Oracle Utilities Work and Asset Management

Release Notes

Release 2.3.0.0.0

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Oracle Utilities Work and Asset Management Release Notes for Release 2.3.0.0.0

Contents

Preface

This document provides an overview of the enhancements, known issues, and other changes in Oracle Utilities Work and Asset Management v2.3.0.0.0. The intended audience is anyone installing or using Oracle Utilities Work and Asset Management v2.3.0.0.0.

Related Documents

For more information on this release, refer to the following documents:

Installation Guides

- Oracle Utilities Work and Asset Management Release Notes
- Oracle Utilities Work and Asset Management Quick Install Guide
- Oracle Utilities Work and Asset Management Installation Guide
- Oracle Utilities Work and Asset Management Database Administrator's Guide
- Oracle Utilities Work and Asset Management Licensing Information User Manual

User Guides

- Oracle Utilities Work and Asset Management and Oracle Utilities Operational Device Management Business User's Guide
- Oracle Utilities Work and Asset Management and Oracle Utilities Operational Device Management Administrative User's Guide

Supplemental Documents

- Oracle Utilities Work and Asset Management Server Administration Guide
- Oracle Utilities Work and Asset Management Security Guide

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	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 on the screen, or text that you enter.

Chapter 1

Release Notes

Release Notes provides general information about this Oracle Utilities Work and Asset Management release, including new functionality/enhancements, known issues, and other important information.

Refer to the *Quick Install Guide* and *Installation Guide* for information regarding supported platforms and installation steps.

Visit My Oracle Support (http://support.oracle.com) for the most recent service packs and patches for this release to ensure you have the most current version of the product.

This guide includes the following:

About This Release

This release includes functionality updates for Oracle Utilities Work and Asset Management and Oracle Utilities Operational Device Management:

- Oracle Utilities Work and Asset Management provides functionality to handle large volumes of assets and to manage the receipt, installation, maintenance, tracking and removal of those assets. The system also manages approval processing, tracks purchasing transactions, manages inventory and resources, and tracks costs, accounting and financial transactions.
- Oracle Utilities Operational Device Management provides functionality to handle large volumes of Utilities industry devices and to manage the receipt, installation, maintenance, tracking and removal of those devices.

  Note: Oracle Utilities Operational Device Management is optimized for interoperability with Oracle Utilities Work and Asset Management, however a license for Oracle Utilities Work and Asset Management is required to take advantage of this functionality. Refer to the *Oracle Utilities Work and Asset Management Licensing Information User Manual* for a description of licensing limitations.

The release includes the following components:

- Oracle Utilities Application Framework v4.4.0.3.0
- Oracle Utilities Work and Asset Management v2.3.0.0.0

Features introduced in this release are highlighted in the Oracle Utilities Work and Asset Management Enhancements section.

- Refer to the *Oracle Utilities Work and Asset Management Quick Install Guide* for a full list of the media pack components and application components included with this release. Also refer to the **Supported Platforms** section in that guide for an updated list of supported platforms.
- Visit My Oracle Support (http://support.oracle.com) for the most recent service packs and patches for this release to ensure you have the most current version of this product.

Relationship Between v2.3.0.0.0 and Prior Versions

For the complete installation procedure, refer to the *Oracle Utilities Work and Asset Management Installation Guide*.

Database Changes

This release includes database enhancements. For more information, refer to the *Oracle Utilities Work and Asset Management Database Administrator's Guide*.

Upgrade Considerations

This section provides the considerations with respect to upgrading Oracle Utilities Work and Asset Management from a prior version to v2.2.0.2.

As part of the upgrade process, values for the existing Work Category/ Work Class lookups (WORK_CLASS_FLG and WORK_CATEGORY_FLG) will be converted to Admin data. These values can be maintained via their own portals. This allows filtering/ reporting on work at the Activity level.

The following table shows the new admin tables, and the business and maintenance objects for each.

New Admin Table	Tables	Business Objects	Maintenance Object
Work Class	W1_WORK_CLASS (Primary) W1_WORK_CLASS_CHAR W1_WORK_CLASS_L W1_WORK_CLASS_WORK_CATEGORY	W1-WORKCLASS (Work Class) W1-WORKCLASSBUNDLINGADDBO (Bundling Add BO for Work Class) W1-WORKCLASSPHYSICALBO (Physical BO for Work Class)	W1-WORKCLAS

New Admin Table	Tables	Business Objects	Maintenance Object
Work Category	W1_WORK_CATEGORY (Primary) W1_WORK_CATEGORY_CHAR W1_WORK_CATEGORY_L	W1-WORKCATEGORY (Work Category) W1-WORKCATEGORYBUNDLINGADDBO (Bundling Add BO for Work Category) W1-WORKCATEGORYPHYSICALBO (Work Category Physical BO)	W1-WORKCAT

Deprecated Items

The Work Class and Work Category flag fields/lookups have been replaced with admin/maintenance objects with corresponding names. Though deprecated, these fields/lookups remain in the system but are no longer used.

For more information about the Work Class and Work Category admin tables, refer to the table in the Upgrade Considerations section.

Supported Integrations

The following integrations are supported in this version of **Oracle Utilities Work and Asset Management**.2.3.0.0.0

Note: Version numbers listed below are supported as of the v2.3.0.0.0. release (April 2021). Refer to the *Certification Matrix for Oracle Utilities Products* (Document ID 1454143.1) on My Oracle Support to determine if support for newer versions of the listed products have been added.

Oracle Utilities Product Integrations to Oracle Applications

- **Oracle Utilities Work and Asset Management Connector for Enterprise Resource Planning (ERP)**
  The Oracle Utilities Work and Asset Management Connector for Enterprise Resource Planning enables integration of Oracle Utilities Work and Asset Management with a generic set of business processes and data exchanges for implementations with Enterprise Resource Planning systems such as Oracle E-Business Suite, PeopleSoft, JD Edwards EnterpriseOne, Fusion Applications or Enterprise Resource Planning Cloud.

Oracle Utilities Product Integrations

- Oracle Utilities Work and Asset Management V2.3.0.0.0 to Oracle Utilities Analytics 2.7.0.x
- Oracle Integration Pack for Oracle Utilities Field Work V12.2
  - Oracle Utilities Mobile Workforce Management V2.3.0.3+

Additional Integrations

- **GIS Integration**
  The GIS Integration uses ESRI GIS software to allow users to view asset layers on a map, and to create and view work requests and work orders on the map.
- **BI Publisher Reports Integration**
  BI Publisher Reports allow users to generate and print reports for certain entities, such as operational data, activity reports, purchasing reports, inventory reports and so on. Refer to the Administrative User Guide for more information.

Please refer to the *Oracle Utilities Work and Asset Management Administrative User Guide* or the specific integration guides available on the Oracle Technology Network for more information.

Supported Portals on iOS

The following portals are supported when accessing the WAM application via a browser on Apple iOS devices in this release:

Crew Work-related Portals

- Work Requests
- Service Call
- Work Order
- Work Activity
- Permit
- Timesheet
- Other Direct Charges
- Construction Work Order
- Construction work Activity

Inventory-related Portals:

- Material Request
- Material Return
- Receiving Receipt
- Receiving Return
- Physical Inventory
- Reorder Review
- Reorder Mass Approval
- Stock Item
- Stock Item Detail
- Stock Transfer

Demo Data Information

The application delivers a demo database based on the application versions provided with the release, including Oracle Utilities Application Framework.

Demo data provides sample configuration and data for key application features. Demo data is delivered as part of the base installation. Refer to the *Oracle Utilities Work and Asset Management Database Administrator's Guide* for more information, or contact Oracle Support.

Oracle recommends that you do not clone the demonstration environment as a basis for a new production environment. The demonstration environment typically includes transactional data that will be irrelevant to your production environment and can cause unexpected issues if it is not purged correctly. The recommended process is to start a new production environment from a new installation and migrate "clean" system data (such as business objects and algorithms) and administrative data (such as sample activity types or other administrative entities) from the demonstration and/or test or development environments as applicable.

Refer to the *Oracle Utilities Work and Asset Management Administrative User Guide* for more information or contact Oracle Support.

Oracle Utilities Work and Asset Management Enhancements

This section describes new and enhanced features in this release of Oracle Utilities Work and Asset Management.

The release includes:

- System Wide Enhancements
- Asset Management Enhancements
- Inventory Enhancements
- Resource Enhancements
- Purchasing Enhancements
- Work Management Enhancements
- Financial Enhancements
- Oracle Field Service Cloud Integration
- Oracle Human Capital Cloud Integration
- Oracle Financials Cloud Integration
- Oracle Procurement Cloud Integration
- Integration Inbound Web Services
- Integration Outbound Web Services
- ERP Product Hub Integration
- ERP Integration
- Integration Enhancements
- Miscellaneous Enhancements

Note: The **Steps To Enable** sections provide guidelines for enabling each feature, where applicable.

System Wide Enhancements

Decimal Support for Cost Center Percentages

Cost Center Percentage and **Asset Cost Distribution Percentage** on Work Activity now use a five-decimal format to present numeric values. In addition, **Activity Reconciliation** and **Overhead** now support five-decimal percentages.

Steps to Enable

No steps are required to enable this feature.

Asset Management Enhancements

Asset Condition Assessment Reset

When refurbishing an asset, the asset's condition should be treated as new. The Asset Condition Assessment Reset enables you to document such event as an asset history with an effective date and time. The system ignores historical asset management service histories prior to the effective date and time when calculating the asset's condition.

Steps to Enable

To enable this feature, complete the following steps:

1. Create a new service history type using the W1-ResetAssetConditionRatinSHT (Reset Asset Condition Service History) business object.
2. Add the new service history type to the Valid Service History Type for asset types with applicable processes (such as refurbishment). Typically, only one service history type per asset type is needed.
3. Grant user security access (such as Add mode to create service history) to the W1-RSTCNDRTNGBOAS application service of the W1-ResetAssetConditionRatinSHT business object.

Asset Location Description Search Filter

The Asset Information Search query option provides a new filter to retrieve assets based on asset location descriptions. You can enter part of the asset location description and use upper case or lower case as appropriate.

Steps to Enable

No steps are required to enable this feature.

Asset Query SOAP Inbound Web Service

The W1-AssetQuery (Asset Query) SOAP inbound web service provides support for external asset queries matching various criteria.

Steps to Enable

No steps are required to enable this feature.

Asset Replication Includes Asset Attributes for Operational Device Asset Types

The system automatically copies the asset attributes of the source smart meter, communication relay, or communication component to the new asset when using Asset Replication. When duplicating an Oracle Utilities Operational Device Management asset, manually entering the asset attributes of the source asset to the duplicated asset is not needed if the template asset used already includes the necessary attributes.

Steps to Enable

No steps are required to enable this feature.

Changes to Questionnaire Service History’s Application Service

In order to adhere to the Oracle Utilities standard of one unique application service for one business object, the W1-QuestionnaireSvcHist business object now uses the W1-QSTSVCHISTBOAS application service.

Previously, the W1-QuestionnaireSvcHist (Questionnaire Service History) and W1-ServiceHistoryWAM (General Service History) business objects used the W1-SVCHSTWUBOAS (Service History BO) application service.

This release provides an upgrade script that retains the same Questionnaire Service History access of User Groups with CM Owner Flags that previously accessed the W1-QuestionnaireSvcHist business object that uses the W1-SVCHSTWUBOAS application service.

Steps to Enable

No steps are required to enable this feature.

Connect To - Nonlinear Asset Location

The "Connect To" function now supports nonlinear asset location connections, enabling you to connect the source asset location to the target asset location as long as the target's Location Type is defined in the Valid Connect To Location Types list of the source location. For example, a pipe can connect to a plant asset. Previously, "Connect To" only supported connections between linear asset locations.

Steps to Enable

No steps are required to enable this feature.

Enable Questionnaire Service History for Operational Devices and Service Order Management Activities

The **Questionnaire Service History** provides the capability to address test and inspection issues in Oracle Utilities Operational Device Management. This feature also supports Oracle Utilities Operational Device Management and Oracle Utilities Service Order Management integration for device tests and inspections, and pass through field activities.

Access the service history questionnaire from **Menu**, then **Asset Management**, and then **Question**. Previously, **Menu**, then **Condition Assessment**, and then **Condition Assessment Question** was used to access the questionnaire.

Steps to Enable

No steps are required to enable this feature.

Functional Process Portal

The **Functional Process** portal provides the ability to associate multiple asset locations that perform larger function together. The portal enables the association of all the assets and components that belong to those asset locations, and gives you the capability to even include child asset locations.

The portal allows you to:

- Review functional processes and corresponding asset locations, child locations, asset in the locations from a Tree View.
- Select assets or locations from the functional process to create work activities.

The portal also provides the following information:

- Cost statistics of all locations in the functional process.
- Maintenance triggers of all assets in the asset locations and work histories.

Steps to Enable

No steps are required to enable this feature.

Functional Process Zone with Multi-select Option

A new zone in the Functional Process portal allows you to search and add multiple asset locations to a functional process. The new zone only appears in the portal when the functional process is in the "Created" status and the search results exclude asset locations that are already included in the functional process.

Steps to Enable

No steps are required to enable this feature.

Get Asset and Location Details SOAP Inbound Web Service

The W1-GetAssetLocationDetails (Get Asset/Location Details) SOAP inbound web service allows you to obtain asset and location information to support a field-created asset activity.

Steps to Enable

No steps are required to enable this feature.

Infrastructure Asset Status Transitions

You can take an infrastructure out of service or retire the infrastructure asset by simply clicking the **Take Out of Service** or **Retire** button in the **Asset** portal.

Steps to Enable

No steps are required to enable this feature.

Mass Asset Disposition Update by Batch

The **Change Disposition in Batch** button in the **Mass Asset Disposition Update** portal allows you to perform disposition updates on a large number of assets through a batch job.

Steps to Enable

No steps are required to enable this feature.

Synchronize Useful Life and Remaining Life for Analytics Visualization

To synchronize the Remaining Useful Life and Remaining Economic Life values between Oracle Utilities Analytics Visualization and Oracle Utilities Work and Asset Management:

- The system defaults the Install Date or In Service Date of the Minimum Effective Asset Disposition if the **In Service Date** field in the **Performance** tab is not populated (blank).
- The Remaining Useful Life and Remaining Economic Life calculation rules have been updated to only use the **In Service Date** in the **Performance** tab.

Previously, Oracle Utilities Analytics Visualization and Oracle Utilities Work and Asset Management calculated the Remaining Useful Life and Remaining Economic Life of an asset differently.

- Oracle Utilities Analytics Visualization calculated the values using the **In Service Date** in the **Performance** tab of the **Asset** portal.
- Oracle Utilities Work and Asset Management calculated the values using the **In Service Date** in the **Performance** tab of the **Asset** portal but if the In Service Date was not available, it calculated the values using the Install Date or In Service Date of the Minimum Effective Asset Disposition.

Steps to Enable

No steps are required to enable this feature.

Time Zone Support on Location Objects

Several Location-related objects like asset location, work location, out of service location, and storeroom now include a **Time Zone** field. The system derives the time zone for new location from the user's profile but if a time zone is not specified on the user's profile, the system uses the time zone defined on Installation Options. The system can also derive the time zone from the location of the activity and send this as part of the activity message sent to an external system.

Steps to Enable

No steps are required to enable this feature.

Verify Asset Installation SOAP Inbound Web Service

The W1GAstDtlBNo (Get Asset Details By Badge Number) SOAP inbound web service verifies an asset's eligibility for installation at a specific location and for a specific work activity through its badge number. After verification, the service returns asset information that can be used to complete work on the field.

Steps to Enable

No steps are required to enable this feature.

Inventory Enhancements

Default Requester from Reorder Review in Purchase Document

The system automatically populates the **Initiator** and **Requested By** fields of a Purchase Order or Purchase Requisition record after the execution of the W1-BSRR (Batch Stock Reorder Monitor Process) batch control.

The conditions by which the system determines the **Initiator** and **Requested By** values are as follows:

- If the **Supervisor** of the Storeroom is an active employee and a user of the system:
    - **Initiator:** *Supervisor (Contacts)* of the storeroom
    - **Requested:** *Supervisor (Contacts)* of the storeroom
- If the **Supervisor** of the Storeroom is invalid or there is none:
    - **Initiator:** *User ID* that submitted the W1-BSRR batch job
    - **Requested By:** *Buyer* of the Reorder Review
- If **Supervisor** details are not provided:
    - **Initiator:** *User ID* that submitted the W1-BSRR batch job
    - **Requested By:** *User ID* that submitted the W1-BSRR batch job

Steps to Enable

No steps are required to enable this feature.

Default Values to Activity Flag Validation on Stock Item

The system displays an error message when a user changes the **Default Values To Activity** (from *Yes* to *No*) of a stock item with a **Stock Item Detail Class** value of *Inventory* or *Expensed At Receipt*.

Steps to Enable

No steps are required to enable this feature.

Deliver to Location in Material Request Includes Asset Locations

When creating a material request, you can now set the **Deliver to Location** value based on Asset Location attributes to match direct purchase requisition and order originating from an Activity Resource Requirement. Additionally, if **Activity** information is available in the material request, the system defaults the asset location as the Deliver to Location. To provide a better experience in selecting a Deliver to Location, a search window replaces the drop-down list style.

Steps to Enable

No steps are required to enable this feature.

Lot Managed Filter for Stock Item Information

You can now quickly search for stock items classified as lot-managed by selecting the *Lot Managed* option in the **Search By** field of the **Stock Item Query** portal.

Steps to Enable

No steps are required to enable this feature.

Material Request Demands and Pending Returns

The Material Request Demands feature allows you to configure the system to tag inventory stock items as "Pending Demand" or "On Demand" for material requests unrelated to an activity. Previously, only activity resource requirements could be used to tag inventory stock items. The system tags the inventory stock item as "Pending Demand" when the status of the material request is "Created", and "On Demand" when the status is "Ready To Issue."

The Pending Returns feature provides visibility to pending return quantities and the option to include pending return quantities in Available Quantities calculations after the system determines to automatically reorder stock items.

Steps to Enable

To enable this feature, complete the following steps:

1. Select **Admin**, select **General**, select **Master Configuration**, and then select **Master Configuration**.
2. Populate the **Include Pending Return** and **Include Non-Work Material Requests As Demand** parameters.

Tips and Considerations

Enable this feature if material requests are not created in advance (like when at the storeroom) or are short lived (created and quickly issued).

Material Request and Stock Transfer Header Record Updates

System-generated and configurable Material Request and Stock Transfer numeric identifiers allow you to easily search for records and create a reference for the request or transfer. The Material Request and Stock Transfer number appears in the information string of the record throughout the system and are printed on the Material Request or Stock Transfer document.

Steps to Enable

No steps are required to enable this feature.

Physical Inventory Header Record Updates

System-generated and configurable Physical Inventory numeric identifiers allow you to easily search for records and create a reference for the inventory. The Physical Inventory number appears in the information string of the record throughout the system and are printed on the Physical Inventory document.

Steps to Enable

No steps are required to enable this feature.

Receipt Outbound Synchronization

This release supports outbound synchronization for receipts for integrations with ERP systems where Oracle Utilities Work and Asset Cloud Service owns inventory and the ERP system owns purchasing.

The system creates an outbound synchronization request that sends an outbound message after the Oracle Utilities Work and Asset Cloud Service completes a receipt,

Steps to Enable

For new implementations, refer to the Oracle Utilities Work and Asset Cloud Service Integration to Oracle Procurement Cloud Configuration Guide for more information.

For upgrading and disabling this feature, deactivate the W1RCPTOUTSYN algorithm on the "COMPLETED" status of the W1-ReceiptHeader business object.

Search and Create Receipts from Purchase Order

This feature enables you to create a receipt from a purchase order using the Add Receipt context menu or by performing a search using the PO Number as a filter.

You can search and retrieve a Purchase Order ID using a system-generated, sequential purchase order number and a created receipt's Purchase Order ID is automatically populated.

