

Oracle Utilities Meter Data Management
Release Notes

Release 2.2.0
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Oracle Utilities Meter Data Management Release Notes

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Preface

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

Audience

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

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 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 and Prior Versions](#)
- [Supported Platforms Notice](#)
- [Database Changes](#)
- [Supported Integrations](#)
- [Demo Data Information](#)
- [Oracle Utilities Meter Data Management Enhancements](#)
- [Deprecated Items](#)
- [Oracle Utilities Application Framework Release Notes](#)
- [Known Issues in This Release](#)

About This Release

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

- Oracle Utilities Application Framework 4.3.0.3
- Oracle Utilities Service and Measurement Data Foundation 2.2.0

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 and Prior Versions

Version 2.2.0 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, 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 directly.

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

Version 2.2.0 includes the following database enhancements:

- All Tables with column "MSG_PARM_VAL" have been expanded from size 30 to size 2000. The following tables are included in the change:
 - D1_US_LOG_PARM
 - D1_NW_LOC_LOG_PARM
 - D1_FACILITY_LOG_PARM
 - D1_SP_LOG_PARM
 - D1_TOU_MAP_LOG_PARM
 - D1_COMM_IN_LOG_PARM
 - D1_MEASR_COMP_LOG_PARM
 - D1_INT_MSRMT_DATA_LOG_PARM
 - D1_DVC_CFG_LOG_PARM
 - D1_USAGE_LOG_PARM
 - D1_DYN_OPT_LOG_PARM
 - D1_DYN_OPT_EVENT_LOG_PARM
 - D1_USAGE_EXCP_PARM
 - D1_COMM_OUT_LOG_PARM
- The following ILM indexes have been dropped and would be expected to be created by those customers implementing ILM:
 - D1T281S2

- D1T304S4
- D1T308S2
- D1T319S1
- D1T340S1
- D1T380S1
- D1T386S1
- D1T400S4

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 2.2.0 /Oracle Utilities Analytics 2.6.0.0.2 or higher

Oracle Utilities Meter Data Management 2.2.0 to Oracle Utilities Customer Care and Billing 2.4.0.x, and 2.5.0 or higher

Oracle Utilities Meter Data Management 2.2.0 to Oracle Utilities Operational Device Management 2.0.1.x and 2.1.1.x

Additional Integrations

BI Publisher 11.1.1.5.0

Oracle Utilities Customer Self Service 2.1.0 and 2.2.0

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.

Oracle Utilities Meter Data Management Enhancements

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

- [Dashboard Enhancements](#)
- [Interval Data Options Enhancement](#)
- [VEE Rules Enhancements](#)
- [Billing Process Enhancements](#)
- [Handling Widespread Outages Enhancement](#)
- [User Interface Enhancements](#)
- [Integration Enhancements](#)
- [Multiple Time Zone Support Enhancements](#)
- [Technical Enhancements](#)

Dashboard Enhancements

MDM Operational Dashboard

The new MDM Operational Dashboard will provide an overview of batch performance as well as the status of key business processes. This dashboard will provide day-to-day statistics that are of interest to management and end users.

- Track and view the duration of key batch processes as a group and how they relate to a defined performance target, e.g. Meter-to-Bill
- Monitor Measurement and Event Loading Trends
- View Trends to Identify Problems: this includes IMD and Usage Transaction monitoring for exceptions and status.

Tablet Support for Dashboards

The MDM Operational Dashboard, Service Order Operational Dashboard, and Service Order Trends Dashboard have been revised to allow for easier viewing on tablets such as the Apple iPad™ (iOS 9.1).

Interval Data Options Enhancement

Subtractive Interval Data

Some head-end systems do not provide interval data in engineering units (kWh, kW, CCF, etc.), and instead provide register readings, known as pulses, where the current reading must be subtracted from the prior reading and manipulated to derive engineering units. Oracle Utilities Meter Data Management has been enhanced to perform the subtractive calculation on each interval within an initial measurement.

This enhancement supports advanced features such as:

- Supporting rollovers calculation and validation for subtractive interval registers
- Efficient identification of the start reading for the first interval of an initial measurement
- Recalculation of the consumption a final measurement that occurs immediately after an initial measurement that has been processed. This ensures that existing measurements will have their consumption appropriately adjusted when either their start reading has been updated or a new start reading has been added.

- Ability to identify and re-evaluate estimations performed prior to and subsequent to an initial measurement received with new more accurate data.
- Alignment of the reading and consumption amounts for each interval based on the results of VEE processing. For example, if an initial measurement included a missing interval when that interval is estimated the appropriate adjustments will be made to the interval's reading and the consumption of the subsequent interval.

The enhancement includes a new reading condition code to delineate the condition of the reading (aka pulse) from the condition of the measurement calculated from that reading (e.g. kWh). Please note: the measurement condition may be marked as estimated even if the associated reading is an actual reading. This situation will occur when an interval's reading is non-estimated but the start reading is estimated resulting in a calculated consumption amount that is estimated.

VEE Rules Enhancements

VEE Rule: Consecutive Interval Check

This new validation rule flags any combination of consecutive intervals within initial measurement data based on the values of the data or the condition codes of the data. It can be used to find faulty meters that are reporting consecutive outage codes, zero measurements, or negative values. It can also be used by water utilities to identify leaks based on the interval never reaching zero.

VEE Rule: Dynamic Comparison Validation

This powerful new validation rule compares measurements to historical statistics for the related Service Point. The system will maintain statistics such as the following: sum, min, max, average, median, zero value count, outage count, and standard deviation. Setting up these measuring component statistics is a prerequisite to using the rule.

