Oracle Utilities Customer to Meter

Release Notes

Release 2.9.0.0.0

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Oracle Utilities Customer to Meter Release 2.9.0.0.0 Release Notes

Contents

Preface

This release notes provides an overview of the new functionality, enhancements, known issues and other changes in Oracle Utilities Customer to Meter, Release 2.9.0.0.0.

The preface includes:

Audience

Release Notes is intended for anyone installing or using Oracle Utilities Customer to Meter.

Related Documents

For more information, refer to these Oracle documents:

Installation Guides and Release Notes

- *Oracle Utilities Customer to Meter Release Notes*
- *Oracle Utilities Customer to Meter Quick Install Guide*
- *Oracle Utilities Customer to Meter Installation Guide*
- *Oracle Utilities Customer to Meter Database Administrator's Guide*
- *Oracle Utilities Customer to Meter Database Changes Guide*
- *Oracle Utilities Customer to Meter Optional Products Installation Guide*
- *Oracle Utilities Customer to Meter Licensing Information User Manual*

Administrative and Business User Guides

- *Oracle Utilities Customer to Meter Administrative User Guide*
- *Oracle Utilities Customer to Meter Business User Guide*

Supplemental Documents

- *Oracle Utilities Customer to Meter Server Administration Guide*
- *Oracle Utilities Customer to Meter Security Guide*

Updates to Documentation

The complete Oracle Utilities Customer to Meter documentation set is available from Oracle Help Center at https://docs.oracle.com/en/industries/utilities/index.html.

Visit My Oracle Support for additional and updated information about the product.

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 that appears on the screen, or text that you enter.

Acronyms

The following acronyms and terms are used in this document:

Acronym	Definition
CCB	Oracle Utilities Customer Care and Billing
C2M	Oracle Utilities Customer To Meter
SOM	Oracle Utilities Service Order Management
SGG	Oracle Utilities Smart Grid Gateway
ODM	Oracle Utilities Operational Device Management
MDM	Oracle Utilities Meter Data Management
OUAF	Oracle Utilities Application Framework

Additional Resources

Additional and updated information about the product is available on My Oracle Support. For more information and support, visit the Oracle Support website.

Chapter 1

Oracle Utilities Customer to Meter Release Notes

Welcome to the Oracle Utilities Customer to Meter Release Notes. This document provides general information about Oracle Utilities Customer to Meter V2.9.0.0.0 including new functionality, known issues, and other important information.

This guide includes the following:

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

Release Overview

This section contains general information about this release of Oracle Utilities Customer to Meter v2.9.0.0.0. The release includes the following components:

- Oracle Utilities Customer to Meter v2.9.0.0.0
- Oracle Utilities Application Framework v4.5.0.0.0

Please visit My Oracle Support (http://support.oracle.com) and Oracle Software Delivery Cloud (http://edelivery.oracle.com/) for the most recent service packs and patches for Oracle Utilities Customer to Meter v2.9.0.0.0 to ensure you have the most current version of this product.

Supported Platforms

See the **Supported Platforms** section in the *Oracle Utilities Customer to Meter Quick Install Guide* (included in this release) for a list of supported platforms.

Supported Upgrades

This version of Oracle Utilities Customer to Meter supports the following upgrade paths:

- From Oracle Utilities Customer to Meter v2.6.0.1 to v2.9.0.0.0
- From Oracle Utilities Customer to Meter v2.7.0.0 to v2.9.0.0.0
- From Oracle Utilities Customer to Meter v2.7.0.1 to v2.9.0.0.0
- From Oracle Utilities Customer to Meter v2.7.0.3 to v2.9.0.0.0
- From Oracle Utilities Customer to Meter v2.8.0.0 to v2.9.0.0.0

Addition of Operational Device Management

Oracle Utilities Operational Device Management is included as part of Oracle Utilities Customer to Meter, providing functionality for asset configuration, configuration reports, asset management for devices, and asset replication.

Customers can disable the Oracle Utilities Operational Device Management functionality if desired. Refer to the *Oracle Utilities Customer To Meter Database Administrator's Guide* and the *Oracle Utilities Customer To Meter Installation Guide* for details related to disabling Oracle Utilities Operational Device Management in Oracle Utilities Customer To Meter.

Database Changes

The database enhancements for v2.9.0.0.0 are fully documented in *Oracle Utilities Customer to Meter Database Changes Guide*.

Enhancements in Oracle Utilities Customer to Meter

This section outlines enhancements added in this release of Oracle Utilities Customer to Meter including:

- Customer Care and Billing Related Enhancements
- Meter Data Management and Service Order Management Related Enhancements
- Operational Device Management Related Enhancements

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

Customer Care and Billing Related Enhancements

This section outlines customer care and billing-related enhancements introduced in this release of Oracle Utilities Customer to Meter, including:

- Customer Information
- Contextual Insights
- Start, Stop, and Transfer Service Request Processing
- Customer Interactions
- Rating and Billing
- Payment Processing
- Credit and Collections
- Data Synchronization
- Web Services
- Oracle Utilities Network Management System Integration
- Data Migration Enhancements
- Miscellaneous

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

Customer Information

This section describes the new and enhanced customer information features in this release, including:

- Customer 360 Portal Zones
- Dashboard Portal Zones
- Person ID Usage - Installation Options
- Service Agreement Information Algorithm Type and Algorithm

Customer 360 Portal Zones

The **Customer 360** portal provides an enriched view of a customer with the following updates:

- New **Program Enrollment** zone:
  - Allows you to review a customer's program-related contextual insights like payment methods, budget billing arrangements, e-billing preferences, and web account availability. Each program is displayed as its own contextual insight and allows you to quickly enroll the customer into a program, if required.
- Enhanced **Customer Activity History** zone:
  - The multi-select filter enables you to choose a subset of activities to display. The filter also allows you to select and display all the activities by clicking one checkbox.
  - The list of applicable activity categories for the account has been expanded to include Payment Arrangement, Service Order, Device Event activities, Cash-only and Credit Rating histories.
  - The **Display Icon Override Configuration** master configuration's Service Agreement maintenance object option includes a Service Agreement Type for overriding the Service Agreement maintenance object icon (for example, for assigning a custom icon for payment arrangement service agreement). The master configuration also provides a new Service Agreement Relationship option for overriding the SA Relationship maintenance object icon.
- Enhanced **Financial Details** zone tabs:
  - Enhanced **Usage and Billing** tab:
    - The **Billing and Usage Display Configuration** master configuration now provides color previews when configuring **the Usage and Billing** tab.
    - An **Hourly View** time scale for viewing a customer's hourly usage details on a specific day.
    - **Cost Graph View**:
      - The **Bill Summary Cost** bar tooltip now includes summary information about cancelled and/or rebilled bill segments that may have occurred after bill completion. Also, the ending balance is no longer displayed.
      - The **Ending Balance** bar tooltip, for bills based on balance forward accounts, now displays various financial summary information for a bill (such as the previous period's balance, total payments, total adjustments, total billing corrections, total current billing charges, and ending balance).
    - **Table View**:
      - Related entries automatically expand by default when changing from the Graph view to the Table view.
  - Enhanced **Financial History** tab:

- **Previous** and **Next** buttons replace the previous page navigation options.
- Expandable financial event details without having to go to the next page to see further details.

- Enhanced **Payment Agreements** tab:
  - Support for payment arrangement for bills.
  - Indicates if a payment arrangement's scheduled payment is partially received and remaining amount due. The dates of received payments are also displayed.
  - Indicates if a pay plan's scheduled payment is partially received and the remaining amount due.
- New **Credit & Collection** tab:
  - Displays the latest information for these processes in Tree view:
    - **Collection and Severance**: Shows active collection processes or collection processes associated with active severance processes for the account. If there are no active collection processes or collection processes associated with active severance processes, the system may display the most recent inactive collection process by debt class.
    - **Overdue and Cut**: Shows active overdue processes or overdue processes associated with active cut processes for the account. If there are no active overdue processes or overdue processes associated with active cut processes, the system may display the most recent inactive overdue processes.
    - **Write Off**: Shows active write processes linked to the account. If there are no active write off processes, the system may display the most recent inactive write off process by write off debt class.

You can use the tree to view high-level information and transfer to the maintenance page of the record.

The enhanced **Customer 360** portal zones provide you with a more complete view of the customer, which makes it easier for you to handle account maintenance requests and the most common inquiries.

Steps To Enable

Refer to the **Defining Customer 360 Options** section of the *Oracle Utilities Customer to Meter Administrative User Guide* for more information.

Dashboard Portal Zones

The **Customer** and **Premise Tree** zones of the **Dashboard** portal provide a more intuitive user experience with the following additions or enhancements:

- **Customer** zone:
  - The Person's alternative name is displayed if available.
  - The **Account** drop-down does not appear for a Person with multiple accounts. The **Customer Insights** zone of the **Customer 360** portal may be configured with an insight for this situation.

- **Premise Tree** zone
  - The **Status** string of smart meters at a service point are shorter and indicate if the meters are "Connected," "Disconnected," or "Removed." Previously, the text included the commissioning status.
  - The **Device** information string is shorter and only includes the Device ID and Device Type description

You can more accurately interact with your customers using important customer-related information displayed by the Dashboard portal zones.

Steps To Enable

No steps are required to enable this feature.

Person ID Usage - Installation Options

You can now specify when you want to capture primary identification details for a person through the **Person ID Usage** drop-down in the **Person** tab on the **Installation Options** portal. You can instruct the system to capture the details if the person is linked to an account, the main customer of the account, or financially responsible for the account's debt. Previously, identification details were captured when the pre-configured option was "Optional" or "Required".

This provides the flexibility to define when to capture primary identification details based on the person's relationship with the account.

Steps To Enable

To enable this feature, refer to the Defining Installation Options section of the *Oracle Utilities Customer to Meter Administrative User Guide* for more information.

Service Agreement Information Algorithm Type and Algorithm

The Service Agreement Information algorithm type (C1SAMOINFO) can be used to retrieve a number of fields from the input service agreement Id which can be used as substitution variables for deriving messages to be used as output Information strings. Soft parameters define the message number and corresponding substitution variables to be used for building each output information string.

The Service Agreement Information (C1SAMOINFO) algorithm, based on the C1SAMOINFO algorithm type, is configured by default on the SA (Service Agreement) maintenance object.

Refer to the Detailed Description on the C1SAMOINFO (Service Agreement Information) algorithm type for more information about this algorithm type and algorithm.

Steps to Enable

No steps are required to enable this feature.

Contextual Insights

This section describes the new and enhanced contextual insights features in this release, including:

- Financially Responsible Person

Financially Responsible Person

The **C1-FINPER-BADGE (Financially Responsible Person)** insight type enables you to surface focused alerts about the Person's financial role (Main Person, Financially Responsible Person, or Third Party Guarantor) on an account.

This contextual insight can help you can elevate your customer service interactions by increasing your knowledge about the customer in the most appropriate screens.

Steps To Enable

Configure the insight type on the appropriate Insight Groups. Refer to the Insight Groups section of the *Oracle Utilities Customer to Meter Administrative User Guide* for more information.

Highlight In Progress Start/Stop/Transfer Requests

The **C1-CSRQSST-LIST (Highlight In Progress Start/Stop/Transfer Requests)** insight type allows you to surface focused alerts about the following process flows for the customer or premise in context:

- Start Service Request
- Stop Service Request
- Transfer Service Request

Steps To Enable

Configure the insight type on the appropriate Insight Groups. Refer to the Insight Groups section of the *Oracle Utilities Customer to Meter Administrative User Guide* for more information.

Highlight Premise Service Information

The **C1CSRTPREMSI (Highlight Premise Service Information)** algorithm type can surface additional service point and meter details that can be used on contextual insights. The Control Central Alert algorithm type is used by the **C1-PREMSVC-LIST (Highlight Premise Service Info - List)** insight type.

You can elevate your customer service interactions by providing Premise service contextual insights on the most applicable screens.

Steps To Enable

Configure the insight type on the appropriate Insight Groups. Refer to the Insight Groups section of the *Oracle Utilities Customer to Meter Administrative User Guide* for more information.

Pending Start/Stop Service Agreements

These Insight Types enables you to surface focused intelligence about pending Start/Stop service agreement information:

- **C1-PNDSTR-BADGE (Highlight Pending Start)** - Badge insight for pending Start service agreements
- **C1-PNDSTR-LIST (Highlight Pending Start)** - List insight for pending Start service agreements
- **C1-PNDSTP-LIST (Highlight Pending Stop)** - List insight for pending Stop service agreements

You can elevate your customer service interactions by providing pending Start/Stop badge and/or list contextual insights on the most applicable screens.

Steps To Enable

Configure the insight type on the appropriate Insight Groups. Refer to the Insight Groups section of the *Oracle Utilities Customer to Meter Administrative User Guide* for more information.

Person and Premise Life Support/Sensitive Load

The following Control Central Alert algorithm-based Insight Types allows you to surface focused alerts, for Premises and Persons with life support or sensitive load information, on applicable screens:

- **C1-PERLSSL-BADGE (Highlight Person Life Support/Sensitive Load)**
- **C1-PRMLSSL-BADGE (Highlight Premise Life Support/Sensitive Load)**

You can use these alerts to more effectively interact with customers within the context of the current business process.

Steps To Enable

Configure the insight type on the appropriate Insight Groups. Refer to the Insight Groups section of the *Oracle Utilities Customer to Meter Administrative User Guide* for more information.

Insight Classes

Additional Insight Classes were added to designated areas within corresponding UI Maps for specific zones, which enables you to configure new Insight Types with defined valid visual structures and render these in the designated areas. Insight Classes serve as placeholders within specific zones for rendering contextual insights.

You can elevate your customer service interactions by providing quick access to key information from the most appropriate zones.

Steps To Enable

Refer to the Customer 360 - Customer Insights section of the *Oracle Utilities Customer to Meter Administrative User Guide* for more information.

Program Enrollment Contextual Insights

The following Insight Types enable you to surface focused alerts about various programs a customer may or may not be enrolled in and to initiate the appropriate actions where required:

- C1-APAYENRL-LIST (Auto Pay Enrollment)
- C1-BUDGENRL-LIST (Budget Billing Enrollment)
- C1-EBILLENRL-LIST (E-Bill Enrollment)
- C1-WEBENRL-LIST (Web Enrollment)

These contextual insights can help you elevate your customer service interactions by increasing your knowledge about the customer in the most appropriate screens.

Steps To Enable

Configure the insight type on the appropriate Insight Groups. Refer to the Insight Groups section of the *Oracle Utilities Customer to Meter Administrative User Guide* for more information.

Start, Stop, and Transfer Service Request Processing

This section describes the new and enhanced start, stop, and transfer service request processing features in this release, including:

- Agent Contact Scripting for Start/Service/Transfer Service Request Process Flows
- Custom Panel Elements in Start/Stop/Transfer Service Request Process Flows
- Review and Submit Panels for Start/Stop/Transfer Service Request Process Flows
- Enhanced Customer Identification Process Flow Panel for Start Service Requests
- Enhanced Deposit Required Algorithm Types
- Start/Stop Date Validation in Start/Stop/Transfer Service Request Process Flows
- Postal Code Defaults and Mailing/Seasonal Address Validation in Start/Stop/Transfer Service Request Process Flows
- Paperless Billing Validation in Start/Stop/Transfer Service Request Process Flows
- Initiate Start or Transfer Service Request Process Flow with a Starting Premise
- Start Service Request Process Flow Cancellation - Auto Person/Account Clean Up
- Customer Service Request Maintenance Object
- Service Agreements to Start Determination
- Service Agreements to Start for a Service Point Derivation
- "Add All SA Type When None Are Initial" Feature Configuration Option Type

Agent Contact Scripting for Start/Service/Transfer Service Request Process Flows

The Customer Service Request Type enables you to define contact scripting for call center agents. Your agents can use the contact scripting as they work through a Start, Stop or Transfer Service Request process flow for a customer who is on the phone. The agents can also read the contact script to the customer to handle requests for customer data or for information-only notices.

You can specify the contact script text to display in predefined locations or script points related to the following in start service request process flows:

- For the type of person linked to the start service request process flow (Person or Business):
    - New Customer Identification Introduction
    - Identification Request
    - Date of Birth Explanation
    - Life Support/Sensitive Load
    - Phone Number Advisory
    - Email Address Advisory
- For the Customer Class for the account linked to the start service request process flow:
    - Other Persons on Account
    - Paperless Billing Advisory

You can specify the contact script text to display in predefined locations or script points related to the following in stop service request process flows:

- For the type of person linked to the stop service request process flow (Person or Business):
    - Life Support/Sensitive Load
    - Phone Number Advisory
    - Email Address Advisory
- For the Customer Class for the account linked to the stop service request process flow:
    - Other Persons on Account
    - Paperless Billing Advisory

You can specify the contact script text to display in predefined locations or script points related to the following in transfer service request process flows:

- For the type of person linked to the transfer service request process flow (Person or Business):
    - Life Support/Sensitive Load
    - Phone Number Advisory
    - Email Address Advisory
- For the Customer Class for the account linked to the transfer service request process flow:

- Other Persons on Account
- Paperless Billing Advisory

Steps To Enable

Refer to Adding Custom Text to the Start, Stop, and Transfer Processes in the *Oracle Utilities Customer to Meter Administrative User Guide* for more information.

Tips And Considerations

If your implementation has added custom elements through data area extensions, the extensions can reference custom script points. To implement custom script points, ensure your map fragment's class attribute is set to "contact-script-point" and the scriptPoint attribute is set to the CM script point extendable lookup value. For example, `<div class="contact-script-point" scriptPoint="CM-NewScriptPoint"/>`.

Custom Panel Elements in Start/Stop/Transfer Service Request Process Flows

Extension-related data areas enable you to add custom elements at the bottom of panels for the Start Service Request, Stop Service Request, and Transfer Service Request process flows. The panels to which you can insert implementation-specific elements and user interface hints or fragments are as follows:

- Start Service Request
  - Move To Premise Address
  - Customer Identification
  - Services To Start
  - Person and Account Details
- Stop Service Request
  - Services To Stop
  - Person and Account Details
- Transfer Service Request
  - Move To Premise Address
  - Services to Start
  - Services to Stop
  - Person and Account Details

Similarly, Customer Service Request business objects related to these process flows now have their own corresponding extension-related data areas. Your extended data areas must match the corresponding extensions in the process flow panels. The processing associated with each process flow will pass the implementation-specific elements to the applicable Customer Service Request-related records.

Steps To Enable

Refer to Capturing Custom Elements in the Start, Stop, and Transfer Processes in the *Oracle Utilities Customer to Meter Administrative User Guide* for more information.

Review and Submit Panels for Start/Stop/Transfer Service Request Process Flows

The **Review and Submit** panel replaces the **Summary** panel on process flows that are based on application-owned Process Flow Types for start, stop, and transfer service requests. The panel allows you to review information captured from previous panels, go back to the appropriate panel to update specific information, and then submit the information to process the service request and create and/or update the appropriate customer records.

This table lists the information appearing on the **Review and Submit** panel per service request process flow.

