

# **Oracle Utilities Mobile Workforce Management**

Release Notes

Release 2.3.0.1.0

January 2017  
(Updated November 2017)

Oracle Utilities Mobile Workforce Management, Release Notes, Release 2.3.0.1.0

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# Preface

These release notes provide an overview of the enhancements, known issues, and other changes in this release.

## Audience

This guide is intended for anyone installing or using Oracle Utilities Mobile Workforce Management 2.3.0.1.

## Related Documents

For more information, refer to these Oracle documents:

### Installation, Configuration, and Release Notes

- *Oracle Utilities Mobile Workforce Management Release Notes*
- *Oracle Utilities Mobile Workforce Management Quick Install Guide*
- *Oracle Utilities Mobile Workforce Management Server Application Installation Guide*
- *Oracle Utilities Mobile Workforce Management DBA Guide*
- *Oracle Utilities Mobile Workforce Management Hybrid Mobile Application Installation and Deployment Guide*

### User Guides

- *Oracle Utilities Mobile Workforce Management Administrative User Guide*
- *Oracle Utilities Mobile Workforce Management Business User Guide*
- *Oracle Utilities Mobile Workforce Management Mobile Application User's Guide (Java-based)*
- *Oracle Utilities Mobile Workforce Management Hybrid Mobile Application User's Guide*
- *Oracle Utilities Mobile Workforce Management Hybrid Mobile Contractor Application User's Guide*

### Implementation and Development

- *Oracle Utilities Mobile Workforce Management Hybrid Mobile Application Implementation and Development Guide*

### Map Editor Installation and User Guides

- *Oracle Utilities Mobile Workforce Management Map Editor User's Guide*
- *Oracle Utilities Mobile Workforce Management Map Editor Installation Guide*

### Supplemental Documents

- *Oracle Utilities Mobile Workforce Management Server Administration Guide*
- *Oracle Utilities Mobile Workforce Management Security Guide*

## Abbreviations and Common Phrases

The following abbreviations are used throughout this and other documents provided with the product:

API	Application Programming Interface
CDI	Common Dispatching Interface
ETW	Effective Time Window
GPS	Geographic Positioning System
HTTPS	Hypertext Transfer Protocol Secure
MCP	Mobile Communications Platform
MDT	Mobile Data Terminal
MWM	Mobile Workforce Management
POU	Period of Unavailability
RPS	Resource Planning and Scheduling
SLA	Service Level Agreement
SMS	Short Message Services
UI	User Interface

The use of the word “Company” is used to describe the utility or field service organization that purchased the MWM product. The use of the word “Customer” is used to describe the end use customer of the utility or field service organization, or the entity receiving the service provided.

## Conventions

The following text conventions are used in this document:

Convention	Meaning
<b>boldface</b>	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.

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# Release Notes

This document provides general information about the Oracle Utilities Mobile Workforce Management 2.3.0.1 release including new functionality, known issues and other important information.

Prior to installing this release, it is important that you review all of the release notes and review your business processes as they relate to the new enhancements. There may be steps to complete or information to review before accepting the release. Refer to the quick install guide and installation guide for information regarding supported platforms and installation steps.

This guide includes the following:

- [Release Overview](#)
- [Integration Information](#)
- [New Functionality](#)
- [Known Issues](#)
- [End of Support Notices](#)
- [Oracle Utilities Application Framework Version 4.3.0.2 Release Notes](#)
- [Oracle Utilities Application Framework Version 4.3.0.3 Release Notes](#)

## Release Overview

The release includes all the components and features previously released in earlier service packs, plus a number of fixes tested and released together. Features introduced in this release are described in the [New Functionality](#) section.

- Refer to the *Quick Install Guide* for a full list of the media pack components and application components included with this release.
- Refer to the *Release Notes* available with previous service packs for functionality delivered with those versions.
- 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.

## Supported Upgrades

This release supports update paths as indicated below. Please refer to the Oracle Utilities Mobile Workforce Management *Installation Guide* for release v2.3.0.1 included in this release for complete information.

- **Initial Install:** If you are installing Oracle Utilities Mobile Workforce Management for the first time, you can install v2.3.0.1 directly.
- **Upgrade Install:** Oracle Utilities Mobile Workforce Management v2.3.0.1 supports the following upgrade paths:
  - Upgrading from version 2.3.0.0.0 to version 2.3.0.1
- **Oracle Utilities Application Framework:** Ensure that you have installed the latest version of Oracle Utilities Application Framework, v4.3.0.3, as indicated in the installation guide.

## Supported Platforms Notice

See the Supported Platforms section of the Oracle Utilities Mobile Workforce Management *Quick Install Guide* for release v2.3.0.1 included in this release for an updated list of supported platforms.

### Changes in Supported Platforms

The following platforms were newly certified in this release:

- Windows 2012 Server R2 (64-bit)

### Changes in Supported Mobile Platforms

The following mobile platforms and devices were newly certified in this release:

- Android 5.1
- Dell Inspiron 13 7000 Series
- iOS

## Database Changes

This release includes database changes. For more information about these changes, refer to the Oracle Utilities Mobile Workforce Management *Database Administrator's Guide*.

## Integration Information

The following integrations are supported in this version of Oracle Utilities Mobile Workforce Management:

- **Oracle Utilities Analytics, 2.5.0**  
Please note that the product name for Oracle Utilities Analytics 2.5.0 was formerly “Oracle Utilities Advanced Spatial and Operational Analytics” in previous versions.
- **Oracle Process Integration Pack for Oracle Utilities Field Work 3.1**  
The Process Integration Pack for Oracle Utilities Field Work supports the creation and synchronization of field work records between Oracle Utilities Customer Care and Billing 2.4 and 2.3, Oracle Utilities Work and Asset Management 1.9.1, and Oracle Utilities Mobile Workforce Management.
- **Oracle Process Integration Pack for Oracle Utilities Field Work 12.1**  
The Process Integration Pack for Oracle Utilities Field Work supports the creation and synchronization of field work records between Oracle Utilities Customer Care and Billing 2.5 and 2.4 and 2.3, Oracle Utilities Work and Asset Management/ Oracle

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Utilities Operational Device Management 2.1.0.0.0, and Oracle Utilities Mobile Workforce Management.

- Oracle Utilities Network Management System 1.12.0.2.0
- Oracle Service Order Management 2.1.0.3

Please refer to integration documentation on the Oracle Technology Network for more information.

## New Functionality

The following sections provide details on the new features implemented in this release with a summary of new user interface and functionality enhancements and some implementation and training information. While these notes provide high level configuration information, please refer to the online Help and User Guides for details regarding configuration and implementation of the enhancements.

- [Crew Shift Enhancements](#)
- [Activity Enhancements](#)
- [Mobile Application Enhancements](#)
- [Miscellaneous Enhancements](#)
- [New System Data Details](#)

## Crew Shift Enhancements

This section provides information about enhancements related to crew shifts.

### Crew Calendar Mass Update

In this release, a dispatcher can more easily make changes to a crew's shifts as well as create new shifts for an entire month. The option is available on the CDI Gantt as part of the crew shift menu actions. It is also included in the general crew content menu, making it anywhere a crew is displayed along with its content menu.

## Activity Enhancements

This section provides information about enhancements related to activities.

### Business Day Cutoff Time

A business day cutoff time is added to the definition of activity type. If entered, an activity that is created or received from the host after this business day cutoff time will not be scheduled for the current day; it's earliest effective time window will start at 00:00:01 on the following day. For example, for a utility shutoff order, the business day cutoff is noon. If a shutoff activity comes in from the host at 1:00 PM today, it's effective from date (day 1) would be 00:00:01 tomorrow.

## Mobile Application Enhancements

This section provides information about enhancements related to the mobile application.

### Mobile Component Editor

With this release, mobile components are implemented using a browser-based editor. Use the Mobile Component portal on the Admin menu to author custom mobile components as well as



extend base components. Refer to *Understanding Mobile Application Files* in the “Mobile Application” topic of the Administrative User Guide for more details of the functionality provided.

**Note.** The process of introducing custom mobile component plug-ins, services, and inbound messages, as well as custom extensions, to base JavaScript mobile component content was enhanced to no longer require the extra step of explicitly referencing these extensions as files in the custom product configuration mobile component. The application bundle packaging batch process no longer generates separate files for these extensions, and therefore any reference to such files is invalid and prevents the mobile application from being deployed. Please review your custom product configuration mobile component record and remove all references, if any, to these custom extension files.

## Language Packs

With this release, the labels used by the mobile application start up and bundle processing are defined as part of two new message categories: 11512 MCP Startup Labels and 11513 MCP Application Bundle Labels. For each language supported by the base product, Oracle translates the labels to that language, corresponding language pack files are generated by the Build Mobile Component Package (M1-BMCOM) batch process and a new mobile application runtime for that language is added to the App store.