Steps to Enable

No steps are required to enable this feature.

Shipment Deficiency

Shipment Deficiency enables the documentation of various receiving shipment issues and optionally alert people (for example, buyers) of those issues. Tools are available to assist in finding and tracking the resolution of the issues. Shipment deficiency only applies to stock items requiring multistep receiving (for example, not automatically accepted upon receipt).

Steps to Enable

No steps are required to enable this feature.

Shipping Memo

This release provides a more complete scope of functionality to support inventory or procurement processes, such as tracking stock item or assets shipped due to return, repair, and storeroom transfer.

Steps to Enable

No steps are required to enable this feature.

Shipping Memo Report

The **Print** button in the **Shipping Memo** portal enables the generation of a shipping memo containing a list of stock items associated with the shipment.

Steps to Enable

No steps are required to enable this feature.

Storeroom Type Category

The Storeroom Category attribute enables the categorization of storeroom types as Standard, Truck, or Unmanned, allowing you to deal with storerooms of different categories with different processes. For example, when you consider some crew trucks as inventory storerooms and allow crews to perform material issues from truck storerooms using their mobile devices while online or offline. Another example is when you allow crews to perform material issues from unmanned storerooms using their mobile devices while online.

Steps to Enable

No steps are required to enable this feature.

Unit of Measure in Permit Template and Permit Maintenance Screens

The Materials grid in the **Permit Template** or **Permit** portal now displays a read-only Unit of Measure column. Additionally, the system populates the column when the **Stock Item** value changes.

Steps to Enable

No steps are required to enable this feature.

Resource Enhancements

Change Request Portal

The **Change Request** portal enables you to request changes to objects that you cannot update directly, justify the request, and describe the impact of the changes. The portal routes the change requests to appropriate parties for approval and applies the changes once approved. The portal also allows you to describe changes unrelated to any single specific object and request approval.

Steps to Enable

Set the Change Request Type referencing the product's preconfigured metadata to enable change request for the following objects:

- General (not related to any specific object)
- Asset
- Asset Location

- Stock Item
- Stock Item Detail
- Vendor
- Vendor Location

Key Resources

Refer to *Understanding Change Request Type* of the online help for more information.

Leave Request Fixes

The new Canceled status allows you to cancel employee unavailability such as an approved personal leave. The system ignores canceled employee unavailability when calculating the crew shift’s total capacity. In addition, the *Expired* status replaces the *Inactive* status to clearly describe the employee unavailability status as not current.

Steps to Enable

No steps are required to enable this feature.

Mobile Storeroom Assignment

You can now assign storeroom types as Standard, Truck, and Unmanned by using the **Storeroom Category** field. For each crew, you can restrict the truck and unmanned storerooms they can access from their mobile devices by optionally defining a list of truck and unmanned storerooms.

You may have different processes when dealing with storerooms of different categories. For example, if you consider some crew trucks as inventory storerooms and allow crews to perform material issues from their truck storerooms, using their mobile device while online or offline. You can also allow crews to perform material issues from unmanned storerooms, using their mobile devices while online.

Steps to Enable

No steps are required to enable this feature.

Purchasing Enhancements

Cost Center-based Expense Codes

The **Validate Cost Center/Expense Code** parameter in the Financial Master Configuration enables you to automatically filter PR/PO Line expense codes by cost center.

Steps to Enable

No steps are required to enable this feature.

Download Blanket Contract Line Items for New Vendor Bids

The **Vendor Bid Download** tab on the **Blanket Contract** portal enables you to download blanket contract line items for new bids and export the line items into a spreadsheet file using the **Export To Excel** option.

Steps to Enable

No steps are required to enable this feature.

Import to Blanket Contract for Vendor Bid Enhancements

The new **Upload Lines From File** link in the **Blanket Contract Header** portal enables you to upload a properly formatted vendor bid file. The portal also displays a new link that allows you to check the progress of the upload or view errors. Previously, the system provided a generic loading tool that required you to copy-paste data from the file with the downloaded format in the format required by the tool and submit two batch jobs to load the data.

Steps to Enable

To enable this feature, complete the following steps:

1. Select **Admin**, select **General**, select **Request Type**, and then select **Add**.
2. Set BO to Blanket Contract Line Upload Request Type.
3. Select **Admin**, select **General**, select **Master Configuration**, and then select **Purchasing**.
4. Populate the **Blanket Contract Upload** parameters and set **Blanket Contract Line Upload Request Type** to the record created in Step 2.

Improved Usability for Blanket Contract Line Maintenance Screens

The **Blanket Contract Line** maintenance screen now includes the following enhancements:

- The **Craft**, **Equipment**, **Stock Item**, and **Other** fields now accept codes as search criteria. You can enter part of the craft code, equipment code, stock item code, or other resource code and press **Enter** to open the Search window. The Search window opens with search results matching the code criteria.
- The system automatically populates these **Blanket Contract Line Information** fields based on the code selected from the Search window:
    - If the code selected is *Craft*, the fields are **Description**, **Detailed Description**, and **Unit Price**
    - If the code selected is *Equipment*, the fields are **Description**, **Detailed Description**, **Unit Price**, and **Unit of Purchase**
    - If the code selected is *Stock Item*, the fields are **Description**, **Detailed Description**, **Unit Price**, **Unit of Purchase**, **Purchase to Issue Ratio**, and **List of Manufacturer/Part Numbers**
    - If the code selected is *Other Resource*, the fields are **Description**, **Detailed Description**, **Unit Price**, and **Unit of Purchase**

Steps to Enable

No steps are required to enable this feature.

Improved Usability for PR Line Maintenance Screens

The **Labor Purchase Requisition Line** maintenance screen now features the following enhancements:

- The **Craft** field now accepts craft codes as search criteria. You can enter part of the craft code and press **Enter** to open the Search window. The Search window opens with search results that match your code criteria.
- For a purchase requisition referencing a blanket contract, the **Blanket Contract Line** defaults to the blanket contract line of the selected craft, equipment, other resource type, or stock item.
- Selecting a Blanket Contract Line defaults the **Hourly Rate** to the blanket contract's hourly rate.
- Clearing the **Blanket Contract Line** for an equipment with an invoice reverts the **Hourly Rate** to the latest **Invoice Unit Price**.
- Clearing the **Blanket Contract Line** for an equipment without an invoice reverts the **Hourly Rate** to the craft's effective hourly rate.

The **Equipment Purchase Requisition Line**, **Other Resource Purchase Requisition Line**, and **Material Purchase Requisition Line** maintenance screens now include the following enhancements:

- The **Equipment**, **Stock Item**, and **Other** fields now accept codes as search criteria. You can enter part of the equipment code, stock item code, or other resource code and press Enter to open the Search window. The Search window opens with search results that match the code criteria.
- For a purchase requisition referencing a blanket contract, the **Blanket Contract Line** defaults to the blanket contract line of the selected craft, equipment, other resource type, or stock item.
- Selecting a **Blanket Contract Line** defaults the **Unit of Measure** and **Unit Price** to the blanket contract's unit of measure and unit price.
- Clearing the **Blanket Contract Line** reverts the **Unit of Measure** to the unit of measure of the equipment or other resource type.
- Clearing the **Blanket Contract Line** reverts the **Unit of Purchase** to the stock item's unit of purchase.
- For equipment, other resource type, or stock item with an invoice, the **Unit Price** defaults to the latest **Invoice Unit Price**.
- For equipment or other resource type without an invoice, the **Unit Price** defaults to the effective unit price of the equipment or other resource type.
- For a stock item without an invoice, the Unit Price defaults to the stock item detail's average unit price.

Steps to Enable

No steps are required to enable this feature.

Improved Usability for Purchase Order Line Maintenance Screens

The **Purchase Order Line** maintenance screen now includes the following enhancements:

- The **Craft**, **Equipment**, **Stock Item**, and **Other** fields now accept codes as search criteria. You can enter part of the craft code, equipment code, stock item code, or other resource code and press **Enter** to open the Search window. The Search window opens with search results matching the code criteria.
- The system automatically populates these **Main** and **Order Line Information** fields based on the code selected from the Search window:
    - If the code selected is *Craft*, the fields are **Description**, **Detailed Description**, and **Unit Price**
    - If the code selected is *Equipment*, the fields are **Description**, **Detailed Description**, **Unit Price**, and **Unit of Purchase**
    - If the code selected is *Stock Item*, the fields are **Description**, **Detailed Description**, **Unit Price**, **Unit of Purchase**, and **Purchase to Issue Ratio**
    - If the code selected is *Other Resource*, the fields are **Description**, **Detailed Description**, **Unit Price**, and **Unit of Purchase**

Steps to Enable

No steps are required to enable this feature.

Large Blanket Contract Performance Enhancements

The following portal updates provide the ability to perform online actions on large blanket contracts without experiencing time outs:

- **Blanket Contract**
    - Increased page size of existing **Blanket Contract Lines** zone
    - Added blanket contract line filters to fit relevant lines into a page
    - Moved Create a Purchase Request, Create a Purchase Order, Resequence, and Delete functions to the **Blanket Contract Lines** zone
    - Limit new blanket contract revisions to the first 300 lines initially
    - Added the **Copy More Lines** link to the **Blanket Contract Lines** zone, allowing you to copy the succeeding lines (301st and onwards) of the new blanket contract revisions
    - Added visual clues indicating the status of copied lines for the new blanket contract revisions
- **Purchase Requisition**
    - Added the **Blanket Contract Lines** zone, enabling you to search and add lines to the current purchase requisition record
    - Replaced the **Add Lines from Blanket Contract** link in the **Additional Processes** section with the **Blanket Contract Lines** zone
- **Purchase Order**
    - Added the **Blanket Contract Lines** zone, enabling the searching and adding of lines to the current purchase order record

Steps to Enable

No steps are required to enable this feature.

Multiple Purchase Orders on Same Invoice

Single invoice for multiple purchase orders with the same vendor location is now supported. You can also add new invoice lines to purchase order lines from different purchase orders with the same vendor location as the invoice header.

Additionally, you can filter invoice search results by Invoice Line Information such as PO Number, PO Line Item Number, Invoice Line Description, and Invoice Line Status.

Steps to Enable

No steps are required to enable this feature.

Tips and Considerations

The Purchase Order Number on the invoice header must be blank to allow an invoice against multiple purchase orders.

Purchase Requisition Outbound Synchronization Support for Oracle Fusion Procurement Cloud

The Purchase Requisition outbound message includes more information to provide support for integration with Oracle Procurement Cloud.

You can now synchronize purchase requisition information between Oracle Utilities Work and Asset Cloud Service and Oracle Procurement Cloud.

Steps to Enable

For upgrading customers who have implemented such a flow:

- If you created your own own outbound message type and have overridden the algorithm parameter with your own outbound message type code by adding a new entry with a later effective date to the algorithm, you may choose to do nothing as the feature only updates the parameter value with the old effective date and the system still uses your value.
- If you created an outbound message type with the code "ZZ-ERP-PR," the feature ignores the code as the algorithm parameter value is not this value anymore. If you want to keep your existing value, you need to override the outbound message type parameter of algorithm "W1-INTCPRMSG" by adding a new entry with a later effective date than ours and specify your value there.

Usage Expense Code Override on Direct Purchase Stock Item Detail

You can define a usage expense code on a specific direct purchase stock item detail, which may be different from the default usage expense code defined on the stock item.

Steps to Enable

No steps are required to enable this feature.

Work Management Enhancements

Add an Activity to a Completed or Closed Work Order

You can now add any activity to a completed or closed work order. Previously, you could only add a follow up activity (for example, created from a service history) to a completed or closed work order.

Additionally, this release updates the W1-LocalActivityCoreWAM (Work Order Activity) business object to prevent the addition of a new activity to a canceled or reopened work order.

Steps to Enable

No steps are required to enable this feature.

Additional Fields in Template Work Order Activity

The **Template Work Order Query** and **Template Work Order** portals now include the Crew field. When you click Create Work Order using a template work order with crew information, the system automatically copies the information to the new work order. When creating a template work order based on a work order with crew information, the system automatically copies the information to the new template.

The **Template Activity** portal now includes the **Backlog Group**, **Outage Type**, **Work Priority**, and **Crew** fields. When creating a work activity using a template activity with backlog group, outage type, work priority, and crew information, the system automatically copies the information to the new work activity. When creating a template activity based on a work activity with backlog group, outage type, work priority, and crew information, the system automatically copies the information to the new template activity.

Steps to Enable

No steps are required to enable this feature.

Additional Project Portal Zones

New **Project** portal zones provide additional information such as work activities, timesheets, purchase orders, and so on which enable you to understand the project's overall progress. The zones also allows you to select and send multiple activities to an external system when the projects are integrated with an external project management system. Previously, the portal sent activities separately from each of the activity's portals.

Steps to Enable

No steps are required to enable this feature.

Add Service Call and Supplemental Work Location to Possible Duplicate SC/WR/WO Activity Zone in the Work Request and Service Call Portals

The **Possible Duplicate WR/WO/Activity** zone in the **Work Request** portal now checks for service calls. Previously, the zone only checked for work requests, work orders, and work activities. The Possible Duplication criteria now includes Work Location where previously it only checked Asset Location.

In addition, review possible redundant work in the **Service Call** portal using the new **Possible Duplicate WR/WO/Activity** zone.

Steps to Enable

No steps are required to enable this feature.

Asset Organization Hierarchy Changes

This release removes the **Organization Hierarchy** zone from the **Scheduling** and **Crew Shift** portals and embeds the zone in the **Activity Search** zone of each portal to provide improved usability and consistency.

Embedding the **Organization Hierarchy** tree view in the **Activity Search** zone provides a **Hierarchy Location** search filter that can start from the root hierarchy node. Additionally, the **Activity Search** screen includes the following enhancements:

- The Work Location filter is now available in the **Location Information** option of **Search By**.
- Description of an organization is mandatory to ensure the proper display of organization nodes in the tree view.

Steps to Enable

No steps are required to enable this feature.

Automatically Create Timesheets Based on Employee Record Configurations

This feature enables the automatic creation of timesheets based on configurations of an individual employee record, which is most applicable to an employee performing the same tasks for an extended period of time. The configurations include an optional work calendar that allows the system to skip timesheet creation for non-working days and holidays.

Steps to Enable

No steps are required to enable this feature.

Bulk Timesheet Creation

The **Timesheet Quick Entry** portal allows you to enter any number of timesheet entries for employees, for any charge types such as activity, cost center, project, leave, and function. You can also duplicate a single timesheet entry or the entire list to make minor or quick changes for new timesheet entries. The employees accessible to the logged on user as follows:

- Employee record of user
- If the user is a supervisor, all employees reporting to the supervisor
- If the user is a timekeeper, all employees on the timekeeper record
- If the user has payroll security authorization, any employee

In addition, a new Timekeeper object associates the user responsible for entering time with a list of employees regardless of the user's HR supervisor or employee relationship.

Steps to Enable

No steps are required to enable this feature.

Create Crew Timesheet from an Activity

The **Add Crew Timesheet** context menu in Work Activity enables supervisors to select the specific crew to which their employees are assigned and create the timesheets for these employees working on the same activity.

Steps to Enable

No steps are required to enable this feature.

Create Service Call from Contact Portal

The **Create Service Call** button in the **Contact** portal provides the ability to quickly create a service call record with all of the existing contact's information and eliminates the need to scroll through the menu to find the **Service Call** menu item.

Steps to Enable

No steps are required to enable this feature.

Create Timesheet from Activity

The **Add Timesheet** context menu added to the **Work Activity** portal enables the creation of a specific timesheet depending on the assigned Unrestricted Timesheet Search access.

- Super User: Employee (existing in the system) timesheet
- Supervisor: Subordinate timesheet
- Non Super or Non Supervisor: Own timesheet

Work Activity performs the following checks after selecting an Employee Time and Period for the timesheet:

- If a timesheet exists for the selected Employee Time and Period, the **Timesheet Maintenance** portal opens
- If a timesheet does not exists and only a single Timesheet Header business object exists, Work Activity automatically creates a timesheet and the **Timesheet Maintenance** portal opens
- If a timesheet does not exists and multiple Timesheet Header business objects exist, you can select a business object, Work Activity automatically creates a timesheet, and the **Timesheet Maintenance** portal opens

After Work Activity performs the checks and the **Timesheet Maintenance** portal opens, the **Charge Type** is automatically set to "Activity" and the initiating Activity ID is populated in the **Timesheet Detail Quick Add** zone.

Steps to Enable

No steps are required to enable this feature.

Deletion of Template Work Order

Simply delete a template work order and its associated template activities, template dependencies, and template activity resource requirements by clicking **Delete** in **Record Actions** section in the **Template Work Order** portal.

Steps to Enable

No steps are required to enable this feature.

External and Internal Permit Reports

The **Print** button in the **Permit** portal provides the capability to generate a copy of the permit. The printed permit contains a Personal Entry section that allows logging of employees that enter and exit the site.

Steps to Enable

No steps are required to enable this feature.

Mobile Storeroom and Material Issue Integration Flow Support

This release provides the following web services to support integration flows:

- **Mobile Storeroom Synchronization:** A synchronous web service that returns basic information about all active mobile storerooms. For example, provided trucks can be used by the external system to synchronize truck entities.
- **Truck Inventory Query:** A synchronous web services that returns truck inventory information.
- **Activity Material Usage:** A web service that reports material usage for an activity for material issued from mobile storerooms.

The following integration flows are also supported in this release:

- **Tracked Asset Installation:** Install tracked assets directly from a mobile storeroom such as a truck.
- **Asset Installation in Offline Mode:** Install an asset while in offline mode and include information about assets issued to an activity, and send the information to an external system as part of the activity details. When offline, the crew cannot validate the badge number to be installed, and this feature provides the list of assets issued to an activity that the crew can store in their mobile device. This feature also enables the crew to request to refresh the activity details on their mobile devices to include the assets issued after receiving the assets for an activity and while still connected to the storeroom area.

Steps to Enable

No steps are required to enable this feature.

Selected Asset Attachments Carry to Work Activity

The new **Work Type** field on the **Attachment** portal enables you to classify asset attachments as related to a specific work order type. Those attachments will automatically be displayed in the new **Asset Attachments** zone on the **Work Activity** portal. The new **Send to Crew** field on the **Attachment** portal allows you to classify the asset attachments as relevant information for the field crew working on the assets.

Note: The activity information sent to an external mobile workforce application will only include asset attachments that you explicitly mark for sending.

Steps to Enable

No steps are required to enable this feature.

Support Asset Installation and Removal Activity Completion Events

The Activity Completion Message now supports the following asset-related work performed by crews:

- Removal of existing asset
- Set an asset out of service, retaining the current location (supported if allowed by Asset Type Configuration)
- Attach a component to an existing asset
- Install at a specified location without any installed assets
- Replace an existing asset or component (removes the current asset and installs a new asset)
- Define measurements and complete applicable service histories for removed, installed, and attached assets

The following new Completion Event Types enable the handling of removal and installation events:

- Remove Tracked Asset
- Remove Non-Tracked Asset
- Install Tracked Asset
- Install Non-Tracked Asset
- Attach Component

The new Get Asset Details by Badge Number API provides mobile applications with the capability to verify assets using the badge numbers when installing an asset or attaching a component to an asset. The API also returns the necessary asset details to complete the field work related to the asset.

Steps to Enable

No steps are required to enable this feature.

Tips and Considerations

The upgrade script changes the BO W2-Vehicle application service from W1-NODEOU to W1-NODECL. W1-NODEOU only provides Operational Device Management access. W1-NODECL provides access to Operational Device Management and Work and Asset Management, and is linked to the ALL_SERVICES User Group.

Support Timesheet and Resource Usage Reports for Work Activities Created in the Field

The Interface Timesheet Details and Interface Other Direct Charge Details web services now accept the mobile identifier of a field-created activity as an option to indicate the work activity related to usage reports. The services allow an external mobile application to send timesheet and resource usage reports for field-created work activities. Additionally, the services process messages asynchronously as inbound communication staging records when the new activity is not yet created during the message processing.