Service Request Process Flow Section	Section
Start	Starting Services Person and Account Details
Stop	Stopping Services Person and Account Details
Transfer	Starting Services Stopping Services Person and Account Details

In addition, these Customer Service Request Type business objects have been enhanced to support the **Review and Submit** panel on process flows:

- C1-StartServiceRequestType (Start Service Request Type)
- C1-StopServiceRequestType (Stop Service Request Type)
- C1-TransferServiceRequestType (Transfer Service Request Type)

The C1-StartServiceRequestType business object allows you to override the Start Services Review section, C1-StopServiceRequestType allows you to override the Stop Services Review section, and C1-TransferServiceRequestType allows you to override the Start Services Review and Stop Services Review sections with your custom replacement UI sections. All three business objects also allow you to override the Person and Account Details Review sections with your custom replacement UI sections, and the Navigation Option and Label so you can choose to navigate to an alternative page instead of Control Central after the process flow finishes.

Steps to Enable

No steps are required to enable this feature.

Key Resources

Refer to the Setting Up Start, Stop and Transfer Request Types section of the *Oracle Utilities Customer to Meter Administrative User Guide* for more information.

Enhanced Customer Identification Process Flow Panel for Start Service Requests

A number of improvements have been made to the **Customer Identification** panel on process flows that are based on the application-owned Process Flow Type for start service requests. These can be summarized as follows:

- Allows you to reuse your search information to create a new Person record for the start service request using the **Create New Customer** button when there is

no person in context and Person Search does not return any records. You can specify the Person Contact Type for the phone number, Email Contact Type for the email address, and update the ID Type for the identification details.

- Allows you to perform one of these actions when there is no person in context but Person Search returns records:
  - Run a search with updated information if the customer's Person record is not returned
  - Use the **Create New Customer** button to add a Person record
  - Select from the results and use an existing Person record
- Advises you if the Person record is without valid primary identification details when there is a person in context or you selected a Person Search result. You can enter these details on the panel and continue progressing the process flow. The Accounts for Service section also displays a message for each account that is ineligible for service if you selected the "Existing" option or a new account is not allowed for a start service request.
- Enables you to review the outcome of various checks or assessments through messages appearing after the following user actions (these are defined in specific configuration settings or plugin spots on the Customer Service Request Type referenced by the process flow):
  - Determining if an ID/Credit Check should be performed (triggered by the new **Continue** button)
  - ID/Credit Check (triggered by the existing **Verify ID** button)
  - Determining if a deposit is required (triggered by the new **Check Deposit Requirement** button)
- Defaults the Customer Class from the Installation Options based on the Person or Business flag set on the process flow.

There are also several changes to the C1-StartServiceRequestType (Start Service Request Type) business object:

- For **Primary Identifier Types**, the "New" option in the **Usage** drop-down is now "New and Non-Identifying". You can use this option for ID Types to be used as a primary identifier for new persons but are not considered valid when performing ID/Credit Checks as their values may not be unique for verification purposes.
- You can specify one of these **Date of Birth Usage** options to indicate when to be prompted for the person's date of birth on the Customer Identification process flow panel:
  - Always
  - For ID/Credit Check
  - For Starting Service
- The **Store Date of Birth on Person** label replaces the **Date of Birth Characteristic Type** label to make it clear where the information may be stored.

Steps to Enable

No steps are required to enable this feature.

Key Resources

Refer to the Setting Up Start, Stop and Transfer Request Types section of the *Oracle Utilities Customer to Meter Administrative User Guide* for more information.

Enhanced Deposit Required Algorithm Types

The following algorithm types for processing start or transfer service requests streamline the deposit assessment processes:

- **C1REQDEPBACR (Require Deposit Based on Account's Credit Rating)** - When the account's credit rating meets or exceeds the threshold, a message is no longer displayed
- **C1DEPEXBAGE (Deposit Exemption Based On Age)** - If the customer is exempt from a deposit based on age then subsequent algorithms plugged into the same plugin spot are not performed.
- **C1DEPEXMPBAH (Deposit Exemption Based On Account History)** - When the account does not have an active or recent service, this advises you that a deposit is required.
- **C1REQDEPAID (Require Deposit Based On ID and Credit Check)** - Indicates whether a deposit is required:
  - Since an ID or credit check was not performed
  - Since the ID or credit check did not pass
  - Since the ID or credit check indicates that the information provided is possibly fraudulent
  - Based on an external credit score

Steps to Enable

No steps are required to enable this feature.

Key Resources

Refer to the Setting Up Start, Stop and Transfer Request Types section of the *Oracle Utilities Customer to Meter Administrative User Guide* for more information.

Start/Stop Date Validation in Start/Stop/Transfer Service Request Process Flows

A message now appears when the applicable date validation algorithm, based on the **C1VALSVCSD (Validate Service Start Date)** or **C1VALSVCSTD (Validate Service Stop Date)** application-owned algorithm type, determines that the start or stop date on a process flow (based on an application-owned Process Flow Type) is not within the predefined range and the algorithm is configured to allow you to still proceed.

Steps to Enable

No steps are required to enable this feature.

Postal Code Defaults and Mailing/Seasonal Address Validation in Start/Stop/Transfer Service Request Process Flows

Start, stop, and transfer service request process flows based on the application-owned Process Flow Types now automatically defaults the city, county, and state of the related Postal Code Default administration record if the postal code is changed on the **Person**

and Account Details panel. In addition, if the existing Address Validation capability is enabled, you can use the Validate button(s) on the **Person and Account Details** panel to validate the mailing and/or seasonal address details.

Steps to Enable

No steps are required to enable this feature.

Key Resources

Refer to the Implementing Address Validation section of the Oracle Utilities Customer to Meter *Administrative User Guide* for more information.

Paperless Billing Validation in Start/Stop/Transfer Service Request Process Flows

The system automatically notifies you when the Paperless Billing option is selected and the customer does not have an active email address.

This ensures that customers with paperless billing provide an active email address before the system initiates email interactions.

Steps To Enable

No steps are required to enable this feature.

Initiate Start or Transfer Service Request Process Flow with a Starting Premise

You can identify a move-to (starting) premise prior to initiating a process flow for a start or transfer service request. A process flow, based on an application-owned Process Flow Type for a start or transfer service request, can receive a Premise ID to prepopulate on the Move-To-Premise Address panel of the flow.

Steps to Enable

No steps are required to enable this feature.

Start Service Request Process Flow Cancellation - Auto Person/ Account Clean Up

Canceling (deleting) a Start Service Request will automatically delete the Person and/or Account record created by that process flow.

Auto Person/Account Clean Up reduces the number of Person and/or Account records to maintain for customers you do not have an immediate ongoing relationship with.

Steps To Enable

No steps are required to enable this feature.

Customer Service Request Maintenance Object

You can now capture creation and completion details associated with start, stop, and transfer service requests like Created by User, Final Date/Time, and Final User in new fields on the **C1_CSREQ (Customer Service Request)** maintenance object.

This feature enables you to extract additional information through the Generalized Data Export for use by external systems.

Steps to Enable

No steps are required to enable this feature.

Tips and Considerations

For upgrading implementations, you can run the **C1-UPCSR (Update Customer Service Requests)** batch process to populate the following fields on the Customer Service Request table:

- Created by User (C1_CREATED_BY_USER)
- Final Date Time (C1_FINAL_DTTM)
- Final User (C1_FINAL_UESR).

Service Agreements to Start Determination

The system determines the Service Agreement Types for new service agreements based on the previous services, regardless of status, when the previous services are on the same account. The Start SA switch on the service agreements to start reflects the services that are currently switched on or off. When all services are switched off, the service agreements are defaulted to start.

Previously, when previous services have different statuses such as an active electric service and a stopped water service, the new electric service was based on the active electric service and the water service was based on the initial Service Agreement Types defined for the service point's Service Point Type. If Service Agreement Types were not configured as initial for the Service Point Type, service agreements for the service point were not shown and prevented the start service on the service point via the Start/Stop function.

Steps To Enable

No steps are required to enable this feature.

Service Agreements to Start for a Service Point Derivation

The system only includes the service agreement to start based on the Service Agreement Type from the current or recent service for the service point. Additionally, the system automatically notifies you when starting the service to indicate that the Service Agreement Type is not the default for the service point's Service Point Type.

Previously, the system included the Service Agreement Type matching the current or recent service (defaulted to start) and the initial Service Agreement Type for the service point's Service Point Type (defaulted not to start), thus more than one service agreement could be unintentionally started for the service point.

Steps To Enable

No steps are required to enable this feature.

"Add All SA Type When None Are Initial" Feature Configuration Option Type

The "Add All SA Type When None Are Initial" option type, for the **Customer Information Options** feature configuration type, provides control over the behavior when you are starting service for the first time at a service point and initial Service Agreement Types have not been configured as initial service agreement types on the service point's Service Point Type.

Steps To Enable

To enable this feature, configure the "Add All SA Type When None Are Initial" option type on the applicable **Customer Information Options** feature configuration type.

- If the feature option type is set, an entry for each Service Agreement Type for the service point's Service Point Type is created in lieu of a single row without a service agreement type. All entries default to not starting and you must select the service(s) to start from the collection.
- If the feature option type is not set, a single entry is added to the service agreement collection to be started and linked to the service point. The added service agreement allows you to select the Service Agreement Type for the service agreement to start.

Customer Interactions

This section describes the new and enhanced customer interaction features in this release, including:

Template-based Outbound Notifications

You can now initiate template-based outbound notifications to an external system for communication delivery (for example, via email or SMS) and include customer-specific information to provide more personalized interaction. Previously, only message-based notifications were available based on application-owned business objects.

These new application-owned business objects enable you to create **Notification Types** for template-based notifications:

- **C1-NotifTypeTmplSubscription (Template-Based Subscription Notification Type)** - Customers must sign up or subscribe to receive these types of notifications
- **C1-NotifTypeTmplParentPush (Template-Based Parent Push Notification Type)** - Customers do not need to sign up to receive these types of notifications
- **C1-NotifTypeTmplIndividualPush (Template-Based Individual Push Notification Type)** - Customers do not need to sign up to receive these types of notifications

Notification Types based on the **C1-NotifTypeTmplSubscription** or **C1-NotifTypeTmplIndividualPush** business object allows you to:

- Optionally plug in an **Override Delivery Information** algorithm to override the logic that retrieves active contact preferences or the default contact information for an account. The application-owned **C1OVINVGSTDI (Override Invite Guest Delivery Information)** algorithm allows you to only use email as the delivery type if required.
- Plug in one or more **Template Data** algorithms to retrieve information to include in the outbound template-based notification. These application-owned **Template Data** algorithms are available for use if these meet your implementation-specific requirements:

- **C1GUESTNTFTD (Guest Notification Template Data)** - Retrieves guest-related details such as guest name, guest email, and so on
- **C1BILLINFTMP (Bill Information Template Data)** - Retrieves bill-related details such as Bill ID, due date, amount due, and so on
- **C1PAYINFTMPD (Payment Information Template Data)** - Retrieves payment-related details such as payment amount
- **C1COLLNFTMP (Collection Notification Template Data)** - Retrieves collection-related details such as amount due and arrears date

- Define one or more **Template Names** for each **Delivery Type per Language** and use on the resulting outbound notifications.

The following algorithms now support message- and template-based **Notification Types**:

- **C1-BLDNTFPRF (Build Notifications For Notification Preference)** - Used on the **Notify** state of these service task-related business objects:
  - WX-NotifyBillDueTask (Bill Due Notification Task)
  - WX-NotifyBillReadyTask (Bill Ready Notification Task)
  - WX-NotifyLatePayTask (Late Payment Notification Task)
  - WX-NotifyPayReceivedTask (Payment Received Notification Task)
- The Lead Event Completion algorithm based on the **C1-LECNTPF (Create Notification Using Notification Preferences)** algorithm type. Used on the C1-LeadEvtTypeUseNotifPref (Notify Customer Using Communication Preferences) business object.
- Algorithms based on the **C1-DETTOPUP (Determine If Top Up Needed)** algorithm type. Used on the **Determine if Top Up Needed** state of the C1-PrepayBillerTask (Prepay Biller Task) business object.
- Algorithms based on the **C1-CHKBSSTAT (Check PPB Bill Segment Status)** algorithm type. Used on the **Calculating Bill Segment** state of the C1-PrepayBillerTask (Prepay Biller Task) business object.

  Note: The application-owned **C1-NotificationType** business object has been updated to indicate that it is used for message-based notifications. In this release, you can plug in an **Override Delivery Information** algorithm for subscription and individual push-related message-based **Notification Types**.

Template-based outbound notifications elevate your customer interactions with more personalized digital communications.

Steps to Enable

To enable this feature, refer to the Setting Up Notification Preference Options section of the *Oracle Utilities Customer to Meter Administrative User Guide* for more information.

Oracle Responsys Integration for Transactional Outbound Notifications

The integration to Oracle Responsys enables you to send Oracle Utilities Customer to Meter initiated transactional notifications and correspondence to customers via email or

SMS based on their preferred communication channel(s). This end-to-end solution provides the capability to:

- Define template-based Notification Types for each type of outbound notification or correspondence in Oracle Utilities Customer to Meter
- Define algorithms to extract the data required for each type of outbound notification or correspondence in Oracle Utilities Customer to Meter
- Configure the corresponding Notification Templates in Oracle Responsys
- Use Notification Hub for notification queues, enrichment, and communication with Oracle Responsys

The Oracle Integration Cloud-based Notification Hub manages the communication between Oracle Utilities Customer to Meter and Oracle Responsys.

Steps to Enable

To enable this feature, refer to the Configuration Guide related to the integration for more information.

Rating and Billing

This section describes the new and enhanced rate and billing features in this release, including:

- Enhanced Stepped Service Quantity Calculation Rule Type for Prorated Bill Segments
- Rate Calculation Rule - Derive Value Algorithm Types
- Valid Device Configuration Types Processing for Rate Schedules

Enhanced Stepped Service Quantity Calculation Rule Type for Prorated Bill Segments

The **Override SQ Algorithm** plugin spot allows you to specify an algorithm to override a step service quantity calculated by a step rule on rate calculation rules based on the **C1-SteppedSQ (Stepped Service Quantity)** business object. This may be useful in billing scenarios, involving a tiered rate schedule with a unit rate change, resulting in applicable service quantities not adding up to a tier's upper limit. Additionally, you can define **Step Group** values in the **STEP_GROUP_FLG (Step Group)** lookup to enable combining step rules for evaluation and adjustment as a group.

You can use the application-owned **C1-OVRDSTPSQ (Override Step Service Quantity)** algorithm in the plugin spot to ensure that the total calculated step service quantities do not exceed the step limit (prorated due to rate version or value break) and the calculated service quantities sum up to the billable service quantity. If the algorithm does not meet your specific requirements, you can configure a custom implementation-specific algorithm for the plugin spot.

> **Note:** This feature only applies to Stepped Service Quantity based calculation rules where the Seasonal attribute is set to "*No*."

This reduces end customer complaints or calls and frees up your call center agents by ensuring service quantities in a prorated bill are consistent at all levels.

Steps to Enable

To enable this feature, refer to the **Detailed Description** on the C1-OVRDSTPSQ (Override Step Service Quantity) algorithm.

Rate Calculation Rule - Derive Value Algorithm Types

The following Calculation Rule - Derive Value algorithm types are provided for use in various calculation rules:

- **C1MDMACRED (MDMA Credits)** - Creates an appropriate Characteristic Type and Value to handle credits issued to a customer. Issuance of credits is a result of the customer's meter being read by a third-party service provider.
- **C1SEASDAY (Seasonal Days in a Billing Period)** - Creates an entry in the service quantity (SQ) array that contains the number of days in the current bill period that fall in a defined season.
- **C1CALCDA (Calculate Characteristic Type/ Value if Service Agreement Relationship Types Exist)** - Defines the types of parameters supplied to a service quantity rule that creates an appropriate Characteristic Type and Value.
- **C1MOMSCRED (Meter Ownership and MSP Credits)** - Returns the number of meters that are not owned by the company.
- **C1BILLCRED (Bill Credits For Electric Consolidated Billing)** - Define the types of parameters supplied to a service quantity rule that creates an appropriate Characteristic Type and Value

These algorithm types will help reduce implementation-specific extensions when migrating from the component-based rating engine to the rules-based rating engine.

Steps to Enable

To enable these features, refer to the **Detailed Description** on the new Calculation Rule - Derive Value algorithm types.

Valid Device Configuration Types Processing for Rate Schedules

Creating or updating a service agreement triggers a validation process to check if the Rate Schedule defined on the service agreement relates to a valid device configuration type (or types) based on the devices installed at the service points to be billed.

The **Rate Schedule** portal provides a new **Device Configuration Type** section that allows you to review the list of valid device configuration types. The system only displays the section when you define the rate schedule in the D2-CCBRateScheduleLookup (CCB Rate Schedule) extendable lookup. The list of valid device configuration types is a combination of:

- Device configuration types defined in the extendable lookup with an Override Calculation Usage Group
- Device configuration types for the default Usage Calculation Group defined in the extendable lookup

Steps to Enable

No steps are required to enable this feature.

Payment Processing

This section describes the new and enhanced payment processing features in this release, including:

Support for NACHA's Web Debit Account Validation Rule

Automated Clearing House (ACH) originators of web debits, are required to validate a customer's checking or savings account prior to using the account for the first time for an electronic payment. This release enhances several business objects, entities, and batch controls to provide support for the web debit account validation rule.

Business Objects (associated with Inbound Web Services (IWS))

- WX-AutoPayTask (Automatic Payment Setup Task)
  - The CXAutoPaySetUp (Auto Pay Setup) and WXAutoPaySetup (Auto Pay Setup) inbound web services create an automatic payment self-service task for setting up the customer's account with auto-pay details.
  - The WX-AutoPayTask business object includes the "Account Validation" lifecycle state that provides:
    - A **Business Object: Enter** algorithm that calls the Web Debit Account Validation plugin spot when the service task's Web Debit Account Validation flag is set to "Yes" and the account number is not referenced on the account's existing Auto Pay options or Person Self-Service Options.
    - A **Business Object: Monitor** algorithm checks the status of the account validation process and transitions the self-service task to the next appropriate state such as **Process Auto Pay Set Up**, **Account Validation Error**, or **Rejected**.
  - The WX-AutoPayTask business object also includes the "Account Validation Error" state that provides:
    - A **Business Object: Enter** algorithm that creates a To Do Entry error.
    - A **Business Object: Monitor** algorithm for retry processing.
    - A **Business Object: Monitor** algorithm for wait timeout processing that checks if the service task has been in the current state for too long, based on the Wait Timeout Threshold configured on the service task type. If the threshold is exceeded, the algorithm creates a To Do Entry using the To Do Type or To Do Role configured on the service task type and transitions the service task to the **Discarded** state.
  - The related WX-AutoPayTaskType (Automatic Payment Setup Task Type) business object provides an attribute to indicate whether or not the account (first time to be used for an electronic payment) requires web debit account validation.
  - The **Main** tab of the Automatic Payment Setup self-service task includes an **Account Validation Details** section with the following fields:

- **Web Debit Account Validation Status** - Specifies the validation status of the account.
- **Error Wait Timeout Date/Time** - Automatically populated if the service task in in the Account Validation Error state.

