Oracle Financial Services Revenue Management and Billing

OR

Oracle Insurance Revenue Management and Billing

Version 8.0.0.0.0

Release Overview Guide

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Oracle Financial Services Revenue Management and Billing/Oracle Insurance Revenue Management and Billing Version 8.0.0.0.0 Release Overview Guide

Note: To improve the content readability, the above two products are collectively referred to as Oracle Revenue Management and Billing throughout this document.

G33029-02

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Preface

About this Document

This document describes the new features, enhancements, user interface level changes, and database level changes made in this release. The new features and enhancements are classified under three categories – Generic (which is intended for both domains), Financial Services, and Insurance. It lists and describes enhancements made in the framework. It also encloses the ORMB and OUAF deprecation notices and enables you to access the product documentation.

Intended Audience

This document is intended for the following audience:

- End-Users
- System Administrators
- Consulting Team
- Implementation Team

Organization of the Document

The information in this document is organized into the following sections:

Section No.	Section Name	Description
Section 1	Prerequisites	Lists some prerequisites for the existing customers while upgrading to the ORMB Version 8.0.0.0.0.
Section 2	New Features (Generic)	Lists and describes the new features introduced in this release that can be used in both financial services and health insurance domains.
Section 3	New Features (Specific to Financial Services)	Lists and describes the new features introduced in this release that can be used in the financial services domain.
Section 4	New Features (Specific to Insurance)	Lists and describes the new features introduced in this release which can be used in the health insurance domain.
Section 5	Enhancements (Generic)	Lists and describes the enhancements made to the features that are used in both financial services and health insurance domains.
Section 6	Enhancements (Specific to Financial Services)	Lists and describes the enhancements made to the features that are used in the financial services domain.

Section No.	Section Name	Description
Section 7	Enhancements (Specific to Insurance)	Lists and describes the enhancements made to the features that are used in the health insurance domain.
Section 8	User Interface (UI) Level Changes	Lists the changes made to the existing screens in ORMB.
Section 9	Database Level Changes	States the documents that you can refer for different database level changes.
Section 10	Technical Recommendations	Provides recommendations to improve the overall batch performance on the Windows and Linux platforms.
Section 11	Oracle Utilities Application Framework Version 25.4 Enhancements	Lists and describes the new features and enhancements made in OUAF Version 25.4.
Section 12	Deprecation Notices for OUAF Version 25.4	Lists the features and system data that are deprecated in this release or planned for deprecation in the future release of OUAF.
Section 13	Deprecation Notices for ORMB Version 8.0.0.0.0	Lists the features and system data that are deprecated in this release or planned for deprecation in the future release of ORMB.
Section 14	Product Documentation	Provides information on how to access the ORMB documentation.
Section 15	Technical Support	Provides instructions on how to avail the technical support for ORMB.

Conventions

The following conventions are used across the document:

Convention	Meaning
boldface	Boldface indicates graphical user interface elements associated with an action, or terms defined in the text.
italic	Italic indicates a document or book title.
monospace	Monospace indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or information that an end-user needs to enter in the application.

Related Documents

You can see the following documents for more information:

Document Name	Description
Oracle Revenue Management and Billing Version 8.0.0.0.0 Release Notes	Lists the new features and enhancements made in this release. It contains high-level information about the supported platforms, framework upgrade, supported upgrades, unsupported integrations, and media pack downloads. It also lists the discontinued features, bug fixes, and known issues in this release.
Oracle Revenue Management and Billing Licensing Guide	Lists different features which you can use when you acquire a license for the following products: • Oracle Financial Services Revenue Management and Billing • Oracle Insurance Revenue Management and Billing It also provides the licensing information about the third-party JARs and components which are included in the above-mentioned products.
Oracle Revenue Management and Billing Quick Installation Guide	Provides information about the media packs which are available for the current release. It contains information about the supported platforms, space requirements, and release-specific documentation library. In addition, it contains high-level information on how to install ORMB and selected additional software.
Oracle Revenue Management and Billing Installation Guide	Provides an overview about the application architecture. It contains detailed information about the software and hardware requirements, supported platforms, application server and database space requirements, and application server pre-requisites for supported platforms. It explains the installation and configuration menu options which are available during installation and advanced menu options which are available post installation. It also explains how to install OUAF, OUAF rollup packs, ORMB, and ORMB patches or rollup packs. It contains appendices which lists ORMB rollup packs and notices about third-party JAR and other components.

Document Name	Description
Oracle Revenue Management and Billing Database Administrator's Guide	Provides information about the supported database platforms and explains how to install database with or without demo data. It contains the standards and conventions that should be followed while working with ORMB database. In addition, it lists various configurations and implementation guidelines with respect to tablespace, encryption, storage, compression, indexes, initialization parameters, listener, table partitioning, performance monitoring, memory resource management, optimizer statistics and segment advisors, etc. It contains various appendices which lists the new objects added in ORMB, application services configured for default user groups, new objects added in OUAF, information about OUAF system tables and ORMB rollup packs, notices about third-party JAR and other components.
Oracle Revenue Management and Billing Security Guide	Highlights what's new in security! Describes all the security features available in ORMB for authentication, authorization, user access, database access, LDAP and SSO integration, audit, encryption, web services, and JNDI access. It also describes how to provide support for data masking, Oracle cloud object storage, groovy, HTTP proxy, keystore, truststore, whitelist, federated architecture, and object erasure. In addition, it explains how to garble the customer information.
Oracle Revenue Management and Billing Server Administration Guide	Provides detailed information about the product architecture, native support, directory structures, environment variables, logs, etc. It explains various concepts related to the batch server and lists and describes the scripts required for installing and configuring ORMB. It explains how to monitor the system and configure Web browser, Web application server, business application server, inbound web services, and batch server. It explains how to provide Oracle Cloud Support and how to integrate and monitor Oracle Scheduler. It contains various appendices which lists and describes the parameters available in the ENVIRON.INI, Web.xml, spl.properties, hibernate.properties, submitbatch.properties, threadpoolworker, coherence-cache.config.xml, and tangosol-coherence-override.xml files.

Document Name	Description
Oracle Utilities Application Framework Business Process Guide	Explains how to get acquainted with the user interface. It explains the different types of pages or portals that you may come across in the application. It explains how to set the user preferences and how to create, manage, assign, and complete a To Do in the application. It also explains how to submit reports and view historic reports in the application.
Oracle Utilities Application Framework Administrative Guide	Explains the general, security, user, designing, developing, and scripting options available in Oracle Utilities Application Framework (OUAF). It describes the user interface, database, configuration, and reporting tools available in OUAF. In addition, it provides information on how to configure incoming and outgoing messages and how to integrate Lightweight Directory Access Protocol (LDAP), Oracle Identity Manager (OIM), and Batch Scheduler with Oracle Revenue Management and Billing (ORMB).
Oracle Revenue Management and Billing Business Process Guide	Explains how to maintain the demographic, geographic, and financial objects (i.e. accounts) of a customer. It explains how to manage a customer's bills, payments, adjustments, credits, collections processing, statements and deposits in Oracle Revenue Management and Billing (ORMB). It also describes the financial transactions, case management, sales and marketing functions, rates engine, quotations, loans, how to monitor and execute job streams, and how to manage workflows, notifications, and overdue processing. In addition, it explains how to extract the data from the system using an extract template. The features listed and described in this document can be used in both financial services and health insurance domains.
Oracle Revenue Management and Billing Administrative Guide	Explains how to configure various features and functionalities in Oracle Revenue Management and Billing (ORMB). For example, billing, payments, adjustments, financial transactions, credits, collections processing, loans, service credits, background processes, quotations, case management, security, overdue processing, batch scheduler, workflow, and notifications, etc. The information available in this document can be used in both financial services and health insurance domains.

Document Name	Description
Oracle Revenue Management and Billing Banking User Guide	Describes various features which are available for the financial services business. For example, customer registration, customer 360° view, invoicing group, pricing management, multi-currency accounts, currency conversion, construct based billing and settlement, trial billing, product lifecycle management, subscription billing, mass pricing update, accrual, foreign exchange gain loss, transaction feed management, upload validated payment and adjustment data, freeze payments on notification, payment request, offset request, funding request, hold request, refund/write off request, dispute request, upload request, earnings credit rate, payment agreement request, invoice request, deal management, etc. It describes all screens related to these features and explains how to perform various tasks related to the feature in the application.
Oracle Revenue Management and Billing Insurance User Guide	Describes various features which are available for the following three lines of health insurance business – fully-insured group, self-funded, and individual. For example, customer registration, customer 360° view, pricing management, trial billing, transaction feed management, upload validated payment and adjustment data, freeze payments on notification, payment request, offset request, funding request, hold request, refund/write off request, upload request, payment agreement request, invoice request, inbound message processing, reconciliation, entity audit, premium repricing, etc. It describes all screens related to these features and explains how to perform various tasks related to the feature in the application.
Oracle Revenue Management and Billing Upgrade Path Guide	Explains the path and pre-requisites for upgrading Oracle Revenue Management and Billing from one version to another.

Document Name	Description
Oracle Revenue Management and Billing Upgrade Guide	Explains how to upgrade the ORMB application server and database from one version to another. It also explains how to migrate the ORMB data from one version to another and describes the additional tasks that you need to perform after upgrading from one version to another. It includes various appendices that contain information about new tables introduced in the current release, existing tables which are modified in the current release, dropped algorithms and algorithm types, dropped characteristic types, dropped algorithm parameters, dropped option types in feature configurations, ORMB rollup packs, and SQL statements used for data migration.
Oracle Revenue Management and Billing Direct Database Upgrade Guide	Explains how to directly upgrade the ORMB database from 2.5.0.1.0 or any later version to the current release. It also highlights any known issues during direct database upgrade and how to handle these issues in the database.
Oracle Revenue Management and Billing Transaction Feed Management - Batch Execution Guide	Explains the sequence in which the batches should be executed while performing various tasks in the Transaction Feed Management (TFM) module. It provides detailed information about each TFM batch and its parameters. It also indicates the restart and multi-threading ability of each batch. In addition, it recommends values for various parameters which can be used for tuning batch performance as per the available hardware.
Oracle Revenue Management and Billing Batch Guide	Provides detailed information about various batches which are used in different modules, such as billing, payments, financial transaction, pricing management, funding request, offset request, hold request, upload request, inbound message, payment agreement request, accruals, earnings credit rate, ILM, deferred revenue recognition, reconciliation, garbling, repricing, entity audit, statements, etc. It also contains information about the batch parameters and the batch restart and multi-threading abilities.
Oracle Revenue Management and Billing Information Lifecycle Management (ILM) Implementation Guide	Provides an overview of the Information Lifecycle Management (ILM) feature. It describes how to implement ILM for the Transaction Feed Management (TFM) and Billing modules. It also provides detailed information about the ILM batches and their parameters.
Oracle Revenue Management and Billing FOP Reports Guide	Explains how to extract data from the system using various FOP reports in Oracle Revenue Management and Billing.

Access to Oracle Support

Oracle customer access to and use of Oracle support services will be pursuant to the terms and conditions specified in their Oracle order for the applicable services.

Change Log

Revision	Last Update	Updated Section	Comments
1.1	08-May-2025	Person Level Payment Distribution	Updated Information
		C1-ADJ-PAY Feature Configuration	Updated Information
		C1-PAYPORTAL Feature Configuration	Updated Information

Contents

Prerequisites

If a customer is already using the Transaction Feed Management feature and wants to upgrade to Oracle Revenue Management and Billing Version 8.0.0.0.0, then the customer needs to ensure the following (before upgrading):

- All bills generated in the system are in the **Complete** status. In other words, there should not be any bills in the **Pending** status. If there are any bills in the **Pending** status or if any billable charge (generated through TFM) is not yet billed, disaggregation and cancellation of transactions which are uploaded using any previous version will not happen successfully.
- Transactions which are uploaded using any previous version must not be in the **Initial Product Determined (INPD)** status. They can be in the **Uploaded (UPLD)**, **Invalid (INVL)**, **Error (EROR)**, **Completed (COMP)**, or **Cancelled (CNCL)** status.
- Equal to (=) or tilde (~) symbol is not used in any existing price item parameter code and value. Otherwise, erroneous results might occur.

New Features (Generic)

This section describes the following new features added in this release that can be used in both financial services and health insurance domains:

Support Division Group in the Disaggregation, AutoPay, and GL Batches

Until now, the division group functionality in the transaction aggregation and billing batches was only tested and certified for the financial services domain. Now, the division group functionality in the following batches is tested and certified for both the financial services and health insurance domains:

- **Transaction Aggregation Batches** - C1-TXNIP, C1-TXNPS, C1-TXNVP, C1-TXNEX, C1-TXNSQ, C1-TXNCM, C1-TXMCU
- **Billing Batches** – BILLOPEN, BSGENREG, POSTPROC
- **Transaction Disaggregation Batches** - C1-DISTG, C1-BSEGD, C1-PNBD, C1-IDENT, C1-PDTXN, C1-TXNCU, C1-DRSUA
- **AutoPay Batches** – APAYCRET, ACTVTAPY, APAYACH, APAYDSFR, BALAPY, APYSDSFR, AREFRA, APAYRA
- **GL Batches** - C1-GLASN, C1-GLS, C1-GLDL

The existing parameter named **Division** in the above batches is renamed to **Division or Division Group**. It is enhanced to support both the division group and division. If you specify the value for the **Division or Division Group** parameter, the system will first check whether it is a division group. If so, the system will perform the expected behavior for all the divisions which belong to the division group. However, if the specified value is not a division group, the system will check whether it is a division and will accordingly perform the expected behavior for the respective division. If you do not specify the value for the **Division or Division Group** parameter, the system will perform the expected behavior for all the divisions in the system.

Points to Note:

If the transaction disaggregation cycle is started for a division (for example, D001), then you need to complete the cycle of the respective division before starting the new cycle for the same division (i.e., D001).

If the transaction disaggregation cycle is started for a division group (for example, DG01), then you need to complete the cycle of the respective division group before starting the new cycle for the same division group (i.e., DG01).

Points to Note:

If the transaction disaggregation cycle is started for a division group (for example, DG02 which includes the D001 and D002 divisions), then you cannot start the new cycle for any division (i.e., D001 or D002) which belongs to the respective division group until the disaggregation cycle of that division group is completed. Similarly, if the transaction disaggregation cycle is started for a division (for example, D001 which is included in the DG01 division group), then you cannot start the new cycle for the DG01 division group until the disaggregation cycle of the respective division (i.e., D001) is completed.

The support for comma(,) separated values for the **Division** parameter in the **C1-GLASN** batch is deprecated from this release. Instead, we recommend you use the **Division Group** functionality.

FT Extension Record on Adjustment Freeze

Oracle Revenue Management and Billing enables you to create financial transaction extension record in the **C1_FT_EXT** table whenever an adjustment financial transaction is frozen. A new algorithm type named **C1-STMPADFTX** is introduced in this release. It should be attached to the **Adjustment Freeze** system event of the respective adjustment type. This algorithm does the following:

- Creates a FT extension record in the **C1_FT_EXT** table whenever an adjustment financial transaction is frozen. The following details required for the FT extension record are derived from the related revenue financial transaction using the match event ID - Policy ID, Plan ID, Start Date, End Date, Membership ID, Related Revenue Financial Transaction ID, Health Plan Code, and Price Item Code.
- Splits the GL lines of the adjustment financial transaction based on the respective related revenue financial transaction. The GL split is done only when the **General Ledger Split Required** parameter in the algorithm is set to **Y**.

You need to attach an algorithm created using the **C1-STMPADFTX** algorithm type to the **Adjustment Freeze** system event of the offset request and reconciliation adjustment types. The system will then create FT extension records for the offset request and reconciliation adjustments while freezing the respective financial transactions.

Person Level Payment Distribution

Oracle Revenue Management and Billing provides the ability to apply a payment to a person. The system will then distribute the payment amount against the unpaid bills of the person's accounts and all its child persons' accounts. This feature is only applicable for person's and its child persons' accounts that practice open item accounting. At present, the system supports the person level payment distribution only through the **Payment Request** feature and not through any other payment methods (such as, inbound web service, EDI 820, or payment upload). You can opt for the person level payment distribution while creating or transferring a payment through the **Payment Request** feature.

While creating a match type for the person level payment distribution, you must set the entity type of the match type to **Person**. A new algorithm type named **C1-MD-PER** is introduced in this release.

It enables you to fetch all the open bills of the person and its child persons in the hierarchy. If the **Invoice Type Characteristic Type** and **Invoice Type Characteristic Value** parameters are defined in the algorithm, the system will retrieve open bills of only those accounts from the person hierarchy where the given characteristic is defined for the account with the respective value. However, if the **Invoice Type Characteristic Type** and **Invoice Type Characteristic Value** parameters are not defined in the algorithm, the system will retrieve all the open bills from the person hierarchy. In case you want to match payment against the accounts with different invoice types (i.e., Claims and Admin), you need to define two algorithms using the **C1-MD-PER** algorithm type with different invoice types (i.e., one with invoice type set to Claims and another with invoice type set to Admin) and then specify both the match types in the payment creation or transfer request. Note that there are few behavioral exceptions while using the person level payment distribution option:

- You can use multiple match types in the payment creation or transfer request. But, while using the match type where the entity type is set **Person**, you cannot use any another match type where the entity type is set to **Account** or **Bill**. You are only allowed to use additional match types where the entity type is set **Person**.
- Any excess amount is applied only to the payor account and not to each payee account.
- Excess amount is distributed only when the payment is manually distributed by clicking either **Distribute** or **Distribute and Freeze** button and not when the payment creation or transfer request is created in the **Draft** status.

A new algorithm type named **C1-DFT-EXS** is introduced in this release. To use the person level payment distribution option in the **Payment Request** feature, you need to attach an algorithm created using the **C1-DFT-EXS** algorithm type to the **Enter** system event of the **Distribute** and **Distribute And Freeze** status (with highest sequence number) in the **C1-PaymentRequest** business object.

To implement this feature, the following changes are made to the system:

- A new option type named **Person Level Payment Characteristic Type** is added to the **C1-ADJ-PAY** feature configuration.
- A new option type named **FK Reference for Account** is added to the **C1-PAYPORTAL** feature configuration.
- Two new algorithm types are introduced in this release - **C1-MD-PER** and **C1-DFT-EXS**.
- Two existing algorithm types named **C1-PAY-DFT** and **C1-PAYREQPOS** are enhanced to validate whether all the match types specified in the payment creation or transfer request have entity type set to **Person**.
- The **C1-PAYCREATE** algorithm type is enhanced to stamp person ID as a characteristic on the payment when it applied using a match type where the entity type is set to **Person**.

Note: You need to set the above-mentioned new option types in the **C1-ADJ-PAY** and **C1-PAYPORTAL** feature configurations. In addition, you need to add one more value named **DST.UNPAID_AMT** for the **Bill** option type in the **C1-PYREQSRT** feature configuration.

New Features (Specific to Financial Services)

This section describes the following new features added in this release that can be used in the financial services domain:

FOP Reports

The following FOP reports are newly shipped in this release:

- **Pricing Detail Report** – Enables you to extract the effective standard price list, account agreed, and customer agreed pricing of various customers in a particular division. While generating the pricing detail report, you can specify the following parameters – Division, Pricing Type (i.e., Standard or Agreed), Customer Identifier Type, Customer Identifier, Customer Class, Effective Start Date, Effective End Date, Expiry Start Date, Expiry End Date, Price Item, Pricing Flag (i.e., **Z** for Zero Pricing, **E** for Effective Pricing, and **X** for Expired Pricing). The division and either effective date range or expiry date range are mandatory.

  You can generate the pricing detail report from the user interface or through a batch process in the Excel and PDF formats. We have shipped the following pricing detail reports in this release:

  - **FOPPRICEBPDF** - Used when you want to generate the pricing detail report through the **C1-RPTGN** batch in the PDF format.
  - **FOPPRICEBXLS** - Used when you want to generate the pricing detail report through the **C1-RPTGN** batch in the Excel format.
  - **FOPPRICEOPDF** - Used when you want to generate the pricing detail report from the user interface in the PDF format.
  - **FOPPRICEOXLS** - Used when you want to generate the pricing detail report from the user interface in the Excel format.

Bill Correction

In the financial services domain, the business often needs to correct the bills in various scenarios, such as due to pricing errors, incorrect configuration, transaction processing errors, operational errors identified post billing, etc. As a result, not only the current bills but also the past bills generated in the system may be impacted.

The billing errors are usually identified by the business, customers, system users, and so on at any stage of the billing process. For example, when the trial or regular bill is generated, regular bill is completed, payment is made against the bill, the next bill is issued, etc. At present, the business is manually handling the entire bill correction process from the configuration change to the bill regeneration including the old bill cancellation, pricing changes, transaction disaggregation, transaction aggregation, automatic payment creation, FT posting, bill extraction, etc.

Now, the system facilitates you with a robust bill correction model through which you complete the end-to-end bill correction process from the existing bill cancellation to the new bill generation. At present, you can add new charges to a bill, or make pricing changes and view the impacted bills through the bill correction model itself. Once you create a bill correction request at the account or bill level, you can add new billable charges to the bill or correct any existing charges included in the bill and then regenerate a new bill with the additional or corrective charges. Note that, at present, you can correct or add only non-recurring billable charges and not recurring billable charges through the **Bill Correction** feature.

On the other hand, once you create a bill correction request at the price assignment level, you can verify the impact on all the existing bills before making the pricing changes, make the pricing changes, and then regenerate all the impacted bills. Note that, at present, only transaction based regular price assignments and not non-transaction based regular or post-processing price assignments can be corrected through the **Bill Correction** feature.

To implement this feature, the following changes are made to the system:

- A new master configuration business object named **C1-BillCorrectionConfig** is introduced in this release. You need to create a master configuration for bill correction as per the business requirements. It enables the system to determine whether you can correct the bills of a particular period or not, whether you can correct the bills which are already paid, and whether you can correct the bills for which the accounting period has closed, etc.
- A new screen named **Bill Correction Type** is introduced in this release. It enables you to create, edit, copy, and delete a bill correction type. A bill correction type enables the system to determine the bill correction business object using which a bill correction request should be created, whether approval process is required for the respective bill correction request, whether bill tolerance check is required on the new bill generation, etc. In addition, it also enables the system to determine whether the automatic payment creation and extraction process of an impacted bill should be kept on hold until the new bill is generated. The system then releases the hold on the impacted bills when the impacted bills are canceled.
- A new screen named **Bill Correction** is introduced in this release. It enables you to create, edit, and delete a bill correction request.

Bill Correction Due to Correction in Charges

While creating a bill correction request at the account or bill level, you need to specify the bill for which correction is required. On creating a bill correction request, the status of the bill correction request is set to **Draft**. Note that all the charges which are included in the bill are listed as the correction entities in the bill correction request.

On clicking the **Verify Impact** button, the system fetches the impacted bill in the deferred mode by executing the **C1-BCIMV** batch job. Once the impacted bill is derived, the status of the bill correction request is changed from **Deferred Impact Verification** to **Impact Verification Completed**. On clicking the **Broadcast** icon corresponding to a correction entity (i.e., billable charge), you can view the bills which will be impacted when the charge is corrected.

You can then submit the bill correction request. On clicking the **Submit** button, the system checks whether the number of bill segments in the bill exceeds the online record process limit (defined in the **C1-BLCORBLCN** algorithm).

Bill Correction in the Online Mode

If the number of bill segments in the bill does not exceed the online record process limit, the system cancels the impacted bill immediately and changes the status of the bill correction request to **Correction In Progress**. If you want to correct the existing charges included in the bill, you can click the link on the respective correction entity (i.e., billable charge) and navigate to the **Billable Charge** screen where you can make required changes to the existing charge. However, if you want to include additional charges in a bill, you can click the **Add Billable Charge** button in the **Bill Correction** screen and navigate to the **Billable Charge** screen from where you can add the required billable charge. You can add multiple billable charges via the **Bill Correction** screen. Once you add the required billable charges, you need to select all the charges (i.e., correction entities) and then click the **Regenerate** button. The new bill is generated in the **Pending** status. Once you click the **Freeze** button, the status of the bill segments is changed to **Frozen**. Here, if the **Bill Tolerance Check** option is selected in the respective bill correction type, then the system will create the required To Do for bill review when the bill amount does not fall within the tolerance limit. In addition, the system will not allow you to freeze the bill segments until you complete the respective To Do generated for the bill. Once the To Do is completed, you can freeze the bill segments of the new bill and then complete the bill by clicking the **Complete** button. Once the new bill is completed, the status of the impacted bill in the bill correction request is changed to **Bill Regeneration Completed**. You can then view the new bill corresponding to the impacted bill in the **Bill Correction** screen.

Once the status of all the impacted bills is changed to **Bill Regeneration Completed**, the status of the respective correction entity is changed to **Completed**. And, finally, once the status all the correction entities in the bill correction request is changed to **Completed**, the status of the bill correction request is changed to **Processed**.

Note: The **Freeze/Complete** button appears instead of the **Freeze** and **Complete** buttons when the **Bill Segment Freeze Option** field is set to **Freeze At Bill Completion** in the installation options.

Bill Correction in the Deferred Mode

If the number of bill segments in the bill exceeds the online record process limit, the system cancels all the impacted bills in the deferred mode by executing the **C1-BLCNL** batch job. Once the impacted bill is canceled, the status of the bill correction request is changed from **Deferred Bill Cancelation** to **Configuration Correction**. In addition, a To Do is created for the user to make the required changes in the bill. If you want to correct the existing charges included in the bill, you can click the link on the respective correction entity (i.e., billable charge) and navigate to the **Billable Charge** screen where you can make required changes to the existing charge. However, if you want to include additional charges in a bill, you can click the **Add Billable Charge** button in the **Bill Correction** screen and navigate to the **Billable Charge** screen from where you can add the required billable charge. You can add multiple billable charges via the **Bill Correction** screen. Once you add the required billable charges, you need to select all the charges (i.e., correction entities) and then click the **Regenerate Bill** button.

The system changes the status of the bill correction request to **Deferred Regeneration**. You need to then manually execute or schedule all the billing batches (with the off cycle mode set to **C**).

Once the new bill is generated and completed for a bill correction request, the status of the impacted bill in the bill correction request is changed to **Bill Regeneration Completed**. You can then view the new bill corresponding to the impacted bill in the **Bill Correction** screen.

Once the status of all the impacted bills is changed to **Bill Regeneration Completed**, the status of the respective correction entity is changed to **Completed**. And, finally, once the status all the correction entities in the bill correction request is changed to **Completed**, the status of the bill correction request is changed to **Processed**.

