

Oracle Utilities Meter Data Management

Release Notes

Release 2.2.0 Service Pack 3

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Oracle Utilities Meter Data Management Release Notes

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Contents

Preface	i-i
Audience	i-i
Related Documents	i-i
Conventions.....	i-ii
Chapter 1	
Release Notes	1-1
About This Release.....	1-2
Relationship Between 2.2.0.3.0 and Prior Versions	1-2
Supported Platforms Notice	1-2
Database Changes.....	1-2
Database Archiving	1-3
Archiving Strategy	1-3
Archiving Initial Measurement Data Records	1-3
Supported Integrations	1-4
Oracle Utilities Product Integrations	1-4
Additional Integrations.....	1-4
Demo Data Information	1-4
Enhancements.....	1-4
Chrome Browser Support.....	1-5
Processing Timetable Types	1-5
Measuring Component Comparison Periods	1-5
Interval Proxy Day Estimation	1-5
Service Point Quantities.....	1-5
Standalone Measuring Components.....	1-6
Uploading Measurement Data in Comma Separated Values (CSV) Format	1-6
Dynamic Aggregation.....	1-6
Usage Calculation Requests	1-7
Application Flattening.....	1-7
Oracle Utilities Application Framework V4.3.0.6 Release Notes	1-8
System Wide Enhancements	1-8
File Access Enhancements	1-9
Batch Enhancements.....	1-10
DBMS Scheduler Integration Enhancements.....	1-11
To Do Enhancements	1-13
Configuration Tools Enhancements	1-14
Analytics Configuration Enhancements	1-15
Web Service Enhancements	1-16
Configuration Migration Assistant Enhancements.....	1-17
Mobile Framework Enhancements	1-18
Security Enhancements	1-18
Miscellaneous Enhancements	1-19
Oracle Utilities Application Framework System Data Details.....	1-22
Oracle Utilities Application Framework Deprecation Notices.....	1-24

Known Issues in This Release	1-27
Known Issues in Oracle Utilities Meter Data Management.....	1-27
Known Issues in Oracle Utilities Application Framework.....	1-27

Preface

These release notes provide an overview of the new functionality and known issues in Oracle Utilities Meter Data Management version Release 2.2.0 Service Pack 3.

Audience

Release Notes is intended for anyone installing or using Oracle Utilities Meter Data Management version Release 2.2.0 Service Pack 3.

Related Documents

The following documentation is included with this release.

Installation, Configuration, and Release Notes

- *Oracle Utilities Meter Data Management Release Notes*
- *Oracle Utilities Meter Data Management Quick Install Guide*
- *Oracle Utilities Meter Data Management Installation Guide*
- *Oracle Utilities Meter Data Management Database Administrator's Guide*
- *Oracle Utilities Meter Data Management Licensing Information User Manual*

User Guides

- *Oracle Utilities Meter Data Management Business User Guide*
- *Oracle Utilities Meter Data Management Administrative User Guide*

Supplemental Documents

- *Oracle Utilities Meter Data Management Security Guide*
- *Oracle Utilities Meter Data Management Server Administration Guide*

Conventions

The following text conventions are used in this document:

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

Chapter 1

Release Notes

These release notes contain the following sections:

- [About This Release](#)
- [Relationship Between 2.2.0.3.0 and Prior Versions](#)
- [Supported Platforms Notice](#)
- [Database Changes](#)
- [Database Archiving](#)
- [Supported Integrations](#)
- [Demo Data Information](#)
- [Enhancements](#)
- [Oracle Utilities Application Framework V4.3.0.6 Release Notes](#)
- [Known Issues in This Release](#)

About This Release

This section contains general information about Oracle Utilities Meter Data Management Release 2.2.0 Service Pack 3. This release of Oracle Utilities Meter Data Management includes the following components:

- Oracle Utilities Application Framework 4.3.0.6
- Oracle Utilities Meter Data Management Release 2.2.0 Service Pack 3

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

Relationship Between 2.2.0.3.0 and Prior Versions

Version 2.2.0.3.0 supports the following upgrade paths:

- If you are installing Oracle Utilities Meter Data Management for the first time, you must install version 2.2.0.3.0, available on the Oracle Software Delivery Cloud.
- If you have Oracle Utilities Meter Data Management version 2.1.0.3 installed you can upgrade to version 2.2.0.3.0 directly.
- If you have Oracle Utilities Meter Data Management version 2.2.0.1 or 2.2.0.2 installed you can upgrade to version 2.2.0.3.0 directly.
- If you have version 2.1.0.2 or earlier installed, you must upgrade to 2.1.0.3 and then to 2.2.0.3.0.

Supported Platforms Notice

See the Supported Platforms section of the *Oracle Utilities Meter Data Management Quick Install Guide* included in this release for an updated list of supported platforms.

Database Changes

Refer to **Appendix F: Database Changes in Oracle Utilities Meter Data Management** in the *Oracle Utilities Meter Data Management DBA Guide* for details about database changes introduced in this release.

Database Archiving

This section provides general guidelines and information related to archiving data, including:

- [Archiving Strategy](#)
- [Archiving Initial Measurement Data Records](#)

Archiving Strategy

Customers can use the Oracle Utilities Information Lifecycle Management product to mark records eligible for "archiving" or use a custom process. Initial measurement (IMD) records should only be purged by archiving/dropping old partitions/subpartitions (for ILM, a subpartition can be dropped/archived when all of the records within the subpartition have the ILM_ARCH_SW='Y'). To prevent corruption of the object model, IMD records should not be deleted using any other method outside of the application. Please note, customers should perform adequate tests to ensure that removing IMD records does not adversely impact custom code or meter data operations.

We recommend customers follow the archiving strategy defined in Oracle Utilities Meter Data Management Database Administrator Guide. Please see the Sample SQL for Periodic Maintenance appendix. This appendix describes the process of archiving, dropping partitions and restoring partitions, including the following general recommendations:

1. Before dropping a partition\ subpartition, archive the data to a transportable tablespace.
2. Export the transportable tablespace to the file system.
3. Drop the partition\subpartition.
4. Reload data from the file system if issues are encountered.

