

# **Oracle Utilities Mobile Workforce Management**

Database Administrator's Guide

Release 2.0.1 Service Pack 7

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# Preface

This guide provides instructions for installing and maintaining the database for Oracle Utilities Mobile Workforce Management.

This preface contains these topics:

- **Audience**
- **Related Documents**
- **Updates to this Documentation**
- **Conventions**

## Audience

Oracle Utilities Mobile Workforce Management Database Administrator's Guide is intended for database administrators who will be installing and maintaining the database for Oracle Utilities Mobile Workforce Management.

## Related Documents

For more information, see these Oracle documents:

- *Oracle Utilities Mobile Workforce Management Quick Install Guide*
- *Oracle Utilities Mobile Workforce Management Installation Guide*

## Updates to this Documentation

This documentation is provided with the version of the product indicated. Additional and updated information about the operations and configuration of the product is available from the Knowledge Base section of My Oracle Support (<http://support.oracle.com>). Please refer to My Oracle Support for more information.

# 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.



# Chapter 1

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## Database Overview

This section provides an overview of the Oracle Utilities Mobile Workforce Management database, including:

**Note:** This service pack is intended to be installed on top of an existing Oracle Utilities Mobile Workforce Management installation. Please refer to the chapter “Installing Service Packs” for information about installing the database for this service pack.

- **Supported Database Platforms**
- **Database Maintenance Rules**

## Supported Database Platforms

This section defines the platforms on which Oracle Utilities Mobile Workforce Management is verified to operate.

### Supported Platforms Summary Table

Oracle Utilities Mobile Workforce Management is certified on the following platforms:

Platform	Database Version
AIX 6.1 TL4 (POWER 64-bit)	Oracle Database Server 11.2.0.1 (64-bit)
HP-UX 11.31 (Itanium 64-bit)	Oracle Database Server 11.2.0.1 (64-bit)
Oracle Enterprise Linux 5.4 (64-bit) x86_64 (64-bit)	Oracle Database Server 11.2.0.1 (64-bit)
Red Hat Enterprise Linux 5.4 (64-bit) x86_64 (64-bit)	Oracle Database Server 11.2.0.1 (64-bit)
Solaris 10 (SPARC 64-bit)	Oracle Database Server 11.2.0.1 (64-bit)
Windows Server 2008 SP2 (x86_64 64-bit)	Oracle Database Server 11.2.0.1 (64-bit)

Refer to My Oracle Support for additional details.

### Support for Software Patches and Upgrades

Due to the ongoing nature of software improvement, vendors will issue patches and service packs for the operating systems, application servers and database servers on top of specific versions that Oracle Utilities Mobile Workforce Management has been tested with.

If it is necessary to apply an upgrade, please do that in a test environment prior to updating the Oracle Utilities Mobile Workforce Management production environment.

The only exception from this rule is Hibernate software. For this the exact version mentioned in this guide must be installed. Please always check with Oracle Utilities Mobile Workforce Management support prior to installing Hibernate updates.

Always contact Oracle Utilities Mobile Workforce Management support prior to applying vendor updates that do not guarantee backward compatibility.

# Database Maintenance Rules

The database supplied with the product consists of the following elements:

- A set of users to administrate, execute and read the database schema provided.
- A set of database roles to implement security for each of the users provided.
- A schema containing the base database objects used by the product.

The installation of these components is outlined in the installation section of this document.

## What Changes Are Permitted

During and after installation of the product the following changes may be performed by the database administrator personnel on site:

- Users supplied by product may be changed according to the site standards.
- Database objects may be added to the schema according to database naming standards outlined later in this document.
- Database views and indexes may be created against base database objects.
- Database storage attributes for base indexes and base tables may be changed according to site standards and hardware used.
- Tablespace names, attributes and locations may be changed according to site standards.
- Database topology (that is, base table/index to tablespace, tablespace to data file, datafile to location) may be altered according to tuning and/or site standards.
- Database triggers may be created against base database objects unless they attempt to contravene base data integrity rules.
- Database initialization and parameter settings may be altered to site standards unless otherwise advised by Oracle Support or outlined in this document.

## What Changes Are Not Permitted

In order to maintain the operations of the product and upgradability, during and after installation of the product the following changes may *not* be performed by the database administrator personnel on site:

- Roles provided must not be altered in any way.
- Base objects must not be removed or altered in the following ways:
  - Columns in base tables must not be altered in anyway (altered, removed or added).
  - Columns in Indexes must not be altered or removed.
  - Tables must not be renamed or removed.
  - Base Views must not be renamed or removed.
  - Base indexes must not be removed.

# Chapter 2

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## Database Installation

This section provides the steps required to install or upgrade the Oracle Utilities Mobile Workforce Management database, including:

- **Installation Overview**
- **Oracle Database Installation**

**Note:** This is not a new installation. Please start by referring to the chapter “Installing Service Packs” for the steps required to upgrade the database to this service pack.

# Installation Overview

Note. Refer to the Oracle Utilities Mobile Workforce Management *Installation Guide* for the hardware and software versions required for the installation on the Unix Server or Windows Server. This installation is for Oracle Utilities Mobile Workforce Management V2.0.1 and the upgrade of Oracle Utilities Mobile Workforce Management V2.0.0.0 or V2.0.0.1. to V2.0.1.

The following type of installation is available for Oracle Utilities Mobile Workforce Management:

- **Initial Install** - a database with no demo data.
- **Upgrade Install** - a database upgrade.
- **Demo Install** - a database populated with demo data.

Note: The database installation requires a supported version of the Java Development Kit to be installed on the Windows desktop where the install package is staged and run from. Refer to the Supported Platform section of the Oracle Utilities Mobile Workforce Management *Installation Guide* for the required version of Java.

For an Initial Install or Demo Install you will create an empty database on the Unix or Windows server and then populate the database with data. For a database Upgrade Install you will upgrade your current Oracle Utilities Mobile Workforce Management database.

Review the Storage.par file prior to Initial Install or Upgrade Install. Information in this file is used by CDXDBI while installing and upgrading the Oracle Utilities Mobile Workforce Management database objects.

For optimum storage allocation, DBAs should create multiple tablespaces with extents sized to store different types of tables/indexes. They can then edit this file before each upgrade and install process, to spread the tables and indexes across these tablespaces. Tables and indexes can be created in parallel by editing degree of parallelism. The default value is 1.

To provide additional information, the table names are included for each index as a comment.

Tablespace and parallel information for only the new objects is used. Therefore, for initial installs, information for each object should be reviewed. Be careful while editing this file. Make sure that the tablespace names being used exist in the database. Do not change the basic format of this file.

Note. Prior to the installation of the database schema for the product, please ensure that the Database Management System software is installed according to your site standards and the installation guide provided by the database vendor.

Also ensure that the Oracle Locator component is installed.

# Oracle Database Installation

The following section outlines the instructions for installing the Oracle Database for Oracle Utilities Mobile Workforce Management.

Note: The installation tools outlined in this guide run on Windows and UNIX/Linux only. If the database server is installed on a platform not supported by the utilities then the site should use the Windows utilities to execute the installation.

## Database Creation

This step is not required if you are performing a database upgrade from a previous version of the application.

Note. The Unix and Windows installs will create an empty database with the Oracle Locator component, Geocoder feature, at least one tablespace for storing the application objects before running the install. The default name of the application tablespace is CISTS\_01. If you do not use the default name or want to spread the application objects across multiple tablespaces, you must edit the Storage.par file, supplied with the install package, before the installation process.

### Unix

The files are located in MWM/DatabaseCreation/Unix.

1. FTP the contents of the Database Creation folder to a temporary directory on the UNIX server.
  2. To create the database set the ORACLE\_HOME and ORACLE\_BASE variables.
  3. Execute the utility cdxdba.plx by entering following command:
- ```
perl cdxdba.plx
```
4. The script will prompt for parameter values:
    - Enter the instance name (DEMO): DEMO
    - Enter ORACLE\_BASE: the directory where the setup files for the database will be created (/orasw/app/oracle):
    - Enter ORACLE\_HOME: the folder where the current version of Oracle software is installed (/orasw/app/oracle/product/):
    - Enter ORACLE\_DATA: the directory where the data files for the database will be created (/db05/oradata):
    - Enter the character set for the database (UTF8):
  5. Enter the values based on the settings of your database server. You can also accept the default values displayed if they match your database server settings. You will be prompted to confirm the settings and select Y or N to create the database.

```
ORACLE_SID: DEMO
ORACLE_HOME: /orasw/app/oracle/product/
ORACLE_BASE: /orasw/app/oracle
ORACLE_DATA: /db05/oradata
Character Set: UTF8
Do you want to continue (Y/N)?
```

6. Once the database has been created, you will be prompted with the questions:

```
Do you want to import a demo database dump into this database (Y/N)?
```

- Select N to exit the database utility.
- Select Y to import the Demo Install data.

For the Demo Install use the dump file exp\_demo.dmp.

Do you want to import a demo database dump into this database (Y/N)? Y

- Enter the name of the dump file (exp\_demo.dmp):
- Enter the name of the log file (exp\_demo.log):

Ready to import the CISADM schema into the database, do you want to continue (Y/N)? Y

Note. Update the oratab, tnsnames.ora and listener.ora files for the new database and check the connectivity to this database from another server and from your desktop.

## Windows

The files are located in MWM/DatabaseCreation/Windows. You should be logged in as a user who is a member of local ORA\_DBA group on that server. The ORA\_DBA group should have "administrator" privileges assigned to it.

1. To create a database, run the utility CDXDBA.exe located in the Windows folder.

The utility will display a list with the following options:

- E - Export a schema from the database
- R - Refresh a schema with a database dump.
- C - Create/Recreate a local database.
- H - See help for the command line options.

2. Select option C to create an empty database on your machine.

Follow the prompts to complete the install.

3. Once the database has been created you can exit the utility or select the R - Refresh a schema with a database dump file to load the Demo Install data.

Option R causes the utility to drop all the objects from the schema and import the schema from a database dump file.

For the Demo Install use the dump file exp\_demo.dmp.

Note. Update the oratab, tnsnames.ora and listener.ora files for the new database and check the connectivity to this database from another server and from your desktop.

## Security Configuration

The configuration utility and scripts are located in the Security folder.

Execute the OraGenSec.exe utility.

The script will prompt for parameter values:

Enter the application read-only user or Schema Owner in the database (e.g CISADM or CISREAD):

Enter the password for the user:

Enter the name of the Oracle Database: database name

Enter a comma-separated list of Oracle users in which synonyms need to be created (e.g. `cisuser,cisread`): `cisuser,cisread`

Select the following options:

(A/a): Generate security for All objects in the Database (e.g. A or a for all objects)

(O/o): Generate security for specific Objects inputted in this terminal (e.g. `CI_ACCT,CI_ACCT_K`)

Generate security for specific objects generated from an input File (e.g. `Security_Objects.txt`)

The utility configures security for the CISADM schema objects.

## Populating Language Data

At this point, the Oracle Utilities Mobile Workforce Management demo database is ready for use. Please note that this database contains data in the ENGLISH language only. If you use any other supported language, you must first run the NEWLANG batch program to duplicate the data entries for that language. For more information on running this batch program, refer to the User Documentation, Defining Background Processes.

You can also install the language specific demo data packages (if available) into the database. Please contact your Oracle representative to receive information on these packages

## Initial Installation

This section describes the initial installation of the database.

**Note:** You must have a supported version of the Java Development Kit installed on the Windows desktop where you stage and run the database installation package. Refer to the Oracle Utilities Mobile Workforce Management *Installation Guide* for more information.

### Database Script and Utilities Installation

Unzip the database.zip file to your local machine.

The database folder contains several files that will be referred to in the installation process.

Set up a Microsoft Windows desktop with the Oracle Client installed.

### Create Database

The Initial installation requires the following to be installed before the installation can be started:

- A database must be created. Site standard techniques or tools may be used to create the database. The templates for creating the database are located under the relevant database version subdirectory of the "Database Creation" directory under:
  - `createdb.sql` - Create Database
  - `createdbcatalog.sql` - Build database catalog tables.
  - `createdbfiles.sql` - Create data files for tablespaces
  - `init.ora` - Sample initialization parameters for the database
  - `createcdxusers.sql` - Create users
  - `restartdb.sql` - DB restart
- The users and roles for the product. Templates for this activity are located under the relevant database version subdirectory of the "Database Creation" directory as `createcdxusers.sql`.

Note. Please alter a copy of the above files for site specific changes.



Note. The CDXDBA utility provided in the Database Creation folder may be used to automate the process. See "Database Creation" for more details.

## Pre-Install Tasks

To enable the geocoder feature:

- If the Oracle database was created without using CDXDBA, make sure the Oracle Locator component is installed.
- Execute "MWM\_Geocoder\_install.sql" with a DBA privileged user from the SQL prompt from the Pre-Install folder under ORS.

## Install

Install Oracle Utilities Application Framework V4.0.2 prior to Oracle Utilities Mobile Workforce Management 2.0.1.

The files for Oracle Utilities Application Framework installation are located in the FW folder

1. Install Base FW V4.0.2 by running the CdxDBI.exe from the Install-Upgrade folder under FW402.
2. Apply prerequisite Framework DB single fixes. See the Oracle Utilities Mobile Workforce Management *Installation Guide* for more details.

The files for the Initial Install of MWM 2.0.1 are located in the Install-Upgrade folder under ORS. To install the MWM database:

The process prompts you for the names of three database users:

- A user that will own the application schema (for example, CISADM).
- A user that has select/update/insert/delete (read-write) privileges to the objects in the application schema. The application will access the database as this user. (for example, CISUSER).
- A user with read-only privileges to the objects in the application schema. (for example, CISREAD).
- Location for jar files. (The Jar files are bundled with the database package.)
- Java Home (For example, C:\Java\jdk1.6.0\_18)

Perform the following steps:

1. Run CDXDBI.exe from ORS/Install-Upgrade. The utility prompts you to enter values for the following parameters:
  - The name of the target database.
  - The password for the SYSTEM user account in the database (in silent mode).
  - The name of the owner of the Database Schema.
  - The password for the user (in silent mode).
  - The Oracle user with read-write privileges to the Database Schema.
  - The location of the Jar file.
  - Java Home.
2. If you chose to continue, CDXDBI first checks for the existence of each of the users specified and prompts for their password, default tablespace, and temporary tablespace, if they do not exist.

3. After setting up the roles and users, the utility continues upgrading schema and system data definitions. If an error occurs while executing an SQL or another utility, it logs and displays the error message and allows you to re-execute the current step.

The files for the Initial Install of MWM 2.0.1 are located in the Install-Upgrade folder under M1. To install the MWM database:

1. Run CDXDBI.exe from MWM/Install-Upgrade. The utility prompts you to enter values for the following parameters:
  - The name of the target database.
  - The password for the SYSTEM user account in the database (in silent mode).
  - The name of the owner of the Database Schema.
  - The password for the user (in silent mode).
  - The Oracle user with read-write privileges to the Database Schema.
  - The location of the Jar file.
  - Java Home.
2. If you chose to continue, CDXDBI first checks for the existence of each of the users specified and prompts for their password, default tablespace, and temporary tablespace, if they do not exist.
3. After setting up the roles and users, the utility continues upgrading the schema and system data definitions. If an error occurs while executing an SQL or another utility, it logs and displays the error message and allows you to re-execute the current step.

#### **CDXDBI performs the following tasks:**

1. Interacts with the user to collect information about the name of Oracle account that will own the application schema (for example, CISADM), password of this account, password of the SYSTEM account in the database, and the name of the Oracle account that the application user will use (for example, CISUSER), and the name of the Oracle account that will be assigned read-only privileges to the application schema (for example, CISREAD).
2. Connects to the database as SYSTEM account, checks whether the user already has the application schema installed to verify whether this is an initial installation.
3. Verifies whether the tablespace names already exist in Storage.par file (the process aborts, if not).
4. Installs the schema, installs the system data, and configures security.
5. Maintains upgrade log tables in the database.
6. Updates release id when the upgrade is completed successfully.
7. If an error occurs while executing a SQL script or another utility, it logs and displays the error message and allows you to re-execute the current step. Log files CDXDBI###.log are created in the same folder as CDXDBI and contains all the SQL commands executed against the database along with the results. The log files are incremental so that the results are never overwritten. If warning messages are generated during the upgrade, CDXDBI prompts the user at the end of the process. Users should check the log files to verify the warning messages. Warning messages are only alerts and do not necessary mean a problem exists.
8. Stores the Schema owner and password in the feature configuration table . The password is stored in encrypted format.

#### **Post-Install Tasks:**

Refer to **Populating Language Data** on page 2-5 if the application is to run in another language other than English.

The Following steps will import styles and maps in the specified database:

- Please execute ImportSDOThemes.bat with parameters  
`ImportSDOThemes.bat -u CISADM -p <PASSWORD> -c <DATABASE NAME>`
- After importing themes/styles /GEOM Metadata (zz\_user\_sdo\_themes/zz\_user\_sdo\_styles), postImport.sql is invoked from target main schema. This will:
  - Insert new styles/themes/sdo\_geom\_metadata in USER\_SDO\_THEMES/USER\_SDO\_STYLES/USER\_SDO\_GEOM\_METADATA
  - Drop ZZ\_USER\_SDO\_THEMES, ZZ\_USER\_SDO\_STYLES, ZZ\_USER\_SDO\_GEOM\_METADATA tables from target database.
  - Create domain key indexes

### Database Statistics Generation

During an install process, new database objects may be added to the target database. Before starting to use the database, generate the statistics for these new objects.

## Upgrade Install

The following section assumes an existing Oracle Utilities Mobile Workforce Management V2.0.0 installation on top of Oracle Utilities Application Framework V4.0.1 installation.

- Apply prerequisite Framework DB single fixes. See the Oracle Utilities Mobile Workforce Management *Installation Guide* for more details.

The files for the Upgrade Install of Oracle Utilities Mobile Workforce Management 2.0.1 are located in the Install-Upgrade folder.

### Install

The CDXDBI process prompts for the names of three database users during this process:

- A user that will own the application schema (for example, CISSPLADM).
- A user that has read-write privileges to the objects in the application schema. The application will access the database as this user. (for example, CISSPLUSER).
- A user with read-only privileges to the objects in the application schema. (for example, CISSPLREAD).
- Location for jar files. (The Jar files are bundled with the database package.)
- Java Home (For example, C:\Java\jdk1.6.0\_18)

Following are the steps involved:

1. Review and edit the Storage.par file to set the tablespace names. The instructions for editing the file are included in the file itself.
2. Run CDXDBI.exe from ORS/Install-Upgrade folder. The utility prompts you to enter values for the following parameters:
  - The name of the target database.
  - The password for the SYSTEM user account in the database (in silent mode).
  - The name of the owner of the Database Schema.
  - The password for the user (in silent mode)
  - The Oracle user with read-write privileges to the Database Schema

- The Oracle user with read-only privileges to the Database Schema
  - The location of the Jar file.
  - Java Home.
3. The utility at this point is ready to perform the upgrade install and prompts you for permission to start the process.
  4. If you chose to continue, CDXDBI first checks for the existence of each of the users specified earlier and prompts for their password, default tablespace, and temporary tablespace, if they do not exist.
  5. After setting up the roles and users, the utility continues upgrading schema and system data definitions. If an error occurs while executing an SQL or another utility, it logs and displays the error message and allows you to re-execute the current step.
  6. Run CDXDBI.exe From MWM/Install-Upgrade. The utility prompts you to enter values for the following parameters:
    - The name of the target database.
    - The password for the SYSTEM user account in the database (in silent mode).
    - The name of the owner of the Database Schema.
    - The password for the user (in silent mode)
    - The Oracle user with read-write privileges to the Database Schema
    - The Oracle user with read-only privileges to the Database Schema
    - The location of the Jar file.
    - Java Home.
  7. The utility at this point is ready to perform the upgrade install and prompts you for permission to start the process.
  8. If you chose to continue, CDXDBI first checks for the existence of each of the users specified earlier and prompts for their password, default tablespace, and temporary tablespace, if they do not exist.
  9. After setting up the roles and users, the utility continues upgrading schema and system data definitions. If an error occurs while executing an SQL or another utility, it logs and displays the error message and allows you to re-execute the current step.