Steps to Enable

No steps are required to enable this feature.

Track Activity Associated with Asset Disposition Changes

Oracle Utilities Work and Asset Management tracks the disposition change when a work activity removes or installs an asset. When this happens, the Activity ID is now recorded on the Asset Disposition Change record. Previously, an installation did not specify the asset on the activity's asset list and the activity was not listed as part of the asset's work history.

Steps to Enable

No steps are required to enable this feature.

Work Activity Completion Improvements

The **Work Activity** portal includes a new **Completion** tab that provides the capability to perform various action to complete an activity and lists all completion events for the activity representing completion information captured by an external system for the activity. The new tab also replaces the **Completion Event Information** zone on the **Main** tab.

When the completion activity is associated with at least one asset, data entry in the **Completion** tab is at the asset level and allows you to:

- Add service histories and replicate a service history to all applicable assets on the activity
- Add measurements
- Mark the asset as worked on or not
- Remove the asset
- Install a new asset to a location without any installed assets
- Attach a component to the asset
- Add a follow up work request for the asset

When the completion activity is not associated with any asset, data entry in the **Completion** tab is at the activity level and allows you to:

- Add service histories
- Add a follow up work request for the activity

Steps to Enable

No steps are required to enable this feature.

Work Activity, Work Request, and Service Order Search Filters

The Work Activity Location Search provides new address filters including "Building," "Room," and "Position." The system also checks these address filters against the Work Location defined on Work Activity, Work Request, and Service Call records.

Steps to Enable

No steps are required to enable this feature.

Work Planning Portal

The **Work Planning** portal provides high-level summaries (graphs) of work backlogs through the following zones:

- Open Work Activity by Status
- Open Work Activity by Phase
- Open Work Activity by Status (Without Planner)
- Open Work Activity by Held for Parts

The **Work Activity Search** zone enables querying of work activities and labor requirements, and select from the results multiple work activities to mass update or schedule.

Steps to Enable

No steps are required to enable this feature.

Financial Enhancements

Cost Adjustment Type and Cost Adjustment

The **Cost Adjustment** portal allows the transfer of cost among activities, projects, and cost centers.

Steps to Enable

You can configure the cost adjustment approval profiles and Cost Adjustment Types for your implementation. Note that this release includes W1-ATATD (Approval Type - Adjustment), which is a base To Do Type for cost adjustment approval.

Configure an ERP Integration admin record for the W1-ADJSMNT (Cost Adjustment) maintenance object with Oracle Utilities Work and Asset Management as the Owning system if your implementation uses ERP Connector for ERP integration. Configuring the admin record ensures that financial transactions created by cost adjustments in Oracle Utilities Work and Asset are sent to the ERP through the ERP integration.

Oracle Field Service Cloud Integration

Assets Installs and Removals

Oracle Field Service Cloud integration enables you to perform the following on tracked and non-tracked assets:

- Install into the asset location defined on the work order activity
- Remove from the asset location defined on the work order activity
- Replace (remove and install) from and into the asset location defined on the work order activity

In addition, you can query an asset installed in Oracle Utilities Work and Asset Cloud Service from the Oracle Field Service Cloud mobile application, select a proper asset, perform installation, and enter measurements and service histories for the asset within a single closeout user interface.

Steps to Enable

No steps are required to enable this feature.

Complete All Option

The Complete All option enables you to complete service histories, timesheets, equipment usage entries, and other charges that are in Pending states.

Steps to Enable

No steps are required to enable this feature.

Mobile Storeroom Details Synchronization with Oracle Field Service Cloud Mobile Application

Use the Oracle Field Service Cloud mobile application to perform Oracle Utilities Work and Asset Cloud Service activities such as the following:

- Synchronizing truck inventories with Work and Asset Cloud Service-managed mobile storerooms
- Managing truck inventories
- Reporting inventories used for activities to Oracle Utilities Work and Asset Cloud Service

Steps to Enable

No steps are required to enable this feature.

Pick Up Orders

In this release, you can now create any of the following pick up work orders using Oracle Field Service Cloud via a mobile device while working on an activity assigned to your crew:

- Related Work Order - work order related to assets linked to the activity
- Related Work Request - work request related to assets linked to the activity
- Unrelated Work Order - work order related to assets not linked to the activity
- Unrelated Work Request - work request related to assets not linked to the activity

Steps to Enable

No steps are required to enable this feature.

Planned Service Histories

Oracle Field Service Cloud integration enables you to specify planned service histories to an Oracle Utilities Work and Asset Cloud Service activity, make the service histories available in the Oracle Field Service Cloud mobile application, and link the applicable assets upon completion of the planned service histories.

Steps to Enable

No steps are required to enable this feature.

Work Activity Interim Status Update

Oracle Field Service Cloud integration enables you to receive notifications when an Oracle Field Service Cloud crew starts working on an activity or when the work activity status transitions from *Sent* to *In Progress*.

Steps to Enable

No steps are required to enable this feature.

Oracle Human Capital Cloud Integration

Refer to the *Oracle Utilities Work and Asset Management Connector for Enterprise Resource Planning* documentation for more information about configuring the following features.

Employee Absence Synchronization

The integration allows you to maintain employee absences in Oracle Human Capital Management Cloud and synchronize the data with Oracle Utilities Work and Asset Cloud Service, maintaining the same data on both systems. Additionally, the integration supports initial bulk upload of employee absences and incremental updates.

Steps to Enable

Refer to *Oracle Utilities Cloud Services Integration Guide* for more information.

Employee Data Synchronization

The integration allows you to maintain employee-related data in Oracle Human Capital Management Cloud and synchronize the data with Oracle Utilities Work and Asset Cloud Service, maintaining the same definition on both systems. In addition, the integration supports initial bulk upload of employee-related data and incremental updates.

Steps to Enable

Refer to *Oracle Utilities Cloud Services Integration Guide* for more information.

Job and Job Grade - Craft and Craft Rate Synchronization

The integration allows you to maintain job definitions and job grades in Oracle Human Capital Management Cloud and synchronize the definitions and grades with Oracle Utilities Work and Asset Cloud Service's Crafts and Crafts Rates, maintaining the same definitions and grades on both systems. The integration also supports initial bulk upload of job definitions and grades, and incremental updates. Additionally, a new process allows you to update craft rates in Oracle Utilities Work and Asset Cloud Service on a regular basis.

Steps to Enable

Refer to *Oracle Utilities Cloud Services Integration Guide* for more information.

Oracle Financials Cloud Integration

Refer to the *Oracle Utilities Work and Asset Management Connector for Enterprise Resource Planning* documentation for more information about configuring the following features.

Chart of Accounts Synchronization

The integration allows you to establish Chart of Accounts in ERP Financial Cloud and synchronize the data with Oracle Utilities Work and Asset Cloud Service, maintaining the same Chart of Accounts on both systems. In addition, the integration supports initial bulk upload of Chart of Accounts and incremental updates.

Steps to Enable

Refer to *Oracle Utilities Cloud Services Integration Guide* for more information.

General Ledger Details Synchronization

A new Oracle Integration Cloud process supports the integration of Oracle Utilities Work and Asset Cloud Service with Oracle Financials Cloud, and allows you to send summarized financial transaction details to the appropriate General Ledger accounts in Oracle Financials Cloud. The process enables Oracle Financials Cloud to process the received information and create the General Ledger information journal entries.

Steps to Enable

Refer to *Oracle Utilities Cloud Services Integration Guide* for more information.

General Ledger Information Extract

The W1-ERPGL batch job enables the integration of financial transactions to an ERP system by sending financial or General Ledger information in batches. The file format of the W1-ERPGL batch job meets Oracle Financials Cloud requirements. Oracle Utilities Work and Asset Cloud Service acts a subsidiary ledger for labor- and material-related financial transactions.

Steps to Enable

If you are using the ERP connector and sending financial transactions or general ledgers to ERP through messaging, make sure that the value of the GL Extract Batch Code parameter in Financial Master Configuration is blank.

Set the value of the GL Extract Batch Code parameter to “W1-ERPGL” to send financial transactions to ERP systems through batch files.

Tips and Considerations

Populating the GL Extract Batch Code parameter in Financial Master Configuration will only generate batch files. Previously, the ERP connector ignored the GL Extract Batch Code parameter.

Oracle Procurement Cloud Integration

Refer to the *Oracle Utilities Work and Asset Management Connector for Enterprise Resource Planning* documentation for more information about configuring the following features.

Purchase Orders

You can create purchase orders in Oracle Procurement Cloud and send these to the Oracle Utilities Work and Asset Cloud Service.

Steps to Enable

No steps are required to enable this feature.

Purchase Order Receipts

You can create purchase order receipts in Oracle Utilities Work and Asset Cloud Service and send these to Oracle Procurement Cloud for purchase order receipt creation.

Steps to Enable

No steps are required to enable this feature.

Purchase Requisitions

You can create purchase requisitions in Oracle Utilities Work and Asset Cloud Service and send these to Oracle Procurement Cloud for processing and purchase order creation.

Steps to Enable

No steps are required to enable this feature.

Vendor or Vendor Location Synchronization

The integration with Oracle Procurement Cloud enables you to maintain Vendor-related or Vendor Location-related data in Oracle Procurement Cloud and synchronize the data with Oracle Utilities Work and Asset Cloud Service employee records. The integration also supports initial bulk upload of vendors and vendor locations to Oracle Utilities Work and Asset Cloud Service, as well as incremental updates.

Steps to Enable

No steps are required to enable this feature.

Integration Inbound Web Services

Activity Material Usage Report

The W1-ActivityMaterialUsage (Material Usage) SOAP inbound web service allows an external system to report truck materials used for an activity.

Steps to Enable

No steps are required to enable this feature.

Chart of Accounts Synchronization REST Inbound Web Service

The W1-ChartOfAccountSynchronization REST inbound web service allows your ERP system to send or update Chart of Accounts to Oracle Utilities Work and Asset Cloud Service.

Steps to Enable

No steps are required to enable this feature.

Craft and Craft Rates Synchronization REST Inbound Web Service

The W1-Craft REST inbound web service allows you to define jobs and grades in your Human Capital Management systems and synchronize them with Oracle Utilities Work and Asset Management Crafts and Craft Rates.

Steps to Enable

No steps are required to enable this feature.

Create Mobile Work Order SOAP Inbound Web Service

The W1-CreateMobileWorkOrder (Create Mobile Work Order) SOAP inbound web service allows you to create field-initiated work order from a mobile application or external system and follow up the work order through an existing activity. This service creates a work order for a single asset based on the information provided by the crew on the field. The created work order consists of a single activity and if the crew initiating the activity plans to work on the activity and gives confirmation, the service automatically activates the activity.

Steps to Enable

No steps are required to enable this feature.

Create Mobile Work Request SOAP Inbound Web Service

The W1-CreMoblWR (Create Mobile Work Request) SOAP inbound web service allows you to create field-initiated work request from a mobile application or external system and follow up the work request through an existing activity.

Steps to Enable

No steps are required to enable this feature.

Employee Absences Synchronization REST Inbound Web Service

The W1-Leave REST inbound web service allows you to synchronize employee absences in Human Capital Management systems with Work and Asset Cloud Service's Employee Unavailability, maintaining the same data on both systems.

Steps to Enable

No steps are required to enable this feature.

Employee Synchronization REST Inbound Web Service

The W1-EmployeeSynchronization REST inbound web service allows you to synchronize employee-related data in Human Capital Management systems with Oracle Utilities Work and Asset Cloud Service, maintaining the same definitions on both systems. In addition, this service attempts to match employees with a Work and Asset user IDs through the first name, last name, and email address.

Steps to Enable

No steps are required to enable this feature.

Mobile Storeroom Details Synchronization

The W1-SynchronizeMobileStoreroomDetails (Synchronize Mobile Storeroom Details) SOAP inbound web service enables an external system to get basic details for all active mobile storerooms and synchronize the list with the external system.

Steps to Enable

No steps are required to enable this feature.

Mobile Storeroom Inventory

The W1-MobileStoreroomInventory (Mobile Storeroom Inventory) SOAP inbound web service returns stock item inventory, which include tracked assets and non-tracked stock items, for a mobile storeroom.

Steps to Enable

No steps are required to enable this feature.

Purchase Order Synchronization

The W1-PurchaseOrderSynchronization REST inbound web service enables an ERP system to send or update purchase orders to Oracle Utilities Work and Asset Cloud Service for purchase requisitions initiated from Oracle Utilities Work and Asset Cloud Service.

Steps to Enable

No steps are required to enable this feature.

Validate Asset Installation in Offline Mode

The W1GAstDtlBNo (Get Asset Details By Badge Number) web service allows an external system's mobile application to find an asset by badge number and confirm that the asset is valid for installation. For tracked assets, the validation ensures that the status of the asset is "Pending Disposition" and its related activity includes a material issue. The material issue would not exist at the time of the validation if the asset is issued from the crew's truck. The validation also accepts assets with an "In Store" status if the asset resides in the crew's truck storeroom.

Steps to Enable

No steps are required to enable this feature.

Work Order Activity Details Include Issued Assets

The W1-WOActivityDetails (Work Order Activity Details) SOAP inbound web service enables an external system to request the latest details of a previously interfaced activity. This service also returns information about assets issued for the work activity, which can be used to support mobile application flows where crews need to install an asset issued for the activity offline.

Steps to Enable

No steps are required to enable this feature.

Integration Outbound Web Services

Purchase Requisition Outbound Message

The Purchase Requisition outbound message with the W1-PREQIMSG outbound message type now includes information that supports integration with Oracle Procurement Cloud.

Steps to Enable

Refer to the *Oracle Utilities Work and Asset Cloud Service Integration to Oracle Procurement Cloud Configuration Guide* for more information.

Receipt Details

The W1-RCPTOUTMS outbound message type supports sending of receipts to external systems. For example, when sending a message to an ERP system where Oracle Utilities Work and Asset Cloud Service owns the inventory and another system owns purchasing.

Steps to Enable

Refer to the *Oracle Utilities Work and Asset Cloud Service Integration to Oracle Procurement Cloud Configuration Guide* for more information.

Work Order Activity Message Include Issued Assets

The Work Order Activity outbound message now includes information about assets issued for the work activity that can be used to support mobile application flows where the crew needs to install an asset issued for the activity offline.

Steps to Enable

No steps are required to enable this feature.

ERP Product Hub Integration

Stock Item Synchronization

Stock Item Synchronization enables you to define and maintain assets and inventories in the ERP Product Hub item catalog, synchronize the assets and inventories with Oracle Utilities Work and Asset Cloud Service, which maintains the same definition across both solutions. This integration also supports initial bulk upload or ERP items to Oracle Utilities Work and Asset Cloud Service and incremental updates.

Steps to Enable

No steps are required to enable this feature.

ERP Integration

Allow Purchase Requisitions to be Canceled After Sending to External ERP

Enabling ERP integration in Purchase Requisition allows implementations to send approved purchase requisitions to external ERP systems. However, there are circumstances where there is a need to cancel the purchase requests after being sent to the external ERP systems.

This release enhances the business object lifecycle states and related algorithms to allow approved purchase requisitions to transition from *Sent to External System* to *Canceled*. Additionally, this feature can adjust **Pending Order Quantities** based on the purchase requisition status.

Steps to Enable

No steps are required to enable this feature.

Stock Item Synchronization Inbound REST Web Service Stock Based on Service Script

This service script-based inbound REST web service creates a Stock Item Synchronization record that allows external systems to create or update stock items, eliminating the need to work directly with the Stock Item Synchronization business object.

Steps to Enable

No steps are required to enable this feature.

Integration Enhancements

Additional Web Services Supporting Integration with Oracle Field Service Cloud

The following new web services enable external systems to retrieve basic control data details and set the status of an activity:

- **External Mobile Control Data:** This web service retrieves basic control data details needed by an external system mobile application.
- **Update Activity Status:** This web service allows external systems to set the activity status to “In Progress.”

Steps to Enable

No steps are required to enable this feature.

Consume Machine Learning Insights

The F1-BusinessInsights (Common Business Insights) REST API enables interfacing of asset-related machine learning insights into Oracle Utilities Work and Asset Management. The REST API captures insights as Business Flags attached to assets because the external standard name of each type of reported insights needs to be associated with a Business Flag Type.

Business flags are informational or may require investigation and analysis. Business flags that require investigation and analytics create To Do entries for follow ups and investigations.

This release adds the **Asset Business Flag** zone to the **Asset** portal and the **Asset Location Business Flag** zone to the **Asset Location** portal.

- The **Asset Business Flag** zone displays the business flags created for the asset within the last 30 days, starting from the Business Flag Date/Time or Current Date/Time.
- The **Asset Location Business Flag** zone displays the business flags created for the asset location within the last 30 days, starting from the Business Flag Date/Time or Current Date/Time.

Steps to Enable

No steps are required to enable this feature.

GIS Enhancements

ESRI 10.7.1 Certification

ESRI 10.7.1 is supported for integration with Oracle Utilities Work and Asset Cloud Service.

Steps to Enable

No steps are required to enable this feature.

Standardized Outbound Messaging with the GIS System

Outbound messages are retained and the mechanism used to issue outbound messages to the GIS system is standardized to ensure the security, consistency and self-documentation of the GIS integration subsystem. The standardization of the mechanism includes the deprecation of the Esri WAM Integration master configuration and WAM GIS extendable lookup.

Previously, the message exchange with the GIS system is not based on the standard outbound message function because of some limitations of the function.

With the deprecation of these master configuration and extendable lookup, these outbound message-related URLs are now specified on standard Message Sender records associated with the outbound message types on the GIS external system record:

- Esri Geo Processing Service URL
- Esri Geo Processing Token Service URL
- Asset Layer URL

Note: The outbound message types are defined in the Esri WAM Integration master configuration.

Steps to Enable

No steps are required to enable this feature.

Tips and Considerations

An automated update script creates Message Sender records for upgrading customers.

Update in Jackson Libraries for Generate Token Service

In this release, the application will retrieve Jackson libraries from the ArcGIS Server Installation folders for the Generate Token Service. Previously, the application retrieved Jackson libraries from the GIS JAR location.

Steps to Enable

To configure the GIS Server to retrieve Jackson libraries for the Generate Token Service, extract jackson-annotations-2.8.5.jar, jackson-core-2.8.5.jar, and jackson-databind-

2.8.5.jar from <ArcGIS Server Installation Path>\Server\framework\lib\shared to these locations and enable the extractor program to access secured map or feature services:

- C:\Program Files (x86)\ArcGIS\Desktop10.7\java\lib\ext - ArcGIS Desktop installation folder path
- C:\Program Files\ArcGIS\Server\usr\lib\ext - ArcGIS Server installation folder path

Miscellaneous Enhancements

Asset Preventive Maintenance Override Date

The Calendar PM Reset Date suspends or postpones an asset's Calendar Interval Preventive Maintenance and Calendar Anniversary Preventive Maintenance trigger(s) to a future date. The reset date serves as the starting point for all calendar preventive maintenance triggers to calculate the next preventive maintenance event. The reset date does not impact preventive maintenance triggers referring to a Location Specific Template Work Order, which includes a list of locations (for example, a route).

Additionally, you can manually refresh the forecast instead of waiting for the Asset batch job by using the **Recalculate Forecast** button in the **Maintenance Schedule Forecast** zone on the **Maintenance** tab of the **Asset** portal.

Steps to Enable

Make the feature accessible by assigning or updating privileges and/or job roles. Details are provided in **Role Information**.

Role Information

System administrators should grant the Calendar PM Reset Date access mode to users that update the **Calendar PM Reset Date** field on an asset record. The new access mode is added to the application services of asset business objects.