## Right to Left Support

With this release the mobile application provides support for right-to-left languages.

## Miscellaneous Enhancements

This section provides information about general enhancements.

### Migration of Templates by Configuration Migration Assistant (CMA)

With this release, Configuration Migration Assistant (CMA) was enhanced to support the migration of common shift templates, POU templates, and mail templates. Corresponding new migration plans were added to the **Admin Data** migration request.

Note that migration of common shift templates does not include its subscriptions to crews. Only the common templates are copied over. In the same way, migration of POU templates does not include the invited crews, only the template information.

## New System Data Details

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

### New Migration Plans

The following changes were implemented to support the [Migration of Templates by Configuration Migration Assistant \(CMA\)](#).

- New migration plan for migrating a common shift weekly template and its daily templates (without its subscriptions): **M1-ShiftWeeklyTemplate**.
- New migration plan for migrating a POU template (without invited crews): **M1-TemplatePOU**.
- New migration plan for migrating a Mail template: **M1-MailTemplate**.

The **M1-Admin** migration request was enhanced to include new instructions to extract these templates.

## New Message Categories

The following new message categories were added to support mobile application [Language Packs](#).

- 11512 MCP Startup Labels
- 11513 MCP Application Bundle Labels

Review these labels and translate them to your preferred language when setting up the mobile application for another language.

## Known Issues

This section lists issues that were found but not resolved in both Oracle Utilities Mobile Workforce Management and Oracle Utilities Application Framework at the time of release.

### Oracle Utilities Mobile Workforce Management Known Issues

The following table lists known issues in Oracle Utilities Mobile Workforce Management version 2.3.0.1 at the time of release.

Bug Number	Description
22893025	On the mobile application, the geographic map functionality does not work for Cloud installations.
21528065	When all activities that belong to a dispatched depot task are recalled and removed from the run the depot task itself still remains on the device when it should be canceled.
24823046	There are a few minor issues related to right to left translations.
25436077	<p>The Hybrid mobile application is in the final stages of approval for distribution via the various app stores (iTunes, Google Play, Microsoft App Store). The 2.3.0 Hybrid mobile application is not forward-compatible and is not certified for use with 2.3.0 SP1. To avoid any potential risk of using the 2.3.0 MCP with the 2.3.0 SP1 server application, the download of the 2.3.0 SP1 mobile application bundle is blocked by default.</p> <p>In conjunction with the final app store approvals, Patch 25436077 will be released to enable the download of the mobile application bundle.</p>

## Oracle Utilities Application Framework Known Issues

The following table provides a list of known issues in Oracle Utilities Application Framework at the time of release.

Bug Number	Description
23093571	<p>Domain templates reference old class files.</p> <p>If your implementation uses the domain template to create a WebLogic domain, as a workaround to these, do the following:</p> <ol style="list-style-type: none"> <li>1. Edit bin/setDomainEnv.sh and change antlr, serializer and xalan jar versions to the following: <ul style="list-style-type: none"> <li>• antlr-2.7.7.jar</li> <li>• serializer-2.7.2.jar</li> <li>• xalan-2.7.2.jar</li> </ul> </li> <li>2. If using the demo keystores, you must also generate new keystores and copy them to:&lt;WL_HOME&gt;/user_projects/domains/SFIX1_domain/security</li> </ol> <p>The ouaf_demo_*.jks provided for native with the domain template does not work; it contains the CN=ouaf_demo_cert, it should be set to the host name.</p> <p>Console changes workaround (repeat for all [server]).</p> <ol style="list-style-type: none"> <li>1. Navigate to: Home &gt;Summary of Environment &gt;Summary of Servers &gt;[server]</li> <li>2. Click Keystores Tab.</li> <li>3. Set Keystores to: Demo Identity and Demo Trust</li> <li>4. Set Demo Identity Keystore to: &lt;WLS ROOT&gt;/user_projects/domains/SFIX1_domain/security/DemoIdentity.jks</li> <li>5. Set Demo Trust Keystore to: &lt;WLS ROOT&gt;/wlserver/server/lib/DemoTrust.jks</li> <li>6. Click the SSL Tab.</li> <li>7. Set Identity and Trust Locations to: Keystores</li> <li>8. Review Identity and Trust settings: <ul style="list-style-type: none"> <li>• Private Key Location: from Demo Identity Keystore</li> <li>• Private Key Alias: DemoIdentity</li> <li>• Certificate Location: from Demo Identity Keystore</li> <li>• Trusted Certificate Authorities: from Demo Trust Keystore and Java Standard Trust Keystore</li> </ul> </li> <li>9. Import certificate to ks/.ouaf_truststore by executing the following command: <pre>initialSetup.sh -i</pre> </li> </ol>

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Bug Number	Description
25382647	<p>A new property (<code>spl.runtime.customSQLSecurity</code>) was introduced to restrict custom SQLs from using database functions that are not explicitly specified in a white list.</p> <p>When not explicitly set, the value for this property is incorrectly assumed to be true, which enforces SQL security by default. The default value should be changed to <i>false</i>, allowing existing custom SQLs to work properly as they were prior to the upgrade.</p> <p>Until this issue is fixed, existing custom SQLs referencing functions that are not in the white list would fail to execute. If this is applicable to your implementation, setting the new property to false would resolve the issue.</p>

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## Deprecation Notices

This section describes items that are deprecated in this release or planned for deprecation in a future release, including:

### Legacy Mobile Application

This release supports both the Java-based legacy MCP and the new Hybrid MCP. Support for the legacy MCP will continue through the end of Premier Support for this release (March 2021), or until any of the underlying technologies of the legacy MCP go out of support, which we have no control over. Please start planning for this upcoming deprecation of the legacy MCP and convert your custom mobile applications, if any, onto the new Hybrid platform.

The connected MCP mode is only available using the old MCP and will be deprecated along with the legacy MCP.

## End of Support Notices

No platforms were deprecated in this release.

## Oracle Utilities Application Framework Version 4.3.0.2 Release Notes

This section describes enhancements, system data and deprecation notices in Oracle Utilities Application Framework version 4.3.0.2 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 v4.3.0.2, including:

- [System Wide Enhancements](#)
- [Configuration Tool Enhancements](#)
- [Batch Enhancements](#)
- [To Do Enhancements](#)
- [Integration Enhancements](#)
- [Configuration Migration Assistant \(CMA\) Enhancements](#)
- [Miscellaneous Enhancements](#)
- [ILM Enhancements](#)

### System Wide Enhancements

This section describes the system wide enhancements made in this release.

#### Main Menu Changes

This section describes the changes made to the **Main Menu**.

- The **Batch** submenu was renamed **Tools**.
- The **Health Check** portal introduced in the previous release has been moved from the **Admin/System** submenu to the **Menu/Tools** submenu.
- The **External Message** submenu was renamed **Integration**.

#### Admin Menu Changes

These changes are only applicable to implementations that use the Functional sort order configuration for the **Admin Menu**. The following changes have been made:

- The **Audit Query** menu entries have been moved from the **Audit Query** submenu to the **Database** submenu. The **Audit Query** submenu is no longer applicable in the framework. If your edge application includes menu entries in this submenu, then it will still be visible with the application specific menu entries. If your edge application does not include any entries, the submenu will no longer be visible. Note that in this case, the metadata for the **Audit Query** submenu will exist with the owner flag of CM to cater for the possibility that an implementation has added their own menu entries to this submenu.
- The **Currency** menu entry has been moved from the **Financial** submenu to the **General** submenu. The **Financial** submenu is no longer applicable in the framework. If your edge application includes menu entries in this submenu, then it will still be visible with the

application specific menu entries. If your edge application does not include any entries in the **Financial** submenu, the submenu will no longer be visible. Note that in this case, the metadata for the **Financial** submenu will exist with the owner flag of CM to cater for the possibility that an implementation has added their own menu entries to this submenu.

- The **Migration** submenu has been renamed **Implementation Tools**.  
The following menu entries have been moved to the **Implementation Tools** submenu:
  - **Application Viewer** (formerly found in the **Database** submenu)
  - **Bundle Export** (formerly found in the **System** submenu)
  - **Bundle Import** (formerly found in the **System** submenu)
  - **Revision Control** (formerly found in the **System** submenu)
- The **External Message** submenu has been renamed **Integration**
- The **Bucket Configuration** submenu has been renamed **Analytics Configuration**.
- The following menu entries have been moved to the **General** submenu:
  - **Characteristic Type** (formerly found in the **Database** submenu)
  - **Extendable Lookup** (formerly found in the **Database** submenu)
  - **Feature Configuration** (formerly found in the **System** submenu)
  - **Master Configuration** (formerly found in the **System** submenu)
  - **Status Reason** (formerly found in the **System** submenu)

### Installation Time Zone Differ from Operating System Time Zone

In previous releases, the time zone configured on the installation options had to be the operating system (OS) time zone. In this release, that rule has been relaxed, allowing for the installation time zone to differ from the OS time zone. In conjunction with this, a new application property has been added to indicate whether the DB session time zone should be synchronized to the time zone defined on the installation options (rather than the OS time zone). The property name is **ouaf.database.session.setInstallationTimeZone** and its default value is 'false'.