- WX-OneTimePayTask (One Time Payment Task)
  - The CXMakePayment (Make One Time Payment) and WXMakePayment (Make One Time Payment) inbound web services create a One Time Payment Task self-service task for managing an immediate or scheduled one-time payment. The created task is based on the WX-OneTimePayTask (One Time Payment Task) business object.
  - The WX-OneTimePayTask business object includes the "Account Validation" lifecycle state that provides:
    - A **Business Object: Enter** algorithm that calls the Web Debit Account Validation plugin spot when the service task's Web Debit Account Validation flag is set to "Yes" and the account number is not referenced on the account's existing Auto Pay options or Person Self-Service Options.
    - A **Business Object: Monitor** algorithm checks the status of the account validation process and transitions the self-service task to the next appropriate state such as **Process Auto Pay Set Up**, **Account Validation Error**, or **Rejected**.
  - The WX-AutoPayTask business object also includes the "Account Validation Error" state that provides:
    - A **Business Object: Enter** algorithm that creates a To Do Entry error.
    - A **Business Object: Monitor** algorithm for retry processing.
    - A **Business Object: Monitor** algorithm for wait timeout processing that checks if the service task has been in the current state for too long, based on the Wait Timeout Threshold configured on the service task type. If the threshold is exceeded, the algorithm creates a To Do Entry using the To Do Type or To Do Role configured on the service task type and transitions the service task to the **Discarded** state.
  - The related WX-OneTimePayTaskType (One Time Payment Task Type) business object provides an attribute to indicate whether or not the account (first time to be used for an electronic payment) requires web debit account validation.
  - The **Main** tab of the One Time Payment Task self-service task includes a **Web Debit Account Validation Details** section with the following fields:
    - **Web Debit Account Validation Status** - Specifies the validation status of the account.
    - **Error Wait Timeout Date/Time** - Automatically populated if the service task in in the Account Validation Error state.

Entities

The **Auto Pay Clearing Staging Record** provides a **Prenote** switch. The base-provided algorithm for Web Debit Account Validation that performs ACH prenotification sets the switch to "True" when the prenotification auto pay staging record is created.

The following entities provide a plugin spot for the **Web Debit Account Validation** algorithm:

- **Auto Pay Route Type**
- **CIS Division** in the **Auto Pay Route Type Override Controls**

You can use the plugin spots to validate the checking or savings account to be used for the first time for web-initiated one-time payments or recurring bill auto pay enrollments. In addition, the base product provides an algorithm for one type of prenotification method for account validation. The **Web Debit Account Validation** algorithm creates a pre-notification auto pay staging record (request) with a zero payment amount and the rest of the auto pay information that includes the new account number.

Batch Controls

The following batch controls can populate the **Entry Details** section of an ACH extract record with the "28 (Check Debit Prenote)" or "38 (Savings Debit Prenote)" **Transaction Code** if the related Auto Pay staging record is a pre-notification:

- **APAYACH (Auto Pay Extract – ACH)**
- **C1-APACH (Auto Pay Extract – ACH (with offset days parameters))**

In addition, these batch controls use the Prenote switch to stamp the specific transaction code on the checking or savings debit prenotification.

These enhancements reduce the need for implementation-specific extensions to support NACHA's web debit account validation rule.

Steps To Enable

Account Validation Error State

The **Business Object: Enter** algorithm for creating a To Do Entry error is an instance of the **F1-TDCREATE** algorithm type (Oracle Utilities Application Framework), which specifies the new C1-AVETD To Do Type as soft parameter. To use the Retry Account Validation monitor algorithm (instance of F1-TODORETRY algorithm type) plugged in to the **Account Validation Error** state, add an algorithm parameter instance that also specifies the Retry Frequency (parameter 11).

The **Business Object: Monitor** algorithm for retry processing is an instance of **TODORETRY** algorithm type (Oracle Utilities Application Framework). To use this **Account Validation Error** state algorithm, add an algorithm parameter instance that specifies the Maximum Retry (parameter 1).

Entities

If your implementation will not use the base package supplied Web Debit Account Validation algorithm, plug in your custom algorithm for initiating that validation process.

Receipt Printing Using Point-of-Sale Printers - Additional Samples

Additional **BPA Script and UI Map samples** for **Payment Event**, **Payment Quick Add**, and **Payment Event Quick Add** transactions enable you to use additional fields for printing receipts or endorsements when using the sample receipt printer functionality as a starting point. The additional fields include information related to organization, payments, tender, and endorsements.

The new **BPA Scripts and UI Maps** include the following:

- **BPA Scripts**

- C1-PyEvtPrt (Payment Event Print)
- C1-PyEvQAPrt (Payment Event Quick Add Print)
- C1-PyQAPrt (Payment Quick Add Print)

- **UI Maps**
  - C1-PaymentEventPrint (Payment Event Print)
  - C1-PaymentEventQuickAddPrint (Payment Event Quick Add Print)
  - C1-PmtQuickAddPrint (Payment Quick Add Print)

Each BPA Script calls the appropriate sample UI Map to open Print Options. Selecting an option (for example, Endorse, Receipt, or Stub) launches the browser's printer dialog.

In addition, updates to the **Point of Sale (POS) Printer Integration** master configuration provide the ability to capture the following information used by the BPA Scripts:

- Company Name
- Company Premise
- Payment Receipt and Endorsement Messages

These additional samples reduce the need for implementation-specific extensions.

Steps to Enable

To enable this feature, refer to the **Receipt Printing** section of the *Oracle Utilities Customer to Meter Optional Products Installation Guide* for more information.

Tips and Considerations

For upgrading implementations, you can run the **C1-UPPSC (Update Point of Sale Integration Config)** batch process to update the enhanced **Point of Sale (POS) Printer Integration** master configuration with the existing Point-of-Sale related configuration from **Installation Options**.

These existing BPA Scripts and UI Maps are not planned to be enhanced but the descriptions have been updated to indicate for network printer use:

- BPA Scripts
  - C1-PEAddPrt (Payment Event Print - for network printers)
  - C1-PEQAddPrt (Payment Event Quick Add Print - for network printers)
  - C1-PyQAddPrt (Payment Quick Add Print - for network printers)
- UI Maps
  - C1-PayEventAddPrint (Payment Event Print - for network printers)
  - C1-PayEventQuickAddPrint (Payment Event Quick Add Print - for network printers)
  - C1-PaymentQuickAddPrint (Payment Quick Add Print - for network printers)

Credit and Collections

This section describes the new and enhanced credit and collections features in this release, including:

Use SA's Service Type Parameter on COLL EVT SEV Algorithm Type

You can set the **Use SA's Service Type (Y/N)** parameter in algorithms based on the **COLL EVT SEV (Nominate A Single SA To Sever)** algorithm type to define the service agreement to sever when different service agreement Service Types are associated with a single service point's Service Type. For example, when water and wastewater service agreements are both associated with a "water" service type. Setting the parameter to "Y" instructs the system to use the service agreement's Service Type. Setting the parameter to "N" instructs the system to use the service point's Service Type and choose the service agreement with the highest balance to sever, regardless of the service agreement's Service Type. Note that when service agreements and service points have the same service type, the setting of the parameter does not have any impact.

The new parameter provides additional flexibility to determine the service agreement to sever as part of collections processing.

Steps To Enable

To enable this feature, complete these steps:

1. Update algorithms based on the **COLL EVT SEV (Nominate A Single SA To Sever)** algorithm type.
2. Set the **Use SA's Service Type (Y/N)** parameter to the value that meets your business requirements.

Key Resources

Refer to the How To Nominate A Single Service To Sever (Rather Than Sever Everything That's In Arrears) section of the *Oracle Utilities Customer to Meter Administrative User Guide* for more information.

Support for Digital Communication-related Collection Process Events

The application-owned **C1COLLEVTNOT (Collection Event Notification)** algorithm type enables you to initiate the creation of template-based notifications to be sent to an external system (for example, Oracle Responsys) for communication delivery. C1COLLEVTNOT-based algorithms can be configured on applicable **Collection Event Types**, which can then be defined in the required **Collection Process Templates**, enabling you to include digital collection events as part of your collection processes to trigger outbound notifications to encourage customers to pay their outstanding debt (for example, communication via email and SMS).

This algorithm type lowers your collections costs and increases customers' likelihood of paying off outstanding debt.

Steps to Enable

To enable this feature, refer to the Setting Up Collection Event Types section of the *Oracle Utilities Customer to Meter Administrative User Guide* for more information.

Data Synchronization

This section describes the new and enhanced data synchronization features in this release, including:

- Synchronization of Notification Contact Preference Information
- Synchronization of Person's Life Support/Sensitive Load Information to Metering Contact Record

Synchronization of Notification Contact Preference Information

Activating or deactivating an account's push- or subscription-based notification's contact preference information triggers the creation of a **synchronization request** to initiate the sending of an **outbound message** to the edge application (for example, Oracle Utilities Network Management System) that requires or used that notification contact preference information. The **Edge Application Notification** section of the **Notification Preferences** master configuration allows you to define the **Notification Types** and **External System** related configuration of the other edge applications to be notified after activation or deactivation of the appropriate notification contact preference.

> **Note:** The **C1-NCPIL (Notification Preference Sync Initial Load)** batch control creates initial Notification Contact Preference synchronization request records that can be used for initiating the initial loading of notification contact preference information into other Edge applications.

This synchronization will help decrease project implementation costs, duration, and risk.

Steps to Enable

To enable this feature, refer to the Other Edge Application Notification section of the *Oracle Utilities Customer to Meter Administrative User Guide* for more information.

Synchronization of Person's Life Support/Sensitive Load Information to Metering Contact Record

The system automatically synchronizes the Life Support/Sensitive Load information on a Person record to the related metering Contact record. Note that the metering Contact record is not viewable and editable on the user interface. Previously, the system only synchronized the Life Support/Sensitive Load information on a Premise record to the related metering Service Point record.

Steps to Enable

No steps are required to enable this feature.

Web Services

This section describes the new and enhanced web services features in this release, including:

- Additional and Enhanced REST APIs for the Integration Suite Web Service Category

Additional and Enhanced REST APIs for the Integration Suite Web Service Category

The following REST API Inbound Web Services expose various customer-related entities and data, and provide capabilities to create, manage, and/or view data:

- C1-Adjustment (Adjustment) - Creates, maintains, and displays adjustment information
- C1-Budget (Budget) - View account's budget information
- C1-Case (Case) - Creates, maintains, and displays case information
- C1-CollectionProcess (Collection Process) - Creates, maintains, and displays collection process information
- C1-CutProcess (Cut Process) - Maintains and displays cut process information
- C1-LandlordAgreement (Landlord Agreement) - Maintains and displays landlord agreement information
- C1-NotificationPreferencesForAccounts (Notification Preferences for Accounts) - Retrieves notification preferences for a collection of accounts and notification types
- C1-OverdueProcess (Overdue Process) - Creates, maintains, and displays overdue process information
- C1-PayPlan (Pay Plan) - Creates, maintains, and displays pay plan information
- C1-SeveranceProcess (Severance Process) - Creates, maintains, and displays severance process information
- C1-WebUser (Web User) - Creates, maintains, and displays web user information
- C1-WebUserAccount (Web User Account) - Creates, maintains, and displays web user's account information
- C1-WriteOffProcess (Write Off Process) - Creates, maintains, and displays write off process information

Steps to Enable

Refer to the Oracle Utilities REST API documentation.

Tips and Considerations

The REST web service library for the Integration Suite web service category requires a separate Integration Suite license. The REST inbound web service references a service script that requires an Application Service for security purposes.

Role Information

System administrators should grant users submitting the REST service with security access to the Application Service. System administrators should also set New Inbound Web Services from Inactive to Active.

Oracle Utilities Network Management System Integration

This section describes the new and enhanced Oracle Utilities Network Management System integration features in this release, including:

- Oracle Utilities Network Management System Integration

Oracle Utilities Network Management System Integration

The Oracle Utilities Network Management System ensures a seamless automated flow of outage information and makes relevant outage information visible to you from a single application. The productized integration supports the following key business processes:

- Synchronization of customer data and trouble calls from Oracle Utilities Customer to Meter to Oracle Utilities Network Management System.
- Query job history, trouble call history, and planned outages from Oracle Utilities Customer to Meter.

Steps to Enable

To enable this feature, refer to the *Oracle Utilities Customer to Meter Integration to Oracle Utilities Network Management Implementation Guide* for more information.

Data Migration Enhancements

This section describes the new and enhanced features related to data migration in this release, including:

- Batch Processes for Migrating Initial Master Data and Scalar Meter Reads

Batch Processes for Migrating Initial Master Data and Scalar Meter Reads

New data migration related batch processes provide the capability to migrate data from specific Oracle Utilities Customer Care and Billing master data objects to specific Oracle Utilities Customer to Meter metering and asset related objects. You can migrate Oracle Utilities Customer Care and Billing data such as person, service agreement, meter, item, service point, service point/meter history, service point/item history, and contract option/event to corresponding Oracle Utilities Customer to Meter metering and asset related objects like contact, usage subscription, device (asset), service point (or node), install event, and dynamic option/event.

These initial data migration processes also cater for migrating scalar meter reads to measurements.

This reduces project costs, configuration time, and migration timelines. It also simplifies migration from the Oracle Utilities Customer Care and Billing data model to the Oracle Utilities Customer To Meter data model.

Steps to Enable

To enable this feature, refer to the **Initial Master Data Conversion** section of the *Oracle Utilities Customer to Meter Administrative User Guide.*

Miscellaneous

This section describes the new and enhanced miscellaneous features in this release, including:

- Attachments Zones
- Restricting Implementation-Specific Values in Notification Controlled By Lookup

Attachments Zones

The application-owned **Attachments** zones in the Portal-related tab pages for the following entities enable you to add, change, view, and delete attachments:

- Person
- Account
- Premise
- Service Agreement

These zones reduce the need to integrate with a separate system to store attachments.

Steps to Enable

No steps are required to enable this feature.

Tips and Considerations

If your system has implementation-specific Attachments zones related to these applicable entities:

- Disable the application-owned **Attachments** zones to continue using your existing implementation-specific zones.
- Disable your implementation-specific **Attachments** related zones and use the application-owned zones.

Restricting Implementation-Specific Values in Notification Controlled By Lookup

The **NTF_CTRL_FLG (Notification Controlled By)** Lookup contains specific predefined values that allow a service task, bill route, or quote route to control an outbound notification for a specific Notification Type. The Custom switch is now unchecked so you cannot add implementation-specific values to this lookup.

This restriction reduces the capture of redundant data.

Steps to Enable

No steps are required to enable this feature.

Meter Data Management and Service Order Management Related Enhancements

This section outlines meter data management, service order management, and smart grid gateway related enhancements introduced in this release of Oracle Utilities Customer to Meter, including:

User Experience Enhancements

This section describes the new and enhanced user experience features in this release, including:

Service Order Management Data in Local Time

The following portals now use and display the time in the Service Point or Installation Event time zone:

- Activities - SOM
- Activities - Command
- Appointment Booking

Previously, the Service Order Management application component did not include a time zone component at the Activity Type level and used the application's default Installation Option time zone, which did not match the time zone of the local service point.

Steps to Enable

No steps are required to enable this feature.

Device and Service Point Enhancements

This section describes the new and enhanced device and service point features in this release, including:

Device Characteristics

Device Characteristics provide projects or multi-commodity utilities with the capability to define valid and required characteristics, configure the characteristics' defaults, and assign the characteristics to be used on a device. For example, the characteristics for a water meter can vary from an electric meter.

Configure and define characteristics for devices using new Device Characteristics zones to reduce project costs.

Steps to Enable

Refer to the **Characteristic Types and Defining Characteristic Types** sections of the *Oracle Utilities Customer to Meter Administrative User Guide* for more information.

Tips And Considerations

You can configure the characteristics for your projects on the device types.

Integration and Data Extract Enhancements

This section describes the new and enhanced integration and data extract features in this release, including:

Consumption Extract Type Caching

With this feature, caching the Consumption Extract Type details and inputs for flagging an Initial Measurement Data for historical extract limits the number of additional processing needed to enable Configurable Consumption Extracts and DataConnect.

This feature improves the efficiency of identifying Initial Measurement Data for historical extract for enabling Configurable Consumption Extract and DataConnect.

Steps to Enable

No steps are required to enable this feature.

Estimation Enhancements

This section describes the new and enhanced estimation features in this release, including:

Post Conversion Estimation Updates

The following updates to the Post Conversion Estimation processes prevent the creation of estimations for prior periods and reduce the overall period estimation runtime:

- Addition of fields to the Interval and Scalar Measuring Component Types that set the maximum number of prior days that periodic estimation will consider.
- Each periodic estimation run now considers the "No of Hours in Past to Retrieve Last Usable Measurement" Measurement Data Option Feature Configuration option if the Measuring Component Type does not include a preconfigured maximum number of days to estimate.
- The new D1-IMCDT (Initialize Measuring Component Dates) batch control allows you to initialize key estimation-related dates and times for measuring components prior to the initial periodic estimation run. The batch control initializes the most recent non-estimated date and time based on final measurements, updates the most recent measurement date and time based on final measurements, and updates all measuring components to a supplied last contiguous measurement date and time.

Steps to Enable

To enable the Measuring component maximum number of days to estimate, complete these steps:

1. Navigate to the Measuring Component Type.
2. Edit the Measuring Component Type and provide the **Maximum Days to Estimate**.

To enable the Measurement Data Options feature configuration, complete these steps:

1. If the Feature Configuration does not yet exist, add a new Feature Configuration for the Feature Type Measurement Data Options.
2. Navigate to the Measurement Data Options Feature Configuration.
3. Add an option for "No of Hours in Past to Retrieve Last Usable Measurement" and provide the maximum number of hours.

To use the D1-IMCDT (Initialize Measuring Component Dates) batch control, complete these steps:

1. If you would like to run on a subset of Measuring Components, create a duplicate of the batch control with a new version of D1-IMCDT-SR (Select Measuring Components for Initialization) that contains a query to identify the Measuring Components to update.
2. Add a submission for the batch control, supplying the appropriate values for Most Recent Non-Estimated Measurement Date/Time, Most Recent Measurement Date/Time, and Last Contiguous Measurement Date/Time.
3. Supply the appropriate number of threads.

Key Resources

Refer to **Running Initial Periodic Estimation** in the *Oracle Utilities Customer to Meter Administrative User Guide* for more information.

Oracle Field Service Integration Enhancements

This section describes the new and enhanced Oracle Field Service Integration features in this release, including:

- Multiple Service Histories Support
- Oracle Field Service Cloud Integration

Multiple Service Histories Support

In this release, multiple service histories (work instructions and questionnaires) for field tasks that are applicable to the Meter Data Management/Service Order Management application component and the Operational Device Management application component are created for devices that are tracked as assets. The Meter Data Management or Service Order Management application component serves as a conduit for sending a list of service history types configured in the Operational Device Management application component on activity types and asset types to the field work system (for example, Oracle Field Service Cloud) as part of the Field Activity synchronization request. Upon completion of the field work, the Meter Data Management or Service Order Management application component takes the completion information related to service history types and initiates the Operational Device Management activity completion event that records the service history on the asset.

Multiple service histories is most applicable to scenarios where a shared activity is created directly in the Meter Data Management or Service Order Management application component for a tracked device.