#### **CDXDBI performs the following tasks:**

1. Interacts with the user to collect information about the name of Oracle account that will own the application schema (for example, CISSPLADM), password of this account, password of the SYSTEM account in the database, and the name of the Oracle account that the application user will use (for example, CISSPLUSER), and the name of the Oracle account that will be assigned read-only privileges to the application schema (for example, CISSPLREAD).
2. Connects to the database as SYSTEM account, checks whether the user already has the application schema installed to verify whether this is an upgrade installation.
3. Verifies whether the upgrade path from the current release id to the target release id is supported by the upgrade.
4. Verifies whether the tablespace names already exist in Storage.par file (the process aborts, if not).
5. Upgrades the schema, upgrades the system data, and configures security.
6. Maintains upgrade log tables in the database.

7. Updates release id when the upgrade is completed successfully.
8. If an error occurs while executing a SQL script or another utility, it logs and displays the error message and allows you to re-execute the current step. Log files CDXDBI###.log are created in the same folder as CDXDBI and contains all the SQL commands executed against the database along with the results. The log files are incremental so that the results are never overwritten. If warning messages are generated during the upgrade, CDXDBI prompts the user at the end of the process. Users should check the log files to verify the warning messages. Warning messages are only alerts and do not necessary mean a problem exists.
9. Stores the Schema owner and password in feature configuration table . The password will be stored in encrypted format.

## Demo Install

Before the installation can be started:

- A database must be created. Site standard techniques or tools may be used to create the database. The templates for creating the database are located under the relevant database version subdirectory of the MWM/DatabaseCreation directory under:
  - createdb.sql - Create Database
  - createdbcatalog.sql - Build database catalog tables.
  - createdbfiles.sql - Create data files for tablespaces
  - init.ora - Sample initialization parameters for the database
  - createcdxusers.sql - Create Users
  - restartdb.sql - restart database
- The users and roles for the product. Templates for this activity are located under the relevant database version subdirectory of the "Database Creation" directory as createcdxusers.sql.

Note: Please alter a copy of the above files for site specific changes.

Note: The CDXDBA utility provided in the "Database Creation" folder may be used to automate the process.

## Install

Complete the application **Database Creation** on page 2-3 to create the database and import the Demo Install data into the database.

The Database Creation contains the instructions for the import of the Demo Install data.

# Chapter 3

---

## Installing Service Packs

This section provides the steps required to upgrade the Oracle Utilities Mobile Workforce Management database to this service pack release v2.0.1.7

Note: Throughout this document, Oracle Utilities Mobile Workforce Management v2.0.1 **Service Pack 7** is represented as v2.0.1.7.

This chapter includes:

- **Package Contents**
- **Supported Upgrade Paths**
- **Upgrading Oracle Utilities Mobile Workforce Management to v2.0.1.7**

### Package Contents

The following directories are included in the 'MWM-V2.0.1.7-Database.zip' zip file:

1. ORS
2. MWM

### Supported Upgrade Paths

This service pack release of Oracle Utilities Mobile Workforce Management (v2.0.1.7) supports only the following upgrade paths:

1. Upgrading from v2.0.1.0 to v2.0.1.7
2. Upgrading from v2.0.1.6 to v2.0.1.7

**Note:** If your database was created manually without using CDXDBA and if Oracle Locator is enabled, you must execute the pre-installation script before proceeding with the steps below.

To do this, go to ..\ORS\Pre-Installation and execute the "MWM\_Geocoder\_install.sql" script as a DBA-privileged user.

For instructions on performing this database upgrade applicable to your environment, please refer to the following section:

- **Upgrading Oracle Utilities Mobile Workforce Management to v2.0.1.7**

# Upgrading Oracle Utilities Mobile Workforce Management to v2.0.1.7

This section describes the steps to be performed to upgrade your existing Oracle Utilities Mobile Workforce Management database to v2.0.1.7. It consists of:

- **Installing Oracle Real-Time Scheduler v2.0.1.7**
- **Installing Oracle Utilities Mobile Workforce Management v2.0.1.7**
- **Configuring Security**

## Installing Oracle Real-Time Scheduler v2.0.1.7

Follow these instructions to install Oracle Real-Time Scheduler v2.0.1.7:

1. Unzip MWM-V2.0.1.7-FW-PREREQ-Multiplatform.zip, and refer to the "Readme.txt" under Database.zip file to install MWM FW Prereq DB Single Fixes.
2. Go to ..\ORS\Install-Upgrade and run CdxDBI.exe
3. The utility prompts you for the following entries:
  - Enter the target database: <Target database name>
  - Enter the password for the SYSTEM user: <SYSTEM user's password>
  - Enter the owner of Database Schema: <Owner Of DatabaseSchema>
  - Enter the location for Java Home (jdk1.6.0\_18): <Location for Java\_Home>
  - Enter the jarfiles location: <Give the location of jarfiles directory under the ORS directory >
  - Enter the password for CISADM: <Target DB User's password>
  - Re-enter the password: <Target DB User's password>
  - Enter the Oracle user with read-write privileges to Database Schema: <DatabaseSchema>
  - Enter the Oracle user with read-only privileges to Database Schema: <DatabaseSchema>
  - Enter the database role with read-write privileges to Database Schema: <RoleName>
  - Enter the database role with read-only privileges to Database Schema: <RoleName>

## Installing Oracle Utilities Mobile Workforce Management v2.0.1.7

Follow these instructions to install Oracle Utilities Mobile Workforce Management v2.0.1.7:

1. Go to ..\MWM\Install-Upgrade and run CdxDBI.exe
2. The utility prompts you for the following entries:
  - Enter the target database: <Target database name>
  - Enter the password for the SYSTEM user: <SYSTEM user's password>
  - Enter the owner of Database Schema: <Owner Of DatabaseSchema>
  - Enter the location for Java Home (jdk1.6.0\_18): <Location for Java\_Home>
  - Enter the jarfiles location: <Give the location of jarfiles directory under the ORS directory >
  - Enter the password for CISADM: <Target DB User's password>
  - Re-enter the password: <Target DB User's password>

- Enter the Oracle user with read-write privileges to Database Schema: <DatabaseSchema>
  - Enter the Oracle user with read-only privileges to Database Schema: <DatabaseSchema>
  - Enter the database role with read-write privileges to Database Schema: <RoleName>
  - Enter the database role with read-only privileges to Database Schema: <RoleName>
3. Go to ..\MWM\Post-Upgrade and run ImportSDOThemes.bat using the command below:

```
ImportSDOThemes.bat -U <Dbusername> -c <connectionString>
```

## Configuring Security

To configure security, follow the steps below:

1. Go to ..\MWM\Security and run oragensec.exe
2. The utility prompts you for:
  - Enter the application read-only user or Schema Owner in the database: <Owner Of DatabaseSchema>
  - Enter the password for the user: <'Target DB User's password'>
  - Enter the name of the Oracle database: <'Target database name'>
  - Enter a comma-separated list of Oracle users in which synonyms need to be created (e.g. cisuser,cisread):
  - Select the following options: <Input A/a>
    - (A/a): Generate security for All objects in the Database?
    - (O/o): Generate security for specific Objects inputted in this terminal?
    - (F/f): Generate security for specific objects generated from an input File?



# Chapter 4

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## Database Design

This section provides a standard for database objects such as tables, columns, and indexes, for products using the Oracle Utilities Application Framework. This standard helps smooth integration and upgrade processes by ensuring clean database design, promoting communications, and reducing errors. Just as Oracle Utilities Application Framework goes through innovation in every release of the software, it is also inevitable that the product will take advantage of various database vendors' new features in each release. The recommendations in the database installation section include only the ones that have been proved by vigorous QA processes, field tests and benchmarks. This section includes:

- **Database Object Standard**
- **Column Data Type and Constraints**
- **Standard Columns**

# Database Object Standard

This section discusses the rules applied to naming database objects and the attributes that are associated with these objects.

## Categories of Data

A table can belong to one of the three categories:

- Control (admin)
- Master
- Transaction

For purposes of physical table space design, metadata and control tables can belong to the same category.

Example of tables in each category:

- **Control:** SC\_USER, CI\_ADJ\_TYPE, F1\_BUS\_OBJ
- **Master:** CI\_PER, CI\_PREM,
- **Transaction:** F1\_FACT, CI\_FT

All tables have the category information in their index name. The second letter of the index carries this information. See **Indexes** on page 4-3 for more information.

## Naming Standards

The following naming standards must be applied to database objects.

### Table

Table names are prefixed with the owner flag value of the product. For customer modification **CM** must prefix the table name. The length of the table names must be less than or equal to 30 characters. A language table should be named by suffixing **\_L** to the main table. The key table name should be named by suffixing **\_K** to the main table.

It is recommended to start a table name with the 2-3 letter acronym of the subsystem name that the table belongs to. For example, **MD** stands for metadata subsystem and all metadata table names start with **CI\_MD**.

Some examples are:

- CI\_ADJ\_TYPE
- CI\_ADJ\_TYPE\_L

A language table stores language sensitive columns such as a description of a code. The primary key of a language table consists of the primary key of the code table plus language code (LANGAGUE\_CD).

A key table accompanies a table with a surrogate key column. A key value is stored with the environment id that the key value resides in the key table.

The tables prior to V2.0.0 are prefixed with CI\_ or SC\_.

### Columns

The length of a column name must be less than or equal to 30 characters. The following conventions apply when you define special types of columns in the database.

- Use the suffix **FLG** to define a lookup table field. Flag columns must be CHAR(4). Choose lookup field names carefully as these column names are defined in the lookup table (CI\_LOOKUP\_FLD) and must be prefixed by the product owner flag value.
- Use the suffix **CD** to define user-defined codes. User-defined codes are primarily found as the key column of the admin tables.
- Use the suffix **ID** to define system assigned key columns.
- Use the suffix **SW** to define Boolean columns. The valid values of the switches are 'Y' or 'N'. The switch columns must be CHAR(1)
- Use the suffix **DT** to define Date columns.
- Use the suffix **DTTM** to define Date Time columns.
- Use the suffix **TM** to define Time columns.

Some examples are:

- ADJ\_STATUS\_FLG
- CAN\_RSN\_CD

## Indexes

Index names are composed of the following parts:

**[X][*application specific prefix*][C/M/T]NNN[P/S]n**

- **X** - X is used as a leading character of all base index names prior to Version 2.0.0 of the framework. Now the first character of product owner flag value should be used instead of letter X. For client specific implementation index in Oracle, use CM.
- Application specific prefix could be C, F, T or another letter.
- **C/M/T** -The second character can be either C or M or T. C is used for control tables (Admin tables). M is for the master tables. T is reserved for the transaction tables.
- **NNN** - A three-digit number that uniquely identifies the table on which the index is defined.
- **P/S** - P indicates that this index is the primary key index. S is used for indexes other than primary keys. **n** is the index number, unique across all indexes on a given table (0 for primary and 1, 2, etc., for the secondary indexes).

Some examples are:

- XC001P0
- XT206S1
- CM206S2

Warning! Do not use index names in the application as the names can change due to unforeseeable reasons.

## Oracle Implementations

The storage.par file that comes with the product allocates all base tables and indexes to the default tablespace CISTS\_01. If you decide to allocate some tables or indexes outside of the default tablespace, then this has to be reflected in the storage.par file by changing the tablespace name from the default value to a custom value, according to the format shown below:

**Format:** Object Type:Object Name:Tablespace name:Parallel:Comments.

Where Parallel defines the number of threads, that Oracle DB Server will use to access a table or create an index. Default value is 1.

For instance, if a DBA decided to allocate table CI\_ACCT in a tablespace MyTablespace, then they would have to change line 2 below to TABLE:CI\_ACCT:MyTablespace:1

```
TABLE:CO_INSTALLATION:CISTS_01:1
TABLE:CI_ACCT:CISTS_01:1
...
etc.,
INDEX:XC001P0:CISTS_01:1   :prompt # CI_DV_TEST_TYPE_L
INDEX:XC002P0:CISTS_01:1   :prompt # CI_BANK_ACCOUNT
INDEX:XC003P0:CISTS_01:1   :prompt # CI_BANK
...
etc.
```

The cdxdbi process uses the storage.par file to place the new database objects into defined tablespaces. A tablespace referenced in the storage.par file must exist in the database.

The storage.par file has to be adjusted before each upgrade and/or new installation as required to allocate the tables and indexes across those tablespaces.

Table name is included as a comment for each of the indexes for clarity.

For initial installs, information for each object should be reviewed by a DBA. For upgrades, only tablespace information for the objects added in the new release needs to be reviewed by a DBA.

Be careful while editing this file. Make sure that the tablespace names being used exist in the database. Do not change the basic format of this file.

## Sequence

The base sequence name must be prefixed with the owner flag value of the product.

## Trigger

The base trigger name must be prefixed with the owner flag value of the product.

When implementers add database objects, such as tables, triggers and sequences, the name of the objects should be prefixed by CM. For example, Index names in base product are prefixed by X; the Implementer's index name must not be prefixed with X.

# Column Data Type and Constraints

This section discusses the rules applied to column data type and constraints, and the attributes that are associated with these objects.

## User Defined Code

User Defined Codes are defined as CHAR type. The length can vary by the business requirements but a minimum of eight characters is recommended. You will find columns defined in less than eight characters but with internationalization in mind new columns should be defined as CHAR(10) or CHAR(12). Also note that when the code is referenced in the application the descriptions are shown to users in most cases.

## System Assigned Identifier

System assigned random numbers are defined as CHAR type. The length of the column varies to meet the business requirements. Number type key columns are used when a sequential key assignment is allowed or number type is required to interface with external software. For example, Notification Upload Staging ID is a Number type because most EDI software uses a sequential key assignment mechanism. For sequential key assignment implementation, the DBMS sequence generator is used in conjunction with Number Type ID columns.

## Date/Time/Timestamp

Date, Time and Timestamp columns are defined physically as DATE in Oracle. Non-null constraints are implemented only for the required columns.

## Number

Numeric columns are implemented as NUMBER type in Oracle. The precision of the number should always be defined. The scale of the number might be defined. Non-null constraints are implemented for all number columns.

## Fixed Length/Variable Length Character Columns

When a character column is a part of the primary key of a table define the column in CHAR type. For the non-key character columns, the length should be the defining factor. If the column length should be greater than 10, use VARCHAR2 type in Oracle.

## Null Constraints

The Non-null constraints are implemented for all columns except optional DATE, TIME or TIMESTAMP columns.

## Default Value Setting

The rules for setting the database default values are as follows:

- When a predefined default value is not available, set the default value of Non-null CHAR or VARCHAR columns to blank except the primary key columns.
- When a predefined default value is not available, set the default value Non-null Number columns to 0 (zero) except the primary key columns.
- No database default values should be assigned to the Non Null Date, Time, and Timestamp columns.

## Foreign Key Constraints

Referential integrity is enforced by the application. In the database do not define FK constraints. Indexes are created on most of Foreign Key columns to increase performance.

## Standard Columns

This section discusses the rules applied to standard columns and the attributes that are associated with these objects.

### Owner Flag

Owner Flag (OWNER\_FLG) columns exist on the system tables that are shared by multiple products. Oracle Utilities Application Framework limits the data modification of the tables that have owner flag to the data owned by the product.

### Version

The Version column is used to for optimistic concurrency control in the application code. Add the Version column to all tables that are maintained by a Row Maintenance program irrespective of the language used (COBOL or JAVA).

# Chapter 5

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## Database Implementation Guidelines

The following section outlines the general implementation guidelines for the database components, including:

- **Configuration Guidelines**
- **Oracle Database Implementation Guidelines.**

Note: Refer to My Oracle Support for more information.

# Configuration Guidelines

This section includes general recommendations for configuring various database objects and includes a brief syntax overview. It covers the general aspects of the database objects and does not cover any specific implementation requirements.

## Index

Index recommendations specify points that need to be considered when creating indexes on a table.

1. Indexes on a table should be created according to the functional requirements of the table and not in order to perform SQL tuning.
2. The foreign keys on a table should be indexes.

In an Oracle Utilities Application Framework environment, always make sure that the optimization parameters are set as follows:

```
optimizer_index_cost_adj=1
optimizer_index_caching=100
```

This will make sure that optimizer give a higher priority to index scans.

## Table Partitioning Recommendations

Oracle Utilities has two recommendations for partitioning tables.

1. No partitioning for non-RAC environments.
2. Minimum of 'n' partitions for selective database objects, where 'n' is number of RAC nodes.

## Storage Recommendations

This section specifies recommended options for storing the database objects.

### SecureFile for Storing LOBs

Beginning with Oracle 11g, tables having fields with data type of CLOB or BLOBs should have the LOB Columns stored as SecureFiles.

- The storage options with SecureFiles should be CACHE and COMPRESS.
- The COMPRESS options make sure that LOB data is always stored in the compressed state.

See **Database Syntax** on page 5-3 for more information on SecurFiles.

## Database Configuration Recommendations

This section specifies the recommended methods for configuring the database with a focus on specific functional area.

### Large Redo Log File Sizes

The Redo Log files are written by the Log Writer Background process. These Log files are written in a serial manner. Once a Log File is full, a Log Switch occurs and the next Log file starts getting populated.

It is recommended that the size of the Redo Log files should be sufficiently high so that you do not see frequent Log Switches in the Alert logs of the database. Frequent Log Switches impact the IO performance and can be avoided by having a larger Redo log File size.



## Database Syntax

### SecureFile

```
CREATE TABLE <Table_Name>
( COLUMN1 ...,
  COLUMN2 (CLOB)
)
LOB (COLUMN2) STORE AS SECUREFILE (CACHE COMPRESS);
```

## Database Initialization Parameters

The recommended Initialization Parameters are given below. These parameters are a starting point for database tuning. An optimal value for a production environment may differ from one customer deployment to another.

```
db_block_size=8192
log_checkpoint_interval=10000
db_file_multiblock_read_count=8
transactions=3000
open_cursors=1200
optimizer_index_cost_adj=1
optimizer_index_caching=100
session_cached_cursors=50
trace_enabled=FALSE
db_files=1024
dbwr_io_slaves=10 (Only if Asynchronous IO is not Supported)
sessions=1528
sec_case_sensitive_logon=FALSE
processes=1000
dml_locks=4860
```

# Oracle Database Implementation Guidelines

This section provides specific guidelines for implementing the Oracle database.