Users can define formulas (no programming required) for the comparison of current measurements to these statistics. This is powerful rule will allow utilities to look for unusual usage patterns. For example:

- Lowest/highest usage ever
- Current usage is more than three standard deviations from the mean
- Detect unexpected zero usage
- Detect negative usage while ruling out known cases
- Abnormal usage
- Voltage threshold monitoring

Please note, this rule does not query large sets of historical data and should perform better than the existing High Low VEE Rule.

VEE Rule: Final Measurement Replacement

This validation rule is being enhanced to allow you to define a range of configuration options to decide if scalar or interval data should replace existing measurements. The options include value change thresholds, percentage change thresholds, as well as condition code ranking. One common use for this rule is rejecting trivial measurement changes to prevent very small changes for a bill from being sent to a customer.

VEE Rule: Inactive Measurement Check

This new validation rule flags any initial measurement data received on a device that is either disconnected, not installed, and/or not connected to a usage subscription. This rule works for both interval and scalar data.

VEE Rule: Interval Estimation Create IMD for Gap

This rule is very different from other VEE rules in that it does not examine the current initial measurement but rather looks to see if there are any missing measurements prior to the initial measurement being processed (i.e. a gap exists). If so and the scenario meets the configured options it will generate an estimation initial measurement to fill in that gap.

This rule is intended to provide more real-time filling of missing measurements as opposed to running periodic estimation. However, it is still expected that periodic estimation will be used in conjunction with this rule such that any gaps that are not filled in by this rule would eventually be filled in by periodic estimation.

This rule can be configured to perform minimal validation of that gap that is identified and defer to the estimation initial measurement to validate against other initial measurements and final measurements that may overlap the gap. Conversely, it can also be configured to validate the gap and exclude any periods where a final measurement or in progress initial measurement overlaps the gap's duration.

VEE Rule: Prolonged Estimation Check

This new validation rule can be used on either interval or scalar measurement data and creates an alert when a device has been estimated for an extended period of time.

Billing Process Enhancements**Measurement Reprocessing**

A major problem facing utilities is when devices are installed with an incorrect consumption multiplier. When this occurs, the billing consumption and the bills are incorrect. This enhanced functionality automatically corrects historic consumption when a meter multiplier or installation constant is corrected. The system looks for retroactive changes on either measuring components or installation events. When these multipliers are updated, historic measurements will be automatically reprocessed and trigger billing adjustment notifications to the customer information system (CIS).

Measurement Date Boundary Check

This new initial measurement data logic allows rejection of very old or future dated measurements based on user defined tolerances. This rule will help customers that want to mark old measurement partitions as "Read Only" or who want to prevent changes to measurements after a defined period of time but still keep the data in the system. If partitions are marked as "Read Only", these partitions do not need to be backed up as frequently as other measurements which reduces your overall data footprint. This is an important consideration when there are vast amounts of measurement data. Likewise, this logic can prevent erroneous future measurements that can cause the database to spawn unneeded partitions.

Usage Transaction Exceptions

This release includes enhanced exception management functionality for usage transactions. Similar to VEE exceptions, exceptions from usage transaction can now be stored in new usage exception maintenance object. This process will enable execution of the rest of the rules after encountering a non-severe error. Base usage rules have been enhanced to support configuration of exception type and severity to indicate that exceptions will be recorded in the exception table. A new Usage Transaction Exception Summary zone was also added to the Usage Transaction Log portal to list the all the exceptions hit with a broadcast option to display the details of an exception entry.

Usage Rule: Alignment and Delay Usage Rule

This new usage rule helps customers with two primary needs:

1. Aligning multi-meter accounts
2. Delaying estimation in the hope that actual data will be received from the device.

The rule can be used for either of these needs alone or both at the same time.

For customers with multiple billing channels on the same device/service point, this rule helps ensure meter channels on the same service point are aligned to the same date and quality of measurements for billing (e.g. aligning the interval and scalar channels).

For customers with service on multiple service points, this rule helps ensure meter channels on different service points are aligned to the same date and quality of measurements for billing (e.g. for bulked service).

When estimated data exists, this rule can delay the completion of bill determinant requests (usage transactions) until the end of the request window. This provides the necessary time for the head-end to retry usage and potentially provide actual data before the end of the request window.

Usage Rule: Business Hold Flag

This new usage rule can stop a usage transaction from proceeding when there have been business flags for the applicable service points. The hold can either be indefinite or set to expire a configurable amount of time prior to the calculation window ending.

Usage Rule: Round and Adjust Usage

This new usage rule copies identified source and target service quantities and inserts these as period service quantities that are rounded and adjusted.

Usage Rule: Usage High/Low Rule

This new usage rule is used to manipulate validate the current usage against historical usage, either previous year usage or previous usage. It ensures that any increase or decrease of the current usage relative to historical usage is within a tolerance.

Usage Rule: Usage Rule Exception Handler

This new usage rule analyzes the exception list accumulated during the execution of usage rules, based upon exception criteria on the usage rule. This is used to stop execution of succeeding rules if there are too many exceptions have been hit. This is similar to the Exception Handler VEE rule.

Maintaining Minimum Condition Code When Combining Curves

Improvements were made to the Vector and Service Quantity and Apply Formula usage rules to allow retaining minimum interval condition code for each interval when combining multiple curves of interval data.

Handling Widespread Outages Enhancement**Outage Storm Mode**

Unfortunately, utilities and their customers are often subject to natural disasters that cause disruptions to AMI networks. These outage events can be related to hurricanes, tornadoes, ice storms, earthquakes, tsunamis, etc. During these severe outages, AMI systems do not always provide outage and restoration events from the devices. Without these outage and restoration events, the system processes could estimate measurements that would be billed by the CIS. This will lead to unhappy customers, bad press, and lots of manual cleanup work after the fact.