Steps to Enable

To enable this feature, update field task types that Meter Data Management/Service Order Management and Operational Device Management application components share

or jointly own to include the enrichment service for Asset System Data Retriever in the Processing Scripts section and set it as X1-AstSysRet.

Oracle Field Service Cloud Integration

The Oracle Field Service Cloud integration enables the passing of device-related field activities like meter test or device inspection to Oracle Field Service Cloud for scheduling, routing, and completion. The integration supports passing of planned service histories or forms for an activity and valid service histories for each asset linked to the activity that the crew can complete on the field.

The Oracle Field Service Cloud integration provides the capability to pass a collection of planned service histories for an activity and pass valid service histories for each asset linked to the activity, which field crews can complete.

Steps to Enable

To enable this feature, refer to the *Oracle Utilities Meter Data Management Integration to Oracle Field Service Cloud Configuration Guide* and *Oracle Field Service Cloud Configurations Setup Guide* for more information.

Product Usability Metrics

This section describes the new and enhanced product usability metrics features in this release, including:

- Meter and Channel Counts Without a Usage Subscription

Meter and Channel Counts Without a Usage Subscription

The Product Use Metric dashboard provides the ability to calculate meter and channel counts without consideration of usage subscriptions and view master data counts. This allows you to see meter and channel counts in implementations that are not using the usage calculation functionality.

Steps to Enable

To enable this feature on implementations that require device count independent of Usage Subscription, set the **Exclude US Check (Y or N)** parameter to "Y" on algorithms with the D1DVCCNTSNP (Create Device Count Snapshot) algorithm type.

To enable this feature on implementation that require channel count independent of Usage Subscription, set the **Exclude US Check (Y or N)** parameter to "Y" on algorithms with the D1-CHLCNTSNP (Create Channel Count Snapshot D1-CHLCNTSNP) algorithm type.

Service Orders

This section describes the new and enhanced service order features in this release, including:

- Service Orders and Field Tasks by CIS Division
- Capture Field Activity Reschedule Reason
- Mirroring Field Activity's Cancel Reason

Service Orders and Field Tasks by CIS Division

Multi-division companies that issue different types of work requests by service type or region are able to configure varying service orders and field tasks by operating division. Examples of these service orders and fields tasks are service order orchestration processes, supporting different work calendars, start/end hours, and crews. Companies can also limit the field task types by division. This is useful for multi-division companies that issue different types of work requests by service type or region.

Steps to Enable

To enable this feature, complete these steps:

1. Select the **Control by CIS Division** configuration in Installation Options.
2. In the **Miscellaneous** tab of the **User** portal, set the user's default division and other divisions.
3. Configure the applicable divisions on applicable service point types.
4. Configure valid Field Task Types and applicable disconnect locations on applicable service point types.
5. Configure the applicable divisions on the Service Order Management activity type. Note that a new S**ervice Order Management (SOM) Activity Type** portal exists to support this.

Capture Field Activity Reschedule Reason

The Service Order Management application component provides the ability to capture the reason for a field activity reschedule of a rebooked appointment or changed service date. In a Customer to Meter implementation, the Customer Care and Billing field activity is not exposed and the rescheduling only applies to the Service Order Management field activity. The reschedule reason of the Customer Care and Billing field activity is automatically synchronized to the corresponding Service Order Management field activity. However, if rescheduling is made directly on the Service Order Management field activity, the reschedule reason is not automatically synchronized with the Customer Care and Billing field activity.

Steps to Enable

To enable this feature, set up the Service Order Management application component's Reschedule Reason extendable lookup.

Mirroring Field Activity's Cancel Reason

The system mirrors the reason for canceling a Service Order Management field activity to the corresponding Customer Care and Billing field activity. Previously, the system only assigned the cancel reason to the corresponding Customer Care and Billing field activity.

Steps to Enable

To enable this feature, set up the Service Order Management application component's Cancel Reason extendable lookup.

Smart Grid Gateway Enhancements

This section describes the new and enhanced smart grid gateway features in this release, including:

Landis+Gyr Adapter Updates

Landis+Gyr v8.1 is now supported.

Steps To Enable

To enable this feature, refer to the **Smart Grid Gateway Adapters** section of the *Oracle Utilities Customer to Meter Administrative Guide* for more information.

Itron OpenWay Adapter Updates

Itron OpenWay Operation Center v5.3 and v5.4 are now supported.

Steps To Enable

To enable this feature, refer to the **Smart Grid Gateway Adapters** section of the *Oracle Utilities Customer to Meter Administrative Guide* for more information.

Sensus Adapter Updates

Sensus RNI version 4.10 is now supported. This reduces maintenance costs.

Steps To Enable

To enable this feature, refer to the **Smart Grid Gateway Adapter Native Implementations** section of the *Oracle Utilities Customer to Meter Administrative User Guide* for more information.

Silver Springs Network Adapter Updates

Itron SSN (AMM) version 4.14 is now supported, allowing the use of the latest SSN head-end system version. The updated SSN adapter reduces maintenance costs and enables the use of the latest SSN head-end system.

Steps To Enable

To enable this feature, refer to the **Smart Grid Gateway Adapter Native Implementations** section of the *Oracle Utilities Customer to Meter Administrative User Guide* for more information.

Throttle Disconnect Commands for Nonpayment

The Throttle Disconnect Commands for Nonpayment feature provides the capability to limit the number of disconnect commands sent per hour. By limiting the number of disconnect commands that occur at once, customer call centers will not be overwhelmed with service calls (for example, outage or payment) when processing large numbers of device disconnect activities.

Steps To Enable

To enable this feature, complete these steps:

1. Verify that Cut for Non Payment Orchestration Service is set to "Restricted to Business Hours."
2. Configure the Remote Disconnect Activity Type by setting the Throttle Option to "Allowed," the schedule, and the number of requests to process.
3. Schedule the D1-CRWTO (Command Request Wait Monitor with Throttle Option) batch job to be inline with the Remote Disconnect Type schedule. Note that you can use this batch job for all commands but should not be used in conjunction with older batch jobs that call commands.

Tips And Considerations

As of this release, throttling is only available with Remote Disconnect smart meter command activities.

Sensus Adapter - Unit of Measurement Filtering for On-Demand Reads

The Sensus adapter provides Unit of Measurement (UOM) filtering to exclude irrelevant meter readings from an on-demand read (ODR) request. UOM filtering disregards any units of measure that do not have the corresponding Meter Data Management application component measuring component. Previously, the Sensus ODR process provided all possible units of measure for a device and if the unit of measure is not setup as a measuring component for the device IMD Seeder errors occurred.

Steps To Enable

No steps are required to enable this feature.

Miscellaneous Enhancements

This section describes the new and enhanced estimation features in this release, including:

- Dynamic Aggregation Totalization
- Dynamic Multi-Reaggregation
- Dimension Scanner and Aggregation Monitor Performance Improvements
- Measurement Quality and Timeliness Dimension Scan Batch Control

Dynamic Aggregation Totalization

The Dynamic Aggregation Engine now uses the same totalization rules as that of the Billing Determinant Engine. The aggregation process considers the Measuring Component rules and the Usage Subscription-Service Point rules when totaling usage. For example:

- Measuring Component Rules
  - How to Use: Valid values are Additive, Check, Peak, and Subtractive
- Usage Subscription-Service Point Rules
  - How to Use: Add, Check, Subtract

- Use Percent: Percentage in whole numbers, for example 50 = 50%

Steps to Enable

To enable this feature on the Measurement from US Service Points and Measurements from US Direct Links data sources, you should set the **Apply Usage Subscription Multiplier** to "Yes."

Dynamic Multi-Reaggregation

The D1-GAGRR (Generate Aggregation Group Run for Re-Aggregation) batch control allows downstream processes to perform multiple dynamic aggregation on the same business day by generating a new aggregation group for each batch control run. You can schedule multiple runs of the batch control, which is helpful for complex customer billing that need to re-aggregate before running the billing processes.

Steps to Enable

You can schedule a D1-GAGRR batch job at each point of the day that requires re-aggregation. Optionally, you can provide an Aggregation Group Code to limit the re-aggregations into a single aggregation group.

Dimension Scanner and Aggregation Monitor Performance Improvements

In this release, the D1-DSAEM (Dimension Scanner and Aggregation Monitor) batch control provides multi-threading support, which improves batch job performance and results to faster completion time. This saves time and results in a more efficient process.

Steps to Enable

No steps are required to enable this feature.

Measurement Quality and Timeliness Dimension Scan Batch Control

The D1-MQTDS (Measurement Quality and Timeliness Dim Scan) batch control provides the capability to perform dimension scans for timeliness and quality aggregation. With multi-threading enabled on the batch control, you can expect improved performance and reliability, and you have the ability to save the progress of interrupted batch runs. Additionally, the batch control consolidated the handling of explicit references to Usage Groups and dynamic determination of usage groups on Usage Subscriptions. A single Activity and Activity Type is applicable to both Usage Group determination methods. The batch control also simplifies the calculation of an Initial Measurement Data's timeliness by removing the need to plug in the D2-DET-TML (Determine IMD's Timeliness) algorithm to Initial Measurement Data business objects.

Steps to Enable

If the implementation uses D2-MsrmtQuantityAggScanner (Measurement Quantity Scanner), additional configurations are not required.

If the implementation uses D2-SubMsrmtQDUCAggScanner (Dimension Scanner - Create Aggregators) and D2-MsrmtQDUCAggScanner (Dimension Scanner - Create Sub Scanner), complete the following steps to enable the feature:

1. Navigate to Activity Type and find the "Measurement Quantity Scanner" entry. If no "Measurement Quantity Scanner" Activity Type exist then create one.

2. Deactivate the Dimension Scanner - Create Aggregators activity type.
3. Deactivate the Dimension Scanner - Create Sub Scanner activity type.
4. Add an activity with a Measurement Quantity Scanner activity type and associate this with the Aggregation Measuring Component Type and Market Relationship Type configured for the Dimension Scanner - Create Aggregators-based activity.
5. Deactivate Dimension Scanner - Create Aggregators-based activities.
6. Deactivate Dimension Scanner - Create Sub Scanner-based activities.
7. Navigate to each Initial Measurement Data business object and remove the D2-DET-TML (Determine IMD's Timeliness) algorithm.

Operational Device Management Related Enhancements

This section outlines relevant operational device management-related enhancements introduced in this release of Oracle Utilities Customer to Meter, including:

Asset Management Enhancements

This section describes the new and enhanced asset management features in this release, including:

Asset Disposition Tab

You can review and analyze asset information through the **Asset Disposition** tab of **Assets** portal. This tab displays the **Disposition History** zone, previously displayed in the **Main** tab, and provides a new **Components History** zone that enables you to review components attached to assets.

Steps to Enable

No steps are required to enable this feature.

Work Management

This section describes the new and enhanced work management features in this release, including:

Send Updated Activity Details to External System

Synchronize the updated activity details of your Operational Device Management application component and external systems. Previously, Operational Device Management application component did not notify external systems of any updates made to the activities that the external system created.

Steps to Enable

No steps are required to enable this feature.

Miscellaneous Enhancements

This section describes the new and enhanced asset management features in this release, including:

Contextual Insights in Assets Portal

The **Assets** portal enhances your user experience through new Badge Contextual Insights for asset condition rating and asset location criticality. Contextual insights enhance the user experience by drawing attention to specific asset conditions.

Steps to Enable

To enable this feature, complete these steps:

1. Add and configure the W1-AssetConditionScoreBuckets (Asset Condition Score Bucket Configuration) business object by selecting **Admin** then **B** and the **Bucket Configuration** menu item.
2. Add and configure the W1-AssetCriticalityBuckets (Asset Criticality Bucket Configuration) business object by by selecting **Admin** then **B** and the **Bucket Configuration** menu item.
3. Configure W1ASCNLOCCRT (Asset Condition and Location Criticality) and related badge Insights and Insight Types algorithms.
4. Add an Insight Group to the asset condition by selecting **Admin**, then **I**, select **Insight Group** then **Add**. Set the Insight Class to "W1AC (Asset Condition)" and Valid Visual Structure to "Badge Insight". Add the created Asset Condition Insight Type to the Insight Type list of the insight group.
5. Add another Insight Group to the asset condition. Set the Insight Class to "W1LC (Asset Location Criticality) and Valid Visual Structure to "Badge Insight". Add the created Asset Criticality Insight Type to the Insight Type list of the insight group.

Operational Device Management-Service Order Management Integration

This section describes the new and enhanced Operational Device Management-Service Order Management Integration features in this release, including:

Support for Multiple Service Histories Per Asset for Operational Device Management - Service Order Management Integration

You can now create multiple service history questionnaires for Operational Device and Service Order Management activities. In addition, new Service History Types are maintained in the corresponding Activity Type and Asset Type. Previously, only one service history questionnaire was created for Operational Device and Service Order Management activities.

This allows accumulation of additional service information through the creation of multiple service histories for Operational Devices and Service Order Management activities.

Steps to Enable

1. Update the activity's Activity Type with the Service History Types valid for the activity.
2. Update the asset's Asset Type with the Service History Types valid for the asset.

Tips and Considerations

The list of valid Service History Types sent to Service Management are maintained in Activity Type and Asset Type.

System Wide

This section describes the new and enhanced system wide features in this release, including:

- Crew, Asset, and Asset Location Search Enhancements
- Unified Search
- Menu Items Display Order

Crew, Asset, and Asset Location Search Enhancements

Crew-related search fields now appear as drop-downs throughout the application. In addition, asset-related search fields support badge numbers as alternate keys for asset IDs and asset location-related search fields support tag numbers as alternate keys for location IDs.

Steps to Enable

No steps are required to enable this feature.

Unified Search

Unified Search provides support for finding asset and asset locations. You can use the filter rules and hints provided by the table in the unified search box:

Filter	Filter Rule	Hint	Comments
Badge Number	Minimum five characters excluding whitespaces	bn: | BN:	Applicable to asset search only
Serial Number	Minimum five characters excluding whitespaces	sn: | SN:	Applicable to asset search only
Tag Number	Minimum five characters excluding whitespaces	tn: | TN:	
Building	Minimum two alphanumeric characters excluding whitespaces	bl: | BL:	

Filter	Filter Rule	Hint	Comments
Address 1	One ore more numeric characters followed by a space and an alphanumeric character	ad: | AD:	
Description	Minimum five characters excluding whitespaces	ds: | DS:	

Unified search results display a maximum of 20 records.

Steps to Enable

To use the unified search for assets and asset locations, add users to a group with access to the following applications:

- W1-ASSETUNISRCH (Asset Unified Search)
- W1-ASTLOCUNISRCH (Asset Location Unified Search)

Tips and Considerations

By default, Unified Search only uses asset search. If you prefer asset location search, deactivate asset search by completing these steps:

1. Navigate to Extendable Lookup.
2. Search and navigate to the F1-UnifiedSearch business object.
3. Set the status of W1-AssetUnifiedSearch (Asset Unified Search) to "Inactive."
4. Save the changes.
5. Log off and log in to the application.

Menu Items Display Order

The context menu is now ordered as follows:

- Go To > the object. Asset, if available, is the first item in the context menu.
- Quick View, if available, is the second item in the context menu.
- All remaining items are listed in alphabetical order.

Steps to Enable

No steps are required to enable this feature.

System Data Details

Refer to the **System Data Details** sections in the following documents for information about new and updated system data delivered in this release of Oracle Utilities Customer to Meter that may need to be reviewed for possible impact by implementations:

- *Oracle Utilities Customer Care and Billing v2.9.0.0.0 Release Notes*

- *Oracle Utilities Meter Data Management v2.5.0.0.0 Release Notes*
- *Oracle Utilities Operational Device Management v2.4.0.0.0 Release Notes*

Known Issues in This Release

There are no known issues in this release.

Supported Integrations

The following integrations are supported in this version of Oracle Utilities Customer to Meter.

Note: Version numbers listed below are supported as of the v2.9.0.0.0. release (April 2022). 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

- C2M V2.9.0.0.0 to Oracle Utilities Network Management System V2.4.0.x, or V2.5.0.x

Other Integrations

Refer to the **Supported Integrations** sections in the following documents for information about other integrations that are supported in this version of Oracle Utilities Customer to Meter:

- *Oracle Utilities Customer Care and Billing v2.9.0.0.0 Release Notes*
- *Oracle Utilities Meter Data Management v2.5.0.0.0 Release Notes*
- *Oracle Utilities Operational Device Management v2.4.0.0.0 Release Notes*

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 included in the package and includes its own installation instructions. Please refer to the *Oracle Utilities Customer To Meter Database Administrator's Guide* for more information or contact Oracle Support.

Oracle Utilities Application Framework v4.5.0.0.0 Release Notes

This section describes enhancements, system data details and deprecation notices in Oracle Utilities Application Framework v4.5.0.0.0 including:

- Product Usability
- Integration Enhancements
- Data Export
- To Do Management and Processing Enhancements
- Batch Processing Enhancements
- Implementation Tool Enhancements
- Analytics
- Miscellaneous Enhancements
- Web Services
- 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.

Product Usability

This section describes the new and enhanced product usability features in this release, including:

- Redwood User Experience
- Batch Day Dashboard and Batch Run Threads Portals
- Dashboard Portal Controls - User Preferences
- Display Domain Name in Toolbar
- Enhanced Button Web Component
- New Base Display Icon Images Provided
- Tabbed Display
- Issue Detail Collector Tool
- Switch UI View Option
- User Search Shows Enabled Users by Default
- Adjust Menu Sequences
- Entity Tags
- Field References
- Filter Area On Data Explorer Collapses After Search
- Inbound SOAP Web Service Debugging Improvement

- Menu Application Security Portal
- New Hot Keys for Navigation
- New User Experience
- Open API Specification Enhancements
- User Group Services Management - Filter User Groups by Entity Tag
- Ability to Configure a Warning when Downloading Data

Redwood User Experience

Oracle's Redwood user experience introduces a new compact page header that takes up less vertical space to allow more page content to be displayed, as well as new portal tabs, buttons, background colors, borders, and fonts all updated to match the overall Redwood user experience found in other Oracle applications.

Oracle Redwood provides a consistent user interface experience across Oracle's latest solutions.

Steps to Enable

To enable the Redwood user experience, add the `redwood=true` parameter to your application or environment URL.

Key Resources

Refer to the **Redwood Look and Feel** section of the *Oracle Utilities Customer to Meter Business User Guide* for more information.

Unified Search

Oracle's Redwood user experience provides a single search box to quickly retrieve customer, account, and meter information such as customer name, premise address, account ID, badge/serial number, and more (where applicable). For more complex queries, you can use the link provided to navigate to a pre-configured advanced search portal. You can also search for Oracle Utilities application menu items using the same single search box.

Unified Search allows you to quickly find customer, account, and meter information without leaving the current page.