## Oracle Partitioning

If you use a base index for the partitioning key, rename the index to CM\*\*.

If you use the primary key index of the table as the partitioning key:

- Make the index non-unique.
- Primary constraints should still exist.

The upgrade on the partitioned table will work the best if the partitioning key is not unique. This allows the upgrade tool to drop the PK constraints if the primary key columns are modified and recreate the PK constraints without dropping the index.

# Appendix A

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## Upgrades to the Oracle Utilities Application Framework V2.2.0.7 Database

This document describes the database upgrade process for the Oracle Utilities Application Framework database from V2.2.0.7 to V4.0.2. It highlights changes made to the administrative tables and how those changes should be applied to the data in order for a V2.2.0.7 database to work with the V4.0.2 application, and to preserve the business logic implemented in the previous version of the application. The changes that do not require data upgrade are not described in this document. The tasks that need to be performed after running the upgrade scripts are included.

The added functionality of V4.0.2 is not the scope of this documentation. The upgrade scripts do not turn on the newly added functionality by default. For new functionality, refer the V4.0.2 User Guides. In the last section of this document you will find a list of the new tables that are added in V4.0.2.

# Automatic Data Upgrade

This section describes what the upgrade script will populate in new tables and columns to preserve the existing base product application functions of the previous version of Oracle Utilities Application Framework.

## Display/Expand Zones in Portal

To allow the user to display or hide zones in the portal, we need to provide an extra field on the Field Maintenance Page of Portal Zone (CI\_PORTAL\_ZONE). The new field added to Portal Zone is called Display Switch (DISPLAY\_SW). It defines a display switch value of Y or N to display or hide a zone within the portal.

Also to allow the user to expand or collapse the zones in the portal, we need to provide an extra field on the Field Maintenance Page of Portal Zone. The new field added to Portal Zone is called Zone Collapsed Switch (ZONE\_COLLAPSED\_SW). It defines a Zone Collapsed switch value of Y or N to collapse or display a zone within the portal.

As a part of the Upgrade Process DISPLAY\_SW is set to 'Y' and ZONE\_COLLAPSED\_SW is set to 'N'.

## Long Userid Support

To support Long Userid other than the fixed 8 Character Userid, a new column External Userid (EXT\_USER\_ID) is added to the User Table (SC\_USER) Table. The External Userid column has unique values and it is mapped to Userid (USER\_ID). Users are authenticated using External Userid and there after the Userid would be used by the Application. The External Userid (EXT\_USER\_ID) would be populated as Userid (USER\_ID) wherever the External Userid is not populated as a part of the Upgrade Process.

## Long Context Value on XAI Sender

A new field Context Value Long (F1\_CTXT\_VAL\_LONG) is added to XAI Sender Table (CI\_XAI\_SNDR\_CTX). This new field is a longer version of the existing field CTXT\_VAL. CTXT\_VAL supports only 50 characters. To accommodate the long Value for the SOAP Action URL (for making third party web service calls) and long encrypted passwords, the new column is added on the XAI Sender Table. The existing column CTXT\_VAL on this table would be unsupported. For this to be possible, as a part of upgrade script, all the current data in CTXT\_VAL column would be updated into F1\_CTXT\_VAL\_LONG column. There after the column CTXT\_VAL would be updated with a single Blank.

## Metadata For Translation

Two new Flags Translatable Flag (F1\_TRANSLATABLE\_FLG) and Extract for Translation Flag (F1\_EXTRACT\_TRANSLATION\_FLG) are added to aid in Translation, which was originally handled in a Text file. Translatable Flag is added in CI\_MD\_FLD and indicates whether we translate the label on this field or not and the valid values are yes (YES) and no (NO). Extract for Translation Flag is added to CI\_MD\_TBL and CI\_MD\_TBL\_FLD and has a valid values of yes (YES) and no (NO). A table or a table field, which is marked for extraction, would be included in the extraction process to be sent to WPTG. As a part of upgrade process the flag F1\_TRANSLATABLE\_FLG is defaulted to yes (YES) and F1\_EXTRACT\_TRANSLATION\_FLG is defaulted to no (NO).

## Online Help

To follow Oracle documentation standards, TUGBU Word documentation for CCB and Framework is converted into DITA XML format. This will involve Conversion of old word files and indexes to DITA xml, Online help generation using DITA open toolkit and Integration of the

new online help with Framework. The DITA documentation architecture requires small individual topics that are built up into topic hierarchies. To support this for Help related Navigation keys in CI\_MD\_NAV Table, the URL (field- URL\_OVRD) is updated based on the set naming strategy.

## Performance Metadata Flags

Two new Flags Cache Flag (CACHE\_FLG) and Key Validation Flag (KEY\_VALIDATION\_FLG) are added to the Metadata Table (CI\_MD\_TBL). The Cache Flg will enable Caching of the Table and Key Validation Flag determines if Key Uniqueness is being issued by Framework before Inserting into the database. The valid values for cache flag are not Cached (NONE) and cachedForBatch (BTCH). The valid values for key validation flag are always (ALL), never (NONE) and onlineOnly (ONLI). As a part of the upgrade process CACHE\_FLG would be populated with a default value of NONE and for KEY\_VALIDATION\_FLG it would be populated with ALL, for product owned data as well.

## Precise Time for Holiday Dates

Two new Fields named Holiday Start Date (F1\_HOLIDAY\_START\_DTTM) Holiday End Date (F1\_HOLIDAY\_END\_DTTM) are added to the Metadata Table (CI\_CAL\_HOL). This will help in defining the holiday begin and end dates with time. This is different from the existing Holiday dates where we just specify the date. As a part of the upgrade process the field F1\_HOLIDAY\_START\_DTTM would be populated with HOLIDAY\_DT with Time as 00:00:00. For F1\_HOLIDAY\_END\_DTTM the default value would be F1\_HOLIDAY\_START\_DTTM+24 Hours.

## Portal Display Rule

A new flag Allow User Configuration (USER\_CONFIG\_FLG) is added to the Portal Table (CI\_PORTAL). User Configuration Flag indicates if a user is allowed to have individual control of the zones on this portal. This flag is defaulted to 'Y' for all existing Portals during the upgrade process. If the Override User Configuration flag on CI\_PORTAL is Blank and Allow User Configuration Flag is set to Y, then display the Portal, else if it set to 'N' then the Portal should not get displayed.

## Rownum in Explorer Zones

The number of Records retrieved by the Query in Data Explorer Zone Types would be limited. This is because the entire result is neither required to be displayed and nor required for downloads. The existing Zone Parameter Values for Zone Type-Data Explorer and Zone Type Parameter-NBROFROWS and ROWSTOEXPORT would be updated. As a part of upgrade process when Zone Parameter values do not exists then limitFetch=false would be set. For existing non-blank Zone Parameter values, limitFetch=false count=ZONE\_PARM\_VAL would be updated.

## Support Child XML Storage

The child list elements are allowed to contain XML mappings to XML storage fields. The existing implementation of Business Objects storing any XML mapped fields under groups stored the field in the physical storage field as a top-level xml element. This may result in conflict in their storage. So the new Implementation will store the fields like so in the physical CLOB field. The existing Business Object schemas that exist will remain. As a part of Upgrade Process an attribute "fwRel="2" would be added to the root "schema" to provide backward compatibility to already existing Business Object schemas.

## Secure Business Services and Service Scripts

Application Services (APP\_SVC\_ID) is added to Business Service Table (F1\_BUS\_SVC). Based on the Application Service, the ability to execute a Business Service and a Service Script by different user groups would be controlled. As a part of upgrade process the APP\_SVC\_ID column for existing Business Services (F1\_BUS\_SVC) and Service scripts (CI\_SCR) would be populated with a Default Application Service (F1-DFLTAPS) where there is no Application Service associated. The default Application Service would be added to all the existing User groups and the 'Execute' Access Mode on this Service would be granted to all the user groups.

## Security On User Access

A new flag User Enable (USER\_ENABLE\_FLG) is added to user Table (SC\_USER). The valid values are Enable (ENBL) and Disable (DSBL). When a user depart or is no longer associated with the system then the BO Web service after confirming the status of the user and immediately deny user access to all "authorized" application services when the user is disabled. As a part of the upgrade process the USER\_ENABLE\_FLG will be set to 'ENBL' for the existing users in the Users table(SC\_USER).

## Timed Batch Jobs

A new flag Batch Control Type (F1\_BATCH\_CTRL\_TYPE\_FLG) is added to Batch Control Table (CI\_BATCH\_CTRL). The valid values are Not Timed (F1NT) and Timed (F1TM). Along with this there are additional new columns added to the Batch Control Table. Based on this the batch controls will be automatically initialized on a timed basis. As a part of the upgrade process the F1\_BATCH\_CTRL\_TYPE\_FLG will be set to 'F1NT' for the existing data in the Batch Control Table.

## Update Zone Parameter

A new field Zone Parameter Value override (ZONE\_PARM\_VAL\_OVRD) is added to zone parameter Table (CI\_ZONE\_PRM). The users would be able to override the existing value for Zone Parameter. For this to be possible, as a part of upgrade script, all Zone Type Parameters with usage as zone, which are not found in Zone parameter, a record needs to be inserted in Zone Parameter with Zone Parameter value as blank.

# Schema Change

## New Tables

The following new tables are added to Oracle Utilities Application Framework V4.0.2.

| Tables                     | Description                                  |
|----------------------------|----------------------------------------------|
| CI_BATCH_CTRL_ALG          | Batch Control Algorithm                      |
| F1_BUS_OBJ_STATUS_RSN      | Business Object Status Reason                |
| F1_BUS_OBJ_STATUS_RSN_CHAR | Business Object Status Reason Characteristic |
| F1_BUS_OBJ_STATUS_RSN_L    | Business Object Status Reason Language       |
| F1_EXT_LOOKUP_VAL          | Extendable Lookup                            |
| F1_EXT_LOOKUP_VAL_L        | Extendable Lookup Language                   |
| F1_GEN_PROC                | F1_GEN_PROC                                  |
| F1_GEN_PROC_K              | F1_GEN_PROC_K                                |
| F1_MANAG_CONTENT           | Managed Content                              |
| F1_MANAG_CONTENT_L         | Managed Content Language                     |
| F1_MST_CONFIG              | Master Configuration. Added in FW 22         |
| F1_REQ                     | Request                                      |
| F1_REQ_K                   | Request Key                                  |
| F1_REQ_LOG                 | Request Log                                  |
| F1_REQ_LOG_PARM            | Request Log Parameter                        |
| F1_REQ_TYPE                | Request Type                                 |
| F1_REQ_TYPE_L              | Request Type Language                        |
| F1_REQ_TYPE_LOG            | Request Type Log                             |
| F1_REQ_TYPE_LOG_PARM       | Request Type Log Parameter                   |
| F1_SYNC_REQ                | F1_SYNC_REQ                                  |
| F1_SYNC_REQ_CHAR           | F1_SYNC_REQ_CHAR                             |
| F1_SYNC_REQ_K              | F1_SYNC_REQ_K                                |
| F1_SYNC_REQ_LOG            | F1_SYNC_REQ_LOG                              |
| F1_SYNC_REQ_LOG_PARM       | F1_SYNC_REQ_LOG_PARM                         |

## New Views

The following new Views are added to Oracle Utilities Application Framework V4.0.2.

| View              | Description               |
|-------------------|---------------------------|
| CI_USR_ACC_GRP_VW | Access Group by User View |

## Dropped Tables

The following tables are dropped in this release.

- CI\_SCR\_STEP\_K

## Unsupported Tables

The following tables would be deprecated in a future release.

- CI\_XAI\_SVC\_VERS (L)
- CI\_MODULE

## Added Columns

The following Table Columns are added to Oracle Utilities Application Framework V4.0.2.

| Table         | Column                 | Required | Upgrade Note     |
|---------------|------------------------|----------|------------------|
| CI_BATCH_CTRL | BATCH_LANGUAGE_CD      | N        | Timed Batch Jobs |
| CI_BATCH_CTRL | BATCH_THREAD_CNT       | N        | Timed Batch Jobs |
| CI_BATCH_CTRL | EMAILID                | N        | Timed Batch Jobs |
| CI_BATCH_CTRL | F1_BATCH_CTGY_FLG      | N        | Timed Batch Jobs |
| CI_BATCH_CTRL | F1_BATCH_CTRL_TYPE_FLG | Y        | Timed Batch Jobs |
| CI_BATCH_CTRL | F1_TIMER_ACTIVE_FLG    | N        | Timed Batch Jobs |
| CI_BATCH_CTRL | MAX_COMMIT_RECORDS     | N        | Timed Batch Jobs |
| CI_BATCH_CTRL | TIMER_INTERVAL         | N        | Timed Batch Jobs |
| CI_BATCH_CTRL | TRC_PGM_END_SW         | N        | Timed Batch Jobs |
| CI_BATCH_CTRL | TRC_PGM_STRT_SW        | N        | Timed Batch Jobs |
| CI_BATCH_CTRL | TRC_SQL_SW             | N        | Timed Batch Jobs |
| CI_BATCH_CTRL | TRC_STD_SW             | N        | Timed Batch Jobs |
| CI_BATCH_CTRL | USER_ID                | N        | Timed Batch Jobs |
| CI_BATCH_JOB  | BATCH_NBR              | N        | Timed Batch Jobs |



| Table           | Column                     | Required | Upgrade Note                   |
|-----------------|----------------------------|----------|--------------------------------|
| CI_CAL_HOL      | F1_HOLIDAY_END_DTTM        | Y        | Precise Time for Holiday Dates |
| CI_CAL_HOL      | F1_HOLIDAY_START_DTTM      | Y        | Precise Time for Holiday Dates |
| CI_FK_REF       | ZONE_CD                    | N        |                                |
| CI_INSTALL_PROD | PROD_TYPE_FLG              | N        |                                |
| CI_MD_FLD_L     | DESCRLONG_OVRD             | N        |                                |
| CI_MD_FLD       | F1_TRANSLATABLE_FLG        | Y        | Metadata for Translation       |
| CI_MD_FLD       | F1_TRANSLATION_CONTEXT     | N        | Metadata for Translation       |
| CI_MD_TBL       | CACHE_FLG                  | Y        | Performance Metadata Flags     |
| CI_MD_TBL       | KEY_VALIDATION_FLG         | Y        | Performance Metadata Flags     |
| CI_MD_TBL_FLD   | F1_EXTRACT_TRANSLATION_FLG | Y        | Metadata for Translation       |
| CI_MD_TBL_FLD   | F1_TRANSLATION_CONTEXT     | N        | Metadata for Translation       |
| CI_MD_TBL       | F1_EXTRACT_TRANSLATION_FLG | Y        | Metadata for Translation       |
| CI_MD_TBL       | F1_TRANSLATION_CONTEXT     | N        | Metadata for Translation       |
| CI_MSG          | F1_TRANSLATION_CONTEXT     | N        | Metadata for Translation       |
| CI_PORTAL       | USER_CONFIG_FLG            | Y        | Portal Display Rule            |
| CI_PORTAL_ZONE  | SORT_SEQ                   | N        | Portal Display Rule            |
| CI_PORTAL_ZONE  | SORT_SEQ_OVRD              | N        | Portal Display Rule            |
| CI_PORTAL_ZONE  | ZONE_REFRESH_PERIOD        | N        |                                |
| CI_PORTAL_ZONE  | DISPLAY_SW                 | N        | Display/Expand Zones in Portal |
| CI_PORTAL_ZONE  | ZONE_COLLAPSED_SW          | N        | Display/Expand Zones in Portal |
| CI_TIME_ZONE    | F1_TIMEZONE_NAME           | Y        |                                |
| CI_TIME_ZONE_L  | DFLT_TIME_ZONE_LABEL       | N        |                                |

| Table             | Column                | Required | Upgrade Note                                 |
|-------------------|-----------------------|----------|----------------------------------------------|
| CI_TIME_ZONE_L    | SHIFT_TIME_ZONE_LABEL | N        |                                              |
| CI_USR_ZONE       | ZONE_REFRESH_PERIOD   | N        |                                              |
| CI_XAI_SNDR_CTX   | F1_CTXT_VAL_LONG      | Y        | Long Context Value on XAI Sender             |
| CI_ZONE_L         | DESCRLONG_OVRD        | N        | Update Zone Parameter                        |
| CI_ZONE_PRM       | ZONE_PARM_VAL_OVRD    | N        | Update Zone Parameter                        |
| F1_BNDL_ENTITY    | USER_ID               | N        |                                              |
| F1_BUS_OBJ_STATUS | STATUS_REASON_FLAG    | N        |                                              |
| F1_BUS_SVC        | APP_SVC_ID            | Y        | Secure Business Services and Service Scripts |
| F1_DATA_AREA      | F1_EXT_DATA_AREA_CD   | N        |                                              |
| F1_FACT           | BO_STATUS_REASON_CD   | N        |                                              |
| F1_FACT_LOG       | BO_STATUS_REASON_CD   | N        |                                              |
| SC_USER           | EXT_USER_ID           | Y        | Long Userid Support                          |
| SC_USER           | TIME_ZONE_CD          | N        |                                              |
| SC_USER           | F1_SECURITY_HASH      | N        | Long Userid Support                          |
| SC_USER           | USER_ENABLE_FLG       | N        | Security on User Access                      |

## Dropped Columns

The following columns are dropped in this release.

- CI\_PORTAL: USER\_CONFIG\_OVRD\_FLG column.
- F1\_MAP\_L: HTML\_DEFN column.
- CI\_XAI\_SNDR\_CTX: CTXT\_VAL column.
- CI\_XAI\_IN\_SVC\_L: DESCR254 column.
- CI\_SCR\_STEP, CI\_SCR\_STEP\_L, CI\_SCR\_PRMP, CI\_SCR\_PRMP\_L, CI\_SCR\_FLD\_MAP: SCR\_STEP\_ID column.

## Unsupported Table Columns

These columns will be deprecated in a future release.

- CI\_XAI\_IN\_SVC: XAI\_VERSION\_ID column is not used.
- CI\_XAI\_JDBC\_CON: DATABASE\_NAME column is not used.