While this is a problem for major outage events, this can also occur with smaller outages (smaller blackouts, planned outages, etc.). This can potentially become an issue anytime the AMI network has a significant number of devices failing to communicate.

This release includes enhanced outage processing to improve estimation accuracy during major outages. The system can automatically stop estimations when the number of meter readings coming is less than a user defined tolerance. This tolerance is based on a significant drop in the read percentage for all devices in a similar postal code, service type, and head-end system.

Estimations can automatically resume when the device returns to normal operation. This can occur through a number of actions: read percentage for the surrounding area returns to normal, regular data is received from the device, or a power restoration device event is received from the device.

The system also includes the ability to manually override "storm mode". This override allows estimations to resume even if the outage hasn't been fully resolved. This is useful if network fixes take too long and the utility has decided that customers should be billed on an estimate after a few days pass.

User Interface Enhancements

Updated 360 Degree View Charts

The charts that display measurement and event data on the 360 Degree View portals have been rewritten to leverage more modern graphical options. The prior functionality has been retained in almost all cases. Also, new enhancements have been added:

- Hover text has been added to Event Bars shown below Measurement Charts
- Additional Measuring Components can be displayed on the Service Point Consumption History zone

A new option is available to defer the rendering of charts on the 360 Degree Views to allow a user to choose the time period before running selecting any data. This will provide a performance benefit since users won't need to let the chart load once, change the dates to the desired range, and render the chart again.

Changes to the Application Look and Feel

The general look and feel of the application has changed. The following points highlight some of the changes.

- The font size has been increased.
- New images have been introduced for many icons in the system.
- The color schemes have changed.

These changes make it easier to support accessing the application from different types of devices, where touching the screen is a common form of selecting and launching information.

Changes to the Actions/Navigation Area

Several changes have been made to the Actions/Navigation area in this release.

The following actions have been moved from the actions/navigation area:

- Save
- Duplicate
- Delete
- Clear
- Refresh

- Previous Item
- Next Item

These actions are now found in the Page title area. Also note that the Previous Item and Next Item were previously icons. In this release, they are now buttons with the text Previous Item and Next Item.

Changes to Menu Behavior

Several changes have been made to the behavior of the Main Menu and the Admin Menu.

In previous releases, the menus were accessed using a vertical bar on the left side of the page area. The "active" menu available in the menu bar was chosen using a Menu drop-down list in the Actions/Navigation area (where the user could choose to make the Main Menu or the Admin Menu the "active" menu). In this release, the menu bar is no longer used. In addition, rather than a menu drop-down list to select Main Menu or Admin Menu, the Actions/Navigation area now includes separate icons for the two menus. Clicking the icon opens each menu directly.

In previous releases, if a menu entry supported both "Search" and "Add" modes, the menu would be shown with a plus sign (“+”) on the menu entry beside the menu label. The user would click the menu label to enter the page in "Search" mode and would click the sign to add a new entry for the maintenance object represented by the menu entry. In this release, if both "Search" and "Add" are supported for a given menu entry, a sub-menu with the explicit choices of Add and Search appear for the user to choose. If a menu entry does not support the “Add” mode, then the user simply clicks on the menu label to launch the page.

New User Menu

In this release, the Preferences link and the Logout link, which used to be separate links in the navigation area, are now entries in a drop-down list under the logged in user's name. This is referred to as the User Menu.

In addition, the information is now defined using menu metadata. This allows an edge product or implementation to add additional menu entries to the user menu, if desired.

Page Title Location

In previous releases the title of the page was positioned in the center of the actions and navigation area. In this release, the page title has been moved closer to the object display area, directly above the "Main" tab.

Next/Previous To Do Icons Moved to Current To Do Zone

In this release, the Previous To Do and Next To Do icons have been changed to buttons and are now found in the Current To Do dashboard zone.

Page Actions

In this release, some actions that were previously found in the header of a zone on a portal, such as Add and Go To Search, have been moved to be visible in the Page area where Clear and Refresh and other buttons are now displayed.

This information is configurable using new Portal Options functionality. One of the base delivered option types is a Page Action Menu. In conjunction with this, a new menu type Page Action Menu has been introduced. The base product provided portals have been updated to include actions in the Page Action area that were formerly found in the header of one of the zones on the portal.

In previous releases, the main zone of a standalone maintenance portal included a Go To Search hyperlink. Clicking it would navigate to the query page that is associated with the maintenance object. In this release base package portals have been updated to contain a Search button in the Page Action area and the Go To Search hyperlink has been removed from the zone header area. Also note that if any of the portal pages include a log tab, the Search button is also accessible from

the Log tab (note: the log tab hyperlink for adding a log entry will still remain in the log zone header). This is an enhancement from the previous release where the Log tab did not provide the ability to navigate to the Search portal directly.

Note that in addition, base package portals have also been configured to include an Add button to allow a user to initiate adding a new record after viewing an existing record. This is an enhancement from the previous release where the maintenance portals either did not provide the ability to Add or leveraged a link in a zone header on the maintenance portal.

In previous releases, the main search zone of a separate query portal included an Add link. In addition, All-in-One portals included an Add link in its List zone. In this release, those portals have been updated to configure an Add button in the Page Action area and the Add link has been removed from the zone header area.

Bookmarks Introduced

This release includes a Bookmark action in the Page area. Clicking this button allows a user to bookmark the page along with the data that is displayed on the page. The user may choose to name the bookmark as desired.