In addition, existing functionality for referring to the current date and current timestamp and standard Date/Time have been changed to use functions **@currentDate** and **@currentTimestamp**. The functions **CURRENT\_DATE**, **SYSDATE**, **CURRENT\_TIMESTAMP** and **SYSTIMESTAMP** should not be used. This ensures that the time used is the correct DB session time.

**Upgrade impact:** Implementations should review any custom SQL, for example in custom data explorer zones, to ensure that **@currentDate** and **@currentTimestamp** are used going forward.

### Cache Flushing Enhancements

In previous releases, the product provided commands to flush caches but depending on where the flush request is performed, not all caches may be included. For example, the **flushAll.jsp** command from the browser flushed the application cache for the web layer and the server layer, but it did not flush the web services cache or the batch thread pool worker cache.

Within WebLogic, there are multiple deployments each with their own cache: web layer, service layer and IWS (web services). In addition, if WebLogic clusters are implemented, there may be multiple nodes configured that all need their caches flushed.

In this release support has been introduced to perform a 'global' flush when requesting cache flushing.

- A JMS Topic will be used to broadcast the request of a flush. Each deployment in WebLogic includes a 'listener' to respond to requests for a flush. Refer to the *Server Administration Guide* for more information about how to configure this.

- Performing the flushAll.jsp command will now check for the JMS topic configuration and if available it will request a global flush. If not, it will perform a local flush as per previous functionality.
- By default, the various deployments in WebLogic (web, service and web services) will 'listen' for the global flush request.
- The thread pool workers may also be configured to 'listen' for the global flush request; however this is not the default behavior. If the thread pool workers are not configured to 'listen' to this request, their caches are refreshed by restarting the thread pool workers, by submitting the **F1-FLUSH** batch job. Also note that as per [automatic flushing](#), the system has been enhanced to support automatic flushing of the Hibernate cache for batch. However, the methods described here are still required for flushing the application caches.

Note that these enhancements only impact WebLogic and do not impact Websphere.

In addition, the **F1-FLUSH** batch job has been enhanced to flush cached data for all thread pool workers for all thread pools (not just the thread pool where the batch job was submitted).

### Enhanced EJB Container Security Support

For Oracle WebLogic implementations the product now uses additional facilities to secure JNDI access to EJB resources. This change will be transparent to implementations as it will be included in the upgrade templates. It reuses the JNDI lookups already available. In order to better secure JNDI resources exposed by the application, Weblogic JNDI resources will be configured to be require authentication (anonymous access is no longer granted) and not accept connections from remote systems. If there are cases where remote access may be required, customers will need to configure the following property to be true: -Dweblogic.jdbc.remoteEnabled.

It is also advised to not use the system user to access JNDI resources. This release advises the installers to user a different user such as ouafjndi rather than system. For convenience, the ouafjndi user has been added to the ldap for embedded installations.

### Enhanced JMS Security Support

For Oracle WebLogic implementations the product now uses additional facilities to secure JMS access for inbound and outbound communications. This change will be transparent to implementations as it will be included in the upgrade templates. It reuses the settings already populated for other components.

### Support for Service Identifier: Removal of SID

In line with the directions of Oracle Database 12c, JDBC connections should refer to the Service Identifier and not Oracle SID as SID is deprecated in Oracle 12c. Customers using Oracle SID should configure a Service Name for the database and alter the Database connection strings to use the service name.

### Importing Self-Signed Certificates

If you are using self-signed certificates and the Inbound Web Services (IWS) feature, then it is necessary to import these certificates into the OUAF truststore file.

Perform the following commands:

1. Start Weblogic.
2. Initialize a command shell and setup the environment by running the following:

#### Unix:

```
$SPLEBASE/bin/splenvron.sh -e $SPLENVIRON For example:  
/ouaf/TEST_ENVIRON1/bin/splenvron.sh -e TEST_ENVIRON1
```

#### Windows:

```
%SPLEBASE%\bin\splenvron.cmd -e %SPLENVIRON% For example:
D:\ouaf\TEST_ENVIRON1\bin\splenvron.cmd -e TEST_ENVIRON1
```

3. Execute the following script to generate all information:

**Unix:**

```
$SPLEBASE/bin/initialSetup.sh -i
```

**Windows:**

```
%SPLEBASE%\bin\ initialSetup.cmd -i
```

**Note:** This needs to be performed before deploying the IWS application.

## Configuration Tool Enhancements

In this release, the following enhancements have been made to the configuration tool functionality.

### Schema Editor Enhancements

The following enhancements have been made in the schema editor for defining elements for a business object:

#### Simplified Flattening a Characteristic/Characteristic List

When the schema editor was introduced, it included an element type for **Flattened Field**, providing the information needed to indicate which child table the element is mapped to along with the detail needed to uniquely define the flattened row.

Because a common use of flattening is to flatten an entry in a sequence based characteristic, in this release, a new schema editor element type **Characteristic** has been introduced to help simplify the steps needed to create an element that is flattening a characteristic. This can be thought of as a type of wizard for a specific type of **Flattened Field** element.

The **Characteristic** element may only be used if the maintenance object has at least one characteristic collection that is sequence based. If there is only one such characteristic collection on an MO the user only needs to define the element name and select the characteristic type. The system will generate the full syntax of the flattened field, including the 'row' definition. The appropriate mapField attribute will automatically be configured to the ADHOC\_CHAR\_VAL, CHAR\_VAL or CHAR\_VAL\_FK<sub>n</sub> based on the chosen characteristic type. In addition, for FK reference type characteristics, the fkRef attribute will be automatically generated.

If the MO has more than one sequence based characteristic collection (not a common situation) then after defining the element name, the user must select the appropriate characteristic collection prior to selecting the characteristic type.

Note that this is only available for the schema editor on Business Object because that is the only place where the maintenance object is known. For other schema editors on other pages, for example the Data Area schema editor, the **Flattened Field** element type must be selected to define this type of element.

Similarly, a new schema editor element type **Characteristic List** has been introduced to help simplify the steps needed to create a flattened list based on a characteristic, where the list includes the Sequence and the Characteristic Value. This can be thought of as a type of wizard for a specific type of **Flattened List** element. In this situation, the user must define the element name for the list element and the element name for the characteristic value element. The rest of the functionality related to selecting the characteristic type is similar to the **Characteristic** element type. The system will generate the full syntax of the flattened list including the 'rowFilter' definition. It will automatically create an element for the Sequence.



### Script Syntax Highlighter

In this release, enhancements have been made to the Edit Data editor pop-up text box on Script to aid in writing edit data step types.

- A mono-spaced font is used making it easier to read
- Line numbering has been added
- Pressing the tab key provides indentation
- Highlighting is used when typing to match brackets, single quotes and double quotes
- Colors are used to distinguish comments, keywords and values

In addition, the pop-up shown when clicking the **View Script as Text** link also includes the line numbering, the colors and the mono-spaced font.

### Ability to Round Based on Dynamic Scale in Scripting

In this release, a new API has been provided to allow for a monetary amount to be rounded based on a dynamic number of decimals. This is to support the fact that different currencies support a different number of decimals.

Example:

```
move "parm/amount" to $qnty;
```

```
move "currency/decimalPositions to $scale;
```

```
move "fn:round(xs:decimal($qnty) * math:exp10(xs:double($scale))) div
```

```
math:exp10(xs:double($scale))" to "parm/roundedAmount";
```

### Moved Tips Topics to Help

In this release, the topics visible in the Tips zones have been moved to online help. As part of this conversion, some of the tips verbiage has been changed and some of the topics have been rearranged. The following table highlights the pages that include a Tips dashboard zone and the change that was done.