Points to Note:

While creating a batch job using the **POSTPROC** batch control with the off cycle mode set to **C**, you need to specify your email address. The system then internally updates the status of the impacted bill, respective correction entity, and bill correction request once the batch is successfully executed.

If the **Final Review Required** option is selected in the respective bill correction type, the status of the bill correction request is changed to **Final Review In Progress** on clicking the **Regenerate Bill** button. Once you review the changes in the bill correction request and click the **Complete Review** button, the status of the bill correction request is changed to **Deferred Regeneration**.

Bill Correction Due to Pricing Changes

While creating a bill correction request at the pricing level, you need to specify the price assignment for which correction is required. On creating a bill correction request, the status of the bill correction request is set to **Draft**. Note that the price assignment is listed as the correction entity in the bill correction request. You can add more than one price assignments in the bill correction request.

On clicking the **Verify Impact** button, the system fetches all the impacted bills and their bill segments where the pricing is referred in the deferred mode by executing the **C1-BCIMV** batch job. Once all the impacted bills are derived, the status of the bill correction request is changed from **Deferred Impact Verification** to **Impact Verification Completed**. On clicking the **Broadcast** icon corresponding to a correction entity (i.e., price assignment), you can view the bills which will be impacted when the price assignment is corrected.

You can then submit the bill correction request. On clicking the **Submit** button, the system checks whether the total number of bill segments of the impacted bills exceeds the online record process limit (defined in the **C1-BLCORBLCN** algorithm).

Bill Correction in the Online Mode

If the total number of bill segments does not exceed the online record process limit, the system cancels all the impacted bills immediately and changes the status of the bill correction request to **Correction In Progress**. You can then click the **Edit** icon corresponding to the price assignment in the **Bill Correction** screen and navigate to the **Price Item Pricing** screen where you can make the required changes in the price assignment.

Once the pricing changes are done, you need to select the required price assignments for which you want to initiate the transaction disaggregation process and then click the **Initiate Disaggregation** button.

The system will then automatically create a disaggregation request using the request type as **Price Assignment** in the **Pending** status. You need to then manually execute or schedule the transaction disaggregation batches. Once the status of the transaction disaggregation request is changed to **Complete**, you need to manually execute or schedule the transaction aggregation batches. Once the transactions are reaggregated, you need to select the required price assignments based on which you want to regenerate the bills and then click the **Regenerate** button. The new bill is generated in the **Pending** status. Once you click the **Freeze** button, the status of the bill segments is changed to **Frozen**. Here, if the **Bill Tolerance Check** option is selected in the respective bill correction type, then the system will create the required To Do for bill review when the bill amount does not fall within the tolerance limit. In addition, the system will not allow you to freeze the bill segments until you complete the respective To Do generated for the bill. Once the To Do is completed, you can freeze the bill segments of the new bill and then complete the bill by clicking the **Complete** button. Once the new bill is completed, the status of the impacted bill in the bill correction request is changed to **Bill Regeneration Completed**. You can then view the new bill corresponding to the impacted bill in the **Bill Correction** screen.

Once the status of all the impacted bills is changed to **Bill Regeneration Completed**, the status of the respective correction entity is changed to **Completed**. And, finally, once the status all the correction entities in the bill correction request is changed to **Completed**, the status of the bill correction request is changed to **Processed**.

Note: The **Freeze/Complete** button appears instead of the **Freeze** and **Complete** buttons when the **Bill Segment Freeze Option** field is set to **Freeze At Bill Completion** in the installation options.

Bill Correction in the Deferred Mode

If the total number of bill segments exceeds the online record process limit, the system cancels all the impacted bills in the deferred mode by executing the **C1-BLCNL** batch job. Once all the impacted bills are canceled, the status of the bill correction request is changed from **Deferred Bill Cancelation** to **Configuration Correction**. In addition, a To Do is created for the user to make the required changes in the price assignment. You can then click the **Edit** icon corresponding to the price assignment in the **Bill Correction** screen and navigate to the **Price Item Pricing** screen where you can make the required changes in the price assignment. Once the pricing changes are done, you need to select the required price assignments for which you want to initiate the transaction disaggregation process and then click the **Initiate Disaggregation** button.

The system will then automatically create a disaggregation request using the request type as **Price Assignment** in the **Pending** status. The status of the bill correction request is changed to **Transaction Reprocessing**. You need to then manually execute or schedule the transaction disaggregation batches. Once the status of the transaction disaggregation request is changed to **Complete**, you need to manually execute or schedule the transaction aggregation batches. Once the transactions are reaggregated, you need to select the required price assignments based on which you want to regenerate the bills and then click the **Regenerate Bill** button.

The system changes the status of the bill correction request to **Deferred Regeneration**. You need to then manually execute or schedule all the billing batches (with the off cycle mode set to **C**).

Once the new bills are generated and completed for a bill correction request, the status of the impacted bill in the bill correction request is changed to **Bill Regeneration Completed**. You can then view the new bill corresponding to the impacted bill in the **Bill Correction** screen.

Once the status of all the impacted bills is changed to **Bill Regeneration Completed**, the status of the respective correction entity is changed to **Completed**. And, finally, once the status all the correction entities in the bill correction request is changed to **Completed**, the status of the bill correction request is changed to **Processed**.

Points to Note:

While creating a batch job using the **POSTPROC** batch control with the off cycle mode set to **C**, you need to specify your email address. The system then internally updates the status of the impacted bill, respective correction entity, and bill correction request once the batch is successfully executed.

If the **Final Review Required** option is selected in the respective bill correction type, the status of the bill correction request is changed to **Final Review In Progress** on clicking the **Regenerate Bill** button. Once you review the changes in the bill correction request and click the **Complete Review** button, the status of the bill correction request is changed to **Deferred Regeneration**.

The system also enables you to create a bill correction request wherein you can add both billable charges as well as price assignments as the correction entities.

New Features (Specific to Insurance)

This section describes the following new features added in this release that can be used in the health insurance domain:

Health Check

A new screen named **Health Check** is introduced to facilitate the system health check for insurance companies. It enables you to perform duplicate data integrity check, detect errors in inbound message processing, find unbilled memberships, find memberships with unbilled sponsor charges, extract bill segments generated beyond charge end date, and view canceled memberships with one day billable charge. The **Health Check** screen is tested and certified for the fully insured group and fully insured individual lines of business. At present, the system supports duplicate data integrity check for the following entities through this screen - Policy, Policy Plan, Membership, Membership Person, Billable Charge and Bill Segment.

You can access this screen from the **Admin** menu. It contains the following zones:

- **Duplicate Entity** – Enables you to view duplicate data for various entities in the system within a specific date range. The valid entities are:
    - **Policy** - Used when you want to retrieve all the duplicate policies with the **In Force/Active** status where the policy number and source system are same, and the policy date range is either same or overlapping.
    - **Policy Plan** - Used when you want to retrieve all the duplicate policy plans with the **Active** status where the plan number, policy number and source system are same, and the policy plan date range is either same or overlapping.
    - **Membership** – Used when you want to retrieve all the duplicate memberships with the **Active** status where the following conditions are met:

        - External membership ID, membership type, and health plan, or External membership ID, membership type, policy, and policy plan are same for the individual or group membership, respectively.
        - All the member persons in the membership are identical.
        - The membership date range is either same or overlapping.
    - **Membership Person** – Used when you want to retrieve all the member persons who have been added in the membership two or more times with the same or overlapping date range.
    - **Billable Charge** – Used when you want to retrieve all the duplicate billable charges with the **Billable** status for the same membership and price item combination with the same or overlapping date range.
    - **Bill Segment** – Used when you want to retrieve all the duplicate bill segments with the **Frozen** status and the **Show on Bill** flag set to **True** for the same membership and price item combination with the same or overlapping date range.
- **Membership without Sponsor Billable Charge** - Enables you to view all the memberships for which the benefit sponsor charges are not yet created in the system. Here, the **Price Item** and **Benefit Sponsor Price Item** fields are mandatory.

  On specifying the price item and benefit sponsor price item, the system first derives all the billable charges of a given price item and then determines the memberships for which these billable charges are created. Once the list of memberships is derived, the system fetches the memberships where the given benefit sponsor price item is specified to create sponsor billable charges. Once the memberships are filtered, the system then checks whether the benefit sponsor charges are created for the respective memberships. If the benefit sponsor charges are not yet created for the memberships, the system will list such memberships in this zone.
- **Bill segments beyond billable charge end date** - Enables you to view all the frozen bill segments which are generated beyond the billable charge end date.
- **Membership not billed** - Enables you to view all the memberships which are due for billing for the specified month and year but are not yet billed on the accounting date as per the respective account's bill cycle.
- **Error Messages Count in Inbound Message** - Enables you to view the count of error messages that occurred while processing inbound messages. The system considers the error messages of inbound messages which are created within the specified date range and are in the **Pending** or **Rejected** status. On clicking the **Broadcast** icon corresponding to the error message count, the **Inbound Message List** zone appears.
- **Inbound Message List** - Enables you to view the inbound messages where the respective error has occurred.
- **Cancelled Memberships with one day Billable Charge** - Enables you to view all the memberships which are created within the specified date range and are in the **Canceled** status and for which one day billable charge exists in the system.
- **Error Messages in Inbound Message** - Enables you to view the error messages that occurred while processing inbound messages. You can view the error messages of inbound messages which are in the **Pending** or **Rejected** status.

Referring Paid through Date in Delinquency Management

Until now, the paid through date stamped on the account was not considered while creating or canceling a delinquency process for the fully insured individual line of business. Now, the **C1-DLNQMNRL** algorithm is enhanced to consider the paid through date stamped on the account. Now, in addition, this algorithm does the following:

- If the paid through date is stamped on the account and paid through date is later than batch business date (i.e., processing date), it skips the account, and its debt is not monitored.
- If the paid through date is stamped on the account and if the overdue bill's max bill segment end date is less than or equal to the paid through date, it skips the respective overdue bill while monitoring the account's debt.

The system then accordingly creates a delinquency process for the account. The paid through date of an account is updated immediately once the bill of the account is completed. There is a need to regularly monitor whether the existing delinquency process of the account should be canceled or not. Therefore, the **C1-CANDELPRC** algorithm is also enhanced to consider the paid through date stamped on the account. Now, in addition, this algorithm does the following when the **C1-DPMON** batch is executed:

- If the paid through date is stamped on the account and paid through date is later than batch business date (i.e., processing date), it cancels the delinquency process of the account with the appropriate cancel reason.

Retention Type Enrollment Tier Based Pricing

Until now, you were able to calculate certain charges, such as stop-loss premium, administrative fees, etc. based on number of enrollments using the retention type enrollment based pricing. While defining a retention type enrollment based pricing rule, you were able to define different fees for different set of pricing parameters. There are certain services (i.e., price items) for which business needs to define a complex pricing model wherein several pricing variations are offered based on certain mandatory and non-mandatory pricing parameters. While defining, editing, or copying a retention type enrollment based pricing rule with a complex pricing model, the system performance was deteriorated, thereby affecting the system reliability and usability over time.

To handle the above business scenario, a multi-tiered retention type enrollment based pricing model is offered in this release. The system enables you to define the following two types of retention type enrollment based pricing rules in the system:

- Retention Type Enrollment Based Pricing Rule without Tier (Traditional method)
- Retention Type Enrollment Based Pricing Rule with Tier

To implement this feature, the following changes are made to the system:

- The **tieredSw** tag is newly added in the **C1-PrcRuleTypRetEnrollBased** business object schema.
- A new business object named **C1-PricingRuleRetTypeEnrolTier** is introduced in this release.

- A new option type named **Approval Workflow Group for Retention Type Enrollment Tier** is added in the **C1-ASOBLLNG** feature configuration.

A new field named **Tiered Switch** is available in the **Enrollment-Specific Additional Data** section while defining a retention type enrollment based pricing rule type. It enables the system to determine whether the retention type enrollment based pricing rule will be tier or non-tier based. If you select the **Tiered Switch** option, you need to set the pricing rule business object to **C1-PricingRuleRetTypeEnrolTier** in the retention type enrollment based pricing rule type. However, if you do not select the **Tiered Switch** option, you need to set the pricing rule business object to **C1-PricingRuleRetTypeEnroll** in the retention type enrollment based pricing rule type. In this way, you can maintain two separate retention type enrollment based pricing rule types in the system – one without tier and another with tier.

Before you create multi-tiered retention type enrollment based pricing rule, you need to create the following:

- Required parameters including the **Tier** parameter where all the possible business tiers (for example, Spouse + 1 Dependent, Spouse + 2 Dependents, Family, etc.), are set as the predefined values.
- Associate the required parameter (for example, Healthcare Coverage Class) as the mandatory parameter with the price item (**Note:** The system will then, by default, select the mandatory parameter while defining the pricing (i.e., fee) in the pricing rule.)
- Associate the **Tier** parameter as the non-mandatory parameter with the price item

While defining a pricing rule using the multi-tiered retention type enrollment based pricing rule type, the **Tier** button appears in the **Pricing Parameters** grid. Once you click the **Tier** button, all the business tiers set as the predefined values (for example, Spouse + 1 Dependent, Spouse + 2 Dependents, Family, etc.) are listed in the **Pricing Parameters** grid. You can then specify different fee for each mandatory pricing parameter and tier combination. Until the pricing rule is referred, you can anytime remove the tiers by clicking the **Remove Tier** button and define a non-tier based pricing, if required.

The system creates one price assignment for each mandatory pricing parameter and tier combination. You can define a multi-tiered retention type enrollment based pricing rule at the parent customer and bill group levels. You can also configure the approval workflow process for a multi-tiered retention type enrollment based pricing rule.

Billable Charge Creation or Cancellation through File Upload Interface

Until now, the system enabled you to create mass billable charges at once for the fully insured group and individual lines of business through the **Upload Request** feature. Now, in addition, the system enables you to create or cancel mass billable charges at once for the fully insured group and individual lines of business through the **File Upload Interface** feature.

A new file request type named **BCUPLD** is shipped with the product. It enables you do the following:

- Create a pass through or SQI based billable charge for an account for a particular coverage period. You can create the billable charges for the group and individual memberships.

- Cancel an existing billable charge of an account, thereby supporting billable charge reversal for a particular coverage period. You can then send the billable charge record with the appropriate corrections, if required.

Note: At present, the **BCUPLD** file request type supports maximum five billable charge characteristics by default. However, you can update the **BCUPLD** file request type to support more than five billable charge characteristics based on the requirement.

You can upload and process a billable charge creation/reversal file in the CSV format using the **BCUPLD** file request type. The billable charge creation/reversal file should contain records with the following additional information apart from the basic details – Source System, Policy Number, Plan Number, Health Plan Code, Subscriber Identifier Type, Subscriber Identifier, Membership Type, External Membership ID.

When the contract ID is not specified, the system uses the source system, policy number, plan number, and price item combination to derive the contract against which the billable charge should be created for the group membership. Similarly, the system uses the health plan code and price item to derive the contract against which the billable charge should be created for the individual membership. And, when the **C1MMBRSH** characteristic is not specified in the billable charge record, the system uses either of the following to derive the group or individual membership:

- Subscriber Identifier Type and Subscriber Identifier
- External Membership ID
- Membership Type, External Membership ID, Subscriber Identifier Type and Subscriber Identifier

If you want to cancel an existing billable charge, you need to set the **C1REVIND** characteristic type to **Y** corresponding to the billable charge record in the file. The system will then check whether a billable charge with the specified details already exist in the system. If so, the system will accordingly cancel the respective billable charge. Note that the billable charge reversal record should be sent with reversed amount (i.e., if the original charge amount was positive, then the reversal charge amount should be negative and vice-versa). To find a pass-through billable charge, the system uses the Coverage Period, Membership ID, Bill Line Level Sequence, Bill Line Level Amount, Billable Charge Status, Price Item, and Contract ID combination.

However, to find an SQI based billable charge, the system uses the Coverage Period, Membership ID, SQI Level Sequence, SQI Amount, Billable Charge Status, Price Item, and Contract ID combination. The system also enables you to specify reasons while creating or cancelling a billable charge. The reason indicates why you want to create or cancel a billable charge. Along with each reason, you can specify the following details:

- Sequence
- Priority
- Effective Date

The former two are mandatory whereas the latter one is non-mandatory. A new table named **CI_BILL_CHG_RSN** is introduced in this release to store the reasons for a billable charge. This reason is stored only for reporting purposes and is not displayed anywhere in the system. You can specify maximum 10 reasons for each billable charge record in the file.

On executing the **C1-FTRAN** batch, the system does the following:

- Creates a billable charge for the membership. It also stamps the respective membership ID as a characteristic on the billable charge.
- Cancels a billable charge where the **C1REVIND** characteristic type is set to **Y**.

Age Calculation During Continuous Individual Membership Coverage

In the fully insured individual line of business, there are scenarios wherein an individual and his/her dependent persons may continuously belong to different memberships of different health plans that belong to the same health product category, such as Medical or Dental, etc. In other words, an individual person has continuous insurance coverage over a period without any lapses or gaps. In such scenarios, the business requires that an individual person's age should be calculated based on the plan year's first continuous coverage start date. For example, in the plan year 2024, if an individual belongs to four memberships with continuous coverage period (for example, M1 with the coverage period 01-Jan-2024 to 31-Mar-2024, M2 with the coverage period 01-Apr-2024 to 30-Jun-2024, M3 with the coverage period 01-Jul-2024 to 30-Sep-2024, and M4 with the coverage period 01-Oct-2024 to 31-Dec-2024), the system should calculate the individual person's age using the M1 coverage start date.

To implement this business scenario, the following changes are made to the system:

- A new algorithm type named **C1-DTCAGEIM** is introduced in this release. An algorithm created using the **C1-DTCAGEIM** algorithm type is attached to the **Audit** system event of the **C1-IndividualMembership** business object. This algorithm determines whether the health plans belong to the same health product category (i.e., first few digits of HIOS ID are same) while deriving continuous coverage individual memberships and the plan year start month (i.e., 1 for Jan-Dec, 3 for Mar-Feb, 6 for Jun-May, etc.) based on which first continuous coverage is considered for the plan year.
- The **C1CTRLDT** characteristic type is shipped with the product.

Now, when an individual person belongs to different memberships with continuous coverage period, the system stores the plan year's first continuous coverage start date in the form of characteristic corresponding to the member person using the **C1CTRLDT** characteristic type. The system then considers this characteristic while calculating the individual person's age during premium calculation.

The system stamps this characteristic against the main subscriber and each dependent person in an individual membership. However, in the following scenarios, the **C1CTRLDT** characteristic is not stamped on the respective dependent person:

- A dependent person in any subsequent memberships (i.e., M2, M3, or M4) was not enrolled on the plan year's first continuous coverage membership (i.e. M1) start date.
- A dependent person is not continuously covered in different memberships (for example, DP1 is covered in M1 and M2 for the entire coverage period, covered in M3 from 01-Jul-2024 to 31-Jul-2024, and then covered in M4 for the entire coverage period).

If the characteristic is not stamped on any dependent person in an individual membership, the system calculates the age using the traditional method (i.e., using the age calculation date specified in the fully insured pricing rule business rule).

The above feature is implemented with the basic assumption that the main subscriber would be same in the continuous individual membership coverage. The product does not cater to the scenario wherein the main subscriber is different in the continuous individual membership coverage of a dependent person. To handle such scenarios, you can manually stamp the **C1CTRLDT** characteristic on the dependent person so that the age is calculated during the premium calculation.

To Do Creation for Manual Refund/Write Off on Membership Cancellation

Oracle Revenue Management and Billing facilitates you with the following on cancelling an individual membership or direct billed group membership:

- Automatically cancel any refund and/or write off requests which are systematically created through refund/write off instruction via the **Automatic Refund/Write Off** feature
- Create a To Do for refund and/or write off requests which are manually created for the account via the **Refund/Write Off Request** feature.

To implement this feature, the following changes are made to the system:

- A new algorithm type named **C1-WOCANMCN** is introduced in this release. An algorithm created using the **C1-WOCANMCN** algorithm type is attached to the **Canceled** status in the lifecycle of the **C1-IndMembership** and **C1-Membership** business objects.
- The **C1-RFRQC** and **C1-WORQC** To Do types are newly introduced in this release.

Note: This feature is tested and certified for the fully insured individual and direct billed group membership lines of business.

On canceling an individual membership, the system determines the account to which the individual membership is billed using the **Account Identifier Type** and **Account Identifier Value** characteristics. While fetching the characteristics, the system considers the characteristic types which are specified in the **Account Identifier Type Char Type** and **Account Identifier Value Char Type** option types of the **C1-ASOBLLNG** feature configuration.

However, on cancelling a group membership, the system checks whether the billing arrangement characteristic is defined on the group membership. The system considers the characteristic type which is specified in the **Billing Arrangement** option type of the **C1-ASOBLLNG** feature configuration. If the billing arrangement characteristic is defined on the group membership, the system checks whether the characteristic value is set to **DRCT** (i.e., Direct Billing). If so, the system derives the financially responsible person's account from the system. However, if the billing arrangement characteristic is not defined on the group membership or if its characteristic value is not set to **DRCT** (i.e., Direct Billing), the system will skip the group membership and will take no actions against it.

Once the account is derived for an individual membership or direct billed group membership, the system checks whether there is any refund/write off request created for the account. If so, the system checks whether the refund/write off request is systematically created through refund/write off instruction via the **Automatic Refund/Write Off** feature. If so, the system automatically cancels the refund/write off request of the account. However, if the refund/write off request is not systematically created through refund/write off instruction, the system creates a To Do using the respective To Do type specified in the **C1-WOCANMCN** algorithm. You can then refer this To Do and manually cancel such refund/write off request of the account.

Trigger Repricing on Deleting Derivation and Pricing Parameters of a Bill Group

Until now, you were able to delete the derivation and pricing parameters of a bill group from the user interface. But repricing was not triggered on the deletion. Now, on deleting a derivation and pricing parameters combination of a bill group, the system changes the status of the derivation and pricing parameters combination to **Inactive**. In addition, if the audit event process is configured for the **C1-BillLevel** business object, the system creates an audit event with the audit action set to **Change Row**.

On executing the **C1-CBIPR** batch, the system creates a repricing entity detail record for the audit event in the **CI_REPRC_ENTITY_DTL** table. While repricing, you need to execute the following batches in the specified sequence:

1. C1-FIBLR
2. C1-FIMRE
3. C1-CBIPR
4. C1-FIMRC
5. C1-REPC1
6. C1-REPC2
7. C1-REPC3
8. C1-FIBCR

Once the repricing entity detail record is created for the audit event, you need to execute the **C1-FIMRC** batch. It will delete the inactivated derivation and pricing parameters combination (that was earlier deleted from the user interface) from the system. If the deleted derivation and pricing parameters combination was referred for billing any memberships in the system, you need to ensure that those memberships are appropriately billed to a new bill group and do not remain unbilled in the system.

Note: The **C1-CBIPR** and **C1-FIMRC** batches and **C1-REAUDEVNT** algorithm are enhanced to implement this feature.

Split Dependent Person Coverage

Until now, when a member person data was received on reinstating a membership, the system created a new record for the dependent person with the **Active** status instead of updating the old inactive record. However, if a dependent person was active for a particular coverage period (for example, Jan 2025 to Mar 2025) and then reenrolled in the same membership for a different coverage period (for example, Jun 2025 to Dec 2025), the system did not allow to create a new record for the dependent person with the **Active** status. Instead, the system tried to update the existing record and thereby failed as the start date of coverage period was different.

To support multiple coverage period scenarios for a dependent person, the upstream system needs to send the full coverage snapshot for the dependent person. For example, if DP1 was enrolled in M1 from Jan 2025 to Mar 2025 and then reenrolled in M1 from Jun 2025 to Dec 2025, you need to send two records on reenrolment for the same member person in the **Active** status – one with the coverage period Jan 2025 to Mar 2025 and another with the coverage period Jun 2025 to Dec 2025.

Note that if the newborn is end dated and then reenrolled within the gift days period, then the newborn will still be eligible for original gift days discount on reenrolment. For example, let's assume that a newborn is enrolled on 1st May with gift days 31. This means his gift days period is from 1st May to 31st May. Now, if the newborn enrolment is ended on 5th May and then reenrolled from 15th May, the newborn would still be eligible for the gift days till 31st May.

Similarly, if you want to cancel a particular coverage period record of a member person (for example Jun 2025 to Dec 2025) and enroll the member person for a new coverage period (i.e. May 2025 to Dec2025), you need to send the full coverage snapshot of the dependent person along with the cancellation record. For example, if DP1 was enrolled in M1 for two coverage periods - Jan 2025 to Mar 2025 and Jun 2025 to Dec 2025 and if you want to change the coverage period Jun 2025 to Dec 2025 to May 2025 to Dec 2025, you need to send three records for the same member person in the specified sequence through the same inbound message:

1. One record in the **Active** status with the coverage period Jan 2025 to Mar 2025
2. Another record in the **Canceled** status with the coverage period Jun 2025
3. Third record in the **Active** status with the coverage period May 2025 to Dec 2025

The specified sequence helps to address any erroneous results. Note that the split dependent person coverage feature is applicable for the fully insured group and fully insured individual lines of business.

ILM Support for Reconciliation and Discrepancy Report

Until now, the out of box ILM implementation was provided for the Transaction Feed Management, Billing, and Trial Billing modules. Now, in addition, the out of box ILM implementation is provided for the Reconciliation module. To facilitate this feature, the following changes are made to the system:

- Two new algorithm types named **C1-REILMELIG** and **C1-DRILMELIG** are introduced in this release.
- Two new batches named **C1-RECRL** and **C1-DRCRL** are introduced in this release.

To enable the ILM support for reconciliation and its pay instructions, you need to set the ILM specific option types in the **C1-RECONCLT** maintenance object. Similarly, to enable the ILM support for discrepancy report, you need to set the ILM specific option types in the **C1-DISCR-RPT** maintenance object. For more information, see the *Oracle Revenue Management and Billing ILM Implementation Guide*.

On executing the **C1-RECRL** batch, the system identifies and marks the member reconciliations and its pay instructions which are eligible for archival. Similarly, on executing the **C1-DRCRL** batch, the system identifies and marks the discrepancy reports which are eligible for archival. For more information about these batches, see the *Oracle Revenue Management and Billing ILM Implementation Guide*.

Manual Hold Request Creation Via Inbound Message

Oracle Revenue Management and Billing provides the ability to create a hold request through an inbound message. A new set of tags are introduced in the health care inbound message schema. An inbound message enables you to hold only the bill generation process of an account by creating a hold request. You can provide the bill hold information either at the person or account level. If you provide the bill hold information at the account level, the system creates a hold request with the entity level set to **Account** and includes the respective account in the hold request. However, if you provide the bill hold information at the person level, the system creates a hold request with the entity level set to **Account** and includes all the accounts of the person in the hold request.