Existing bookmarks are visible in a new Bookmarks dashboard zone. The zone allows you to navigate to the bookmarked page or delete the bookmark.

Users may also manage existing bookmarks on the user page using a new Bookmarks tab. The bookmark name may be modified; the sequence may be adjusted or the bookmark may be deleted.

Security Note: The bookmark button and the bookmark dashboard zone are secured using an application service (F1-BOOKMARKS). Implementations must grant access to this application service in order for their users to access this functionality.

Maintenance Portals Show Information String

Options have been added to maintenance portals. One of the base delivered option types is a Foreign Key reference. Configuring a portal with the FK Ref option populates the info string after the title. Base package portals were updated for this behavior:

Checkbox Support for UI Auto-rendering

In this release, user interface auto-rendering logic has been enhanced to support displaying a checkbox for elements. This can be accomplished by defining an element with a data type of Boolean or referring to a field that is defined as a 'switch'.

Ability to Save Multiple Search Criteria for Queries

In previous releases, the explorer menu provided the ability for a user to "Save Preferences" for a query zone. This allowed a user to capture preferred filter values for a given query zone.

In this release the functionality has been expanded as follows:

- Users may save multiple search preferences for a given query zone, providing meaningful names for each. Note that for a multi-query zone with several search options available in the drop-down list, the list of saved searches is available at the "header" (multi-query zone) level allowing the user to choose a different saved search that will change the search option and load the filter criteria in one click.
- Users may designate one of those searches as the default search used when first entering the query zone from the menu.
- Users may choose to add the saved searches to a Favorite Searches dashboard zone. This allows for the user to drill to that query portal and load the desired saved search in one click.

Security Note: The new Favorite Searches dashboard zone and the ability for a user to save searches on a query zone are secured using an application service (F1_USRFAVSCH).

Implementations may choose to configure whether or not users are permitted to save searches (and have access to the favorite searches zone).

Upgrade Note: In the previous release the ability to "save preferences" was not secured. To maintain this capability for existing users, an upgrade script links this application service F1_USRFAVSCH to all user groups in the system. Implementations may review the user groups and remove the security if desired.

Functional Note: the saved searches capability is not tied to a Profile User. If a user's portal preferences and/or favorite links/scripts are configured via a Profile User, they will still be able to save their own searches. This is a change from the "save preferences" functionality where a user would not be able to save their own search preferences if linked to a Profile User. In addition, in previous releases, the user would see the saved preferences of the Profile User. In this release, saved searches are unique to a user. No preferences from a profile user are inherited. As mentioned, security may be used to limit a user's ability to save their preferences.

Quick Edit for Initial Measurement Data

To reduce the need to navigate between portals an ability to view and update initial measurement data in a pop-up window has been added to a few key zones:

- Interval - Initial Measurement Overlay
- Scalar - Initial Measurement Overlay
- Initial Measurement Data History

The benefit of this is twofold:

- Users can immediately see initial measurement data without needing to navigate multiple places and once done viewing the data they remain on the original portal from which they launched.
- The interval data can be viewed side by side with the portal from which they launched

Restricting Users' Data Access

This enhanced functionality allows restriction of data access for users throughout the system based on the Access Groups to which they're assigned. With this functionality, users will only be able to see transactional data they have permission to view. This occurs through defining Access Groups on a market which then marks the relevant service point with the defined access requirements.

The isolated access group security can be defined in numerous ways and will still restrict access to the data. You can limit access by operating company, jurisdiction, and/or other attributes like customer type (commercial vs. residential). Once the Access Group is set on the service point, the user interface screens within the system will use whatever value is set to limit access.

Browser Support

Firefox™ is now a supported browser for Oracle Utilities Meter Data Management.

Accessibility changes

The following user interfaces were enhanced to support accessibility:

- Service Quantity Overlay zone in Usage Transaction portal. New buttons for showing interval quantities in tabular form and to export these quantities for viewing.
- Scalar Audit View in 360° portal. New buttons for showing the measurement log counts in tabular form and to export these counts for viewing.
- Interval Audit View in 360° portal. New buttons for showing the measurement log counts in tabular form and to export these counts for viewing.

Integration Enhancements

Dynamic Option Data Synchronization

Oracle Utilities Meter Data Management has been enhanced to support data synchronization of dynamic options at the service point level. A dynamic option is a special event that denotes that special pricing is applicable for a period of time. This is unusually used for dynamic pricing options like critical peak pricing and peak time rebates. Originating the synchronization of dynamic options is also supported in Oracle Utilities Customer Care and Billing (CC&B).

Issuing Service Orders for DataRaker Issues

Oracle Utilities Meter Data Management now supports the receipt of business flags to identify circumstances of a service point as identified by other edge applications. More specifically, any issues that are identified through DataRaker advanced analytics can be ingested into the system and associated to the appropriate service point as a business flag. These business flags can be represented in two ways:

- Service Point Business Flags provide informational details about the happenings at a service point. These can be configured to require manual investigation.
- Service Point Monitor Business Flags provide the ability to automatically create a service issue monitor as a result of a business flag. If the monitor results in a service investigative order the result of the field work can then either confirm or reject the existence of the issue that triggered the creation of the business flag.

Service Issue Monitor Completion Criteria

The service issue monitor functionality has been enhanced to provide an evaluation of the outcome of the service investigative order it has created. The completion criteria can take the form of either:

- A field activity remark
- A script

The criteria will be evaluated and if the issue for which the investigative order was created was closed the service issue monitor will complete. If the criteria have not been met the service issue monitor can be highlighted for manual intervention to assess next steps (i.e. discard the service issue monitor or create another service issue monitor).