Attachment Suppression and Completion Date Time Mapping

The W1-SOMActivityCompletion (SOMActivityCompletion) Communication Type now includes the following enhancements:

- For inbound communications with large attachment data in the completion event list, the system displays the **Completion Event Substitution Text** value instead of the attachment data. This prevents the browser from overloading without modifying the actual data.
- Added completionDateTime to Communication Data Mapping. This ensures the Datetime data in the raw message received by Oracle Utilities Meter Data Management converts from an XSD format to an Oracle Utilities Application Framework format.

Steps to Enable

No steps are required to enable this feature.

Batch Loader Request

The new Batch Loader Request feature handles high volumes of data through batches. Previously, the generic Online Loader Request only handled low volume simple objects that were primarily admin objects. The new Batch Loader Request has the same requirements in terms of the format for CSV files as the Online Loader, but a batch loader request record acts like a control record and only references the CSV file which has the data. The data file can be either a file in the file system on the server or an attachment uploaded into the application. One batch job is required to load data from the file into staging records and another batch job is required to load the staging records into the application.

Steps to Enable

To enable this feature, create a Batch Loader Request Type.

1. Select **Admin**, select **Request Type**, and select **Add**.
2. Choose the Batch Loader Request Type business object.

Conversion Batch Controls

This release provides the Oracle Utilities Work and Asset Management data conversion tool with batch controls that are configurable on maintenance objects that are eligible for conversion.

Steps to Enable

System administrators that perform conversion tasks must have access to the F1-CONVERSION (Conversion Batch) application service.

Data Security by Owning Organization

Data security relies on the entity's association with an Owning Organization wherein only users with access to the Owning Organization can access the entity. The user's association with an Owning Organization is through the access groups configured on the data access roles of the user's profile.

In this release, data access restriction is always set to restricted regardless of the usage status of the Owning Organization search filters. Previously, enforcement of data security by the Owning Organization was optional, enabling data security by Owning Organization that required several configuration steps, and data access restriction based on Owning Organization search filters.

With the new restricted data security, you can directly secure an entity by populating its Owning Organization attribute or indirectly secure the entity by associating it with another entity that is directly secured to an Owning Organization. For example, you can directly secure the Work Order entity by populating its Owning Organization attribute and its secure indirectly all its activities by associating these with the Work Order. You can also not secure other entities. For example, operation and technical entities not used by business users should not be set to always restricted but rather the system administrator should review all the data unfiltered by Owning Organization to properly address issues and exceptions.

The following business entities directly support security by Owning Organization:

- Asset
- Location - includes all classes of locations stored in the Node maintenance object such as asset locations, storerooms, and so on
- Purchase Order Header
- Purchase Requisition Header
- Template Work Order
- Work Design

- Work Location
- Work Order
- Work Request

The Work Activity business entity indirectly supports security by Owning Organization through Work Order association.

The following administration entities directly support security by Owning Organization:

- Activity Type
- Asset Type
- Business Unit
- Checklist Type
- Cost Adjustment Type
- Cost Center
- Distribution Code
- Labor Earning Type
- Location Type - includes all classes of location types stored in the Node Type maintenance object such as asset location types, storeroom types, and so on
- Question
- Specification
- Service Category
- Service Class
- Service Code
- Service History Type
- Work Category
- Work Class

In this release, the Compatible Unit and Crew business entities now directly support data security by Owning Organization, and the following business entities indirectly support data security Owning Organization via association:

- Activity Reconciliation (Work Order association)
- Design Element (Work Design association)
- Expedite Purchase Order (Purchase Order Header association)
- Invoice Header (Purchase Order Header association)
- Material Request Header (Storeroom (Node) association)
- Material Return Header (Storeroom (Node) association)
- Measurement (Asset association)
- Physical Inventory Header (Storeroom (Node) association)
- Warranty (Asset association)

The following administrative entities directly support data security by Owning Organization:

- Approval Profile
- Expense Code
- Planner

Steps to Enable

To enable this feature, complete the following steps:

1. Set up user configuration.
2. For upgrading implementations, identify primary tables with incorrect Owning Organization values and correct these online or with a custom plugin-driven batch process.
3. Run the Apply Access Group VPD Policy batch process.

To set up user configuration:

1. Configure access groups and roles to fulfill your business requirements. Define a global access group and link this to all access roles if you are sharing several entities across all owning organizations.
2. Configure each online user with a default access group and link the user to valid access roles.
3. Do not configure batch and integration users with default access groups but link these to valid access roles.

For upgrades, ensure existing records in the primary tables of the directly secured supported maintenance objects have the correct value in the Owning Organization field. This only applies to the list of directly secured entities. You can update online or through a custom plugin-driven batch process depending on the volume of each table and the number of records that need corrections.

Tips and Considerations

For upgrading implementations, ensure the **Owning Organization** field has the correct value for existing records in the primary tables of directly supported maintenance objects. Depending on the volume of each table and number of records with incorrect Owning Organization values, you can update the incorrect values online or use a custom plugin-driven batch process.

Role Information

System administrators should have access to the W1APLVPD Application Service in order to enable this feature through the Apply Access Group VPD Policy batch process.

Update User Groups with Granted Access to Application Services

The User Group classification of the Application Services have been updated to ensure that each application service belongs to only one of this user group:

- WAM_SERVICES
  - W1-DEBOAS (Design Element BO)
  - W1EQPT (Equipment Portal)
  - W1-MNTEVENT (Maintenance Event MO)

    - W1RCRPTQ (Receiving Report Portal)
    - W1-CUCATEGBOAS (CU Category BO)
    - W1COM (Communication Log Portal)
    - W1-SVCCALLCATBOAS (Service Call Category BO)
    - W1-EQUIPMENTACTBOAS (Equipment for Activity BO)
    - W1PORPTQ (Purchase Order Report Portal)
    - W1RQNRPT (Requisition Report Portal)
- ALL_SERVICES
    - F1_USRFAVSCH (Saved Searches/Favorite Searches Zone)
    - W1ASLOQ (Asset Location Query Portal)
    - W1ASTMDU (Mass Asset Disposition Update Portal)
    - F1-DFLTAPS (Default Execution Application Service)
    - W1-SYNCREQININTBOAS (Sync Request Inbound Initial BO)
    - W1ASTQRY (Asset Query Portal)
    - W1RPTDSP (Reports Dispatch Portal)
    - W1AVTRPT (Activity Report Portal)
- ODM_SERVICES
    - W1-IOSASSETBOAS (In/Out of Service Asset BO)

Steps to Enable

No steps are required to enable this feature.

Oracle Utilities Application Framework v4.4.0.3.0 Release Notes

This section describes enhancements, system data details and deprecation notices in Oracle Utilities Application Framework v4.4.0.3.0 including:

- Page to Portal Conversion
- Product Usability
- Integration Enhancements
- Data Export
- To Do Management and Processing Enhancements
- Batch Processing Enhancements
- Content Migration Assistant (CMA) Enhancements
- Implementation Tool Enhancements
- Security Features
- Analytics
- Miscellaneous Enhancements
- Oracle Utilities Application Framework Deprecation Notices
- Technical Upgrade Notes

Note: The **Steps To Enable**, **Tips and Considerations**, **Key Resources**, and **Role Information** sections provide guidelines for enabling each feature, where applicable.

Page to Portal Conversion

To Do Entry Portal

The **To Do Entry** page has been converted to a portal, leveraging a more flexible and extendable user interface metaphor.

The following points highlight some improvements in the new portal functionality:

- In the new page, log entries are visible on the Log tab, which is the product standard for maintenance pages with logs.
- In the new page, there is a "related object" display. The system uses the drill keys associated with the To Do entry and determine the information string of that object and displays it to the user. A user can click this link to drill into the related object. Separately, a **Work** button is added to the page that performs the following functionality: if the To Do is "open", it gets assigned to the user; the To Do becomes the 'current To Do' and populates that dashboard zone; the user is brought to the target transaction (and if there is a BPA script associated with the To Do message, that script is launched). Previously, the **Message Text** was clickable and a user used this link to drill into the related key or launch the script.
- In the new page, the sort keys are shown on the main page instead of a separate tab. The drill keys are also shown on the **Main** tab, but within the **Record Information** section, which is initially collapsed.

- The characteristics linked to a To Do Entry are shown in a separate zone on the Main tab. However, when editing the To Do Entry, if you are allowed to make changes to the characteristics, they are maintained using the edit dialogue. Since this is a portal/zone based maintenance, foreign key characteristics use the Search Zone metaphor for searching. This is the standard for all maintenance objects going forward. This is an improvement from the previous page where the search was the old fixed page metaphor, causing issues when attempting to reference an object that did not have an old legacy fixed page search. In addition, when maintaining characteristics for an automatic To Do Entry, the new page presents valid characteristic types by first looking for valid characteristic types for the To Do Type and if no values are found, shows all the valid characteristic types for the To Do Entry entity.
- If there are related To Do entries for the To Do being shown, a badge insight is used to highlight the number of related To Dos, using the Contextual Insight feature introduced in this release. In addition, a zone displays a detailed list of the related To Do entries is included on the portal.

The following points highlight functionality that is the same as the previous version of the page:

- The To Do Entry query by To Do Type only shows the To Do Entries that are valid for the user: ones assigned to the user or ones that are Open in a To Do Role that the user is in.
- The To Do Entry query by ID allows the user to view that To Do entry.
- Any user may add a User Log.
- Any user may edit the To Do and change comments.
- Only users that are valid for the To Do (per the criteria in the first bullet) are allowed to change the priority or add or change Characteristic values or are allowed to Forward, Complete or Send Back. Note that as before, Send Back is only enabled if the To Do entry's Assigned By is populated.
- A user completing the To Do entry is able to add comments as part of the action.

Standardizing the layout of the **To Do Entry** page provides you with a user interface experience that is consistent with other portal-based pages.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

If there are any foreign key characteristics that are configured to be valid To Do Entry characteristics and users may manually add a link to one of these types of objects, be sure that there is a Search Zone defined for the FK Reference for this characteristic type.

Upgrade scripts ensure that users with Read access to the existing application service will have access to the new application service associated with the new portal. This table lists the existing and new application services.

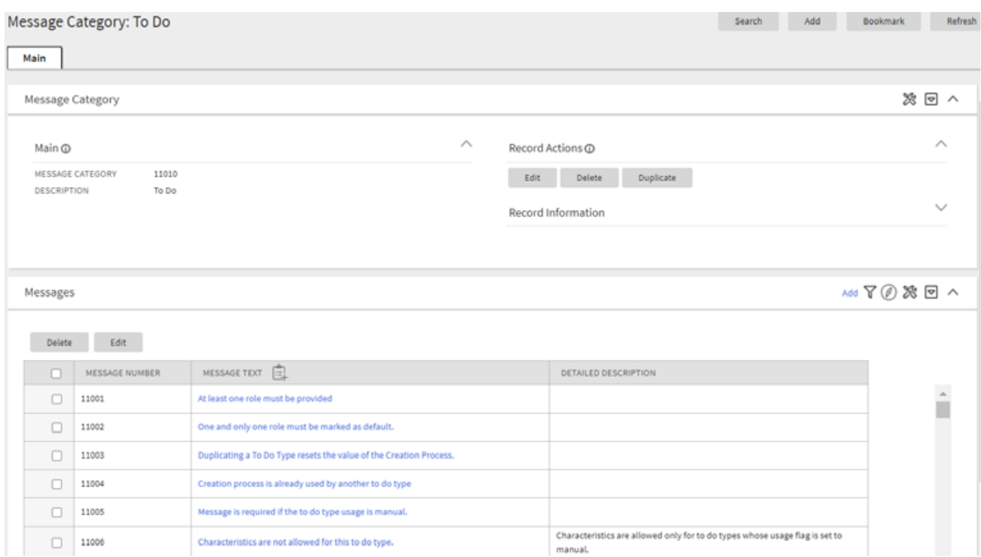
Object	New Application Service	Access Added to Any User Groups with this Application Service/Read Access
To Do Entry Query Portal	F1TODOEQ	CILQTDEP
To Do Entry Portal	F1TODO	CILQTDEP

Note that any existing bookmarks for this page will take user to the previous version of the page. You need to take the following actions to move the bookmark to the new page:

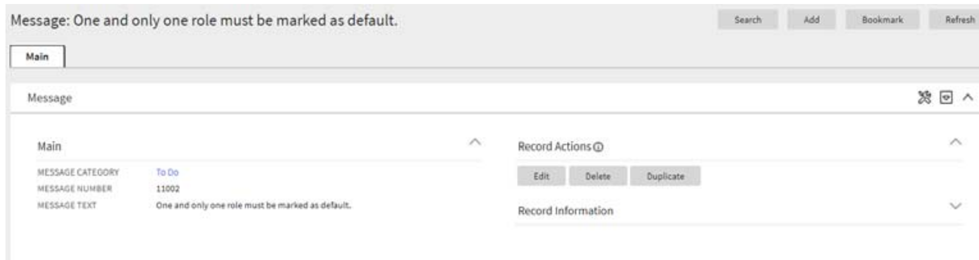
1. Click the bookmark. Take note of the To Do Entry ID.
2. Navigate to the **To Do Entry** portal via the menu.
3. Search and select the To Do Entry from your bookmark. This takes you to the new page.
4. Delete the existing bookmark from the **Bookmark** dashboard zone.
5. Click the **Bookmark** page action button to add a bookmark for this record for the new page.

Message Category/Message Portal

The **Message** page has been converted to a portal, leveraging a more flexible and extendable user interface metaphor. Users may view messages for a message category and perform actions on this page.



Additionally, a separate Message maintenance portal is provided to view and update an individual message.



The new user interface pages include improved search criteria including searching by message text.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

Upgrade scripts ensure that users with Read access to the existing application service will have access to the new application service associated with the new portal. This table lists the existing and new application services.

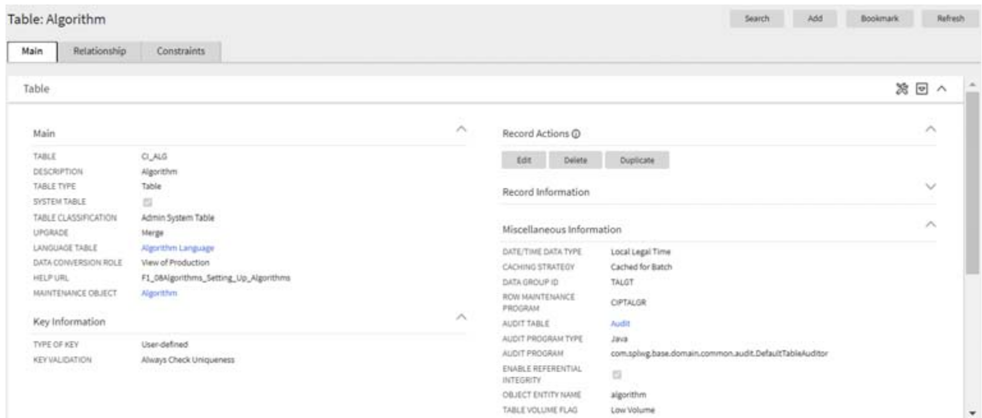
Object	New Application Service	Access Added to Any User Groups with this Application Service/Read Access
Message Category Query Portal	F1MSGQ	CILTMSGP
Message Category Portal	F1MSGC	CILTMSGP
Message Portal	F1MSG	CILTMSGP

Note that any existing bookmarks for this page will take user to the previous version of the page. You need to take the following actions to move the bookmark to the new page:

1. Click the bookmark. Take note of the Message Category.
2. Navigate to the **Message Category** portal via the menu.
3. Search and select the Message Category from your bookmark. This takes you to the new page.
4. Delete the existing bookmark from the **Bookmark** dashboard zone.
5. Click the **Bookmark** page action button to add a bookmark for this record for the new page.

Table Portal

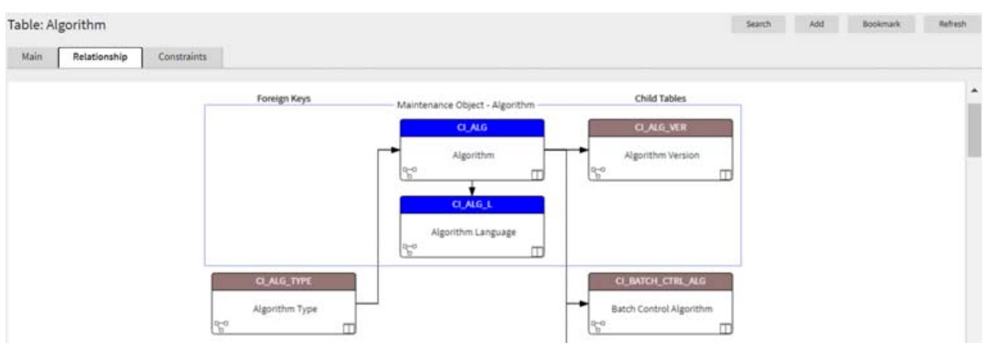
The **Table** page has been converted to a portal, leveraging a more flexible and extendable user interface metaphor.



The following highlights some additional features in the new portal:

- The maintenance object(s) associated with the table are included in the display.
- Optional fields that are not populated are not shown for a cleaner view.
- The list of fields for the table is shown in a zone on the main tab. The zone indicates which fields are part of the primary key and which are foreign keys. The label of the field as defined in the Field record is displayed and the user may drill into the fields from this zone.
- The Constraints tab shows the constraints for this table and allows for maintenance of the information. In addition, other tables that have constraints that refer to this table are displayed in this tab.

As part of this enhancement, a new Relationship tab is introduced and includes an Entity Relationship Diagram (ERD). This is similar to what is shown in the Data Dictionary in the Application Viewer so users no longer need to launch the Application Viewer to get this information. Be aware that the Application Viewer is planned for deprecation. The zone highlights which related tables are part of the same maintenance object. A user can drill to the ERD of any of the tables in the diagram. Additionally, a user can navigate to the maintenance object page for any table in the diagram.



Standardizing the layout of the Table page provides you with a user interface experience that is consistent with other portal-based pages.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

Upgrade scripts ensure that users with Read access to the existing application service will have access to the new application service associated with the new portal. This table lists the existing and new application services.

Object	New Application Service	Access Added to Any User Groups with this Application Service/Read Access
Table Portal	F1TABLE	CILETBLP

Note that any existing bookmarks for this page will take user to the previous version of the page. You need to take the following actions to move the bookmark to the new page:

1. Click the bookmark. Take note of the Table.
2. Navigate to the **Table** page via the menu.
3. Search and select the Table from your bookmark. This takes you to the new page.
4. Delete the existing bookmark from the **Bookmark** dashboard zone.
5. Click the **Bookmark** page action button to add a bookmark for this record for the new page.

Time Zone Portal

The **Time Zone** page has been converted to a portal, leveraging a more flexible and extendable user interface metaphor. It uses the All in One page metaphor that includes a list zone and display zone. The list zone includes a filter to narrow the results, if needed.

Standardizing the layout of the **Time Zone** page provides you with a user interface experience that is consistent with other portal-based pages.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

Upgrade scripts ensure that users with Read access to the existing application service will have access to the new application service associated with the new portal. This table lists the existing and new application services.

Object	New Application Service	Access Added to Any User Groups with this Application Service/Read Access
Time Zone Portal	F1TMZNM	CILTTZNP

Note that any existing bookmarks for this page will take user to the previous version of the page. You need to take the following actions to move the bookmark to the new page:

1. Click the bookmark. Take note of the Time Zone.
2. Navigate to the **Time Zone** portal via the menu.
3. Search and select the Time Zone from your bookmark. This takes you to the new page.

4. Delete the existing bookmark from the **Bookmark** dashboard zone.
5. Click the **Bookmark** page action button to add a bookmark for this record for the new page.

Work Calendar Portal

The **Work Calendar** page has been converted to a portal, leveraging a more flexible and extendable user interface metaphor. The new user interfaces page includes more mass actions, including duplication capabilities for holiday dates.

Standardizing the layout of the **Work Calendar** page provides you with a user interface experience that is consistent with other portal-based pages.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

Upgrade scripts ensure that users with Read access to the existing application service will have access to the new application service associated with the new portal. This table lists the existing and new application services.