Archiving Initial Measurement Data Records

The reading value (if available) and a combined multiplier (created from multipliers defined for the measurement's measuring component type and install event) are now stored for measurements in the final Measurement (D1-MSRMT) table. Since these values are now stored on the final Measurement table, customers can archive IMD records from the Initial Measurement Data (D1-IMD) table. The IMD record is not used for product cancel rebill processes. The D1-IMD table could be up to 55% of the total database size so removing these records will materially impact storage requirements.

Customers should only archive IMD records that are no longer needed, e.g., no longer working exceptions for that period or not needed for audit purposes. Some customer use the IMD table as an audit record of readings received. As an alternative, customers may choose to store the raw head-end system files on the file system to reduce storage costs and license costs.

Supported Integrations

The following integrations are supported in this version of Oracle Utilities Meter Data Management:

Oracle Utilities Product Integrations

- Oracle Utilities Meter Data Management Release 2.2.0 Service Pack 3 /Oracle Utilities Analytics 2.7.0.0.+
- Oracle Utilities Meter Data Management Release 2.2.0 Service Pack 3 to Oracle Utilities Customer Care and Billing 2.4.0.x, 2.5.0.x, 2.6.0.x, 2.7.0
- Oracle Utilities Meter Data Management Release 2.2.0 Service Pack 3 to Oracle Utilities Operational Device Management 2.1.x and 2.2.0.x

Additional Integrations

- BI Publisher 12.2.1.x
- Oracle Utilities Customer Self Service 2.1.0.x and 2.2.0.x

Demo Data Information

The application delivers a demo database based on the application versions provided with the release, including Oracle Utilities Application Framework. Demo data provides sample configuration and data for key application features.

Demo data is included in the service pack. Please refer to the *Database Administrator Guide* for more information about installing the demo database, or contact Oracle Support.

Enhancements

This section describes new features and functionality included in this release of Oracle Utilities Meter Data Management, including:

- [Chrome Browser Support](#)
- [Processing Timetable Types](#)
- [Measuring Component Comparison Periods](#)
- [Interval Proxy Day Estimation](#)
- [Service Point Quantities](#)
- [Standalone Measuring Components](#)
- [Uploading Measurement Data in Comma Separated Values \(CSV\) Format](#)
- [Dynamic Aggregation](#)
- [Usage Calculation Requests](#)
- [Application Flattening](#)

Chrome Browser Support

The Chrome web browser is supported with this release of Oracle Utilities Meter Data Management.

Processing Timetable Types

The Processing Timetable Type is a new object that can define a common schedule for executing a process that can be defined once and shared across many processes. It is currently associated to the scheduling of [Dynamic Aggregation](#) and the execution of projection estimations for [Standalone Measuring Components](#). There are two types that are provided with the base package:

- **Daily:** defines the lag or lead before processing should occur and whether or not the processing should be on a business or work day.
- **Defined Dates:** defines specified periods to be processed and the day on which they should be processed.

Measuring Component Comparison Periods

Measuring Component Comparison Periods capture a list of "like days" for a given day of interval measurements. The rules for identifying a "like day" are captured on the Measuring Component Comparison Type. Generally a "like day" is identified by evaluating a few factors:

1. How well correlated the interval curve is with the comparison day
2. Whether the average measurement for the day is within tolerance of the comparison day
3. Does the type of day (day of week, weekday vs weekend, holiday, etc) align with the comparison day

The list of days to be evaluated for "like days" can be selected from a horizon of days adjacent to the comparison day, from the prior year, or both adjacent days and days from the prior year.

These like days are a key input into the [Interval Proxy Day Estimation](#) rule. Although the main use case for these comparison periods is weather related measurements they can be used against any measured value.

Interval Proxy Day Estimation

The Interval Proxy Day Estimation VEE rule drives the estimation of missing intervals by selecting interval data to average from a list of days that are most like the day being estimated through the use of [Measuring Component Comparison Periods](#). A sample use case for this rule would be to estimate missing intervals by finding days in the past or the future that are most like the weather for the day that is being estimated.

Service Point Quantities

Service Point Quantities are a new measured value that can be stored at the service point level. These are intended to store quantities that do not change frequently enough to be captured as measurement data. A sample use case for these quantities is storing the peak

load contribution a given Service Point had in relation to the peak load of a deregulated market.

Standalone Measuring Components

The following standalone measuring components have been introduced:

- **Interval Standalone:** can be used for any standalone interval measurement data
- **Interval Standalone Comparison:** can be used for any standalone interval measurement data where Measuring Component Comparison Periods are required
- **Interval Standalone Data Request:** can be used for any standalone interval measurement data where the data is requested from an external system on a schedule

Uploading Measurement Data in Comma Separated Values (CSV) Format

A new option has been enabled on the measuring component context menu that allows for the loading of measurement data using a comma separate values (CSV) file that specifies the date/time of the measurements, the reading value (subtractive only), the measurement value, and the measurement condition. This supports loading data to Scalar, Interval, and Subtractive Interval Measuring Components. Multiple days of can be uploaded at one time:

- **Interval:** an initial measurement will be created for each contiguous set of intervals based on the date/time
- **Scalar:** an initial measurement will be created for each date/time entry

Dynamic Aggregation

Dynamic Aggregation is a new aggregation engine that allows for point and click configuration of aggregations for supported tables:

- Aggregation Groups provide the schedule of aggregation, groups related aggregations, and provides the execution sequence of the aggregation
- Measuring Component Sets define what will be aggregated: dimensions to aggregate by as well as criteria to limit the set of constituent data for the aggregation
- Data Sources define where the data to be aggregated resides: measurement data for physical meters (scalar and interval), measurement data for measuring components associated to a Usage Subscription, Item Data, Usage Transaction Service Quantities, Service Point Quantities, and measurement data from other aggregations
- The Measuring Component Type has been enhanced to include aggregation functions in the definition of value identifiers which
- The Measuring Component maintenance object has been enhanced to include the attributes (aka dimensions) by which an aggregation is being performed

All of these changes together allow for the simple addition of new aggregations.