Bill Cycle Synchronization from CC&B

When Service Order Management is implemented, measurement cycles are maintained for Meter Data Management service point and will no longer exist for Customer Care and Billing service points. This becomes an issue during service agreement activation when the account's bill cycle is identified through its association to the service point's measurement cycle.

In this release, bill cycles in Customer Care and Billing and their schedules are now synchronized to Meter Data Management. In addition, measurement cycle and bill cycle relationship is also established in Meter Data Management. This relationship will be used to identify the bill cycle that will be assigned to an account during service agreement activation via a service call to Meter Data Management. A change to Meter Data Management service point's measurement cycle could also potentially trigger a change in the account's bill cycle. CC&B will be notified of this change via a service call staged from a new service point business object audit algorithm.

Multiple Time Zone Support Enhancements

Initial Measurement Data Aligning Meta-Data to Storage

In prior versions the meta-data for initial measurement date/times did not match the storage (i.e. data was stored in standard time without DST adjustments but the meta-data did not indicate this). With this version the meta-data now indicates that initial measurement date/times are stored in standard.

This change ensures that date/times with explicit time zone information (i.e. in xs:dateTime format with the UTC offset provided) will be handled in the most efficient way possible since the integration layer (XAI or IWS) will correctly convert them into the base time zone (i.e. the time zone defined on the installation options - framework) in standard. Previously they would have been converted into the base time zone in legal time (i.e. adjusted for DST) and required an additional conversion into the base time zone in standard.

Important Note: It is important that service providers are appropriately configured to indicate the date/time format being used in initial measurement imports. For example, if they use xs:dateTime with a UTC offset (e.g. 2016-11-23T11:00:00-05:00) then the IMD Import Date/Time Format field should be set to "With Time Zone."

Support for xs:dateTime in Master Data Sync

In prior versions master data synchronization required date/times to be in the OUAF format (YYYY-MM-DD-HH.MI.SS). An enhancement has been made to support xs:dateTime so that date/times can be sent with explicit time zone information. This provides more flexibility in how dates can be imported via synchronization. Any date/time received in xs:dateTime format with time zone information provided will be converted, as appropriate, into the base time zone.

Important Note: if any date/times are being received in the "custom elements" element within the synchronization object it will require customer modification effort to handle the xs:dateTime to OUAF format conversion.

Time Zone on Facility

The facility maintenance object was enhanced to include a time zone. This time zone will not be validated against other time zones in the system. For example, a facility of a given time zone can be associated via network location to a service point in a different time zone.

Supporting Time Zones with Differing Shift Schedules

This enhancement ensures that the appropriate time zone is used when converting date/times from standard to legal (i.e. adjusted for DST) or legal to standard. Previously there were instances where a difference in DST shift schedules between a master data time zone and the base time zone might result in inappropriate shifting during DST. For example, if implementation had multiple US based time zones and one of those time zones was America/Phoenix which does not have adjustments for DST.

Technical Enhancements

Remove Master Data IDs from Admin Configuration Data

This enhancement eliminates the problem of special types of data that cannot easily be migrated to another environment, e.g., a measuring component for an "Average Usage Profile". This problem occurs because the source environment references a specific primary key that may not exist in the destination environment. This change includes the ability to reference master data (Measuring Component, Device, TOU Map) by an identifier rather than an environment specific primary key, thus allowing configuration data to be migrated without needing to also migrate the master data. This will help ease the task of migrating configuration data.

Deprecated Items

This section describes items no longer supported by this version of Oracle Utilities Meter Data Management:

- All Oracle 11g platforms
- Microsoft Internet Explorer 10
- Linux 5.8
- Solaris 10
- WebSphere
- Microsoft Server 2008 R2
- Microsoft Server 2012 for Production
- Java 6

Oracle Utilities Application Framework Release Notes

This section describes enhancements, system data details and deprecation notices in Oracle Utilities Application Framework version 4.3.0.3.0 including:

- [Oracle Utilities Application Framework Enhancements](#)
- [Oracle Utilities Application Framework System Data Details](#)
- [Oracle Utilities Application Framework Deprecation Notices](#)

Oracle Utilities Application Framework Enhancements

This section describes new and enhanced features in this release of Oracle Utilities Application Framework v4.3.0.3.0, including:

- [Configuration Tool Enhancements](#)
- [Integration Enhancements](#)
- [Reporting and Monitoring Enhancements](#)
- [Configuration Migration Assistant \(CMA\) Enhancements](#)
- [Miscellaneous Enhancements](#)

Configuration Tool Enhancements

This section provides information about enhancements to the system configuration tools.

Introduced Support for the Apache Groovy Language

In this release, the system includes support for writing plug-in scripts and service scripts using the Apache Groovy programming language.

This enhancement includes:

- A new step type of **Groovy Member** has been added which provides a free format text area where you can enter Groovy code.
- A script can incorporate Groovy code in one of following two ways:
 - If a scripting engine version is used, a script can include a combination of Groovy Member step types and other script step types. The Groovy Member steps form a Groovy class whose methods can be invoked from edit data steps within the main script body.
 - Plug In scripts can be written solely using Groovy. A new a script engine version value of Groovy has been added so that the script can indicate this to the framework. This avoids the need to convert the data to and from an XML structure when invoking a plug-in and provides the ability to write Groovy code that can work with the Java objects directly
 - For security, the product, Java and third party classes available for scripting in Groovy will be restricted to a published whitelist.
 - A system wide property setting governs whether or not Groovy may be used in scripting by your implementation

Refer to the topic 'Using Groovy within Scripts' in the 'Defining Script Options' chapter of the *Administration Guide* for more details of the functionality provided.