Page	Old Link Verbiage	New Link Verbiage	Comments
Several pages	Valid schema attributes and node names	View advanced schema topics	BO, BS, DA, UI Map and Script all had a link to 'Valid schema attributes and node names'. This topic included both Schema syntax details and UI Hint syntax details. The online help has two separate topics for Schema syntax and UI Hint syntax. As a result, the tips link will bring the reader to a parent topic called <b>Advanced Schema Topics</b> where the reader can choose to view the schema syntax or the UI hint syntax.
	Valid schema attributes and node names	View advanced schema topics	See comments in the first row.
Business Object	View a sample schema	No new equivalent	The product includes many base schemas that may be viewed for samples

Page	Old Link Verbiage	New Link Verbiage	Comments
Business Service	Valid schema attributes and node names	View advanced schema topics	See comments in the first row
	View a sample schema	No new equivalent	The product includes many base schemas that may be viewed for samples
	View examples of business services	View common business services	This topic has not been carried over as is. Only the 'Miscellaneous Useful Services' has been included with only framework owned business services included
Data Area	Valid schema attributes and node names	View advanced schema topics	See comments in the first row
	View a sample schema	No new equivalent	See comments in the first row
Script	View a list of edit data step type commands	View edit data step type commands View script engine version 2 notes	The existing tips topic included a section with 'script engine version 2 notes'. This topic has been split out so there are now two separate links.
	Valid schema attributes and node names	View advanced schema topics	See comments in the first row
UI Map	Valid HTML attributes and supported Javascript functions	Valid HTML attributes and supported Javascript functions	Tips topic has been converted as is
	Standard HTML and CSS class styles	Standard HTML and CSS class styles	Tips topic has been converted as is
	Valid schema attributes and node names	View advanced schema topics	See comments in the first row

Page	Old Link Verbiage	New Link Verbiage	Comments
	View a list of explorer column mnemonics	View SQL column parameter mnemonics	Adjusted the verbiage
	View explorer configuration samples	View SQL statement valid keywords View pagination configuration samples	This topic has not been carried over as is. The samples are not included because there are many base product zones that may be viewed for samples. The supported SQL keywords are included in their own topic. In addition, the pagination configuration has its own topic.
Zone		View zone action parameter mnemonics View user filter parameter mnemonics View hidden filter parameter mnemonics View multi-select action parameter mnemonics	New links have been included to view detailed configuration for various parameters including Zone Action, User Filter, Hidden Filter and Multi-Select Action.

### Support for Processing BO / MO Plug-ins via Batch Monitor

By default, when a record is processed by a business object monitor batch process, the BO post processing and audit algorithms and the MO audit algorithms are not executed. In this release, the system has been enhanced to allow for an algorithm to indicate that the BO and MO algorithms should be executed by the batch monitor. The Enter, Exit and Monitor plug-in spots for the BO status have been enhanced to include a new Boolean switch called 'force post processing'. Any algorithm may set this to true to cause the algorithms to execute. The default setting is false ensuring backward compatibility.

## Batch Enhancements

In this release, the following enhancements have been made to batch functionality.

### Integration with Oracle Scheduler

The Oracle Database includes an enterprise wide scheduler to simplify the scheduling of background processes. The scheduler is implemented by the DBMS\_SCHEDULER package. The product provides an integration with the Oracle Scheduler to facilitate scheduling background processes shipped with the product.

Refer to the *Server Administration Guide* for more information. In addition, a white paper, Oracle Scheduler Integration provides implementation advice and guidelines.

### Plug-in Driven Batch Processes

In this release two new batch processes have been introduced to support invoking plug-in algorithms for the logic that differs from one batch process to another: the logic to select the records to process and the logic to process the records. The following points highlight more information about the functionality:

- A new batch process has been provided to perform adhoc processing where some records are selected based on algorithm logic and each record is processed based on algorithm logic.
- A new batch process to be able to create an extract file. It is similar to the perform adhoc processing batch process and calls the same algorithm plug-in spots to select and process the

records. In addition, it includes parameters and logic to support writing a fixed position extract file, a CSV file or an XML file.

- A new plug-in spot has been introduced to the Batch Control called Select Records. Algorithms plugged into this spot supply an SQL that the batch process should execute to select the records that should be included in the processing. The algorithm may also supply bind variables to be substituted into the SQL when executed. Note that the product provides a base algorithm type for this plug-in spot that simply defines a parameter for the SQL. It may be used by any custom batch process where the SQL does not rely on any special bind variables that must be determined. Simply create an algorithm for the algorithm type and provide the appropriate SQL. Refer to the algorithm type Select Records by Predefined Query (**F1-PDB-SR**) for more information.
- A new plug-in spot has been introduced to the Batch Control called Process Record. This algorithm is called for each record selected for the process. For the adhoc processing batch process, algorithms plugged into this spot are responsible for doing the work for each record based on the desired logic. For the extract batch process, algorithms plugged into this spot are responsible for returning the data that should be written to the file in one or more XML instances along with the schema name(s) that describes the XML instance(s). For XML output format, the batch process will write the XML instance data as returned by the plug-in. For fixed position or CSV output format, the batch process will convert the XML instance data to the appropriate format and add it to the file.

The product provides a template batch control record for each of the plug-in driven batch processes that include a detailed description of the logic along with the standard parameters supported. If an implementation would like to introduce a custom batch process, after creating appropriate Select Records and Process Record algorithms, the appropriate template batch control may be duplicated to support the custom algorithms. Refer to the detailed description and parameter descriptions for the batch controls Plug-in Driven Generic Template (**F1-PDBG**) and Plug-in Driven Extract Template (**F1-PDBEX**).

### Event Driven Batch Process Triggering (via BO State Transition)

In this release a new BO Enter algorithm type (**F1-SCHEDJOB**) has been provided to create an entry in the Batch Job Submission table for a batch control provided as a parameter. This allows for a batch job to be 'event driven'.

An algorithm may be created for this algorithm type for any batch job that should be triggered when a record enters a given BO state. It does not allow for any user provided parameters but rather relies on the default values defined on the batch control.

In addition, the product provides base algorithms for various CMA batch controls. Refer to [Algorithms Provided for Event Driven Batch Submission for Various Steps](#) for more information.

### New Post-Processing Plug-in Spot

In this release a new plug-in spot has been introduced for batch programs: Post-Processing. If a given batch control references a post-processing algorithm, the algorithm is executed after all the threads for a given batch run are completed.

Algorithms for this plug-in spot receive the batch control and run number for the current batch job, in case the statistics of the current batch job are useful for the algorithm logic.

The product also provides a base algorithm type (**F1-NEXTJOB**) that submits a new batch job for a batch control defined as a parameter. This is helpful for use cases where multiple batch processes should be run in sequence and where the batch jobs are not configured as timed or are part of a scheduler.

### Ability to Download Batch Logs

In previous releases if a user wished to review the log files created by a batch run, it was necessary to find the server location where the logs are stored to view the information.

In this release, the Batch Run Tree page, which displays information about a batch run, provides links to download the log files for each thread to save or view locally. Please note the following information about this functionality:

- The location of the log files is defined in the application properties file and in addition must be defined for each thread pool worker.
- Separate **Download** hyperlinks are shown for the 'stdout' log and the 'stderr' log, if the logs exist.
- If multiple threads are used for the batch run, separate log files exist for each thread, if applicable. The **Download** hyperlinks are visible at the thread detail level.
- The name associated with the log file(s) is captured for each thread in the Batch Thread table. The **Download** hyperlinks are only shown if there is a log file name captured on the Batch Thread and this log file is still available in the log directory. Note that this also means that the ability to download will only be available for batch processes run after upgrading to this release as batch processes run prior to the upgrade will not have the file name stamped on the Batch Thread.
- Users must be given explicit security access to be able to download the files. The links are only visible if the user has the appropriate access. The required access is the Download access mode on the Batch Run Tree application service.

### Automatic Flushing of the Thread Pool Worker Cache

In previous releases, the cache used by batch processes could only be refreshed by restarting the thread pool workers or by running **F1-FLUSH**.

As described in [Cache Flushing Enhancements](#), the thread pool workers can also be configured to listen to a global flush request.

In this release the system is configured to automatically flush the Hibernate (sometimes referred to as the L2 cache) cache periodically. An implementation may turn it off using a properties setting **com.ouaf.batch.disableAutoFlush=true**. The default number of seconds between flushes is 60. An implementation may override that value using a different properties setting: **com.ouaf.batch.flushIntervalInSeconds=nn** (where nn is the desired number of seconds). Note that this automatic flushing only covers the Hibernate cache. Batch processes may also access server level caches (also referred to as application caches).

### Support for Paging in LDAP Import

It is possible that an LDAP server has a maximum number of objects that a query can return. For implementations with a large number of users that may exceed that limit, the LDAP Import batch process has been enhanced to support multiple calls to the LDAP server to retrieve user information in pages. A new parameter called **LDAP Query Page Size** has been added to the LDAP Import batch control **F1-LDAP**. Configure a value for this parameter to indicate that multiple paged searches should be performed with each call retrieving the indicated number of objects.

### New Purge Batch Category

In this release a new batch category value has been added: **Purge**. It may be used to identify batch controls that are related to purging records.

As part of this change the To Do Purge (**F1-TDPG**) and the Notification Download Purge (**F1-NDPUR**) batch controls have been updated to refer to the new Purge value.