## Column Format Change

| Table Name                      | Column Name           | From          | To            |
|---------------------------------|-----------------------|---------------|---------------|
| CI_ALG_L                        | DESCR50               | VARCHAR2: 50  | VARCHAR2: 100 |
| CI_ALG_TYPE_L                   | DESCR50               | VARCHAR2: 50  | VARCHAR2: 100 |
| CI_BATCH_CTRL_P_L               | DESCR50               | VARCHAR2: 50  | VARCHAR2: 100 |
| CI_MD_MENU_ITEM_L               | DESCR50               | VARCHAR2: 50  | VARCHAR2: 100 |
| CI_MD_MENU_L                    | DESCR50               | VARCHAR2: 50  | VARCHAR2: 100 |
| CI_MSG_L                        | MESSAGE_TEXT          | VARCHAR2: 100 | VARCHAR2: 254 |
| CI_MSG_L                        | MESSAGE_TEXT_OVRD     | VARCHAR2: 100 | VARCHAR2: 254 |
| CI_NT_DWN_PROF_L                | DESCR50               | VARCHAR2: 50  | VARCHAR2: 100 |
| CI_NT_DWN_TYPE_L                | DESCR50               | VARCHAR2: 50  | VARCHAR2: 100 |
| CI_NT_UP_XTYPE_L                | DESCR50               | VARCHAR2: 50  | VARCHAR2: 100 |
| CI_NT_XID_L                     | DESCR50               | VARCHAR2: 50  | VARCHAR2: 100 |
| CI_SYSDATA_LOG                  | PK_VAL1               | VARCHAR2: 50  | VARCHAR2: 300 |
| CI_SYSDATA_LOG                  | PK_VAL2               | VARCHAR2: 50  | VARCHAR2: 300 |
| CI_SYSDATA_LOG                  | PK_VAL3               | VARCHAR2: 50  | VARCHAR2: 300 |
| CI_SYSDATA_LOG                  | PK_VAL4               | VARCHAR2: 50  | VARCHAR2: 300 |
| CI_SYSDATA_LOG                  | PK_VAL5               | VARCHAR2: 50  | VARCHAR2: 300 |
| CI_XAI_JDBC_CON                 | DATABASE_PASS<br>WORD | VARCHAR2: 32  | VARCHAR2: 64  |
| CI_WF_EVT_TYPE_L                | DESCR50               | VARCHAR2: 50  | VARCHAR2: 100 |
| Change Done Only In<br>Metadata | ADDRESS1              | VARCHAR2: 64  | VARCHAR2: 254 |
| Change Done Only In<br>Metadata | ADDRESS2              | VARCHAR2: 64  | VARCHAR2: 254 |
| Change Done Only In<br>Metadata | ADDRESS3              | VARCHAR2: 64  | VARCHAR2: 254 |

| Table Name                   | Column Name | From         | To            |
|------------------------------|-------------|--------------|---------------|
| Change Done Only In Metadata | ADDRESS4    | VARCHAR2: 64 | VARCHAR2: 254 |

## Metadata Changes in FW for Successful Upgrade

The Following Metadata is changed for a successful Upgrade.

| Metadata Description                                                                                                                              | Action Items for Products                                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ADDRESS1, ADDRESS2, ADDRESS3 and ADDRESS4 Fields are going to be set as FW owned during upgrade. The DataType would be set as VARCHAR2(254 BYTE). | Products that upgrade to FW40 need to make sure that the physical tables should have these columns of length 254.                                                                                                                                 |
| The label of ADDRESS4 field is changed to 'Address 4                                                                                              | 'Products that upgrade to FW40 need to make sure that there would be a new label for Address4 field.                                                                                                                                              |
| BO_DATA_AREA, CITY, COUNTY, GEO_CODE, HOUSE_TYPE, IN_CITY_LIMIT, NUM1, NUM2 and POSTAL would be FW owned.                                         | NONE                                                                                                                                                                                                                                              |
| The Label of GEO_CODE field is changed to 'Geographical Code                                                                                      | 'Products that upgrade to FW40 need to make sure that there would be a new label for GEO_CODE field.                                                                                                                                              |
| XAI_ENV_HNDL_ID = 'DefaultHnd' in CI_XAI_ENV_HNDL Table would be FW owned.                                                                        | NONE                                                                                                                                                                                                                                              |
| Lookup Field HOUSE_TYPE would be FW owned.                                                                                                        | NONE                                                                                                                                                                                                                                              |
| Lookup Field Value- DFLT for field ENV_TYPE_FLG would be FW owned                                                                                 | NONE                                                                                                                                                                                                                                              |
| Lookup Field Values- APTF and FPNM for field SENDER_CTXT_FLG would be FW owned.                                                                   | NONE                                                                                                                                                                                                                                              |
| ACCT_ID, PER_ID and PREM_ID fields are removed from FW. These fields would be now C1 owned.                                                       | Products that upgrade to FW40 need to make sure that these fields would be now C1 owned. During FW40 upgrade in BI these fields should be set as 'BI' owned. If they do not need these fields then it needs to be removed from their environment. |
| The label of NUM1 field is changed to 'Number 1                                                                                                   | 'Products that upgrade to FW40 need to make sure that there would be a new label for NUM1 field.                                                                                                                                                  |
| ACTION_FLG (Lookup) and EFF_DT fields are promoted to FW.                                                                                         | Products that upgrade to FW40 need to make sure that these fields would now be F1 owned.                                                                                                                                                          |

| Metadata Description                                                                                                                           | Action Items for Products                                                                                                                                                                                                                         |
|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TST_COMP_TYP_CD is made CM owned in FW                                                                                                         | Products that upgrade to FW40 need to make sure that if they have this field as F1 owned then it would be deleted. This field is moved to CCB and is related to BUG-6698188                                                                       |
| Lookup Field- ACCESS_MODE and Field_Value- 'PE' would be set as F1 owned                                                                       | Products that upgrade to FW40 need to make sure that the field value-'PE' would now be F1 owned for field name-'ACCESS_MODE'.                                                                                                                     |
| Field TRANS_BUS_OBJ_CD would be FW Owned.                                                                                                      | Products that upgrade to FW40 need to make sure that this Field would now be F1 owned.                                                                                                                                                            |
| View CI_USR_ACC_GRP_VW would be F1 Owned                                                                                                       | Products that upgrade to FW40 need to make sure that this view would now be F1 owned.                                                                                                                                                             |
| CI_SCRIPTS Zone is deleted from FW. Also for CI_TODO Zone the record with Zone Parameter name as CACHE_DATA is made FW owned with value as 'Y' | 'ETM , CCB and BI needs to care about this. The FW 402 upgrade scripts will handle this.                                                                                                                                                          |
| INPUT_OPT_TYPE is deleted from FW                                                                                                              | Products that upgrade to FW40 need to make sure that these fields would be now C1 owned. During FW40 upgrade in BI these fields should be set as 'BI' owned. If they do not need these fields then it needs to be removed from their environment. |

## New System Data

This section lists the new system data that are added for business process configuration.

### Algorithm Type

The following algorithm types are new to V4.0.2.

| Algorithm Type | Description                                    |
|----------------|------------------------------------------------|
| F1-MTR-EM      | To Do Summary Email Monitor.                   |
| F1-ORAGEOCD    | Oracle Spatial Geocoding                       |
| F1-REQ-INF     | Request Information                            |
| F1-REQTY-VAL   | Request Type Validation                        |
| F1-GEN-BOMNJ   | Generic Business Object Status Monitor<br>Java |
| F1-SMSEND      | Send SMS Message Using Oracle BPEL             |
| F1-GENPRINFO   | Maintenance Object - Information               |
| F1-TD-SM-EM    | Email Users on Outstanding To Dos              |

### Algorithm

The following Algorithms are Framework Owned system data in V4.0.2.

| Algorithm    | Description                                                          |
|--------------|----------------------------------------------------------------------|
| F1-AT-RQ     | Transition to Default Next Status                                    |
| F1-AT-RQJ    | Transition to Default Next Status Using<br>Java Based Algorithm Type |
| F1-GENPRINFO | General Process                                                      |
| F1-MTR-EM    | To Do Summary Email Monitor                                          |
| F1-ORAGEOCD  | Oracle Spatial Geocoding                                             |
| F1-REQ-INF   | Request Information                                                  |
| F1-REQTY-VAL | Request Type Validation                                              |
| F1-SMSSNDBPL | Oracle Sms Send                                                      |
| F1-TD-SM-EM  | Email Users on Outstanding To Dos                                    |

### Application Service

The following Application Services are new to V4.0.2.

| Application Service | Description           |
|---------------------|-----------------------|
| ALGDESCRSERVICE     | Algorithm Description |

| Application Service  | Description                                        |
|----------------------|----------------------------------------------------|
| F1-APAYEXPCRTYPEBOAS | Request Type - To Do Summary Email Type            |
| F1-DFLTAPS           | Default Execution Application Service              |
| F1-EXPUSERSREQBOAS   | Request - To Do Summary Email                      |
| F1-GENPROC           | General Process Maintenance Object                 |
| F1ADMIN              | System Admin Functions via Browser Client          |
| F1APPSEC             | Application Security Portal                        |
| F1BORFOL             | Business Object Status Reason Portal               |
| F1CONFIGLOG          | Show User Config Log (Debugging Tool)              |
| F1DEBUG              | Debug Option Access via Browser Client             |
| F1EMHLAU             | Embedded Help                                      |
| F1EXLKP              | Extendable Lookup                                  |
| F1EXLKPS             | Extendable Lookup Query                            |
| F1LCAMRP             | Request MO                                         |
| F1LEXTLKUP           | Extended Lookup Value                              |
| F1LRACTN             | Request Type - Retrieve Action Details for Display |
| F1LTAMTP             | Request Type MO                                    |
| F1REQ                | Request                                            |
| F1REQTYP             | Request Type                                       |
| F1STREAS             | Status Reason                                      |
| F1SUBRQQ             | Request Query                                      |
| F1TBLEXC             | Translatable Strings Exceeding Capacity            |
| F1UIZONE             | Context Sensitive Zone                             |
| FWLSTRJP             | Status Reason MO                                   |
| FWLTMGCT             | Managed Content                                    |

## Access Mode Added to Application Service

The following Access Mode is added to existing Application Services and is new to V4.0.2.

| Application Service | Description           | Access Mode           |
|---------------------|-----------------------|-----------------------|
| CILTUSEP            | User                  | Enable/Disable (ENBL) |
| CILTWSDP            | Feature Configuration | Super User (F1SU)     |

## Batch Control

The following Batch Controls are new to V4.0.2.

| Batch Control | Description                |
|---------------|----------------------------|
| F1-ARQPR      | Request Monitor            |
| F1-REQTY      | Request Type Monitor       |
| F1-SUBRQ      | Request Monitor (Deferred) |

## Business Object

The following Business Objects are Framework Owned system data in V4.0.2.

| Business Object           | Description                            |
|---------------------------|----------------------------------------|
| F1-BOStatusReason         | Business Object Status Reason          |
| F1-COUNTRY                | Country BO                             |
| F1-ContextZonePhysicalBO  | Physical BO for Context Sensitive Zone |
| F1-ExtLkpPhysicalBO       | Physical BO for Extended Lookup        |
| F1-Installation           | Installation Options - Framework       |
| F1-ManagedContPhysicalBO  | Physical BO for Managed Content        |
| F1-StatusReasonPhysicalBO | Physical BO for Status Reason          |
| F1-ToDoSumEmailReq        | To Do Summary Email Request            |
| F1-ToDoSumEmailTyp        | To Do Summary Email                    |
| F1-User                   | User                                   |
| F1-XAI_Inbound_Service    | XAI Inbound Service                    |

## FK Reference

The following FK References are new to V4.0.2.

| FK Reference | Description                |
|--------------|----------------------------|
| F1-ACCGP     | Access Group               |
| F1-ACTTY     | Request Type               |
| F1-BOSRC     | BO with Search Zone        |
| F1-BUS       | Business Object            |
| F1-CAL       | Work Calendar              |
| F1-CNTRY     | Country                    |
| F1-CTXZN     | Context Sensitive Zone     |
| F1-CURCY     | Currency                   |
| F1-DASRC     | Data Area with Search Zone |



| FK Reference | Description                  |
|--------------|------------------------------|
| F1-DISPR     | Display Profile              |
| F1-EXLKP     | Extendable Lookup value list |
| F1-EXLKU     | Extendable Lookup            |
| F1-GENPR     | General Process              |
| F1-MANCT     | Managed Content              |
| F1-MDSO      | Meta-data Search Object      |
| F1-PHONE     | Phone Type                   |
| F1-REQTY     | Request Type                 |
| F1-SCSRC     | Script with Search Zone      |
| F1-STRSN     | Status Reason                |
| F1-SUBRQ     | Request                      |
| F1-TZONE     | Time Zone                    |
| F1-UISRC     | UI Map with Search Zone      |
| F1-USSRC     | User Id With Search Zone     |
| F1-XAIAD     | XAI Adapter                  |
| F1-XAICL     | XAI Class                    |
| F1-XAIEH     | XAI Envelope Handler         |
| F1-XAIEX     | XAI Executer                 |
| F1-XAIFM     | XAI Format                   |
| F1-XAIRC     | XAI Receiver                 |
| F1-XAISV     | XAI Inbound Service          |
| F1-ZONHD     | Zone Type                    |
| F1SR-MO      | MO Option - Status Reason    |

## Lookups

The following Lookups are added to Oracle Utilities Application Framework V4.0.2.

| Lookup Field Name | Field Value | Language | Description    |
|-------------------|-------------|----------|----------------|
| ACCESS_MODE       | ENBL        | ENG      | Enable/Disable |
| ACCESS_MODE       | F1AC        | ENG      | Active         |
| ACCESS_MODE       | F1IN        | ENG      | Inactive       |
| ACCESS_MODE       | F1SU        | ENG      | Super User     |
| ACCESS_MODE       | PE          | ENG      | Pending        |

| Lookup Field Name | Field Value | Language | Description                      |
|-------------------|-------------|----------|----------------------------------|
| ALG_ENTITY_FLG    | F1GS        | ENG      | Installation - Address Geocoding |
| ALG_ENTITY_FLG    | F1MA        | ENG      | Maintenance Object - Audit       |
| ALG_ENTITY_FLG    | F1SR        | ENG      | Installation - SMS Receive       |
| ALG_ENTITY_FLG    | F1SS        | ENG      | Installation - SMS Send          |
| BUS_OBJ_OPT_FLG   | F1PD        | ENG      | Request Preview Service Script   |
| BUS_OBJ_OPT_FLG   | F1PV        | ENG      | Request Preview Map              |
| CACHE_FLG         | BTCH        | ENG      | Cached for Batch                 |
| CACHE_FLG         | NONE        | ENG      | Not Cached                       |
| CHAR_ENTITY_FLG   | F1AR        | ENG      | Request Log                      |
| CHAR_ENTITY_FLG   | F1RT        | ENG      | Request Type Log                 |
| DEST_FLD_TYPE_FLG | GBLC        | ENG      | Global Context                   |
| DEST_FLD_TYPE_FLG | PRTC        | ENG      | Portal Context                   |
| EXT_DATA_TYPE_FLG | DUR         | ENG      | Duration                         |
| EXT_SYS_TYP_FLG   | F1CR        | ENG      | Application Context Root         |
| EXT_SYS_TYP_FLG   | F1DB        | ENG      | Database Connection Information  |
| EXT_SYS_TYP_FLG   | F1SS        | ENG      | SMS Send Configuration           |
| F1-DELETEME       | F1IA        | ENG      | Image Accessibility              |
| F1-DELETEME       | F1LG        | ENG      | System Data Logging Enabled      |
| F1DB_OPT_TYP_FLG  | F1DP        | ENG      | Schema Password                  |
| F1DB_OPT_TYP_FLG  | F1DU        | ENG      | Schema Owner                     |
| F1SS_OPT_TYP_FLG  | F1OP        | ENG      | Operation Name                   |
| F1SS_OPT_TYP_FLG  | F1PT        | ENG      | Port Type                        |
| F1SS_OPT_TYP_FLG  | F1PW        | ENG      | Password                         |
| F1SS_OPT_TYP_FLG  | F1SN        | ENG      | Service Name                     |
| F1SS_OPT_TYP_FLG  | F1SU        | ENG      | Server URL                       |

| Lookup Field Name              | Field Value | Language | Description           |
|--------------------------------|-------------|----------|-----------------------|
| F1SS_OPT_TYP_FLG               | F1UN        | ENG      | User Name             |
| F1_BATCH_CTGY_FLG              | F1AD        | ENG      | Ad Hoc                |
| F1_BATCH_CTGY_FLG              | F1CV        | ENG      | Conversion            |
| F1_BATCH_CTGY_FLG              | F1EX        | ENG      | Extract               |
| F1_BATCH_CTGY_FLG              | F1MN        | ENG      | Monitor               |
| F1_BATCH_CTGY_FLG              | F1OV        | ENG      | Object Validation     |
| F1_BATCH_CTGY_FLG              | F1PR        | ENG      | Process What's Ready  |
| F1_BATCH_CTGY_FLG              | F1RI        | ENG      | Referential Integrity |
| F1_BATCH_CTGY_FLG              | F1TD        | ENG      | To Do Entry           |
| F1_BATCH_CTRL_TY<br>PE_FLG     | F1NT        | ENG      | Not Timed             |
| F1_BATCH_CTRL_TY<br>PE_FLG     | F1TM        | ENG      | Timed                 |
| F1_DATE_MATH_OP<br>TION_FLG    | F1AB        | ENG      | Add Business Days     |
| F1_DATE_MATH_OP<br>TION_FLG    | F1AD        | ENG      | Add Days              |
| F1_DATE_MATH_OP<br>TION_FLG    | F1AT        | ENG      | Add Times             |
| F1_DATE_MATH_OP<br>TION_FLG    | F1DD        | ENG      | Date Difference       |
| F1_DATE_MATH_OP<br>TION_FLG    | F1DT        | ENG      | Date Time Difference  |
| F1_DATE_MATH_OP<br>TION_FLG    | F1FL        | ENG      | Force Last Day        |
| F1_DATE_MATH_OP<br>TION_FLG    | F1MD        | ENG      | Days in Month         |
| F1_DATE_MATH_OP<br>TION_FLG    | F1WD        | ENG      | Day of Week           |
| F1_EXTRACT_TRAN<br>SLATION_FLG | F1NO        | ENG      | No                    |
| F1_EXTRACT_TRAN<br>SLATION_FLG | F1YS        | ENG      | Yes                   |

| Lookup Field Name           | Field Value | Language | Description                      |
|-----------------------------|-------------|----------|----------------------------------|
| F1_EXT_LOOKUP_U<br>SAGE_FLG | F1AC        | ENG      | Active                           |
| F1_EXT_LOOKUP_U<br>SAGE_FLG | F1IN        | ENG      | Inactive                         |
| F1_INPUT_IS_IN_DS<br>T_FLG  | F1N         | ENG      | No                               |
| F1_INPUT_IS_IN_DS<br>T_FLG  | F1Y         | ENG      | Yes                              |
| F1_INPUT_IS_IN_DS<br>T_FLG  | F1AN        | ENG      | Assume Not in Shift              |
| F1_INPUT_IS_IN_DS<br>T_FLG  | F1AY        | ENG      | Assume In Shift                  |
| F1_PROD_TYPE_FL<br>G        | F1PL        | ENG      | Parallel application             |
| F1_SHOW_ALL_REQ<br>_FLG     | F1YE        | ENG      | Yes                              |
| F1_STATE_CONDITI<br>ON_FLG  | F1AC        | ENG      | Active                           |
| F1_STATE_CONDITI<br>ON_FLG  | F1IN        | ENG      | Inactive                         |
| F1_TIMER_ACTIVE_<br>FLG     | F1DS        | ENG      | No                               |
| F1_TIMER_ACTIVE_<br>FLG     | F1EN        | ENG      | Yes                              |
| F1_TRANSLATABLE_<br>FLG     | F1NO        | ENG      | No                               |
| F1_TRANSLATABLE_<br>FLG     | F1YS        | ENG      | Yes                              |
| GEO_MTCH_QLTY_<br>FLG       | 1           | ENG      | Exact match                      |
| GEO_MTCH_QLTY_<br>FLG       | 10          | ENG      | Postal code does not<br>match    |
| GEO_MTCH_QLTY_<br>FLG       | 11          | ENG      | City does not match              |
| GEO_MTCH_QLTY_<br>FLG       | 2           | ENG      | Street type does not<br>match    |
| GEO_MTCH_QLTY_<br>FLG       | 3           | ENG      | House does not match             |
| GEO_MTCH_QLTY_<br>FLG       | 4           | ENG      | Street address does not<br>match |
| ICON_TYPE_FLG               | LBTN        | ENG      | 32 x 32 pixels                   |