To create a hold request via an inbound message, you must set the **action** tag to **H** within the **billHold** tag. You can also send information, such as hold reason, start date, end date, and hold request type along with the **action** tag in the inbound message. If you send all these details in the inbound message, the system creates a hold request using the given information. However, if you do not send all these details in the inbound message, the system first derives the hold request preference from the **Hold Request Field Mapping** option type of the **C1-HOLDSRCH** feature configuration. Then, the system creates a hold request using the following attributes of the hold request preference:

- Default Manual Hold Reason
- Default Manual End Date
- Default Manual Hold Request Type Code

The system sets the hold request start date to the system date. The hold request is created in the **Active** status. The hold process in the hold request is set to **Bill Generation** and the hold process and hold entity start and end dates are set to the hold request start and end dates, respectively. The bill after date is set for the accounts on the **C1-HLMON** batch execution.

You can also release a hold request through an inbound message. To release a hold request via an inbound message, you must set the **action** tag to **R** within the **billHold** tag. You can also send information, such as hold reason, start date, end date, and hold request type along with the **action** tag in the inbound message. If you send all these details in the inbound message, the system derives an active hold request with the given hold reason, start date, end date, and hold request type combination. However, if you do not send all these details in the inbound message, the system first derives the hold request preference from the **Hold Request Field Mapping** option type of the **C1-HOLDSRCH** feature configuration. Then, the system derives an active hold request using the following attributes of the hold request preference:

- Default Manual Hold Reason
- Default Manual End Date
- Default Manual Hold Request Type Code

If a hold request exists with the respective account or with the accounts of the person, the system changes the status of the hold request to **Released**. While releasing a hold request, the system derives the reason from the **Default Manual Release Reason** attribute of the hold request preference. The bill after date is updated for the accounts on the **C1-HLMON** batch execution.

The system also enables you to discard a hold request through an inbound message. The system changes the status of the hold request to **Discarded** when the **action** tag is set to **R** within the **billHold** tag and the hold request start date is a future date. While discarding a hold request, the system derives the reason from the **Default Manual Discard Reason** attribute of the hold request preference.

Points to Note:

The approval process for hold request is not supported in this feature. Therefore, we recommend you to use a hold request type where the **Activation Approval** or **Release Approval** option is not selected.

This feature is tested and certified for both the fully insured group and fully insured individual lines of business.

Automatic Hold Request Creation Via Inbound Message

Oracle Revenue Management and Billing provides the ability to automatically create a hold request whenever the status of an inbound message is changed to **Rejected**. Note that an automatic hold request is created only when the **Create Automatic Hold Request** attribute of the hold request preference is set to **Yes**. The system considers the hold request preference which is specified in the **Hold Request Field Mapping** option type of the **C1-HOLDSRCH** feature configuration.

To enable the automatic hold request creation via inbound message feature, you need to attach an algorithm created using the **C1-HCINBHOLD** algorithm type to the **Enter** system event of the **Rejected** status in the **C1-InboundMessage** business object.

Once the status of an inbound message is changed to **Rejected**, the system automatically holds only the bill generation process of an account by creating a hold request. If an account is updated through an inbound message, the system creates a hold request with the entity level set to **Account** and includes the respective account in the hold request. If an existing person with one or more accounts is updated through an inbound message, the system creates a hold request with the entity level set to **Account** and includes all the existing accounts of the person in the hold request. Note that the automatic hold request creation via inbound message is not valid when a request to add a person or account is received through an inbound message.

While creating an automatic hold request, the system uses the following attributes of the hold request preference:

- Default Automatic Hold Reason
- Default Automatic End Date
- Default Automatic Hold Request Type Code

The system sets the hold request start date to the system date. The hold request is created in the **Active** status. The hold process in the hold request is set to **Bill Generation** and the hold process and hold entity start and end dates are set to the hold request start and end dates, respectively. The bill after date is set for the accounts on the **C1-HLMON** batch execution.

If the member data is received along with the person data in an inbound message, the system determines whether the person belongs to a group or individual membership. If the person belongs to an individual membership, the system determines the account to which the individual membership is billed using the **Account Identifier Type** and **Account Identifier Value** characteristics which are defined on the individual membership. While fetching the characteristics, the system considers the characteristic types which are specified in the **Account Identifier Type Char Type** and **Account Identifier Value Char Type** option types of the **C1-ASOBLLNG** feature configuration. However, if the person belongs to a group membership, the system determines the account to which the group membership is billed using the following attributes of the hold request preference:

- Characteristic Type for Bill Level 1
- Characteristic Type for Bill Level 2
- Characteristic Type for Bill Level 3
- Characteristic Type for Bill Level 4

Once the billing account is derived for the membership, the system creates an automatic hold request for the respective account.

Points to Note:

You can manually release an automatic hold request from the user interface or through an inbound message.

The approval process for hold request is not supported in this feature. Therefore, we recommend you to use a hold request type where the **Activation Approval** option is not selected.

This feature is tested and certified for both the fully insured group and fully insured individual lines of business.

Automatic Hold Request Creation Via File Upload Interface

Oracle Revenue Management and Billing provides the ability to automatically create a hold request when a billable charge creation or cancelation fails for an account through the **File Upload Interface** feature. Note that an automatic hold request is created only when the **Create Premium Hold Request** attribute of the hold request preference is set to **Yes**. The system considers the hold request preference which is specified in the **Hold Request Field Mapping** option type of the **C1-HOLDSRCH** feature configuration.

To enable the automatic hold request creation via file upload interface, you need to attach an algorithm created using the **C1-HRFRT** algorithm type to the **Post-Processing** system event of the **C1-FTRAN** batch control. If an error occurs while creating or cancelling a billable charge for an account, the system automatically holds only the bill generation process of the account by creating a hold request.

While creating an automatic hold request, the system uses the following attributes of the hold request preference:

- Default Automatic Hold Reason
- Default Automatic End Date
- Default Automatic Hold Request Type Code

The system sets the hold request start date to the system date. The hold request is created in the **Active** status. The hold process in the hold request is set to **Bill Generation** and the hold process and hold entity start and end dates are set to the hold request start and end dates, respectively. The bill after date is set for the accounts on the **C1-HLMON** batch execution.

Note that the system creates one hold request for all the accounts of a file for which billable charge creation or cancelation failed on executing the **C1-FTRAN** batch.

Points to Note:

You can manually release an automatic hold request from the user interface or through an inbound message.

The approval process for hold request is not supported in this feature. Therefore, we recommend you to use a hold request type where the **Activation Approval** option is not selected.

This feature is tested and certified for both the fully insured group and fully insured individual lines of business.

Enhancements (Generic)

This section lists the enhancements made to the following features that are used in both financial services and health insurance domains:

Extract Account Name for the Bill Tolerance To Do

Until now, whenever the **C1-CHKINVRBR** algorithm is attached to the **Pre Bill Completion Review** system event of a customer class, the system checks whether any bill of the respective accounts exceeds the tolerance limit. If so, the system creates a tolerance To Do using the given tolerance To Do type. In this tolerance To Do, the Bill ID extracted as the extra information by the **C1-CHKINVRBR** algorithm was displayed incorrectly. Now, this issue is fixed. The extracted Bill ID is displayed accurately corresponding to the To Do in the user interface.

In addition, as per the business requirements, the account name (i.e., account's main customer name) is extracted by the **C1-CHKINVRBR** algorithm to be displayed corresponding to the To Do in the user interface. The existing To Do type named **C1-BT_TB** is enhanced to include an additional sort key named **Account Name**. It is also set as the default sort key in this release. Now, whenever a tolerance To Do is created for a bill through the **C1-CHKINVRBR** algorithm, you can see the account name as the extra information corresponding to the To Do in the **Supervisor To Do Assignment** screen. Note that if you are using a custom tolerance To Do type, you need to accordingly add the **Account Name** sort key with the **Use as Default** field set to **Yes** in the respective To Do type.

Billing Batches

The following changes are made to the Billing batches:

- Two new parameters named **Account ID** and **Process All or Selected Accounts** are added to the **BILLOPEN** batch control.
- Three new parameters named **Account ID**, **Process All or Selected Accounts**, and **Billing Processing Sequence** are added to the **BSGENREG** batch control.
- Two new parameters named **Account ID** and **Process All or Selected Accounts** are added to the **POSTPROC** batch control.

- The existing parameter named **Off Cycle Switch** is enhanced in the **BILLOPEN**, **BSGENREG**, and **POSTPROC** batches to support the bill correction requests. If you set the **Off Cycle Switch** parameter value to **Y**, the batch considers the new parameter named **Off Cycle Mode** introduced in this release. It enables the system to determine whether to create adhoc bills for an account through an invoice request or through a bill correction request. The valid values for the **Off Cycle Mode** parameter are:
    - **I** – Used when you want to process the invoice requests created for the persons or accounts in the **Deferred Processing Batch** status.
    - **C** – Used when you want to process the bill correction requests in the **Deferred Regeneration** status.

  If you do not specify any value for the **Off Cycle Mode** parameter when the **Off Cycle Switch** parameter is set to **Y**, by default, it is set to **I**.
- While creating a batch job using the **POSTPROC** batch control with the off cycle mode set to **C**, you need to specify your email address. The system will then internally update the status of the impacted bill, respective correction entity, and bill correction request once the batch is successfully executed.

Batch Scheduler

The following enhancements are made to the Batch Scheduler feature:

- Now, while defining or editing a scheduler program for a batch control, you can view the detailed description of the batch parameters in the grid.

C1-ADJ-PAY Feature Configuration

The following changes are made to the **C1-ADJ-PAY** feature configuration:

- A new option type named **Person Level Payment Characteristic Type** is added to the **C1-ADJ-PAY** feature configuration. It is used to specify the characteristic type through which you want to store the Person ID on the payment. The system stamps this characteristic on the payment when it is created or transferred using a match type where the entity type is set to **Person**.

  Here, you must specify a characteristic type where the characteristic entity is set to **Payment**. Note that the **C1-PRPAY** characteristic type is shipped with the product. You can also use a custom characteristic type, if required.

C1-PAYPORTAL Feature Configuration

The following changes are made to the **C1-PAYPORTAL** feature configuration:

- A new option type named **FK Reference for Account** is added to the **C1-PAYPORTAL** feature configuration. It is used to specify the foreign key reference for account. The system then generates information string for the account using the specified foreign key reference and accordingly displays it in the **Payment Request** screen. Note that the **C1-ACCT** foreign key reference for account is shipped with the product. You can also use a custom foreign key reference, if required.

Payment Request

The following changes are made to the Payment Request feature:

- Supports person level payment distribution. For more information, see the Person Level Payment Distribution section.
- A new option named **DST.UNPAID_AMT** is added to the **Sort By** list in the **Payment Request - Edit Payment Amount** screen. It enables you to sort the records in the ascending and descending order of the unpaid amount.
- The **Reset** button is added in the **Payment Request - Edit Payment Amount** screen. It enables you to set the payment amount of all the records to zero (0).

Enhancements (Specific to Financial Services)

This section lists the enhancements made to the following feature that is used in the financial services domain:

Bill Drill Down Details

The following changes are made to the Bill Drill Down Details feature:

- You can also create a bill correction request from the **Bill Drill Down Details** screen. The system validates whether the bill is eligible for correction based on certain criteria. If the bill meets the eligibility criteria, the **Eligible to Correct** icon appears in the **Bill Correction Eligibility** column of the **Search Billing Element** zone. On clicking the **Eligible to Correct** icon, you can navigate to the **Bill Correction** screen. However, if the bill does not meet the eligibility criteria, the system displays the appropriate reason in the **Bill Correction Eligibility** column.
- If a bill correction request is generated for a bill, the system displays the bill correction information string in the respective column of the **Search Billing Element** zone.
- Two new search by options named **Invoice Construct Details** and **Bill Aging** are added in the **Search By** list. These search by options enable you to view the bills which are part of any invoice or settlement construct and the bills which are overdue, respectively.
- Few new columns are added in the **Search Billing Element**, **Bill Segments**, and **Bill Segment Calculation Lines** zones. For more details, see the User Interface (UI) Level Changes section.

Enhancements (Specific to Insurance)

This section lists the enhancements made to the following features that are used in the health insurance domain:

Hold Request

Until now, while releasing a hold request, the **C1-HLMON** batch used to set the bill after date of the respective accounts to the system date. As a result, the business could bill the account only from the next day of hold release. But there are scenarios wherein the business would like to bill the account immediately on the same day when the hold is released. Therefore, now, while releasing a hold request, the **C1-HLMON** batch will clear the bill after date of the respective accounts. This will enable the business to bill the account immediately on the same day when the hold is released.

Customer 360° View

Until now, the following fields appeared in the **Account Financial and Collections Summary** zone of the **Account** tab in the **Customer 360° Information** screen:

- **Current Balance** = Account Level billed + Payments + Excess Credits + Unbilled Adjustments + Unbilled Corrections

- **Payoff balance** = Account Level billed + Payments + Excess Credits + Unbilled Corrections

Now, in addition, you can view the following field in the **Account Financial and Collections Summary** zone:

- **Actual Account Balance** = Account Level billed + Payments + Excess Credits

Minimum Premium Program (MPP)

The following enhancements are made to the MPP pricing:

- Until now, whenever the deficit amount was roll forwarded to the successive contract (i.e., to the successive MPP pricing rule) on renewal during final settlement, the system calculated the roll forward billable charge incorrectly. It considered the arrangement value specified in the deficit settlement rule while calculating the roll forward billable charge amount. For example, if the arrangement value was set to 90% in the deficit settlement rule, the system roll forwarded 90% of cumulative deficit amount and retained 10% of cumulative deficit amount. Now, while creating a roll forward billable charge using an MPP pricing rule on final settlement, the system roll forwards 10% of cumulative deficit amount on the successive contract and retains 90% of cumulative deficit amount.
- Earlier, the **Minimum Premium Attachment Point** field was mandatory while defining an MPP pricing rule. Now, this field is non-mandatory. Now, until you select any value from the **Minimum Premium Attachment Point** list, the system, by default, sets the minimum premium attachment point value to **0**. In addition, the **Minimum Premium Attachment Point Value** field is non-editable. The **Minimum Premium Attachment Point Value** field is editable only when you select any value from the **Minimum Premium Attachment Point** list.

Inbound Message

The following changes are made to the Inbound Message feature:

- Until now, you were able to create parent customers, bill groups, their accounts, policies, and policy plans for the fully insured group business through a health care inbound message via customer registration. Now, you can skip the customer registration and directly create the entities using their respective business objects specified in the inbound message type. A new field named **Customer Registration Required** is available while defining an inbound message type. By default, the **Customer Registration Required** option is selected.

  If you select the **Customer Registration Required** option, you need to specify the customer registration type in the respective field. However, if you do not select the **Customer Registration Required** option, you need to specify the person business object, account business object, membership business object**,** policy plan business object, benefits business object, address business object, and statement construct business object in the respective fields.

Note: The approval workflow feature available while creating entities via customer registration will not be available when you skip the customer registration while processing inbound messages for the fully insured group business.

- The **C1-HCInboundMessage** business object is enhanced to create a hold request with one or more accounts both manually and automatically. An automatic hold request is created via an inbound message when the status of the inbound message is changed to **Rejected**. For more information, see the Automatic Hold Request Creation Via Inbound Message section. A hold request is manually created or released via an inbound message only when the respective action is received within the **billHold** tag. For more information, see the Manual Hold Request Creation Via Inbound Message section.
- The following tags are newly introduced in the health care inbound message schema:

Parent Tag	New Tags
<accountData>	<billHold> <action></action> <holdRequestType></holdRequestType> <startDate></startDate> <endDate></endDate> <reason></reason> </billHold>
<personData>	<billHold> <action></action> <holdRequestType></holdRequestType> <startDate></startDate> <endDate></endDate> <reason></reason> </billHold>

Repricing

The following enhancements are made to the Repricing feature:

- A new parameter named **Membership Category Flag** is introduced in the **C1-REPC1**, **C1-REPC2**, and **C1-FIBCR** batches to improve the batch performance. It should be used when you want to create repricing requests for memberships of a particular category. The valid values are: **INDV** and **GRUP**. This parameter can be used only when the repricing mode is set to **MEMB**.

Health Product 360° View

The following enhancements are made to the Health Product 360° View feature:

- The **Rate Information** column is removed from the **Pricing Rule** zone of the **Health Plan 360° Information** screen. Instead, a new zone named **Pricing Rule Parameter Rate Information** is introduced. It appears on clicking the **Broadcast** icon corresponding to the pricing rule. The **Pricing Rule Parameter Rate Information** zone displays base fee and modifier rate of different pricing parameters defined in the pricing rule.

Automatic Offset of Debit and Credit Bill Line Items

Until now, you were able to setup the auto maintenance process for accounts wherein the system automatically offsets the debit and credit bill line items of the accounts. The auto maintenance process is driven using the **Offset Request** feature ensuring that the match events are created at the bill line item level. The transfer adjustment creation was not supported while automatically offsetting the debit and credit bill line items of the accounts.

Now, the **Transfer Adjustment** option is supported while automatically offsetting the debit and credit bill line items of the accounts. In other words, you can now select the **Transfer Adjustment** option while creating an offset request type where the offset category is set to **Auto Maintenance**. On executing the **C1-AUTOM** batch, the system then creates the transfer and/or offset adjustments using the adjustment type which is specified in the offset request type. If the **Transfer Adjustment** option is selected in the respective offset request type, the system creates the transfer adjustments in the **Frozen** status.

Invoice Request

Oracle Revenue Management and Billing enables you to generate an adhoc regular or trial bill for an account through an invoice request. Until now, whenever an invoice request was canceled, the system did not automatically delete the pending bill and their bill segments generated for the account via the invoice request. Also, the system did not cancel the invoice request when a pending bill generated for the account via the invoice request was deleted.

Now, the system supports the following business scenarios:

- If a regular or trial bill generation invoice request is canceled, the system will automatically delete the pending regular or trial bill and their bill segments, respectively, generated for the account via the invoice request.
- If a regular pending bill (generated via the invoice request) with a To DO is deleted from the user interface or through a batch process, the system will cancel the invoice request with the appropriate reason.

To implement the former business scenario, the following changes are made to the system:

- A new algorithm type named **C1-INVREQCAN** is introduced in this release. An algorithm created using the **C1-INVREQCAN** algorithm type is attached to the **Canceled** status in the lifecycle of the **C1-InvoiceRequest** and **C1-InvoiceRequestTrial** business objects.
- A new value named **Cancelled** is added in the **INVOICE_REC_STATUS_FLG** lookup field.

Now, when you cancel an invoice request, the system checks whether there is a pending bill generated for the account via the invoice request. If so, the system deletes the pending bill and their bill segments and then accordingly changes the status of the invoice request to **Canceled**. In addition, the system does the following:

- Updates the status of the record in the invoice request to **Cancelled**.

- Displays the following error message corresponding to the record in the **Invoice Request Details** zone of the **Invoice Request** screen:
    - The pending bill is deleted because invoice request was cancelled.

However, to implement the latter business scenario, the following changes are made to the system:

- A new algorithm type named **C1-INVDPBM** is introduced in this release. An algorithm created using the **C1-INVDPBM** algorithm type is attached to the **Deferred Processing Batch** status in the lifecycle of the **C1-InvoiceRequest** business object.
- The **C1-INVRQ** batch is enhanced to support this business scenario. It is attached to monitor the process at the **Deferred Processing Batch** status in the lifecycle of the **C1-InvoiceRequest** business object.

Now, on executing the **C1-INVRQ** batch, the system checks whether there are any invoice requests created using the **C1-InvoiceRequest** business object and in the **Deferred Processing Batch** status. If so, the batch invokes the algorithm attached to the **Deferred Processing Batch** status. This algorithm checks whether the pending bill (generated via the invoice request) with a To Do for the account is deleted. If so, the system then changes the status of the invoice request to **Canceled**. In addition, the system does the following:

- Stamps the status reason corresponding to the invoice request indicating the reason why it was canceled.
- Updates the status of the record in the invoice request to **Cancelled**.
- Displays the following error message corresponding to the record in the **Invoice Request Details** zone of the **Invoice Request** screen:
    - Invoice request is cancelled due to bill deletion.

Allocate Advance Deposit for Delinquent Customers

Until now, when the payment on the advance deposit contract was canceled after using it to settle an overdue bill through a delinquency process, the system did the following:

- Canceled the debit adjustments created against the advance deposit payment.
- Canceled the credit adjustments used to offset the overdue bills through a delinquency process.
- Unapplied or canceled the advance deposit offset request. If the number of transfer or offset adjustments did not exceed the online record process limit (defined in the **C1-DFRUNAPLY** algorithm), the system canceled the transfer or offset adjustments immediately and then changed the status of the advance deposit offset request to **Unapplied Offset**. On cancelling the advance deposit offset request, the system resumed the delinquency process using the **C1-CDPPAYCAN** algorithm attached to the **Payment Cancellation** system event of the account's customer class.

  However, if the number of transfer or offset adjustments exceeded the online record process limit (defined in the **C1-DFRUNAPLY** algorithm), the system changed the status of the advance deposit offset request to **Defer Unapplied**. On executing the **C1-OFSRQ** batch, the system considered the advance deposit offset requests which are in the **Defer Unapplied** status. The system then canceled the transfer or offset adjustments of the advance deposit offset request and changed the status of the advance deposit offset request to **Unapplied Offset**.

However, in this case, the system did not resume the delinquency process. This is because the batch couldn't invoke the **C1-CDPPAYCAN** algorithm attached to the **Payment Cancellation** system event of the account's customer class.

To handle this discrepancy between the UI and batch behaviour, the following changes are made to the system:

- The **C1-CDPPAYCAN** algorithm is invoked only when bill payment is canceled and not when the advance deposit payment is canceled.
- A new algorithm type named **C1-REOPDELIN** is introduced in this release. An algorithm created using the **C1-REOPDELIN** algorithm type is attached to the **Unapplied Offset** status in the lifecycle of the **C1-OffsetRequest** business object. The **C1-REOPDELIN** algorithm reinstates or reopens the respective delinquency process for which the advance deposit offset request was created.

For more information on how a delinquency process is resumed when an advance deposit payment is canceled, see the **Resuming a Delinquency Process on Advance Deposit Payment Cancellation** section in the *Oracle Revenue Management and Billing Insurance User Guide*.

Member Reconciliation

Until now, when the member reconciliation was triggered for an account on post bill completion, the system did not give the flexibility to use different adjustment types for different benefit sponsor accounts. This is because the field mapping was hard-coded in the **C1-RCLOPNRCN** algorithm. Now, a new field named **Field Mapping** is introduced while defining a reconciliation type. Here, you need to specify a preference which is created using the **Member Reconciliation** preference category. Hence, the system gives you the flexibility to use different member reconciliation preference for different reconciliation types and thereby, enabling you to configure different adjustment types for different benefit sponsor accounts. You can then accordingly use the reconciliation type while reconciling a file with membership benefits pay instructions received from a particular benefit sponsor.

Also, the following parameters are removed from the **C1-RCPM** batch:

- Field Mapping
- Billed Transfer Reconciliation Adjustment Type
- Reconciliation Adjustment Type for Offsetting Debits using Billed Credits
- Payment Instruction Reconciliation Adjustment Type

Instead, the latter three parameters are available as the attributes while defining a preference using the **Member Reconciliation** preference category. You need to define the following new attributes along with the existing ones in the **Member Reconciliation** preference:

- **Billed Transfer Recon Adjustment Type** – Used to specify the adjustment type using which you want to create the adjustment on the bill segment's contract when the pay instruction is reconciled.
- **Recon Adj Type for Offsetting Debits using Billed Credits** – Used to specify the adjustment type using which you want to create the adjustments when offsetting billed debit verses billed credits.

- **Payment Instruction Recon Adjustment Type** – Used to specify the adjustment type using which you want to create the adjustment on the reconciliation contract when the pay instruction is reconciled.

Note: The above adjustment types must be included in the adjustment type profile attached to the respective contract type.

C1-ASOBLLNG Feature Configuration

The following option type is newly added in the **C1-ASOBLLNG** feature configuration:

- **Approval Workflow Group for Retention Type Enrollment Tier** - Used to specify the approval workflow group for a retention type enrollment tier based pricing rule. It helps the system to determine whether the approval transaction should be created while defining, editing, or deleting a retention type enrollment tier based pricing rule.

Refund Request

The following enhancements are made to the Refund Request feature:

- Until now, the **Edit** button appeared in the **Refund Request** zone only when the refund request was in the **Draft** status. Now, in addition, the **Edit** button appears in the **Refund Request** zone when the refund request is in the **Processed** status. The system now enables you to add, update, or delete the characteristics of a refund request even when it is in the **Processed** status.

Fully Insured Pricing Rules

While viewing the details of an age based, tier based, and discount charge pricing rules, the following changes are made to the user interface:

- The **Pricing Parameters** section is removed from the **Age Based Pricing Rule**, **Tier Based Pricing Rule**, and **Discount Charge Pricing Rule** zones. Instead, a new zone named **Pricing Rule Parameter Rate Information** is added in the user interface to handle the performance issues.
- The **Pricing Rule Parameter Rate Information** zone enables you to view the base and modifier fee defined for each pricing parameters combination.

Payments

The following changes are made to the Payments feature:

- Earlier, all the algorithms which were attached to the **Payment Segment Fin Algorithm** system event of a payment segment type used to derive the following four values through a query - **Match Event ID**, **Contract ID**, **Pay Segment Amount**, and **Pay Segment ID**. Now, these values are retrieved as input from the **Payment Segment Fin Algorithm** spot. We have accordingly updated the following algorithm types:
    - C1-NCPAY-FT
    - C1-PAYARSPLT
    - PSEG-AC

- PSEG-CA
- PSEG-NM

You need to create the algorithms of the above algorithm types once again and attach it to the required payment segment type. Also, you need to update the custom algorithm types such that they retrieve the above four values from the **Payment Segment Fin Algorithm** spot instead of deriving them through queries.

Offset Request

The following changes are made to the Offset Request feature:

- A new field named **Person Hierarchy** appears in the **Search Bill** zone when you search for bills using the **Person Details** option. This field is applicable only when you specify the person ID as the search criteria. If the **Person Hierarchy** option is selected, the system will display all unpaid or partial paid bills of the person and its child persons in the hierarchy.
- You can create FT extension records for the offset request adjustments. For more information, see the FT Extension Record on Adjustment Freeze section.