Usage Calculation Requests

Usage Calculation Requests are a new way to create and calculate an alternate set of usage transactions for an established usage subscription. For example, in a deregulated market there may be an annual process to calculate the peak load contribution of all customers. A new usage transaction business object has been created to be leveraged with usage calculation requests that provides two new benefits:

1. It supports defining multiple usage calculation groups and allowing for each group to be approved separately.
2. It will create [Service Point Quantities](#) using the service point quantity data calculated by the usage calculation groups

A series of batch jobs have been provided to provide the ability to perform bulk operations across all usage transactions for a usage calculation request:

- Create Usage Transactions
- Retry Usage Transactions
- Approve / Reject the results of a given Usage Calculation Group

These have been developed as plug-in driven batches (where appropriate) to allow for easy customization of the driving queries.

Application Flattening

The application components used by Oracle Utilities Meter Data Management and Oracle Utilities Smart Grid Gateway (designated by D2, D3, D4, D5, D6, D7, D8, and DG) have been merged into a single application component, designated D1 (formerly known as the Service and Measurement Data Foundation). When this merged application component is installed, all metadata, database records, and Java classes for each of the previously separated components are also installed. This simplifies installation of the Oracle Utilities meter data products.

Notes:

- **Owner and Prefixes:** The owner flag of all records and objects in this merged application component have been changed to "D1" (Oracle Utilities Meter Data Management), but retain their old prefixes (D2, D3, D4, etc.).
- **Installed Products:** After the application is installed, the Installed Products table will list only the Oracle Utilities Application Framework and Oracle Utilities Meter Data Management as installed. Post-installation scripts are available to update the Installed Products table to reflect specific licensed products such as Oracle Utilities Smart Grid Gateway Adapters and/or Oracle UtilitiesMarket Settlements Management.
- **Custom Code:** Any custom ("CM") Java code or scripts that directly reference objects previously owned by individual application components may need to be changed to reflect this change.
- **Licensing:** This changes does NOT impact product licensing. Oracle Utilities Meter Data Management Oracle Utilities Smart Grid Gateway, Oracle Utilities Smart Grid Gateway adapters, Oracle Utilities Service Order Management, and Oracle Utilities Market Settlements Management are still separately licensed products.

Oracle Utilities Application Framework V4.3.0.6 Release Notes

This section describes enhancements, system data details and deprecation notices in Oracle Utilities Application Framework v4.3.0.6.0 including:

- [System Wide Enhancements](#)
- [File Access Enhancements](#)
- [Batch Enhancements](#)
- [DBMS Scheduler Integration Enhancements](#)
- [To Do Enhancements](#)
- [Configuration Tools Enhancements](#)
- [Analytics Configuration Enhancements](#)
- [Web Service Enhancements](#)
- [Configuration Migration Assistant Enhancements](#)
- [Mobile Framework Enhancements](#)
- [Security Enhancements](#)
- [Miscellaneous Enhancements](#)
- [Oracle Utilities Application Framework System Data Details](#)
- [Oracle Utilities Application Framework Deprecation Notices](#)

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

System Wide Enhancements

Change to the About Box for Cloud Implementation

In the About Box, you can see simplified product information for Cloud implementations. The About Box shows the Cloud product name and the Cloud version. It does not display all the products in the "stack". This information is still visible in the **Installation Options - Installed Products** page.

Steps To Enable

No steps are required to enable this feature.

Required Indicator Added to Fixed Pages

You will see asterisks next to fields that are required as defined in the table / field metadata. Business objects are not considered for these types of pages. In the previous release, portal-based pages were enhanced to automatically display an asterisk adjacent to fields that are required as defined in either the table / field metadata or in the business object schema.

Steps To Enable

No steps are required to enable this feature.

File Access Enhancements

The following sections highlight enhancements related to accessing files.

Support for Defining File Alias Using Extendable Lookup

In a previous release, we provided the ability for you to define substitution variables for a file location definition using a properties file. This allowed you to configure file locations in the application in places like Batch Control "File Path" parameters and in various master configuration options to reference a "token" rather than the full file path. For this release, an alternate option has been provided that allows you to define native file storage locations using an extendable lookup.

Note: Any code that references file paths for reading or writing must be updated to reference a new API in order to support this functionality. Contact customer support for more information.

Steps To Enable

The **F1-FileStorage** (File Storage Configuration) extendable lookup has been provided to support this feature. Using this extendable lookup, you can define a value referencing the "Native File Storage" file adapter option, and then define the file path that this value represents. The file path field follows the same rules as any other file path. For example, it can reference "@SPLOUTPUT@" or any other value defined in the Substitution Variables properties file. In addition, if the system has been configured to validate the value against a whitelist, this is also enforced.

A new syntax has been defined for referencing file locations during configuration. For example, in "File Path" parameters for a batch control: `file-storage:// {ExtendableLookupValue}`.

Key Resources

Refer to the online help for more information about the supported syntax.

Support for Cloud Storage Access

For Cloud product releases, the system allows you to create code that reads or writes files to reference an Oracle Cloud Storage location rather than the native file system.

Steps To Enable

The **F1-FileStorage** (File Storage Configuration) extendable lookup has been provided to support this. Using this extendable lookup, a value may be defined referencing the "Oracle Cloud Object Storage" file adapter option, which allows for the details on how to connect to cloud storage to be entered.

Using this configuration, the same syntax described above may then be used when defining a File Path in the application (for example, a parameter for a batch control).

`file-storage://{ExtendableLookupValue}/{bucket name}`

Note: Any code that references file paths for reading or writing must be updated to reference a new API in order to support this functionality. This is the same API

mentioned above for supporting defining a Native File Storage location using the F1-FileStorage extendable lookup. Contact customer support for more information.