Steps to Enable

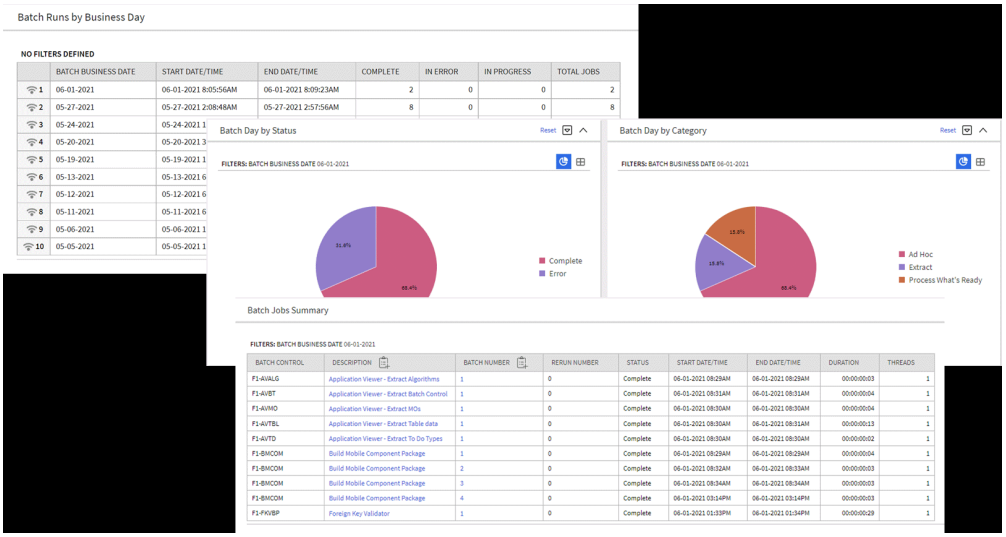
To enable the Redwood user experience, add the `redwood=true` parameter to your application or environment URL.

Key Resources

Refer to the **Unified Search** section of the *Oracle Utilities Customer to Meter Business User Guide* for more information.

Batch Day Dashboard and Batch Run Threads Portals

The **Batch Day Dashboard** portal provides a high level summary of the batch jobs that ran for a given business date. It provides analysis by job status and job category using analytic charts. The batch jobs summary provides links to the Batch Run Threads portal and the Batch Run Tree for a selected batch run.



The **Batch Run Threads** portal provides a high level summary of the threads for a given batch run. It provides analysis by various criteria using analytic charts. The portal is accessed via a link from the batch jobs summary zone on the Batch Day Dashboard portal.

An implementation may introduce additional zones to these portals as needed.

The introduction of the **Business Day Dashboard** allows you to quickly determine the state and performance information of your batch workloads using the Business Date as a key dimension. The portal contains zones to provide details about state and individual thread performance to assist in detecting data and performance issues with individual batch workloads.

Steps To Enable

No steps are required to enable this feature.

Tips And Considerations

This table lists the new application services for the portals.

Object	New Application Service
Batch Day Dashboard	F1BTCHDY
Batch Run Threads Portal	F1BTCHTH

Dashboard Portal Controls - User Preferences

Oracle's Redwood user experience enables you to set the following **Dashboard** portal control options according to your preferences:

- Collapsed/Expanded Portal: The system retains the collapsed **Dashboard** portal after your logged out and start a new session. Previously, when you ended your session with your **Dashboard** portal collapsed, the system displays an expanded **Dashboard** portal the next time you logged in to the application.
- Portal Width: You can resize or adjust the width of the **Dashboard** portal by using a slider and the system retains your preferred width even after logging out of the application. Previously, your needed to navigate to User Preferences to adjust the width of the **Dashboard** portal.

- Vertical Position: You can position the **Dashboard** portal on the left or right side of the screen. Previously, the portal's position is fixed on the right side of the screen.

Steps to Enable

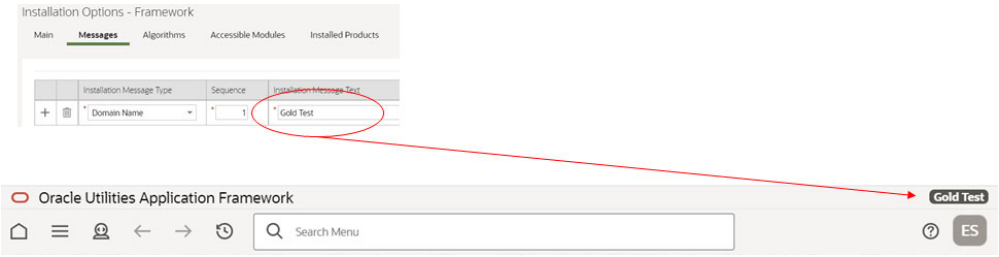
To enable the Redwood user experience, add the `redwood=true` parameter to your application or environment URL.

Tips And Considerations

Refer to the **User Preferences** section of the *Oracle Utilities Customer to Meter Administrative User Guide* for more information on defining the portal's location.

Display Domain Name in Toolbar

The system supports defining a domain name using an installation message. When using the Redwood user experience view, the text entered in the **Installation Message Text** for an Installation Message of type "Domain Name" is displayed in the title bar.



Implementations with multiple environments for development, testing, production, and others can easily identify their current environment using this name.

> **Note:** This feature is only supported under the Redwood user experience view. Refer to online documentation for more information on Redwood user experience view.

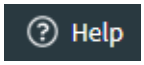
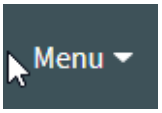
Steps to Enable

To enable the Redwood user experience, add the `redwood=true` parameter to your application or environment URL.

Enhanced Button Web Component

The enhanced button web component (ou-button) provides a number of button formats:

Object	New Application Service
 or 	Icon buttons show only an image, such as the search and filter icons. This was previously the only button format supported.

	Text buttons show text within a shape or outline.
	Text + Icon buttons show text aligned with an icon.
	Menu buttons show text and a down caret.
	Icon Menu buttons show an icon and a down caret.

In addition, the ou_button component supports the use of a Display Icon Reference instead of a direct reference to the image file and the ability to reference edge application owned images, including SVGs.

Steps To Enable

No steps are required to enable this feature.

New Base Display Icon Images Provided

Several additional SVG icons are provided for use in contextual insights and trees, and other user interface features that support SVG icons.

Icon	ID	Description
	F1ARRCL	Left Arrow - Circled
	F1ARRCR	Right Arrow - Circled
	F1BLDING	Building
	F1BOOK	Book
	F1CHK	Check

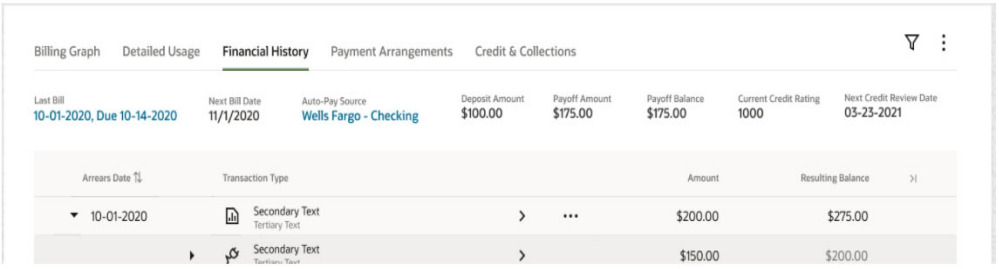
	F1CLOSE	Close
	F1CLOSEC	Close - Circled
	F1EVT	Event
	F1EVTN	Event Note
	F1KMBOOK	Knowledge Management
	F1NOIMG	Image Not Found
	F1REFNCE	Reference

Steps To Enable

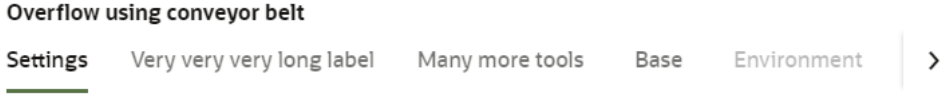
No steps are required to enable this feature.

Tabbed Display

A new zone type is introduced that allows a single zone to display different panels of information using tabs.



The zone supports up to 50 zones as tabs with overflow support when the tab display exceeds the screen resolution available.



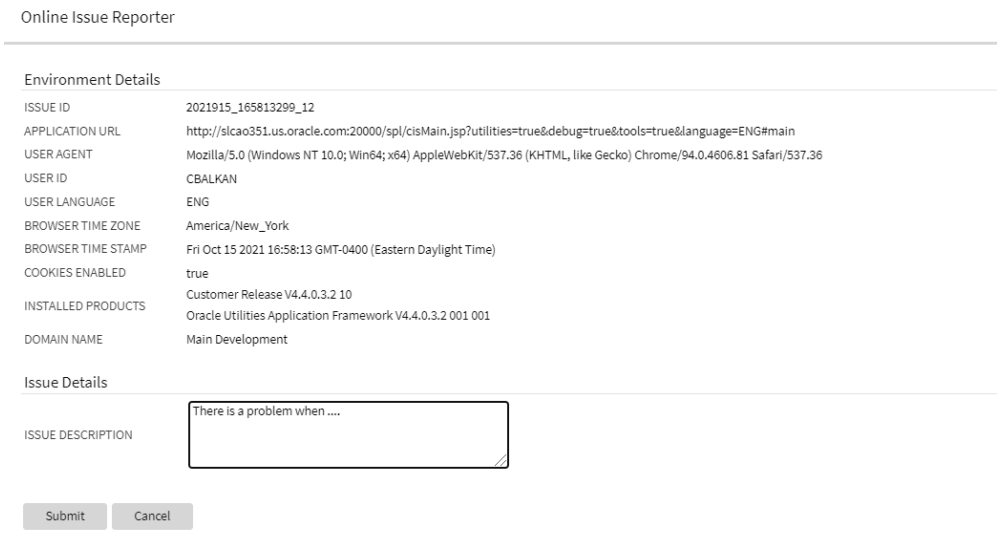
The **Tab Display** zone supports the display of complex of information using tabs within a single zone. This allows you to stay within a context of a zone, but it allows for flexibility in the information available in that zone to reduce your time and costs.

Steps To Enable

No steps are required to enable this feature.

Issue Detail Collector Tool

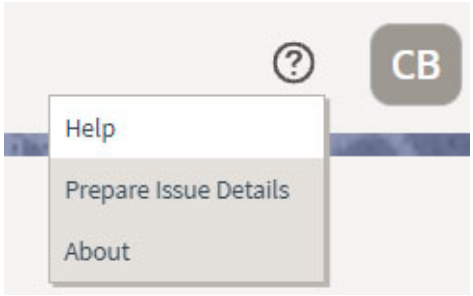
When a user encounters an error with the product and submits a service request, information about the environment, release, and configuration of the user is often very helpful in understanding the cause of the problem. The issue collector script can be used to capture the environment details and issue description for reporting purposes. The script is accessed via the Prepare Issue Details item in the Main - Tools submenu. A popup window is provided to display the details that are being captured and allows the user to add additional text describing the specific issue.



When the details are submitted, they are added to the system log, together with a unique identifier, so the information can be searched when investigating the problem.

The menu item is secured so that implementations may choose which users have access to this capability.

Redwood Only: Note that for the Redwood user interface, the help menu on the toolbar includes a menu item for launching this window. If you are able to access this option through the **Main - Tools** submenu, you will also see the option in the **Help** menu.



Steps to Enable

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

Role Information

System administrators should set grant users or grant access to the F1-PREPISSUEDTLS application service for the Prepare Issue Details menu item.

Switch UI View Option

The User menu now includes a Switch UI View option that allows users to switch the user interface between the standard look and feel and the Redwood User Experience introduced in a previous release.

The Switch UI View option in the User menu can also be secured using the F1UIVIEW application service.

This option provides an easier method to switch between user experiences than manually changing the environment URL. Implementations may now control which users, if any, have the ability to toggle between the new Redwood look and feel and the standard look and feel.

Steps to Enable

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

Role Information

System administrators should grant access to the F1UIVIEW application service for those users who will be allowed to switch between user experiences.

User Search Shows Enabled Users by Default

The zone-based user search that is used for any portal-based user interface where a user record needs to be selected now shows only enabled users in the result by default. Enabled users are those whose User Enable flag is set to "Enabled". If you want to include inactive users in your search criteria (users whose User Enable flag is set to "Disabled"), you can check the new "Include Inactive Users" filter.

Steps To Enable

No steps are required to enable this feature.

Adjust Menu Sequences

The system's menu configuration includes sequence numbers to allow control over the order of menu lines throughout the system. If sequence numbers of one or more entries are the same, the system orders those lines alphabetically. Unless there are special circumstances, the product standard is to use the sequence number 50 for all menu lines that are part of the Main Menu or Admin Menu configuration.

Several Oracle Utilities Application Framework-delivered menu lines have been updated to sequence 50 to align with this product standard. The My Preferences menu entry on the Main Menu has a higher sequence (80) so that its position is always last in that menu.

Steps To Enable

No steps are required to enable this feature.

Entity Tags

Entity tagging supports grouping of configuration, demo, and test related entities so they can better describe a logical function. Each group is represented by a "tag" and entities may be associated with multiple tags.

A **Tags** dashboard zone allows the user to add, remove, and review tags for an entity. The zone is secured by an application service so that it is only available to applicable user roles. The **Entity Tag** portal lists all entities linked to a tag and supports mass actions for associating configuration entities with a tag.

Steps To Enable

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

Role Information

System administrators should grant access to the following application services:

- F1-ENTYTAG application service for the Entity Tag maintenance object.
- F1ENTAG application service for the Entity Tag maintenance portal.
- F1ENTAGS application service for the Entity Tag query portal.
- F1-TAGS application service for the Tags dashboard zone.

Field References

A References tab is added to the Field portal to list application components that explicitly reference the field record. You can review all application references of a field record.

Steps To Enable

No steps are required to enable this feature.

Filter Area On Data Explorer Collapses After Search

The filter area now collapses when searching on data explorer zones in all cases. The Expand Filters button becomes visible, allowing you to adjust your search criteria, if desired.

Previously, this behavior only occurred if the query resulted in more than two records. The behavior is now consistent for all results.

Steps To Enable

No steps are required to enable this feature.

Inbound SOAP Web Service Debugging Improvement

If your inbound SOAP web service uses XSL transformation, the debug log now includes the details of the document before and after the XSL transformation. You now see more information in the debug output for inbound SOAP web services that use XSL transformation.

Steps To Enable

No steps are required to enable this feature.

Menu Application Security Portal

A user may require several application service grants to properly work with the application components associated with a specific menu line. A new **Menu Application Security** portal is provided to assist with maintaining application security for a user group and the application services associated with a specific menu line. The portal is accessible from a new **Menu Links** dashboard zone that is available when reviewing the Menu page.

The **Application Services Linked** and **Application Services Unlinked** zones now include a filter by entity tag, allowing you to refine the list of application services by logical function.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

An upgrade script updates all user groups that currently have access to the existing **Menu** page application service CILEMNUP to have the same access to the new portal application service F1MENU.

New Hot Keys for Navigation

The new hot key **Alt+[** allows you to quickly move the cursor focus to the next major page component. You can use Shift+Alt+[to reverse the navigation order. The major page components include:

- The menu or toolbar area
- The Dashboard
- The Page Title area
- The main Page Area, including the tabs for the current page and the display area of the current page

The new hot key **Alt+]** allows you to quickly move the cursor focus to the next zone. You can use **Shift+Alt+]** to move the cursor to the previous zone. For portal-based pages, this key navigates through zones in the portal and through the zones in the Dashboard. For fixed pages, the key applies to navigation of zones within the Dashboard portal.

Steps To Enable

No steps are required to enable this feature.

New User Experience

The product provides an updated user experience referred to as Redwood. The new experience includes a compact page header that takes up less vertical space to allow more page content to be displayed, as well as new portal tabs, buttons, background colors, borders, icons, and fonts. Previously, this user experience was only available by turning on a URL parameter. This parameter is no longer supported or necessary, and the experience has been enriched.

The following are highlights from the Redwood user experience:

- Palette and Icons - The color palette and icons reflect a more modern and streamlined user experience.

- Unified Search - There is a single search box to perform comprehensive searches for data relevant to your application, based on search options supplied by your specific product.
- Dashboard Controls - The default location for the dashboard is now on the left. User preferences allow you to configure it on the right, as before. In addition, the state of the dashboard (its width and whether it is open or closed) are captured in the user preferences and remain set until changed again.
- Portal or Zone Configuration - There is advanced configuration for portals and zone layout, including new width options and height options.
- Domain Name Display - Installation Options allow you to define a domain name for an environment. This information is displayed in the toolbar.

You can use the Switch UI View option in the user menu to revert the user experience to the previous one for the current session. This option is only visible if the user has been granted access to the appropriate application service.

Oracle is transitioning all its products to a new consistent user experience, branded the Redwood experience. The Oracle Utilities Application Framework has implemented this experience to provide a more consistent and modern interface with new design elements including consistent color, layout, fonts, behavior and icongraphy.

Steps To Enable

No steps are required to enable this feature.

Tips And Considerations

Note that to view the underlying HTML for a page, you should use the **Inspect** option rather than **View Source** or **View Frame Source**. With the Redwood user experience, the "view source" options no longer include the underlying HTML source code.

Open API Specification Enhancements

The Open API Specification document generated for an Inbound Web Service complies with up-to-date schema definition standards.

Note that the changes do not impact the request and response schemas used by the web service at run time and therefore should not cause upgrade issues.

The following sections describe the changes introduced in this release:

- Schema Reference

  The primary changes is to how a schema is referenced using the $ref attribute and how its root node is defined for when XML format is used.

  Previously, the $ref definition referenced the "root" element of the request and response schemas using a nested reference within the schema definition. This was needed to ensure that in XML format the same root node was included in the request and response schemas.

  ```
  "$ref": "#/components/schemas/CREATEPERSON_request/properties/
  C1-CrePerson"
  ```

  Schema Definition

  ```
  "CREATEPERSON_request": {
      "type": "object",
      "properties": {
  ```

```
"C1-CrePerson": {
   "type": "object",
   "properties": {
   "personId": {
   "type": "string",
   "maxLength": 10,
   "description": "Person ID"
   }
```

This type of nested schema reference is no longer supported. Instead, a designated XML attribute is added to explicitly define the root node.

In this release, the schema reference is changed as follows:

```
"$ref": "#/components/schemas/CREATEPERSON_request"
```

Schema Definition

```
"CREATEPERSON_request": {
   "type": "object",
   "properties": {
      "personId": {
         "type": "string",
         "maxLength": 10,
         "description": "Person ID"
         }
      }
   "xml": {
      "name":"C1-CrePerson"
}
```

- Reusing the Schema Definition for the Standard Error Response

  Previously, the same error response structure was repeated as a separate schema for each IWS operation. This made the file large for no reason. In this release, a single copy of the error response schema is included in the document to make it smaller and simpler.

- Adjusting the "Tags" Attribute Text

  The tags attribute is constructed as <Resource Category description> / <IWS description>. The IWS description part was used to include the detailed description of the service if any was defined, but tags should ideally be short and not involve detailed descriptions. In this release, the IWS description part is changed to include only the short description of the service, regardless of any detailed description that may be defined for the service.

Steps To Enable

No steps are required to enable this feature.

User Group Services Management - Filter User Groups by Entity Tag

The User Group Services Management portal provides zones to view the application services linked or unlinked to a chosen user group and the ability to remove or add services.

The Application Services Linked and Application Services Unlinked zones now include a filter by entity tag, allowing you to refine the list of application services by logical function.

Steps To Enable

No steps are required to enable this feature.

Ability to Configure a Warning when Downloading Data

You can configure the system to provide a warning to users when data is downloaded or exported locally, to remind them that it could contain sensitive or personal data that should be safeguarded.