Reconciliation

The following changes are made to the Reconciliation feature:

- You can create FT extension records for the reconciliation adjustments. For more information, see the FT Extension Record on Adjustment Freeze section.

Field Mapping

The following changes are made to the Field Mapping feature:

- A new preference category named **Hold Request** is introduced in this release. It contains the following attributes:

Attribute	Purpose
• Default Manual Hold Reason • Default Manual End Date • Default Manual Hold Request Type Code • Default Manual Release Reason • Default Manual Discard Reason	Used while creating a manual hold request through an inbound message. For more information, see the Manual Hold Request Creation Via Inbound Message section.

Attribute	Purpose
• Create Automatic Hold Request • Default Automatic Hold Reason • Default Automatic End Date • Default Automatic Hold Request Type Code • Characteristic Type for Bill Level 1 • Characteristic Type for Bill Level 2 • Characteristic Type for Bill Level 3 • Characteristic Type for Bill Level 4	Used while creating an automatic hold request through an inbound message. For more information, see the Automatic Hold Request Creation Via Inbound Message section.
• Create Premium Hold Request • Default Automatic Hold Reason • Default Automatic End Date • Default Automatic Hold Request Type Code	Used while creating an automatic hold request when billable charge creation or cancellation fails for an account through **File Upload Interface** feature. For more information, see the Automatic Hold Request Creation Via File Upload Interface section.

C1-HOLDSRCH Feature Configuration

The following changes are made to the **C1-HOLDSRCH** feature configuration:

- A new option type named **Hold Request Field Mapping** is added to the **C1-HOLDSRCH** feature configuration. It is used to specify a preference which is created using the **Hold Request** preference category. The system considers this preference in the following three scenarios:
  - Manual Hold Request Creation via Inbound Message
  - Automatic Hold Request Creation via Inbound Message
  - Automatic Hold Request Creation via File Upload Interface

User Interface (UI) Level Changes

The following table lists changes made to the existing screens in Oracle Revenue Management and Billing:

Screen Name	Changes
Reconciliation Type	The following change is made to this screen: • The **Field Mapping** field is added in the **Main** section of the **Reconciliation Type** zone.
Reconciliation Type (Used for Adding, Editing, and Copying)	The following change is made to this screen: • The **Field Mapping** field is added in the **Main** section.
Pricing Rule Type	The following change is made to this screen: • The **Tiered Switch** field is added in the **Enrollment-Specific Additional Data** section of the **Pricing Rule Type** zone.
Pricing Rule Type (Used for Defining and Editing)	The following change is made to this screen: • The **Tiered Switch** field is added in the **Enrollment-Specific Additional Data** section.
Bill Drill Down Details	The following changes are made to this screen: • The **Invoice Construct Details** and **Bill Aging** options are newly introduced in the **Search By** list. • The **Bill Date**, **Bill Correction Eligibility**, **Bill Correction Information**, **Bill Cycle**, and **Auto Pay Information** columns are added to the **Search Results** section of the **Search Billing Element** zone (when the **Search By** option is set to **Bill Details**). • The **Rate Info**, **Pricing Information**, **Billable Charge Feed Source**, and **Recurring Charge Information** columns are added in the **Bill Segments** zone. • The **Calculated Amount**, **Aggregated Quantity**, **Billed Quantity**, **Rate**, **Pricing Amount**, **Pricing Currency**, and **Exchange Rate** columns are added in the **Bill Segment Calculation Lines** zone.
Scheduler Program (Used for Adding and Editing)	The following change is made to this screen: • The **Detailed Description** column is added in the **Batch Parameter** grid.

Screen Name	Changes
Membership (Used for Searching)	The following changes are made to this screen: • The **Membership Information** column is renamed to **Membership** in the **Search Results** section. • The **Price Item** column is removed from the **Search Results** section.
Membership (Used for Viewing)	The following changes are made to this screen: • The **Creation Date** column is added in the **Billable Charges** zone of the **Charges** tab. • The **Membership Information** field is renamed to **Membership** in the **Main** tab. • The **Price Item Information** and **Billable Charge Information** columns are renamed to **Price Item** and **Billable Charge**, respectively, in the **Billable Charges** zone of the **Charges** tab. • The **Pricing Rule Information** column is renamed to **Pricing Rule** in the **Billable Charge Timeline Details** zone of the **Charges** tab. • The **Membership Information** field is renamed to **Membership** in the **Add Membership Log** window. • The **Membership Contracts** zone is removed from the **Charges** tab.
Health Plan 360° Information	The following changes are made to this screen: • The **Rate Information** column is removed from the **Pricing Rule** zone. • The **Pricing Rule Parameter Rate Information** zone is added to this screen. • The **Health Plan 360° Information** screen is renamed to **Health Plan 360°**.
Health Product 360° Information	The following change is made to this screen: • The **Health Product 360° Information** screen is renamed to **Health Product 360°**.

Screen Name	Changes
Customer 360° Information	The following changes are made to this screen: • The **Actual Account Balance** field is added in the **Account Financial and Collections Summary** zone of the **Account** tab. • The **Child Person Information** column is renamed to **Child Person** in the **Child Persons** zone of the **Person** tab. • The **Policy Information** column is renamed to **Policy** in the **Policy Information** zone of the **Policy** tab. • The **Policy Plan Information** column is renamed to **Policy Plan** in the **Policy Plans** zone of the **Policy** tab. • The **Pricing Rule Information** and **Price Item Information** columns are renamed to **Pricing Rule** and **Price Item**, respectively, in the **Fully-Insured Pricing Rules** zone of the **Pricing Information** tab. • The **Policy Information** column is renamed to **Policy** in the **Self-Funded Policy Information** zone of the **Pricing Information** tab. • The **Pricing Rule Information** and **Price Item Information** columns are renamed to **Pricing Rule** and **Price Item**, respectively, in the **Parent Customer Pricing Rules** zone of the **Pricing Information** tab.
Benefit (Used for Searching)	The following changes are made to this screen: • The **Memo Only Sponsor Charge Flag** field is renamed to **Memo Only Sponsor Charge** in the **Search Benefit** zone. • The **Benefit Information**, **Membership Information**, **Member Person Information**, and **Memo Only Sponsor Charge Flag** columns are renamed to **Benefit**, **Membership**, **Member Person**, and **Memo Only Sponsor Charge**, respectively, in the **Search Results** section.
Benefit (Used for Viewing)	The following changes are made to this screen: • The **Benefit Information, Membership Information,** and **Memo Only Sponsor Charge Flag** fields are renamed to **Benefit, Membership** and **Memo Only Sponsor Charge**, respectively, in the **Main** section of the **Benefit** zone. • The **Benefit Information** field is renamed to **Benefit** in the **Add Benefit Log** window.

Screen Name	Changes
Pricing vs Passthrough Charges (Used for Searching)	The following change is made to this screen: • The **Membership Information** column is renamed to **Membership** in the **Search Results** section of the **Pricing vs Passthrough Charges** zone.
Pricing vs Passthrough Charges (Used for Viewing)	The following changes are made to this screen: • The **Membership Information** field is renamed to **Membership** in the **Main** section of the **Membership** zone. • The **Person Information** column is renamed to **Person** in the **Member Person** zone. • The **Membership Information** column is renamed to **Membership** in the **Other Plans of Main Subscriber** zone.
Policy (Used for Searching)	The following change is made to this screen: • The **Policy Information** column is renamed to **Policy** in the **Search Policy** zone.
Policy (Used for Viewing)	The following changes are made to this screen: • The **Policy Information** field is renamed to **Policy** in the **Policy** zone of the **Main** tab. • The **Person Information** column is renamed to **Person** in the **Policy** zone of the **Main** tab. • The **Plan Information** and **Price Item Information** columns are renamed to **Plan** and **Price Item**, respectively, in the **Plans** zone of the **Plan** tab. • The **Membership Information** column is renamed to **Membership** in the **Memberships** zone.
Policy Plan (Used for Viewing)	The following changes are made to this screen: • The **Plan Information, Policy Information,** and **Price Item Information** fields are renamed to **Plan, Policy,** and **Price Item**, respectively, in the **Policy Plan** zone. • The **Membership Information** column is renamed to **Membership** in the **Memberships** zone.
Discrepancy Report (Used for Searching)	The following change is made to this screen: • The **Discrepancy Report Information** column is renamed to **Discrepancy Report** in the **Search Discrepancy Report** zone.

Screen Name	Changes
Discrepancy Report (Used for Viewing)	The following changes are made to this screen: • The Discrepancy Report Information field is renamed to Discrepancy Report in the Discrepancy Report zone of the Main tab. • The Discrepancy Report Information field is renamed to Discrepancy Report in the Add Discrepancy Report Log window.
Reconciliation (Used for Searching)	The following change is made to this screen: • The **Reconciliation Information** column is renamed to **Reconciliation** in the **Search Reconciliation** zone.
Reconciliation (Used for Viewing)	The following changes are made to this screen: • The **Reconciliation Information** field is renamed to **Reconciliation** in the **Reconciliation** zone of the **Main** tab. • The **Reconciliation Information** field is renamed to **Reconciliation** in the **Add Reconciliation Log** window.
Refund/Write Off Request (Used for Searching)	The following changes are made to this screen: • The **Refund/Write Off Request Information** and **Account Information** columns are renamed to **Refund/Write Off Request** and **Account**, respectively, in the **Search Refund/Write Off Request** zone.
Refund Request (Used for Viewing)	The following change is made to this screen: • The **Account Information** field is renamed to **Account** in the **Refund Request** zone.
Write Off Request (Used for Viewing)	The following change is made to this screen: • The **Account Information** field is renamed to **Account** in the **Write Off Request** zone.
Payment Request (Used for Searching)	The following changes are made to this screen: • The **Payment Request Information**, **Payment Event Information**, and **Payor Account Information** columns are renamed to **Payment Request**, **Payment Event** and **Payor Account**, respectively, in the **Search Payment Request** zone.

Screen Name	Changes
Payment Request (Used for Viewing)	The following changes are made to this screen: • The **Payment Request Information**, **Payment Event Information** and **Payor Account Information** fields are renamed to **Payment Request**, **Payment Event** and **Payor Account**, respectively, in the **Payment Request** zone of the **Main** tab. • The **Tender Control Information** and **Deposit Control Information** fields are renamed to **Tender Control and Deposit Control**¸ respectively, in the **Payment Request** zone of the **Main** tab. • The **Payment Request Information** field is renamed to **Payment Request** in the **Add Payment Request Log** window.
Payment Event Summary (Used for Searching)	The following changes are made to this screen: • The **Payment Event Information** column is renamed to **Payment Event** in the **Search Payment Event** zone. • The **Payee Account Information** column is renamed to **Payee Account** in the **Payments** zone.
Offset Request	The following change is made to this screen: • A new field named **Person Hierarchy** appears in the **Search Bill** zone when you search for bills using the **Person Details** option.
Payment Request - Edit Payment Amount	The following changes are made to this screen: • A new option named **DST.UNPAID_AMT** is added to the **Sort By** list. • The **Reset** button is added to this screen.

Database Level Changes

This section highlights the documents that you can refer for the following database level changes:

New Objects in the ORMB V8.0.0.0.0 Database

To view the list of objects (such as tables, columns, algorithm types, business objects, and so on) which are newly introduced in Oracle Revenue Management and Billing Version 8.0.0.0.0, see the **Appendix A: New Objects in the Oracle Revenue Management and Billing V8.0.0.0.0 Database** in the *Oracle Revenue Management and Billing Database Administrator's Guide*.

New Objects in the OUAF V25.4 Database

To view the list of objects (such as tables, columns, algorithm types, business objects, and so on) which are newly introduced in Oracle Utilities Application Framework Version 25.4, see the **Appendix D: New Objects in the Oracle Utilities Application Framework V25.4 Database** in the *Oracle Revenue Management and Billing Database Administrator's Guide*.

New Tables in the ORMB V8.0.0.0.0 Database

To view detail information about the tables that are newly introduced in Oracle Revenue Management and Billing Version 8.0.0.0.0, see the **Appendix C: New Tables Added in ORMB Version 8.0.0.0.0** in the *Oracle Revenue Management and Billing Upgrade Guide*.

New Tables in the OUAF V25.4 Database

To view detail information about the tables that are newly introduced in Oracle Utilities Application Framework Version 25.4, see the **Appendix M: New Tables Added in OUAF Version 25.4** in the *Oracle Revenue Management and Billing Upgrade Guide*.

Existing Tables Modified in ORMB V8.0.0.0.0

To view the columns that are newly added, modified, or dropped from the existing tables in Oracle Revenue Management and Billing Version 8.0.0.0.0, see the **Appendix D: Existing Tables Modified in ORMB Version 8.0.0.0.0** in the *Oracle Revenue Management and Billing Upgrade Guide*.

Existing Tables Modified in OUAF V25.4

To view the columns that are newly added, modified, or dropped from the existing tables in Oracle Utilities Application Framework Version 25.4, see the **Appendix N: Existing Tables Modified in OUAF Version 25.4** in the *Oracle Revenue Management and Billing Upgrade Guide*.

Algorithms and Algorithm Types Dropped in ORMB V8.0.0.0.0

To view the algorithms and algorithm types which are dropped in Oracle Revenue Management and Billing Version 8.0.0.0.0, see the **Appendix E: Algorithms and Algorithm Types Dropped in ORMB Version 8.0.0.0.0** in the *Oracle Revenue Management and Billing Upgrade Guide*.

Algorithms and Algorithm Types Dropped in OUAF V25.4

To view the algorithms and algorithm types which are dropped in Oracle Utilities Application Framework Version 25.4, see the **Appendix O: Algorithms and Algorithm Types Dropped in OUAF Version 25.4** in the *Oracle Revenue Management and Billing Upgrade Guide*.

Parameters Added or Removed from Algorithm Types in ORMB V8.0.0.0.0

To view the parameters which are newly added or dropped from the existing algorithm types in Oracle Revenue Management and Billing Version 8.0.0.0.0, see the **Appendix F: Parameters Added or Removed from Algorithm Types in ORMB Version 8.0.0.0.0** in the *Oracle Revenue Management and Billing Upgrade Guide.*

Option Types Added or Removed from Feature Configurations in ORMB V8.0.0.0.0

To view the option types which are newly added or dropped from the existing feature configurations in Oracle Revenue Management and Billing Version 8.0.0.0.0, see the **Appendix G: Option Types Added or Removed from Feature Configurations in ORMB Version 8.0.0.0.0** in the *Oracle Revenue Management and Billing Upgrade Guide.*

Characteristic Types Dropped in ORMB V8.0.0.0.0

To view the characteristic types which are dropped in Oracle Revenue Management and Billing Version 8.0.0.0.0, see the **Appendix H: Characteristic Types Dropped in ORMB Version 8.0.0.0.0** in the *Oracle Revenue Management and Billing Upgrade Guide.*

Batch Controls Dropped in ORMB V8.0.0.0.0

To view the batch controls which are dropped in Oracle Revenue Management and Billing Version 8.0.0.0.0, see the **Appendix I: Batch Controls Dropped in ORMB Version 8.0.0.0.0** in the *Oracle Revenue Management and Billing Upgrade Guide.*

Parameters Added or Removed from Batch Controls in ORMB V8.0.0.0.0

To view the parameters which are newly added or dropped from the existing batch controls in Oracle Revenue Management and Billing Version 8.0.0.0.0, see the **Appendix J: Parameters Added or Removed from Batch Controls in ORMB Version 8.0.0.0.0** in the *Oracle Revenue Management and Billing Upgrade Guide.*

Parameters Added or Removed from Batch Controls in OUAF V25.4

To view the parameters which are newly added or dropped from the existing batch controls in Oracle Utilities Application Framework Version 25.4, see the **Appendix P: Parameters Added or Removed from Batch Controls in OUAF Version 25.4** in the *Oracle Revenue Management and Billing Upgrade Guide.*

Default User Group Application Services

Oracle Revenue Management and Billing provides the following default user groups - ALL_SERVICES, C1_BSERVICES, HCADMIN, and INADMIN. To view the application services configured for the default user groups, see the **Appendix B: Application Services Configured for Default User Group** in the *Oracle Revenue Management and Billing Database Administrator's Guide*.

Technical Recommendations

To improve the overall batch performance on the Windows and Linux platforms, we recommend you to make changes in the following files:

File Name	Change From	Change To
hibernate.properties	hibernate.c3p0.timeout = 300	hibernate.c3p0.timeout = 600
threadpoolworker.sh	MEM_ARGS="-Xms512m -Xmx1024m -XX:MaxPermSize=768m"	MEM_ARGS="-Xms512m -Xmx4096m -XX:MaxPermSize=768m"

Oracle Utilities Application Framework Version 25.4 Enhancements

The following enhancements are made in Oracle Utilities Application Framework (OUAF) Version 25.4:

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

Data Privacy and Security Enhancements

This section describes the new and enhanced data privacy and security feature introduced in this release:

UI Masking for Numbers

The system is enhanced to support masking numeric values on the user interface. This is useful if your implementation has certain quantities or amounts that are sensitive and should only be available unmasked to certain users.

The system provides a new masking algorithm type (**F1-MASKNBR**) for number masking. The following functionality is provided by this algorithm type:

- It uses the number 9 as its masking character.
- Like the existing string masking algorithm type, this new algorithm type includes configuration for an application service, security type, and authorization level allowing you to configure security for users that are allowed to see the data unmasked.
- For users that do not have the security to see data unmasked, the algorithm type returns a static number of 9s to mask both the digits themselves and the number of digits. See the algorithm type description for more information.

Masking for alphanumeric data, such as credit card numbers, bank account numbers, and personal identification numbers (for example, social security number) was already supported.

This does not impact any existing extensions.

Steps To Enable

To enable this feature, see the **User Interface Masking** section in the *Oracle Utilities Application Framework Administrative Guide* for more information.

Tips and Considerations

The Data Masking plug-in spot was also enhanced to receive the **Field Name** as optional input to the algorithm.

Product Usability Enhancements

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

Additional Inbound Web Service Query Options

You can search for REST Inbound Web Services by operation information and help text details.

In addition, the Open API spec may also be launched from the **Inbound Web Service Operation** portal for your convenience.

This provides more flexible search options. There is no impact to existing extensions with this enhancement.

Steps To Enable

No steps are required to enable this feature.

Batch Job Submission Query Portal

The **Batch Job Submission** search page has been converted to a portal to provide you with a more flexible user experience. The portal includes additional filters to allow more granularity in the search. The search also supports pagination, providing the ability to navigate between sets of search results.

This provides you with more search criteria and additional information in the search results. There is no impact to existing extensions with this enhancement.

Steps To Enable

No steps are required to enable this feature.

Enter Menu Name in Search Without Slash

The search widget no longer requires a preceding slash to search for a menu item.

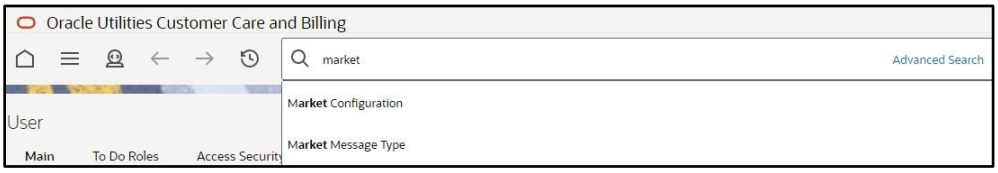


Figure 1: Search Widget

If the keyword for the menu name matches keywords in the unified search results, you will see results mixed in. In this example, the word "market" includes results with "market" in the menu name and "market" in a customer's name or address.

Figure 2: Searching with Keywords

When you enter a slash before the menu item text, it is a signal to the search to only search for the text in menu entries.

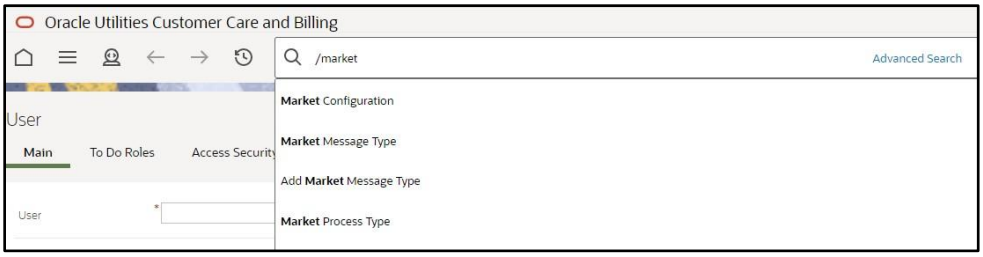


Figure 3: Searching for Menu Item

When using the Search widget, no longer requiring the slash improves usability and consistency.

Steps To Enable

No steps are required to enable this feature.

Improvements to Batch Analytics Snapshot Update Processes

Based on volume testing, the queries used to select records for the batch run and batch thread analytics snapshot tables have been optimized. Additional indexes have been added to the tables to support the amended queries. The batch processes now also support selecting records within a range of days, instead of months, to provide more flexibility in the initial population of the snapshot tables.

The processes used to populate the batch analytics table have been amended to improve performance.

Steps To Enable

No steps are required to enable this feature.

New Batch Analytics Views

The batch analytics views no longer derive data directly from the various batch run related tables. Instead, the views now reference the snapshot tables, which have been designed to simplify the view SQL and to take advantage of specific indices that are not available in the source data.

Steps To Enable

No steps are required to enable this feature.

Zone SQL and UI Map HTML Editor Improvements

The CodeMirror library is now used to apply syntax highlighting logic to the SQL editor in data explorer Zones. Line sequence numbers were also added.

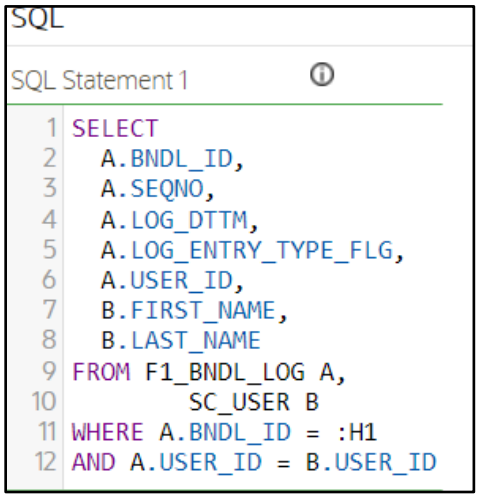


Figure 4: SQL Editor

The same improvements are visible in the HTML Editor for a UI map

Figure 5: HTML Editor

When viewing or editing the SQL definition in zone maintenance and when viewing or editing the HTML for a UI map, readability is improved with syntax highlighting.

Steps To Enable

No steps are required to enable this feature.

Ability to Override Labels in Business Object Configuration

The following language related to a business object status may now be overridden by your implementation:

- Status description. This is the text visible when displaying the current status of a record that is governed by a business object.
- Next Status Action Label for the business object status' next status. This is the text visible on an action button that you may use to transition a record to the next status.

For example, you could change the status "Canceled" for a given business object to use the term "Discarded". You could do this by navigating to the lifecycle definition for that business object and providing an override description for the "Canceled" state. In addition, you can find the states that transition to Canceled and override the Action Label from "Cancel" to "Discard".

The description of any product-delivered business object Status Reason can now also be overridden by your implementation.

Note: There are places where a status or a status reason description is captured as an audit of a point in time, such as in a log record. If you change the description of a status on a business object or the description of a status reason, the change will not cascade to any place that has captured the description previously.

This does not impact any existing extensions. The user interface may change if you choose to override descriptions.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

The product delivers two new views:

- **F1_BUS_OBJ_STATUS_VW** - This view is built from the data in **F1_BUS_OBJ_STATUS_L**, but it sets the value of the **DESCR** field to the new override description if populated (otherwise to the description).
- **F1_BUS_OBJ_STATUS_RSN_VW** - This view is built from the data in **F1_BUS_OBJ_STATUS_RSN_L**, but it sets the value of the **DESCR** field to the new override description if populated (otherwise to the description).

If you have any custom zones that retrieve the **DESCR** field from **F1_BUS_OBJ_STATUS_L** or from **F1_BUS_OBJ_STATUS_RSN_L** and you plan to override any business object status description or a status reason description, you should update your custom zone to use the corresponding view instead.

Terminology Change: "Sidebar" Replacing "Dashboard"

The vertical area that stays anchored in the application as a user moves through the system is now referred to as a "Sidebar" instead of a "Dashboard." This change is reflected in documentation, metadata descriptions, and configuration on the User page related to the area (including the Sidebar Width, the Sidebar Location and the Sidebar State). This does not impact any extensions.

This allows the "Sidebar" to be distinguished from other "Dashboards" used to describe portals that display high-level views of a specific subject area. For example, the **Batch Day Dashboard** and the **To Do Dashboard**.

Steps To Enable

No steps are required to enable this feature.

Easier Access to Release Notes

The **Help** drop down menu was enhanced to include a Release Notes entry. For cloud implementations, the link brings you to the **Cloud Readiness/What's New** portal for the appropriate product and version. For an on-premise implementation, the link brings you to the **Release Notes** page for the appropriate product and version.

You now have a link to quickly access the information about the new features for the current version of the product.

This does not impact any existing extensions.

Steps To Enable

System administrators should set/grant users/grant access to the **F1-RELNOTE** application service, Inquire access mode.

Master Configuration Improvements

The master configuration functionality is enhanced to support multiple records for the same business object. You can use an optional new primary Part Name field to uniquely identify the record. Note that the master configuration business object needs to be designed to support multiple parts as indicated by a designated business object option. By default, the part name is not populated for the main record, which allows additional parts to have a unique value as needed.

Due to a growing number of master configuration records, the master configuration UI has become a standard maintenance portal with a separate query portal. This allows for a better user experience when searching for records and allows different business objects to have their own portals as needed.

Additionally, the master configuration maintenance object is enhanced to support the following new features:

- An optional configuration class that may be used at design time to highlight the broader purpose of certain configurations for reporting purposes.
- A Standard characteristics table for extension purposes.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

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

Object	New Application Service	Access Added to any User Groups with this Application Service/Read Access
Master Configuration Query Portal	F1MSTQRY	F1MSTCFG

Any business object that supports an **Edit** action should include a standard **Record Actions** section as part of its display map. Prior to this release, if a business object did not include such a section, it could still be edited via the old portal. The new standardized maintenance portal requires the section to exist. You should correct these custom business objects accordingly. Until these custom business objects are fixed, you may include the **Master Configuration Actions** (**F1MFGACT**) zone to the **Master Configuration** maintenance portal.