Object	New Application Service	Access Added to Any User Groups with this Application Service/Read Access
Work Calendar Entry Query Portal	F1WRKCLQ	CILTCLWP
Work Calendar Portal	F1WRKCAL	CILTCLWP

Note that any existing bookmarks for this page will take user to the previous version of the page. You need to take the following actions to move the bookmark to the new page:

1. Click the bookmark. Take note of the Work Calendar.
2. Navigate to the **Work Calendar** portal via the menu.
3. Search and select the Work Calendar from your bookmark. This takes you to the new page.
4. Delete the existing bookmark from the **Bookmark** dashboard zone.
5. Click the **Bookmark** page action button to add a bookmark for this record for the new page.

Access Group Portal

The Access Group page has been converted to a portal, leveraging a more flexible and extendable user interface metaphor.

Converting the Access Group page to a portal provides a user interface experience that is consistent with other portal-based features or modules.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

Upgrade scripts ensure that users with Read access to existing application service will have access to the new application service associated with the new portal. The following lists the existing and new application services:

Object	New Application Service	Access Added to Any User Groups with this Application Service/Read Access
Access Group Query Portal	F1ACGRPQ	CILTASGP
Access Group Portal	F1ACGRPM	CILTASGP

An upgrade script is provided to update the Access Group's FK Reference (F1-ACCGP) with the new query zone (F1-ACCGRPQ).

Note that any existing bookmarks for this page will take the user to the old page. You need to take the following actions to move the bookmark to the new page:

1. Click the bookmark. Take note of the Access Group.
2. Navigate to the **Access Group** page.
3. Search and select the Access Group from your bookmark. This step takes you to the new page.
4. Delete the existing bookmark from the **Dashboard's Bookmark** zone.
5. Click the **Bookmark** page action button to add a bookmark for this record for the new page.

Application Service Portal

The **Application Service** page has been converted to a portal, leveraging a more flexible and extendable user interface metaphor.

As part of this change, the **Secured Objects** zone has been moved to the **Main** tab from the **Application Security** tab. The **Application Security** tab continues to have the zones showing the user groups with and without access.

Converting the **Application Service** page to a portal provides you with a user interface experience that is consistent with other portal-based features or modules.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

Upgrade scripts ensure that users with Read access to existing application service will have access to the new application service associated with the new portal. The following lists the existing and new application services:

Object	New Application Service	Access Added to Any User Groups with this Application Service/Read Access
Application Service Query Portal	F1APPSVQ	CILTAPSP
Application Service Portal	F1APPSVM	CILTAPSP

Note that any existing bookmarks for this page will take the user to the old page. You need to take the following actions to move the bookmark to the new page:

1. Click the bookmark. Take note of the Application Service.
2. Navigate to the **Application Service** page.
3. Search and select the Application Service from your bookmark. This step takes you to the new page.
4. Delete the existing bookmark from the **Dashboard's Bookmark** zone.
5. Click the **Bookmark** page action button to add a bookmark for this record for the new page.

Zone Portal

The **Zone** page has been converted to a portal, leveraging a more flexible and extendable user interface metaphor.

The following highlights key changes to how a zone is maintained:

- The zone's portal links are now viewed and maintained on the **Main** tab.
- To support easier viewing and maintenance, the data explorer zone parameters are shown in three separate groups: **Filters**, **General Parameters**, and **SQLs**. The SQLs zone supports editing of SQL and its related parameters, including column definitions. In addition, the SQLs zone supports broadcasting to view related parameters, where each can be edited individually. When editing a Column parameter, the maintenance window has been streamlined by mapping the various mnemonics to separate fields with appropriate labels and search capability for foreign key references.
- A **Replicate** action has been added to the **Record Actions** section of the new user interface. In the previous zone page, the **Replicate** action was found in a special **Replicate Zone** dashboard zone.

Converting the **Zone** page to a portal provides you with a user interface experience that is consistent with other portal-based features or modules.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

Upgrade scripts ensure that users with Read access to existing application service will have access to the new application service associated with the new portal. The following lists the existing and new application services:

Object	New Application Service	Access Added to Any User Groups with this Application Service/Read Access
Zone Portal	F1ZONE	CILZZONP

Note that any existing bookmarks for this page will take the user to the old page. You need to take the following actions to move the bookmark to the new page:

1. Click the bookmark. Take note of the Zone.
2. Navigate to the **Zone** page via the menu.
3. Search and select the Zone from your bookmark. This step takes you to the new page.
4. Delete the existing bookmark from the **Dashboard's Bookmark** zone.
5. Click the **Bookmark** page action button to add a bookmark for this record for the new page.

Portal Maintenance

The **Portal** page has been converted to a portal, leveraging a more flexible and extendable user interface metaphor. More specifically, the new portal provides easier access to other tab portals and context sensitive zones associated with a standalone portal.

Converting the **Portal** page to a portal provides you with a user interface experience that is consistent with other portal-based features or modules.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

Upgrade scripts ensure that users with Read access to existing application service will have access to the new application service associated with the new portal. The following lists the existing and new application services:

Object	New Application Service	Access Added to Any User Groups with this Application Service/Read Access
Portal	F1PRTL	CILZPORP

Note that any existing bookmarks for this page will take the user to the old page. You need to take the following actions to move the bookmark to the new page:

1. Click the bookmark. Take note of the Portal code.
2. Navigate to the **Portal** page via the menu.

3. Search and select the Portal from your bookmark. This step takes you to the new page.
4. Delete the existing bookmark from the **Dashboard's Bookmark** zone.
5. Click the **Bookmark** page action button to add a bookmark for this record for the new page.

Characteristic Type Portal

The **Characteristic Type** page has been converted to a portal, leveraging a more flexible and extendable user interface metaphor.

Converting the **Characteristic Type** page to a portal provides you with a user interface experience that is consistent with other portal-based features or modules.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

Upgrade scripts ensure that users with Read access to existing application service will have access to the new application service associated with the new portal. The following lists the existing and new application services:

Object	New Application Service	Access Added to Any User Groups with this Application Service/Read Access
Characteristic Type Portal	F1CHRTYP	CILTCHTP

Note that any existing bookmarks for this page will take the user to the old page. You need to take the following actions to move the bookmark to the new page:

1. Click the bookmark. Take note of the Characteristic Type code.
2. Navigate to the **Characteristic Type** page via the menu.
3. Search and select the Characteristic Type from your bookmark. This step takes you to the new page.
4. Delete the existing bookmark from the **Dashboard's Bookmark** zone.
5. Click the **Bookmark** page action button to add a bookmark for this record for the new page.

Field Portal

The **Field** page has been converted to a portal, leveraging a more flexible and extendable user interface metaphor.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

Upgrade scripts ensure that users with Read access to existing application service will have access to the new application service associated with the new portal. The following lists the existing and new application service:

Object	New Application Service	Access Added to Any User Groups with this Application Service/Read Access
Field	F1FIELD	CILEFLDP

An upgrade script is provided to enable the following FK reference records with the Field search zone (F1-FLDSRCH) as opposed to using the fixed-page style search:

- F1BF-MO
- F1RF-MO
- F1SR-MO
- F1ST-MO
- F1TY-MO

Product Usability

User Dashboard Control

While using the system, if a user collapses the dashboard, the system retains this setting until the user changes it again. Previously, the collapsed state of the dashboard was only applicable during a user's session. The next time a user logged into the application, the dashboard would reset to the original settings.

While using the system, the user may adjust the width of the dashboard using the slider and the system retains this setting until the user changes it again. Previously, the user could only adjust the width of the dashboard in the user preferences.

Each user may now also choose to locate the dashboard zone on the left of the page rather than the right.

Steps To Enable

No steps are required to enable this feature.

To Do Dashboard Portal

The **To Do Dashboard** portal is intended to be used by both supervisor and non-supervisor To Do users. For supervisors, the charts consider To Do entries that are in a role which the supervisor is a member. For non-supervisors, the charts consider open To Do entries that are in a role of which the user is a member or entries currently assigned to the user.

The **To Do Dashboard** portal provides a high level summary of open To Do entries and To Do entries currently being worked on by various criteria using analytic charts.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

Supervisors are those users with security access to the "supervisor" access mode for the To Do Dashboard application service.

Upgrade scripts are provided to automatically allow users with Read access to either of the existing To Do Summary page and Supervisor To Do Summary page application services to have access to the new application service associated with the new portal. Note that the new portal does not replace any existing portal. It is provided as an additional summary portal to assist users with To Do management.

This table list the existing and new application services.

Object	New Application Service	Access Added to Any User Groups with this Application Service/Read Access
To Do Dashboard	F1DDASH	CILQTDSP, CILQTSSP In addition, users with access to the Supervisor Summary page will get supervisor access to the **Dashboard** portal

Create Tab Portals

When creating a new portal page in the product, it is common to want to add additional tab portals for the same page. For example, it is common to use a separate Log tab portal for viewing log entries. Previously, it was not possible to create the tab portal and link it to the appropriate standalone portal.

You can insert new tabs when creating a new portal a page without the need to perform programming or coding.

Steps To Enable

No steps are required to enable this feature.

Inbound Web Service Deployment - Filters Added

The **Deployment Status** zone on the **Inbound Web Service Deployment** portal has been enhanced to include filters. You may narrow down the results by Inbound Web Service name and/or description.

This enhancement allows you to easily retrieve deployment status data filtered by inbound web service names and descriptions.

Steps To Enable

No steps are required to enable this feature.

Admin Menu Hidden if User has no Admin Items

If a user does not have security for any entries in the Admin menu drop-down, the menu itself is suppressed from the toolbar. Previously, if a user did not have security for any admin menu entries, the Admin menu was still visible in the toolbar and it would show an empty line when clicked.

This feature provides the appropriate administrative menu items in the product's toolbar based on the user's assigned security access.

Steps To Enable

No steps are required to enable this feature.

Increased SQL Parameter Size

This feature increases the size of the following parameters to Varchar2 (32767) to provide more space for defining complex SQL statements to be used by zones or by the Select Records algorithm of a plugin-driven batch program:

- ZONE_PARM-VAL: Parameter Value on the Zone Parameters table (CI_ZONE_PRM)
- ALG_PARM_VAL: Value on the Algorithm Parameters table (CI_ALG_PARM)

The increased parameter size provides more space for defining complex SQL statements for data explorer zones and Select Record algorithms.

Steps To Enable

No steps are required to enable this feature.

Date and Time Field Improvements

Date, time, or combined date and time input fields have been enhanced with new and improved icons. In addition, the arrows to move the date or time forward or backward one day or hour have been removed. These changes have been applied to portal-based maintenance pages and query filters. Fixed pages are not impacted by this change.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

If you include JavaScript that targets the forward or backward arrows, it should be removed since those icons are no longer included in the generated HTML.

Additional Context Labels for Date and Time Fields

A date/time field has a single label throughout the application, but there are contexts in which a separate label may be needed for its "date" and "time" parts. An example of such context is when the field is used by the operational analytics product.

In the same way, date and time fields are associated with additional elements in the operational analytics product describing their various time aspects such as their month, year, hour, minutes, parts, and so on. These elements share a common part of the field's label as their prefix. For example, for a **Creation Date/Time**, **Creation Date**, or **Creation Time** field, you may provide "Creation" as the field's base context label.

In this release, the definition of a Field is enhanced to support up to three sets of context-related alternate labels and corresponding labels for "Date", "Time", and "Date/Time" field types.

In the framework product, the following fields that are currently referenced by operational analytics tables are updated to include the context labels:

- ASSIGNED_DTTM: Assigned Date/Time
- COMPLETE_DTTM: Completion Date/Time
- CRE_DTTM: Create Date/Time

Steps To Enable

No steps are required to enable this feature.

Query Portals Introduced for Existing Pages

Previously, many configuration objects used the fixed page user interface metaphor. Fixed pages use popup search windows to locate records. Many of these configuration objects now provide query portals instead of popup search windows. Additionally, the Search menu item for these configuration objects open a query portal rather than a popup search window.

The query portals provide a more intuitive search interface with several criteria fields and a single search button as compared to the popup search window that featured a separate search button for each criteria group. When selecting a record from the results, the user is brought to the existing maintenance page. The navigation through the menu in Add mode bring the user to the maintenance page with a blank form (as before). The query portal includes an **Add** button to add a record from there.

The following provides additional detail of where this functionality has been added:

- **Algorithm:** In addition to algorithm and description, the query portal includes algorithm and parameter related search criteria.
- **Algorithm Type**
- **Batch Control:** Besides batch control, description, and category, the query portal includes related batch control information search criteria.
- **Business Object:** Besides business object code, description, and maintenance object, the query portal includes related business object information search criteria.
- **Business Service:** In addition to business service and description, the query portal includes service and schema related search criteria.
- **Characteristic Type:** The query portal provides searching by characteristic type, description, type of characteristic, and characteristic entity.
- **Data Area:** In addition to data area and description, the query portal portal include schema related search criteria.
- **Feature Configuration:** In addition to feature name and description, the query portal includes feature option and value related search criteria.

- **Field:** Besides field and description, the query portal includes related field information search criteria.
- **Foreign Key Reference:** In addition to foreign key reference code and description, the query portal includes additional search criteria.
- **Lookup:** The query portal provides field name and related field description search criteria.
- **Maintenance Object:** In addition to maintenance object, description, and table, the query portal includes maintenance object option search criteria.
- **Managed Content:** In addition to managed content, description, and type, the query portal includes managed content related search criteria
- **Menu:** In addition to menu name, description, and type, the query portal includes menu related search criteria.
- **Navigation Key:** In addition to navigation key and program component identifier, the query portal includes navigation key information related search criteria.
- **Navigation Option:** In addition to navigation option and description, the query portal includes navigation option information related search criteria
- **Portal:** In addition to portal code and description, the query portal includes portal information related search criteria.
- **Script:** Besides script, description algorithm entity, and script type, the query portal includes related step type information search criteria.
- **Table:** In addition to table and description, the query portal includes related table information search criteria
- **UI Map:** In addition to map code and description, the query portal includes map information related search criteria
- **Zone:** In addition to zone, description, and zone type, the query portal includes zone parameter search criteria

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

Upgrade scripts ensure that users with Read access to existing application services will have Read access to the new application services associated with the new query portals. The following lists the application services associated with the existing fixed pages and the corresponding application services for the new query portal:

Object	New Application Service	Access Added to Any User Groups with this Application Service/Read Access
Algorithm	F1ALGQ	CILTALGP
Algorithm Type	F1ALGT1	CILTALTP
Batch Control	F1BTCHQ	CILBTCP
Business Object	F1BOQ	FWLTBOJP

Object	New Application Service	Access Added to Any User Groups with this Application Service/Read Access
Business Service	F1BSVQ	FWLTBSVP
Characteristic Type	F1CHRTYQ	CILTCHTP
Data Area	F1DTARQ	FWLTDARP
Feature Configuration	F1FCFGQ	CILTWSDP
Field	F1FLDQ	CILEFLDP
Foreign Key Reference	F1FKRFQ	CILEFKRP
Lookup	F1LKUPQ	CILTLKFP
Maintenance Object	F1MOQ	CILEMOBP
Managed Content	F1MANCQ	FWLTMGCT
Menu	F1MENUQ	CILEMNUP
Navigation Key	F1NAVKQ	CILENAVP
Navigation Option	F1NAVOQ	CILENVOP
Portal	F1PRTLQ	CILZPORP
Script	F1SCRQ	CILZSCRP
Table	F1TBLQ	CILETBLP
UI Map	F1UIMPQ	FWLTUIMP
Zone	F1ZONEQ	CILZZONP

Integration Enhancements

HTTP Method

Parameters Supported for POST HTTP Method in REST Services

The REST engine supports defining path and query parameters for POST operations. Previously, POST operations did not support parameters. The assumption had been that all information was included in the payload.

This feature provides URL parameters for POST HTTP methods.

Steps To Enable

No steps are required to enable this feature.

Delete HTTP Method for REST Web Services

The REST Inbound Web Service was enhanced to support the DELETE HTTP method.

The actual actions and functionality that are triggered by a given REST service call are still controlled by the business object, business service, or service script that is configured on the operation. For example, if you configure an operation with the DELETE HTTP method and you reference a service script that is simply reading a record, the system will perform the action of the service script and read the record. The HTTP methods are meant as external documentation.

Steps To Enable

No steps are required to enable this feature.

Additional REST APIs

In this release, the following inbound REST web services are available:

- F1-BusinessInsights: The Common Business Insights API enables adding business flag records.
- F1-SubmitJob: The Batch Job Submission API allows external batch scheduling systems to submit an adhoc batch submission request.
- F1-SyncRequest: The Master Data Synchronization API enables adding inbound synchronization request records.
- F1-HealthCheckREST: The Health Check API invokes the health check service and returns the health check results.
- F1-Cache: The System Cache Management API invokes the service that flushes the server cache.
- C1-CustomerContact: The Customer Contact API enables retrieval of customer contact records.

Steps To Enable

Make the feature accessible by assigning or updating privileges and/or job roles. Details are provided in Role Information. If you need additional information about this API, contact your Delivery Team.

Role Information

The service called by the operation on the REST web service references a specific Application Service. The administrator must grant security access to that application service to the user submitting the REST service.

Support for Tracing REST Inbound Web Services

The REST Inbound Web Service object exposes tracing configuration to enable tracing. Enable tracing for an inbound web service record creates log information for the record on future REST call executions.

Steps To Enable

No steps are required to enable this feature.

Submit Job REST Web Service Returns Job ID

The F1-SubmitJob REST Inbound Web Service now returns the resulting Batch Job ID. This allows calling systems to use that ID to get subsequent information about the Batch Job.

Steps To Enable

No steps are required to enable this feature.

User Redirection to Separate Target System

Your implementation may want to support the ability for a customer to authorize a customer service representative (CSR) to view the customer's account information in a customer facing portal. This would allow the CSR see exactly what the end customer is seeing or experiencing.

When the request for the CSR to view the customer information is received, the following steps occur:

- The security server for the customer facing portal is contacted to obtain a temporary grant code.
- The redirection response returns the grant code and the URL of the target customer facing portal.
- The browser redirects to the user to this URL with the grant code which is further authenticated and automatically exchanged for an authorization token, allowing the CSR to log in.

Standard security measures with private/public key encryption using JSON Web Tokens (JWT) ensure that only the implementation's application is allowed to communicate with the implementation's customer facing portal server. The system also provides a plug-in spot to allow for additional information, such as the customer's name and email address, to be included in the call to the security server.

This feature allows customers to authorize a customer service representative (CSR) to view the customer's account information in a customer facing portal and enable the CSR to see exactly what the end customer is seeing or experiencing.

Steps To Enable

Add a master configuration record using the F1-RedirectionTargetsConfig business object and configure the record with the following:

- URL of the target application
- URL of the security server
- Keystore alias for the public/private key stored in the application keystore used for secure communication with the security endpoint

Your product may also provide an algorithm to populate additional context information. If so, that algorithm may also be referenced in this configuration.

Tips and Considerations

Note that this feature works in conjunction with functionality provided by Oracle Utilities Customer To Meter.

Role Information

System administrators should grant access to the F1-REDIRECT (Redirect Service) Application Service to secure the call to this feature.