## To Do Enhancements

This section describes To Do related enhancements.

### Enhanced Logic for To Do Creation Plug-in

In previous releases, the product provided a BO Enter plug-in to create a To Do Entry allowing for configurable parameters to control aspects of the To Do creation. In this release, the algorithm has been enhanced to allow for information to be defined on the related type record for the object. This allows for one BO to be configured for a master / transactional object with one algorithm but different 'type' records may be used that configure different settings for the To Do creation.

- **To Do Type** - Previously, the To Do Type had to be referenced as a parameter on the algorithm. In this release, a parameter has been enabled to reference an element name for the To Do Type on the related type. If populated, the algorithm first looks for an element on the object's 'type' record. If one is found that is used. Otherwise, the To Do Type defined as an algorithm parameter is used.
- **To Do Role** - Similarly, a parameter has been enabled to reference an element name for the To Do Role. It follows similar rules to the To Do Type. Note that the algorithm looks for the To Do Type and To Do Role independently of each other. In other words, the algorithm does not expect to find the To Do Role populated in the same place as the To Do Type.
- **Retry Frequency** - Previously, the Retry Frequency could be defined as a parameter on the algorithm or as an option on the BO. In this release, a new parameter has been defined allowing for the retry frequency to be defined on an element for the related 'type' object.

Refer to the detailed description of the algorithm type F1-IDCREATE for more information.

## Integration Enhancements

This section provides information about integration oriented enhancements.

### SSLv3 Support Retirement and TLS 1.2 Support

In alignment with industry trends the use of SSLv3 will not be supported for inbound and outbound communications. An error message will be generated when attempting to use this protocol, denying its use. Customers using this protocol should shift to an alternative protocol including TLS 1.2. Refer to the Oracle WebLogic and IBM WebSphere documentation for details of altering the protocols used.

### JSON Support for Outbound Messages

In this release, support has been provided for sending messages that natively support the JSON format (JavaScript Object Notation) for outbound messages.

A new message sender class has been provided for handling JSON based web services. It is responsible for converting the message into JSON format prior to connecting with the external web service. When configuring a JSON communication sender on the External System / Outbound Message configuration, you may define one of three options for converting the XML Source (from the outbound message BO) to JSON (and subsequently converting a response received):

- Use a standard API (using a Jettison library) to do the conversion of the XML to JSON. In this case an XSL may optionally be applied prior to calling the API. The product also supports applying an XSL to the response after the JSON to XML conversion is performed.
- Simply apply an XSL to the XML source that will result in a valid JSON formatted message. In this case the standard API is used to transform a response back to XML.
- Use a base delivered conversion from XML to JSON that know how to convert some framework specific element types to JSON. Note that for this option, the system also

supports converting from the outbound message schema to a different schema (defined using a data area) via XSL before doing the base JSON conversion. In addition, the JSON response is converted back to XML using this method. As with the request, the conversion may be from JSON to the business object's response schema or to an interim schema (defined using a data area) which may then be transformed via XSL to the BO's response schema. If no response schema is defined, then the standard API is used to transform the response to XML.

### **Business Flag Introduced**

It is possible that information detected in one product may be useful or even critical to share with another product. The framework provides functionality for receiving information from an external system that acts as a type of flag or alert that may need investigation. This allows any system to store detected business flags in a common way and share that information with one or more other systems.

The following is an example of a use case for business flags. Imagine that DataRaker highlights potential theft of service at a certain location. That product may initiate a business flag alert to various products owned by the implementation with a recognized standard name for the business flag, such as "TAMPER".

- If Oracle Utilities Meter Data Management receives this business flag, it may initiate a service investigation monitor.
- If Oracle Utilities Meter Workflow Management receives this business flag, it may initiate a service investigation activity.
- If Oracle Utilities Customer Care and Billing receives this business flag, it may initiate a hold on billing for that location.

Note that the framework product supplies basic functionality to support logic that is common to all edge applications that implement business flag functionality. However it is the individual edge applications that supply more specific functionality (business objects and algorithms) for specific use cases, if applicable.

Refer to the Business Flag section in the Integration chapter in the framework administration guide as well as the related section in your specific edge application's administration guide for details about what is supported in your product for this functionality.

**Note:** Business Flag has been enabled for ILM. A standard ILM crawler batch control has been provided for this maintenance object and the MO is configured with the standard ILM eligibility algorithm.

### **JMS Queue Message Browser**

In this release, a new portal has been introduced that can view messages in a JMS Queue. In order to connect to the JMS Queue, Message Senders must be defined for each queue so that the credentials (user name / password) are defined.

Users select the Message Sender / JMS Queue to view and a list of up to 300 messages is displayed. A message selector may be used to limit the results to messages that satisfy the message selector.

The details of a single message may be viewed. In addition, the portal supports selecting one or more messages to delete from the queue.

### **Several JMS Related Objects Renamed**

In this release, the following objects have been renamed:

- XAI JMS Connection has been renamed to JMS Connection.
- XAI JMS Queue has been renamed to JMS Queue.
- XAI JMS Topic has been renamed to JMS Topic.

- XAI JNDI Server has been renamed to JNDI Server.

These objects are not specific to the legacy XAI functionality. They are applicable for external messaging and integration so their names have been updated accordingly.

In addition, the maintenance pages for these objects have been moved from the **Admin >XAI** menu to the **Admin >Integration** menu.

### Support for XML Message Substitution in HTTP URL

In this release, the system supports entering `@XMLMSG@` in the URL of an HTTP message sender. This is supported for GET calls where an XSL has been applied that converts the XML into HTTP GET parameters.

For example, if the XML message is as follows:

```
<myRequest>
  <firstName>Mary</firstName>
  <lastName>Smith</lastName>
</myRequest>
```

An XSL may be used to convert the XML to the following:

**firstName=Mary&lastName=Smith.**

Then the following URL: `http://example.com/myService?@XMLMSG@` would be converted to this to execute the HTTP GET call: `http://example.com/myService?firstName=Mary&lastName=Smith`

### Miscellaneous Updates for Inbound Web Service

Several enhancements have been made to inbound web service maintenance and deployment functionality.

#### IWS Deployment Default Security

IWS has been enhanced to improve the default security of deployed Inbound Web Services. Prior to this release, installations were required to manually add a security policy for each web service even if it was supplied as part of their product. If a web service did not have a security policy defined the container default would be used. This was container dependent but was typically HTTP Basic over HTTP. This is not an acceptable level of security so a mechanism was defined to create a global default security policy even if an environment has taken no steps to customize the security policy for individual IWS.

The default security policy for IWS is `@Policy(uri="policy:Wssp1.2-2007-Https-BasicAuth.xml", attachToWsd=true)`. This policy requires HTTP Basic Authentication over HTTPS and a WS-Security timestamp.

An environment does not need to do any further configuration if this is acceptable. However, if a different security policy is desired, a new feature configuration option may be defined using the option type **Default security policy** in the **External Messages** feature type.

An individual inbound web service may continue to define a specific security policy by defining an Annotation referencing the base Policy annotation type (**F1POLICY**). Note that the **F1-USERNAM** annotation has been removed as it defined a security policy that sent clear text passwords. As part of the upgrade, any existing Inbound Web Service that refers to this annotation will be updated to remove the reference.

In addition, the system supports configuration to indicate that no `@Policy()` should be generated. This may be used when policy management is configured via the admin console. To turn off the policy generation for all services, configure `<none>` in the **Default security policy** feature configuration option. To turn off the policy generation for a particular IWS record, configure a web service annotation that defines `<none>` as its URI.



After determining and configuring the appropriate security policy, Implementations will need to redeploy their inbound web services. If using the default security policy, the following changes are needed:

- Use an https URL to invoke any inbound web service
- Use HTTP Basic credentials
- Supply a WS-Security Timestamp in the SOAP header to prevent replay attacks

### **IWS Services Secured by Default**

Operations for an IWS refer to a business object (BO), business service (BS) or service script (SS). A business object is typically delivered with a specific security application service. However, since most business services and service scripts are used internally, they are typically delivered with a default application service. In this release, any business service or service script that is configured in an operation row for an Inbound Web Service has been updated to refer to a specific security application service. This allows an implementation to explicitly secure which user groups may access those underlying services via a web service call.

The following application services have been introduced for existing business services that are linked to inbound web services:

- F1-EMAILSVC (for business service F1-EmailService)
- F1-SMSRECEIVESVC (for business service F1-SmsReceive)
- F1-UPDATESYNCSVC (for business service F1-UpdateSyncRequest)
- F1-GEOCODESVC (for business service F1-GeocodeAddress)
- F1-HEALTHCHECKSVC (for business service F1-HealthCheck)

**Upgrade Note:** Upgrading clients will receive the new application services but the business services listed will not be updated to refer to the new application services because that column is customizable. Existing implementations that wish to take advantage of the new application services must update the business service to refer to the new application service and configure the user groups to have appropriate access the application service as per business rules.