Override a Row Header Using UI Hints

A new Row Header attribute has been added to the schema definition to allow one or more elements to be explicitly marked as row headers. Previously, the system automatically assigned the attribute scope="row" to the PK field for a list or to the first non-suppressed element. This was not always the element that best identified the row. For example, a sequence number would have been less meaningful than the description of the next element in the list, such as a parameter name.

Note: This attribute is only applicable to elements in a list.

This improves the experience for users using a screen reader.

Steps To Enable

No steps are required to enable this feature.

To Do Management and Processing Enhancements

This section describes the following new and enhanced To Do features introduced in this release:

To Do Entry Lifecycle Improvements

Several improvements were made to the To Do Entry lifecycle to more accurately reflect the status of a To Do Entry:

- The status **Being Worked On** was renamed to **Assigned** to reflect what actually happens in that status. Previously, you could have one or more To Do Entries in the **Being Worked On** state, but it did not mean that work was being performed yet. Now this status reflects only that the work has been assigned to someone.
- A new status value of **In Progress** was added. This allows you to explicitly mark which To Do Entry you are actually working on. You can only have one To Do Entry in the **In Progress** state at a time.
- A new status value of **On Hold** was added. This allows you to pause the progress of a To Do Entry if you need to wait for some event to occur before continuing to work on a To Do. Putting a To Do in the **On Hold** status allows for a more accurate accounting of how long it takes to work on a To Do Entry.

The two new status values of In **Progress** and **On Hold** are captured in a new Substatus field (TD_SUB_STATUS_FLG) on the To Do Entry. This new field can only be populated if the To Do Entry is in the **Assigned** status (the status formerly known as **Being Worked On**). This was done so that any implementation with the existing status field (ENTRY_STATUS_FLG) will continue to work as before.

An implementation needs to opt into using the substatus functionality by giving users that work on To Do Entries access to the new access modes. See the release readiness detail below for directions. Once an implementation has opted into the functionality, you will see these additional capabilities related to To Do Entries:

- When you perform any action that previously automatically assigned a To Do to you, it now also moves the To Do entry to **In Progress**. This happens if you click the **Work** action on To Do Entry, To Do Management, or on the **To Do Details** tab of the To Do Dashboard. Additionally, if you use To Do List and click the hyperlink in the **Message** column, this functionality applies.
- When you log into the system and have a To Do Entry that is **In Progress**, it is shown in the **Current To Do** dashboard zone.

- If you have an **In Progress** To Do and perform an action that causes a different To Do Entry to become In Progress, the previous To Do Entry is moved to the **On Hold** status.
- When you view an **Open** To Do Entry on the **To Do Entry Maintenance** page or **Current To Do** zone and you are allowed to work on the To Do, you see a button for **Start Progress**. This allows you to assign it to yourself and start work on in.
- When you view an **Assigned** To Do Entry on the **To Do Entry Maintenance** page or in the **Current To Do** zone, you also see a button for **Start Progress**.
- When you view an **In Progress** To Do Entry on the **To Do Entry Maintenance** page, you see buttons for **Hold Progress** and Stop Work. If you click **Stop Work**, it resets the **In Progress** state and the To Do will just be **Assigned**. These buttons are also available in the **Current To Do** zone. You can also perform any action that you can do in the **Assigned** state, including reopen, unassign, forward, and **Complete** the To Do.
- When you view an **On Hold** To Do Entry on the **To Do Entry Maintenance** page, you see buttons for **Start Progress** and **Stop Work**. You can also perform any action that you can do in the Assigned state, including reopen, unassign, forward, and **Complete** the To Do.

The To Do log has been enhanced to capture the status of the To Do Entry at the time the log is created as follows:

- A new log type **Status Updated** has been added and is used for any changes related to the new states of **In Progress** and **On Hold**. The existing log types of **Assigned**, **Forwarded** and **Sent Back** will continue to be used for those states for backward compatibility purposes.
- Going forward, log entries created will capture the status of the To Do at the time the log was created. Existing log values that predate the upgrade are not updated.
- A single status field is used and be populated with the substatus value of **In Progress** or **On Hold**, if applicable. Otherwise, it is populated with the status value of **Open**, **Assigned**, or **Completed**.

All the places where a To Do status is shown for an existing record, the system will show the substatus of **In Progress** or **On Hold**, if populated, otherwise it will show the **Status** (Open, Assigned or Complete).

The **To Do Dashboard** > **To Dos by Status** graph has been enhanced to also break out counts by substatus.

Steps To Enable

Provide the required access before using this feature.

Tips and Considerations

Regardless of whether an implementation has opted into the functionality, you will see that the additional status values are now available in the filter criteria for Status on the **To Do Management** and **To Do Dashboard** > **Details** pages. The filters for other pages, including **To Do Search**, **To Do List**, and **Supervisor To Do Assignment** have not changed to include the substatus values in the filter criteria. In addition, any page that shows a bar with counts of Assigned or Open To Do Entries have not changed to include counts by the substatus values.

Key Resources

See the Improved To Do States training.

Access Requirements

System administrators should set/grant users/grant access to the access modes **HDPR** (Hold Progress), **SPWK** (Stop Work) and **STPR** (Start Progress) for the **CILQTDEP** application service. If you choose to use this functionality, the recommendation is that this security is granted to all users that use To Do Entry (or none).

To Do Entry Supports Both Creation Process and Routing Process

If a To Do Type is configured with a creation process and a routing process, a To Do Entry based on that type now supports both processes. The creation process is stamped for audit purposes and the routing process is stamped so that the To Do Entry is processed the next time the routing process is run. Previously, although the To Do Type supported configuration for both types of processes, the To Do Entry table could only support a relationship to the creation batch process. The routing process functionality was not possible. To Do Entries created by a batch process may also be marked to be routed to an external system, increasing usability.

Steps To Enable

No steps are required to enable this feature.

Duration Information Added to To Do Portal and Information String

The system now includes the following calculated duration information on the **To Do Entry** page:

- For a non-complete To Do, the Total Duration from its creation until now.
- For a completed To Do Entry, the Total Duration from its creation until its completion.
- For a To Do Entry that had ever been in the In Progress state, the Time In Progress. If it is currently in the In Progress state, the end duration time is the current date/time.

In addition, the base delivered Information string for a To Do Entry has been updated to include the age for a non-complete To Do and the duration for a completed To Do.

If your implementation uses a To Do information algorithm to override the base delivered information, you will not see any change to your To Do information. This change does not impact any extensions.

When you see the calculated duration information, it helps you understand at a glance how long a To Do entry took to work on and how long before it was completed.

Steps To Enable

No steps are required to enable this feature.

Related To Do Support Improvements

The zone that displays related To Do entries on the **To Do Entry** maintenance portal has been enhanced to support actions on the related To Do entries. In addition, the current To Do being maintained is included in the results so that you can perform actions on all To Do entries.

The **Related To Do Entries** zone supports all the actions available on the **To Do Management** portal. You can do mass assignment, mass updates to priority, mass addition of a log entry, and mass completion. In addition, you have access to the **Work** button to push all the related To Do entries into your Worklist. The actions are only available if a user is allowed to work all the related To Do entries.

On the **To Do Management** zone and the **To Do Details** zone on the **To Do Dashboard** portal, the link for the Related To Dos message now brings you to the **To Do Entry** maintenance portal. Previously, you were brought to the **To Do Search** page where you could do actions only on the To Do entries related to the one in the results.

This does not impact any extensions.

The ability to action one or more related To Dos on the **To Do Entry** maintenance portal provides improved support for managing multiple records.

Steps To Enable

No steps are required to enable this feature.

Improved Display on Filters on To Do Dashboard Portal

Prior to this release, the same filters impacting all charts on the **To Do Dashboard** portal were displayed redundantly within each chart zone. As of this release the display of these filters, and the ability to reset them, has been moved to a central zone at the top of the portal.

Displaying filters in a central zone as opposed to being embedded in each chart zone adds clarity about the content being displayed and improves the usability of the portal.

Steps To Enable

No steps are required to enable this feature.

Standardize Providing Comments on Various To Do Dialogues

The following dialogues has been enhanced to be consistent with respect to prompting for comments and adding a user log entry when updating or completing one or more to do entries:

- To Do Entry
  - The **Edit** action includes the ability to add a user log entry. That saves a user from having to click the Log tab and then click **Add User Log Entry**.
  - If there are related To Dos, the **Complete** action on the related To Do entries zone is enhanced to prompt for a user log entry. If there is only one To Do included in the selection, the prompt also includes comments, showing the current value of the comments. The **Update** action on this zone already prompted for a user log entry and is enhanced to also include comments if only one To Do Entry was chosen.
- To Do Management
  - The **Complete** action has been enhanced to prompt for a user log entry. If there is only one To Do included in the selection, the prompt also includes comments, showing the current value of the comments.
  - The **Update** action already prompted for a user log entry and is enhanced to also include comments if only one To Do Entry was chosen.
- Current To Do sidebar zone
  - The **Complete** action has been enhanced to prompt for comments and user log entry.
  - The **Complete All** action (applicable when there are related To Do Entries) has been enhanced to prompt for a user log entry.

Steps To Enable

No steps are required to enable this feature.

Batch Processing Enhancements

This section describes the following new and enhanced batch processing features introduced in this release:

File Integration Type Writing Multiple Files and Flexibility in File Names

Previously, the plugin-driven extract process was enhanced to allow for the Process Records algorithm to return one or more file names to write the data to. In this release, the capability is extended to File Integration Types. The Extract Process algorithm plug- in spot on the file integration record now also supports returning a file name, allowing for records to be written to a file that differs based on business data, such as CIS Division or service provider. The plug-in spot supports indicating a file name for each schema instance if the use case requires some components of a work unit's information to be written to a separate file.

The ability to indicate that one or more open files should be closed is also supported by the Extract Process plug-in spot. This ensures that batch processes do not cause more than 10 files to be open at a given time for a given thread, which saves on memory allocation.

Steps To Enable

No steps are required to enable this feature.

Log Files for Batch Threads Renamed

The batch log files generated for batch threads, which you can download while viewing the results of a batch run on the batch run tree, are produced using the following format:

- (Batch control).(run number).(re-run number).THD(n).(datetime).stdout|stderr

The values of the batch control, run number, re-run number, n for thread number, and datetime are substituted at runtime. The new format aligns with the format for the logs generated at the batch run level ((Batch control).(run number).(re-run number).(datetime).stdout|stderr).

Previously, the format of these file names was the following:

- (Batch control).(datetime).(pid).THD(n).stdout|stderr

Steps To Enable

No steps are required to enable this feature.

Support for Database Resource Management for Batch Processes

DB Resource Manager tools may be used to prioritize resource allocation between various groups of batch processes. For example, processes like GDE. CMA, ILM etc., may be associated with a lower resource allocation priority relative to more critical batch processes. To support this capability, certain batch controls can be explicitly associated with a **Resource Group** of three pre-defined priority levels: 10 - High, 20 - Medium, 30 - Low. This definition is made using a new Batch Resource Configuration extendable lookup. The base product does not release values in this extendable lookup, allowing you to set up your own priority references.

When configured, the resource group of a batch control is added as part of the **MODULE** database session variable as follows: <batch control>,**R=<resource group>** and can be used as a correlation to a consumer group mapping in Oracle Resource Manager.

With this configuration enabled, DBAs can set up rules that parse the MODULE variable to identify the resource group for a batch process and apply prioritization rules accordingly. Since not all batch controls would be associated with a resource groups, default allocation rules should be considered.

Note: This enhancement does not include nor enforce the DB resource management configuration. It only allows for such tool to be leveraged by DBAs as needed. Refer to the Oracle Database Resource Manager documentation.

In addition, the batch control query portal is enhanced to filter by and display resource group information.

Steps To Enable

To enable this feature, complete these steps:

1. DBA configures DB Resource Manager allocation priority rules by resource group, including a default rule for batch controls not associated with a resource group.

2. Enable this functionality using the new Expose Batch Resource Group option in the General System Configuration feature configuration type.
3. Flush all caches.

Batch Job Submission Portal

The **Batch Job Submission** page has been converted to a portal, leveraging a more flexible user interface metaphor. The portal organizes information in a way that makes it easier to review and enter key details, such as batch job parameters.

In addition, the following user interactions were changed in the portal:

- The **Add** dialog now requires the batch control to be entered via a popup map.
- The **Duplicate and Queue** action is renamed to **Duplicate**.
- A new action of **Rerun** has been introduced. This action has the same behavior as **Duplicate** with the exception that it populates the batch rerun number with the batch number in context. This replaces the current dialog whereby a user must manually enter the batch number to be rerun in the batch rerun number field.
- The action buttons now only appear if the user has "execute" access for the batch control in context and has security access to the "queue" action for the batch job submission application service.
- New searches have been introduced for both the batch control entry, on the add popup, and the batch user on the add, duplicate, and rerun input pages. For batch controls, the results are restricted to batch controls to which the user has access. For users, results are restricted to users who have access to the batch control in context.
- The batch number is now displayed as a link to the batch run tree. This replaces the context menu.
- Several fields have been rearranged to increase the amount of space available for the batch parameters. This includes:
    - Moving the submission method to the **Record Information** section.
    - Moving the override and debugging parameters to a collapsed **Additional Run Details** section under **Record Information**. Note that this applies to input windows as well.
    - Suppressing the submission user field if the batch user and submission user are the same.
    - Removing the detailed description column from the batch parameters grid and replacing it with a widget that can be clicked to show the detailed description if needed.

This does not impact any extensions.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

A new business object (BO) for Batch Job Submission and a new Determine BO algorithm linked to the Maintenance Object were introduced. The base BO includes all the user interface behavior designed for the new portal. If your implementation has introduced your own CM business object and CM Determine BO algorithm, you should review your business object's configuration and merge it into the base business object.

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

Object	New Application Service	Access Added to any User Groups with this Application Service/Read Access
Batch Job Submission Portal	F1BCHJOB	CILZRBPP

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

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

Batch Email Includes Environment Information

The email sent when a batch job is complete now includes the domain name, if configured for the environment, directly in the email subject.

For example:

Batch Job <ID> Ended <Status> - <Domain Name>

Batch Job F1-MGDIM Ended SUCCESSFULLY - Acceptance Test 1

In a previous release, support for the domain name was added and the batch email was updated to include the domain name in the body of the email. If you were running the same batch job in multiple environments, you needed to open each email to see which environment the message is referred to.

This does not impact any extensions.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

The domain name is defined in the **Messages** tab of the **Installation Options - Framework** page using the *Domain Name* message type.

Improved Batch Submission

The following improvements were made to the **Batch Job Submission** portal:

- Security for changes to the batch user:
    - There are two users associated with submitting a batch process: the user who submits the request and the batch user who controls permissions and auditing during the actual execution of the job. It is not uncommon for implementations to set up generic users with the required batch execution permissions, in which case the batch user and submission user may differ. Before this release, users submitting jobs online had the ability to set the batch user ID to any user. Allowing the batch user to be overridden may cause auditing issues. A new User Override (F1UO) access mode is added to the Batch Job Submission application service (CILZRBPP). Only users who are granted this access mode can override the batch user ID when submitting a batch job.
- Preserving the original user details:
    - If the submission user has override privileges, they have the ability to retain the original batch user details when duplicating or rerunning a batch job. If the Run as original user checkbox is selected, the batch user, language, and email address from the original batch run will be copied to the new batch job. If not, the user details are defaulted from the submission user.
- Simplified user dialog:
    - The user interface for submitting a batch job has been simplified to a single form without the intermediate prompt for the batch control.

This does not impact any extensions.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

Upgrade scripts ensure that users with Add access to the existing Batch Job Submission (CILZRBPP) application service will have access to the new User Override (F1UO) access mode.

You should review user groups that are not allowed to override the batch user at batch job submission and remove their access to the User Override (F1UO) access mode.

Batch Level of Service Web Service

After you configure Batch Level Of Service on the appropriate Batch Controls, you can use this API to track the Batch Level Of Service for monitoring purposes.

The API supports two operations:

- Returns the Batch Level of Service for a batch control. You can use this to return the full Batch Level of Service information for any batch control.
- Returns the overall Batch Level of Service for each batch control that is currently running that has a Batch Level Of Service configured. You can use this to monitor critical running processes using Batch Level Of Service.

This allows the monitoring tools to use Batch Level Of Service as a monitoring metric.

Steps To Enable

System administrators should set/grant users/grant access to the access mode F1EX for the CILTBTCP application service.

Tips and Considerations

This API is only applicable if the Batch Level Of Service is configured.

Parameter Validation Algorithm on Batch Control

Many plugin-driven batch processes include parameters specific to that process. This plugin spot now provides the ability to detect any parameter errors at the batch run level, before any further processing. Previously, there was no way to validate those parameters prior to invoking the select or process records algorithms.

This is a single algorithm plugin spot. For multiple algorithms, the one with the highest sequence is used. The assumption is that algorithms for this spot will use standard error message reporting.

Note: The plugin spot is only available to batch processes using the plugin-driven extract, generic, or upload process templates.

Batch Control Options

In this release users can define options on a Batch Control. These work like options on other objects such as business objects and portals. These options allow the product and your implementation to mark batch controls with additional information.

Options on Batch Control allow the product and implementations to link additional information to a batch control for special processing or for reporting purposes.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

The product provides a business service (F1-RetrieveBatchOption) to retrieve the options for a given Batch Control and option type. When calling the business service you indicate whether you expect a single option value or if there can be multiple option values.

Batch Control Portal

The **Batch Control** page has been converted to a portal, leveraging a more flexible and extendable user interface metaphor. The portal organizes information in a way that makes it easier to review the batch control's configuration and includes the following key features:

- Include key information in the Main section and move less important details to designated sections.
- Support description inheritance from an optional reference to a batch template.
- The display and maintenance of batch parameters is enhanced as follows:
    - Follows the concise summary / details user experience introduced on the Batch Job Submission portal.
    - Distinguish between general parameters supported by the batch framework and those implemented by the batch control program.
    - Distinguish between general parameters that are applicable to all batch controls and those that may be depend on certain functionality supported by the batch.
- The display and maintenance of Algorithms follow the user experience introduced on the Business Object portal.
- Level of service information is not always calculated when a record is displayed. Instead it is available on demand using a designated button.
- Display additional information
    - Selection algorithm if any
    - Process record algorithm if any
    - Upload algorithm if any
- A more comprehensive list of references to the batch control.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

A new business object for Batch Control and a new Determine BO algorithm linked to the Maintenance Object were introduced. The base business object includes all the user interface behavior designed for the new portal. If your implementation has introduced your own CM business object and CM Determine BO algorithm, you should review your business object's configuration and align it with the base business object.

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

Object	New Application Service	Access Added to any User Groups with this Application Service/Read Access
Batch Control Portal	F1BTCTRL	CILTBTCP

Improved Display of Batch Thread Level Information

The business service that returns the level of service information for a specific batch control (F1-BatchLevelOfService) is now aligned with the logic of the Health Check business service (F1-HealthCheck). When multiple Level of Service algorithms are plugged in on the batch control, the overall Level of Service code is populated as follows:

In addition, the **Threads** tab has been enhanced to support a Thread Summary action that summarizes instance information per thread.

Steps To Enable

No steps are required to enable this feature.

Batch Level of Service API Includes Supporting Details

The **Batch Run** portal has been enhanced to reflect the Accumulate All Instances indication set on the batch control when displaying information at the batch run thread level.

- If any algorithm returns Error, that value is returned.
- Otherwise, if any return a Warning, that value is returned.
- Otherwise, Normal is returned.

The **Reason** is set to "See Results for Details". In addition, the results returned by each algorithm is returned so that the caller can review the details.

This business service is called by the F1-BatchLevelOfService REST inbound web service. Users of this API will now see the additional details.

When calling the Batch Level of Service API, you now can see the supporting details when there are multiple level of service algorithms. In addition, the summarized level of detail output surfaces the most important information.

Steps To Enable

No steps are required to enable this feature.

Batch Submission by Batch Group

If multiple batch jobs are submitted for the same batch control, only one job runs at a time; the other jobs wait in the queue. There are some use cases where a batch is submitted from an online transaction to defer heavy processing to batch. If multiple users are performing the same action for different records, the jobs are queued up.

In this release, there is the concept of a **Batch Group** where multiple batch controls may get created for the same purpose and get associated, via an option, to a **Batch Group**. The existing F1SubmitJob "Submit Batch Job" script was enhanced to submit a job for the requested batch control or any of the batch controls associated with it using the **Batch Group** option. If the requested batch control is associated with a batch group, then the batch control with a low number of in progress batch jobs is submitted.

Note that associating a batch control with a batch group should be done with caution. You should ensure that all batch controls in the group can run concurrently without interfering each other.

As part of this enhancement, the **Additional Information** option of the **Batch Control Query** portal was also enhanced to support a search by batch control options.

When applicable, pool-based batch submission supports a more efficient way of delegating user-centric tasks to be performed via batch processes that can run in parallel.

Steps To Enable

You need to update the logic that submits the batch job to call F1SubmitJob passing the batch group.

Batch Thread Strategy by Actual Keys

Typically, system generated keys are assigned in such a way that they are evenly distributed across batch threads. This is known as the "Thread Iteration (THDS)" strategy where each thread is assigned a low to high key range that is based solely on the size of the primary key field. There are situations where keys do not evenly distribute across threads, resulting in uneven thread completion times. For example, conversion entities in the staging schema have legacy keys, which are typically not evenly assigned. This impacts the Object Validation and XML resolution batch processes that thread by legacy keys.

In this release, a new variation of the thread distribution strategy 'KEYS" was introduced where the low and high IDs for the thread are calculated based on actual keys. The range is calculated based on the total number of records in the table divided by the requested number of threads, such that each thread processes approximately the same number of records.

The new strategy is available to plug-in driven and standard monitor batch processes. These batch programs support a new **Batch Strategy** batch parameter that can be used to override the default strategy. Note that the new strategy can only be used when processing is over a table with a single system generated prime key.

Steps To Enable

To enable this feature when submitting a monitor batch or a plug-in driven batch, populate the Batch Strategy parameter with the value KEYS.

JSON Format Support for Plugin-driven Extract

The plugin-driven extract batch job was enhanced to support output formats related to JSON:

In this release, a new variation of the thread distribution strategy 'KEYS" was introduced where the low and high IDs for the thread are calculated based on actual keys. The range is calculated based on the total number of records in the table divided by the requested number of threads, such that each thread processes approximately the same number of records.

- **JSON Document** - You can configure this format to produce either a JSON object, which contains an array of the output records, or simply an array of output records. Whether you extract an object or an array is determined by whether or not you suppress the object Grouping name.
- **JSON Lines** - You can configure this format to produce a series of JSON objects. In this format, each output record is a JSON object.

Steps To Enable

To enable this feature, see the **Extract Record Processing** topic in the **Background Processes** chapter of the *Oracle Utilities Application Framework Administrative Guide*. Several sections in that topic highlight considerations for using JSON and JSONL format.

Large File Upload Improvements

Previously, uploading a file using the plugin-driven upload batch process assumed that the content of the entire file was processed as a single unit of work. With this approach, an upload of a large file has often hit various resource limitations and timed out.

As of this release, the following features were introduced to better support large file uploads:

- A new batch control is provided for splitting a large file into multiple smaller files. Refer to batch control F1FSPLIT for more information.
- The existing **File Upload** batch algorithm entity was enhanced to support algorithms designed to process records in smaller units of work than the entire file. Note that the algorithm can still be designed to process all the records in a file as a single unit of work as before.

Steps To Enable

If you have large files to upload, choose one of the new features to better process the file.

To use the batch job that takes a large file and splits it to smaller files, complete these steps:

1. Create a batch control using the batch template File Split Template (F1FSPLIT).
2. Include this batch in the scheduler prior to the existing upload process you have for uploading the file. The file name parameter for this should be configured with an appropriate GLOB syntax to handle multiple files.

No coding changes are required for this option.

To use the feature where the algorithm can handle chunks of work, coding changes are needed. See the **The File Upload Algorithm** section in the **Uploading Records** topic of the **Background Processes** chapter in the *Oracle Utilities Application Framework Administrative Guide*. With this option the additional batch process to split the file is not needed.

Implementation Tool Enhancements

This section describes the following new and enhanced implementation features introduced in this release:

Business Object Portal

The **Business Object** page has been converted to a portal, leveraging a more flexible and extendable user interface metaphor. The portal organizes information in a way that makes it easier to review and understand the configuration that controls business object related functionality.

In addition, the following implementation tasks were simplified by updates in this release:

- When adding a new business object, the schema is automatically generated, along with key UI configuration scripts as needed.
- If the new business object is a subclass of an existing business object, the schema is generated accordingly.
- Introducing a new business object algorithm: This action was available as a context sensitive zone and is now incorporated into the appropriate sections of the portal.
- Deactivating and activating a base product algorithm: This is now a simple action on the algorithms sections of the portal.
- Filtering for algorithms by system event.
- Filtering for options by option type.

Steps To Enable

No steps are required to enable this feature.

Additional Terms Added to SQL Allowlist

The following terms were added to the SQL Allowlist:

- CHR
- COALESCE
- LAG
- NEXT_DAY
- REGEXP_INSTR
- REGEXP_REPLACE
- REGEXP_SUBSTR
- REVERSE
- RPAD
- RTRIM
- TO_NUMBER
- XMLQUERY

Note that the terms were also added to the allowlist in previous releases via patches. This does not impact any extensions.

Additional terms included in SQL allowlist provides implementations with more capabilities when writing SQL statements in data explorers.

Steps To Enable

No steps are required to enable this feature.

Business Object Portal Improvements

Business object option types and algorithms system events are now documented in designated extendable lookups, **Option Configuration** for option types and **Algorithm Entity Type** for system events. It is noted whether they support single or multiple values. This configuration is for documentation purposes only. Previously, there was no indication as to whether a business object's option type or algorithm system event implemented a single value or supported multiple values.

Using this information, the **Business Object** portal uses an icon to highlight whether a single value option type or algorithm system event record has been overridden by a higher sequence record. The situation may occur when the business object's option or system event configuration is extended by other products or customers. In the same way, an icon is used to highlight that a business object algorithm has been inactivated. The use of these icons makes it easier to focus on configuration records that are in effect and active.

The detailed description of the option types is presented in a more user friendly and searchable way. Also, as of this release, you can maintain reasons for a specific status directly on the **Lifecycle** tab where you review and maintain all other status-related configurations.

This does not impact any extensions.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

If you have introduced custom business object-related option types, it is recommended that you also define them in the Option Configuration extendable lookup to indicate whether the option type assumes a single value or multiple values. By default, the **Business Object** portal displays an option type that is not defined in the extendable as if it supports a single value.