New REST Engine Version Setting for Inbound REST Web Services

In this release, a new REST Engine Version flag has been added to REST Inbound Web Services. All existing REST Inbound Web Services are marked with a REST Engine Version value of 1.0 for backward compatibility and all new services are assigned version 2.0 as a default. The following provide details of how the behavior will differ for each engine version:

- Root Node for Payload
  - REST Inbound Web Service records with a REST Engine Version value of 2.0 do not have a root node around the payload.
  - Although the common practice for data that uses JSON is to not include a root node, previously a root node was expected. For backward compatibility reasons, any REST Inbound Web Service records marked as version 1.0 should continue to supply a root node in the request, and responses will continue to return the root node.
- Default Format
  - REST Inbound Web Service records with a REST Engine Version value of 2.0 default to JSNO format. If required, this can be overridden by including the 'application/xml' parameter in the Accept header. REST Inbound Web Service records with a REST Engine Version value of 1.0 default to XML format. This is for backward compatibility. If needed, this can be overridden by including the 'application/json' parameter in the Accept header.
- Format for Numbers and Booleans in the Response
  - JSON format returns strings with the value surrounded by quotes while numbers and Booleans do not have quotes. Previously, the system was incorrectly treating numbers and Booleans as strings in the response in JSON format.
- Backward Compatibility
  - For Inbound Web Service records marked as REST Engine Version 1.0, the system provides override support to indicate that for specific Inbound Web Service records you would like to continue to receive quotes for numbers and Booleans in the JSON response. This is only applicable if your implementation has existing integrations that have worked around this issue and would fail if the response returns the corrected format. A feature configuration is provided to identify the Inbound Web Service records that fall into this category.
  - An explicit REST Engine Version setting helps customers account for functional differences between versions when implementing Inbound Web Services.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

If your implementation has integrations that have worked around the issue that numbers and Booleans were treated as strings and therefore had quotes in the JSON response, do the following to identify the Inbound Web Service records that should retain the old, incorrect format:

1. Select **Admin**, then **General**, then **Feature Configuration**.
2. Look for an existing feature configuration with the feature type External Messages. If one does not exist, create one.
3. Add an option for the option type **IWS JSON Data Type Exceptions**.
4. In the value, indicate the Inbound Web Service record that is an exception. Note that multiple options for the option type may be added. Additionally, the option value supports a comma delimited list.

JSON Response Correctly Handles Arrays

The REST response correctly returns list as arrays for JSON format regardless of the number of instances.

Previously, if a list included only one instance, the JSON response returned the single instance as a JSON object rather than a JSON array. If a list included more than one instance, the JSON response returned an array.

Steps To Enable

No steps are required to enable this feature.

Parameters Supported for POST HTTP Method in REST Services

The REST engine supports defining path and query parameters for POST operations. Previously, POST operations did not support parameters. The assumption had been that all information was included in the payload.

This feature provides URL parameters for POST HTTP methods.

Steps To Enable

No steps are required to enable this feature.

Data Export

Data Export Tools

New set of tools are provided that allow customers to export their data to files that can be consumed by downstream applications like Data Lakes or any other system that needs the data.

The application supports the following classes of export methods for a maintenance object:

- Generalized: Applies to maintenance objects with low to medium volume and update activities. Most maintenance objects in the system are eligible for this method. This method involves an initial export of the object's entire data followed by an ongoing export of the changes that occur over time. Not that the ongoing export functionality is only supported in a Cloud installation.
- Specialized: Applies to maintenance objects with high volume or frequent update activities. This method uses a specific batch process for each maintenance object to optimally export data. This type of export involves an initial export of the

object's existing data. The initial run of the batch process exports the entity's existing data. Subsequent runs of the batch process exports data incrementally based on a timestamp field.

New batch controls are provided for eligible maintenance objects based on their export method classification.

The **Generalize Export Dashboard** portal allows you to select eligible entities to export and review their export state and configuration at a glance.

Steps To Enable

Make the feature accessible by assigning or updating privileges and/or job roles. Details are provided in Role Information.

Tips and Considerations

The ongoing export feature of the Generalized Data Export method is only supported in a Cloud installation.

Role Information

System administrators that handle data export activities must have access to the following Secured Entity Application Services:

- F1-DATAEXPORT (Batch Controls) - All data export batch controls are associated with this application service
- F1-DATAEXPORTCTRL (Data Export Control Maintenance Object and Business Objects)
- F1DEXCNT (Data Export Control Portal)
- F1DEXCNS (Data Export Control Query Portal)
- F1GEXDAS (Generalized Export Dashboard Portal)

To Do Management and Processing Enhancements

Assign To Do Role Based on Access Group

In this release, the Access Group has been enhanced to include To Do Assignment Override configuration. This allows you to define special To Do Roles that you have created for your access groups and use the Assignment Override to indicate which To Do Types should have the To Do entry directed to the special To Do Role. The To Do entry functionality is heavily driven by To Do Role. Users are only allowed to view and work To Do entries that are assigned to a role that user is in. If your implementation has configured row level security for certain objects using an Access Group, you may want to ensure that only certain users can view To Do entries for those objects.

Defining special To Do Roles for access groups ensure that only certain users can view To Do entries for objects using an Access Group, you may want to ensure that only certain users can view To Do entries for those objects.

Steps To Enable

When configuring the To Do Roles, determine if To Do Entries for objects linked to certain access groups should be directed to specific groups of users.

- Define appropriate To Do Roles based on your To Do Types and your access groups, and link the appropriate user to each role.
- For each To Do Role, configure the To Do Types to which the role is valid.
- On each access group, configure the To Do Type/To Do Role override so that any To Do entry created for the indicated To Do Type will be assigned the indicated To Do Role for objects linked to this access group.

Configure the appropriate To Do pre-creation algorithm. A To Do pre-creation algorithm is needed to check for this override configuration and assign the appropriate role. This algorithm could be plugged in at the To Do Type (if only certain To o Types require this functionality) or could be plugged in at the installation level (if a larger number of To Do Types require this type of override). The algorithm needs to identify the object related to the To Do entry that is governed by an Access Group. This object may be the Drill Key or may be related to the To Do Entry via a characteristic. Once the object is identified, the algorithm determines its access group and then checks if there is an override role for the To Do Types for this To do entry.

Specific cloud services may already provide a To Do pre-creation algorithm to assign a To Do Role based on an identified access group. If one is provided and satisfies your business case, use that algorithm. Otherwise, an appropriate algorithm needs to be determined.

To Do Supervisor Actions

Supervisors can now reopen To Do Entries assigned to other users. Previously, only the user currently assigned to the To Do entry could reopen the To Do. Supervisors must be valid users in a To Do Role for the To Do Type to use this feature.

Steps To Enable

Make the feature accessible by assigning or updating privileges and/or job roles. Details are provided in Role Information.

Role Information

A supervisor must be a member of a User Group with *Supervisor Assignment* access mode on the To Do Management and To Do Search application services.

Batch Processing Enhancements

File Integration Extract Configuration

The application provides the following file integration administrative objects that define the processing needed to create a specific type of extract using a plugin-driven background process:

- File Integration Type: Describes and classifies the extract configuration.
- File Integration Record Type: Captures the sequence, format, and logic for extracting the data required by the extract record.

The File Integration Type defines the record types that make up the extract. Each file integration record uses a data area to define the record's format and a collection of extract algorithms that populate the data area. The file integration types are extendable through the addition of customer record type details or custom file integration records.

A new batch parameter defines the file integration type that is applicable to a batch control. The batch parameter works with the base-package Process Records algorithm that retrieves the file integration type configuration and processes in sequence for each record type of the configuration.

Steps To Enable

Make the feature accessible by assigning or updating privileges and/or job roles. Details are provided in Role Information.

Role Information

Implementers that view and define file integration types must have access to the following Secured Entity Application Services:

- F1-FILEINT (File Integration Type MO)
- F1-FLINREC (File Integration Record MO)
- F1FLINTS (File Integration Type Query Portal)
- F1FLINTP (File Integration Type Portal)

Ability to Skip Records in Plugin-driven Extract

The Process Record algorithm can prevent writing empty rows to extract file using the *skipped* parameter.

- File Integration Type: Describes and classifies the extract configuration.
- File Integration Record Type: Captures the sequence, format, and logic for extracting the data required by the extract record.

The recommended best practice when designing plugin-driven batch is to ensure that the SQL in the Select Records algorithm is only selecting the records that are relevant to the process. Previously, the extract plugin-driven batch process expected each call to the Process Records plugin to return at least one schema to write to the extract file. In use cases where the Process Record algorithm checks a condition of the given record and finds that it does not need to be extracted after all, an empty row was written to the extract file. In this release, for this situation, the Process Record algorithm can now configure the is *skipped* output parameter, which will ensure that no empty row is written.

Steps To Enable

Add logic to the Process Record algorithm that detects a condition where no extract details should be written and set the is **skipped** parameter to *True*.

Define Record XML Node for Plugin-driven Extract

You can define a record XML node when multiple schemas are returned for a plugin-driven extract that should be output in XML format.

The record XML node output parameter resolves issues where:

- The Process Record plugin returns multiple schemas (rows) for a given record.
- The plugin-driven extract batch process (whose output format is XML) is not able to determine which schemas belong together logically.

The output parameter 'record XML node' in the schema collection should be used to indicate the outer XML node to use to group related information together. All schemas returned from a single call to the Process Record plugin that have the same record XML node will grouped in the written output within that XML tag.

Steps To Enable

To take advantage of this functionality, a Process Record algorithm that returns multiple schemas for a given record where all information in the schemas should be grouped within an XML tag should return the same Record XML Node value.

Thread Pool Name Batch Parameter

The Thread Pool Name parameter is available in all base-delivered batch controls. The parameter allows implementations to designate the batches to be run on a thread pool different from the default thread pool.

The record XML node output parameter resolves issues where:

- The Process Record plugin returns multiple schemas (rows) for a given record.
- The plugin-driven extract batch process (whose output format is XML) is not able to determine which schemas belong together logically.

The output parameter 'record XML node' in the schema collection should be used to indicate the outer XML node to use to group related information together. All schemas returned from a single call to the Process Record plugin that have the same record XML node will grouped in the written output within that XML tag.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

Implementations with custom batch controls can add the Thread Pool Name parameter to their batch controls.

Root Node Element Optional on Plug-in Driven Exract

The plug-in driven extract batch program now supports configuration to suppress the inclusion of a Root Node Element by entering the word "suppress" in the XML Root Name parameter.

Steps To Enable

No steps are required to enable this feature.

Manifest File Creation

The batch framework now supports the ability to request the creation of a manifest file. Batch jobs that support the creation of the manifest file now include a "Manifest Option" batch parameter.

Manifest file information is provided in JSON format and includes information about the batch run, number of files, number of records processed, and details about each file including name, size, and SHA-256 hash value.

The following batch programs supplied by Oracle Utilities Application Framework were enhanced to support the new Manifest option:

- F1-GEXPI: The Generalized Initial Export Initiator batch control includes this new option and defaults to "Y."
- F1-GEEXO: The Generalized Ongoing Export batch control includes this new option and defaults to "Y."
- F1-GEIXP: The Generalized Initial Export Template batch control includes this new option and defaults to "Y." In addition, an upgrade script finds all the batch controls that were created from this template and inserts the new parameter on those records. The value defaults to "Y."
- F1-PDBEX: The Plug-in Driven Extract Template batch control includes this new option and defaults to blank. In addition, an upgrade script finds all the batch controls that were created from this template and inserts the new parameter on those records. The value is set to blank.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

If product delivered batch programs include the Manifest Option parameter, set this option to "Y" to produce a manifest file when running the batch job.

If your implementation has any custom background processes that produce extract files and you would like to include a manifest option, add the batch parameter "manifestOption". To set this up, complete the following steps:

1. Select **Admin**, select **System**, select **Batch Control**, and select **Search**.
2. Search for and select the Batch Control.
3. Add a new batch parameter and set the parameter name to "manifestOption" (it is important to use this value), description to "Manifest Option", and security type to "None."
4. Set the sequence to an appropriate value.
5. Note that for the detailed description, the recommendation is to follow the pattern of the base delivered options: "If set to 'Y' a manifest file is created with the following name: {batchCode]_{batchNumber}_{rerunNumber}_manifest.json"

Support for File Compression and Decompression

File compression when extracting and decompression when uploading is now supported. Not every batch program that manages extracts or uploads automatically supports this functionality. Each batch program that supports it must explicitly indicate that the functionality is supported.

The following highlights additional information about the functionality:

- The system supports both GZIP compression/decompression and ZIP compression/decompression.
- If an extract program supports file concatenation, ZIP compression is not supported. Only GZIP compression is supported.
- To indicate that an extract file should be compressed, you should simply use .zip or .gz as the suffix of the file name. The system will use the compression method based on the chosen suffix. For example, myFile.gz will produce a GZIP compressed CSV file.
- For upload programs that support decompression, the file name's suffix will similarly trigger the appropriate decompression method.

The following programs provided by Oracle Utilities Application Framework support compression and decompression:

- Batch controls that use the same batch program as F1-PDBEX (Plug-in Driven Extract Template). Note that this batch program supports compression and concatenation. The combination of ZIP compression and concatenation is not supported.
- Batch controls that use the same batch program as F1-PDUPL (Plug-in Driven Upload Template).

Individual products (such as Oracle Utilities Customer Cloud Service or Oracle Utilities Meter Solution Cloud Service) may also include batch upload or extract programs. The batch control will explicitly state that compression or decompression is supported.

- F1-GEEXO: Generalized Ongoing Export
- The various Initial Data Export batch controls for each maintenance object

Steps To Enable

No steps are required to enable this feature.

Submission Method and User for Batch Jobs

New fields have been added to batch jobs to capture the submission method for a batch job and the user who submitted the job, if applicable. The Submission User is captured to have an audit of the user that created the submission. This may be different from the batch user (existing field) that is provided to all the processes executed by the batch program. Note that there are some use cases where this field is not applicable. For example, timed batches and batch submission records created by a scheduler do not have a "submission user."

The **Submission Method** field is a customizable lookup. The base supported values are:

- Online: Populated when a user manually creates a batch job submission
- Generated: Populated by algorithms that submit a batch job and by "initiator" batch jobs that submit other batch jobs

- Scheduled: Populated by the DBMS scheduler. Note that for other schedulers, it is not advised to use this value as there may be logic and validation related to records created with this value that may not apply to other schedulers
- Timed: Populated by the batch daemon that submits timed jobs
- Other: Populated when no other value is provided

Note: Existing batch job submission records were not updated to populate either of these two new fields.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

If your implementation has any algorithms or "initiator" type batch controls that create a batch job submission record, consider updating your code to populate the Submission Method of "Generated." Otherwise, the value of "Other" will be used.

Support Cancellation of In Progress Batch Job Submission

In this release, you can request to cancel a batch job submission record for a job that is in progress. Previously, you could only cancel a pending batch job submission. The following points highlight additional information regarding this feature:

- The new Pending Cancel status allows you to cancel a Pending or Started job submission record. The status transitions to Pending Cancel. This is a signal to the batch processor. For pending jobs, it removes the job from the queue. For in progress jobs, it discontinues the processing. Once the batch processor confirms that all the work or pending work is canceled, it updates the status of the batch job submission record to Canceled.
- Batch job submission records will only transition to Ended if the batch run completed. Previously, when you canceled a Pending batch job submission record, the status would be changed to Canceled and then once the batch processor removed the job from the queue, the status would be updated to Ended.
- Batch jobs that were initiated by the DBMS Scheduler do not support this functionality. An existing business service may be used to cancel a DBMS job.
- The new Cancel operation of the F1-SubmitJob Inbound REST Web Service allows an implementation to request the cancellation of a job from an external system.

You can now cancel a batch job submission record with an In Progress or Pending status.

Steps To Enable

No steps are required to enable this feature.

Additional Batch Categories

The Batch Category flag has been enhanced to add two additional values: Upload and Upgrade.

- **Upload** may be used to categorize batch controls that are responsible for uploading data.
- **Upgrade** may be used to categorize batch controls that are responsible for upgrading some set of data based on other data.

The new Batch Category options allow you to categorize batch controls used for uploading and upgrading data.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

Note that for batch controls delivered with the base package, the **Batch Category** field should have abase value defined. This value can be overridden by an implementation. For upgrading clients, existing batch controls are not updated to use new categories. For example, if there are existing batch controls that upload data but were originally delivered with a 'Process What's Ready' category, your data will remain with the 'Process What's Ready' category.

Support for Interrupting DBMS Job Steps

The system provides a new business service that receives a DBMS Job Name and finds all the running batch jobs for the Job's chain. For each one found, it cancels the batch job submission entry and marks the step "failed" in DBMS without stopping the DBMS Job. The steps in the chain can subsequently be restarted using the DBMS Scheduler - Restart Failed Chain business service.

This feature allows you to easily restart a DBMS job by interrupting a DBMS Job Step.

Steps To Enable

No steps are required to enable this feature.

Start Date, End Date, and Time Added to Batch Thread Instance

The start date/time and end date/time of a batch thread instance are captured. Previously, this information was only available in informational messages linked to batch thread instance. The informational messages are still included but now that start and end date/time stamps are captured directly on the instance record.

This feature will make it much easier for implementation to do analysis about batch timings at the instance level, if desired.

- The Process Record plugin returns multiple schemas (rows) for a given record.
- The plugin-driven extract batch process (whose output format is XML) is not able to determine which schemas belong together logically.

The output parameter 'record XML node' in the schema collection should be used to indicate the outer XML node to use to group related information together. All schemas returned from a single call to the Process Record plugin that have the same record XML node will grouped in the written output within that XML tag.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

For existing batch thread instance records created prior to upgrading to this version, the system does not automatically populate the new columns. There is an upgrade background process provided to upgrade records if an implementation would like to do analysis of older records. The batch control is F1-BTIDT (Upgrade Batch Thread Instance Date / Time). It includes parameters to limit the upgrade to certain batch controls and/or a specific date range so that only the records you plan to include in your analysis are affected. Review the batch control detailed description for more information.

This batch control has its own application service. In order to run the batch job, you must have privileges to this application service: F1-BTIDT, access mode F1EX.

Environment Information Added to Batch Email

The email sent when a batch program completes now includes information related to the installation configuration for the environment where the batch was run. This will help users that may be working in more than one environment (for example, development and test or two different testing regions), users that are working in more than one version of a product, or users that are working with more than one product.

The email now includes:

- The product name taken from the row in the Installed Products collection on the Installation Options that is marked at the 'display' product. This is the product name visible in the application heading.
- The product version taken from the same installed products row.
- If configured, the Domain Name taken from the Messages collection on the Installation Options. Refer to the description of the new Define an Environment Domain Name feature for more information.

Information related to the installation configuration of the environment that ran the batch job helps users working in more than one environment, in more than one product version, or with more than one product.

Steps To Enable

To take advantage of this functionality, a Process Record algorithm that returns multiple schemas for a given record where all information in the schemas should be grouped within an XML tag should return the same Record XML Node value.

Content Migration Assistant (CMA) Enhancements

Default User Support for CMA

The new Default User attribute in the Migration Assistant Configuration (Master Configuration) record prevents errors from occurring when the system references a non-existing user ID in the target environment during a data import.

You have the option of defining a Default User. The Configuration Migration Assistant tool uses the defined Default User when a record has constraints on the User table and the referenced user ID is invalid.

Steps To Enable

In the **Master Configuration** portal, update the Migration Assistance Configuration with a Default User ID.

Migration Configuration Enhancements

A migration plan has been provided for the Table object, allowing for changes to customizable fields to be copied to another environment. The F1-SystemConfig (Framework System Configuration) migration request has been updated to include the new migration plan.

Steps To Enable

No steps are required to enable this feature.

Test Data Migration and Other Improvements

Various enhancements were made to the Content Migration Assistant tool (formerly known as Configuration Migration Assistant) to better handle migration of selected business entities for testing or other purposes. As such its name has been slightly changed to emphasize that it can be used to migrate any type of content, not just configuration data.

The following points highlight key export related improvements and changes:

- An **Entity Summary** zone listing how many entities were exported by maintenance object is shown on the Migration Data Set Export portal.
- A new **Collect Entity** dashboard zone is available to provide an easier way to collect entities to export onto an Entity List type of migration request. The zone appears on the dashboard once a migration request is in context, allowing the user to add any entity to the request list while reviewing information on the entity's maintenance portal.
- Entities specified using their prime keys on a Criteria-based migration request are listed in a zone to allow easy navigation to these entities.
- Search by a data set identifier is now supported.