| Lookup Field Name      | Field Value | Language | Description                       |
|------------------------|-------------|----------|-----------------------------------|
| ICON_TYPE_FLG          | MBTN        | ENG      | 24 x 24 pixels                    |
| ICON_TYPE_FLG          | SBTN        | ENG      | 16 x 16 pixels                    |
| INS_ALG_ENTITY_FLG     | F1GS        | ENG      | Geocoding Service                 |
| INS_ALG_ENTITY_FLG     | F1SR        | ENG      | SMS Receive Service               |
| INS_ALG_ENTITY_FLG     | F1SS        | ENG      | SMS Send Service                  |
| KEY_VALIDATION_FLG     | ALL         | ENG      | Always Check Uniqueness           |
| KEY_VALIDATION_FLG     | NONE        | ENG      | Never Perform Uniqueness Checking |
| KEY_VALIDATION_FLG     | ONLI        | ENG      | Check Uniqueness Online Only      |
| MAINT_OBJ_OPT_FLG      | F1SR        | ENG      | Status Reason Field               |
| MAINT_OBJ_OPT_FLG      | F1RB        | ENG      | ReplaceBO Option                  |
| MAINT_OBJ_OPT_FLG      | F1RM        | ENG      | ReplaceMO Option                  |
| MAINT_OBJ_OPT_FLG      | F1RS        | ENG      | Replace BO Status Option          |
| MAINT_OBJ_SEVT_FLG     | F1MA        | ENG      | Audit                             |
| MANAG_CONTENT_TYPE_FLG | F1CS        | ENG      | CSS Definitions                   |
| MANAG_CONTENT_TYPE_FLG | F1JS        | ENG      | Javascript                        |
| MANAG_CONTENT_TYPE_FLG | F1WL        | ENG      | Whitelist                         |
| MANAG_CONTENT_TYPE_FLG | F1X         | ENG      | XSLT                              |
| MANAG_CONTENT_TYPE_FLG | F1XC        | ENG      | XSLTC                             |
| MSG_PARM_TYP_FLG       | DUR         | ENG      | Duration parameter                |
| PROD_TYPE_FLG          | F1PL        | ENG      | Parallel Application              |
| SENDER_CTXT_FLG        | BMSG        | ENG      | Bytes Message                     |
| SENDER_CTXT_FLG        | JMSP        | ENG      | JMSUserPassword                   |

| Lookup Field Name        | Field Value | Language | Description                               |
|--------------------------|-------------|----------|-------------------------------------------|
| SENDER_CTXT_FLG          | JMSU        | ENG      | JMS User Name                             |
| SRC_FLD_TYPE_FLG         | GBLC        | ENG      | Global Context                            |
| SRC_FLD_TYPE_FLG         | PRTC        | ENG      | Portal Context                            |
| STATUS_REASON_FLG        | F1OT        | ENG      | Optional                                  |
| STATUS_REASON_FLG        | F1RD        | ENG      | Required                                  |
| STATUS_REASON_SELECT_FLG | F1SL        | ENG      | Selectable                                |
| STATUS_REASON_SELECT_FLG | F1US        | ENG      | Not Selectable                            |
| STD_TM_SRC_FLG           | F1RF        | ENG      | Referenced Time Zone                      |
| STEP_TYPE_FLG            | NVRD        | ENG      | Navigate and refresh dashboard            |
| USER_CONFIG_FLG          | N           | ENG      | No                                        |
| USER_CONFIG_FLG          | Y           | ENG      | Yes                                       |
| USER_ENABLE_FLG          | DSBL        | ENG      | Disable                                   |
| USER_ENABLE_FLG          | ENBL        | ENG      | Enable                                    |
| XAI_OPTION_FLG           | TDIN        | ENG      | To Do Type for Inbound JMS Message Errors |
| XAI_OPTION_FLG           | SUSR        | ENG      | Privileged Users                          |
| ZONE_HPRM_USG_FLG        | ZOVR        | ENG      | Zone - Override Allowed                   |

## Maintenance Object

The following Maintenance Objects are new to V4.0.2.

| MO code      | Description                         |
|--------------|-------------------------------------|
| F1-GENPROC   | General Process                     |
| F1-MAN CONT  | Managed Content                     |
| F1-REQ       | Request                             |
| F1-REQ-TYPE  | Request Type                        |
| F1-EXT LKUP  | Extendable Lookup                   |
| F1-UI ZONE   | Context Sensitive Zone - Single Row |
| F1-STSREASON | Business Object Status Reason       |

## Script

The following Scripts are Framework-owned system data in V4.0.2.

| Script       | Description                                                                  |
|--------------|------------------------------------------------------------------------------|
| F1-AppSerDet | Get Application Service Details                                              |
| F1-AppSrvNav | Navigate to User Group Application Service Page                              |
| F1-BOSStatus | Status Reason Drop Down populate - Pre Processing                            |
| F1-ChkOutLst | Objects Checked Out By User                                                  |
| F1-CondShwZn | Zone Visibility - Should Display Zone in Portal Conditionally                |
| F1-CreEmail  | Request - Create Email                                                       |
| F1-DelUsrGrp | Deny Access                                                                  |
| F1-EdtMDFld  | Edit MD Field                                                                |
| F1-ExLkActn  | Extendable Lookup Actions                                                    |
| F1-ExLkpActZ | Extendable Lookup - Action Map Derivation                                    |
| F1-ExLkpValD | Extendable Lookup Value Derivation Script                                    |
| F1-ExLkpZ    | Extended Lookup - Action Map Derivation                                      |
| F1-ExtDA     | Visibility script for Extended Data Area                                     |
| F1-GENPRINFO | General Process MO Information                                               |
| F1-GetUser   | Get the current User                                                         |
| F1-GetUsrInf | Retrieves the user information with user id appended                         |
| F1-GotoPrtl  | Navigate to portal, given appropriate maintenance object code and key values |
| F1-MainRqTyp | Request Type - Maintain                                                      |
| F1-MaintStRs | Business Object Status Reason Maintenance                                    |
| F1-MtrEmail  | Request Type - To Do Summary Email Monitor                                   |
| F1-PopMDFld  | Populate MD Field                                                            |
| F1-ReqActn   | Request - Retrieve Action Details for Display                                |
| F1-ReqAdd    | Request - Add                                                                |
| F1-ReqCan    | Request - Cancel                                                             |
| F1-ReqChg    | Request - Change                                                             |

| Script       | Description                                                        |
|--------------|--------------------------------------------------------------------|
| F1-ReqDisp   | Request - BO and Map Derivation                                    |
| F1-ReqInf    | Request - Information                                              |
| F1-ReqTyDisp | Request Type - Retrieve Details for Display                        |
| F1-ReqTypSel | Request Type - Select Active                                       |
| F1-ReqValTyp | Request - Validate Request Type                                    |
| F1-ReqZ      | Request - Action Map Derivation                                    |
| F1-RetChrDet | Retrieve Characteristic Type Information Details                   |
| F1-RetSchDef | Retrieves schema definition                                        |
| F1-RqTypActn | Request Type - Retrieve Action Details for Display                 |
| F1-RqTypZ    | Request Type - Action Map Derivation                               |
| F1-RqUsrLgAd | Request - Add User Log Entry                                       |
| F1-RtUsrLgAd | Request Type - Add User Log Entry                                  |
| F1-STRLONG   | String Too Long                                                    |
| F1-SecAthLvl | Security Type with Authorization Level Info                        |
| F1-SelBOLbl  | Retrieve Label for Select BO                                       |
| F1-StsReqRsn | BO Statuses                                                        |
| F1-TRANSTBL  | Inhibit tables with fields not exceeding capacity                  |
| F1-TdSumText | To Do Summary Text Message                                         |
| F1-TodoRqDsp | Request - Retrieve To Do Summary Email Request Details for Display |
| F1-TodoSmPrv | Request - Preview To Do Summary Email                              |
| F1-TodoSumEm | To Do Summary Email                                                |
| F1-TodoTyDsp | Retrieve To Do Summary Email for Display                           |
| F1-UpdMDFld  | Update MD Field                                                    |
| F1-UsrGrpCds | User Group Access Codes                                            |
| F1-ValTdsTyp | To Do Summary Email Request Type Validation                        |
| F1ExtLkMaint | Extended Lookup Maintenance                                        |
| CreatePerson | SS Create Person                                                   |

## To do Type



The following To Do type is new to V4.0.2.

| To Do Type | Description                       |
|------------|-----------------------------------|
| F1-ARQPR   | Request Monitor Errors            |
| F1-INJMS   | JMS Inbound Message In Error      |
| F1-REQTY   | Request Type Monitor Errors       |
| F1-SUBRQ   | Request Monitor (Deferred) Errors |

## Portal

The following Portal is new to V4.0.2.

| Portal     | Description                             |
|------------|-----------------------------------------|
| F1APPSEC   | Application Security                    |
| F1EMHLAU   | Embedded Help Authoring                 |
| F1EXLKP    | Extendable Lookup                       |
| F1EXLKPS   | Extendable Lookup Query                 |
| F1REQ      | Request                                 |
| F1REQTYP   | Request Type                            |
| F1STREAS   | Status Reason                           |
| F1SUBRQQ   | Request Query                           |
| F1TBLEXC   | Translatable Strings Exceeding Capacity |
| F1_MAN_CON | Managed Content                         |

## Portal Zone

The following Portal Zones are added to V4.0.2

| Portal   | Zone         |
|----------|--------------|
| F1APPSEC | F1-APSVDTL   |
| F1APPSEC | F1-USGRPWSR  |
| F1APPSEC | F1-USGRPWTSR |
| F1EMHLAU | F1-UISRC     |
| F1EXLKP  | F1-EXLKPLST  |
| F1EXLKP  | F1-EXLKPVLD  |
| F1EXLKP  | F1-EXLKACTN  |
| F1EXLKPS | F1-EXLKPSRCH |
| F1REQ    | F1-SUBRACTN  |
| F1REQ    | F1-SUBRQL    |

| Portal       | Zone         |
|--------------|--------------|
| F1REQ        | F1-SUBRQZ    |
| F1REQTYP     | F1-REQTYL    |
| F1REQTYP     | F1-RQTACTN   |
| F1REQTYP     | F1-SUBRQD    |
| F1REQTYP     | F1-SUBRQT    |
| F1STREAS     | F1-BORFOL    |
| F1STREAS     | F1-SREBO     |
| F1SUBRQQ     | F1-SUBREQ    |
| F1TBLEXC     | F1-STRLONG   |
| F1TBLEXC     | F1-TRANSTBL  |
| F1_MAN_CON   | F1-MAN-CON   |
| F1_MAN_CON   | F1-SCHHDR-MC |
| F1_SCHEMA_BO | F1-SCHEMA-US |
| F1_SCHEMA_DA | F1-EXTDA     |

## UI Map

The following UI Maps are Framework Owned system data in V4.0.2.

| Map                            | Description                                      |
|--------------------------------|--------------------------------------------------|
| F1-AppSrvDetDisp               | Application Service Details Display              |
| F1-AppSrvUsGrpFilter           | Application Service User Group Filter Area       |
| F1-AppZoneHeaderMenu           | Application URL Zone Header Menu Fragment        |
| F1-CancelRequest               | Request - Cancel Confirmation                    |
| F1-DAExplorerHeaderFrameAction | Explorer Header Action UI Map Fragment           |
| F1-DisplayFavoriteScripts      | Display Favorite Scripts                         |
| F1-EditMDField                 | Edit MD Field                                    |
| F1-EditorHeader                | HTML Editor Zone Header                          |
| F1-EnterRequestType            | Request - Select Request Type                    |
| F1-ExplZoneHeadMenuFusion      | Fusion style zone header menu for explorer zones |
| F1-ExtDAHeader                 | Default Header for Data Explorers                |
| F1-GenericZoneHdrActions       | Generic Zone Header Actions                      |

| Map                            | Description                                |
|--------------------------------|--------------------------------------------|
| F1-MQueryExpHeaderFrameActions | Multi Query Explorer Header Action UI Map  |
| F1-MultiExplorerHeadFrameAct   | Explorer Header Action UI Map Fragment     |
| F1-RequestActions              | Request - Actions                          |
| F1-RequestTypeActions          | Request Type - Actions                     |
| F1-RequestTypeUserLogAdd       | Request Type - Add User Log Entry          |
| F1-RequestUserLogAdd           | Request - Add User Log Entry               |
| F1-StatusReasonInput           | State Transition - Enter Reason            |
| F1-StatusReasonMaintenance     | Status Reason - Maintenance                |
| F1-StringLongDetails           | Display fields exceeding 70% capacity      |
| F1-ToDoSumEmailDisp            | To Do Summary Email Request - Display      |
| F1-ToDoSumEmailPreview         | Request - Preview To Do Summary Email      |
| F1-ToDoSumEmailReqMaint        | Request - To Do Summary Email Maintenance  |
| F1-ToDoSumEmailTypMaint        | To Do Summary Email Type - Maintenance     |
| F1-ToDoSumEmailTypeDisp        | To Do Summary Email Request Type - Display |
| F1-UIMapHeadMenuFusion         | Fusion look zone header menu               |

## XAI Inbound Service

The following XAI Inbound Service is new to V4.0.2.

| XAI Inbound Service name | Description   |
|--------------------------|---------------|
| F118739517               | F1-SmsReceive |

## Zone Type

The following Zone Types are new to V4.0.2.

| Zone Type code | Description     |
|----------------|-----------------|
| F1-APP-URL     | Application URL |

## Zone

The following new Zones are added to V4.0.2.

| Zone        | Zone Type | Description                      |
|-------------|-----------|----------------------------------|
| F1-APSRVSEC | F1-DE     | Get Application Service Security |

| Zone         | Zone Type    | Description                              |
|--------------|--------------|------------------------------------------|
| F1-APSVDTL   | F1-MAPEXPL   | ApplicationServiceDetails                |
| F1-BNCTXZS   | F1-DE-QUERY  | Context Sensitive Zone Search            |
| F1-BNEXLKPS  | F1-DE-QUERY  | ExtendedLookupSearch                     |
| F1-BNMANCONS | F1-DE-QUERY  | Managed Content Search                   |
| F1-BNSTSRSNS | F1-DE-QUERY  | Business Object Status Reason Search     |
| F1-BORFOL    | F1-DE-SINGLE | Business Objects with Status Reason      |
| F1-BOSRCH    | F1-DE-QUERY  | Business Object Search                   |
| F1-BOSTSLST  | F1-DE-SINGLE | Retrieve BO Statuses Allowing Reason     |
| F1-BSRDRS    | F1-DE-SINGLE | Getrequiredstatusreasons                 |
| F1-BSSLRS    | F1-DE-SINGLE | Get all selected Reasons                 |
| F1-CONDSHWZN | F1-DE-SINGLE | ApplicationServiceDetails                |
| F1-DASRCH    | F1-DE-QUERY  | Data Area Search                         |
| F1-DISSTS    | F1-DE-SINGLE | Zone to fetch distinct states for the BO |
| F1-EXLKPLST  | F1-DE-SINGLE | Extendable Lookup Value List             |
| F1-EXLKPSRCH | F1-DE-QUERY  | ExtendableLookupSearch                   |
| F1-EXLKPVALD | F1-MAPDERV   | ExtendableLookupValue                    |
| F1-EXTDA     | F1-DE-SINGLE | Extension Data Areas                     |
| F1-FAVSCR    | F1-DE-SINGLE | Favorites Scripts                        |
| F1-GETACTTYP | F1-DE-SINGLE | Retrieve Active Request Types            |
| F1-GETEXLKPD | F1-DE-SINGLE | Get Extended Lookup Value details        |
| F1-GETEXTSYS | F1-DE-SINGLE | Retrieve External Systems                |
| F1-GETRECREQ | F1-DE-SINGLE | Retrieve Latest Request for Request Type |
| F1-GPINFO    | F1-DE-SINGLE | Retrieve General Process Information     |
| F1-MAN-CON   | F1-XMLEditor | Editor                                   |
| F1-MONAVKEY  | F1-DE-SINGLE | Get Tab Menu Navigation Key for MO       |
| F1-REQTYL    | F1-DE-SINGLE | Request Type Log                         |

| Zone         | Zone Type    | Description                                    |
|--------------|--------------|------------------------------------------------|
| F1-RQTACTN   | F1-MAPDERV   | Actions                                        |
| F1-SCHHDR-MC | F1-FIELDVALS | General Information                            |
| F1-SCSRCH    | F1-DE-QUERY  | Script Search                                  |
| F1-SREBO     | F1-DE-SINGLE | Status Reasons                                 |
| F1-STRLONG   | F1-MAPEXPL   | Translatable Strings<br>Exceeding Capacity     |
| F1-SUBRACTN  | F1-MAPDERV   | Actions                                        |
| F1-SUBREQ    | F1-DE-QUERY  | Request Search                                 |
| F1-SUBRQD    | F1-MAPDERV   | Request Type                                   |
| F1-SUBRQL    | F1-DE-SINGLE | Request Log                                    |
| F1-SUBRQT    | F1-DE-SINGLE | Request Type List                              |
| F1-SUBRQZ    | F1-MAPDERV   | Request                                        |
| F1-TDS-ALL   | F1-DE-SINGLE | To Do Summary Email All                        |
| F1-TDS-CNT   | F1-DE-SINGLE | To Do Summary Email<br>Count                   |
| F1-TDS-OPN   | F1-DE-SINGLE | To Do Summary Email Get<br>Open To Dos by Type |
| F1-TDS-PRV   | F1-DE-SINGLE | To Do Summary Email<br>Preview                 |
| F1-TRANSTBL  | F1-DE-SINGLE | Translatable Tables                            |
| F1-TZSRCH    | F1-DE-QUERY  | Time Zone Search                               |
| F1-UISRC     | F1-DE-QUERY  | UI Map Search                                  |
| F1-UISRCH    | F1-DE-QUERY  | UserInterfaceMapSearch                         |
| F1-USGRACML  | F1-DE        | Get User Group Access<br>Modes                 |
| F1-USGRPWSR  | F1-DE        | UserGroups with Access                         |
| F1-USGRPWTSR | F1-DE        | UserGroups without Access                      |
| F1-USGRSECL  | F1-DE        | Get Security Type Access for<br>User Group     |
| F1-USSRCH    | F1-DE-QUERY  | User Search                                    |
| F1_USRSCR    | F1-MAPEXPL   | Favorite Scripts                               |
| F1-WORKCAL   | F1-DE-QUERY  | Work Calendar Search                           |

# Appendix B

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## Upgrades to the Oracle Utilities Application Framework V4.0.2 Database

This document describes the database upgrade process for the Oracle Utilities Application Framework database from V4.0.1 to V4.0.2. It highlights changes made to the administrative tables and how those changes should be applied to the data in order for a V4.0.1 database to work with the V4.0.2 application, and to preserve the business logic implemented in the previous version of the application. The changes that do not require data upgrade are not described in this document. The tasks that need to be performed after running the upgrade scripts are included.