In the same way, if you have introduced custom business object related system events, it is recommended that you also define them in the Algorithm Entity Type extendable lookup to indicate whether the system event assumes a single algorithm or multiple algorithms. By default, the **Business Object** portal displays a system event that is not defined in the extendable as if it supports multiple algorithms.

Extended Tree Node Broadcasting Capabilities

The Populate Node and Override Information tree node algorithms can now optionally set the broadcast fields to use. When this information is not provided, the default primary key field names are used. Previously, when a user clicked on the broadcast icon on a tree node, the broadcasted field names were hardcoded to the node entity's primary key field names. While this was appropriate for most entities, there were use cases where the broadcasted field names should have differed from key names.

In addition, these tree node algorithms can now also determine that for a specific node the broadcast icon is not applicable and therefore should not be displayed. The tree node definition must explicitly allow broadcasting for the icon to appear and the algorithm can only set it to not appear as needed for a specific node.

This does not impact any extensions.

This allows for better support of complex tree node broadcasting requirements and provides more flexible interaction with trees.

Steps To Enable

No steps are required to enable this feature.

Extensions Dashboard Improvements

The **Extensions Dashboard** portal was enhanced to show all revisions made to an extension entity in descending order in a new **Revision Control** zone. A **Configuration Migration** zone was also added to also list all Content Migration Assistant migration objects that applied changes to an extension entity. These zones appear only when an extension entity is selected.

A new **Review** tab was added to the **Extensions Dashboard** portal to highlight rare duplicate configuration issues that may arise after an upgrade. Utilities can use this information to adjust their configuration.

This does not impact any extensions.

The new user experience allows utilities and partners to improve the way they track and manage their extensions, which helps to reduce implementation costs.

Steps To Enable

No steps are required to enable this feature.

Maintenance of Lookup Values Improvements

Lookup values can be easily filtered by various criteria and a smaller set of records can be selected for update. This helps handle lookup fields, like algorithm entity, that have too many values to manage as a single list. This does not impact any extensions.

This improved user experience helps to reduce implementation costs.

Steps To Enable

No steps are required to enable this feature.

Algorithm Entity Information Portal

A new **Algorithm Entity** query and display portal is available. You can use the query portal to look for a specific algorithm entity (also referred to as a plug-in spot). In case you want to research more than one plug-in spot, the results include a worklist icon to put results in a worklist.

Once you select an entry, you are brought to a display portal where you can review information about the algorithm entity. You can use the View Plug-in Spot API link to see the hard parameters passed into algorithms for this plug-in spot. You can read the detailed description, if provided, to understand more information about how or when algorithms are called and their responsibility.

If there are any algorithm types for the plug-in spot, they are listed in a separate zone. If applicable, you can drill into the algorithm type or its script. It includes the parameters and the number of algorithms for the algorithm type.

This does not impact any extensions.

Steps To Enable

System administrators should set/grant users/grant access to the following application services:

- **F1ALGENQ** - Algorithm Entity Query Portal
- **F1ALGENT** - Algorithm Entity Portal

Client Folder Reorganization

The new folder structure does the following:

- The JavaScript files are being located in more "functional" folders, so they are easier to find, fix, and test.
- These "functional" folders are easier to bundle. Oracle Utilities Application Framework bundles JavaScript files to help performance.
- Oracle Utilities Application Framework includes some external "library" JavaScript, for example, OJet and JQuery. The library files have been relocated to make it easier to identify they are library files.

Reorganizing the folder structure makes it easier for you to locate folders, which results in faster development and bug fixes. In the future, this structure will make it easier to adopt other common development tools.

Note: This enhancement only impact extensions using custom UI Maps or old style custom JSP based pages that hardcode library locations. These pages must refer to the new locations to operate as before.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

All the Oracle Utilities Application Framework references have been updated as necessary. If a UI Map has been developed that manually references a library file, it will need to be updated.

- Use the Oracle Utilities Application Framework-provided UI Map include - F1- OJETLIBS or F1-OJETLIBSR (Recommended).
- Update your UI Map to refer to the new library location. Since the library folder structure still contains the version number, you need to update it for each release.

Generate API Specification Files for Publication

Prior to this release, the publication process of product APIs involved a manual online step of downloading the OpenAPI Specification file for each web service and adjusting its content for external publication.

A new batch process, **F1-APIEX**, is now provided to simplify this task and generate a publication-ready specification file for each web service included in a web service category. This batch process is only applicable to anyone responsible for extracting API documentation.

This does not impact any extensions.

Steps To Enable

System administrators should set/grant users/grant access to the **F1-APIEX** application service.

Improved Open API Specification

The following details are included in the Open API specification for a web service:

- Request and response examples. These were available as options for a web service operation, but they are only incorporated into the open API specification as part of this release.
- Help text description for URL and query parameters.

This does not impact any extensions.

Steps To Enable

No steps are required to enable this feature.

Improved Portal and Business Object Option Configuration

It is simpler for you to set up **Portal and Business Object** options where an option's value is restricted to a set of valid values. A user can choose from a drop-down list of valid values.

The **Option Configuration** extendable lookup is enhanced to support a reference to a lookup field that represents the valid values for the lookup. When specified, the corresponding options maintenance UI provides a drop-down list with the corresponding lookup values and the display UI shows the corresponding lookup value description.

This does not impact any extensions.

Steps To Enable

No steps are required to enable this feature.

Business Service Portal

The **Business Service** page has been converted to a portal, leveraging a more flexible and extendable user interface metaphor. The portal organization makes it easier to review the business service's configuration and includes the following key features:

- The schema is generated upon creation of the business service. If the service is based on a data explorer zone, the schema is generated based on the zone configuration, thus streamlining and making it easier to introduce a new data explorer service.
- Navigation to the related zone for data explorer services.
- A more comprehensive list of references to the business service and its schema.
- A less cluttered sidebar by moving all business service tips and schema generation functionality to the new portal.
- Ability to test the service.

Note: This requires security access to application service Test a Service (**F1SCRTEST**) in addition to the ability to add a script which is the existing alternative way for testing any service.

There is no impact to existing extensions with this enhancement.

Steps To Enable

To enable implementers that already have security rights to create scripts to also test their scripts using the new Test action, provide them with access to application service Test a Service (**F1SCRTEST**).

Tips and Considerations

A new business object (BO) for Business Service and a new Determine BO algorithm linked to the Maintenance Object were introduced. The base BO includes all the user interface behavior designed for the new portal. If your implementation has introduced your own CM business object and CM Determine BO algorithm, you should review your business object's configuration and align it with the base business object.

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

Object	New Application Service	Access Added to any User Groups with this Application Service/Read Access
Business Service Portal	F1BUSSVC	FWLTBSVP

Improvements to the Generate API Specifications Batch

The **F1-APIEX** batch process no longer requires a web service category. This makes it easier to generate a complete list of specification files for all web services that are ready for publication. When a web service category is specified, the batch processing is restricted as before to those web services included in the specified category.

In addition, the definition of being ready for publication is extended to also include custom web services that are active.

Steps To Enable

No steps are required to enable this feature.

Groovy Support for Custom Lookup Values

A new LookupHelper.getLookupInstance Java method is provided, which allows programmers to instantiate a lookup object for use in subsequent Groovy code. For example:

```
Lookup customLookup = LookupHelper.getLookupInstance("ALG_ENTITY_FLG", "CMAL");
```

Previously, the product did not support a good method for instantiating a lookup object in a Groovy script when there was no Java class generated for the lookup.

You can instantiate a lookup object in Groovy when referring to a custom lookup value rather than using a variable.

Steps To Enable

No steps are required to enable this feature.

Maintenance Object Portal

The **Maintenance Object** page has been converted to a portal, leveraging a more flexible and extendable user interface metaphor. The portal organization makes it easier to review the maintenance object's configuration and includes the following key features:

- The maintenance object's hierarchical table structure is visualized as a tree. Table information is also provided as a list with worklist capability.
- The display and maintenance of Options and Algorithms follow the user experience introduced on the **Business Object** portal.

- The **Relationship** tab describes the data model relationship between this maintenance object and others.
- Additional details like the maintenance object's application service, its primary table's classification, and related portals are displayed.
- A comprehensive list of references to the maintenance object is provided.
- A less cluttered sidebar by removing the zone that shows business object information to a designated tab on the new portal.

There is no impact to existing extensions with this enhancement.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

A new business object (BO) for Maintenance Object and a new Determine BO algorithm linked to the Maintenance Object were introduced. The base BO includes all the user interface behavior designed for the new portal. If your implementation has introduced your own CM business object and CM Determine BO algorithm, you should review your business object's configuration and align it with the base business object.

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

Object	New Application Service	Access Added to any User Groups with this Application Service/Read Access
Maintenance Object Portal	F1MO	CILEMOBP

Script Portal

The **Script** page has been converted to a portal, leveraging a more flexible and extendable user interface metaphor. The portal organization makes it easier to review the script's configuration and includes the following key features:

- Navigation to the algorithm entity portal for plug-in scripts.
- A more comprehensive list of references to the script and its schema.
- A less cluttered sidebar by moving all script tips to the new portal.
- Ability to view the script as text for a BPA script.
- Ability to view the display and input UI for a script that includes UI hints. This is similar to the actions available for a business object.
- Ability to test a BPA or a Service Script.

Note: This requires security access to application service "Test a Service (**F1SCRTEST**)" in addition to the ability to add a script (which is the existing alternative way for testing any service). This should typically be enabled in development and testing environments.

In addition, the script query portal is enhanced with a new **Additional Information** option that supports searching for scripts by schema information. There is no impact to existing extensions with this enhancement.

Steps To Enable

To enable implementers that already have security rights to create scripts to also test their scripts using the new Test action, provide them with access to application service Test a Service (**F1SCRTEST**).

Tips and Considerations

A new business object (BO) for Script and a new Determine BO algorithm linked to the Maintenance Object were introduced. The base BO includes all the user interface behavior designed for the new portal. If your implementation has introduced your own CM business object and CM Determine BO algorithm, you should review your business object's configuration and align it with the base business object.

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

Object	New Application Service	Access Added to any User Groups with this Application Service/Read Access
Script Portal	F1SCRIPT	CILZSCRP

Support Changes to a Widely Referenced Schema in Batch

Making changes to a schema requires the application to ensure the changes do not violate any schema that references it. The validation process is complex and may time out when the number of references is high. A new batch utility, Update Object Schema (F1- SCMUP), is provided to perform this type of change as a batch process, which allows for higher time limits. The user submitting the change in batch should have the same security permissions needed to perform it online. In addition, submitting the batch requires access to the Update Object Schema (F1-SCHEMAUPD) batch application service.

Supporting a batch utility to make a change to a highly referenced schema assists rare implementation tasks that cannot be completed online.

Steps To Enable

System administrators should set/grant users/grant access to the Update Object Schema (**F1-SCHEMAUP**) application service.

Visibility Script for Zone Header Actions

New mnemonics have been added to the Zone Action parameters in base delivered zone types. The mnemonics allow you to reference a visibility script that can check a condition and return an indication of whether or not to show the action. The mnemonics are:

- vss='scriptName'
- vinput=[...] (values to be passed to the script)

- voutput=booleanValue

The following is an example of the zone configuration for a base delivered zone that shows links to view a service script's schema. The visibility script checks the type of script being displayed and returns an output Boolean of 'true' only if the script is a service script.

```
type=LINK action=SCRIPT bpa='F1ScrStepAct' label=SVC_SCR_DA_LBL
context=[mode='VIEW_SCR_SCHEMA' scriptcd=SCR_CD] vss='F1ScrActVis'
vinput=[scriptcd=SCR_CD scriptAction='VIEW_SCR_SCHEMA'] voutput=showAction
```

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

In a future release, the product will introduce mnemonics to check a user's security access before displaying a zone header action. This information would get cached as a user's security access does not change during their session. It is recommended to wait for that feature and not to create visibility scripts for checking security. You should use the visibility script to check for conditions that could change based on the data being displayed.

Ability to Restrict Behavior for the Live Production Environment

In this release a property is introduced (isLiveProduction) to indicate that the environment is the live production environment. By default this value is set to “false”.

An example of functionality that uses this property to determine behavior is Extensions Dashboard Improvements.

This property enables the base product and implementations to implement tighter restrictions or different default behavior for a live production environment as compared to other environments.

Steps To Enable

To enable this feature, contact your Customer Success Manager to confirm your live production environment to ensure that the property value will be set correctly.

Custom Cascading Style Sheet Support Managed Content Definition

The product allows implementations to define a custom style sheet using a Feature Configuration option. In previous releases, the system only supported defining a *.CSS file and referring to the file location in the option. In this release, the feature option now also allows you to see a Managed Content entry.

Implementing a custom style sheet using managed content allows for implementations to override the cascading style sheet (CSS) using metadata rather than using a CSS file.

Steps To Enable

To enable this feature, complete these steps:

1. Create a Managed Content entry using the **CSS Definitions** managed content type and use this entry to define your custom style sheet definition.
2. Go to the Feature Configuration for the **Custom Look and Feel** feature type. You may need to create one if it does not exist. Use the Style Sheet option to reference the managed content entry.

Email Sender Support Defining 'From' Address

When an email is initiated from within the system using the business service F1- EmailService, the 'from' email address is a parameter that may be populated by the calling program. In this release, the Message Sender has been enhanced to support defining the "from" email address when defining an Email sender using the context type "SMTP From Address". If the call to the business service refers to a sender directly or relies on the default sender (defined on the Message Option) and the 'from' context type is populated, this value is used. Otherwise the value passed into the business service is used.

Note that your specific application may already have some configuration for determining the "From" email address of a given email use case, for example in Feature Configuration. If those values satisfy your implementation's use cases, then no changes are needed.

Steps To Enable

To enable this feature, complete these steps:

1. Navigate to **Message Sender** and find your email sender.
2. In the **Context** tab, add a Context Type for SMTP From Address and populate the desired value.

Personal Identifiable Information Redaction in Logs

In a previous release, the system introduced redaction rules. Implementations use these rules to identify fields that may contain Personal Identifiable Information for their customer data. In this release, the redaction rules are now used to apply to data being written to debug log files.

By default, the redaction rules are applied. In a production environment, this setting cannot be turned off. However, in a non-production environment, the setting can be turned off using a Feature Configuration.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

The system uses a property to identify whether an environment is a live production environment or not. For cloud customers, this is set by the development operations team when a customer indicates they are live. For on-premises clients, you should set this property when you are live. See the *Oracle Utilities Application Framework Administrative Guide* for more information.

If you are in a non-production environment and the data getting written to the logs is not real customer information and you would like to turn off the log redaction, you may turn it off by adding a feature option:

1. Go to **Admin Menu > General > Feature Configuration**.

2. Look for an existing Feature Configuration record for the feature type 'General System Configuration'. If one exists, select it. If one does not exist, use the **Add** button in the page action area to add an entry for this feature type.
3. Add an entry in the option type collection for the Option Type "Turn Off Log Redaction" and enter a value of "Y".

Note that only users with the Administrator access mode (F1SU) for the Feature Configuration application service (CILTWSDP) may add this entry.

Products Use Metrics

In this release, the product delivers two maintenance objects: Product Metric Type and Product Metric Snapshot. The product uses algorithms related to these objects to calculate and capture product use metrics.

In previous releases, the product used entries in the Statistics Control and Statistics Snapshot objects to capture product use metrics, causing these tables to include a mixture of statistics related to your implementation's business processes as well as product use metrics.

Implementations do not need to manage or review the information in the new objects. The **Product Use Metrics** dashboard zones have been updated to display information captured in the Product Metric Snapshot table per the new functionality.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

If your implementation has statistic control entries related to product metrics, they will remain. The **Product Use Metric** dashboard will no longer use this information with the introduction of the Product Metric Snapshot. Consider marking the records as inactive.

Standard user interface components with associated security are provided for the new objects, but implementations do not need to manage or review the information.

Use Export Filename as Worklist Description

The **Migration Data Set Export Query** portal has been enhanced to use the data set's file name as the worklist description.

Using the export file name as a more meaningful worklist description makes it easier to work with CMA export data sets.

Steps To Enable

No steps are required to enable this feature.

Data Area Portal

The Data Area page has been converted to a portal, leveraging a more flexible and extendable user interface metaphor. The portal organizes information in a way that makes it easier to review the data area's configuration and includes the following key features:

- Better use of the Main tab space to display information concisely. For example, showing the schema in text format for a quick review similar to the business object portal.
- The list of data areas that extend this data area are readily available on the **Main** tab instead of hidden in the **Schema** tab.
- More comprehensive list of references to the data area and its schema.
- View the display and input UI for a data area that includes UI hints. This is similar to the actions available for a script.
- Uncluttering of the sidebar by moving data area tips to the new portal.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

A new business object (BO) for Data Area and a new Determine BO algorithm linked to the Maintenance Object were introduced. The base BO includes all the user interface behavior designed for the new portal. If your implementation has introduced your own CM business object and CM Determine BO algorithm, you should review your business object's configuration and align it with the base business object.

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

Object	New Application Service	Access Added to any User Groups with this Application Service/Read Access
Data Area Portal	F1DTAR	FWLTDARP

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

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

Data Correction Self-Service - Support for Orphan Record Deletion

The new Data Correction Request Root, Orphan Record Deletion, and Orphan Record Deletion Type business objects can be used together to create a request to process orphan records. In addition, there are new Backup Table Cleanup and Backup Table Cleanup Type business objects to deal with the backup tables created by the deletion request. The following points highlight features supported by these new objects:

- The Orphan Record Deletion Type defines the parameters for the deletion request, including whether to verify record counts before performing deletion and whether a backup cleanup request should be created.
- The Data Correction Request Root and Orphan Record Deletion business objects define the steps in the deletion process, including:
    - Capturing the table with orphan records, and the number of records affected.
    - Generating the SQL to perform deletion directly in the database.
    - Sending the data correction request to another user for approval.
    - Submitting a batch process to perform the deletion in background.
    - Trapping errors and allowing for the request to be cancelled or restarted if the errors are fixed.
    - Creating a new request to clean up backup tables added during the deletion processing.

Steps To Enable

Provide the required access before using the feature.

Tips and Considerations

To enable users to create requests for orphan record deletion, you must give them add access to the application service for the new Data Correction Request Root business object (F1-DATACORRECTIONRBO).

Upgrade scripts ensure that users with Read access to the existing request type all-in-one portal will have access to the new application service associated with the new query portal. The table below lists the existing and new application services.

Object	New Application Service	Access Added to any User Groups with this Application Service/Read Access
Request Type Portal	F1REQTYQ	F1REQTYP

Access Requirements

System administrators should grant access to the F1-DATACORRECTIONRBO application service for any user that is going to create requests for orphan data correction.

Feature Configuration Portal

The **Feature Configuration** page has been converted to a portal, leveraging a more flexible and extendable user interface metaphor. The portal organizes information in a way that makes it easier to review the UI map's configuration and includes the following key features:

- Better use of the **Main** tab space to display information concisely.
- A standard approach for maintaining options, as used by similar entities like business object.
- External message configuration may be relevant to very few feature types. As such, the new portal includes this information only when applicable.
- Ability to enforce a single configuration record for a feature type in a configurable way that does not require Java code changes.

A new **Feature Type Configuration** extendable lookup was introduced to control whether one or more configurations are allowed for a feature type. It also controls whether external messages configuration is applicable for the feature type. By default, if an extendable lookup record does not exist for a feature type, it is assumed to allow a single configuration and not support external messages configuration.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

A new business object (BO) for UI Map and a new Determine BO algorithm linked to the Maintenance Object were introduced. The base BO includes all the user interface behavior designed for the new portal. If your implementation has introduced your own CM business object and CM Determine BO algorithm, you should review your business object's configuration and align it with the base business object.

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

Object	New Application Service	Access Added to any User Groups with this Application Service/Read Access
Feature Configuration Portal	F1FCFG	CILTWDSP

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

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

UI Map Portal

The **UI Map** page has been converted to a portal, leveraging a more flexible and extendable user interface metaphor. The portal organizes information in a way that makes it easier to review the UI map's configuration and includes the following key features:

- Better use of the **Main** tab space to display information concisely. For example, have the HTML editor more easily accessible.
- A more comprehensive list of references to the UI Map and its schema.
- Uncluttering of the sidebar by moving UI Map tips to the new portal.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

A new business object (BO) for UI Map and a new Determine BO algorithm linked to the Maintenance Object were introduced. The base BO includes all the user interface behavior designed for the new portal. If your implementation has introduced your own CM business object and CM Determine BO algorithm, you should review your business object's configuration and align it with the base business object.

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

Object	New Application Service	Access Added to any User Groups with this Application Service/Read Access
UI Map Portal	F1UIMAP	FWLTUIMP

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

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

Allowlist for Sending Files as Email Attachments

The F1-EmailService business service supports the ability to indicate information to be sent in the email as an attachment. The service supports referencing a record in the Attachment object. In addition, for on premises clients only, it supports referencing a file path and file name directly. In this release, the file paths referenced in this direct method must be 'registered' in the File Storage extendable lookup.

Note that the validation to check against the file storage extendable lookup is delivered in this release. If your implementation uses the technique of referencing a file path and file name when calling F1-EmailService, you will need to configure appropriate entries before proceeding. The system supports defining a "parent'" directory in the file storage extendable lookup. When invoking F1-EmailService, providing a directory within the registered "parent" directory is supported. For example, if you register the path D:\systemFiles\, at runtime when invoking F1-EmailService, you can provide a file in the path D:\systemFiles\CMA.

The allowlist for file paths ensures that the files included in an email are stored in an approved location.

Steps To Enable

To continue using the technique of sending emails with files from a specified file path, complete these steps:

1. Navigate to **Extendable Lookup**.
2. Search and select the **F1-FileStorage** business object.
3. Use the **Add** button to add an entry for a given file path.
4. Define an appropriate **Value** and **Description**.
5. In the **File Adapter** drop-down, choose Native File Storage.
6. In the **File Path**, define a valid file path that may be referenced when sending an attachment. Parent directories may be defined here. At run time, references to child directories within the directory listed here are considered supported.
7. Repeat the step for any unique parent directory that your implementation uses for indicating files to attach when calling F1-EmailService.

Integration Enhancements

This section describes the following new and enhanced integration tools introduced in this release:

Support for Application Variables in Outbound Message Payload

Some products require that "Application ID" and "Tenant ID" values are included with certain API calls, typically as a way to identify the calling application for reporting purposes. These values are provided to the utility at onboarding time and need to be captured in the application in relation to these API configurations.

As of this release, the Message Sender context information was enhanced to also capture the following application details:

- Application ID
- Tenant ID

The new details are not involved in the process of orchestrating and routing the call. They need to be incorporated into the payload by the application logic that composes the message using the new "Get Application Variables (F1MsgVars)" service script.

Steps To Enable

No steps are required to enable this feature.

Object Storage Region Configuration Improvements

The definition of valid cloud object storage regions are now configured using an extendable lookup rather than a lookup. Defining the regions in an extendable lookup allows us to support defining both the region key and the region identifier. Previously, using a lookup to define the region supported only defining the region key. Product code was required to map the region identifier, requiring code change any time a new region was defined.

The product provides base delivered values for all the regions that are provisioned for cloud services. You can define a region for cloud object storage that is not provided by the base produce using the region value in the extendable lookup.

For backward compatibility for upgrading implementations, all regions previously provided in the lookup that are not in the list of those that the product is supplying are provided in the extendable lookup with a "CM" (customer modification) owner.

This does not impact any extensions.

As Oracle Cloud expands the regions it offers, this change allows the services to react to these new regions quickly without changes to the product code.

Steps To Enable

No steps are required to enable this feature.

URL Navigation to a Portal Using Its Navigation Option

Previously, the application supported a URL navigation to portal only via the portal's internal navigation key as the **Location URL** parameter. While a page's internal navigation key could change due to internal design implementations, its navigation option remained unchanged. As a result, it was better to share a page's navigation option with an external system than the internal navigation key.

In this release, a new URL parameter **LocationNavOpt** was introduced to support URL navigation to a portal using its navigation option.

Supporting URL navigation to a portal using its navigation option makes such UI integration flows more resilient to portal internal navigation key changes.

Steps To Enable

To enable this feature, integrations must be updated to use the new **LocationNavOpt** URL parameter with the desired navigation option code when launching the application.

Content Migration Assistant (CMA) Enhancements

This section describes the following new and enhanced CMA features introduced in this release:

Content Migration Assistant Export by Entity Tag

You can now use entity tags to identify entities to export using Content Migration Assistant (CMA). The criteria based migration request functionality is enhanced to support a tag based export instruction as a way of exporting all entities associated with an entity tag.

This allows developers to collate their extensions in a similar way to bundling, but it harnesses the power of the Content Migration Assistant engine.

Steps To Enable

No steps are required to enable this feature.

Improved Support for Large Numbers of SQLs in Migration Object

When importing an object into an environment using Content Migration Assistant (CMA), the product supports selecting one or more SQLs associated with the object and suppressing them. At the apply stage, these SQLs are not included. This is useful when your object has one or more child rows that you prefer not to include in the target environment. In this release, the steps for selecting and marking records to suppress or unsuppress have been enhanced to support objects that have a large number of child records, and therefore a large number of SQLs. Now, instead of clicking **Edit** in the **Migration Object** main display zone, the **List of SQL Statements** zone now has **Suppress** and **Unsuppress** actions. You can use the filters on this zone to narrow down the results, select the appropriate records, and click the desired action.

Additional changes were made to the **List of SQL Statements** zone to better support a large number of records:

- The zone is now configured for Pagination, showing 500 records for a page.

- Additional filter values have been added. You can now do a likable search on the SQL statement text. In addition, you can limit to the results to excluded suppressed rows or to only show the suppressed rows.

Steps To Enable

No steps are required to enable this feature.

Improved Base Product Content Migration Assistant Requests

Previously, some base product migration requests were inefficiently exporting all records of an entity, including many base owned records where the maintenance object did not include fields that could possibly contain customized content. Exporting so many of these entities placed a performance burden on the import step to load, compare, and eventually not apply them.

The following migration requests were enhanced to be more efficient and only export custom-owned entities for maintenance objects that do not contain custom fields:

- F1-SystemConfig
- F1-SecurityConfig
- F1-SecurityConfigWithoutUsers
- F1-Tags
- F1-MigrationAdmin
- F1-IntegrationConfig

Steps To Enable

No steps are required to enable this feature.

Configuration Deletion Portal

You can identify and delete configuration entities that were previously imported via Content Migration Assistant (CMA) and are no longer needed using the new **Configuration Deletion** portal.