Key Resources

Refer to the online help for more information about the supported syntax.

Batch Enhancements

Enhanced Bind Variable Support for Plug-In Drive Batch

The Plug-in Driven Batch functionality in the system supports product-specified bind variables for known batch related attributes like batch business date and batch run number. In previous releases, the mnemonic you used to specify the bind variables used a prefix of "f1.". This causes an issue in certain system configurations. In this release, the system has been enhanced to support the prefix "f1_". This is the recommended prefix you should use going forward. The prefix "f1." continues to be supported for backward compatibility.

Steps To Enable

No steps are required to enable this feature.

Key Resources

Refer to the online help for plug-in driven batch programs for more information.

Monitor Batch Programs Support Restricting By Date

The monitor batch program now supports a **Restrict by Date** parameter. If you populate this parameter with the name of a date field on the primary table of the maintenance object, this limits the records selected to those whose data value is on or before the current date. This allows you to use business objects that have a business rule where a given state transition should only occur many weeks, months or even years in the future. If the record supports a date to mark the future event, the business object can be configured to monitor only the records whose date has arrived. This ensures that, when the monitor is run, it is not constantly picking up records that are not ready (just to check the date and move on).

Optionally, the parameter may include + / - a number of days to support. For example: "all records whose DATE is on or before 3 days from now" or "all records whose DATE is on or before yesterday".

Steps To Enable

Edit the batch control for the monitor process that you wish to restrict using dates and add the restrictToDate parameter using the syntax described above.

Add Start and End Date / Time to Batch Run

In previous releases, the system did not capture the start and end date and time for a batch run. The start and end of each thread was captured through messages linked to the thread.

Since many use cases are requiring information about the start and end of the whole batch run, you can see that the **Start Date / Time** and **End Date / Time** have been added to the batch run table. The system now stamps this information onto newly created batch runs.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

Backward compatibility: Note that due to the sheer volume of batch runs that would exist for upgrading clients, an upgrade script to populate the new start date / time and end date / time has not been provided. Instead, the system includes a business service and java methods to retrieve the start / end date / time for a batch run. This code will first check the columns on the batch run and use those, if populated. Otherwise, it will derive the information using earliest thread's start date / time and the latest thread's end date / time. Note that the business service provided is F1-GetBatchRunStartEnd.

Enhanced Level of Service Support

The "Level of Service" plug-in spot used with batch controls has been enhanced to support multiple algorithms. As a result, you will see that various user interfaces and services that support retrieving level of service information have been enhanced accordingly. In all cases, if the batch control has a single algorithm, the existing behavior continues where the results from that algorithm are returned. If multiple algorithms are found, an overall response is set based on the detailed responses from each algorithm. In addition, the detailed responses are available.

The overall response is set to Error if any of the algorithms returned an error. Otherwise, it is set to Warning if any of the algorithms returned a warning. Otherwise, it is set to Normal.

The following functionality has been enhanced as follows:

- The Health Check business service (F1-HealthCheck). The BS schema still includes a single overall response. In addition, a new collection of detailed responses are included.
- The **Health Check** portal has been enhanced to show the overall response when multiple algorithms exist along with the message, "See results for details". An icon is also provided to expand the section to see the details.
- The **Batch Control** main page has been enhanced to show the overall response for Level of Service when multiple algorithms exist along with the message, "See results for details". An icon is also provided to expand the section to see the details.

Steps To Enable

No steps are required to enable this feature.

DBMS Scheduler Integration Enhancements

This section provides information about enhancements to various APIs provided to integrate with the DBMS Scheduler.

Job Details Service Includes Error Details

The **F1-DBMSGetJobDetails** (DBMS Scheduler Job Details) business service returns an additional element in the Steps collection: error details. If the step's status is Error, you will be able to review the information about the error.

Steps To Enable

No steps are required to enable this feature.

Separate Business Services Provided for Adding / Changing Entries

In a previous release, "maintenance" business services were provided to support maintaining the various objects in the DBMS data model: Program, Chain, and Schedule. In this release, you can use additional business services for maintaining Program, Chain and Schedule when the required elements have been configured appropriately. The new business services are recommended for use when adding or changing a given object. The existing business services are still appropriate when reading or deleting an object.

Steps To Enable

No steps are required to enable this feature.

Support a Job Scope for Defining Options

In previous releases, the DBMS integration supported setting options globally or setting options for a specific program (batch code). In this release, you can now set options for a Job. The option applies to all the programs in the chain for that job.

This gives you the ability to set a **Batch Business Date** for all programs in the chain for a given job.

Steps To Enable

No steps are required to enable this feature.

Additional Configuration Options for Job List Service

The **F1-DBMSGetJobs** (DBMS Scheduler Job List) business service returns information about running or completed runs (based on an input parameter) for a job stream. In previous releases, when requesting completed jobs, the service returned the most recent completed run for each distinct job stream for the input date range.

In this release, you can use additional input parameters to tailor the information returned about running or completed jobs.

- **Return Type** indicator. This is only applicable for completed runs. Using this indicator you can specify if the most recent run of each job stream should be returned or if all completed jobs should be returned for the date range.
- **Job Name**. If a job name is supplied only the details for that Job Name are returned. This is applicable for both running or completed jobs and works in conjunction with the new **Return Type** indicator.

Steps To Enable

No steps are required to enable this feature.

To Do Enhancements

This section provides information about enhancements to To Do Entry functionality.

Recalculate To Do Priority

The system supports an algorithm to calculate a To Do Entry's priority by considering specific factors related to an entry. The Calculate Priority algorithms are executed when the To Do entry is created and updated.

To Do priority calculation logic has been enhanced as follows:

- A new batch control is provided to execute the Calculate Priority algorithms for non-closed To Do Entries (F1-TDCLP). This allows you to implement priority algorithms that use factors that may change over time.
- A log entry is created when the To Do Entry has been updated as a result of a Calculate Priority algorithm. It uses a new log entry type: "Calculated Priority". This is distinct from the log entry type that indicates you have overridden the priority.