Integration Enhancements

This section provides information about integration oriented enhancements.

Introduced a SOAP Message Sender

In this release, a new message sender class has been added to support sending HTTP outbound messages that follow the SOAP format. In previous releases, it was required to use an XSL to add a SOAP envelope to a message to accomplish this. When configuring senders of this type, besides configuring the common HTTP context entries, the following additional context variables are available:

- SOAP Insert Time Stamp (Y/N)
- SOAP User Name Security Type. Values may be BASIC (HTTP Basic), TEXT (Username Token plain text) or DIGEST - Username Token Digest.
- SOAP Expiration Delay (in seconds)

Note that only the HTTP method of POST is supported.

Allow a Web Service to Define Content Type

By default, the real-time HTTP sender sets the HTTP Content-Type header to "text/xml". Some target applications require a different setting, such as "application/xml". In this release, a new sender context type has been added to allow you to configure the appropriate Content-Type for a given Real-time Sender.

Support a Web Service Catalogue

In this release, the product has introduced an adapter to streamline integration between your edge applications and Integration Cloud Service (ICS), which is an offering that serves as integration infrastructure for Oracle cloud solutions.

Reporting and Monitoring Enhancements

The following sections highlight enhancements to reporting functionality.

Ability to Capture Calculated Statistics

In this release, the product introduces functionality related to capturing statistics for a given business use case. The framework provides the following:

- A statistics control object, which is used to configure control information about whether statistics for a given use case are calculated periodically and if so, how often. Additionally it controls whether multiple historic snapshots are kept and for how long. The product provides a base business object which may be used for implementations to define their statistics control records.
- A statistics snapshot object, which is used to capture the calculated statistics. The product provides a "root" business object with an appropriate lifecycle. Edge products or implementations would extend this business object to define specific use cases. The specific business objects would include the appropriate elements in its schema that define the information being captured. And it would include an appropriate algorithm that is used to calculate the statistics data and populate the elements in the record.

The framework also provides user interface objects to view and maintain the statistics control and to view and maintain basic information captured in the statistics snapshot.

Refer to the 'Capturing Statistics' section in the 'Reporting and Monitoring Tools' chapter in the *Administration Guide* for details of the functionality provided and the framework system objects used to support it.

Refer to your specific edge product's release notes to determine if your product has provided support for specific statistics business use cases.

Ability to Define Performance Targets

In this release, the product provides functionality to define and categorize performance targets and link them to objects such as business services, zones and portals. This supports the calculation and display of the metrics against desired results.

In addition, the framework supplies out of the box support for creating batch process performance targets and the necessary components to configure these performance targets on a dashboard that groups related measures.

The batch process performance target functionality may be used a model for creating additional performance measures for use cases applicable to the edge products.

Refer to the 'Measuring Performance' section in the 'Reporting and Monitoring Tools' chapter in the *Administration Guides* for details of the functionality provided and the framework system objects used to support it.

Refer to your specific edge product's release notes to determine if your product has provided support for additional performance target business use cases.

Configuration Migration Assistant (CMA) Enhancements

The following sections highlight enhancements to CMA functionality. Note that the product is continuing to find ways to streamline the overall CMA process; reducing steps and increasing the ability to automate various steps.

Provide Additional Event Driven Batch Events

In this release several new algorithms have been provided to submit batch jobs that will automatically progress the lifecycle of the migration import.

- F1-MGOAP-SJ - Submit Migration Object Apply Monitor. This algorithm is supplied to be plugged into the **Apply Objects** status.
- F1-MGTAP-SJ - Submit Migration Transaction Monitor. This algorithm is supplied to be plugged into the **Apply Transactions** status.
- F1-MGTPR-SJ - Submit Migration Transaction Apply Monitor. This algorithm is supplied to be plugged into the **Retry Transactions** status.

In addition, the existing algorithm F1-MGOPR-SJ may optionally be plugged into the **Retry Objects** status to automatically progress the lifecycle.

In addition, the following algorithms have been provided to submit a batch job upon completion of a batch job:

- F1-MGDIM-NJ - Submit Migration Data Set Import Monitor. This algorithm is supplied to be plugged into the F1-MGTPR (Migration Transaction Monitor), F1-MGTAP (Migration Transaction Monitor - Apply) and F1-MGOAP (Migration Object Monitor - Apply) batch controls.
- F1-MGTPR-NJ - Submit Migration Transaction Monitor. This algorithm is supplied to be plugged into the F1-MGOPR (Migration Object Monitor) batch control.

Automatically Transition to Apply Transactions if Possible

In previous releases, the algorithm that checks to see if a Data Set can automatically transition from Apply Objects to Apply Transactions would only proceed if there were no objects in the Error Applying state. In this release, the algorithm has been changed to instead check for the number of errors. If the number is below a certain limit (configured as a parameter), the data set will transition to Apply Transactions. Note that this automatic transition only occurs if the Migration Data Set Import monitor process is run after the Migration Object Apply monitor process completes.

Ability to Indicate that No Approval is Needed

In this release, a new option has been added to the migration data set import: an Auto Apply flag. This is implemented to allow for use cases where the migration is repetitive and the users have tested it and feel that there is no need for the manual approval step. Setting this flag to Yes results in the Apply step kicking off automatically.