The following points highlight key import related improvements and changes:

- The performance of the Apply Objects batch process is significantly improved when migrating master and transaction entities. This is mainly achieved using a new extendable lookup that guides the tool in processing objects in the order that better reflects their referential dependency on other entities, thus reducing significantly the number of retries needed to successfully import an entity. In addition, migration objects that belong to master and transaction entities inherit part of their system generated key from the migration transaction they are linked to, thus contributing to having all objects that depend on each other be processed by the same batch process thread.

- The **Migration Objects In Error** zone now lists objects based on their processing order, allowing the user to resolve issues in a more intuitive sequence.
- An **Entity Summary** zone listing all imported entities by maintenance object and status is shown on the **Migration Data Set Import** portal. A similar zone is also available at the transaction portal.
- A navigation link to the currently active import related batch process is shown on the data set portal, providing a visual indication as to whether that process is in progress or not.
- Transaction and object related zones are now shown on designated tabs on the migration data set portal, supporting a more intuitive organization of import information.
- Search options by a data set identifier or by migration object are now supported.

Enhancements to the Content Migration Assistant tool provides better migration of business entities for testing and other purposes..

Steps To Enable

No steps are required to enable this feature.

CMA Performance Improvements

The Apply Objects step in CMA has been enhanced to more efficiently apply master and transaction objects. Less retries are used when applying master and transaction objects. When the process of applying an object results in an error, the system keeps retrying that object for a fixed number of times. Master and transaction data are more likely to be processed in the correct dependency order and therefore require less retries.

An import log record is not added when importing a master or transaction entity. Capturing a log record on the imported maintenance object log table is more relevant when importing configuration entities, especially when the import is to a higher environment like production. When importing master and transaction data it is mainly for testing purposes and usually involves higher data volumes so adding an extra log record to every entity unnecessarily consumes time and resources.

The enhancement to the Apply Objects step in CMA efficiently applies master and transaction objects, which results in less retries and errors.

Steps To Enable

No steps are required to enable this feature.

Implementation Tool Enhancements

Data Explorer Graph Support

Info Data Explorer - Single SQL and Info Data Explorer - Multiple SQLs zones now include five data visualization option parameters that may be configured to show the zone data in one or more graphical formats. Option types of Grid, Chart and Map are supported, If a zone defines visualization options, the data explorer will provide icon buttons to toggle between the various views. These buttons are presented in the same order they are defined in the parameter list. Note that if more than one visualization option is present, one option must be of type Grid, allowing for a maximum of four graphical options. The graphs support broadcasting of values from the chart to other zones as filters.

The new data visualization option parameters provide various graphical formats to present zone data.

Steps To Enable

No steps are required to enable this feature.

New Action Method

The Action Method feature provides edge products and implementations the ability to define an object that captures configuration for determining a value, such as an administrative code or an algorithm based on criteria. For example, the appropriate customer service request type to use for starting service for a customer can be determined based on the account's customer class and the CIS division.

Each use case that takes advantage of this functionality is defined using an Action Method Role, defined via an extendable lookup. In the above example, there is an action method role for Start Service. Each Action Method Role value defines one and only one Action Method record, which is where the criteria is defined along with the values determined by the criteria. In the above example, the Action Method for the Start Service action method role provides configuration for indicating the Customer Service Request Type based on a combination of CIS Division and Customer Class. The action method's business object defines a special algorithm plug-in spot called 'Retrieved Action Method Details'. The algorithm receives the criteria and returns the details as per the use case. In the above example, the caller would provide the CIS Division and Customer Class, and the algorithm would use that information to return the correct Customer Service Request Type.

The framework provides several components to help your product or your implementation to define its use cases. Your specific product may provide some functionality that uses the Action Method.

The Action Method feature enables implementations to define an object that captures configuration for determining a value.

Steps To Enable

Your implementation must define the appropriate action method records if your product supports one or more action method roles.

1. Select **Admin**, select **System**, then select **Action Mode** in Add mode. If your product provides more than one action method business object, select the appropriate business object for the use case.
2. Identify the appropriate Action Method Role and fill in the details appropriate for your implementation's business requirements.

Note: The type of details defined here are dependent on the specific use case. Refer to your product's documentation for more information.

You can design you own action method functionality:

- If your implementation has use cases that require or would benefit from an action method and your cloud service does not already define an Action Method Role.
- If your business requirements differ from the supplied functionality.

Enforce Data Type with Ad-hoc Characteristics

An ad-hoc characteristic type may now be explicitly associated with an MD field to enforce data type validation. When characteristics of this type are captured, the system ensures that the entered value complies with the data type of the MD field if specified on the characteristic type record. This validation is performed in addition to existing validation methods such as using a validation algorithm on the characteristic type record or associating a flattened characteristic with an MD field as part of a business object schema.

The system ensures that the captured ad-hoc characteristic type complies with the data type of the MD field.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

When associating an existing ad-hoc characteristic type with an MD field, make sure existing data complies with the MD field's data type to avoid errors at update time.

Additional SQL Functions Supported

The following functions have been added to the SQL Allowlist:

- CAST
- EXTRACT
- GREATEST
- LEAST
- NUMTODSINTERVAL
- LEFT JOIN
- RIGHT JOIN
- INNER JOIN
- add_months

The enhancement added commonly used SQL functions to F1-SQLFunctionWhiteList (Managed Content). In addition, support is provided for the WITH clause, the AT TIME ZONE clause, hierarchal queries, CASE Expressions, and Datetime data types.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

When associating an existing ad-hoc characteristic type with an MD field, make sure existing data complies with the MD field's data type to avoid errors at update time.

Contextual Insights

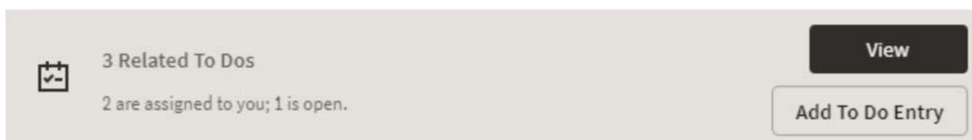
Contextual Insights provide a way to surface focused intelligence and alerts to users in the context of the core screens for any applications built on Oracle Utilities Application Framework. There are many useful configuration options for Contextual Insights.

There are a number of visual patterns that are supported:

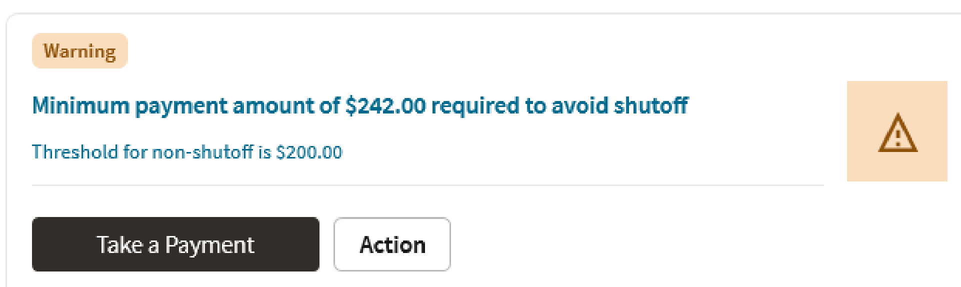
- Badges Insights have a quick text notice with a solid background that is meant to alert the user to crucial summary information or attributes.

- Inline Insights display a message with an icon that is meant to be more descriptive about the context for crucial information to surface.

- List Insights are intended to exist in a list of insights that provide a message about related data as well as allow user actions to be configured. This type of insight supports an icon and supports primary and secondary text.



- Card Insights are the most information rich with the option for showing both primary and secondary text for an insight, a related large icon to call attention to the insight, as well as user actions that can be configured. Often a Card Insight can be used at the top of a list of insights to call more attention to the most important insights.



New color palettes are provided for configuration for Contextual Insights that insecure consistency in user interface when surfaced.

Actions that users can perform are defined in the insight algorithm and include additional configuration on the new Insight Type object. Settings allow you to define what should occur when the action is selected, the text to display, and the emphasis that should be placed on the button.

Insight types may be delivered by your base product. Oracle Utilities Application Framework provides a base badge insight that is visible on the new **To Do Entry** portal if the To Do Entry has related To Dos. Your specific product may include additional insight types for other use cases. In addition, you can introduce your own insight types.

In addition, the product provides the Insight Group object as a convenient way to group multiple insight types together. Insight groups are not delivered by the base product. However, every insight group references a unique insight class (lookup value). The insight class is the reference used when configuring insights to appear on a specific user interface component. Your product may include one or more base insight classes that are ready to use on a user interface component. Your implementation would set up an insight group for this class and choose which insight types to include.

Contextual Insights provide a way to surface focused intelligence and alerts to users in the context of the core screens for any applications built on Oracle Utilities Application Framework.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

Users must be granted access to the following new application services in order to use this functionality:

Secured Object	Application Service	Access Modes
Insight Type MO	F1INSIGHTTYP	A, C, D, R
Insight Type Portal	F1INSTYP	R
Insight Group MO	F1INSIGHTGRP	A, C, D, R
Insight Group Portal	F1INSTGP	R
Color Option MO	F1COLOROPTION	A, C, D, R
Color Option Portal	F1COLOPT	R

Tree Metadata

New tree metadata allows use of user interface tree structures to display hierarchical data in many of the Oracle Utilities Application Framework products.

The Tree metadata encapsulates a number of visual patterns that are common to tree displays:

- Icons
- Broadcast function
- Configurable text for the tree nodes, with multiple options, including a user override
- Support for navigation via hyperlink and context menus
- Support for auto expansion of a tree node on load
- Support for inclusion of implementation specific nodes in trees supplied out-of-the-box

Previously, a tree could only be defined using HTML within a UI map. The Oracle Utilities Application Framework provides user interface tools and services that work in conjunction with the Tree metadata to perform many of the functions that were formerly in HTML.

Algorithms are responsible for the processing that populates the tree node key data and to allow override of the information text, if needed.

Metadata is provided to define configuration for displaying information in a tree format.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

Users must be granted access to the following new application services in order to use this functionality:

Secured Object	Application Service	Access Modes
Tree MO	F1TREE	A, C, D, R
Tree Query Portal	F1TREEQ	R
Tree Portal	F1TREEM	R

Icon Configuration Support

The product now provides support for Scalable Vector Graphic (SVG) images. These images can be scaled without reduction of quality and can take on color. The new Contextual Insight and Tree Metadata features support icons and the recommendation is to use SVG images for these features. The product also provides many base SVG images in the display icon table.

The product provides a Maintenance Object Option to define a default Display Icon for an object. Functionality such as the tree configuration may use this option to retrieve the default icon for an object. An analogous Business Object Option is provided for those maintenance objects that are used for different classes of objects that may warrant different icons at the business object level.

The Icon Configuration Support enables you to use scalable and high resolution SVG images as icons on your product.

Steps To Enable

No steps are required to enable this feature.

Expanded Maintenance Object and Business Object Information

The Maintenance Object Information (MO Info) and Business Object Information (BO Info) plug-in spots now support returning an icon, if requested. The icon may be determined by the algorithm or alternatively, the plug-in drivers return the default Display Icon defined as a maintenance object option or business object option.

In addition, the plug-in spots support alternate detail for the information string itself:

- Short information: The algorithm can optionally return shorter, more concise information.
- Detailed information: The algorithm can optionally return up to four lines of information, allowing the algorithm to return different pieces of information in different lines. This is useful for user interfaces that support displaying information this way. Additionally, the algorithm can return an "overline" text, which is short text that can appear above the primary information text.

Note that the standard user interface metaphor that displays an information string for an object continues to use the standard information string returned by the algorithm. The additionally supported information may be used by specific use cases.

This feature enables you to request and retrieve short or detailed icon information.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

The F1-GetFKReferenceDetails and F1-GetForeignKeyReference business services have been enhanced to return the additional information, if provided by the algorithm. If an icon is requested, it is returned, if provided by the algorithm or found on the Maintenance Object or Business Object option.

Number Format Routine may Suppress Trailing Zeros

The F1-NumberAmountFormatter business service is enhanced to include an input parameter to suppress trailing zeros. For example, if a number has a scale of 5 and the value is 1.12300, depending on the business use case, it may be preferred to show this number as 1.123 instead of 1.12300.

The F1-NumberAmountFormatter business service that formats numbers now suppresses trailing zeros.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

Your specific product may already be using this new feature in existing user interface zones to control the display of numbers. If you have any custom code that formats numbers and would like to take advantage of this feature, the call to the above business service can be modified to set the new input parameter to true.

Security Features

Secured Objects Zone Enhancements

The Secured Objects list may now include the following objects:

- **Menu Items:** Included if the menu item references the application service.

- **UI map:** Included if the application service is referenced in the HTML of the UI map using the oraHasSecurity function.
- **Schema UI hints:** Included if the application service is found in a business object, business service, data area, service script, or UI map schema referencing the oraHasSecurity function.
- **Script Step:** Included if the application service is found in the Edit Data of the script step with a reference to the F1-CheckApplicationSecurity business service.

An option to filter the list by object code or description replaces the zone's pagination function to provide a more targeted list. An increased zone width accommodates lengthy descriptions and prevents scrolling to view information.

Steps To Enable

No steps are required to enable this feature.

Key Resources

You can review the HTML or schema of the IU map to understand the objects being secured by the oraHasSecurity function.

You can review the script to understand the objects being secured by the F1-CheckApplicationSecurity business service.

Analytics

Metadata Extension for Analytics Tables (Oracle Utilities Analytics Visualization)

The metadata describing the product's data model is extended to define tables and views that represent dimension and fact tables in the operational analytics product. New entities and portals are introduced to capture analytics table definitions.

Steps To Enable

Make the feature accessible by assigning or updating privileges and/or job roles.

Tips and Considerations

Support for custom analytics dimensions and facts is currently not available. Extending the definitions of analytics dimensions is available only through characteristics mapping.

Key Resources

Refer to **Operational Analytics** in the *Oracle Utilities Customer Care and Billing Administrative User Guide*.

Role Information

System administrators must have access to the following Secured Entity - Application Services if implementations integrate with Oracle Utilities Analytics Visualization:

- Analytics Table Maintenance Object and Business Objects - F1-ANALYTICS
- Analytics Table Query Portal - F1ANLYTS

- Analytics Dimension Portal - F1ANALYT
- Analytics Fact Portal - F1ANFACT

Characteristics Mapping

The Characteristics Mapping feature maps characteristics to user-defined fields provided by Oracle Utilities Analytics Visualization for each characteristics table associated with an analytics dimension table. Characteristics mapping records can be directly maintained on the **Analytics Dimension** portal.

This release renames the **ETL Mapping Control** menu item to **Characteristics Mapping** and provides standard query and maintenance portals for the maintenance object. Support for ETL Mapping Control is still available for existing implementations integrated with Oracle Utilities Analytics.

Steps To Enable

Make the feature accessible by assigning or updating privileges and/or job roles.

Tips and Considerations

The **Characteristic Mapping Query** portal is associated with the new F1CHRMAP application service. Upgrade scripts ensure that users with Read access to the existing Application Service will receive Read access to the new application service.

Secured Entity	Application Service	Access Added to Any User Groups with this Application Service/Read Access
Characteristic Mapping Query Portal	F1CHRMAP	F1ETL

System administrators must have access to this application service if implementations integrate with Oracle Utilities Analytics Visualization:

Secured Entity	Application Service
Characteristic Mapping BO	F1-CHARMAPBOAS

Key Resources

Refer to **Operational Analytics** and **Defining Characteristic Mapping** in the *Oracle Utilities Customer Care and Billing Administrative User Guide*.

Role Information

System administrators must have access to the F1-CHARMAPBOAS (Characteristic Mapping BO) application service if implementations integrate with Oracle Utilities Analytics Visualization.

Additional Business Flag Configuration Values

The Confidence attribute on Business Flag records now includes a Missed option, which can denote a false negative or a condition missed by the analysis tool.

Additionally, numeric values from *10* to *90* replace the *Low*, *Medium*, and *High* options of the Priority attribute. For backward compatibility, an upgrade step will adjust existing Priority values of Business Flags and Business Flag Types to the following:

- From High to 10
- From Medium to 50
- From Low to 90

Steps To Enable

No steps are required to enable this feature.

Support Analytics Dimension Hierarchy Definition

The metadata needed to support hierarchical dimensions can now be captured as part of the definition of an analytics dimension.

Steps To Enable

No steps are required to enable this feature.

Analytics Fact Logical Name

In this release, the name of the fact is explicitly captured as part of its definition record. Previously, the logical name of an analytics fact was incorrectly derived from its description in English.

Steps To Enable

No steps are required to enable this feature.

Analytics Calendar Dimensions

The following database views are available to support analytics reports that are based on various calendar dimensions, for example reports that summarize information by week, by month, by year, and so on:

- F1_CAL_WEEK_D (Calendar Week Dimension)
- F1_CAL_MONTH_D (Calendar Month Dimension)
- F1_CAL_QUARTER_D (Calendar Quarter Dimension)
- F1_CAL_YEAR_D (Calendar Year Dimension)
- F1_CAL_FISC_PERIOD_D (Fiscal Calendar Period Dimension)
- F1_CAL_FISC_QUARTER_D (Fiscal Calendar Quarter Dimension)
- F1_CAL_FISC_YEAR_D (Fiscal Calendar Year Dimension)

Analytics reports based on calendar dimensions provide summaries in different periods of time.

Steps To Enable

No steps are required to enable this feature.

Analytics Fact Relationship to a Logical Dimension

The operational analytics visualization tool was enhanced to support drilling from one fact to another for performance reasons when they are indirectly linked via the same logical dimension but at different aggregation levels. In order to support this relationship between analytic fact tables, the aggregated fact table explicitly references the corresponding logical dimension as part of its definition record.

The enhancement improves the performance of the operational analytics visualization tool in drilling from one fact to another fact when indirectly linked through the same logical dimension but at different aggregation levels.

Steps To Enable

No steps are required to enable this feature.

Miscellaneous Enhancements

Support Health Check Customization

The new Health Check installation-level System Event enables other product layers and implementations to add algorithms to check for additional conditions. The System Event also includes a base algorithm that checks the Batch Control - Level of Service algorithms. Previously, the Health Check portal and web service only supported checking the Batch Control - Level of Service algorithms.

Steps To Enable

Go to the **Algorithms** tab of the **Installation Options - Framework** page and find or add the Health Check System Event, then add the algorithms appropriate to your business.

Tips and Considerations

For backward compatibility, the system automatically references the Batch Control - Level of Service algorithm in the Health Check System Event in the installation algorithm collection for upgrading clients.

For implementations providing additional checks for other system components, refer to **Introducing Health Check Conditions** in the *Administrative User Guide* for more information.

ILM Configuration Adjustments

The default value of the ILM Restrict by Status business object option is set to Y for the following maintenance objects:

- F1-BUSFLG (Business Flag)
- F1-MKTMSGIN (Inbound Market Message)
- F1-MKTMSGOUT (Outbound Market Message)
- F1-MKTPRCEVT (Market Process Event)
- F1-MKTPROC (Market Process)

- F1-OBJERSCH (Object Erasure Schedule)
- F1-PROSTR (Process Flow)
- F1-REMOTEMSG (Mobile Remote Message)
- F1-STSSNPSHT (Statistics Snapshot)
- F1-SVCTASK (Service Task)
- F1-SYNC REQ (Sync Request)
- F1-SYNCREQIN (Inbound Sync Request)

Defaulting **ILM Restrict by Status** to “Y” allows the Information Lifecycle Management Eligibility algorithm of the maintenance objects to restrict archiving based on the status of the record.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

Implementations using Information Lifecycle Management that do not require archiving restrictions based on status should add the **ILM Restrict by Status** option type, assign it a higher sequence number, and set its value to “N”.

Conversion Entity Dashboard

The implementation tools for reviewing data conversion information include the following:

- Conversion Entity Query: Facilitates the selection of maintenance objects eligible for data conversion.
- Conversion Entity Dashboard: Lists the data conversion settings of the queried maintenance object and the current status of maintenance objects in the overall data conversion process.