Steps To Enable

No steps are required to enable this feature.

Monitor a To Do Entry

A new "To Do Monitor" system event has been added to To Do Type. You can use To Do Monitor algorithms to periodically review information related to a To Do entry and take action, if appropriate. For example, To Do Monitor algorithms may be used to detect if the situation that caused the To Do Entry to be generated has been remedied in the meantime, allowing for the To Do Entry to be completed. Along with the new plug-in spot, a batch process has also been provided (F1-TDMON) that selects non-final To Do entries whose To Do type is configured with at least one monitor algorithm and executes the monitor algorithms.

A new base algorithm type has also been provided to close a To Do entry if more than X days have passed since its creation (where X is a configurable parameter). You can use this algorithm for To Do Types that create entries that may become obsolete if some number of days have passed with no action.

Steps To Enable

No steps are required to enable this feature.

Expand Ability to Add Logs and Enter Comments on To Do

Previously, the ability to update To Do Entries is limited to users that are either assigned to the To Do Entry (for "being worked on" records) or are in a role for a record in "open" status.

The validation has been relaxed to allow other users to add comments or to add a User Log entry for any To Do Entry that is in Open or Being Worked On status. For example, if a call center user is speaking to a customer about an issue and the user finds a To Do that is related to the issue, the call center user can add information to the To Do Entry from the conversation with the customer even if the user is not authorized to work on the To Do.

Steps To Enable

No steps are required to enable this feature.

Configuration Tools Enhancements

The following sections highlight enhancements to the configuration tools functionality.

New Schema Editor

You can use the new schema editor on schema-based objects (Business Objects, Business Services, Service Scripts / BPA Scripts, UI Maps, and Data Areas).

Some of the features are highlighted below:

- The default view of the schema editor is a **Tree** view of the elements on the leftmost column and a tabular view of some of the most common attributes of each element.
- You can toggle to a **Label** view, which shows field labels or referenced objects' descriptions. For example, for any included business objects, data areas, UI maps, etc., toggling to the **Label** view shows the description of these objects.
- The edit button shows a more detailed panel to configure all the attributes of the element. This is the same panel used in previous releases.
- The user can toggle to the **Text** view. This view has been enhanced to use colors to distinguish element names from attribute labels from attribute values.

Note that this was also added to 4.3.0.5.0 as a hot fix. (Bug 27077859)

Steps To Enable

No steps are required to enable this feature.

Process Flow Configuration Tool

You can now use a new Process Flow Configuration tool. A process flow is an interface guiding a user through a series of actions in order to accomplish a specific task. The task can be as simple as the collection of information in order to update business data or involve more complex logic such as submitting and tracking batch processes, exchanging messages with an external system, etc. You can easily implement these user interfaces using the Process Flow Configuration tool. A process flow type defines the entire metadata needed to control the behavior of process flows of a given type. This includes the sequence of steps, the panel, the rules associated with each step, and more.

Steps To Enable

1. Create the components, such as UI maps and scripts, to be used for displaying and managing each step in the process.
2. Configure a Process Flow type for that process.
3. Set up the appropriate navigation method for process flows of that type.

Key Resources

Refer to online help for detailed information on how to design and configure a process flow.

Terminology Change in Add Element Dialog

You will see new terminology when adding an element in the scheme editor. In the previous release, the option for including a Map in the schema via UI Hints was called **Embedded HTML** in the **Add** dialogue. When viewing the configuration details, the section heading was **Embedded HTML Attributes**. However, the schema element generated (and visible in the **Tree** view of the schema editor) is `uiHint:includeMap`. In this release, the text in the **Add** dialogue has been changed to **Include Map Fragment**. When viewing the configuration details, the section heading is now **Included Map Fragment Attributes**.

Steps To Enable

No steps are required to enable this feature.

Optional Display of State Transition UI Map

There may be circumstances in which the status pre-processing logic can determine the value of the elements to be captured in the state transition map, and you may not find it necessary for the map to be invoked. A new data area (F1-StateTransitionCommon) has been provided that can be included in your pre-processing script. The data area contains a Boolean element called `skipStateTransitionMap` that you can set in your script logic. If this element is set to "true", F1-MainProc will bypass the state transition map processing step.

Steps To Enable

No steps are required to enable this feature.

Analytics Configuration Enhancements

This section provides information about enhancements to analytics configuration functionality.

Cube Views

You can now perform data analysis using Cube Views. Data cubes are multi-dimensional representations of data sets that can be "sliced" using various filters.

The Cube View enhancement includes the following features:

- A new Cube Type maintenance object to capture the configuration of a cube view, including a data explorer zone and corresponding business service that retrieve the data set for a specific cube view type.
- A new Cube View maintenance object and business object that captures various attributes of a cube view instance.
- A generic UI map and supporting service script for displaying a cube view.
- A portal for viewing and maintaining cube view instances.

Steps To Enable

If your product provides business services that support pre-defined Cube Views you wish to use for analysis, you will need to define Cube Types for those views. If you wish to design new Cube Views, you will need to create a supporting business service and zone that follow specific technical guidelines in addition to the corresponding Cube Types.

Key Resources

Refer to the online help for Cube Views for more information.

Web Service Enhancements

The following sections highlight changes to the web service functionality.

Support Configuration for REST Web Services

You can configure REST web services by leveraging the existing inbound web service metadata. A new **Web Service Class** field, with values of REST and SOAP, has been added to inbound web services. The existing inbound web service functionality is now referred to as inbound SOAP web services, or SOAP IWS. Inbound web service deployment is specific to SOAP functionality.