Adjust Retry Logic

A change has been made to the procedure for retrying the apply object and apply transaction processing. In previous releases:

- Clicking Retry Objects from Apply Objects or Retry Transactions from Apply Transactions transitioned the data set to the respective state temporarily but then returned the data set back to Apply Objects or Apply Transactions. This would increment a retry counter used to detect that a retry has been requested.
- Note that clicking Retry Objects from Apply Transactions would simply transition the data set to Apply Objects (incrementing the retry counter). Clicking Apply Transactions from Apply Objects would transition from to Apply Transactions (incrementing the counter). If any transactions were in error, the same steps described below were required.
- After clicking either Retry Objects or Retry Transactions, the user needed to submit two batch jobs. First submit the appropriate batch (Object Monitor or Transaction Monitor) to move the objects/transactions in error back to the status of Approved (for objects) or Ready to Apply (for transactions). (The retry counter would be checked to control this). Then submit the appropriate Apply batch job.

In this release, the Retry Objects and Retry Transactions states are not transitory. This is to help with the effort to automate steps. It also eliminated the need for a retry counter. The steps for retrying are as follows:

- Clicking Retry Objects from Apply Objects or Apply Transactions or clicking Retry Transactions from Apply Transactions transitions the data set to the appropriate Retry state. When a user clicks Apply Transactions from Apply Objects, the system will check whether or not there are transactions in error and if so, automatically transitions to Retry Transactions.
- At this point the appropriate batch job (Object Monitor or Transaction Monitor) to move objects/transactions in error back to the appropriate state (Approved or Ready to Apply, respectively) should be run. As described in [Provide Additional Event Driven Batch Events](#), each Retry state can be configured to automatically submit the appropriate batch job. Once the object or transaction monitor is finished moving the data in error back to the appropriate state, the Data Set should be transitioned from the Retry state back to the appropriate "Apply" state. This can be done with the Data Set Monitor batch job. As described in [Provide Additional Event Driven Batch Events](#), the Data Set Monitor can be automatically triggered by plugging in the appropriate batch control post processing event on the Object Monitor and Transaction Monitor.
- Once the data set is back in the appropriate Apply state, the corresponding Apply batch job should be run. As described in [Provide Additional Event Driven Batch Events](#), the Apply states can be configured to automatically kick off their corresponding batch jobs.

Ability to Migrate Individual Messages

In previous releases, CMA supported the ability to migrate a message category and all its messages. In this release, support now exists for migrating an individual message category (without its messages) and to migrate one or more specific messages within a category. Refer to [New/Updated Migration Plans/Migration Requests](#) for more information.

Miscellaneous Enhancements

This section describes miscellaneous enhancements.

Manage Thread Pool Worker from WebLogic

In this release, threadpoolworkers are now deployed as Weblogic managed servers so that they can be configured, started and stopped from Weblogic.

Support for Installation Options Maintenance through BO

In previous releases, the Installation Options maintenance object was marked to not support maintenance through a BO interaction.

In this release, that setting has changed and in addition, a base BO has been supplied to allow update of installation option configuration through this BO. This may be helpful if updates to the installation options need to be updated from an external system such as an automated testing system.

Note: This change was also implemented as a HOT fix to the 4.2.0.3.0 code line via Bug 22722115.

Populate Context Fields for MO and PK on Portal Based Pages

In this release, new portal context fields have been added for the maintenance object (MAINT_OBJ_CD) and the primary key (PK) field name and value. Up to 5 components are supported for the PK. The fields for the PK field name are PK_FLD_NAME1 through PK_FLD_NAME5. The fields for the PK value are PK_VALUE1 through PK_VALUE5.

The system will attempt to automatically populate the context for the current object being maintained. Refer to the description of business service F1-GetMoAndPrimeKeyFields for information about how the maintenance object is determined.

This functionality allows for portals to implement common functionality that is applicable across different maintenance objects.

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.

This section includes the following:

- [New/Updated Application Services](#)
- [New/Updated Migration Plans/Migration Requests](#)
- [Updated System Data Details](#)

New/Updated Application Services

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

Application Service	Description	Access Mode	Comments
F1PRFTGT	Performance Target Portal	Inquire	New application service for Performance Target functionality.
F1-PERFTGT	Performance Target MO	Add, Change, Delete, Inquire	New application service for Performance Target functionality.
F1-PERFTGTTY	Performance Target Type MO	Add, Change, Delete, Inquire	New application service for Performance Target functionality.
F1PRTGTY	Performance Target Type Portal	Inquire	New application service for Performance Target functionality.
F1-PERFTGTB	Batch Performance Target BO	Add, Change, Delete, Inquire, Active, Inactive, Generate Objects	New application service for Performance Target functionality.
F1SVCCAT	Web Service Catalog Portal	Inquire	New application service for the web service catalog .
F1STATS	Statistics Control Portal	Inquire	New application service for the statistics functionality.
F1-STATS	Statistics Control MO	Add, Change, Delete, Inquire	New application service for the statistics functionality.
F1STCSNP	Statistics Snapshot Portal	Inquire	New application service for the statistics functionality.
F1-STSSNPSHT	Statistics Snapshot MO	Add, Change, Delete, Inquire	New application service for the statistics functionality.

Application Service	Description	Access Mode	Comments
F1-STATSBOAS	Statistics Control BO	Add, Change, Delete, Inquire, Active, Capture, Inactive	New application service for the statistics functionality.
F1-SNPSHTBOAS	Statistics Snapshot Root BO	Add, Change, Complete, Delete, Inquire, Pending	New application service for the statistics functionality.
F1MESSAGECATEGORY	Message Category MO	Add, Change, Delete, Inquire	New application service for the message category MO introduced for Ability to Migrate Individual Messages .

New/Updated Migration Plans/Migration Requests

The following changes were implemented to support the [Ability to Migrate Individual Messages](#).

- New migration plan for specific messages: **F1-Message**.
- New migration plan for migrating a message category only (without its messages): **F1-MessageCategoryOnly**.