A new property setting is provided to indicate that users should be warned whenever they perform an action that causes data to be copied to their local machine. The default text of the warning is as follows:

> "*This action copies a file to your local machine that might contain sensitive data. Be careful to follow your organization's guidelines for handling this type of information.*"

Your implementation may choose to override the text to align with your business practice. The message category and message number are 11001/6201.

The warning is displayed when the user performs any of the following actions:

- Chooses the Export to Excel action on any data explorer zone from the zone menu.
- Views an Attachment. (This actually downloads a local copy of the attachment data).
- Clicks a button that uses the oraDownloadData function from a UI map. This is dependent on specific page design. If a page has a UI map that uses this function to support downloading data, users get the warning when clicking the button. An example of this functionality is visible when editing a Bundle Export record.

Steps To Enable

To enable this feature, complete these steps:

1. Go to the `spl.properties` file and set the `spl.runtime.warning.dialog.before.download` property to true.
2. Optionally, if you would like to override the warning text, go to **Admin**, **System**, **Message** and search for message category 11002, message number 16201.

   Edit the message and enter the desired text in the **Override Message Text.** field.

Integration Enhancements

This section describes the new and enhanced integration features in this release, including:

- Based Delivered External Systems and Message Senders

Based Delivered External Systems and Message Senders

In order to support pre-configured integration flows, the External System and Message Sender records are enhanced to be system-owned entities.

The base product can provide fully configured integrations.

Steps To Enable

No steps are required to enable this feature.

Support for Generic Data Synchronization Functionality

There is a new generic mechanism by which an entity can be synchronized with an external system in an ongoing fashion. The solution supports base product fully configured integrations that may be customized and new custom integrations.

The following points describe the new functionality:

- A new Data Synchronization Control extendable lookup defines a data synchronization configuration for a maintenance object and an external system.
    - If the status of the record is active the synchronization is enabled.
    - A synchronization script is referenced on the record to manage the integration business rules. The script is called in Check mode to determine whether the entity needs to be synchronized upon a change data capture event and it is also called in Process mode to prepare the data and send the outbound message to the external system.
    - There could be multiple configuration records for an entity and external system, allowing override by other products and customer where the configuration with the highest sequence is in effect.
- When an entity is changed, a designated Maintenance Object Audit rule consults all enabled integrations for the entity, as defined by the Data Synchronization Control extendable lookup, to determine whether the change should be synchronized or not. If the change should be synchronized, a generic data synchronization request process for each external system is initiated accordingly.
- The processing of a request to synchronize an entity with an external message is managed by a Generic Data Synchronization request business object that is processed later by batch.

Steps to Enable

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

Tips And Considerations

With this mechanism, introducing a new entity data synchronization involves the following artifacts:

- Implementing a synchronization script.
- Defining standard outbound message configuration including external system and message sender.

- Adding an entry in the Data Synchronization extendable lookup referencing the Maintenance Object, External System and corresponding Synchronization Script. When applicable, use a higher sequence number to override a base product configuration for the same entity and external system.
- Plugging-in the FW generic MO audit to initiate the generic data synchronization request if not already plugged in.

Role Information

System administrators should set grant users or grant access to the F1-GENDATSYNCBOAS application service for the generic synchronization request business object.

Data Export

This section describes the new and enhanced data export features in this release, including:

- General Data Export - File Size Control
- General Data Export - Ongoing Export Enabled On-Premise
- General Data Export - Thread Allocation Control

General Data Export - File Size Control

Generalized Data Export (GDE) batch processes produce a single file per thread by default. This may result in files that are too large to manage. An optional batch parameter Records in File has been added to the GDE batch processes to limit the number of records exported in a file. When specified, the batch process closes the current file when the number of exported records reaches the specified limit and a new file is opened for exporting the next set of records. This allows for multiple export files to be created for a single thread.

The F1-GEXPI (Generalized Initial Export Initiator) batch process has this limit set to 500,000 records per file but this value may be removed or adjusted by your implementation as needed.

The F1-GEEXO (Generalized Ongoing Export) batch process has been enhanced to better manage situations where the backlog of queued changes has become too large. In this situation, the next batch takes longer to export, which delays the downstream consuming step of the export files. The import step can only start once the manifest file is ready when the batch completes. In this release, the backlog can be cleared in smaller "chunks", allowing the downstream consuming process to import them as they are made available. To support this, an optional batch parameter Thread Processing Limit has been introduced to limit the number of records exported in a single run. Instead of waiting for the next scheduled batch run to process the next set of remaining entries, a new batch process may be automatically submitted if requested by the Automatic Backlog Clearance batch parameter. The batch process has this limit set to 500,000 records and enables automatic backlog clearance. These parameters may be adjusted by your implementation as needed.

Steps To Enable

No steps are required to enable this feature.

General Data Export - Ongoing Export Enabled On-Premise

The ongoing export feature of the Generalized Data Export functionality is enabled for on-premise installations. This provides on-premise installations with the ability to continuously export data as it changes.

Steps To Enable

No steps are required to enable this feature.

General Data Export - Thread Allocation Control

By default, each export batch submitted by the F1-GEXPI (Generalized Initial Export Initiator) batch process uses the number threads defined on the maintenance object's specific batch control record. This allows for a more optimal configuration of the number of threads to allocate to a specific batch based on the size of the corresponding maintenance object.

In this release, an optional batch parameter Override Number of Threads is introduced to override this value. When set to "Y" the default value is overridden with the number of threads the initiator batch is submitted with. This allows for a global number of threads allocation that does not require a specific value on each specific export batch control.

Note that this override capability only applies to master and transaction entities. Admin entities are of low volume and therefore should use their default value, which is typically a single thread.

Steps To Enable

No steps are required to enable this feature.

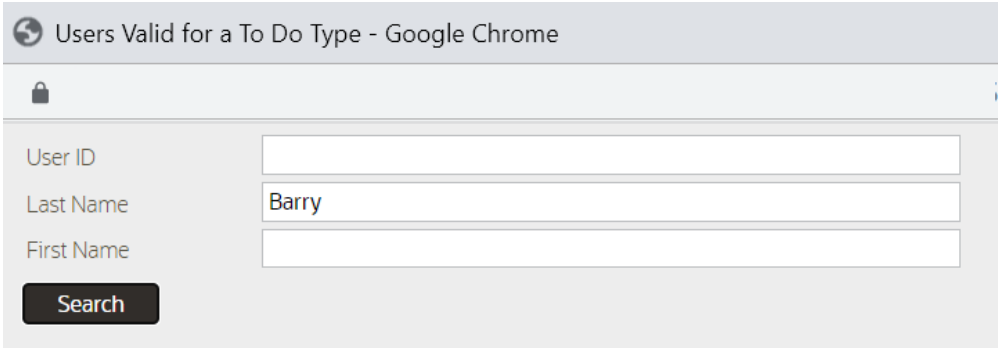
To Do Management and Processing Enhancements

This section describes the new and enhanced To Do features in this release, including:

- Improved User Search for Assigning To Do Entries

Improved User Search for Assigning To Do Entries

The search for users provided in the Forward action on the To Do Entry portal now allows you to filter the result list by the user ID and/or user name.



In addition, the results list has been enhanced to display counts of To Do Entries already assigned to this user for the same To Do Type ("Assigned - This Type") and across all To Do Types ("Total Assigned").

	User Name	User	To Do Role	Role Description	Assigned - This Type	Total Assigned
1	Balladares, Albert	SPLABX	F1_DFLT	System Default Role	0	0
2	Barry, Regina	SPLRXB1	F1_DFLT	System Default Role	0	4

In addition, the To Do Management portal's Assign action has been enhanced. If you are a supervisor using this action, you are prompted to choose the User to assign to. Previously, this prompt used a drop-down. In this release, you now use the same enhanced search. This allows you to filter the search by User ID or user name, and it also provides you with information about each user's current work load.

Steps To Enable

No steps are required to enable this feature.

Batch Processing Enhancements

This section describes the new and enhanced batch processing features in this release, including:

- Root Node Element Optional on Plug-in Driven Exract
- REST Service to Get Batch Job Details
- DBMS Scheduler Option for Defining Time Zone
- DBMS Submission Default Changed to Single Submission

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.

REST Service to Get Batch Job Details

The F1-SubmitJob Inbound Web Service is enhanced to have a new operation to Get the details of the batch job. It uses a new business service: F1-GetBatchJobDetails (Batch Job / Batch Run Details).

If the batch job does not have a batch run associated with it, the service returns information about the batch job only. If there is an associated batch run, the service also returns information about the batch run and its threads and instances.

For cases where an external system, such as an external scheduler, requires information about a batch job, you can use this REST service to return the detail of a given batch job ID.

Steps To Enable

No steps are required to enable this feature.

DBMS Scheduler Option for Defining Time Zone

If your implementation is in a time zone that is different from the database time zone, set the new DBMS Scheduler Option set_sessiontz option to true to ensure that the Start Date/Time on the Batch Job Submission record is set to the time based on installation time zone rather than the database time zone.

Steps To Enable

No steps are required to enable this feature.

Tips And Considerations

Note that the Start Date/Time on the Batch Job Submission record is used as a way to delay the job's execution to a future date. It is not used as a timestamp to indicate when the job was created or executed. If the new option is not set or is set to false, there is no affect if your time zone matches the database time zone or if your time zone is after the database time zone. The setting is only relevant if your time zone is earlier than the database time zone. For those implementations, without this option set, the Batch Jobs are be created with the database time zone, which will cause a delay in the jobs being processed.

DBMS Submission Default Changed to Single Submission

The DBMS scheduler now uses the "single submission" setting as the default. This setting results in the creation of a single Batch Job Submission record for a given job regardless of the number of threads. The resulting records in the Batch Run maintenance object continue to keep track of the multiple threads using the Batch Thread and Batch Instance records. Previously, the default setting was that single submission was turned off.

This setting may be overridden globally or for a specific batch program. Turning off the "single submission" setting results in the creation of a separate Batch Job Submission record for each thread. However, there is no benefit to using this setting. For jobs with a large number of threads, this option results in an unnecessary proliferation of records to manage.

Steps To Enable

No steps are required to enable this feature.

Implementation Tool Enhancements

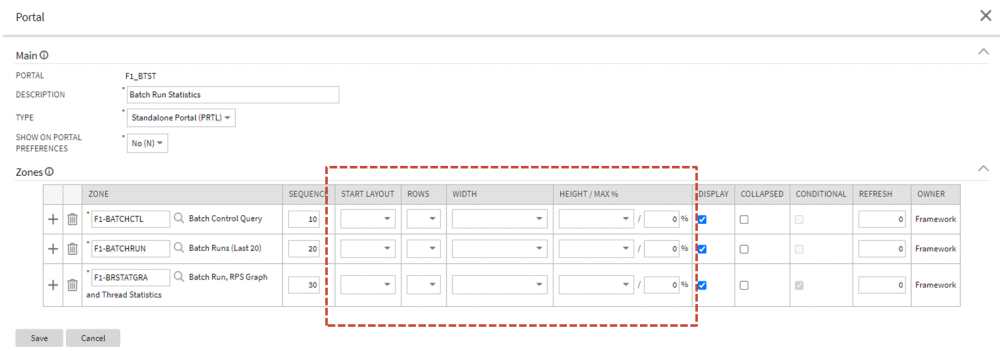
This section describes the new and enhanced implementation tools in this release, including:

- Explicit Imports in Groovy Scripts
- Improved Portal Zone Height Control
- New Base Display Icon Images Supplied
- Groovy Version 3.0.7 Upgrade
- Width Option for Contextual Insights

Support Additional Zone Layout Options

Additional zone width options, zone height options, and layout options are now available. This allows portal designers to have finer-grained control over how the zones are laid out in a portal to optimize layout and reduce whitespace. Additional configuration options added include:

- Row Start Layout: You can start a new row containing one, two or three zones displayed vertically. In past releases, a row included a single zone in each column.
- Increased Width Options: In past releases, zones may be full or half width. You can add additional widths to take advantage of flexible row layouts.
- Flexible Height Options: You can configure additional options for the zone height to optimize the display of the zone.



> **Note:** These options are only supported under the Redwood user experience view. Refer to online documentation for more information on Redwood user experience view.

The additional zone configuration options allow for more specialized design of portals to ensure that information is presented in the optimal way for the user. They also give designers more control of the configuration for better organization of zones in portals.

Steps to Enable

To enable the Redwood user experience, add the `redwood=true` parameter to your application or environment URL.

Support for Defining Links and List Standards in Schemas

Standards for published APIs related to standard REST operations can be defined in the API's operation schema. In some cases, the published API includes elements that are different from the internal schema or additional features on top of the internal schema. In this release, with the introduction of the external facing schema (IWS operation schema), syntax has been added to configure these features directly in the operation

schema, allowing the internal schema to remain unaffected. Note that not all published REST APIs follow the standards below. Refer to the online help for more information about the types of APIs that follow the below standards.

Dynamic Links

There are use cases where the published API will include a "_self" element that includes the endpoint URL of the Get operation related to the data returned in the response. Additionally, these same response payloads may include foreign keys and for those entities, the response includes a "_link" element that includes the endpoint URL of the GET operation for that entity (if it exists).

In this release, syntax is provided in the REST IWS operation schema to support building the runtime endpoint URL for the _self and _link. Besides dynamically building the static portion of the URL based on the current environment details, it also builds the dynamic portion of the URL, substituting the URL components for the operation and substituting the path parameters. The syntax allows you to define a specific IWS Operation or allows you to reference a maintenance object and at runtime for a REST call, and the system determines the appropriate IWS operation and builds the URL for this REST service.

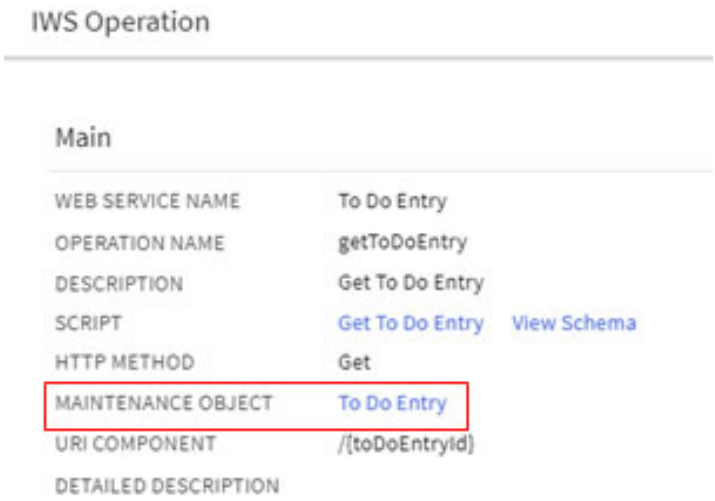
Example of the syntax: `<_self getOperation="mo:'TO DO ENTRY';pk1:toDoEntryId;"/>`

The following is the information returned for the above syntax when performing a Get operation for a To Do Entry with ID 17798129050729. The system determined the Inbound Web Service 'get' operation for To Do Entry and built the URL components for that operation.

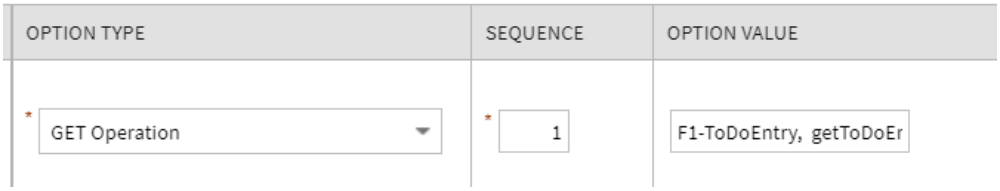
```
"_self": "/rest/apis/common/toDos/toDoEntries/17798129050729"
```

To support dynamically determining the Get Operation for a maintenance object, the following metadata is introduced:

- IWS Operation is enhanced to reference a Maintenance Object code. This field may only be populated on GET operations for REST IWS.



- A new Maintenance Object (MO) Option type is added. It supports defining the IWS, operation name for the GET operation. This option allows for an implementation to override the default GET operation for an object, if needed.



- A new Business Object (BO) Option type is added. The syntax is the same as the maintenance object option. This is useful for maintenance objects that support diverse business objects that may warrant specialized REST APIs.

When you use the "mo" syntax for the GET operation at runtime, the system takes the key of the entity and determines its business object. If it finds a specific GET operation as a BO option, that is used. Otherwise, if it finds a GET Operation configured as an MO option, that is used. Otherwise if it finds an IWS operation that references this MO as a foreign key, that is used. Finally, if it cannot determine a GET operation, it builds the text "Not available".

Foreign Key Group

As mentioned above, when this type of published API includes a foreign key in the response, besides returning the value of the foreign key, we should also return a "_link" with the endpoint URL of that object's 'Get' REST operation. To support that, the standard is that foreign keys are returned in a group.

Example:

```
<user>
    <user/>
    <_link/>
</user>
```

With the new features, the internal schema includes only the element for the data and the external schema includes configuration to build the group.

Internal Schema	Operation Schema Syntax
... <user/> ...	... <user role="FKGP"> <user/> <_link getOperation="mo:'USER';pk1:user;"/ > </user> ...

Collection Lists of Data

When this type of published API returns a list of information, the standard is to use the element "_data" for the list grouping tag.

Example:

```
<drillKeys>
    <_data>
       <sequence/>
```

```
        <keyValue/>
        <description/>
        <version/>
      </_data>
  </drillKeys>
```

With the new features, the internal schema includes the list as defined internally (which does not include the _data element). Syntax in the operation schema allows you to define the list using the _data element.

Internal Schema	Operation Schema Syntax

`<drillKeys type="list">`
`  <sequence/>`
`  <keyValue/>`
`  <description/>`
`  <version/>`
`</drillKeys>`
	`<drillKeys role="COLL">`
	`  <_data mapTo="drillKeys">`
	`  <sequence/>`
	`  <keyValue/>`
	`  <description/>`
	`  <version/>`
	`  </_data>`
	`</drillKeys>`

Supporting syntax in the REST IWS operation schema for some standard features in our published APIs moves the burden of configuration to the object that needs the feature. The internal schema can therefore remain devoid of this configuration that is not applicable to the internal service. This is in the style of the Hypermedia as the Engine of Application State (HATEOAS) standard.

Steps To Enable

No steps are required to enable this feature.

Tips And Considerations

To take advantage of this feature, service scripts used for REST operations should include the F1-WebServiceControl data area. This includes the HTTP method element and allows for future enhancements. Once added, the service script logic can be enhanced to check the value of the HTTP Method and perform different steps based on the value.

Explicit Imports in Groovy Scripts

Any scripts that include Groovy code should explicitly declare the Groovy classes to import using the Groovy Imports step type. The system includes a new `com.oracle.ouaf.groovy.skip.defaultImports=true` setting in the Properties file. If this is configured and the system detects that there are classes referenced in the script that are not explicitly defined when saving a script, it issues a warning and automatically adds import statements for the classes.

Previously, the system did not require explicit imports and had logic to import all callable classes available to Groovy at run time. Two issues were found with this practice.