The following points highlight some of the features:

- In this release, only the POST HTTP method is supported.
- Inbound REST web services reference a resource category. The categories are defined using an extendable lookup. The resource category is a type of grouping attribute. This allows an implementation to associate multiple inbound web service records with a common resource.
- A REST inbound web service may define one or more operations. Each operation defines the business object, business service, or service script that is invoked when the REST service is invoked. For each operation, you configure a Resource URI, which along with the inbound web service name is used to compose the URL for the REST service.
- REST inbound web service records, like SOAP inbound web service records, may be associated with a Web Service Category, which is used to describe the functionality that uses the web service.
- The product uses OpenAPI Specification (formerly Swagger Specification) for viewing the REST API.
- A new REST servlet is provided that supports a new URI format that includes the inbound web service name and resource URI.

The web service catalog functionality used for the integration with Oracle Integration Cloud supports a REST catalog in addition to the existing SOAP catalog.

Steps To Enable

No steps are required to enable this feature.

Key Resources

Backward Compatibility: In previous releases, the product supported a REST servlet that allowed for a business service or service script to be referenced in the URI. This servlet is still supported; however, it now does a check that the business service or service script is referenced in operation for an inbound web service record. This provides an extra layer of security, allowing the product to limit the business service or service script records that are exposed via REST. For backward compatibility, the product provides inbound web service records out of the box for each business service and service script that is part of an existing integration that uses the existing REST servlet. New integrations should use the new REST servlet functionality specified using inbound web service metadata.

Explicitly Define Owner in Service Catalog Configuration

The integration with the Oracle Integration Cloud includes an owner flag for each web service using the owner flag of the main installed product. By using this functionality in the catalog, you can distinguish, for example, web services from Oracle Utilities Customer Care and Billing from web services from Oracle Utilities Work and Asset Management. You can now explicitly choose the owner value to include in the catalog for the web services for your installation using the Owner attribute added to the Service Catalog master configuration. Previously, the owner flag was taken from the **Installed Products** collection using the product marked to "display". When there were implementations where multiple installed products were marked for "display", the integration would potentially choose one that may not be appropriate for that web service integration.

Steps To Enable

If the "display" product in **Installed Products** is not the correct product to include, edit the Service Catalog master configuration record and select the appropriate owner flag.

Improve Performance for Outbound Messages

In previous releases, implementations were required to use the Outbound Message Dispatcher business services to send an outbound message without instantiating it (but where the outbound message business object pre-processing algorithms need to be executed). This business service orchestrated a creation and deletion of the outbound message, which is not desired for performance reasons.

The alternate Outbound Message Mediator business service routes a message without instantiating anything. This business service is preferred when the outbound message should not be instantiated. However, this did not execute the business object pre-processing algorithms. In this release, the Mediator business service has been enhanced to also execute the business object pre-processing algorithms.

Steps To Enable

No steps are required to enable this feature.

Configuration Migration Assistant Enhancements

This section provides information about enhancements to configuration migration assistant (CMA) functionality.

Algorithm to Purge Unchanged Transactions

If desired, you can use a new business object exit algorithm to purge "unchanged" migration objects for a migration data set. This algorithm is meant to be used on the Migration Data Set Import BO (F1-MigrDataSetImport). The algorithm is not plugged in by default.

Steps To Enable

Edit the lifecycle of the F1-MigrDataSetImport business object and configure F1-MGDPURGE as an Exit algorithm for the Ready to Compare status.

Mobile Framework Enhancements

This section provides information about enhancements to mobile framework functionality.

Note: The mobile framework is used only with Oracle Utilities Work and Asset Management.

Support to Activate Deployment Upon Creation

You can use a new parameter in the Create Deployment background process (F1-DPLOY) that indicates if the deployment should be activated after creation. By setting this parameter to "Y", you can save the extra step of manually activating the deployment after the background process finishes.

Steps To Enable

When submitting the batch job, set the new parameter to "Y".

Restrict Mobile Image Attachment File Size

You can configure different attachment size limits for different types of mobile devices. If such a limit is not specified for the mobile device type, the mobile application does not restrict the size of images captured in the field.

Steps To Enable

Edit your MDT type records to set a maximum attachment storage size (defined in MB).

Security Enhancements

This section provides information about enhancements to application security functionality.

Introduce Cryptography Key Support

You can use cryptograph keys for cloud implementations. Signature keys are required for connecting to cloud object storage. The system provides an object called key ring, which allows for a key pair to be generated. To support key rotation, new key pairs can be generated over time. When configuring the Cloud object storage details, you configure the key ring to use for the signature.

Steps To Enable

Define Key Ring codes and generate keys to be used for cloud storage.

Key Resources

Refer to **Support for Cloud Storage Access** on page 1-9 for more information.

Introduction of Object Erasure

You can use an enhanced framework to manage erasure of personally identifiable information (PII). A person's right to erasure of their information is an important data privacy issue.

This release of the object erasure functionality supports the following:

- The ability to mark a maintenance object as eligible for erasure and define the retention period for the data.
- A new Object Erasure Schedule maintenance object to capture the key fields and erasure date for records whose PII must be removed.
- Support for creating and monitoring the erasure schedule, including the method to be used for erasure.
- A portal for viewing erasure configuration and a context-sensitive zone to view erasure status for an object.
- Support for erasing an object by purging its records and for erasing user PII through obfuscation.

Steps To Enable

1. Identify the maintenance objects that have personally identifiable information that you need to erase or obfuscate.
2. Configure each maintenance object with appropriate values for the Erasure BO and Erasure Period options.
3. Configure the appropriate Manage Erasure Schedule algorithms on each of the maintenance objects.

Key Resources

Refer to the online help for data privacy and object erasure for more information.

Miscellaneous Enhancements

Country Enhancements

You can use new drop-down values of Optional and Not Allowed when indicating that a particular address component is enabled instead of using the Boolean checkboxes that used to be used. This allows edge products to introduce additional values, if desired. For example, if an edge product wants to support marking an address component as Required, that value can be added to the list of valid values.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

Backward compatibility: The Boolean values are still maintained so that any code relying on those values will still work as before. The user interface has been updated to display the dropdown instead of the checkbox.