The added functionality of V4.0.2 is not the scope of this documentation. The upgrade scripts do not turn on the newly added functionality by default. For new functionality, refer the V4.0.2 User Guides. In the last section of this document you will find a list of the new tables that are added in V4.0.2.

## Automatic Data Upgrade

This section describes what the upgrade script will populate in new tables and columns to preserve the existing base product application functions of the previous version of Oracle Utilities Application Framework.

### Display/Expand Zones in Portal

To allow the user to display or hide zones in the portal, we need to provide an extra field on the Field Maintenance Page of Portal Zone (CI\_PORTAL\_ZONE). The new field added to Portal Zone is called Display Switch (DISPLAY\_SW). It defines a display switch value of Y or N to display or hide a zone within the portal.

Also to allow the user to expand or collapse the zones in the portal, we need to provide an extra field on the Field Maintenance Page of Portal Zone. The new field added to Portal Zone is called Zone Collapsed Switch (ZONE\_COLLAPSED\_SW). It defines a Zone Collapsed switch value of Y or N to collapse or display a zone within the portal.

As a part of the Upgrade Process DISPLAY\_SW is set to 'Y' and ZONE\_COLLAPSED\_SW is set to 'N'.

## Schema Change

### New Tables

The following new tables are added to Oracle Utilities Application Framework V4.0.2.

| Tables               | Description          |
|----------------------|----------------------|
| F1_DB_OBJECTS_REPO   | F1_DB_OBJECTS_REPO   |
| F1_GEN_PROC          | F1_GEN_PROC          |
| F1_GEN_PROC_K        | F1_GEN_PROC_K        |
| F1_SYNC_REQ          | F1_SYNC_REQ          |
| F1_SYNC_REQ_CHAR     | F1_SYNC_REQ_CHAR     |
| F1_SYNC_REQ_K        | F1_SYNC_REQ_K        |
| F1_SYNC_REQ_LOG      | F1_SYNC_REQ_LOG      |
| F1_SYNC_REQ_LOG_PARM | F1_SYNC_REQ_LOG_PARM |

### Dropped Tables

The following tables are dropped in this release.

- CI\_SCR\_STEP\_K

### Unsupported Tables

The following tables would be deprecated in a future release.

- CI\_XAI\_SVC\_VERS (L)
- CI\_MODULE

## Added Columns

The following Table Columns are added to Oracle Utilities Application Framework V4.0.2.

| Table          | Column            | Required | Upgrade Note                   |
|----------------|-------------------|----------|--------------------------------|
| CI_PORTAL_ZONE | DISPLAY_SW        | N        | Display/Expand Zones in Portal |
| CI_PORTAL_ZONE | ZONE_COLLAPSED_SW | N        | Display/Expand Zones in Portal |

## Dropped Columns

The following columns are dropped in this release.

- CI\_PORTAL: USER\_CONFIG\_OVRD\_FLG column.
- F1\_MAP\_L: HTML\_DEFN column.
- CI\_XAI\_SNDR\_CTX: CTXT\_VAL column.
- CI\_XAI\_IN\_SVC\_L: DESCR254 column.
- CI\_SCR\_STEP, CI\_SCR\_STEP\_L, CI\_SCR\_PRMPT, CI\_SCR\_PRMPT\_L, CI\_SCR\_FLD\_MAP: SCR\_STEP\_ID column.

## Unsupported Table Columns

These columns will be deprecated in a future release.

- CI\_XAI\_IN\_SVC: XAI\_VERSION\_ID column is not used.
- CI\_XAI\_JDBC\_CON: DATABASE\_NAME column is not used.

## Metadata Changes in FW for Successful Upgrade

The Following Metadata is changed in FW402 for a successful Upgrade.

| Metadata Description                                                                                                                              | Action Items for Products                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| CI_SCRIPTS Zone is deleted from FW.<br>Also for CI_TODO Zone the record with Zone Parameter name as CACHE_DATA is made FW owned with value as 'Y' | 'ETM , CCB and BI needs to care about this. The FW 402 upgrade scripts will handle this. |



## New System Data

This section lists the new system data that are added for business process configuration.

### Algorithm Type

The following algorithm types are new to V4.0.2.

| Algorithm Type | Description                      |
|----------------|----------------------------------|
| F1-GENPRINFO   | Maintenance Object - Information |

### Algorithm

The following Algorithms are Framework Owned system data in V4.0.2.

| Algorithm    | Description     |
|--------------|-----------------|
| F1-GENPRINFO | General Process |

### Application Service

The following Application Services are new to V4.0.2.

| Application Service | Description                        |
|---------------------|------------------------------------|
| F1-GENPROC          | General Process Maintenance Object |

### Access Mode Added to Application Service

The following Access Mode is added to existing Application Services and is new to V4.0.2.

| Application Service | Description                   | Access Mode  |
|---------------------|-------------------------------|--------------|
| F1-EXPUSERSREQBOAS  | Request - To Do Summary Email | Pending (PE) |

### FK Reference

The following FK References are new to V4.0.2.

| FK Reference | Description     |
|--------------|-----------------|
| F1-GENPR     | General Process |

### Lookups

The following Lookups are added to Oracle Utilities Application Framework V4.0.2.

| Lookup Field Name          | Field Value | Language | Description                |
|----------------------------|-------------|----------|----------------------------|
| ALG_ENTITY_FLG             | F1MA        | ENG      | Maintenance Object - Audit |
| F1_INPUT_IS_IN_DS<br>T_FLG | F1AN        | ENG      | AssumeNotinShift           |

| Lookup Field Name          | Field Value | Language | Description                               |
|----------------------------|-------------|----------|-------------------------------------------|
| F1_INPUT_IS_IN_DS<br>T_FLG | F1AY        | ENG      | Assume In Shift                           |
| MAINT_OBJ_OPT_FLG          | F1RB        | ENG      | Replace BO Option                         |
| MAINT_OBJ_OPT_FLG          | F1RM        | ENG      | Replace MO Option                         |
| MAINT_OBJ_OPT_FLG          | F1RS        | ENG      | Replace BO Status Option                  |
| MAINT_OBJ_SEVT_FLG         | F1MA        | ENG      | Audit                                     |
| SENDER_CTXT_FLG            | JMSP        | ENG      | JMS User Password                         |
| SENDER_CTXT_FLG            | JMSU        | ENG      | JMS User Name                             |
| STEP_TYPE_FLG              | NVRD        | ENG      | Navigate and refresh dashboard            |
| XAI_OPTION_FLG             | TDIN        | ENG      | To Do Type for Inbound JMS Message Errors |
| ZONE_HPRM_USG_FLG          | ZOVR        | ENG      | Zone - Override Allowed                   |

## Maintenance Object

The following Maintenance Objects are new to V4.0.2.

| MO code    | Description     |
|------------|-----------------|
| F1-GENPROC | General Process |

## Script

The following Scripts are Framework-owned system data in V4.0.2.

| Script       | Description                               |
|--------------|-------------------------------------------|
| F1-ExLkActn  | Extendable Lookup Actions                 |
| F1-ExLkpActZ | Extendable Lookup - Action Map Derivation |
| F1-ExLkpZ    | ExtendedLookup-ActionMapDerivation        |
| F1-GENPRINFO | General Process MO Information            |
| F1-SelBOLbl  | Retrieve Label for Select BO              |

## To do Type

The following To Do type is new to V4.0.2.

| To Do Type | Description                  |
|------------|------------------------------|
| F1-INJMS   | JMS Inbound Message In Error |

## Portal Zone

The following Portal Zones are added to V4.0.2

| Portal  | Zone        |
|---------|-------------|
| F1EXLKP | F1-EXLKACTN |

## UI Map

The following UI Maps are Framework Owned system data in V4.0.2.

| Map                        | Description                                      |
|----------------------------|--------------------------------------------------|
| F1-ExplZoneHeadMenuFusion  | Fusion style zone header menu for explorer zones |
| F1-ExtendableLookupActions | Extendable Lookup - Actions                      |
| F1-UIMapHeadMenuFusion     | Fusion look zone header menu                     |

## Zone

The following new Zones are added to V4.0.2.

| Zone        | Zone Type    | Description                          |
|-------------|--------------|--------------------------------------|
| F1-EXLKACTN | F1-MAPDERV   | Actions                              |
| F1-FAVSCR   | F1-DE-SINGLE | Favorites Scripts                    |
| F1-GPINFO   | F1-DE-SINGLE | Retrieve General Process Information |
| F1_USRSCR   | F1-MAPEXPL   | Favorite Scripts                     |

# Appendix C

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## Oracle Utilities Mobile Workforce Management System Table Guide

This chapter lists the system tables owned by Oracle Utilities Mobile Workforce Management V2.0.1 and explains the data standards of the system tables. The data standards are required for Oracle Utilities Mobile Workforce Management installation, development within Oracle Utilities Mobile Workforce Management, configuration of Oracle Utilities products, and customization of the Oracle Utilities products. Adhering to the data standards is a prerequisite for a seamless upgrade to the next release of the product. For the general discussion of System Tables, refer to the System Table Guide for the Oracle Utilities Application Framework.

This section includes:

- **Development and Implementation System Tables**

## Development and Implementation System Tables

### Parameter Definition

| Properties            | Description                         |
|-----------------------|-------------------------------------|
| Tables                | M1_PARM_DEF, M1_PARM_DEF_L          |
| Standard Data Fields  | Parameter Definition (PARM_DEF_CD). |
| Customer Modification | None                                |

# Appendix D

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## Oracle Application Framework System Table Guide

This section lists the system tables owned by the Oracle Utilities Application Framework V4.0.2 and explains the data standards of the system tables. The data standards are required for the installation of Oracle Utilities Application Framework, development within the Oracle Utilities Application Framework, and the configuration and customization of Oracle Utilities products. Adhering to the data standards is a prerequisite for seamless upgrade to future releases.

This section includes:

- **About the Application Framework System Tables**
- **System Table Standards**
- **Guidelines for System Table Updates**
- **System Table List**

## About the Application Framework System Tables

System tables are a subset of the tables that must be populated at the time the product is installed. They include Metadata and configuration tables. The data stored in the system tables are the information that Oracle Utilities Application Framework product operations are based on.

As the product adds more functionality, the list of system tables can grow. The complete list of the system tables can be found in the **System Table List** section.

## System Table Standards

System table standards must be observed for the following reasons:

- The product installation and upgrade process and customer modification data extract processes depend on the data prefix and owner flag values to determine the system data owned by each product.
- The standards ensure that there will be no data conflict in the product being developed and the future Oracle Utilities Application Framework release.
- The standards ensure that there will be no data conflict between customer modifications and future Oracle Utilities product releases.
- The data prefix is used to prevent test data from being released to production.

**Developer's Note:** All test data added to the system data tables must be prefixed by ZZ (all upper case) in order for the installation and upgrade utility to recognize them as test data.

# Guidelines for System Table Updates

This section describes guidelines regarding the updating of the system table properties.

## Business Configuration Tables

The majority of data in the tables in this group belongs to the customer. But these tables are shipped with some initial data in order for the customer to login to the system and begin configuring the product. Unless specified otherwise, the initial data is maintained by Oracle Utilities Application Framework and subject to subsequent upgrade.

## Application Security and User Profile

These tables define the access rights of a User Group to Application Services and Application Users.

| Properties   | Description                                                                                                                                                                                                             |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tables       | SC_ACCESS_CNTL, SC_USER, SC_USR_GRP_PROF, SC_USR_GRP_USR, SC_USER_GROUP, SC_USER_GROUP_L                                                                                                                                |
| Initial Data | User Group All SERVICES and default system user SYSUSER. Upon installation the system default User Group All SERVICES is given unrestricted accesses to all services defined in Oracle Utilities Application Framework. |

**Developer's Note:** When a new service is added to the system, all actions defined for the service must be made available to the User Group All SERVICES.

## Currency Code

The ISO 4217 three-letter codes are taken as the standard code for the representation of each currency.

| Properties   | Description                      |
|--------------|----------------------------------|
| Tables       | CI_CURRENCY_CD, CI_CURRENCY_CD_L |
| Initial Data | United States Dollar (USD).      |



## DB Process

| Properties   | Description                                                                                                                          |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Tables       | CI_DB_PROC, CI_DB_PROC_L,<br>CI_DB_INSTR, CI_DB_INSTR_L, L,<br>CI_DB_INSTR_OVRD                                                      |
| Initial Data | Copy DB Process (CL-COPDB). This DB process allows users to copy a DB process from one database to another using Config Lab utility. |

## Display Profile

The Display Profile Code is referenced in the User (SC\_USER) table.

| Properties   | Description                                |
|--------------|--------------------------------------------|
| Tables       | CI_DISP_PROF, CI_DISP_PROF_L               |
| Initial Data | North America (NORTHAM) and Europe (EURO). |

## Installation Options

Installation Option has only one row that is shipped with the initial installation of the Oracle Utilities Application Framework. The updatable columns in these tables are customer data and will not be overridden by the upgrade process unless a special script is written and included in the upgrade process.

| Properties   | Description                                                                                 |
|--------------|---------------------------------------------------------------------------------------------|
| Tables       | F1_INSTALLATION,<br>CI_INSTALL_ALG, CI_INSTALL_MSG,<br>CI_INSTALL_MSG_L,<br>CI_INSTALL_PROD |
| Initial Data | Option 11111.                                                                               |

**Developer's Note:** The system data owner of an environment is defined in the Installation Option. This Owner Flag value is stamped on all system data that is added to this environment. The installation default value is Customer Modification (CM). This value must be changed in the base product development environments.

## Language Code

Language Code must be a valid code defined in ISO 639-2 Alpha-3. Adding a new language code to the table without translating all language dependent objects in the system can cause errors when a user chooses the language.

| Properties   | Description    |
|--------------|----------------|
| Tables       | CI_LANGUAGE    |
| Initial Data | English (ENG). |

## To Do Priority and Role

New To Do Types released will be linked to the default To Do Role and set to the product assigned priority value initially. These initial settings can be overridden by the implementation.

| Properties   | Description                |
|--------------|----------------------------|
| Tables       | CI_ROLE(L), CI_TD_VAL_ROLE |
| Initial Data | F1_DFLT                    |

## Development and Implementation System Tables

This section defines the standards for the system tables that contain data for application development. The data in these tables implement business logic and UI functions shared by various products and product extensions in the same database.

### Standards

When adding new data, the owner flag value of the environment must prefix certain fields of these tables. For example, when a developer adds a new algorithm type to an Oracle Utilities Customer Care and Billing environment, C1 should prefix the new Algorithm Type code. The fields that are subject to this rule are listed in Standard Data Fields property.

The data that is already in these tables cannot be modified if the data owner is different than the environment owner. This prevents the developers from accidentally modifying system data that belongs to the Oracle Utilities application framework or the base products. However, some fields are exempt from this rule and can be modified by Customer Modification. These fields are listed in the Customer Modification Fields property.

Starting with version 2.2 of the framework a new system data upgrade rule was introduced - Override Owner flag. If duplicate data rows (data row with same primary key values) are found at the time of upgrade, the owner flag values will get overridden. The lower level application system data will override the upper level system data. For example, F1 overrides C1, F1&C1 override CM, and so on. This rule will be applied to the following tables: CI\_CHAR\_ENTITY, CI\_MD\_MO\_ALG, F1\_BUS\_OBJ\_ALG, F1\_BUS\_OBJ\_STATUS\_ALG, CI\_MD\_MO\_OPT, F1\_BUS\_OBJ\_OPT, F1\_BUS\_OBJ\_STATUS\_OPT, F1\_BUS\_OBJ\_STATUS, F1\_BUS\_OBJ\_STATUS\_L

### Algorithm Type

| Properties            | Description                                                    |
|-----------------------|----------------------------------------------------------------|
| Tables                | CI_ALG_TYPE, CI_ALG_TYPE_L, CI_ALG_TYPE_PRM, CI_ALG_TYPE_PRM_L |
| Standard Data Fields  | Algorithm Type (ALG_TYPE_CD)                                   |
| Customer Modification | None                                                           |

## Algorithm

| Properties            | Description                               |
|-----------------------|-------------------------------------------|
| Tables                | CI_ALG, CI_ALG_L, CI_ALG_PARM, CI_ALG_VER |
| Standard Data Fields  | Algorithm (ALG_CD)                        |
| Customer Modification | None                                      |

## Application Security

| Properties            | Description                                                                                                                                                   |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tables                | SC_APP_SERVICE, SC_APP_SERVICE_L, CI_APP_SVC_ACC                                                                                                              |
| Standard Data Fields  | Application Service ID (APP_SVC_ID). Customer care and billing products prior to version 2.0 will continue to use CI as a prefix for the application service. |
| Customer Modification | None                                                                                                                                                          |

## Batch Control

| Properties            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tables                | CI_BATCH_CTRL, CI_BATCH_CTRL_L, CI_BATCH_CTRL_P, CI_BATCH_CTRL_P_L                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Standard Data Fields  | Batch Process (BATCH_CD), Program Name (PROGRAM_NAME)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Customer Modification | Next Batch Number (NEXT_BATCH_NBR), Last Update Instance (LAST_UPDATE_INST), Last Update Date time (LAST_UPDATE_DTTM) and the batch process update these columns. Time Interval (TIMER_INTERVAL), Thread Count (BATCH_THREAD_CNT), Maximum Commit Records (MAX_COMMIT_RECS), User (USER_ID), Language (LANGUAGE_CD), Email Address (EMAILID), Start program debug tracing (TRC_PGM_STRT_SW), End Program Debug trace (TRC_PGM_END_SW), SQL debug tracing (TRC_SQL_SW) and Standard debug tracing (TRC_STD_SW) on CI_BATCH_CTRL Table. Batch Parameter Value (BATCH_PARM_VAL) on Batch Control Parameters Table (CI_BATCH_CTRL_P) |

## Business Object

| Properties            | Description                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tables                | F1_BUS_OBJ, F1_BUS_OBJ_L,<br>F1_BUS_OBJ_ALG, F1_BUS_OBJ_OPT,<br>F1_BUS_OBJ_STATUS,<br>F1_BUS_OBJ_STATUS_L,<br>F1_BUS_OBJ_STATUS_ALG,<br>F1_BUS_OBJ_STATUS_OPT,<br>F1_BUS_OBJ_STATUS_RSN,<br>F1_BUS_OBJ_STATUS_RSN_L,<br>F1_BUS_OBJ_STATUS_RSN_CHAR<br>F1_BUS_OBJ_TR_RULE,<br>F1_BUS_OBJ_TR_RULE_L                                                                                                                       |
| Standard Data Fields  | Business Object (BUS_OBJ_CD)                                                                                                                                                                                                                                                                                                                                                                                            |
| Customer Modification | Batch Control (BATCH_CD), Alert<br>(BO_ALERT_FLG), Sequence<br>(SORT_SEQ5), Status Reason<br>(STATUS_REASON_FLG) fields on<br>Business Object Status Table<br>(F1_BUS_OBJ_STATUS). Instance<br>Control (INSTANCE_CTRL_FLG),<br>Application Service (APP_SVC_ID) on<br>Business Object Table (F1_BUS_OBJ).<br>Status Reason Selection<br>(STATUS_REASON_SELECT_FLG) on<br>Status Reason Table<br>(F1_BUS_OBJ_STATUS_RSN) |