The new portal assists a system administrator in reviewing and deleting configuration data as follows:

- The administrator selects a set of CMA import data sets that represents a complete imported configuration. This can be done via an external reference name and up to five data set IDs.
- A summary list of maintenance objects included in the reference set is presented along with the number of applied or unchanged entities for each.
- Selecting a maintenance object presents all entities for that type that exist in the current environment but are not included in the reference set. These are the entities the administrator may select for deletion.

This does not impact any extensions.

Steps To Enable

System administrators should set/grant users/grant access to the F1CFGDEL - Configuration Deletion Portal application service.

Improved Migration Related Searches

A new query option, **Included Entities**, is available in the **Migration Plan Query** portal. You can use this option to find migration plans that include other entities. In addition, you can now search for import data sets based on their bulk mode option, which is also presented in the query results.

The ability to search for migration related entities by various criteria helps you review the CMA migration configuration.

This does not impact any extensions.

Steps To Enable

No steps are required to enable this feature.

Content Migration Assistant Web Service

A new API is available, via a REST Service, to allow tools to create and monitor export and import requests for the Content Migration Assistant. The API supports several operations:

- Create a Migration Data Export Request by specifying the key elements in the JSON payload. This returns the Migration Set Identifier created.
- Return the state of a Migration Data Export Request using the Migration Set Identifier as the key.
- Create a Migration Data Import Request by specifying the key elements in the JSON payload. This returns the Migration Set Identifier created.
- Return the state of a Migration Data Import Request using the Migration Set Identifier as the key.

Steps To Enable

System administrators should set/grant users/grant access to the access mode F1EX for the application service F1MIGRDS.

Correction Allowed for Pending Import Data Set Record

An **Edit** action is now supported for minor corrections. The action is available while the record is still in pending status and the monitor batch process has not begun. Previously, an import data set that was added incorrectly had to be canceled.

Supporting an edit action on pending import data set records makes it easy to handle minor corrections and improves the user experience.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

The action requires standard change access rights to the migration data set import business object's application service (F1MIGRDIMP).

Import Data Set Cancellation

Previously, the canceled import data set status represented a request to cancel the dataset and a final status where all objects and transactions were already canceled. This caused a performance issue for the migration object apply batches as they needed to cancel (instead of apply), objects that belonged to a canceled dataset. This included the many data sets that were already fully canceled.

This release supports a distinction between a data set "pending cancel" status, that is a requested to be canceled, and the final "cancelled" status to which the data set transitions to when all its transactions and objects are canceled. With this new approach, you initially set the data set to pending cancel status and the data set is finally cancelled the next time the import data set monitor batch process runs after all the transactions and objects are canceled.

In addition, the import data set lifecycle now allows cancellation from any non-finalized status.

A new **Non-Final Data Sets** query option was added to the **Migration Dataset Import Query**, which considers only non-finalized records and allows for the cancellation of multiple data sets.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

The first batch run of the Migration Data Set Import Monitor (**F1-MGDIM**) batch process may take longer as it transitions all cancelled data sets to the final cancelled status.

Improved Handling of Environment Specific Entities Imported by CMA

The File Storage extendable lookup captures environment-specific information, which makes it easy to surpass file storage settings using CMA. The same issue exists with specific master configuration entities that may contain environment-specific values.

These records may be initially imported from another environment, but they are typically adjusted manually to reflect current environment settings and should not be updated again by an import. In this release, a mechanism is introduced to prevent an unintentional update of such records by a CMA import. The mechanism allows for these records to be added by an import without being updated.

The mechanism works as follows:

- A new Environment Specific Business Object option may be used to mark records as containing environment specific information. The option type is available for Extendable Lookup and Master Configuration business objects, but you can configure it to be valid for other maintenance objects.
- A new migration plan pre-compare algorithm is provided that prevents an update of an entity if its business object is configured with this option. The algorithm is added to the Extendable Lookup and Master Configuration default migration plans, and you can add it to other migration plans as needed.

The File Storage extendable lookup business object is marked as containing environment-specific information using the new option. It should not be updated even if imported unintentionally from another environment.

In addition, the following changes were made to keep such entities in environment specific related migration requests:

- The wholesale **General System Options** migration request excludes extendable lookup and master configuration records if their business object indicates they contain environment-specific information.
- The wholesale **Framework Integration Configuration** migration request includes only extendable lookup and master configuration records if their business object indicate they contain environment-specific information.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

- If your implementation has other extendable lookup or master configuration business objects that must not be updated by CMA you may associate them with the new option.
- If this functionality is needed for other maintenance objects, add the new option type as valid for these maintenance objects and adjust their default migration plan accordingly.
- You may also want to review your custom migration requests to exclude these business objects as needed.

Migration Data Export - New Status When No Records Selected

In this release, a new "No Records" status value has been introduced for the Migration Data Set Export to handle the condition where no records were found by the migration request instructions. This allows you to quickly distinguish between a data set that has an error that needs to be investigated and situations where there were simply no records that satisfied the selection criteria.

The condition of no records found by the migration request instructions when exporting now uses a special status, allowing you to distinguish this condition from errors that need to be investigated.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

If your implementation has any downstream steps that are looking at the status of the Migration Data Set Export to do subsequent steps, you may need to review that logic and confirm whether any steps need to be adjusted based on this new status value.

Web Services Enhancements

This section describes the following new and enhanced web services features introduced in this release:

Define Default Template User for User Provisioning

The F1-OIMUSR (Populate User Data from a "Template" User) algorithm was enhanced to allow a Template User to be provided as a parameter. The algorithm is used by the User business object F1-IDMUser, which is used to create users from an external source. For example, the LDAP batch process uses this business object to create a user. The algorithm to copy information from a template user allows application configuration, such as user groups, user preferences, To Do roles, and other information not supplied by the external system, to be populated on the new user. Previously, this algorithm relied on the value of the template user to be provided as part of the payload for adding the user, using a characteristic. In this release, the algorithm first checks for a template user provided as a characteristic. If it is not found, it uses the template user provided as a parameter to the algorithm, if populated.

Steps To Enable

To enable this feature, complete these steps:

1. Go to **Admin** > **Security** > **User** in add mode and define the template user whose application configuration should be copied onto any new user.
2. Go to **Admin > System > Algorithm**.
3. Search for and select the algorithm **F1-OIMUSR**.
4. Click **Edit**, and then click the + in the Algorithm Parameter collection.
5. Enter an appropriate effective date and the Template User created above.

Improved Handling of Null Values in REST APIs

Date and time elements in requests and response messages require special handling when they contain no value. Unlike a string value, no value for date, time, and date/time elements has to be represented as null and not an empty string. In the same way, a numeric or Boolean element with "no value" should be represented as a null, not an empty string. Previously, the application did not properly accept null values for date and time elements in a JSON request. The application incorrectly represented such values in a JSON response as empty strings. The application correctly handled null values for numeric and Boolean elements except for a few outlier situations that were also fixed as part of this enhancement.

In this release, the Inbound Web Service REST engine v2 is enhanced to properly accept and process null values for elements of all data types.

The following clarifies some differences around request and response processing:

- As part of a request document, any element of any data type can be sent in with a null value, whether via the nil attribute in XML or the null value in JSON.
- As part of a JSON response document, empty node elements would be removed from the response or assigned either a null or empty string based on their data type:
    - A string element would always be assigned "" an empty string. This include all types of string data types like lookup, etc. This already works this way, no change in this release.
    - A date, date/time, time element would have a null value.
    - A number, money element is consistently removed from the response. Previously, this was not the same for some outlying scenarios.
    - A Boolean element is consistently removed from the response. Previously, this was not the same for some outlying scenarios.

Steps To Enable

No steps are required to enable this feature.

Improved Message Sender Context Customization

For most integrations supported by the base product, the end point URL and other details may only be provided by the utility at provisioning time. Previously, the entire message sender definition for such integration point had to be defined by the utility along with the configuration of the external system record that references the message sender.

As of this release, partially defined message senders may be released with the base product, allowing utilities to complete the definition with the necessary context information. This also allows the base product to include a more comprehensive configuration that includes the external system record that references the message sender.

Steps To Enable

No steps are required to enable this feature.

Support Language in REST Request

The REST engine considers the information populated in the Accept-Language header attribute. If a single value is provided, the system checks if the application has that language as a supported language in the application. If so, it returns translatable text in that language. The system looks for an entry in the Language table where the Locale field matches the value passed in Accept-Language.

If multiple entries are provided in the Accept-Language, the system uses HTTP content negotiation to select one of the provided values. If no supported language is found for the Accept-Language content, the system returns information in the language of the system user used to make the REST call.

Steps To Enable

No steps are required to enable this feature.

User Provisioning Using the SCIM Open Standard

A new REST service, SCIM User Provisioning (F1-SCIMUser), is provided to supportadding, changing, or viewing the details of a user where the API follows the SCIM standard.

The following highlights some of the mapping between the SCIM API and theapplication's user record:

- The user record in the application supports only first name and last name. TheSCIM standard supports additional detail such as middle name, suffix, and prefix. These elements are ignored when adding or updating a user.
- The SCIM standard supports a collection of email addresses. The applicationonly supports one email address. As such, only the first email address is usedwhen adding or updating a user.
- A user in the application requires several application specific settings in order tobe added properly. When adding a user record via the Create User operation in this new REST service, the integration supports supplying a Template User reference (in the user type element in the API). The system copies application settings from that user to the new user being provisioned.

Steps To Enable

Provide the required access before using the feature.

Tips and Considerations

The inbound REST web service provided is F1-SCIMUser. Refer to its description along with the help text on the various elements for more information on using the REST service.

You need to define a template user in order to successfully add a User record via this REST service. The template user can be provided in the userType element. Alternatively, you can define the Template User as a parameter to the algorithm F1-OIMUSR (Populate User Data from a "Template" User). Refer to the separate feature "Define Default Template User for User Provisioning" for more information.

Access Requirements

System administrators should set/grant users/grant access to the Execute access mode on the CILTUSEP application service for the web service user that calls the new REST web service.

User Import with Content Migration Assistant

The user record includes a user hash for security reasons. This hash value is calculated using a cryptography key in a given environment. When using Content Migration Assistant to import users from another environment, the process now includes a step to recalculate the user hash value using the target environment's cryptography key.

This update means implementations can import users from one environment to another without getting an error related to the user hash.

Steps To Enable

No steps are required to enable this feature.

User Interface Experience Enhancements

This section describes the following new and enhanced user interface experience features introduced in this release:

Batch Run Portal

The **Batch Run Tree** page has been converted to a portal, leveraging a more flexible and extendable user interface metaphor. The portal organizes information in a way that makes it easier for you to review and analyze performance and exception information for a batch run.

The following are the main new features supported by the portal:

- High level information and overall thread status are provided in the **Main** tab.
- Improved user experience in reviewing thread information (even for a high number of threads), which includes filtering, sorting, broadcasting of detailed information about a thread, and more. The previous tree presentation of threads, instances and error messages was not easy to navigate and review.
- Ability to review error messages across threads.
- Better way to review To Do entries created by the batch process.
- Display of file names created by the batch process.
- Display thread related analytical information.
- Display historical statistics from the last 20 runs.
- Use new actions to set and reset the Do Not Restart indication only when the current batch run is in error and is the latest run.

In addition, a standard **Batch Run Query** portal is also provided to support search functionality.

This does not impact any extensions.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

There is a new business object for Batch Run and a new Determine business object algorithm linked to the Maintenance Object. The base business object includes all the user interface behavior designed for the new portal. If your implementation has introduced your own CM business object and CM Determine BO algorithm, you should review your business object's configuration and merge it into the base business object.

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

Object	New Application Service	Access Added to any User Groups with this Application Service/Read Access
Batch Run Portal	F1BTCCHTH	CILTBTRP
Batch Run Query Portal	F1BTRQ	CILTBTRP

Focused User Access Checks for Business Object Maintenance Flows

When a business object based entity is displayed and maintained online, the logic that prepares the data in these flows reside in designated scripts associated with the record's business object. These scripts may be designed to read other entities and call other services in addition to the main entity being processed. A common example is that a transactional object may invoke the related "type" object to get information.

User access in these specific online maintenance flows are now enhanced to focus on the main entity being processed. In the example of the transactional object invoking the related "type" object to get information, the user is not required to have access to the "type" object. Prior to this release, every one of these additional object reads and service calls were also checked for user access (in addition to the main entity being processed). This situation required that the user was granted access to secondary entities, like admin "type" objects and internal services, which inadvertently also enabled access via the main menu.

This does not impact any extensions.

Steps To Enable

No steps are required to enable this feature.

Standardize Bundle Portals

The **Bundle Export** and **Bundle Import** search portals supported a broadcast action to view the details of a bundle that deviated from standards. This is replaced by standard work list capability, which allows you to quickly review the details of each bundle from the search results.

Standardizing the export and import bundle query portals allows for a more consistent user experience across all search portals.

This does not impact any extensions.

Steps To Enable

No steps are required to enable this feature.

Access Zone Tips via Zone Portal

The **Zone Tips** sidebar zone was removed from the sidebar. You can now access these tips from the **Zone** portal. Most of the tips point to topics that are already grouped together and easily accessible from the standard online help documentation for the **Zone** portal. The allowed list of SQL functions may be viewed from a new zone header action added to the data explorer SQLs zone.

Accessing zone tips via the **Zone** portal is better integrated with specific portal content, eliminates redundancy with existing standard help information, and assists with uncluttering the sidebar of unnecessary content.

Steps To Enable

No steps are required to enable this feature.

Batch Jobs Summary Zone Sorted by Start Date/Time

The **Batch Jobs Summary** zone is now sorted by Start Date/Time, and this zone sort sequence was amended to allow pagination to preserve the start time sort sequences. Previously, the **Batch Jobs Summary** zone was sorted by batch code, run number, and rerun number and column sorting was lost when navigating to the next and previous pages.

Sorting by start date/time allows for paging through the batch jobs in start time order, which is the preferred order for the majority of users.

Steps To Enable

No steps are required to enable this feature.

Conditional Expansion of a Tree Node

The **Populate Node** algorithm entity now allows business rules to set an indication of whether a tree node should be initially expanded or not. When populated, the indication overrides the setting on the tree node definition. Previously, a tree node could be defined to be initially expanded or not as part of the tree configuration. There are cases where the node should be conditionally expanded based on business rules. For example, to prevent the initial expansion when the number of child nodes exceeds a certain threshold.

Supporting a more flexible method for presenting a tree structure where some nodes are expanded and some not based on business rules allows for a better user experience.

Steps To Enable

No steps are required to enable this feature.

Improved Display of Overridden Labels

Entities that support override labels typically display both the original and overridden values, except when these labels are maintained as a list. For example, on the Lookup portal, values and their labels are displayed as a list for which the override value (if it exists) is presented instead of the original label. Previously, you had to edit the record to view the original value, and there was no visual cue as to which label was overridden.

Now a list-based display of overridable labels is standardized to show the original and overridden values so that you do not have to edit a record to see the full content.

Steps To Enable

No steps are required to enable this feature.

Improved Process Flow Cancellation Experience

When you cancel a process flow, you navigate back to the previous page you were working on. Previously, cancelling a process flow resulted in a blank process flow page.

This allows for a more intuitive and efficient user experience.

Steps To Enable

No steps are required to enable this feature.

Improved Process Flow Query

By default, the process flow query now displays the current user's in-progress process flows. The user may further bookmark the query as a quicker way to get to these flows. The new **My Process Flows** query option also supports the ability to delete multiple flows as needed. You can no longer delete another user's process flow.

Previously, the process flow query portal may have been accessed from different parts of the menu by different products. As of this release, it is included in the **Tools** submenu consistently across all products.

Steps To Enable

No steps are required to enable this feature.

Non-applicable Zone Header Actions Hidden on Batch Run Portal

The **Download Zone** header action links on the **Threads** zone of the **Batch Run** portal are now shown only if the corresponding file exists and the user has security access to download the file.

In addition, the **Close** header action link is only shown when more than one batch job request was submitted for the batch run. When a single batch job exists, its parameters are displayed by default and there is no need to close the zone.

Steps To Enable

No steps are required to enable this feature.

Process Flow Characteristics

The control data area structure shared by all process flow scripts now includes a list of characteristics. Process flow scripts may populate the list as needed, and the list is saved along with the process flow record by the base product's process flow manager.

Allowing process flow business rules to capture additional details about a flow makes it easier to locate flows in progress that you may want to resume.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

If your implementation uses a custom process flow manager script, you may need to adjust it to handle characteristics in order to take advantage of this functionality. Refer to the base product's process flow manager script for more information.

Sidebar Reorganization

The sidebar content is organized into **Main**, **Favorites**, and **Tools** sidebars. These are accessible using an icon bar at the bottom of the sidebar.

A portal of type sidebar is introduced for the **Main**, **Favorites**, and **Tools** sidebar. **Sidebar** zones that represent the user's favorite options are displayed as part of the **Favorites** sidebar portal and those classified as tools are displayed in the **Tools** sidebar portal. The remaining zones are displayed as part of the **Main** sidebar portal and are considered key information.

This enhancement allows context sensitive zones to be directly linked to these sidebar portals and displayed relative to other zones on the portals. These context-sensitive zones can now be managed for user preference like any other zone.

This is the default configuration for new customers, but it is an opt-in feature for upgrading customers.

When enabled, it is recommended that you review you custom sidebar zones. When applicable, move the zones to the favourites or tools sidebar portals to unclutter the main sidebar and keep the focus on only key information.

In addition, the **To Do Summar**y zone is no longer available by default on the sidebar for new installations. The **To Do Management** and **To Do Dashboard** portals, introduced in prior releases, provide better tools to manage and review this information, so there is no need to include it on the sidebar by default as well. If you wish to still use this sidebar zone, you can add it as needed. Note that the zone is retained as a custom zone for existing customers.

Steps To Enable

To enable this feature, complete these steps:

1. Go to the Sidebar Configuration Extendable Lookup.
2. Set the CI_DASHBOARD record to inactive.
3. Set the other records to active.
4. Flush the cache.

Worklist Sidebar Zone Hidden When Empty

As part of an effort to unclutter the sidebar, this zone is now hidden when it is empty. Previously, the **Worklist** sidebar zone was always present when enabled regardless of whether it contained a list to manage or not.

This update reduces unnecessary content in the sidebar and improves the user experience.

Steps To Enable

No steps are required to enable this feature.

Application Toolbar Consolidation

The application toolbar area has been streamlined to one line to allow for more space for the main display area.

Several changes have been made to the application toolbar.

- There is now a single **Menu** icon. **Main Menu** and **Admin Menu** are line items in the new consolidated menu dropdown. Note that the shortcut key previously used to open the Admin Menu (Ctrl+Alt+A) has been deprecated.

  Note that to open submenus, you need to click the line of the name of the submenu. Previously, hovering your mouse on the submenu line expected the selection
- In addition if you have any Favorite Links, Favorite Scripts, Favorite Searches or Bookmarks configured, they are also menu items in this new consolidated menu. The sidebar zones for these are still supported.
- Navigation history is no longer a separate button. Now, if you want to see a list of your previous navigation, you simply click and hold the 'back' arrow button. The same functionality works for the 'forward' arrow button. Clicking and holding show you navigation that you had performed and have since 'gone back' from. Note that the shortcut key that used to open the History (Ctrl+Alt+H) has been deprecated.
- The badge with the environment's domain name (if populated) is now displayed directly after the product name.
- The button to toggle the sidebar to collapse / expand was previously an arrow icon on the vertical border between the sidebar and the main display area. This has been replaced by an icon in the header, adjacent to the 'help' menu icon. The icon visible depends on whether your sidebar is configured on the left or the right side of your display. Note that the shortcut key "Alt + J" is still configured for this feature.
- The **Home** icon button is now on the right side, adjacent to the toggle sidebar.
- In an environment where links to **Control Central** and **Account Information** are configured in the toolbar, these are now icons rather than link text and they are positioned before the **Advanced Search** widget.
- Finally, the toolbar is now responsive when zooming in or when resizing the browser window. As the width of the browser gets smaller, the following will occur:
  - The application name is shortened and an ellipsis is added.
  - The environment badge, if visible, is removed.
  - The application name is removed.
  - The home icon is removed.
  - Finally, the search widget is removed.

Steps To Enable

No steps are required to enable this feature.

Determine Insight Group by Action Method

An insight class defines the UI context for which insight information should be provided. Prior to this release, the types of insights included in that context were defined by a single insight group associated with that insight class. There are situations where the list of insight types may vary based on some configuration criteria like CIS division for example. As of this release, action method rules may be used to determine the insight class to use when multiple are defined for an insight class.

Allowing multiple insight groups for an insight class and determining the appropriate one to use by action method rules supports more flexible insight configurations.

Steps To Enable

No steps are required to enable this feature.

Improved Sort Order of Insights

Prior to this release, insights were sorted alphabetically by insight type code. In this release, insights are sorted by their severity category when applicable, followed by the relative sequence of the insight type within the insight group definition and only then by the insight type code.

Sorting insights by severity and a configurable display order allows for a better user experience.

Steps To Enable

No steps are required to enable this feature.

New Base Display Icon Images

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

Icon	ID	Description
	F1ARWORD	Arrow - Open - Down
	F1ARWOL	Arrow - Open - Left
	F1ARWOR	Arrow - Open - Right
	F1ARWOU	Arrow - Open - Up
	F1CISRCH	Search - Content Item

Icon	ID	Description
	F1CLFT	Chevron - Left
	F1DETINFO	Information - Detail
	F1EDITBOX	Edit - Box
	F1ERASER	Eraser
	F1LOCKC	Lock - Closed
	F1LOCKO	Lock - Open
	F1MENUO	Menu - Overflow
	F1RESET	Reset
	F1RESETDD	Reset - Dirty Data
	F1RESETF	Reset - Filters
	F1SLASH	Slash - Forwards
	F1ADOWN	Arrow - Down
	F1APPRLIST	Approved List
	F1AUP	Arrow - Up
	F1BCK2MAP	Back To Map
	F1BKMARK	Bookmark
	F1CONT	Contact
	F1CONTG	Contact Group
	F1CONTGA	Contact Group - Add
	F1DATADOC	Data Document

Icon	ID	Description
	F1DIAMOND	Diamond
	F1DOMAIN	Domain
	F1NEWWIN	Open in New Window
	F1PAUSEC	Pause - Circled
	F1PEN	Pen
	F1RECNTR	Re-center
	F1ROWRMV	Row - Remove
	F1SBARL	Sidebar - Left
	F1SBARR	Sidebar - Right
	F1SQUARE	Square
	F1TARGET	Target
	F1TOOLSHW	Tools - Hammer and Wrench
	F1TOOLSW	Tools - Wrench
	F1VBOXNRW	Vertical Box - Narrow
	F1VBOXWIDE	Vertical Box - Wide
	F1XMLSCH	XML Schema
	F1SBARLC	Sidebar - Left- Collapse
	F1SBARLE	Sidebar - Left - Expand
	F1SBARRC	Sidebar - Right - Collapse
	F1SBARRE	Sidebar - Right - Expand

Additional icons enhance the user experience for displayed information. These have no impact on existing customizations.

Steps To Enable

No steps are required to enable this feature.

Schema Time Zone Support for Date/Time Elements Stored in Legal Time

Schema based UI already supports an implicit time zone and daylight-saving conversion to and from the element's storage and display time zones when the element is stored in standard time. As part of this capability, the element's time zone name is also presented along with its value on a display map for clarity.

Many date/time fields are historically stored in legal time and therefore could not have benefited from this functionality. As of this release, this functionality is also supported for elements stored in legal time.

New schema attributes legalTime= and legalTimeRef= has been introduced to explicitly identify date/time elements as stored in legal time and specify their storage time zone.

The schema based user interface engine has been enhanced to properly display and maintain such elements based on their time zone schema definition. Similar to existing functionality for elements stored in standard time.

Similarly, inbound and outbound message functionality has been enhanced to support time zone conversion for elements explicitly marked as stored in legal time. Similar to existing functionality for elements stored in standard time.

Note: Existing elements that do not explicitly define their storage time zone are not impacted.

Steps To Enable

No steps are required to enable this feature.

Switch Language Zone Only Visible When Applicable

In this release, the Switch Language zone in the sidebar is now only displayed if your implementation has more than one language enabled.

In previous releases, this zone was always visible to any user that had the appropriate security for it, even if your implementation only had one language enabled.

Steps To Enable

No steps are required to enable this feature.

Compact View of User Interface

There is now a system-wide option to turn on a compact view of the user interface. This option reduces the amount of whitespace on the rendered pages.

Enabling the compact view for all users in your implementation allows for more information to be displayed without scrolling.

Steps To Enable

To enable this feature, complete these steps:

1. Navigate to **Admin > General > Feature Configuration**.
2. Search for a feature configuration entry for the **Custom Look and Feel** feature type. If one does not exist, use the **Add** action to add a feature configuration of this type.
3. Edit the record and add an entry in the options collection for the Option Type "**UI View**". Populate the value as 'Compact'.

Consistent User Interface Label Justification

All user interfaces are now showing labels as right justified as specified in the Redwood user interface standards. Previously, there was an inconsistency on which side user interface elements were justified.

In addition, the spacing of the labels has been increased to reduce the instances of label wrapping.

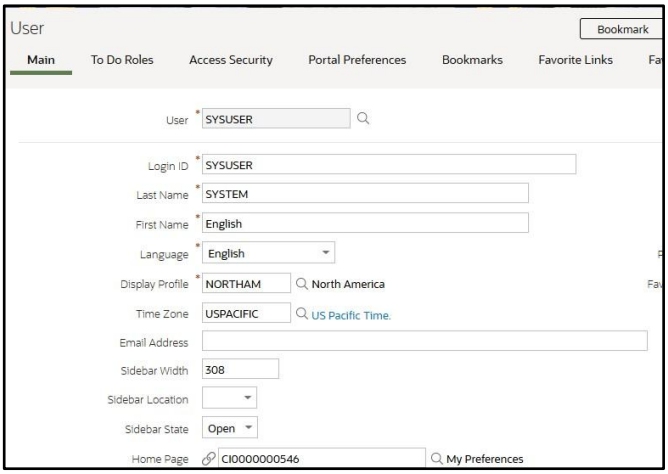


Figure 6: User Screen

Steps To Enable

No steps are required to enable this feature.

File Integration Record Portal

The **File Integration Type** portal lists all the record types included in the configuration along with key details about each record type. Previously, the only way to review the entire record type definition was to edit it, which did not support navigation to various settings like data area and algorithms.

For this release, a standard **File Integration Record** portal is provided for reviewing and maintaining a record type definition. The portal also supports a list view of all record types included in the same File Integration Type configuration. The list of record types on the **File Integration Type** portal was enhanced to support navigation to the new portal.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

Upgrade scripts ensure that users with Read access to the **File Integration Type** portal will have access to the new application service associated with the new **File Integration Record** portal. The table below lists the existing and new application services.