### **Deployment Only Available Online in Development Regions**

In this release, the **Deploy** button on the **Inbound Web Service Deployment** portal will only be allowed when the system is configured to be a 'development' region.

### **New Search by Schema Type / Schema Name**

In this release, a new search option has been added to inbound web service allowing the user search for inbound web services that refer to a specific schema (business object, business service or service script schema).

In addition, a new context menu entry has been added for Business Object, Business Service and Service Script to **Go To Inbound Web Service**, which navigates to the above search option.

### **Ability to View the WSDL for an Inbound Web Service**

In this release, the Inbound Web Service Deployment page has been enhanced to include a new column for each deployed web service or deployed XAI inbound service to be able to view its WSDL.

### **Inbound Web Services Visible in Schema Tree**

The Schema Tree visible on the Schema tabs on Business Object, Business Service and Service Script now include a node for Inbound Web Services linked to the record displayed (if applicable).

### **Support Characteristic Mapping for Analytics Integration**

Some products include integration with Oracle Utilities Analytics that include extract / transformation and load (ETL) processes to extract data from the source system (edge product)

into the analytics product. In previous releases, if an implementation wished to extend the mapping to extract data captured in characteristics tables in the source system for population into user defined fields on dimension, this was possible via additional SQL statements during the extract process.

In this release, the product has provided configuration objects to support mapping one or more characteristic values to a User Defined Dimension in a specific table in the analytics product. The analytics tools uses this configuration during the ETL process to extract the appropriate data. The framework supplies the following configuration objects:

- A new extendable lookup BO: Allowed Target Dimension (**F1-AlwTgtDmn**). This lookup allows for a source system to define the valid target dimension and columns in the analytics product that may map to a characteristic. In addition, it defines the valid source characteristic entity. Note that the framework does not supply any base lookup values for this lookup. However, your specific application may provide base records for objects whose data is extracted for analytics.
- A new maintenance object ETL Mapping Control (**F1-ETLMPCTRL**) to capture the mapping definitions. Along with this, a base BO for ETL Mapping Control (**F1-ETLMapCtrl**) is supplied. System administrators may use the new **ETL Mapping Control** portal (found on the **Admin >Analytics Configuration** menu) to define the desired mapping of characteristic values.

**Note:** Refer to the **Integration >Analytics Configuration** chapter of the *Server Administration Guide* in the online help for more information.

## 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.

### Language Oriented Migration Configuration Removed

In previous releases, the system supplied a migration plan for copying rows in the Language table and implemented a special migration request to only bring the language rows across in an isolated migration. The idea was that if language rows are copied in a migration mixed in with other admin objects with language rows, all objects would have a dependency with the language row and would all be grouped into the same transaction.

In this release, the product is changing its recommendation for language and CMA and does not believe that a new language row should be introduced to a new region using CMA. Supporting an additional language in an implementation requires a major step of translating all base product supplied labels, messages and other user-facing text (system data). An implementation may use a language pack provided by the product to get the necessary translated strings. Alternatively, the implementation may be managing its own translation of system data, which is independent of using CMA. In either case, the expectation is that the translation of the system data is applied for each region at an implementation site following the procedures documented in the online help for supporting additional languages.

In this release, the migration plan **F1-Language** and the migration request **F1-Languages** have been deprecated.

**Note:** For upgrading clients, above records have not been removed, but rather the owner flag has been updated to CM so that other records that may be referencing either of these records are not impacted.

### Caching Requirements Automatically Handled

In previous releases, an important caching step that was required to be performed as part of exporting and importing migration data sets are now performed automatically in this release. The batch jobs used in the CMA process were required to reference a thread pool worker with batch

caching (L2 caching) turned off. In this release, various algorithms used in the CMA lifecycle to retrieve, compare and update data perform a step to turn off the batch caching for their session prior to performing their logic. As a result, the Thread Pool Name is no longer a required parameter in the various batch controls. In addition, there is no need to define a special thread pool worker with batch caching turned off.

### Algorithms Provided for Event Driven Batch Submission for Various Steps

There are many steps involved to progress a migration data set through its full lifecycle. Several of the steps require submission of a batch job. The online help documentation highlights that the batch jobs must be submitted manually or alternatively, defined as Timed or defined in a scheduler.

Because CMA is not an ongoing activity, but rather an activity that happens ad-hoc or on a more irregular schedule, in this release a new option has been provided for some of the batch jobs, to allow them to be submitted by an 'event' (namely transitioning the appropriate BO to state) that should trigger the job.

As described in [Event Driven Batch Job](#), in this release a new algorithm type supports submitting a batch job when entering a state. In addition, base algorithms have been provided to submit the following CMA related batch controls:

- **F1-MGDIM** - Migration Data Set Import Monitor (algorithm **F1-MGDIM-SJ**)
- **F1-MGDPR** - Migration Data Set Export Monitor (algorithm **F1-MGDPR-SJ**)
- **F1-MGOPR** - Migration Object Monitor (algorithm **F1-MGOPR-SJ**)

The product does not however release the CMA related business objects with these algorithms already plugged in. Rather, the users that are performing the migration, if they decide to use this technique for submitting the appropriate batch jobs, should configure them on the appropriate business objects. Refer to the online user documentation for more information.

### Change to the Method for Adjusting Imported Data

In previous releases, CMA supplied an import algorithm meant to allow implementations to adjust imported data. The implementation of the plug-in spot made it challenging to create plug-ins as it didn't allow for easily interacting with the record using a BO. This made it difficult to use a plug-in script as the plug-in type. In addition, it made it difficult to update elements in an XML column.

In this release, the product supplies a new plug-in spot for the import process: **Pre-compare**. The pre-compare algorithm is plugged in on the primary instruction of a migration plan and is executed during the import process for each migration object that references that migration plan. It is called prior to comparing the record's source and target data.

Algorithms for this plug-in spot receive the view of the source data and the target data using a BO schema (the physical BO). The plug-in can compare the source and target views of the data to make appropriate decisions. If any changes are made, they are reflected in the 'source' data captured in the migration object and the comparison of source to target uses the updated source. Note that if an algorithm wished to adjust data that is in an XML based column in the record, there are existing business services that allow you to convert the data from the physical BO to the 'logical' BO to update elements within the XML.

Note that it is possible to use the algorithm to reset the source data as a way of indicating that the record should not be imported. This is not expected to be used often because the expectation is that using appropriate selection criteria at export time should ensure that the only records exported are those that should be imported. However, this is supported if needed. For these situations, the migration object comparison step will transition the record to **Unchanged** and will use an object action value of **Canceled**. (Note that object action is a simple lookup value. The record is not transitioned to the Canceled BO status as to reserve that status for user initiated cancellations of the object or one of its parent records).

The product provides an algorithm for this plug-in spot for the Batch Control migration plan. It adjusts the Batch Run Number and other 'batch run' related fields in the source data such that it matches the value in the target data.

**Note.** The CMA import algorithm plug-in spot will be deprecated in a future release and the recommendation is to discontinue using it.

### Support for Admin Data with System Generated Keys

In previous releases, the CMA documentation indicates that it doesn't support migration of records with system generated keys. In fact the tool supports migrating these records. However, there was no logic in place to check that if a record in the target has the same key that it is in fact the same record. Because keys are generated, it's possible that the record in the target represents a different record.

In this release CMA has been enhanced with respect to system generated keys. To highlight the enhancements, an example using a 'common' attachment will be used to describe possible scenarios. Imagine an attachment for the standard rate codes exists in a source region with the key 123456789. The table below highlights possible situations at the target region and actions supported in CMA.

Scenario	Target Situation	Action	Comments
1	No matching record	Record can be added with key 123456789.	
2	Record exists with key 123456789 and logic confirms that it is also the 'standard rate codes' attachment.	Record can be updated.	
3	Record exists with key 123456789, but logic detects that it is not the 'standard rate codes' attachment.	Record is not updated. An error is issued.	The system cannot update this record because it is not the right attachment record.
4	The system detects that another attachment record exists for the 'standard rate codes' attachment with a different ID.	Record is not updated. An error is issued.	Assumption is that the record was created directly in the target or was copied from a different source.

As highlighted in the table, scenarios 3 and 4 are not currently supported. These use cases would require key mapping to keep track of the id from the source to the id in the target so that any other records from the source that reference this key as a foreign key would be updated as part of the migration. This functionality has not been provided.

Scenarios 1 and 2 above are supported and should cater for 95% of the use cases with some assumptions in place.