## Business Service

| Properties            | Description                      |
|-----------------------|----------------------------------|
| Tables                | F1_BUS_SVC, F1_BUS_SVC_L         |
| Standard Data Fields  | Business Service (BUS_SVC_CD)    |
| Customer Modification | Application Service (APP_SVC_ID) |

## Characteristics

| Properties           | Description                                                                    |
|----------------------|--------------------------------------------------------------------------------|
| Tables               | CI_CHAR_TYPE, CI_CHAR_TYPE_L,<br>CI_CHAR_ENTITY, CI_CHAR_VAL,<br>CI_CHAR_VAL_L |
| Standard Data Fields | Characteristic Type (CHAR_TYPE_CD)                                             |

| Properties            | Description                                                                                                   |
|-----------------------|---------------------------------------------------------------------------------------------------------------|
| Customer Modification | Adhoc Characteristic Value Validation Rule (ADHOC_VAL_ALG_CD) on Characteristic Entity Table (CI_CHAR_ENTTTY) |

## Data Area

| Properties            | Description                   |
|-----------------------|-------------------------------|
| Tables                | F1_DATA_AREA, F1_DATA_AREA_L  |
| Standard Data Fields  | Data Area Code (DATA_AREA_CD) |
| Customer Modification | None                          |

## Display Icon

| Properties            | Description                      |
|-----------------------|----------------------------------|
| Tables                | CI_DISP_ICON, CI_DISP_ICON_L     |
| Standard Data Fields  | Display Icon Code (DISP_ICON_CD) |
| Customer Modification | None                             |

## Foreign Key Reference

| Properties            | Description                                  |
|-----------------------|----------------------------------------------|
| Tables                | CI_FK_REF, CI_FK_REF_L                       |
| Standard Data Fields  | FK reference code (FK_REF_CD)                |
| Customer Modification | Info Program Name (INFO_PRG), Zone (ZONE_CD) |

## Lookup

| Properties | Description                                                                                         |
|------------|-----------------------------------------------------------------------------------------------------|
| Tables     | CI_LOOKUP_FIELD,<br>CI_LOOKUP_VAL,<br>CI_LOOKUP_VAL_L,<br>F1_EXT_LOOKUP_VAL,<br>F1_EXT_LOOKUP_VAL_L |

| Properties            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Standard Data Fields  | <p>Field Name (FIELD_NAME)</p> <ul style="list-style-type: none"> <li>A lookup field name must have corresponding field metadata. The name of the lookup field column must be assigned to avoid conflicts among different products. If you follow the standards for database field names, a Customer Modification lookup field name will be automatically Customer Modification prefixed.</li> </ul> <p>Field Value (FIELD_VALUE)</p> <ul style="list-style-type: none"> <li>If a lookup field is customizable, Customer Modification can insert new lookup values. X or Y must prefix when implementers introduce a new lookup value.</li> <li>Product development can extend the Oracle Utilities Application Framework owned lookup field's value with caution. When it needs to be extended, prefix the first letter of the Owner Flag to the value. For example, when adding a new value to the algorithm entity flag (ALG_ENTITY_FLG), prefix with C1 if you are developing an Oracle Utilities Customer Care and Billing product.</li> </ul> <p>Introduced in V 4.0.1:<br/>Value (F1_EXT_LOOKUP_VALUE)</p> <ul style="list-style-type: none"> <li>This will allow storing longer value keys rather than the normal 4byte lookup values.</li> </ul> |
| Customer Modification | Override Description (DESCR_OVRD) on Lookup Field Value Language Table (CI_LOOKUP_VAL_L)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

A new Feature option is defined through adding a value to EXT\_SYS\_TYP\_FLG. The field value for this look up field must be prefixed by the Owner flag value.

## Map

| Properties            | Description      |
|-----------------------|------------------|
| Tables                | F1_MAP, F1_MAP_L |
| Standard Data Fields  | UI Map (MAP_CD)  |
| Customer Modification | None             |

## Managed Content

| Properties            | Description                             |
|-----------------------|-----------------------------------------|
| Tables                | F1_MANAG_CONTENT,<br>F1_MANAG_CONTENT_L |
| Standard Data Fields  | Managed Content<br>(MANAG_CONTENT_CD)   |
| Customer Modification | None                                    |

## Messages

| Properties | Description                                             |
|------------|---------------------------------------------------------|
| Tables     | CI_MSG_CATEGORY,<br>CI_MSG_CATEGORY_L, CI_MSG, CI_MSG_L |

| Properties           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Standard Data Fields | <p data-bbox="946 218 1403 245">Message Category (MESSAGE_CAT_NBR)</p> <ul data-bbox="946 252 1484 945" style="list-style-type: none"> <li data-bbox="946 252 1484 405">• Messages are grouped in categories and each category has message numbers between 1 and 99999. A range of message categories is assigned to a product. You must use only the assigned category for your product.</li> <li data-bbox="946 426 1484 516">• Oracle Utilities Customer Care and Billing and Oracle Utilities Business Intelligence - 00001 thru 00100</li> <li data-bbox="946 537 1484 594">• Oracle Utilities Application Framework Java - 11001 thru 11100</li> <li data-bbox="946 615 1484 672">• Oracle Utilities Customer Care and Billing Java - 11101 thru 11200</li> <li data-bbox="946 693 1484 749">• Oracle Utilities Business Intelligence Java - 11201 thru 11300</li> <li data-bbox="946 770 1305 798">• Implementer COBOL - 90000</li> <li data-bbox="946 819 1263 846">• Implementer WSS - 90001</li> <li data-bbox="946 867 1256 894">• Implementer Java - 90002</li> <li data-bbox="946 915 1268 942">• Reserved for Tests - 99999</li> </ul> <p data-bbox="946 963 1484 1020">Message Number (MESSAGE_NBR) for COBOL message categories</p> <ul data-bbox="946 1026 1484 1117" style="list-style-type: none"> <li data-bbox="946 1026 1484 1117">• Message numbers below 1000 are reserved for common messages. Implementers must not use message numbers below 1000.</li> </ul> <p data-bbox="946 1138 1484 1194">Message Number (MESSAGE_NBR) for Java message categories</p> <ul data-bbox="946 1201 1484 1913" style="list-style-type: none"> <li data-bbox="946 1201 1484 1260">• Subsystem Standard Messages - 00001 thru 02000</li> <li data-bbox="946 1281 1289 1308">• Reserved - 02001 thru 09999</li> <li data-bbox="946 1329 1403 1356">• Published Messages - 10001 thru 11000</li> <li data-bbox="946 1377 1382 1404">• Package Messages - 10001 thru 90000</li> <li data-bbox="946 1425 1289 1453">• Reserved - 90001 thru 99999</li> <li data-bbox="946 1474 1484 1533">• Each package is allocated 100 message numbers, each starting from 101.</li> <li data-bbox="946 1554 1484 1801">• Published Messages are messages that are special-interest messages that implementations need to know about and are therefore published in the user docs. Examples of these include messages that are highly likely to be changed for an implementation, or messages that are embedded into other texts/messages and therefore the message number is never shown</li> <li data-bbox="946 1822 1484 1913">• Reserved message number ranges are for future use and therefore must not be used by all products.</li> </ul> |



| Properties            | Description                                                                            |
|-----------------------|----------------------------------------------------------------------------------------|
| Customer Modification | Override Description (DESCRLONG_OVRD),<br>Message Text Override<br>(MESSAGE_TEXT_OVRD) |

## Meta Data - Table and Field

| Properties            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tables                | CI_MD_TBL, CI_MD_TBL_FLD,<br>CI_MD_TBL_L, CI_MD_TBL_FLD_L,<br>CI_MD_FLD, CI_MD_FLD_L,<br>F1_DB_OBJECTS_REPO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Standard Data Fields  | <p>Table Name (TBL_NAME)</p> <ul style="list-style-type: none"> <li>Table names must match with the physical table name or view name in the database.</li> <li>Field Name (FLD_NAME)Field name must match with the physical column name in the database unless the field is a work field. Field name does not have to follow the prefixing standard unless the field is a work field or customer modification field.</li> <li>F1_DB_OBJECTS_REPO Table stores information about Indexes, Sequences, Triggers and other database objects excluding Tables and Fields (as they are already stored in the other Metadata tables)</li> </ul> |
| Customer Modification | <p>Audit Switches (AUDIT_INSERT_SW, AUDIT_UPDATE_SW, AUDIT_DELETE_SW), Override label (OVRD_LABEL) on MD Table Field Table (CI_MD_TBL_FLD). Audit Program Name (AUDIT_PGM_NAME), Audit Table Name (AUDIT_TBL_NAME), Audit Program Type (AUDIT_PGM_TYPE_FLG), Key Validation (KEY_VALIDATION_FLG) and Caching strategy (CACHE_FLG) on MD Table (CI_MD_TBL). Override Label (OVRD_LABEL) and Customer Specific Description (DESCRLONG_OVRD) on Field Table.</p>                                                                                                                                                                            |

## Meta Data - Constraints

| Properties            | Description                                                                                                                                                                                                                                                                |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tables                | CI_MD_CONST, CI_MD_CONST_FLD                                                                                                                                                                                                                                               |
| Standard Data Fields  | Constraint Id (CONST_ID) <ul style="list-style-type: none"> <li>Index Name for Primary Constraints</li> <li>&lt;Index Name&gt;Rnn for Foreign Key Constraints Where               <ul style="list-style-type: none"> <li>nn: integer, 01 through 99</li> </ul> </li> </ul> |
| Customer Modification | None                                                                                                                                                                                                                                                                       |

## Meta Data - Menu

Menus can be extended to support multiple products by adding a new menu line to an existing menu. The sequence number on the menu line language table (CI\_MD\_MENU\_LINE\_L) determines the order the menu lines appear. Within the same sequence, alphabetic sorting is used.

| Properties            | Description                                                                                                  |
|-----------------------|--------------------------------------------------------------------------------------------------------------|
| Tables                | CI_MD_MENU, CI_MD_MENU_L,<br>CI_MD_MENU_ITEM,<br>CI_MD_MENU_ITEM_L,<br>CI_MD_MENU_LINE,<br>CI_MD_MENU_LINE_L |
| Standard Data Fields  | Menu Name (MENU_NAME), Menu Item Id (MENU_ITEM_ID), Menu Line Id (MENU_LINE_ID)                              |
| Customer Modification | Override Label (OVRD_LABEL) on Menu Line Language Table (CI_MD_MENU_LINE_L)                                  |

## Meta Data - Program, Location and Services

| Properties | Description                                                                                                                                                                                                         |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tables     | CI_MD_PRG_COM,<br>CI_MD_PRG_LOC, CI_MD_SVC,<br>CI_MD_SVC_L, CI_MD_SVC_PRG,<br>CI_MD_PRG_REF, CI_MD_PRG_MOD,<br>CI_MD_PRG_EL_AT,<br>CI_MD_PRG_ELEM,<br>CI_MD_PRG_SEC, CI_MD_PRG_SQL,<br>CI_MD_PRG_VAR, CI_MD_PRG_TAB |

| Properties            | Description                                                                                                                                                |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Standard Data Fields  | Program Component Id (PROG_COM_ID), Location Id (LOC_ID), Program Component Name (PROG_COM_NAME), Service Name (SVC_NAME), Navigation Key (NAVIGATION_KEY) |
| Customer Modification | User Exit Program Name (USER_EXIT_PGM_NAME) on Program Componenets Table (CI_MD_PRG_COM),                                                                  |

### Meta Data - Maintenance Object

| Properties            | Description                                                    |
|-----------------------|----------------------------------------------------------------|
| Tables                | CI_MD_MO, CI_MD_MO_L, CI_MD_MO_TBL, CI_MD_MO_OPT, CI_MD_MO_ALG |
| Standard Data Fields  | Maintenance Object (MAINT_OBJ_CD)                              |
| Customer Modification | None                                                           |

### Meta Data - Work Tables

| Properties            | Description                                                    |
|-----------------------|----------------------------------------------------------------|
| Tables                | CI_MD_WRK_TBL, CI_MD_WRK_TBL_L, CI_MD_WRK_TBLFLD, CI_MD_MO_WRK |
| Standard Data Fields  | Work Table Name (WRK_TBL_NAME)                                 |
| Customer Modification | None                                                           |

### Meta Data - Search Object

| Properties            | Description                                                                                                                         |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Tables                | CI_MD_SO, CI_MD_SO_L, CI_MD_SO_RSFLD, CI_MD_SO_RSFLDAT, CI_MD_SOCG, CI_MD_SOCG_FLD, CI_MD_SOCG_FLDAT, CI_MD_SOCG_L, CI_MD_SOCG_SORT |
| Standard Data Fields  | Search Object (SO_CD)                                                                                                               |
| Customer Modification | None                                                                                                                                |

---

## Navigation Option

| Properties            | Description                                                                |
|-----------------------|----------------------------------------------------------------------------|
| Tables                | CI_NAV_OPT, CI_NAV_OPT_L,<br>CI_NAV_OPT_CTXT,<br>CI_NAV_OPT_USG, CI_MD_NAV |
| Standard Data Fields  | Navigation Option Code<br>(NAV_OPT_CD), Navigation Key<br>(NAVIGATION_KEY) |
| Customer Modification | None                                                                       |

## Portal and Zone

| Properties            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tables                | CI_PORTAL, CI_PORTAL_L,<br>CI_PORTAL_ZONE, CI_ZONE,<br>CI_ZONE_L, CI_ZONE_PRM,<br>CI_ZONE_HDL, CI_ZONE_HDL_L,<br>CI_ZONE_HDL_PRM,<br>CI_ZONE_HDL_PRM_L,<br>CI_UI_ZONE                                                                                                                                                                                                                                                                                                                             |
| Standard Data Fields  | Portal Code (PORTAL_CD), Zone Code (ZONE_CD), Zone Type Code (ZONE_HDL_CD) <ul style="list-style-type: none"> <li>A new Zone can be added to the Product owned Portal Pages.</li> <li>The existing Zones cannot be removed from the Product owned Portal Pages.</li> </ul>                                                                                                                                                                                                                        |
| Customer Modification | Sort Sequence (SORT_SEQ) on Context Sensitive Zone Table (CI_UI_ZONE). Show on Portal Preferences (USER_CONFIG_FLG) on Portal Table (CI_PORTAL). Override Sequence (SORT_SEQ_OVRD) on Portal Zone Table (CI_PORTAL_ZONE). Customer Specific Description (DESCRLONG_OVRD) on Zone Language Table (CI_ZONE_L). Override Parameter Value (ZONE_HDL_PARM_OVRD) on Zone Type Parameters Table (CI_ZONE_HDL_PRM). Override Parameter Value (ZONE_PARM_VAL_OVRD) on Zone Parameters Table (CI_ZONE_PRM). |

## Sequence

| Properties            | Description                                                                                                   |
|-----------------------|---------------------------------------------------------------------------------------------------------------|
| Tables                | CI_SEQ                                                                                                        |
| Standard Data Fields  | Sequence Name (SEQ_NAME)                                                                                      |
| Customer Modification | Sequence Number (SEQ_NBR)<br>This field is updated by the application process and must be set to 1 initially. |

## Schema

| Properties            | Description               |
|-----------------------|---------------------------|
| Tables                | F1_SCHEMA                 |
| Standard Data Fields  | Schema Name (SCHEMA_NAME) |
| Customer Modification | None                      |

## Script

| Properties            | Description                                                                                                                                                         |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tables                | CI_SCR, CI_SCR_L, CI_SCR_CRT,<br>CI_SCR_CRT_GRP,<br>CI_SCR_CRT_GRP_L, CI_SCR_DA,<br>CI_SCR_FLD_MAP, CI_SCR_PRMP,CI,<br>CI_SCR_PRMP_L, CI_SCR_STEP,<br>CI_SCR_STEP_L |
| Standard Data Fields  | Script (SCR_CD)                                                                                                                                                     |
| Customer Modification | None                                                                                                                                                                |

## To Do Type

| Properties            | Description                                                                                                                                    |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Tables                | CI_TD_TYPE, CI_TD_TYPE_L,<br>CI_TD_SRTKEY_TY,<br>CI_TD_DRLKEY_TY,<br>CI_TD_SRTKEY_TY_L                                                         |
| Standard Data Fields  | To Do Type Code (TD_TYPE_CD)                                                                                                                   |
| Customer Modification | Creation Batch Code (CRE_BATCH_CD),<br>Route Batch Code (RTE_BATCH_CD),<br>Priority Flag (TD_PRIORITY_FLG) on<br>To Do Type Table (CI_TD_TYPE) |

## XAI configuration

| Properties            | Description                                                                                                                                                                                                                                                                                                                |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tables                | CI_XAI_ADAPTER,<br>CI_XAI_ADAPTER_L, CI_XAI_CLASS,<br>CI_XAI_CLASS_L,<br>CI_XAI_ENV_HNDL,<br>CI_XAI_ENV_HNDL_L,<br>CI_XAI_FORMAT,<br>CI_XAI_FORMAT_L, CI_XAI_RCVR,<br>CI_XAI_RCVR_L, CI_XAI_RCVR_CTX,<br>CI_XAI_RCVR_RSP,<br>CI_XAI_RCVR_RGRP,<br>CI_XAI_SENDER,<br>CI_XAI_SERNDER_L,<br>CI_XAI_SNDR_CTX,<br>CI_XAI_OPTION |
| Standard Data Fields  | Adapter Id (XAI_ADAPTER_ID), Class<br>Id (XAI_CLASS_ID), Envelope Handler<br>Id (XAI_ENV_HNDL_ID), XAI Format<br>Id (XAI_FORMAT_ID), Receiver Id<br>(XAI_RCVR_ID), Sender Id<br>(XAI_SENDER_ID)                                                                                                                            |
| Customer Modification | Option Value (OPTION_VALUE on XAI<br>Option Table (CI_XAI_OPTION))                                                                                                                                                                                                                                                         |

The following XAI tables might have system data installed upon the initial installation but a subsequent system data upgrade process will not update the content of these table unless the change is documented in the database upgrade guide : CI\_XAI\_RCVR, CI\_XAI\_RCVR\_L, CI\_XAI\_RCVR\_CTX, CI\_XAI\_RCVR\_RSP, CI\_XAI\_RCVR\_RGRP, CI\_XAI\_SENDER, CI\_XAI\_SERNDER\_L, CI\_XAI\_SNDR\_CTX

## XAI Services

| Properties            | Description                                                                                                                                                                                                                                  |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tables                | CI_XAI_IN_SVC, CI_XAI_IN_SVC_L,<br>CI_XAI_SVC_PARM,<br>CI_XAI_SVC_VERS,<br>CI_XAI_SVC_VERS_L                                                                                                                                                 |
| Standard Data Fields  | XAI Inbound Service Id<br>(XAI_IN_SVC_ID), XAI Inbound Service<br>Name (XAI_IN_SVC_NAME)                                                                                                                                                     |
| Customer Modification | XAI Version (XAI_VERSION_ID), Trace<br>(TRACE_SW), Debug (DEBUG_SW),<br>Request XSL (INPUT_XSL), Response<br>XSL (RESPONSE_XSL), Record XSL<br>(RECORD_XSL and Post Error<br>(POST_ERROR_SW) on XAI Inbound<br>Service Table (CI_XAI_IN_SVC) |

## Oracle Utilities Application Framework Only Tables

All data of the tables in this group belong to the Oracle Utilities Application Framework. No data modification or addition is allowed for these tables by base product development and customer modification. When an environment is upgraded to the next release of the Oracle Utilities Application Framework, the upgrade process will refresh the data in these tables.