Object	New Application Service	Access Added to any User Groups with this Application Service/Read Access
File Integration Portal	F1FLINRC	F1FLINTP (File Integration Type Portal)

Option to Suppress an Explicit Map Zone's Header

By default, an explicit map zone includes a header area that includes the zone title, a zone menu (with the action to Print the zone), and a collapse/expand icon.

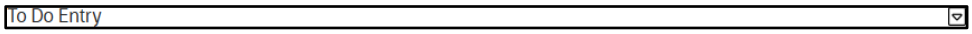


Figure 7: To Do Entry Zone

If there is a portal where this information is not needed, the system provides a new configuration to suppress the header. This is only recommended if there is one zone on the portal so the header title and collapsed option are not needed.

Suppressing an explicit map zone's header area allows you to have more vertical space when the page only has one zone and the standard actions on the zone header are not relevant.

Steps To Enable

To suppress a map zone header, complete these steps:

1. Navigate to the explicit map zone whose header you want to suppress via **Admin** > **System** > **Zone**.
2. In the **General Parameters** section, click **Edit All** and find the **Zone Header Visibility** parameter. Alternatively, you can select the **Show All** checkbox in the header, find the **Zone Header Visibility** parameter, and click the **Edit** (Pencil) icon.
3. Enter 'false' in the **Parameter Value** field and click **Save**.
4. Flush the cache.

Option to Suppress the Page Title Area

You can configure a portal to indicate that the page title should be hidden. You can do this by setting a portal option with type Page Title Visibility and an option value of 'false'. Be aware of the following:

- The page actions displayed in the same row as the page title are also suppressed. As such, page designers should only use this option if the actions in that area are not needed, including **Bookmark**, **Clear**, and **Refresh**.
- This type of option is only applicable to "Standalone" portals, which is related to the **Main** tab of a page. It is not applicable to other types of portal (for example a tab page portal).
- If the page has other portals associated with it (tab page portals), the page title and page actions are also suppressed for those tabs if a user clicks on any of those tabs.

Configuration to suppress the page title and page actions allows for portal-based pages to utilize more vertical space if the title and the page actions are not needed.

Steps To Enable

To suppress a map zone header, complete these steps:

1. Navigate to the standalone portal that defines the **Main** tab for the portal page.
2. Click the **Edit** hyperlink in the **Options** zone.
3. Add a row and choose the **Page Title Visibility** option type.
4. Enter an option value of 'false' and click **Save**.
5. Flush the cache.

Option to Suppress Tabs on a Page

You can configure a portal-based page to indicate that a tab should never appear. This is an example of the **Tab Menu Area** where tabs appear on the **To Do Entry** page.

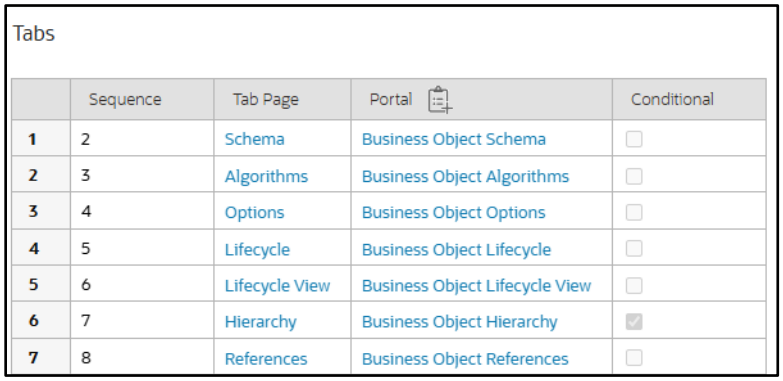
Figure 8: Tab Area

You would only want to hide the tab menu if the page has one tab (the **Main** tab), and you would like to suppress the whole **Tab Menu Area** and provide more vertical space. You can use the **Tab Menu/Tab Visibility** option type with a value of 'false' to make this change.

Additionally, you can define a service script that checks a condition and only display the tab if the conditions are met. For example, on the **Business Object** page, the **Hierarchy** tab is only applicable if the business object being viewed is part of a hierarchy. You can use the syntax ss='serviceScriptName' input=[ ] output=booleanValue to configure this option. Similar to zone visibility configuration, the input supports one or more name value pairs: input=[ELEMENT_NAME=ELEMENT_REF ELEMENT_NAME=ELEMENT_REF], where ELEMENT_NAME is the target XPath in the service script to populate and ELEMENT_REF is either a hard-coded value surrounded by single quotes or any portal or global context field. For example, a script to check if a business object has any hierarchy may have the option type populated as follows:

ss='CM-CheckHierarchy' input=[bo=BUS_OBJ_CD] output=shouldShowTab.

When a tab portal is configured with a visibility option, the **Tabs** zone on the related **Main** (standalone) portal will indicate that the tab is conditional.


Tabs

	Sequence	Tab Page	Portal	Conditional
1	2	Schema	Business Object Schema	☐
2	3	Algorithms	Business Object Algorithms	☐
3	4	Options	Business Object Options	☐
4	5	Lifecycle	Business Object Lifecycle	☐
5	6	Lifecycle View	Business Object Lifecycle View	☐
6	7	Hierarchy	Business Object Hierarchy	☑
7	8	References	Business Object References	☐

Figure 9: Tabs Zone

Steps To Enable

See the feature description above for details.

Miscellaneous Enhancements

This section describes the following miscellaneous enhancements introduced in this release:

- Adjusted Locale for English Language
- Improved Explorer Zone SQL Maintenance
- Portal and Zone Roles
- Upload Large Attachments to Object Storage
- Maintenance Portal Configuration Improvements
- Option Configuration Visibility on Lookup Portal
- New Platform
- Sharing Attachments as Links
- Support for External URL-based Attachments
- Groovy Update to 3.0.17

Adjusted Locale for English Language

As more integrations use the Locale as the standard method to determine a language, the product is adjusting the value defined for the default language row (ENG - English) to use the generic locale "en", instead of the more specific "en-US".

The default record's configuration is now aligned with the typical browser configuration for English.

Steps To Enable

No steps are required to enable this feature.

Improved Explorer Zone SQL Maintenance

Copy and delete actions are available in the SQLs zone when maintaining a data explorer zone. These actions are only allowed in an environment that owns the zone.

This makes it easier to configure queries.

This does not impact any extensions.

Steps To Enable

No steps are required to enable this feature.

Portal and Zone Roles

An explicit definition of the functional role associated with portal and zones is provided.

Assigning the functional role of portal and zones in metadata allows for a more streamlined conversion to corresponding Redwood templates and other role-related configuration enhancements in the future.

This does not impact any extensions.

Steps To Enable

No steps are required to enable this feature.

Upload Large Attachments to Object Storage

By default, an attachment is uploaded and stored in the database along with its entire content. Prior to this release, the process of uploading very large content like videos etc. was often limited by memory constraints. In addition, storing large content in the database is costly.

As of this release, the upload process has been enhanced to support an optional configurable threshold above which content is stored in Oracle Cloud Infrastructure Object Storage and a link to the file is kept on the attachment record.

To enable this functionality, define the object storage attachment location and threshold size in the General System Configuration feature configuration. In addition, you may also use the same feature configuration to set a maximum aggregate size for concurrent attachment uploads for performance reasons.

This feature is an opt in. If such configuration is provided then large attachments are stored in Object Storage, else they are stored in the database subject to existing resource limitations if any.

The following are known limitations with storing content in Object Storage:

- The responsibility for data recovery of attachment content shifts to the customer as part of their Object Storage files management.
- Custom logic if any that relies on attachment content to exist in the database will not work for attachments stored in Object Storage.

Steps To Enable

To enable this feature, complete these steps:

1. Add the **Attachment Location** option to the General System Configuration feature configuration.
2. Set the **Attachment Threshold Size** option on the same feature configuration.
3. Optionally, set the **Maximum Attachment Aggregate Size** option on the same feature configuration.

Maintenance Portal Configuration Improvements

Previously, introducing a new maintenance portal would require manual effort to generate a corresponding maintenance zone, a maintenance script, and an **Add** portal action. In this release, these artifacts can be generated along with the new maintenance portal.

Generating more of the artifacts needed to support a maintenance portal saves implementation time and increases product quality.

Steps To Enable

No steps are required to enable this feature.

Option Configuration Visibility on Lookup Portal

The **Lookup** portal is enhanced to simplify the review of lookup fields that represent standard options by providing a navigation for each lookup value to its corresponding Option Configuration extendable lookup record.

This improves usability by providing a navigation to additional option configuration information for applicable lookup fields.

Steps To Enable

No steps are required to enable this feature.

New Platform

A new platform ensures you are current with the latest technologies and compliant with support and industry standards.

The following changes to the platform were implemented:

- As per previous releases, the latest versions of Google Chrome, Microsoft Edge, and Mozilla Firefox are supported. It is recommended you use the relevant corporate editions of these products.
- The products now support the latest releases of Java 17. Java 8 is not supported in this release. You must upgrade all your Java extensions and related site-specific third-party libraries to Java 17 for this release. Libraries supplied by Oracle in the installation are pre-certified, but any additional libraries must be appropriate for Java 17. See the Oracle JDK Migration Guide for more information on utilities to use and to learn about the process.

- Oracle Database 19c and Oracle Database 23ai are now supported for customers. Refer to the Oracle documentation for details of the upgrade process.
- Oracle Linux 8.x and Oracle Linux 9.x are now supported to house the product tiers. In this release, Oracle Solaris and IBM AIX are not supported as Oracle WebLogic no longer supports those platforms.

Platform changes are necessary to keep the products and service current and compliant with support and industry standards.

Steps To Enable

No steps are required to enable this feature.

Sharing Attachments as Links

Previously, including large attachments in emails was rejected due to content size or caused performance issues. This release supports the ability to share attachments as links instead of sharing their content.

A new **Maximum Email Attachment Size** feature option was added to the General System Configuration feature type to give you the flexibility of restricting the size of actual attachment content embedded in emails. When populated, attachments with their content stored in the database that exceed the size limit are provided as links when attached to emails.

Attachments that are not stored in the database, such as those stored in object storage or their content is referenced via an external URL, are shared only as links when attached to emails.

Steps To Enable

No steps are required to enable this feature.

Support for External URL-based Attachments

Documents residing in an external system can be made available as attachments using a new External URL business object. When adding an attachment, the user can specify a file name (as before) or a URL to a document in an external system.

This allows users to internally reference such attachments as needed to support their business requirements.

Steps To Enable

No steps are required to enable this feature.

Groovy Update to 3.0.17

Groovy was upgraded from 3.0.7 to 3.0.17.

The Groovy upgrade was necessary for Java 17 compatibility.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

There are some behavior differences between Groovy 3.0.7 and 3.0.17 that may require changes to existing groovy scripts. It is strongly advised to run Compile All Groovy Scripts (F1-CAGVY) and remediate any compilation errors before the upgrade so that existing compilation errors are not attributed to this groovy upgrade.

Deprecation Notices for OUAF Version 25.4

This section describes features and system data that are deprecated in this release and planned for deprecation in the future release of Oracle Utilities Application Framework. It contains the following topics:

Deprecation in This Release

The following functionality or system data is deprecated in Oracle Utilities Application Framework Version 25.4:

Legacy User Experience (OPE)

Removed the OPE engine and as an alternative to the Redwood user experience.

Batch Run Statistics Portal/Sidebar Zone

With the introduction of the new **Batch Run** portal, **Batch Day Dashboard** and **Batch Analytics**, the usefulness of the **Batch Run Statistics** zone is limited and was removed from Oracle Utilities Application Framework.

The **Batch Run Statistics** portal provided additional information about batch runs, but some functionality on the portal is related to capturing additional information from an external tool. This information is stored in a Fact record. Support for capturing additional information from an external tool will be discontinued in a future release.

The **Batch Run Statistics** portal was accessible from the original **Batch Job Submission** fixed page. Most functionality in the **Batch Run Statistics** portal is now visible in the **Batch Run** portal. There were additional functionality on the **Batch Run Statistics** portal related to capturing additional information from an external tool. This information is not supported in a future release.

Ability to Switch to the Previous User Experience

Previously, the product supported the ability to switch from the Opattern Enterprise user experience to the Redwood user experience. Going forward, only the Redwood user experience is supported.

Message Legacy Page Metadata

Replaced by portal-based user interface.

Display Icon Legacy Page Metadata

Replaced by portal-based user interface.

Deprecation Planned for Future Releases

This section lists the functionalities and system data that will be deprecated in the future releases of Oracle Utilities Application Framework:

- Ability to Log In with SYSUSER
- Support for Zone Header Map
- Support for Cube Viewer
- Support for Guiding Business Process Assistant (BPA) Scripts
- Support for Switch UI View
- Workflow and Notification Metadata and Database Tables
- Mobile Application Framework Metadata and Java Packages
- Key Ring Validation Scripts, Algorithm Types, and Algorithms
- UI Metadata Related to Converted Pages
- Miscellaneous System Data
- XSLT Managed Content Type
- REST IWS - Original REST Servlet
- Append Setting from Pagination
- Support for Master/Subordinate Servers for Web Service Catalog
- F1-MAINPROC Business Object Read When Pre-processing Exists

Ability to Log In with SYSUSER

The system provides a user out of the box: SYSUSER. In an upcoming release, the product is going to limit the ability to log in using SYSUSER. Implementations should plan to review all their processes and identify ones where SYSUSER is used for system authentication and authorization and instead define a proper user for the process.

In addition, other system delivered users provided as template users will limit login access in an upcoming release.

Support for Zone Header Map

Currently all base delivered zone types support a parameter called Zone Header Map, which can be used to override the zone's header area. The reasons for using this may be to have more control over Actions in the header and to be able to suppress the header.

In a future release, we are no longer going to support defining a zone header map. Implementations should review any zones that are currently defining a custom zone header map. If the map is used to implement actions, use the existing zone action parameters to implement this functionality. If the map is used to suppress the header, an upcoming release will provide zone configuration to achieve this functionality.

Support for Cube Viewer

In the future, the product plans to remove support for the Cube Viewer. Note that this includes support for the F1-COLOR characteristic type that is only used by Cube Viewer. The product uses the F1-Color extendable lookup going forward.

Support for Guiding Business Process Assistant (BPA) Scripts

In the current release, the product supports guiding BPA scripts that surf on top of one or more application pages and interact with these pages in parallel to script execution. This approach is considered legacy functionality and as such limited to fixed pages. It does not work with portal pages. In the future, the product plans to remove support for such scripts.

Support for Switch UI View

In a future release, the F1UIVIEW application service related to the function to switch the user interface to an older user experience will be removed.

Workflow and Notification Metadata and Database Tables

Workflow and notification functionality was an early way to support exchanging messages with an external system (notification) and providing a configurable process for acting on incoming messages (workflow). In more recent years, the functionality for managing external messages is supported using Outbound Message and Inbound Web Service functionality. In addition, there are several features to support processing incoming messages. Service scripts can handle simple use cases. For more complicated processes, the service task or other business object driven objects are available.

The metadata and database tables related to this feature will be removed in a future release. Note that only a portion of the functionality for this feature is managed by Oracle Utilities Application Framework. Most of the functionality is supported in the Oracle Revenue Management and Billing product.

Mobile Application Framework Metadata and Java Packages

Removal of support for the Mobile Application Framework has already been announced in a previous release. However, there is metadata still included in the application related to this functionality.

The metadata and Java packages will be removed in a future release. CM Java code that references services or methods in the ../mobile/.. package should be reviewed.

Key Ring Validation Scripts, Algorithm Types, and Algorithms

The product is removing all scripts, algorithm types, and algorithms that performed validation rules on the K1-SignatureKeyRing business object. The algorithms have been removed from the BO configuration. There are requirements to expand the use of a signature key ring beyond the current implementation for object file storage and the existing validations are not applicable to other planned use cases.

The following metadata is no longer in use and will be removed in a future release:

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

UI Metadata Related to Converted Pages

The UI metadata related to fixed pages that have been converted to portals will be removed in a future release. The navigation keys listed are related to each maintenance page. The related UI program component data will also be removed. Note that the metadata related to the search pages will not be removed at this time in case they are used on other fixed pages.

The following metadata is no longer in use and will be removed in a future release:

User Interface	Related Metadata
Script	• scriptMaintenanceMainPage • scriptMaintenanceStepPage • scriptMaintenanceStepAccordion • scriptStepSendFieldsGrid • scriptStepPromptsGrid • scriptStepReceiveFieldsGrid • scriptMaintenanceCopyStepPopup

User Interface	Related Metadata
	• scriptDataArea • scriptDataAreaGrid • scriptSchemaPage • scriptMaintenanceEligPage • scriptMaintenanceEligCritGrid • scriptTree • scriptMaintenanceTabMenu
Maintenance Object	• maintenanceObjectAlgorithmsGrid • maintenanceObjectAlgorithmsPage • maintenanceObjectGrid • maintenanceObjectTabMenu • maintenanceObjectOptionsGrid • maintenanceObjectMainPage
Business Service	• businessServiceMainPage • businessServiceSchemaPage • businessServiceTabMenu
Batch Run Portal	• batchRunTreeMaint • batchRunTree • batchRunTreePage • batchRunMaintPage • batchRunTabMenu
Batch Submission Portal	• batchSubmitMainPage • batchSubmitTabMenu • batchJobParmGrid
Business Object Portal	• businessObjectAccordionPage • businessObjectAccordionPrtPage • businessObjectAlgorithmsGrid • businessObjectAlgorithmsPage • businessObjectLifecyclePage • businessObjectMainPage • businessObjectOptTypeGrid • businessObjectSchemaPage • businessObjectStatAlgGrid • businessObjectStatTRRuleGrid • businessObjectStatusOptionGrid

User Interface	Related Metadata
	• businessObjectSummaryOptTree • businessObjectSummaryPage • businessObjectSummaryUseTree • businessObjectTabMenu
Lookup Portal	• ctLookUpMaintListGrid • ctLookUpMaintMainPage • Any help navigation keys
Algorithm Portal	• algorithmMainGrid • algorithmMainPage • algorithmTab • Any help navigation keys
User Group Portal	• userGroupMainPage • userGroupProfileGrid • userGroupProfilePage • userGroupTabMenu • userGroupTabMenu2 • userGroupUserGrid • userGroupUserPage • Any help navigation keys
To Do Entry Maintenance	• toDoEntryCharGrid • toDoEntryDrillKeyValuesListGrd • toDoEntrySortKeyValuesListGrid • todoentrykeyvalue • todoentrymain • toDoEntryMaint • toDoEntryPopupAdd • toDoEntryPopupForward • toDoEntryPopupSendBack • Any help navigation keys
Table Maintenance	• metaDataTableFieldsGrid • metaDataTableMainPage • metaDataTableCFldsGrid • metaDataTableConstPage • metaDataTableMaint • metaDataTableRefByConstPage

User Interface	Related Metadata
	• metaDataTableFieldPage • Any help navigation keys
Work Calendar Maintenance	• workCalendarMaint • workCalendarMainPage • workCalendarHolidayGrid • Any help navigation keys
Message Maintenance	• msgMaintDetailsPage • msgMaintGrid • msgMaintPage • msgMaintTabMenu • Any help navigation keys
Time Zone Maintenance	• timeZoneMainPage • timeZoneTabMenu • Any help navigation keys
Application Security Portal	• f1appsecTabMenu
Display Icon Portal	• displayIconRefMaint

Miscellaneous System Data

The following metadata is no longer in use and will be removed in a future release:

Object	Data	Description/Comments
Lookup Value	CHAR_ENTITY_FLG / F1SE	Characteristic Entity / Sync Request Inbound Exception
Script	F1-TDMgActSS	To Do Management – Process Actions (Deprecated) / Replaced by F1TDMgActSS
Script	F1AddDebugLg	Add Log for Monitoring Probe (Deprecated) / Replaced by a BS - F1-MONPRBLOG
Script	F1MgOlmpMnt	Not in use by base functionality
Script	F1MgoSqlPks	Not in use by base functionality
Script	F1MgOlmpPst	Not in use by base functionality
UI Map	F1-MigrObjectImportMaintenance	Not in use by base functionality
Zone	F1-BOMOSRCH	Not in use by base functionality
Zone	F1-CATCHSCH	Not in use by base functionality

Object	Data	Description/Comments
Zone	F1-MONAVKEY	Not in use by base functionality
Zone	F1-REVCONQRY	Not in use by base functionality

XSLT Managed Content Type

Entries in the Managed Content table related to XSL should be using the XSLTC managed content type and not the XSLT managed content type. In a future release, the XSLT managed content type will no longer be supported.

REST IWS - Original REST Servlet

The original URL supplied for invoking IWS based REST services included the IWS Service name in its makeup. Support for this will continue for backward compatibility purposes, but it will be deprecated in a future release. You should adjust your existing integrations to use the currently supported URL.

Append Setting from Pagination

There are several known issues with the functionality of the "append" option in pagination. It is recommended that you do not use this pagination setting.

Support for Master/Subordinate Servers for Web Service Catalog

The Service Catalog Configuration (master configuration) enables you to define subordinate servers. Defining subordinate servers is no longer applicable for the Oracle Integration Cloud.

F1-MAINPROC Business Object Read When Pre-processing Exists

In the original implementation of configuration tools, the main framework maintenance BPA (F1-MainProc) did not perform a Read of the BO when a pre-processing script was linked to the BO via options. The pre-processing script was responsible for the Read.

In a subsequent release, a BO Read was added in F1-MainProc (even if a pre-processing script existed) to resolve a UI Hint issue related to child business objects. This solution introduced a problem only visible for specific scenarios and a different fix has been introduced. The new fix made the BO Read unnecessary in F1-MainProc. Because there are many pre-processing scripts that are properly performing the Read of the BO, ideally the BO 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 BO Read was included in F1-MainProc that were coded to not perform a BO read in the pre-processing script. Due to this situation, the BO Read is still performed as part of the processing of F1-MainProc.

When a pre-processing script exists, we plan to remove the BO Read from F1-MainProc logic. You should review your custom pre-processing scripts that are linked to your BO options to ensure that they properly perform a Read of your BO.

Deprecation Notices for ORMB Version 8.0.0.0.0

This section describes features and system data that are deprecated in this release and planned for deprecation in the future release of Oracle Revenue Management and Billing. It contains the following topics:

Deprecation in This Release

The following user interface and its corresponding metadata are deprecated in this release:

- Reconciliation Object
- Reconciliation Object Line Status
- XAI Adapter
- XAI Format
- XAI Inbound Service

In addition, the following system data is deprecated in this release:

Object Type	Object Name
Algorithm Type	C1-AUDEVMPR
Algorithm	C1-AUDEVMPR

Deprecation Planned for Future Releases

The following table lists the objects which will be deprecated in the future release of Oracle Revenue Management and Billing:

Object Type	Object Name
Algorithm Type	C1_CURALG, SA_DERV_POPC, C1-PLASGNAU, C1-PRCASGNAU, C1-PLAUALG
Algorithm	C1-PLASGNAU, C1-PRCASGNAU, C1-PLAUALG
Feature Configuration	C1_EX_ROUND
Option Types	Currency Conversion Algorithm and Payment Distribution To-Do (from the **C1_MLTCURACC** feature configuration)

<table>
<tr><th>Object Type</th><th>Object Name</th></tr>
<tr><td>Table Columns</td><td>The following table lists the columns which will be deprecated in the next release:
<table>
<tr><th>Table Name</th><th>Column Name</th></tr>
<tr><td>CI_ACCT_PER</td><td>BILL_RTE_TYPE_CD, RECEIVE_COPY_SW, BILL_FORMAT_FLG, NBR_BILL_COPIES, CUST_PO_ID, NOTIFY_SW, and BILL_ADDR_SRCE_FLG</td></tr>
</table></td></tr>
<tr><td>Batch Control</td><td>GLASSIGN, C1-IAENT, C1-DARSU, BILLING, C1-PNDBL, C1-BLGEN, C1-BLPPR</td></tr>
<tr><td>View</td><td>CI_EFF_ACCT_PRICING_VW, CI_EFF_PER_PRICING_VW</td></tr>
<tr><td>Business Service</td><td>C1-EffectivePricing, C1_PriceParmBS
Note: Instead of using the C1-EffectivePricing business service, use the C1-GetEffectivePricing business service to view the data on the Pricing (Account) and Pricing (Person) screens. Similarly, instead of using the C1_PriceParmBS business service, use the C1_PRICE_PARM business object to add, edit, copy, and delete a parameter.</td></tr>
<tr><td>Service Program</td><td>EFFPRCSERVICE, C1_PRICEPARM</td></tr>
<tr><td>Column</td><td>ADDRESS1, ADDRESS2, ADDRESS3, ADDRESS4, CITY, NUM1, NUM2, COUNTY, POSTAL, HOUSE_TYPE, GEO_CODE, IN_CITY_LIMIT, STATE, and COUNTRY from the CI_PER table</td></tr>
<tr><td>Table</td><td>CI_PER_ADDR_SEAS</td></tr>
</table>

Therefore, we strongly recommend you not to use these objects in any custom implementation.

Product Documentation

User manuals and other technical documents are available in the Portable Document Format (PDF) format. You can download the release-specific documentation from either of the following locations:

- **Oracle Technology Network (OTN)** – You can access the ORMB release-specific documentation libraries from OTN using the following URL:

  http://www.oracle.com/technetwork/indexes/documentation/fsgbu-1364781.html

  It contains the **Documentation Library for Oracle Revenue Management and Billing On-Premises Solution** section. You can view and download a release-specific documentation library by clicking the **View Library** and **Download** links, respectively, corresponding to the respective ORMB version.

- **Oracle Help Center (OHC)** – You can access the ORMB release-specific documentation from OHC using the following URL:

  https://docs.oracle.com/en/industries/financial-services/revenue-management-billing/index.html

  The ORMB OHC page contains a drop-down list which allows you to select the ORMB version for which you want to access the documentation.

Points to Note:

You can access the documentation of a release prior to 5.0.0.0.0 from OHC by selecting the **Previous Releases** option from the list.

Always ensure that you download latest revision of the document from **OTN** or **OHC**.

From 6.0.0.0.0 release onwards, the Oracle Revenue Management and Billing Online Help (i.e., help.ear file) is not packaged with the application. The ORMB Online Help is published on Oracle Help Center (OHC). You can continue to use context-sensitive help from the application which will point to the respective topic on OHC.

Technical Support

For any technical support, consult with Oracle Support, Oracle Partner, or Oracle Consulting that may be supporting your implementation or upgrade process.