Note that the new migration plans have not been added to base delivered migration requests. That is because the delivered migration requests are intended for bulk migrations and as such the existing migration plan that includes message categories and its messages is appropriate for the migration request. The new migration plans are provided to support more targeted migrations for an implementation where a specific migration request will be used.

Updated System Data Details

This section highlights miscellaneous changes to system data configuration.

- The XAI Inbound Service maintenance object (**XAI SERVICE**) has been enhanced to refer to an FK Reference that properly displays an XAI Inbound Service when clicked. The previously configured FK Ref for the MO would navigate the user to the maintenance page but only launch the search.

Oracle Utilities Application Framework Deprecation Notices

This section provides information on functionality that has been removed or is no longer supported by Oracle Utilities Application Framework v4.3.0.3.0. This section includes the following:

- [System Data Deprecation](#)
- [Deprecated Functionality Planned For Future Releases](#)

System Data Deprecation

- The menus **CI_ADDCONTEXT** and **CI_GOTOCONTEXT** are not in use and have been removed in this release along with all related menu items and menu lines.

Deprecated Functionality Planned For Future Releases

- Environment Reference. This administrative maintenance object was related to ConfigLab and Archiving, which are no longer supported. In a future release, the following will be removed:
 - Migration Plan **F1-EnvironmentRef**. Note that no base migration request references this plan. Implementations should ensure that no custom migration request references this plan.
 - Business Object **F1-EnvironmentRefPhysicalBO**
 - Maintenance Object **ENV REF**
- 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 tables **F1_IWS_ANN_CHAR** and **F1_IWS_ANN_TYPE_CHAR** will be removed in a future release.

Support for Abbreviated Time Zone Names

The time zone page includes a drop down for defining a Time Zone Name. The list includes many three-digit 'abbreviated' time zone names. However, their use is deprecated because the same abbreviation is often used for multiple time zones (for example, 'CST' could be U.S. 'Central Standard Time' and 'China Standard Time'), and the Java platform can then only recognize one of them.

In a future release the Time Zone name drop down will be updated to remove the abbreviated values and upgrade any existing records to refer to an appropriate supported time zone name.

CMA Import Algorithm

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

BO Read in F1-MainProc when Pre-Processing Exists

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

In a subsequent release, to solve a UI Hints issue related to child BOs, a BO 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 BO Read is no longer necessary 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. Because of this situation, the BO Read is still performed as part of the processing of F1-MainProc.

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

Desupport of Embedded Installation

WebLogic 12.1.3 is currently supported for both embedded and native installations. In future releases of Oracle Utilities Application Framework, using a later version of WebLogic, for example 12.2.*, embedded installations will be not be supported. Only the native installation will be supported.

Known Issues in This Release

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.

Bug Number	Description
Initial Measurement Data	
18897388	When the IMD is created through 360 degree view, there will be one less normalized measurement as compared to the same submitted through XAI. 360 degree view should be adjusted to reflect the same number that XAI is generating.
25058686	VEE exceptions should be allowed to remain open after IMDs are eligible for archiving
25185349	Submitting IMDs without measuring component ID will result in error.
25186342	IMDs are generating 3 log entries due to algorithm "D1-CHK-EM"
25219634	IMD Seeder encounters NULL pointer exception when measuring component is not resolved. This issue can be fixed by installing patch 25219634 (available on My Oracle Support).
Usage Rules	
20640493	When data is being retrieved for usage rules we convert the date/time from wall time to standard time. When the date/time falls on the duplicate hour due to a daylight savings time transition we currently assume it is the second duplicate hour (i.e. the one outside shift period). In the previous release 2.1.0.3, logic was introduced to attempt to disambiguate the hour by using the usage subscription time zone to figure out if either duplicate hour was midnight of that time zone. That logic should be introduced for the usage rule measurement retrieval as well.
360 Degree View	
20861799	360 view zones under Measuring Component/Device/Service Point/Usage Subscription /Contact tab disappears after clicking Refresh. As a workaround, User needs to switch the tabs and click Refresh for the zones to be visible.
25183907	IMD hyperlinks in the Scalar Initial Measurement Overlay zone on the 360 MC Portal are not working.
25186945	TOU Map for display specified in MC type is not defaulted in 360° view zones "TOU By Day" and "TOU Overlay".
Data Migration	
22549745	Current Data Migration tool needs to be updated to accommodate new columns added in the Measurement Table.
Service Issue Monitor	
25186377	The completion criteria list on the Service Issue Monitor is not editable while in add mode.

Bug Number	Description
Measurement Reprocessing	
25164239/ 25138056	Reprocessing Activity - records error if they have an End Date time during daylight saving time

Oracle Utilities Application Framework Known Issues

This following table lists known issues in Oracle Utilities Application Framework at the time of this release.

Bug Number	Description
20811607	When using a FireFox browser, focus is not maintained in input boxes when invalid data is populated.
20579148	Multi query search entries are not retained when the user navigates back using history.
20576737	The Explorer filter icon does not display consistently in Fire Fox.

Bug Fixes Not Included in This Release

This section lists bug fixes released for previous versions of the product that have not been included in this release. These fixes are planned for a future date for the current release using the bug numbers listed in the tables below.

Original Version	Original Fix	Description	2.2.0 HOT
2.1.0.3	24927003	COPY OF 24927003 - CCB-MDM PREMISE INFORMATION ZONE - NEXT METER READ DATE FROM	25103189
2.1.0.3	24704559	COPY OF BUG 24704559 - DEVICE EXCEPTIONS EXPORT TO EXCEL DOES NOT EXPORT NUMBER	25082637