- The record has some other attributes that constitute a type of 'logical key' such that the MO can detect if the record being copied already exists and with which ID. In the example above, the attachment MO can review the attributes of the source record and determine if a record with the same logical attributes exist. If no and there is no existing attachment record with the same ID (representing different data), an attachment record is added with the ID from the source. If an attachment is found in the target for the same logical key with the same ID as the source, it is updated. If a record is found with a different ID than the source, an error is issued.

Note. Each MO that has a system generated key and contains admin data will need to provide its own method that CMA can call to check this information. If the method does not exist, CMA will update an existing record with the same ID. In the framework product, the Attachment MO has

been updated to look at the file name and the creation date. If your specific edge application has additional administrative MOs with system generated keys, verify with that documentation if there is support for checking logical keys.

- The product recommends that an implementation establishes a migration strategy such that administrative records with system generated keys are always created in the same region and always follow a standard migration path for promoting the data from this source region to other regions. Following this strategy, you would minimize or eliminate the possibility that a record for the same logical key is created in multiple places such that different IDs would be generated as described by scenario 4 above.

There is a special use case that is also considered as part of this enhancement. That is, that there are some MOs that contain a mixture of master or transaction data and administrative data. The Attachment is an example of this. The product supports Common attachments and Owned attachments. Owned attachments are records that are specific to its owner. The owner could be master or transaction data and its attachments are therefore considered master or transaction data. Common attachments on the other hand are considered administrative data. For these use cases, an implementation may follow the suggested strategy of only creating the administrative data in one region so that IDs for common attachments are not reused. However, it is reasonable and expected that owned attachments are being created in the target region and may receive a system generated key that matches the key of a common attachment from the source region.

To try to minimize this issue, the system includes a special method to be used by any MO that may contain administrative data mixed in with master or transaction data. This method generates the key of an administrative record with a zero (0) in the middle of the key and ensures that the keys for master and transaction data do not include a zero in this spot. In the framework, the Attachment MO has been updated to use this method. It means that going forward, common attachments will receive a key with a zero in the middle of the key and owned attachments will not.

**Note:** No data conversion is supplied for upgrading customers. It means that for customers with existing attachments the IDs for common attachments and owned attachments are not following any differentiating pattern. If you wish to migrate common attachments, it is possible that the target region has an existing attachment with the same key that may not be for the same logical record.

### Adjusted Access Mode for Retry Actions

The Migration Data Set Import BO includes user initiated actions for Retry Objects and Retry Transactions. In both cases, the access mode used on the BO was Change. In this release, the access mode of Retry Objects was changed to match the one used on the Apply Objects state (Migration Approved). The access mode of Retry Transactions was changed to match the one used on the Apply Transactions state (Apply).

## Miscellaneous Enhancements

This section describes miscellaneous enhancements.

### Ability to Restrict URL References

In this release, the system provides an ability to restrict the information that may be entered when configuring a URL.

- This validation is turned on using a properties file entry:  
**com.oracle.ouaf.urlValidator.enable=true**. For upgrade purposes, the default value is false.
- Implementations can configure a 'white list' of valid hosts/ports/protocols that may be referenced in various URL data entry points. This list is referenced in a new properties file entry: **com.oracle.ouaf.whitelist.file=<file location>**. When a user enters a URL value at both update time and run time, the URL is checked against this white list (if the validation property is 'true'). Note that a new validation API is provided to execute this validation.

- The following framework delivered functionality that captures a URL have been enhanced to execute the new URL validation API.
  - **Message Sender** - context entries for the context types: HTTP URL (1-9), SMTP Host name, HTTP Proxy Host, HTTP Proxy Port and JMS Provider.
  - **JNDI Server** - the Provider URL field.
  - **Web Service Adapter** - the WSDL URL and the URL fields. In addition, the WSDL source will be parsed to extract the service address from the document and validate the value.
  - **Feature Configuration** - Server URL for the SMS Send Configuration feature type.

**Note:** Your specific edge product may also include configuration objects that allow for the definition of a URL. Confirm with your specific product that the URL validation is in place.

**Potential implementation upgrade task:** If your implementation has introduced custom configuration objects that capture a URL and this URL validation is desired, then changes must be made to code to invoke the new URL validation API.

Note that the following entities are not recommended for use going forward but have also been updated to follow this validation pattern:

- XAI JDBC Connection - the JDBC URL and JNDI Data Source.

#### Minor Updates to Navigation Key Field Names

On the Navigation Key page, the field URL Location has been renamed **Navigation Key Type**. Also note that a new value has been added: **Help**. This is used by the product to distinguish help related navigation keys from other external navigation keys. Also note that the value **Override (External)** has been renamed **Override (Other)**. This value may be used to override either External navigation keys or Help navigation keys.

The field **URL Override** has been renamed **URL Component**.

#### Outbound Message Maintenance Object Updated to Determine BO

The Outbound Message maintenance object (**F1-OUTMSG**) is missing the configuration of the Determine BO algorithm. It means that if an implementation has algorithms configured on the Outbound Message business object (namely validation, post processing or audit algorithms), they are not getting executed.

In this release, the maintenance object has been updated to configure this algorithm correctly.

**Upgrade Note:** If your implementation has a business object for Outbound Message (defined on the Outbound Message Type) with BO algorithms configured, the algorithms will now execute when adding or updating an outbound message.

#### Checked Out Dashboard Zone Reorder

For development environments that configure revision control will notice that the Checked Out zone has been changed to sort by the maintenance object's description. In previous releases, the order was dictated by the maintenance object code (which is not visible).

#### Extendable Lookup Value List - Pagination and Filtering Added

When viewing extendable lookup information, you are first prompted to choose the BO for the lookup. Then you are taken to a portal that displays the list of all extendable lookup values for the selected BO at which point you may view, edit or remove values as needed.

In this release, to cater for extendable lookups that may have a large number of lookups values, the list zone has been enhanced to support pagination and includes an ability to filter the list by value or description.

### **Application Service - Application Security Zone Updates**

The Application Security zone on Application Service includes two zones to help review/update the user groups and users that have access to the application service. Both zones were updated to minimize some confusion:

- The zone User Groups with Access was changed to **User Groups Linked**. This is because the zone shows application services linked to the user group even if the link is expired. An expired link by default means that there is no access. The zone title was changed to make this clear. In addition, the user filter functionality for this zone was updated to only show user groups that the user has a current link to. If the user has an expired link to a user group, it is not shown in the results.
- The zone User Groups without Access was changed to **User Groups not Linked**. The zone title was changed to make it clear that this zone shows user groups that do not have any link to the application service. In addition, the user filter functionality for this zone was updated to only show user groups that the user has a current link to. If the user has an expired link to a user group, it is not shown in the results.

### **Table/Field Usage Flags Removed**

In this release, the Table Usage flag has been removed from the Table - Main user interface page and the Field Usage flag has been removed from the Table - Field user interface page. In addition, any validation referencing the fields has been removed.

Note that the columns remain in the respective database tables at this time. However there is no functionality related to them.

### **ECID Support**

The Execution Context ID (ECID) is a unique context id generated by the WebLogic server for every request that is sent to the server. This unique identifier correlates events or requests associated with the same transaction. This value is generated at the start of the request and is passed to subsequent layers. If this request contains a remote server call, the ECID value is passed as a header parameter to the remote server. This way administrator can track the end-to-end flow of a particular request across the application stack.

The following points highlight changes made in this release to support including the ECID in various diagnostic tools.

- The hibernate.properties file used for online transactions has been modified to use JDBC datasource instead of UCP connection pooling. Note that the use of UCP connection pooling is still supported and can be selected during installation of the product.
- The release scripts have been modified to provide an option to configure the diagnostic volume and enable the context. Note that by default the diagnostic volume is set to 'Low' and the context is not enabled.
- A new configurable property has been included in the spl.properties file called "ouaf.weblogic.enableDiagnostics". This provides an option to enable or disable the display of the ECID in log files and V\$SESSION table during online transactions. The value is set to 'false' by default.

### **ILM Enhancements**

- In previous releases, the To Do Entry table included an index for ILM Date, ILM Archive Switch and To Do Entry ID. This index was provided to aid the performance of the ILM crawler batch program. However, the decision is that the product will not release an index in base for ILM enabled MOs for the ILM crawler performance. Rather, as part of configuring

the database for ILM for a given MO, an index on ILM Date, ILM Archive Switch and PK field should be added.

- The database administrator guide has been updated with more information about defining this index when preparing an MO for ILM.
- The existing index for To Do Entry is no longer provided.
- The new [business flag](#) maintenance object has been enabled for ILM.