Attachment Enhancements

You can reference two new columns in the Attachment table:

- **External Reference ID:** This value is available when attachments are added from another system with IDs. The system supports capturing this value in the record and it is displayed in the user interface when populated.
- **Comments:** You can add additional information when creating an attachment.

The system has also introduced a setting to limit the size of the attachment. A new option, **Maximum Attachment Size**, has been added to the General System Configuration feature type. You can define a value here to issue an error if an attachment greater than this size is uploaded.

Steps To Enable

No steps are required to enable this feature.

Customization Setting for Extended Data Area Removed

The **Extended Data Area** field on the Data Area table was incorrectly defined as customizable (or "CMable"). This was incorrect and has been fixed in this release. If your implementation has populated the **Extended Data Area** column on any base-owned data area, that information will be overwritten when this field is corrected.

Note: You can achieve the same functionality by simply including the base-owned data area in the custom data area's schema.

Steps To Enable

No steps are required to enable this feature.

F1-RetrieveCharValDescription Business Service Updated

The Retrieve Characteristic Value Description business service has been updated to use logic that does an exact match on the input characteristic type and characteristic value. In previous releases, the business service to Retrieve Characteristic Value Description was "wrapping" the online characteristic value search. This supported a "likeable" search on the characteristic value. This is not correct behavior for a business service, which is usually used by code that expects one and only one result.

Steps To Enable

No steps are required to enable this feature.

Master Configuration List Usability Enhancements

Master configuration list now provide the following enhancements:

- You are only shown the master configuration business objects for which you have appropriate security rights.
- A filter by Description has been added to support the ability to limit the rows based on the input value. The filter area is collapsed by default.

Steps To Enable

No steps are required to enable this feature.

New ILM Algorithms - Proactively Update ILM Switch

The ILM Eligibility algorithm on a maintenance object, invoked by the ILM crawler batch control, has the responsibility of reviewing records whose **ILM Date** has arrived and marking the **ILM Archive** switch to "Y" based on specific criteria. A common criterion for marking the ILM Archive switch to "Y" is that the record is in a final status.

You can use two new business object level plug-ins:

- A business object Enter Status plug-in to set the **ILM Archive** switch to "Y". You can use this for records that are configured for ILM and have a business object with a lifecycle. You can plug this into the final state(s) to proactively set the switch to "Y". This will reduce the number of records to be reviewed by the ILM Eligibility algorithm when the crawler is run.
- A business object Exit Status plug-in to set the switch back to "N". This is provided for those final states where the record may transition back to a non-final state and where you have plugged in the above Enter status.

Steps To Enable

No steps are required to enable this feature.

Support Including Column Headers in Sync Request Extract

There is a new "Add Column Header" parameter on the Sync Request Extract batch process (F1-SYNEF). If you indicate "Y" for the parameter value, a header record with the column names taken from the data area referenced in the snapshotDA element of the Sync record is included.

Note: This was also added to 4.3.0.5.0 as a hot fix. (Bug 27472229)

Steps To Enable

No steps are required to enable this feature.

Return All Errors on COBOL SQL Updates

All errors encountered during a COBOL update will be returned as an error. In previous releases, only the duplicate error was handled and returned a duplicate error. All other errors were ignored and returned OK.

Note: The hot fix was done in 4.3 SP1.

Steps To Enable

No steps are required to enable this feature.

Removal of Product-Specific Domain Templates

In past releases, Oracle Utilities Application Framework domain templates were shipped with each product to allow for a standard installation experience using the Oracle WebLogic Configuration Wizard. The use of the domain template with the wizard automates the creation of the WebLogic domain used to house the Oracle Utilities products. Due to the standardization efforts between Oracle Utilities Application Framework and the Oracle WebLogic team, you can now use the standard Oracle WebLogic domain templates supplied with Oracle WebLogic with Oracle Utilities Application Framework products. As a result, product-specific templates are no longer necessary and are no longer shipped with the products. You can use the standard templates with a few minor post installation steps.

This enhancement allows greater flexibility when creating the domain for the product in terms of the domain setup as well when in the installation process the domain creation can occur.

Steps To Enable

No steps are required to enable this feature.

Tips and Considerations

If necessary, you can continue to use the WebLogic Domain Builder as in previous releases (post installation to create custom domains).

Key Resources

Details of the new process are documented in the Installation Guide and a new whitepaper covering optimization of the Oracle WebLogic domain for Oracle WebLogic 12.2.x.

Oracle Utilities Application Framework System Data Details

This section provides information about new and updated system data delivered in this release that may need to be reviewed for possible impact by implementations.

New/Updated Application Services

The following application services were added or updated. Review and determine which user groups, if any, should be granted access to the application service/access mode.

The following application services are used with the cryptography key support feature..

Application Service	Description	Access Mode
F1-CRYPTOKEYRING	Key Ring MO	A, C, D, R
F1KEYRNG	Key Ring Portal	R

The following application services are used with the Cube View feature.

Application Service	Description	Access Mode
F1-CUBETYPE	Cube Type MO	A, C, D, R
F1-CUBEVIEW	Cube View MO	A, C, D, R
F1-CUBEVIEWBOAS	Cube View BO	A, C, D, F1AC, F1IN, R
F1CUVWM	Cube View Portal	R
F1CUVWQ	Cube View Query Portal	R
F1CVTYPE	Cube Type Portal	R

The following application service is used by the object erasure feature.

Application Service	Description	Access Mode
F1ESRCFG	Erasure Configuration Portal	R
F1OBERSC	Object Erasure Schedule Portal	R

F1-OBJERSRSCH	Object Erasure Schedule MO	A, C, D, R
F1-OBJERSRSCHBO	Object Erasure Schedule BO	A, C, D, F1DC, F1ED, PE, R
F1-OBJESRSCD	Object Erasure Schedule Zone	R
F1-OESCRL	ILM Crawler - Object Erasure Schedule	F1EX
F1-OESMN	Object Erasure Schedule Monitor	F1EX

The following application services are used with REST Web Services.