- CI\_MD\_AT\_DTL / CI\_MD\_AT\_DTL\_L
- CI\_MD\_ATT\_TY
- CI\_MD\_CTL / CI\_MD\_CTL\_L
- CI\_MD\_CTL\_TMPL
- CI\_MD\_ELTY / CI\_MD\_ELTY\_L
- CI\_MD\_ELTY\_AT
- CI\_MD\_LOOKUP / CI\_MD\_LOOKUP\_F
- CI\_MD\_PDF / CI\_MD\_PDF\_VAL
- CI\_MD\_MSG / CI\_MD\_MSG\_L
- CI\_MD\_SRC\_TYPE / CI\_MD\_SRC\_TYPE\_L
- CI\_MD\_TMPL / CI\_MD\_TMPL\_L
- CI\_MD\_TMPL\_ELTY
- CI\_MD\_TMPL\_VAR / CI\_MD\_TMPL\_VAR\_L
- CI\_MD\_VAR / CI\_MD\_VAR\_DTL / CI\_MD\_VAR\_DTL\_L
- CI\_XAI\_EXECUTER / CI\_XAI\_EXECUTER\_L



## System Table List

This section contains the names of system tables, upgrade actions, and a brief description of the tables. The upgrade actions are explained below.

**Keep (KP):** The data of the table in the customer's database is kept untouched. No insert or delete is performed to this table by the upgrade process. The initial installation will add necessary data for the system

**Merge (MG):** The non-base product data of the table in the database is kept untouched. If the data belongs to the base product, any changes pertaining to the new version of the software are performed.

**Refresh (RF):** The existing data in the table is replaced with the data from the base product table.

**Note.** New product data is also inserted into tables marked as 'Merge'. If implementers add rows for a customer specific enhancement, it can cause duplication when the system data gets upgraded to the next version. We strongly recommend following the guidelines on how to use designated range of values or prefixes to segregate the implementation data from the base product data.

| Table Name        | Upgrade Action | Description                        |
|-------------------|----------------|------------------------------------|
| CI_ALG            | MG             | Algorithm                          |
| CI_ALG_L          | MG             | Algorithm Language                 |
| CI_ALG_PARM       | MG             | Algorithm Parameters               |
| CI_ALG_TYPE       | MG             | Algorithm Type                     |
| CI_ALG_TYPE_L     | MG             | Algorithm Type Language            |
| CI_ALG_TYPE_PRM   | MG             | Algorithm Type Parameter           |
| CI_ALG_TYPE_PRM_L | MG             | Algorithm Type Parameter Language  |
| CI_ALG_VER        | MG             | Algorithm Version                  |
| CI_APP_SVC_ACC    | MG             | Application Service Access Mode    |
| CI_BATCH_CTRL     | MG             | Batch Control                      |
| CI_BATCH_CTRL_ALG | KP             | Batch Control Algorithm            |
| CI_BATCH_CTRL_L   | MG             | Batch Control Language             |
| CI_BATCH_CTRL_P   | MG             | Batch Control Parameters           |
| CI_BATCH_CTRL_P_L | MG             | Batch Control Parameters Language  |
| CI_CHAR_ENTITY    | MG             | Characteristic Type Entity         |
| CI_CHAR_TYPE      | MG             | Characteristic Type                |
| CI_CHAR_TYPE_L    | MG             | Characteristic Type Language       |
| CI_CHAR_VAL       | MG             | Characteristic Type Value          |
| CI_CHAR_VAL_L     | MG             | Characteristic Type Value Language |

| Table Name       | Upgrade Action | Description                               |
|------------------|----------------|-------------------------------------------|
| CI_CURRENCY_CD   | KP             | Currency Code                             |
| CI_CURRENCY_CD_L | KP             | Currency Code Language                    |
| CI_DB_INSTR      | KP             | DB Process Instruction                    |
| CI_DB_INSTR_ALG  | KP             | DB Process Instruction Algorithm          |
| CI_DB_INSTR_L    | KP             | DB Process Instruction Language           |
| CI_DB_INST_OVRD  | KP             | DB Process Instruction Override           |
| CI_DB_PROC       | KP             | DB Process                                |
| CI_DB_PROC_L     | KP             | DB Process Language                       |
| CI_DISP_ICON     | MG             | Display Icon                              |
| CI_DISP_ICON_L   | MG             | Display Icon Language                     |
| CI_DISP_PROF     | KP             | Display Profile                           |
| CI_DISP_PROF_L   | KP             | Display Profile Language                  |
| CI_FK_REF        | MG             | Foreign Key Reference                     |
| CI_FK_REF_L      | MG             | Foreign Key Reference Language            |
| CI_LANGUAGE      | MG             | Language Code                             |
| CI_LOOKUP_FIELD  | MG             | Lookup Field                              |
| CI_LOOKUP_VAL    | MG             | Lookup Field Value                        |
| CI_LOOKUP_VAL_L  | MG             | Lookup Field Value Language               |
| CI_MD_ATT_TY     | RF             | MD Element Attribute Type                 |
| CI_MD_AT_DTL     | RF             | MD Element Attribute Type Detail          |
| CI_MD_AT_DTL_L   | RF             | MD Element Attribute Type Detail Language |
| CI_MD_CONST      | MG             | Constraints                               |
| CI_MD_CONST_FLD  | MG             | Constraint Fields                         |
| CI_MD_CTL        | RF             | Generator Control                         |
| CI_MD_CTL_L      | RF             | Generator Control Language                |
| CI_MD_CTL_TMPL   | RF             | Generator Control Template                |
| CI_MD_ELTY       | RF             | MD Element Type                           |
| CI_MD_ELTY_AT    | RF             | Element Type Attributes                   |
| CI_MD_ELTY_L     | RF             | Element Type Language                     |
| CI_MD_FLD        | MG             | Field                                     |
| CI_MD_FLD_L      | MG             | Field Language                            |

| Table Name        | Upgrade Action | Description                    |
|-------------------|----------------|--------------------------------|
| CI_MD_LOOKUP      | RF             | MD Lookup Field Value          |
| CI_MD_LOOKUP_F    | RF             | MD Lookup Field                |
| CI_MD_MENU        | MG             | Menu Information               |
| CI_MD_MENU_IMOD   | MG             | Menu Item Module Maint         |
| CI_MD_MENU_ITEM   | MG             | Menu Item                      |
| CI_MD_MENU_ITEM_L | MG             | Menu Item Language             |
| CI_MD_MENU_L      | MG             | Menu Language                  |
| CI_MD_MENU_LINE   | MG             | Menu Line                      |
| CI_MD_MENU_LINE_L | MG             | Menu Line Language             |
| CI_MD_MENU_MOD    | MG             | Menu Product Components        |
| CI_MD_MO          | MG             | Maintenance Object             |
| CI_MD_MO_ALG      | MG             | Maintenance Object Algorithm   |
| CI_MD_MO_L        | MG             | Maintenance Object Language    |
| CI_MD_MO_OPT      | MG             | Maintenance Object Option      |
| CI_MD_MO_TBL      | MG             | Maintenance Object Table       |
| CI_MD_MO_WRK      | MG             | Maintenance Object Work Tables |
| CI_MD_MSG         | RF             | MD Message                     |
| CI_MD_MSG_L       | RF             | MD Message Language            |
| CI_MD_NAV         | MG             | Navigation Key                 |
| CI_MD_PDF         | RF             | Predefined Fields              |
| CI_MD_PDF_VAL     | RF             | Predefined Values              |
| CI_MD_PRG_COM     | MG             | Program Components             |
| CI_MD_PRG_ELEM    | MG             | UI Page Elements               |
| CI_MD_PRG_EL_AT   | MG             | UI Page Element Attributes     |
| CI_MD_PRG_LOC     | MG             | Program Location               |
| CI_MD_PRG_MOD     | MG             | Program Module                 |
| CI_MD_PRG_SEC     | MG             | UI Page Sections               |
| CI_MD_PRG_SQL     | MG             | MD SQL Meta Data               |
| CI_MD_PRG_TAB     | MG             | UI Tab Meta Data               |
| CI_MD_PRG_VAR     | MG             | Program Variable               |
| CI_MD_SO          | MG             | Search Object                  |
| CI_MD_SOCG        | MG             | Search Object Criteria Group   |

| Table Name       | Upgrade Action | Description                             |
|------------------|----------------|-----------------------------------------|
| CI_MD_SOCG_FLD   | MG             | Search Object Criteria Group Field      |
| CI_MD_SOCG_FLDAT | MG             | Search Criteria Group Field Attribute   |
| CI_MD_SOCG_L     | MG             | Search Object Criteria Group Language   |
| CI_MD_SOCG_SORT  | MG             | Search Criteria Group Result Sort Order |
| CI_MD_SO_L       | MG             | Search Object Language                  |
| CI_MD_SO_RSFLD   | MG             | Search Object Result Field              |
| CI_MD_SO_RSFLDAT | MG             | Search Object Result Field Attribute    |
| CI_MD_SRC_TYPE   | RF             | Source Type                             |
| CI_MD_SRC_TYPE_L | RF             | Source Type Language                    |
| CI_MD_SVC        | MG             | MD Service                              |
| CI_MD_SVC_L      | MG             | MD Service Language                     |
| CI_MD_SVC_PRG    | MG             | MD Service Program                      |
| CI_MD_TAB_MOD    | MG             | UI Tab Module                           |
| CI_MD_TBL        | MG             | MD Table                                |
| CI_MD_TBL_FLD    | MG             | MD Table Field                          |
| CI_MD_TBL_FLD_L  | MG             | MD Table Field Language                 |
| CI_MD_TBL_L      | MG             | MD Table Language                       |
| CI_MD_TMPL       | RF             | Template                                |
| CI_MD_TMPL_ELTY  | RF             | Template Element Types                  |
| CI_MD_TMPL_L     | RF             | Template Language                       |
| CI_MD_TMPL_VAR   | RF             | Template Variable                       |
| CI_MD_TMPL_VAR_L | RF             | Template Variable Language              |
| CI_MD_VAR        | RF             | Variable                                |
| CI_MD_VAR_DTL    | RF             | Variable Detail                         |
| CI_MD_VAR_DTL_L  | RF             | Variable Detail Language                |
| CI_MD_WRK_TBL    | MG             | Work Table                              |
| CI_MD_WRK_TBLFLD | MG             | Work Table Field                        |
| CI_MD_WRK_TBL_L  | MG             | Work Table Language                     |
| CI_MSG           | MG             | Message                                 |
| CI_MSG_CATEGORY  | MG             | Message Category                        |

| Table Name        | Upgrade Action | Description                    |
|-------------------|----------------|--------------------------------|
| CI_MSG_CATEGORY_L | MG             | Message Category Language      |
| CI_MSG_L          | MG             | Message Language               |
| CI_NAV_OPT        | MG             | Navigation Option              |
| CI_NAV_OPT_CTXT   | MG             | Navigation Option Context      |
| CI_NAV_OPT_L      | MG             | Navigation Option Language     |
| CI_NAV_OPT_USG    | MG             | Navigation Option Usage        |
| CI_PORTAL         | MG             | Portal                         |
| CI_PORTAL_L       | MG             | Portal Language                |
| CI_PORTAL_ZONE    | MG             | Portal Zone                    |
| CI_SCR            | MG             | Script                         |
| CI_SCR_CRT        | MG             | Script Criteria                |
| CI_SCR_CRT_GRP    | MG             | Script Criteria Group          |
| CI_SCR_CRT_GRP_L  | MG             | Script Criteria Group Language |
| CI_SCR_DA         | MG             | Script Data Area               |
| CI_SCR_FLD_MAP    | MG             | Script Field Mapping           |
| CI_SCR_L          | MG             | Script Language                |
| CI_SCR_PRMP       | MG             | Script Prompt                  |
| CI_SCR_PRMP_L     | MG             | Script Prompt Language         |
| CI_SCR_STEP       | MG             | Script Step                    |
| CI_SCR_STEP_L     | MG             | Script Step Language           |
| CI_SEQ            | MG             | Sequence                       |
| CI_TD_DRLKEY_TY   | MG             | To Do Type Drill Key           |
| CI_TD_SRTKEY_TY   | MG             | To Do Type Sort Key            |
| CI_TD_SRTKEY_TY_L | MG             | To Do Type Sort Key Language   |
| CI_TD_TYPE        | MG             | To Do Type                     |
| CI_TD_TYPE_L      | MG             | To Do Type Language            |
| CI_USR_NAV_LINK   | MG             | User Favorite Links            |
| CI_USR_PORTAL     | KP             | User Portal                    |
| CI_USR_ZONE       | KP             | User Zone                      |
| CI_XAI_ADAPTER    | MG             | XAI Adapter                    |
| CI_XAI_ADAPTER_L  | MG             | XAI Adapter Lang               |
| CI_XAI_CLASS      | MG             | XAI Class                      |
| CI_XAI_CLASS_L    | MG             | XAI Class Language             |

| Table Name        | Upgrade Action | Description                          |
|-------------------|----------------|--------------------------------------|
| CI_XAI_ENV_HNDL   | MG             | XAI Envelope Handler                 |
| CI_XAI_ENV_HNDL_L | MG             | XAI Envelope Handler Language        |
| CI_XAI_EXECUTER   | RF             | XAI Executer                         |
| CI_XAI_EXECUTER_L | RF             | XAI Executer Language                |
| CI_XAI_FORMAT     | RF             | XAI Format                           |
| CI_XAI_FORMAT_L   | RF             | XAI Format Language                  |
| CI_XAI_IN_SVC     | MG             | XAI Inbound Service                  |
| CI_XAI_IN_SVC_L   | MG             | XAI Inbound Service Language         |
| CI_XAI_JNDI_SVR   | KP             | XAI JNDI Server                      |
| CI_XAI_JNDI_SVR_L | KP             | XAI JNDI Server Language             |
| CI_XAI_OPTION     | KP             | XAI Option                           |
| CI_XAI_RCVR       | KP             | XAI Receiver                         |
| CI_XAI_RCVR_CTX   | KP             | XAI Receiver Context                 |
| CI_XAI_RCVR_L     | KP             | XAI Receiver Language                |
| CI_XAI_RCVR_RGRP  | KP             | XAI Receiver Rule Group              |
| CI_XAI_RCVR_RSP   | KP             | XAI Receiver Response                |
| CI_XAI_SENDER     | KP             | XAI Sender                           |
| CI_XAI_SENDER_L   | KP             | XAI Sender Language                  |
| CI_XAI_SNDR_CTX   | KP             | XAI Sender Context                   |
| CI_XAI_SVC_PARM   | MG             | XAI Inbound Service Parameters       |
| CI_XAI_SVC_VERS   | MG             | XAI Inbound Service Version          |
| CI_XAI_SVC_VERS_L | MG             | XAI Inbound Service Version Language |
| CI_ZONE           | MG             | Zone                                 |
| CI_ZONE_HDL       | MG             | Zone Type                            |
| CI_ZONE_HDL_L     | MG             | Zone Type Language                   |
| CI_ZONE_HDL_PRM   | MG             | Zone Type Parameters                 |
| CI_ZONE_HDL_PRM_L | MG             | Zone Type Parameters Language        |
| CI_ZONE_L         | MG             | Zone Language                        |
| CI_ZONE_PRM       | MG             | Zone Parameters                      |
| F1_BUS_OBJ        | MG             | Business Object                      |
| F1_BUS_OBJ_ALG    | MG             | Business Object Algorithm            |
| F1_BUS_OBJ_L      | MG             | Business Object Language             |

| Table Name                     | Upgrade Action | Description                                 |
|--------------------------------|----------------|---------------------------------------------|
| F1_BUS_OBJ_OPT                 | MG             | Business Object Option                      |
| F1_BUS_OBJ_STATUS              | MG             | Business Object Status                      |
| F1_BUS_OBJ_STATUS_AL<br>G      | MG             | Business Object Status Algorithm            |
| F1_BUS_OBJ_STATUS_L            | MG             | Business Object Status Language             |
| F1_BUS_OBJ_STATUS_OP<br>T      | MG             | Business Object Status Option               |
| F1_BUS_OBJ_STATUS_RS<br>N      | MG             | Status Reason                               |
| F1_BUS_OBJ_STATUS_RS<br>N_CHAR | KP             | Status Reason Characteristic                |
| F1_BUS_OBJ_STATUS_RS<br>N_L    | MG             | Status Reason Language                      |
| F1_BUS_OBJ_TR_RULE             | MG             | Business Object Transition Rule             |
| F1_BUS_OBJ_TR_RULE_L           | MG             | Business Object Transition Rule<br>Language |
| F1_BUS_SVC                     | MG             | Business Service                            |
| F1_BUS_SVC_L                   | MG             | Business Service Language                   |
| F1_DATA_AREA                   | MG             | Data Area                                   |
| F1_DATA_AREA_L                 | MG             | Data Area Language                          |
| F1_DB_OBJECTS_REPO             | MG             | Database Objects Repository                 |
| F1_EXT_LOOKUP_VAL              | MG             | Extendable Lookup                           |
| F1_EXT_LOOKUP_VAL_<br>L        | MG             | Extendable Lookup Language                  |
| F1_INSTALLATION                | KP             | Installation Option - Framework             |
| F1_MANAG_CONTENT               | MG             | Managed Content                             |
| F1_MANAG_CONTENT_<br>L         | MG             | Managed Content Language                    |
| F1_MAP                         | MG             | UI Map                                      |
| F1_MAP_L                       | MG             | UI Map Language                             |
| F1_SCHEMA                      | MG             | Schema                                      |
| SC_ACCESS_CNTL                 | MG             | User Group Access Control                   |
| SC_APP_SERVICE                 | MG             | Application Service                         |
| SC_APP_SERVICE_L               | MG             | Application Service Language                |
| SC_USER                        | KP             | User                                        |
| SC_USER_GROUP                  | KP             | User Group                                  |

---

| Table Name      | Upgrade Action | Description         |
|-----------------|----------------|---------------------|
| SC_USER_GROUP_L | KP             | User Group Language |
| SC_USR_GRP_PROF | MG             | User Group Profile  |
| SC_USR_GRP_USR  | KP             | User Group User     |



# Appendix E

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