## 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 consists of the following:

- [New/Updated Application Services](#)
- [New/Updated Migration Plans/Migration Requests](#)
- [Updated System Data Details](#)
- [New/Updated XAI Inbound Services](#)
- [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
CILTBTRP	Batch Run Tree	Download	New access mode added for the new ability to <a href="#">download batch logs</a> .
F1JMSBRW	JMS Message Browser Portal	Inquire	New application service for JMS Queue Message Browser.
F1-BUSFLGTYP	Business Flag Type MO	Add, Change, Delete, Inquire	New application service for Business Flag functionality.
F1-BUSFLG	Business Flag MO	Add, Change, Delete, Inquire	New application service for Business Flag functionality.
F1BSFTYM	Business Flag Type Portal	Inquire	New application service for Business Flag functionality.
F1BSFLGQ	Business Flag Query Portal	Inquire	New application service for Business Flag functionality.
F1BSFLGM	Business Flag Portal	Inquire	New application service for Business Flag functionality.
F1-BUSFLGSYN	Business Flag Sync Driver Script	Execute	New application service for the new script exposed as an Inbound Web Service for the Business Flag functionality.
F1APPLYBNDL	Import / Apply Bundle Script	Execute	New application service for the new script exposed as an Inbound Web Service.



Application Service	Description	Access Mode	Comments
F1-EMAILSVC	Send Email BS	Execute	New application service for the Email Service business service that is newly secured.
F1-SMSRECEIVESVC	Receive SMS Message BS	Execute	New application service for the Receive SMS Message business service that is newly secured.
F1-UPDATESYNCSVC	Update Sync Request BS	Execute	New application service for the Update Sync Request business service that is newly secured.
F1-GEOCODESVC	Geocode Address BS	Execute	New application service for the Geocode Address business service that is newly secured.
F1-HEALTHCHECKSVC	Health Check BS	Execute	New application service for the Health Check business service that is newly secured.
F1-ETLMPCTRL	ETL Mapping Control MO	Add, Change, Delete, Inquire	New application service for ETL Characteristic Mapping functionality.
F1ETL	ETL Mapping Portal	Inquire	New application service for ETL Characteristic Mapping functionality.

### New/Updated Migration Plans/Migration Requests

The following migration plans have been added and all have been added to the F1-FrameworkAdmin migration request.

- Attachment (F1-Attachment) (Note that only Common attachments are migrated. This rule is implemented using the migration request.) Note that this MO has system generated keys.
- Bucket Configuration (F1-BucketConfiguration)
- Business Flag Type (F1-BusinessFlagType)
- Inbound Web Service (F1-InboundWebService)
- Menu (F1-Menu) - Note that this MO has system generated keys.
- Web Service Annotation (F1-Annotation)
- Web Service Annotation Type (F1-AnnotationType)

When copying data in system owned tables where the MO does not support any customizable data for a base owned record, there is no reason to copy base owned data. The comparison in the target region will always result in an 'unchanged' state. To reduce the unnecessary copying of this data, the instructions in the migration request for those plans should be checking for the owner flag and only including CM owned records.

The following migration request instructions were updated accordingly:

Migration Request	Migration Plan
F1-FrameworkAdmin	Algorithm Type
	Context Sensitive Zone
	Display Icon Reference
	Managed Content
	Navigation Key
F1-MigrationAdmin	Navigation Option
	Migration Plan
	Migration Request

In addition, base migration plans that include one of the above migration plans as a subordinate instruction were updated to limit the selection to CM owned records.

### New/Updated Inbound Web Services

A new Inbound Web Service has been introduced for the Business Flag functionality: **F1-BusinessFlagSync**.

A new Inbound Web Service has been introduced to import and apply a Bundle: **F1-ApplyBundle**.

### New/Updated XAI Inbound Services

A new XAI Inbound Service has been introduced for the Business Flag functionality: **F1-BusinessFlagSync**. Note that the recommendation for implementations going forward is to use Inbound Web Services for all web service functionality. However, for existing implementations that are using XAI for web service functionality and have not yet changed their implementation to use inbound web services, this record is provided for exposing the Business Flag Sync functionality.

### Updated System Data Details

This section highlights miscellaneous changes to system data configuration.

- The description of Message Category 11011 was changed from **XAI** to **External Message**.
- A new physical BO was added for Batch Control: **F1-BatchControlPhysicalBO**. The existing batch control physical BO (F1-BatchControlMO) used by bundling does not have all the fields from the batch control table. Note that the existing physical BO is still the one configured in the MO option as it is used by bundling. The new BO will be available for any processing that needs it.
- The following menu entries were not configured to follow the standard for 'fixed' pages where using the Search option launches the search with no pre-populated data. They were showing previously viewed records.
  - Navigation Key
  - Portal
  - Zone
- The menu entry to add a zone has been corrected to no longer pre-populate the zone type of a previously viewed record. Navigating to Zone via the menu in add mode will now show a blank page as per the standard for 'fixed' pages.

- The **TO DO ROLE** maintenance object (To Do Role) now has a physical BO and a bundling Add BO. In addition, it has been enhanced to support bundling.

Note that the physical BO for To Do Role was made available in previous releases using the following bugs: 21909965 (4.2.0.2.HOT), 21909955 (4.2.0.3.HOT), 21879998 (4.3.0.0.1.HOT), 21647369 (4.3.0.1.HOT)

Enabling bundling for To Do Role was made available in 4.3.0.1.HOT using bug 21812728.

## Oracle Utilities Application Framework Deprecation Notices

The following points highlight functionality that has been removed or is no longer supported by Oracle Utilities Application Framework v4.3.0.2. This section consists of the following:

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

### System Deprecation

- Batch processing no longer supports **DISTRIBUTED** execution mode. Implementations using **DISTRIBUTED** execution mode should migrate to using **CLUSTERED** execution mode.
- The table usage flag (TBL\_USAGE\_FLG) on MD Table (CI\_MD\_TBL) and the field usage flag (FLD\_USAGE\_FLG) on MD Table Field (CI\_MD\_TBL\_FLD) have been dropped along with their corresponding lookup entries.
- A previous release introduced UI map extension logic where product owned maps needed to include 'hooks' (or user exits) in order for an implementation to extend the UI map html. The two HTML attributes **oraDisplayExtensionUI="xpath;"** and **oraEditExtensionUI="xpath;"** were the statements required to be included in a base product UI map in order to extend them. With the introduction of UI hints, the ability to extend a BO schema and its generated UI map is now the preferred method. It is confirmed that no product had implemented the UI map extension 'hooks'. This functionality is no longer supported.

### System Data Deprecation

The following metadata related to the legacy LDAP import functionality via XAI has been deprecated:

- XAI Inbound Service **LDAPImport**
- XAI Adapter **LDAPImport**
- Message Class (formerly XAI Class) **LDAPIMPRTADA**

Note that for upgrading clients the above records are updated to have a CM owner flag so that any existing records that may reference any of this metadata will continue to be valid.

### 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 menus **CI\_ADDCONTEXT** and **CI\_GOTOCONTEXT** are 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.

# Oracle Utilities Application Framework Version 4.3.0.3 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 <a href="#">Performance Target</a> functionality.
F1-PERFTGT	Performance Target MO	Add, Change, Delete, Inquire	New application service for <a href="#">Performance Target</a> functionality.
F1-PERFTGTTY	Performance Target Type MO	Add, Change, Delete, Inquire	New application service for <a href="#">Performance Target</a> functionality.
F1PRTGTY	Performance Target Type Portal	Inquire	New application service for <a href="#">Performance Target</a> functionality.
F1-PERFTGTB	Batch Performance Target BO	Add, Change, Delete, Inquire, Active, Inactive, Generate Objects	New application service for <a href="#">Performance Target</a> functionality.
F1SVCCAT	Web Service Catalog Portal	Inquire	New application service for the <a href="#">web service catalog</a> .
F1STATS	Statistics Control Portal	Inquire	New application service for the <a href="#">statistics</a> functionality.
F1-STATS	Statistics Control MO	Add, Change, Delete, Inquire	New application service for the <a href="#">statistics</a> functionality.
F1STCSNP	Statistics Snapshot Portal	Inquire	New application service for the <a href="#">statistics</a> functionality.
F1-STSSNPSHT	Statistics Snapshot MO	Add, Change, Delete, Inquire	New application service for the <a href="#">statistics</a> functionality.
F1-STATSBOAS	Statistics Control BO	Add, Change, Delete, Inquire, Active, Capture, Inactive	New application service for the <a href="#">statistics</a> functionality.
F1-SNPSHTBOAS	Statistics Snapshot Root BO	Add, Change, Complete, Delete, Inquire, Pending	New application service for the <a href="#">statistics</a> functionality.

Application Service	Description	Access Mode	Comments
F1MESSAGECATEGORY	Message Category MO	Add, Change, Delete, Inquire	New application service for the message category MO introduced for <a href="#">Ability to Migrate Individual Messages</a> .

## 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 not be supported. Only the native installation will be supported.