Application Service	Description	Access Mode
F1-GETWSDL	Retrieve Inbound SOAP Web Service WSDL BS	F1EX
F1-MOBILESWS	Mobile Web Services	F1EX

The following application services are used by the Process Flow feature.

Application Service	Description	Access Mode
F1PROC	Process Flow Type Portal	R
F1_PROC	Process Flow Portal	R
F1-PROCDEFN	Process Flow Type MO	A, C, D, R
F1-PROCSTORE	Process Flow MO	A, C, D, R
F1-PROCSTOREBOAS	Process Flow BO	A, C, D, R
F1PRSTRQ	Process Flow Query Portal	R

The following application services are used with To Dos.

Application Service	Description	Access Mode
F1-TDCLP	Recalculate To Do Priority	F1EX
F1-TDMON	To Do Monitor	F1EX

Oracle Utilities Application Framework Deprecation Notices

This section provides information on functionality that has been removed, is no longer supported by Oracle Utilities Application Framework v4.3.0.6, or is planned for removal.

Deprecated Functionality

This section lists the functionality has been deprecated at the time of this release.

XML Application Integration (XAI) and Multi-Purpose Listener

The XML Application Integration (XAI) Servlet and Multi-Purpose Listener (MPL) have been removed. Customer migrating to this release should migrate to the recommended alternatives as recommended in the Oracle Service Bus Integration (Doc Id: 1558279.1) and Migrating from XAI to IWS (Doc Id: 1644914.1) whitepapers available from My Oracle Support.

As part of this effort, the user documentation has been updated to remove all the topics related to the XAI servlet and MPL.

Batch on WebLogic

Batch on Weblogic node is no longer supported. Note that this was an implementation that was possibly usable for GBUCS; however, the implementation is no longer viable used in the new OCI (Oracle Cloud Infrastructure/BMC).

Ability to Add Child Rows for Several Maintenance Objects

There are several maintenance objects where base delivered entries are supplied by the product. In some use cases, implementations can extend the base functionality by adding child rows to the base delivered configuration. For example, implementations may add algorithms to a base delivered business object. However, there are some use cases where implementations are not able to extend base functionality by adding child rows. For example, implementations are not able to add additional algorithm type parameters to a base delivered algorithm type. For several use cases, there was validation missing and has been added in this release. If your implementation has added child rows for the maintenance objects in this list, they will be removed at upgrade time:

- Algorithm Type - Parameters
- App Service - Access Mode
- Maintenance Object - Table.
- Navigation Option - Context Fields.
- Script - Step Prompt
- Table - Field
- Table - Constraint / Field
- To Do Type - Sort Keys
- To Do Type - Drill Keys
- Zone Type - Parameters

Items Planned for Future Deprecation

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

Support for Master / Subordinate Services for Web Services Catalog

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

Miscellaneous System Data

- Environment Reference. This administrative MO was related to ConfigLab and Archiving, which are no longer supported. In a future release, the following will be removed:
 - Migration Plan F1-EnvironmentRef. Note that no base migration request references this plan. Implementations should ensure that no custom migration request references this plan.
 - F1-EnvironmentRefPhysicalBO business object
 - ENV REF maintenance object
- The To Do Type F1-SYNRQ (Sync Request Error) is not in use and will be deleted in a future release. Errors for the Sync Request Monitor (that also has the name F1-SYNRQ) are reported using the To Do Type F1-SYNTD (Sync Request Monitor Errors).
- The following algorithm types and algorithms provided for the current LDAP import functionality do not include any logic. They will be removed in a future release.
 - Algorithm Type / Algorithm F1-LDAPIMPRT
 - Algorithm Type / Algorithm F1-LDAPPREPR
- The lookup value CHAR_ENTITY_FLG / F1SE (Characteristic Entity / Sync Request Inbound Exception) is not in use and will be removed in a future release.
- The database table F1_IWS_SVC_OPER_L will be removed in a future release.
- The zone F1-MGRREQDSP will be removed in a future release.

Support for HTTP Proxy Functionality

HTTP Proxies are a common technique for firewalling outbound communications within and outside an enterprise.

In past releases, the configuration of a HTTP Proxy was done on individual senders and other connections. This increased the amount of duplication across the implementations with multiple places to update proxy settings. In this release, these settings have been delegated to the JVM level using proxy features at the JVM level rather than individual connections. This will reduce the amount of configuration and maintenance of proxy functionality by allowing implementations to use the inbuilt proxy support from Java directly. This will require additional command line settings to be configured on the online WebLogic Servers and command lines within our configuration for batch.

For more information about the settings, refer to the Java Networking and Proxy documentation

CMA Migration Requests

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

CMA Import Algorithm

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

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

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

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

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

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

Known Issues in This Release

The following section lists known issues and bugs not fixed in this release of Oracle Utilities Meter Data Management and the Oracle Utilities Application Framework.

This section includes:

- [Known Issues in Oracle Utilities Meter Data Management](#)
- [Known Issues in Oracle Utilities Application Framework](#)

Known Issues in Oracle Utilities Meter Data Management

This section describes known issues in Oracle Utilities Meter Data Management at the time of release. Single fixes for these issues will be released at a later date.

Dynamic Aggregation:

- Issue with aggregation of Customer Service Quantities: When aggregating customer service quantities, aggregator measuring components are being created, but no aggregated measurements are created.

Known Issues in Oracle Utilities Application Framework

The following are the known issues in this version of Oracle Utilities Application Framework which affect Oracle Utilities Meter Data Management at the time of release:

- The Application Viewer is not supported on the Chrome browser.
- Cube Type access should be controlled by the application service associated with the Cube type's "sourcing data" zone. Currently, users that have access to Cube View will see all Cube Types.
- The message "weblogic.rjvm.BubblingAbbrevier\$BadAbbreviationException: Bad abbreviation value: '243'" appears in the Weblogic console log, but there is no known impact to the application and it can be ignored.
- Firefox Error dialogs do not open large enough for you to view full the error message.