- It was possible that the referenced class had the same name as a class in a different package and at runtime, the system would use a different class than what was intended. The non-unique name may not have been visible when writing the code, but rather would be found in a subsequent release (after a new class was introduced) or would be found in a different product layer.

- As the number of classes grew, the compilation time for Groovy scripts continued to increase.

To accommodate scripts written previously, the system compiles the Groovy script at runtime without the automatic import logic. If the script compiles, the system continues and runs the script. If the script does not compile, the system then performs the auto import of all callable classes.

Steps To Enable

No steps are required to enable this feature.

Tips And Considerations

It is recommended that implementations review their existing custom Groovy scripts and proactively update the scripts to explicitly declare the imports.

Web Component Syntax Change

The attributes for Oracle Utilities Application Framework web components have been amended to make them easier to read and more similar to HTML This will impact any existing ou-tree or ou-insight web component reference. The definition has been changed as follows:

- Supported value types are XPath and context.
- XPath references must explicitly say "x[..]". For example, `<ou-insights insightType="x[insightType]" mode="preview"></ou-insights>`. Previously, XPath was the default and did not need any mnemonic. For example, `<ou-insights insightType="insightType" mode="'preview'"></ou-insights>`.
- The change applies to all XPath references. For example in the context values, `<ou-insights insightType="F1-RELATED-TODO" context="TD_ENTRY_ID:x[toDoEntryId];"></ou-insights>`. Previously, the context values appear as `<ou-insights insightType="'F1-RELATED-TODO'" context="'TD_ENTRY_ID':toDoEntryId;"></ou-insights>`.
- Note that in addition to the changes above, literals no longer need to be surrounded by single quotes. Single quotes will continue to be supported but will not be necessary. Refer to F1-RELATED-TODO and TD_ENTRY_ID in the examples.

This enhancement standardizes the interface using industry standard syntax and amends the default rules for the attributes passed into a web component to facilitate enhanced web component features.

Steps To Enable

No steps are required to enable this feature.

New Facility for Invoking Service Scripts or Business Services

The new service invocation function allows a developer to detail specific pieces of a data schema to be sent to the server when invoking a service. It also allows the definition of what needs to be handled when the service is returned. This can greatly reduce the amount of data being handled and therefore can provide a performance boost.

This invocation is also "asynchronous" and therefore will allow other JavaScript processes to continue while the server is processing the request.

Steps To Enable
No steps are required to enable this feature.

Tips And Considerations
This is a new function and does not affect any existing service calls. It is only available for use inside a UI Map.

Key Resources
Refer to the Oracle JET Developer Cookbook.

OJet Upgrade
This is an Oracle standard JavaScript library that provides many user interface components. It is updated regularly to include new and updated components inline with updated Oracle user interface standards (Redwood).

This upgrade allows access to new components and updated Oracle Redwood user experience standards.

Steps To Enable
No steps are required to enable this feature.

Tips And Considerations
With this release, the former "ojcomponent" bind format is no longer valid. Any usage must be replaced with the newer OJet component code.

Key Resources
Refer to the Oracle JET Developer Cookbook.

Script Syntax for Marking Lists in Error
The Edit Data 'terminate with error' syntax is enhanced to support marking an element in a list in error by referencing the variable used to loop through the list.

- `terminate with error( xxxx, yyyy element='$listVar/element_name')`

In this case, the $listVar represents the variable used in the 'for' loop. For example, this validation includes a 'for' loop and uses the variable '$key' to keep track of the list entry:

```
for ($key in "parm/hard/newBusinessObject/relatedBatches/
relatedBatch")
   if ("string($key/perfRelObjType) != 'F1PB'")
      terminate with error (11022, 12104 element='$key/
      perfRelObjType');
   end-if;
end-for;
```

Steps To Enable
No steps are required to enable this feature.

Tips And Considerations
Note that in previous releases, the suggested mechanism for marking an element in a list in error was to concatenate the XPath with the list entry, as follows:

```
move "concat('list[',$count,']/elementName')" to $elementReference;
   terminate with error (11000, 11000 element=$elementReference);
```

However this technique was found to have limitations in certain use cases. As such, it is no longer the recommended technique.

Any scripts that are using the previous technique for marking a list entry in error should be updated to use the new syntax.

Key Resources

Refer to the Edit Data Syntax section of the *Oracle Utilities Application Framework Administrative User Guide* for more information.

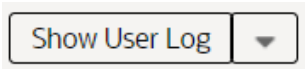
Admin Log Retrieval

A new **Advanced Show Log Option** allows administrative users to fetch logs of other users. By default, a user can only retrieve their own user logs. The following are examples of when this capability is needed:

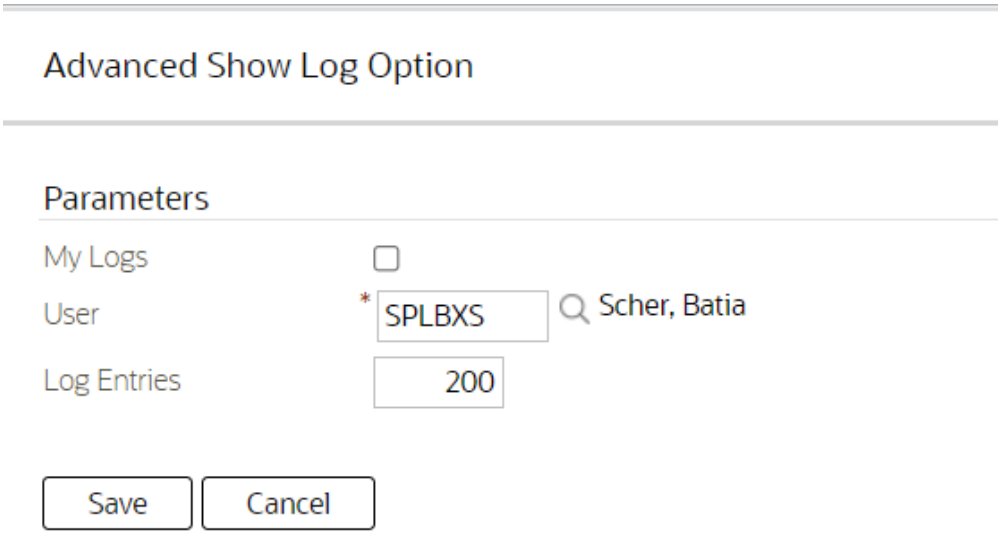
- Batch and integration logs are captured by special user codes created for this type of processing. These users typically do not represent a human and therefore would not access logs using "show user log." Instead, someone else would be accessing these logs.
- Customer administrators would like to retrieve logs for an end user for support reasons. An end user might not have technical skills to gather or assess the log, or they might not have the privileges necessary to access the logs for security reasons.

An Administrative (F1SU) access mode has been added to the existing Show User Log application service (F1USERLOG). Only users with access to the administrative access mode can view the logs of other users.

To a user with administrative access, the **Advanced Show Log Option** is offered as a drop-down button along with the **Show User Log** option.



Clicking **Show User Log** in the drop-down list launches a window allowing you to select the user ID for the desired user logs. You can also adjust the number of log entries. If you realize you want your own logs after all, you can simply click the checkbox.



Steps To Enable

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

Role Information

System administrators should set/grant users/grant access to the Administrative (F1SU) access mode of the existing Show User Log application service (F1USERLOG).

Explicit Imports in Groovy Scripts

When saving a script, if the system detects that there are classes referenced in the script that are not explicitly defined, it issues a warning and automatically adds import statements for the classes. Previously, you had to opt-in to this functionality using a property. In this release, this is now the standard product behavior.

When the script is executed at run time, the system uses the explicit imports to execute the script. Previously, the system had logic to import all callable classes available to Groovy at run time, which caused issues in certain cases. Because you may have custom scripts that still do not have the explicit imports, the system continues to fall back on the previous behavior to import all callable classes for scripts that do not compile with their explicit imports.

You should review your existing custom Groovy scripts and update the scripts to explicitly declare the imports.

Steps To Enable

No steps are required to enable this feature.

Tips And Considerations

The background process F1-CAGVY that reports all scripts that required the automatic import step to successfully compile. You should run this batch program to identify and fix any scripts missing explicit imports.

Improved Portal Zone Height Control

Zone height configuration is simplified and now supports the following options:

- **Content (Unlimited Height)** - Allows the height to be determined by content.
- **Content (Limited Height)** - Allows the height to be determined by content up to a specified maximum limit.
- **Fixed Height** - Sets the zone at a specific height regardless of content.

You can use height limit options to achieve a more consistent portal layout, especially when a zone is rendered on long or small devices.

When a height option is not explicitly selected, zone height is unlimited and determined by content. However, for a data explorer zone, the results grid area itself (not the entire zone) is limited by the zone parameter "height of report" (which has a default value of 50%).

The following zone height options are deprecated and replaced as follows:

- **Content** - Zones configured with this option along with a maximum height limit are upgraded to reference the Content (Limited Height) option. If no limit is specified, the Content (Unlimited Height) option is used.

- **Full** - Zones configured with this option are upgraded to reference the Content (Limited Height) option with a 100% height limit.
- **Half** - Zones configured with this option are upgraded to reference the Content (Limited Height) option with a 50% height limit.

Steps To Enable

No steps are required to enable this feature.

New Base Display Icon Images Supplied

You can use additional SVG icons in contextual insights, trees, and other user interface features that support SVG icons.

Icon	ID	Description
	F1ACTADD	Activities - Add
	F1ARWODL	Arrow - Open - Down - Left
	F1ARWODR	Arrow - Open - Down - Right
	F1ARWOUL	Arrow - Open - Up - Left
	F1ARWOUR	Arrow - Open - Up - Right
	F1ARWSI	Arrows - In
	F1ARWSO	Arrows - Out
	F1ASAVE	Save - Arrows Out

Icon	ID	Description
	F1BOX	Cube
	F1CAL	Calendar
	F1CALL	Telephone
	F1CALLA	Telephone - Add
	F1CAREA	Area Chart
	F1CBXOFF	Checkbox - Off
	F1CBXON	Checkbox - On
	F1CDWNR	Caret - Down - Right
	F1CHDOWN	Chevron - Down
	F1CHDWNR	Chevron - Down - Right
	F1CIRCLE	Circle

Icon	ID	Description
	F1CLEFT	Caret - Left
	F1CLINE	Line Chart
	F1CLIST	Progress List
	F1CLPBC	Clear List
	F1CONSTD	Construction Design
	F1CPYTMP	Copy From Template
	F1CRAGG	Running Aggregate Chart
	F1CRCLE7	Progress Circle
	F1CREATE	Site - Add
	F1CRIGHT	Caret - Right
	F1CRPAGE	Page - Add

Icon	ID	Description
	F1DAREA	Draw Area
	F1DWNLD	Download
	F1EDIT	Edit
	F1EDITIN	Inline Edit
	F1EXACRO	Export Acrobat
	F1FHAND	Free Hand Draw
	F1HEXGN	Polygon - Hexagon
	F1HOUSE	House
	F1HRGS	Waiting Hourglass - Start
	F1LAYERS	Layers
	F1LINEI	Line - Inclined

Icon	ID	Description
	F1LINEST	Line - Staggered
	F1LOC	Location
	F1LOCW	Location Pin - Work
	F1LOCWA	Location Pin - Work - Add
	F1MENUE	Expand Menu
	F1MOVE	Move
	F1MSG	Message
	F1MULT	Multiply
	F1NOTIF	Notification
	F1NUMS	Numbers
	F1OVAL	Oval

Icon	ID	Description
	F1PINS	Location Pin - Solid
	F1RECT	Rectangle
	F1RFRSH	Refresh
	F1RUNNIG	Running
	F1SCLOSE	Close - Circled - Solid
	F1SFILE	Work Request - File Stage
	F1SHARE	Share
	F1STPED	Close - Circled - 2 Colors
	F1TAG	Tag
	F1TEXT	Text
	F1TRIUP	Triangle

Icon	ID	Description
	F1VIEW	View
	F1WRKOA	Gannt Chart - Add
	F1ZOOMIN	Zoom In

Steps To Enable

No steps are required to enable this feature.

Groovy Version 3.0.7 Upgrade

You can stay current with the version of Groovy supported by the product.

Steps To Enable

No steps are required to enable this feature.

Tips And Considerations

Groovy introduced a change in behavior in this newer version. It is unknown whether this change in behavior is intentional or a defect.

Here is one example error:

```
[Static type checking] - Cannot find matching method
com.splwg.base.api.datatypes.Date#addDays(java.math.BigInteger).
Please check if the declared type is correct and if the method
exists.org.codehaus.groovy.control.MultipleCompilationErrorsExcept
ion:
startup failed: C1FATYPALMSG: 47: [Static type checking] - Cannot
find matching method
com.splwg.base.api.datatypes.Date#addDays(java.math.BigInteger).
Please check if the declared type is correct and if the method
exists.
@ line 47, column 35.
Date referenceDate =
row.getDateTime("SCHED_DTTM").getDate().addDays(row.getInteger("DA
YS_ALERT_NBR"));
```

In the cases that we have, some simple changes can be made in the groovy scripts to resolve the compile issues.

For example:

```
Date referenceDate =
row.getDateTime("SCHED_DTTM").getDate().addDays(row.getInteger("DA
YS_ALERT_NBR").intValue());
```

Width Option for Contextual Insights

A new CSS helper class is available to the ou-insights web component: card-full-width. Adding class="card-full-width" to the ou-insights web component ensures that the width for a card insight adjusts to the width of the zone that contains it. Card insights that do not set this parameter use a fixed width.

Steps To Enable

No steps are required to enable this feature.

Analytics

This section describes the new and enhanced analytics features in this release, including:

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.

Miscellaneous Enhancements

This section describes the new and enhanced miscellaneous features in this release, including:

Analytics 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 Analytics 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.

Conversion Tool Support for Generic Foreign Key References

The conversion step of inserting records to the production schema is enhanced to also resolve foreign key references that are captured in a generic set of fields that include the entity's maintenance object (MAINT_OBJ_CD) and its prime key values (PK_VALUE1-5). Tables with more than one set of fields are not supported and all referenced maintenance objects on the table should be convertible.

The enhancement improves the support for complex conversion processes by providing the ability to convert tables with generic foreign key references.

Steps To Enable

No steps are required to enable this feature.

Conversion Tool Support for Long Running Batch Processes

The Override SQL Timeout batch parameter has been added to all conversion batch processes allowing them to set a different timeout limit than the default setting in the cloud. The parameter is set to three hours by default but can be supplied with a different time limit as needed when submitting the conversion batch process.

This provides the ability to extend the time limit set in the cloud for long running conversion batch processes.

Steps To Enable

No steps are required to enable this feature.

Return Additional Details in DBMS Get Job Details Service

More supporting information is provided about the steps related to DBMS job runs when calling the F1-DBMSGetJobs (DBMS Scheduler Job List) business service. The following information is now provided for steps in the job run, where the information is applicable for that step:

- Batch Code
- Batch Number
- Batch Rerun Number
- Error Details (if applicable)

In addition, adjustments were made to what is considered an "In Progress" job run and what is considered a "Completed" job run. Previously, if a step in the DBMS job failed, it was returned for both an In Progress job run request and a Completed job run request. This could become confusing because a job with a failed step was not ever going to continue unless manual intervention occurred, so it is not "in progress." The system now uses the following criteria (from top down) for considering a job run In Progress or Completed:

- If a DBMS Job run has at least one step that is Running, the job is considered In Progress.
- If at least one step is Failed, it is considered Completed.
- If at least one step is Not Started (and no steps are Failed), it is considered In Progress.

If none of the above is true (all steps are Completed), it is considered Completed.

Steps To Enable

No steps are required to enable this feature.

Service to Maintain the Sequence Table

A new business service (F1-DocumentSequenceAddUpd) has been provided to add or maintain records in the Sequence table (CI_SEQ). This service includes various actions to add, retrieve, update or delete a sequence which may be used for any business use case that requires a sequential number to be maintained (such as sequential document numbers in Oracle Utilities Work and Asset Management Cloud Service).

Steps To Enable

No steps are required to enable this feature.

Service Order Management Data in Local Time

The following portals now use and display the time in the Service Point or Installation Event time zone:

- Activities - SOM
- Activities - Command
- Appointment Booking

Previously, Service Order Management did not include a time zone component at the Activity Type level and used the application's default Installation Option time zone, which did not match the time zone of the local service point.

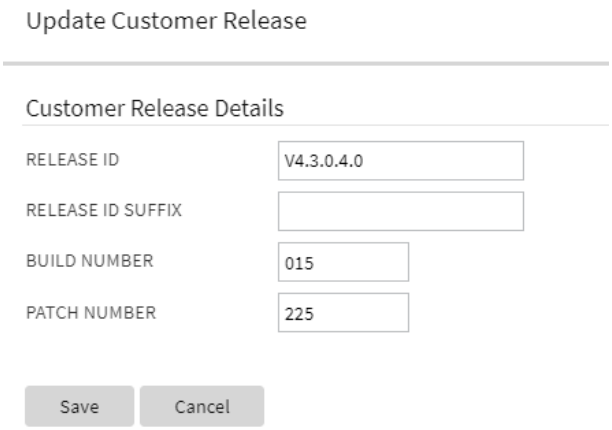
Steps To Enable

No steps are required to enable this feature.

Update Customer Release Version Details

You can update the Customer Release row in the Installed Products collection, allowing implementations to set a version, build, and patch level. This feature is useful for implementations that would like to use this information to manage their own release of customizable code or configuration.

There is a F1CustRelM (Customer Release Maintenance) BPA script that you may use when in a given environment to update the Customer Release information. The script could be linked to a menu entry or configured by appropriate users as a 'favorite script.' Implementation teams may wish to expose this as a REST- or SOAP-based service for integration into Continuous Integration and Continuous Delivery (CI/CD) tools.



Steps to Enable

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

Role Information

Users must have the Execute access mode for the Installation Options application service (CILTINSP).

Additional Elements Added to Installation Options BO

The F1-Installation business object is enhanced to retrieve all the elements on the main table of the Installation Options maintenance object. This provides a performance benefit for any code that needs information from the main table, such as the default currency, but does not require any of the data in the collections linked to the Installation Options maintenance object. Previously, this business object only included the owner flag element.

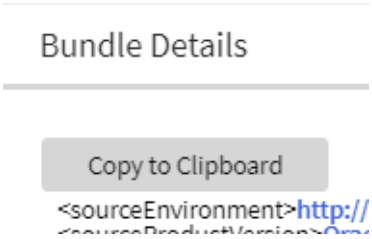
Additional elements added to the business object for Installation Options allow developers to use this artifact when they need main information from the installation option record.

Steps To Enable

No steps are required to enable this feature.

Bundle Export Copy Feature Improvement

In the Bundle Export object, when you have bundled your metadata, use the Copy to Clipboard action to copy the bundle detail properly, retaining spacing for text like the HTML for a UI map.



In previous releases, the Bundle Details zone on the Bundle Export portal provided a "Select All" action to select the bundle details. You then needed to separately use the computer's generic copy function (Ctrl+C) to copy the information to your clipboard. The generic select and copy functionality was not able to retain spacing in objects like the HTML for a UI map. The new Copy to Clipboard action uses specific code to copy the information to the clipboard, retaining spaces.

As part of this feature, the Select All and Deselect All actions were removed. You can still manually select the bundle details manually, if desired.