Steps To Enable

Make the feature accessible by assigning or updating privileges and/or job roles. Details are provided in Role Information.

Role Information

System administrators that handle data conversion activities must ave access to the following Secured Entity Application Services:

- F1CVENTD (Conversion Entity Dashboard Portal)
- F1CVENTQ (Conversion Entity Query)

Ability to Delay Algorithm Execution

The F1PRFMDELAY algorithm type creates a delay in processes that perform asynchronous actions and continue upon receiving a response.

Implementations can use this Business Object Status - Enter algorithm type to delay (counted in seconds) processes that expect a near immediate response to an asynchronous request. The design of the processes using this algorithm type must also consider responses not arriving in a timely manner.

Steps To Enable

For business objects that include a step that sends a message and expects an asynchronous response, create an algorithm for the F1PRFMDELAY algorithm type. Configure the algorithm with the appropriate number of seconds to delay in the parameter. Configure this new algorithm on a status that includes an algorithm that checks for the receipt of the asynchronous response.

User Documentation Enhancements

In this release, the **Defining Algorithms** and **Defining Script Options** chapters of the online help are now under the **Configuration Tools** chapter. Reorganizing the chapters improves the searchability and usability of the algorithm and script topics as these are highly relevant components of the configuration tools.

In this release, the following are highlights of updates to the user documentation (online help):

- The **Database Options** chapter (renamed from "Database Tools") now has an overview section describing relationships of Maintenance Objects, Tables, Fields, and other metadata used to define objects in the system. As part of this update, the Characteristic Type help topics and FK Reference help topics have been moved to the "Database Options" chapter.
- The **Using Groovy Within Scripts** help topic has been updated to clarify best practices for referencing Java classes. The topic indicates that you should reference the class using the fully qualified package name or use an import step type to import the class and declare an alias.

Steps To Enable

No steps are required to enable this feature.

Warning Handling Change

Standard warning processes for business object-driven maintenance show warnings a pop-up dialog boxes, allowing you to click **OK** or **Cancel**. **OK** indicates that the system should proceed with the add, update, or delete operation. **Cancel** returns you to the maintenance map, allowing you to make changes or to cancel the maintenance dialogue altogether. This is consistent with warning handling for fixed pages. Note that, after canceling, the warning message continues to display inline.

Previously, warnings were shown as messages in the maintenance dialog, allowing you to make changes before clicking Save again. The warning conditions were not checked again even though you could have changed something that should have triggered an additional check.

Steps To Enable

No steps are required to enable this feature.

Generic APIs for the Utilities Test Automation (UTA) Tool

The following new Inbound Web Services are introduced to simplify the configuration of UTA test plans:

- Generic Data Explorer (F1-GenericDataExplorer) - This service may be used to call any data explorer zone that returns specific counts or any other type of information before a test is executed and afterwards for the purpose of comparing and evaluating test results.
- Copy Entity (F1-CopyEntity) - This service may be used to duplicate simple test entities.

Steps To Enable

Make the feature accessible by assigning or updating privileges and/or job roles. Details are provided in Role Information.

Role Information

The new UTA application service F1-UTASVC (Automated Testing Service) secures new services. System administrators should only grant access to this service on environments where the UTA tool is allowed to use.

BI Publisher Report Uses External Reference

The algorithm F1-BIPR-INV uses the external report reference to generate the URL. Previously, the algorithm used the internal report code rather than the external reference.

Most sample reports provided by the product populated the same value into the Report Code and the External Reference. Implementations following that pattern will see no impact to this change.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

If your implementation uses BI Publisher for reports and uses this algorithm type to generate the URL, be sure that the External Reference on your existing report codes matches the Report Code value to ensure that the URL will continue to be built as before.

Term Allowlist Used for Accepted Artifacts List

Product descriptions and documentation referencing the term 'Whitelist' are updated to use 'Allowlist' instead. Use inclusive term to identify a list of allowed artifacts.

Steps To Enable

No steps are required to enable this feature.

Define an Environment Domain Name

A new installation message type was introduced for implementations to label the specific environment with a desired domain name. For example, you can use "DEV" to identify your development region and "Test01" to identify one of your test environments.

Refer to the "Environment Information Added to Batch Email" feature for functionality that uses the new installation message in this release. In the future, other base features may take advantage of this information to help users that work in different environments to easily identify the current environment.

The new installation message type allows you to label environments with domain names.

Steps To Enable

To enable this feature:

1. Navigate to the **Installation** page: select **Admin**, select **General**, then select **Installation Options - Framework**.
2. Navigate to the **Messages** tab.
3. Add a new row and choose an Installation Message Type of Domain Name.
4. Enter text that identifies the environment. The recommendation is to keep the text short and concise.

Language Pack Installation Process Change

The procedure for installing a language pack has changed. When downloading the language pack, you are instructed to post the files in a specific directory. After the files have been posted, run the F1-LANG (Apply New Language) batch job for the desired language. This batch job now performs two steps. It created new language rows in the metadata and then applies the translated strings by looking for the language pack that you installed in the specified directory.

Previously, the process steps were to run the Apply New Language batch to create the new language rows and then use a blueprint-like process to apply the translated strings from the downloaded language pack.

The language pack installation procedure now applies the translated strings by looking at the installed language pack instead of the downloaded language pack.

Steps To Enable

No steps are required to enable this feature.

HTML Code not Included in Excel Export

When exporting data explorer results to Microsoft Excel, cells will no longer include HTML code. For cells that contain text where the HTML is used to emphasize or otherwise adjust the appearance of the text in the online page, in Microsoft Excel only the text is included. For cells that only include HTML, for example cells that display an icon, in Microsoft Excel these cells are now empty.

Previously, if HTML code was used for any reason in a cell, the HTML code would be included in the export to Microsoft Excel.

This feature exports data explorer results to spreadsheets instead of HTML code.

Steps To Enable

No steps are required to enable this feature.

Oracle Utilities Application Framework Deprecation Notices

This section provides information on functionality that has been removed, is no longer supported by Oracle Utilities Application Framework v4.4.0.3.0, or is planned for removal.

- Deprecated Items
- Items Planned for Future Deprecation

Deprecated Items

This is a list of functionality / system data that Oracle already removed from the Oracle Utilities Application Framework.

Application Viewer Links

The Application Viewer links in the online help and several maintenance object, business object, business service, and function pages have been removed. You can now navigate directly from the application to metadata pages to view additional content.

Mobile Application

In this release, Oracle Utilities Application Framework no longer supports the built-in mobile application and documentation is no longer available.

Cube Viewer

The Cube Viewer is now only accessible and supported through the Market Settlements product.

Substring Function

The system now uses the database function “substr” for SQL queries and information data explorer zones. Support for the "substring" function has been removed.

Xalan Library

The system now uses the native XSL engine of Java. The changes impacted internal XSLs and XSLs used by implementations that include integration and UI override XSLs if applicable.

Batch Parameter Security Value of None

The Security flag of a batch control parameter is optional and includes the ENCR (Encrypt) and NONE (None) options. The NONE value has been removed because it is redundant and given the flag is optional.

Security Token in REST Container

In Oracle Utilities Application Framework 4.4.0.3.0, REST functionality was properly split out from the web to its own container. This allows REST to have its own authentication and security. By design, the Oracle Utilities Application Framework security token functionality was not added to this REST container because the token is used for CSRF protection for online web container only.

Items Planned for Future Deprecation

This is a list of functionality / system data that Oracle plans to deprecate in a future release.

UI Metadata Related to Converted Pages

UI metadata related to fixed pages converted to portals will be removed in a future release. The following navigation keys related to the maintenance page will be removed:

- **Field:** impFldTabMenu, metaDataFieldMainPage, metaDataFieldMaint, metaDataFieldTableGrid, metaDataFieldTablePage, and any help keys
- **Access Group:** accessGroupMainPage, accessGroupMaint, accessGroupTabMenu, accessGroupDARGrid, and any help keys
- **Application Service:** applicationServiceMainPage, applicationServiceMaintNew, and any help keys
- **Portal:** portalTabMenu, portalMainpage, portalmainPopup, portalOptsGrid, portalOptsPage, and any help keys
- **Zone:** portalZoneTabMenu, portalZoneMainPage, portalZoneGridPage, portalZoneParameterGrid, portalZonePortalGrid, portalZonePortalPage, and any help keys

In this release, the following navigation keys related to the maintenance page will be removed:

- **To Do Entry:** toDoEntryCharGrid, toDoEntryDrillKeyValuesListGrd, toDoEntrySortKeyValuesListGrid, todoentrykeyvalue, todoentrymain, toDoEntryMaint, toDoEntryPopupAdd, toDoEntryPopupForward, toDoEntryPopupSendBack, and any help navigation keys
- **Table:** metaDataTableFieldsGrid, metaDataTableMainPage, metaDataTableCFldsGrid, metaDataTableConstPage, metaDataTableMaint, metaDataTableRefByConstPage, metaDataTableFieldPage, and any help navigation keys
- **Characteristic Type:** charTypeMenucharValuesGrid, charValuesPage, charEntityGrid, charEntitiesPage, and any help navigation keys
- **Work Calendar:** workCalendarMaint, workCalendarMainPage, workCalendarHolidayGrid, and any help navigation keys
- **Message:** msgMaintDetailsPage, msgMaintGrid, msgMaintPage, msgMaintTabMenu, and any help navigation keys
- **Time Zone:** timeZoneMainPage, timeZoneTabMenu, and any help navigation keys

Navigation keys related to search will be removed:

- **Field:** metaDataFieldSearchData and metaDataFieldSearchPage
- **Access Group:** accessGroupSearchData and accessGroupSearchPage

- **Application Service:** applicationServiceSearchData and applicationServiceSearchPage
- **Portal:** portalSearchData and portalSearchPage
- **Zone:** portalZoneSearchData and portalZoneSearchPage

In addition, the UI program component metadata related to Field, Access Group, Application Service, Portal, and Zone navigation will be cleaned up in a future release.

The UI program component metadata related to To Do Entry, Table, Characteristic Type, Work Calendar, Message, and Time Zone navigation will be cleaned up in a future release. Note that metadata related to the search pages will not be removed at this time in case these are used on other fixed pages.

XSLT Managed Content Type

The Managed Content table entries related to XSL should use the XSLTC managed content type instead of the XSLT managed content type. Support for the XSLT managed content type will be deprecated in a future release

REST IWS - Original REST Servlet

The original URL supplied for invoking IWS-based REST services included the IWS Service name in its makeup. We continue to support this for backward compatibility purposes, but we will deprecate it in a future release. As defined in the documentation, you should adjust your existing integrations to use the currently supported URL.

Append Setting In Pagination

There are several known issues with the functionality of the 'append' option in pagination such that it is not recommended to use this pagination setting. This functionality will be deprecated in a future release.

Support for Master / Subordinate Services for Web Services Catalog

The Service Catalog Configuration (master configuration) supports defining subordinate servers. This functionality is no longer applicable for the Oracle Integration Cloud and will be removed in a future release.

Selected Functionality of the Batch Run Statistics Portal

The **Batch Run Statistics** portal provides some additional information abut batch runs. However, some of the functionality provided on this page is related to capturing additional information from an external tool. This information is stored in a Fact record.

The functionality related to capturing additional information will no longer be supported in a future release. This information will still be available to existing clients, but the functionality will no longer be maintained.

Miscellaneous System Data

- Environment Reference. This administrative maintenance object was related to ConfigLab and Archiving, which are no longer supported. In a future release, the following will be removed:

- Migration Plan F1-EnvironmentRef. Note that no base migration request references this plan. Implementations should ensure that no custom migration request references this plan.
- F1-EnvironmentRefPhysicalBO business object
- ENV REF maintenance object

- The following metadata related to the legacy LDAP import pages will be removed in a future release: Services CILTLDIP, CILTLDIL, CILTLDIS, Application Service: CILTLDIP
- The following algorithm types and algorithms provided for the current LDAP import functionality do not include any logic. They will be removed in a future release.
  - Algorithm Type / Algorithm F1-LDAPIMPRT
  - Algorithm Type / Algorithm F1-LDAPPREPR
- The To Do Type F1-SYNRQ (Sync Request Error) is not in use and will be deleted in a future release. Errors for the Sync Request Monitor (that also has the name F1-SYNRQ) are reported using the To Do Type F1-SYNTD (Sync Request Monitor Errors).
- The lookup value CHAR_ENTITY_FLG / F1SE (Characteristic Entity / Sync Request Inbound Exception) is not in use and will be removed in a future release.
- The scripts F1-BundleInf, F1-GENPRINFO, and F1-MgPlnInf will be removed in a future release.
- The zones F1-IWSSCHS, F1-IWSSCHS1, F1-IWSSCHS2, F1-IWSSCHS3 and F1-MGRREQDSP will be removed in a future release.

CMA Migration Requests

The migration requests F1-FrameworkAdmin (Framework Admin) and F1-SchemaAdmin (Schema Admin) are no longer recommended and are not going to be updated with new administration / control tables in future releases. The product may deprecate them in a future release.

CMA Import Algorithm

In a future release, the CMA Import algorithm plug-in spot will be deprecated. As an alternative, review any existing algorithms and create appropriate Pre-Compare algorithms.

Business Object Read in F1-MainProc When Pre-Processing Exists

In the original implementation of configuration tools, if a pre-processing script was linked to the business object via options, the main framework maintenance BPA (F1-MainProc) would not perform a Read of the business object (leaving it to the responsibility of the pre-processing script).

In a subsequent release, to solve a UI Hints issue related to child business objects, a business object Read was included in F1-MainProc even if a pre-processing script existed. This solution introduced a problem only visible for specific scenarios and a different fix has been introduced. In the meantime, the business object Read is no longer necessary in F1-MainProc. Since there are many pre-processing scripts that are properly performing the Read of the business object, ideally the business object Read should be removed from F1-MainProc so that multiple reads are not performed.

However, there may have been pre-processing scripts introduced after the business object Read was included in F1-MainProc that were coded to not perform a business object read in the pre-processing script. Due to this situation, the business object Read is still performed as part of the processing of F1-MainProc.

The product plans to remove the business object Read from F1-MainProc logic when a pre-processing script exists. Review your custom pre-processing scripts that are linked to your business object options to ensure that it properly performs a Read of your business object.

OJet Support for Bind Architecture

OJet previously supported a bind architecture for their components and this format is deprecated in OJet V7.

Example:

```
<input id="text-input"
   type="text"
   data-bind="ojComponent: {component: 'ojInputText',
          textInput: value}"/>
```

Example:

```
<oj-input-text value="value text" label-hint="enabled"></oj-input-
text>
```

The Oracle Utilities Application Framework applications are targeting to stay current on OJet upgrades as newer releases incorporate more features, better performance, and high integration with the Redwood Design System. In this release, Oracle Utilities Application Framework uses OJet V9.1 and with each release, an OJet upgrade will be applied when applicable.

As the bind format has been deprecated, support for the format will be removed from up-coming releases. This results in a smaller file size for OJet components but any existing code in Oracle Utilities Application Framework applications using the bind format will completely stop working. It is anticipated that this could happen as soon as OJet V11, but it could also be a later version. For this reason, it is imperative that any existing OJet code that uses the bind format be updated to use the Web Component format. There can be a direct replacement available (as in the above example) but OJet provides different options so there may be a better alternative.

Technical Upgrade Notes

JavaScript DOM “top” Property

Internal restructuring of the Oracle Utilities Application Framework has removed the use of the JavaScript DOM ‘top’ property to better encapsulate the JavaScript variables and functions, and reduce or remove the use of the Global Namespace. This technical upgrade has minimal effects on coding as filters have been provided to dynamically update the JavaScript at runtime and remove references to 'top'. All references to 'top' now refer to 'main', which already existed as a "pointer variable" to variables and functions. In addition, some functions that obtained pointers to UI objects are now direct references and therefore are no longer functions, for example:

Existing Code	New Code	Comments
var x = top.getNavigationInfo(navOpt)	var x = main.getNavigationInfo(navOpt)	The function names remain the same, only the location has changed
var x = top.main.getNavigationInfo(navOpt)	var x = main.getNavigationInfo(navOpt)	No need for a double reference
var x = top.tabMenu().document	var x= main.tabMenu.document	tabMenu is now a direct reference as well as tabPage, workSpace, and model
var x = top.getMain()	var x = main	getMain() is a redundant function as 'main' is globally available

Should you need to get the 'top' for some reason such as obtaining window dimensions, the new main.getOUAFTop() function has been made available. Alternately, you can code "window.top" which the code changing filter will ignore. Note that the even if the code changing filter is extensive, there are many ways to write JavaScript and therefore some of your functions may still fail. Changing the offending line of code using the above examples as a guide should resolve the issues that arise.

Edge Product Uptake

Similar to customer code, the base Edge Application code is "filtered" to adjust existing code, which removes the need to revisit all existing code and perform updates in order to retain a functioning application. However, new code should follow these standards and the standards presented in relevant guides. It is also best practice to "upgrade" existing code when the opportunity is available.

Note that references to the ‘ouafTop’ variable are possible when looking at Oracle Utilities Application Framework JavaScript. Do not use this variable as this is an interim to ease the path towards a better clean-up of the existing Oracle Utilities Application Framework code. The ‘ouafTop’ variable will be removed when no longer needed and therefore can break your code when used. Oracle Utilities Application Framework will not provide a filter to change 'ouafTop' dynamically.

DOM4J API Upgrade

As part of the Oracle Utilities Application Framework's effort to update 3rd parties to the latest version, edge apps and customers can run into an issue when directly invoking the APIs in the 3rd party's library.

Oracle Utilities Application Framework upgraded the DOM4J API to the 2.1.1 version, which include a large number of changes as part of cleaning up methods to take more restrictive parameters and return more concrete versions. The previous version returned more generic return types and took more open arguments for example, a return type of List was returned from certain APIs. The 2.1.1 version returns nongeneralized versions of the exact type like List<Element> that could result in compile errors and require edge apps or customers to modify the code to fix the API calls.

In order to make code changes, go to the GitHub code repository for dom4j (https://github.com/dom4j/dom4j/blob/master/src/main/java/org/dom4j) and perform the following:

1. Look at the API change to https://github.com/dom4j/dom4j/blob/master/src/main/java/org/dom4j/Element.java setContent() api.
2. Click **History**. This opens all the log of changes that have been made to a class.
3. Click the hexadecimal revision number and review the set of changes made.
4. Click **Split** to see a more visual representation of the changes. You can directly search for the file, for example Element.java, and directly go to the changes to that file in the browser window.
5. Using the changes, make appropriate adjustments to your code. Note that once you find a change to the API, you can also look at code changes made to the other classes that were using the API. Your changes should be inline with the other invokers of the API to ensure that there are no regressions as part of the change that you would make.

Groovy Upgrade

Oracle Utilities Application Framework upgraded to the latest Groovy version and compilation of some of your scripts could fail. For example, one of Oracle Utilities Application Framework's script performed arithmetic and this code was compiled successfully with the previous Groovy version:

- BigDecimal.valueOf(Long.valueOf(batchRunTime.getTotalMilliseconds()/1000))

The latest Groovy version does not compile this code because the it evaluates the division results in an expression as a BigDecimal and the compile error indicates that a valueOf api is not available in the Long class.

To resolve the issue, your code must perform an explicit cast to inform Groovy that the result is a long. For example, this code fixes the compile error and retains the original intention of the code line:

- BigDecimal.valueOf(Long.valueOf((long)(batchRunTime.getTotalMilliseconds()/1000)))

Edge Product Uptake

For edge apps, Oracle recommends that you manually upgrade to the latest Groovy version before taking the official Oracle Utilities Application Framework fix and then run GroovySanityTest (unit testing) to ensure no compilation errors are reported. If there are issues reported, make minor code changes to the script to compile successfully.

Known Issues

There are no known issues in this release.