Action to copy bundle export details retains proper spacing in copied artefacts.

Steps To Enable

No steps are required to enable this feature.

REST Service to Maintain Customer Release Details

The F1-InstallationOptions Inbound Web Service is introduced to provide operations to Get and Patch the release, build number and patch number details on the Customer Release record in the Installation Options installed products list. It uses an existing service script: F1CustRelMSS (F1CustRelMSS).

For cases where an implementation wants to track the version of the custom extensions, you can use this REST service to retrieve and update the Customer Release details. This is particularly useful for Oracle partners and utilities who want to update the customer version from CI/CD tools via curl commands.

Steps To Enable

No steps are required to enable this feature.

Tips And Considerations

The security for these new operations is the same security for the Installation Options - Framework transaction. Users must have the Execute action for the CILTINSP (Installation Options) application service.

Key Resources

Refer to the Open API Specification for the F1-SubmitJob inbound web service for more information.

Oracle Guided Learning Integration

This integration provides a mechanism for customers of the Oracle Guided Learning Cloud Service to define their application identifier (to identify their tenancy) in a

configuration parameter. This will automatically enable the learning widget to appear on the screen passing in the user details and the context to allow relevant content to appear.

Note: This integration is to enable the definition of the application identifier and the display of the widget. No prebuilt content is available at this time. Customers using this facility are free to add their own content as necessary using the Oracle Guided Learning Cloud Service.

Note: This integration only allows links to procedures and processes stored within Oracle Guided Learning. It does not support active workflow integration to Oracle Utilities products in this release.

Steps To Enable

Work with your Service Delivery Manager to complete the required configuration.

Web Services

This section describes the new and enhanced web services features in this release, including:

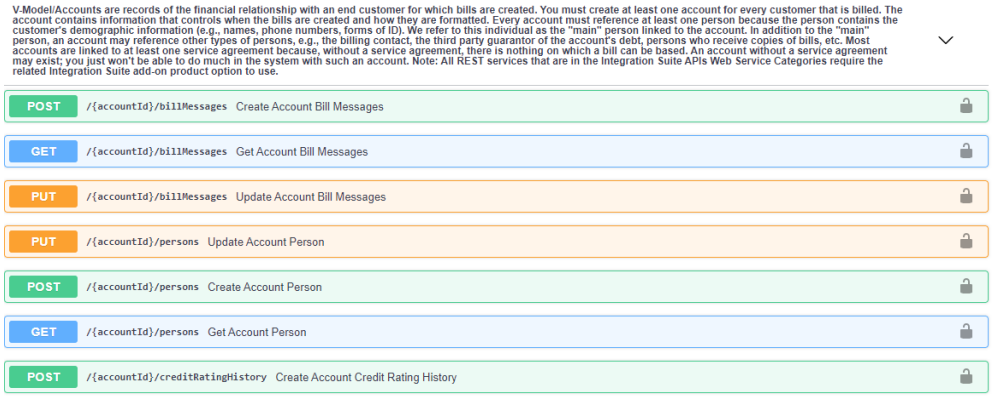
- Additional Metadata to Support API Publishing
- Description Added to Inbound Web Service Operation
- HTTP Method Available to Internal Service Script
- Inbound Web Service Maintenance (REST)
- New Published APIs
- Outbound OAuth Client Credentials Grant Type
- Rootless Request and Response Schemas (JSON)
- Support for an External-facing Schema

Additional Metadata to Support API Publishing

The following internal fields have been added to support publishing product-delivered APIs in the product catalog:

- Detailed description for a REST IWS operation. This new field allows for the product to provide information visible in the catalogue of published APIs.
- Help text is provided for individual elements in a given published API.
- Sample request and response documents may be defined using a new IWS Operation Options collection.
- Operations may be associated with a sequence number that controls the order in which they appear in the Open API Specification.

Previously, the above text was added later in a separate documentation process. The new fields streamline the internal publishing process. Note that this text is visible to implementations in the IWS user interface pages. The information may be added for custom owned IWS, but it will not be used by any product processes. Note that this text is not translated as the published catalogue documentation is in English language only.



This provides the ability to include a detailed description of a REST IWS operation and to support help text for individual elements to better describe the published API. This increases the usability of the API's provided for integration and interfaces to help reduce integration costs.

Steps To Enable

No steps are required to enable this feature.

Description Added to Inbound Web Service Operation

A language table has been added to the IWS operation and a description has been added. This description is included in the Open API Specification and may be included in the published API catalogue for published services. Previously, the operation description was taken from the internal service script, business service or business object. The internal description is not always relevant when publishing the service as an API. The new description allows the system to use an internal description for the internal service and use the operation description for a description specific to the published API.

The description captured on a REST IWS operation allows for a description specific to the operation as compared to the internal service description. This increases the usability of the API's provided for integration and interfaces to help reduce integration costs.

Steps To Enable

No steps are required to enable this feature.

HTTP Method Available to Internal Service Script

When delivering REST operations for a given object, the logic to perform the operation is handled by a service script. In this release, the REST servlet populates the HTTP Method into a variable available to the invoked service script. This allows the product team and implementations the ability to use one service script to handle more than one HTTP method for an entity.

Steps To Enable

No steps are required to enable this feature.

Tips And Considerations

To take advantage of this feature, service scripts used for REST operations should include the F1-WebServiceControl data area. This includes the HTTP method element and allows for future enhancements. Once added, the service script logic can be enhanced to check the value of the HTTP Method and perform different steps based on the value.

Inbound Web Service Maintenance (REST)

The definition of a REST IWS was enriched to include an external-facing schema and documentation options for each operation.

The following enhancements were made to streamline the maintenance of the additional information:

- A standalone **Inbound Web Service Operation** portal is provided for providing additional information about an operation.
- Operations are displayed in a separate zone on the **Inbound Web Service** portal. The zone lists operations in the order they appear in the Open API Specification and supports navigation to the new operation portal.
- Help text information to be shared across all operations of a web service is maintained on a new zone on the **Inbound Web Service** portal.

Steps To Enable

No steps are required to enable this feature.

Tips And Considerations

Upgrade scripts ensure that users with 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
Inbound Web Service Operation Portal	F1IWSOPR	F1IWSSVCP (Inbound Web Service Portal)
Inbound Web Service Operation Maintenance Object	F1IWSSVCOPR	F1IWSSVC (Inbound Web Service Maintenance Object)

New Published APIs

The following new APIs are provided:

- F1-ToDoEntry: A REST IWS for the To Do Entry object. In this release, GET operations are provided for To Do Entry and for To Do Entry Logs.
- F1-ExtendableLookup: A REST IWS for the Extendable Lookup object. In this release, a GET operation is provided.

Both REST services take advantage of the new external facing schema features.

New published APIs for To Do Entry and Extendable Lookup expand the catalogue of options provided for implementations.

Steps to Enable

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

Role Information

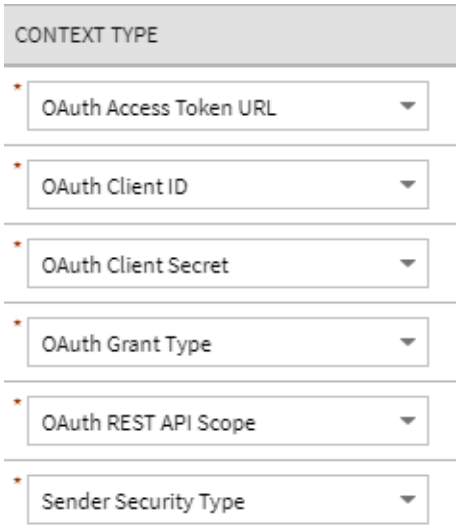
Users must be granted access to the following new application services in order to use this functionality.

REST IWS	Application Service	Access Mode
F1-ToDoEntry	F1-INTG-SUITE-API	F1EX
F1-ExtendableLookup	F1LEXTLKUP	F1EX

Outbound OAuth Client Credentials Grant Type

OAuth is an open standard token-exchange technology for verifying a client's identity across multiple systems and domains without risking the exposure of a password. The OAuth specification methods for acquiring an access token are known as grant types. This release adds support for outbound integration with REST APIs that are secured by the Client Credentials grant type.

The configuration of a message sender is extended to capture the following OAuth related context options:



You can use "OAUTH" for the Sender Security type and "client_credentials" for the grant type. You can configure the rest of these options based on the client information provided by the external system. Note that the Client Secret value is encrypted.

This supports outbound REST API integrations that are based on OAuth "Client Credentials" grant type and increases support within OAuth domains such as the Oracle Cloud Infrastructure and other external OAuth domains.

Steps To Enable

No steps are required to enable this feature.

Rootless Request and Response Schemas (JSON)

The configuration of an outbound message type on the External System page is enhanced to include a new JSON Conversion Method option, "Rootless JSON Conversion," that converts the internal XML-based request and response schemas to and from rootless documents. Previously, exchanging messages with an external system in JSON format required the request and response elements to be enclosed in a root node which is not a typical structure for REST service calls. This release also supports rootless JSON request and response schemas.

This supports standard message exchange with an external system in JSON format where the request and response schemas are rootless structures. It also reduces implementation costs by natively supporting rootless structures where interfaces require them.

Steps To Enable

No steps are required to enable this feature.

Support for an External-facing Schema

You can define a schema for a REST IWS operation. This allows a user to adjust the schema for an external-facing consumer. Previously, the schema of the underlying service (for example, service script) was also the schema for the REST IWS operation. The new IWS operation schema also supports some special configuration that allows additional features to be defined only for the IWS operation schema.

All references to the internal service below reference service script, but the same comments apply to business services and business objects, if that is what is referenced by the IWS operation:

- An element may reference a usage attribute, with values of Request Only, Response Only, Exclude and Both (the default). Previously, all elements in the service script schema were visible in both the request schema and the response schema (for HTTP methods that have both a request and response schema). This sometimes caused confusion or required additional documentation to clarify when the element is applicable.
- A different element name may be defined in the IWS operation schema, overriding the name in the service script. This allows the internal service script element name to more closely align to internal references to the element, if needed. The externa- facing element name can be different allowing for a more readable schema.

The external schema for REST operations allows for more configuration to benefit the published API and helps reduce costs in integration. This increases the usability of the API's provided for integration and interfaces to help reduce integration costs.

Steps To Enable

No steps are required to enable this feature.

Tips And Considerations

If you have existing REST IWS operations, there is no requirement to take advantage of this feature. It is useful if you have elements that you would like to suppress or if there are elements you would like to appear in only the Request or only the Response.

Application Security

This section describes the new and enhanced miscellaneous features in this release, including:

Consolidation of Default Application Services

The product has consolidated the default application services that are required for basic application security.

- F1-DFLTS now serves as the single 'default' application service. All user groups should have access to this application service and all its access modes.
- F1-DFLTAPS was previously used for business services and service scripts as the default application service. Going forward, business services and service scripts should use F1-DFLTS as the default.
- FWLZDEXP was previously used for displaying zones. It is no longer used by base zones. F1-DFLTS is the only application service needed for basic execution of zones.

Steps To Enable

No steps are required to enable this feature.

Tips And Considerations

An upgrade script will proactively update any references in the metadata to F1-DFLTAPS or FWLZDEXP to F1-DFLTS. Implementations should consider if either of these application services are used directly in code and update those references to use F1-DFLTS or a different appropriate application service.

In addition, an upgrade script ensures that all user groups with access to F1-DFLTAPS now have F1EX access to F1-DFLTS.

In a future release, the application services F1-DFLTAPS and FWLZDEXP will be removed from support.

New Application Service for Master Configuration Maintenance Object

The F1-MASTERCONFIG application service is provided to allow you to secure the maintenance of master configuration records separately from the security for the portal used to view master configuration records. This follows the product's standards. Previously, the same application service applied to both the maintenance object and the portal. This prevented you from more granular security configuration.

Steps To Enable

No steps are required to enable this feature.

Tips And Considerations

An upgrade script updates all user groups that currently have access to the existing F1MSTCFG application service to have the same access to the new F1-MASTERCONFIG application service.

In addition, any business object that was referencing the F1MSTCFG application service has been updated to reference F1-MASTERCONFIG.

Note that the existing F1MSTCFG application service has been updated to reference only the Inquire access mode. The access modes for Add, Change, and Delete have been removed since they are not applicable for a portal-based application service.

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 v4.5.0.0.0, or is planned for removal.

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.

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.

LDAP Import Metadata (Legacy Feature)

The following LDAP import metadata have been removed:

- Service Programs: CILTLDIP, CILTLDIL, CILTLDIS
- Application Service: CILTLDIP
- Fields: F1_LDAP_SUMM, F1_LDAPGROUPSEARCHDATA_SUMM, F1_LDAPUSERSEARCHDATA_SUMM, IMP_GRP_LBL, LDAP_ENTITY_FLG, LDAP_IMP_JNDI_LBL, LDAP_PASSWORD, LDAP_PASSWORD_ENC, LDAP_USER, RTRV_LDAP_ENT_LBL, SEARCH_4_LD_GRP_LB, SEARCH_4_LD_USR_LB, SEARCH_BY_LDAP_GRP
- Navigation options: CI0000000956, ldapImportTabMenu
- Navigation keys: ldapGroupSearchData, ldapGroupSearchPage, ldapImportGrid, ldapImportPage, ldapImportTabMenu, ldapUserSearchData
- Records in the UI metadata program component tables related to the above navigation keys.

  Notes:

Implementations may continue to use the F1-LDAP batch job to perform external LDAP integration, if required.

Customers using Oracle Identity Cloud Service are not affected by this removal as a native adapter is used for that integration.

Miscellaneous Metadata

The following miscellaneous metadata have been removed:

- Script: F1-BundleInf, F1-GENPRINFO, F1-MgPlnInf
- Zone: F1-MGRREQDSP

Metadata End of Support (Owner flag set to CM)

Implementations should review and remove if not in use. The following miscellaneous metadata have been removed:

- Lookup value: CHAR_ENTITY_FLG / F1SE
- Algorithms: F1-LDAPIMPRT, F1-LDAPPREPR
- Algorithm Types: F1-LDAPIMPRT, F1-LDAPPREPR
- Maintenance Object: ENV REF
- Business Object: F1-EnvironmentRefPhysicalBO
- To Do Type: F1-SYNRQ
- Zone: F1-IWSSCHS, F1-IWSSCHS1, F1-IWSSCHS2, F1-IWSSCHS3
- Characteristic Type Legacy Page Metadata
- Navigation keys: charTypeMenu, charValuesPage, charValuesPage_H, charValuesGrid, charEntitiesPage, charEntitiesPage_H, charEntityGrid
- Records in the UI metadata program component tables related to the above navigation keys.

Access Group Legacy Page Metadata

The following Access Group metadata have been removed:

- Navigation keys: accessGroupMainPage_H, accessGroupDARGrid, accessGroupMainPage. accessGroupMaint, accessGroupTabMenu
- Records in the UI metadata program component tables related to the above navigation keys.

Application Service Legacy Page Metadata

The following Application Service metadata have been removed:

- Navigation keys: applicationServiceMainPage_H, applicationServiceMaintNew, applicationServiceTabMenu, applicationServiceMainPage, appSvcAccessModeGrid
- Records in the UI metadata program component tables related to the above navigation keys.

OJet Support for Bind Architecture

This feature is replaced by the Web Component Architecture. OJet previously supported a "bind" architecture for their components.

Example:

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

The OJet team announced the deprecation of this format in OJet V7 and continued to support it until OJet V11. The newer releases of OJet have been focused on a "Web Component" architecture.

Example:

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

This release of Oracle Utilities Application Framework now uses OJet V11 where the bind architecture is no longer supported.

Groovy Language-based Custom Function Library Creation

This feature is replaced by the JavaScript language-based custom function library creation. You can only create custom function libraries through JavaScript. Existing Groovy language-based custom function libraries will continue to work in the V4.5.0.0.0.

Field Legacy Page Metadata

The following Field Legacy Page metadata have been removed:

- Navigation Keys: impFldTabMenu, metaDataFieldTableGrid, metaDataFieldTableGrid, metaDataFieldTablePage, metaDataFieldMaint
- Records in the UI metadata program component tables related to the above navigation keys.

Portal Legacy Page Metadata

The following Portal Legacy Page metadata have been removed:

- Navigation Keys: portalMainPage, portalMainPopup, portalOptsGrid, portalOptsPage, portalTabMenu, portalZoneGridPage
- Records in the UI metadata program component tables related to the above navigation keys.

Zone Legacy Page Metadata

The following Zone Legacy Page metadata have been removed:

- Navigation Keys: portalZoneTabMenu, portalZoneMainPage, portalZoneParameterGrid, portalZonePortalGrid, portalZonePortalPage
- Records in the UI metadata program component tables related to the above navigation keys.

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, F1-MgPlnInf, F1-TDMgActSS, and F1AddDebugLg 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.

Custom Groovy Function Support from Oracle Utilities Testing Accelerator

Support for defining custom functions with Groovy script will be deprecated in a future release.

Incorporate Application Viewer to Oracle Utilities Applications

Many aspects of the Application Viewer are incorporated into the application, including the data dictionary. The user interfaces for the tables and fields have been enhanced to provide more information at a glance and a view of the links between tables. Information about algorithms, batch controls, and maintenance objects are also visible directly in the application. In a future release, Javadocs and Groovy Javadocs will be viewable within the application at which point the standalone Application Viewer will no longer be delivered.

Switch UI View

The Switch UI View provides the ability to toggle between Redwood User Experience and pre-Redwood User Experience during a session. Support for pre-Redwood User Experience will be deprecated in a future release.

F1-DFLTAPS and FWLZDEXP Application Services

With the consolidation of application services, references to the F1-DFLTAPS and FWLZDEXP application services will be removed in a future release. Secured objects referencing these application services within HTML or Schemas must use F1-DFLTS or a different application service that is appropriate for the business rule.

Workflow and Notification Metadata and Database Tables

The Workflow and Notification function provided a configurable process to receive incoming messages (workflow) and exchange messages with an external system (notification). In the interim years, Outbound Message and Inbound Web Service manage external messages, service scripts handle simple incoming messages processing, and service tasks or business objects handle complicated incoming messages processing. The Workflow and Notification metadata and database tables will be deprecated in a future release.

> **Note:** Oracle Utilities Application Framework only manages a portion of the Workflow and Notification function. Oracle Utilities Customer Care and Billing mostly supports the function.

Mobile Application Framework Metadata

Metadata related to the Mobile Application Framework will be removed in a future release.

Key Ring Validation Scripts, Algorithm Types, and Algorithms

The following K1-SignatureKeyRing business object validation scripts, algorithm types, and algorithms will be deprecated in a future release:

- Algorithm
  - K1-KRDCKFS
  - K1-KRINCKFS
- Algorithm Type
  - KRDCKFS
  - K1-KRINCKFS
- Message
  - 11009 / 1402
- Plugin Script
  - K1-KRDCKFS
  - K1-KRINCKFS
- Service Script
  - K1-ChkCfgExL

These objects are not applicable to the requirements to expand the use of the Signature Key Ring beyond object file storage and other planned use cases. The algorithms have been removed from the Business Object configuration.

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

Existing Code	New Code	Comments
`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)))

Application Uptake

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.