Oracle Utilities Meter Data Management

Database Administrator's Guide

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Preface

This guide provides instructions for installing and maintaining the database for Oracle Utilities Meter Data Management.

This preface contains these topics:

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

Audience

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

Related Documents

For more information, see these Oracle documents:

- *Oracle Utilities Meter Data Management Quick Install Guide*
- *Oracle Utilities Meter Data 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
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	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

Database Overview

This section provides an overview of the Oracle Utilities Meter Data Management database, including:

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

Supported Database Platforms

This section defines the platforms on which Oracle Utilities Meter Data Management is verified to operate.

Supported Platforms Summary Table

Oracle Utilities Meter Data 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 Meter Data 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 Meter Data 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 Meter Data Management support prior to installing Hibernate updates.

Always contact Oracle Utilities Meter Data 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

Database Installation

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

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

Installation Overview

> Note. Refer to the *Oracle Utilities Meter Data Management Installation Guide* for the hardware and software versions required for the installation on the Unix Server or Windows Server.

The following type of installation is available for Oracle Utilities Meter Data Management:

- **Initial Install** - a database with no demo data.

- **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 Meter Data 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.

Review the Storage.par file prior to Initial Install . Information in this file is used by CDXDBI while installing the Oracle Utilities Meter Data 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.

Oracle Database Installation

The following section outlines the instructions for installing the Oracle Database for Oracle Utilities Meter Data 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 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 MDM/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 schemainto 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 MDM/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 Meter Data 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 Meter Data 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.

Install

Install Oracle Utilities Application Framework V4.0.2 prior to Oracle Utilities Meter Data Management 2.0.0.

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 Meter Data Management Installation Guide* for more details.

The files for the Initial Install of MDM 2.0.0 are located in the Install-Upgrade folder under MDF. To install the MDM 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 MDF/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.

4. Run CDXDBI.exe from MDM/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.

5. 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.

6. 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.

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.

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 MDM/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

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 3-3 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:C0_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 4

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 4-3 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 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

Upgrades to the Oracle Utilities Application Framework 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 retrevied 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_RECS	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_FLG	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_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.

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_PASSWORD	VARCHAR2: 32	VARCHAR2: 64
CI_WF_EVT_TYPE_L	DESCR50	VARCHAR2: 50	VARCHAR2: 100
Change Done Only In Metadata	ADDRESS1	VARCHAR2: 64	VARCHAR2: 254
Change Done Only In Metadata	ADDRESS2	VARCHAR2: 64	VARCHAR2: 254
Change Done Only In 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 Metdata is changed in FW40 for a successful Upgrade.

Metadata Desciption	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 Desciption	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 Java
F1-SMSSEND	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 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_TYPE_FLG	F1NT	ENG	Not Timed
F1_BATCH_CTRL_TYPE_FLG	F1TM	ENG	Timed
F1_DATE_MATH_OPTION_FLG	F1AB	ENG	Add Business Days
F1_DATE_MATH_OPTION_FLG	F1AD	ENG	Add Days
F1_DATE_MATH_OPTION_FLG	F1AT	ENG	Add Times
F1_DATE_MATH_OPTION_FLG	F1DD	ENG	Date Difference
F1_DATE_MATH_OPTION_FLG	F1DT	ENG	Date Time Difference
F1_DATE_MATH_OPTION_FLG	F1FL	ENG	Force Last Day
F1_DATE_MATH_OPTION_FLG	F1MD	ENG	Days in Month
F1_DATE_MATH_OPTION_FLG	F1WD	ENG	Day of Week
F1_EXTRACT_TRANSLATION_FLG	F1NO	ENG	No
F1_EXTRACT_TRANSLATION_FLG	F1YS	ENG	Yes

Lookup Field Name	Field Value	Language	Description
F1_EXT_LOOKUP_USAGE_FLG	F1AC	ENG	Active
F1_EXT_LOOKUP_USAGE_FLG	F1IN	ENG	Inactive
F1_INPUT_IS_IN_DST_FLG	F1N	ENG	No
F1_INPUT_IS_IN_DST_FLG	F1Y	ENG	Yes
F1_INPUT_IS_IN_DST_FLG	F1AN	ENG	Assume Not in Shift
F1_INPUT_IS_IN_DST_FLG	F1AY	ENG	Assume In Shift
F1_PROD_TYPE_FLG	F1PL	ENG	Parallel application
F1_SHOW_ALL_REQ_FLG	F1YE	ENG	Yes
F1_STATE_CONDITION_FLG	F1AC	ENG	Active
F1_STATE_CONDITION_FLG	F1IN	ENG	Inactive
F1_TIMER_ACTIVE_FLG	F1DS	ENG	No
F1_TIMER_ACTIVE_FLG	F1EN	ENG	Yes
F1_TRANSLATABLE_FLG	F1NO	ENG	No
F1_TRANSLATABLE_FLG	F1YS	ENG	Yes
GEO_MTCH_QLTY_FLG	1	ENG	Exact match
GEO_MTCH_QLTY_FLG	10	ENG	Postal code does not match
GEO_MTCH_QLTY_FLG	11	ENG	City does not match
GEO_MTCH_QLTY_FLG	2	ENG	Street type does not match
GEO_MTCH_QLTY_FLG	3	ENG	House does not match
GEO_MTCH_QLTY_FLG	4	ENG	Street address does not 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	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
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	JMS User Password

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-BOStatus	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-EXLKPVALD
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	Application Service Details
F1-BNCTXZS	F1-DE-QUERY	Context Sensitive Zone Search
F1-BNEXLKPS	F1-DE-QUERY	Extended Lookup Search
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	Get required status reasons
F1-BSSLRS	F1-DE-SINGLE	Get all selected Reasons
F1-CONDSHWZN	F1-DE-SINGLE	Application Service Details
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	Extendable Lookup Search
F1-EXLKPVALD	F1-MAPDERV	Extendable Lookup Value
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 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 Count
F1-TDS-OPN	F1-DE-SINGLE	To Do Summary Email Get Open To Dos by Type
F1-TDS-PRV	F1-DE-SINGLE	To Do Summary Email 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	User Interface Map Search
F1-USGRACML	F1-DE	Get User Group Access Modes
F1-USGRPWSR	F1-DE	User Groups with Access
F1-USGRPWTSR	F1-DE	User Groups without Access
F1-USGRSECL	F1-DE	Get Security Type Access for 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

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, CI_DB_INSTR, CI_DB_INSTR_L, L, 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, CI_INSTALL_ALG, CI_INSTALL_MSG, CI_INSTALL_MSG_L, 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, F1_BUS_OBJ_ALG, F1_BUS_OBJ_OPT, F1_BUS_OBJ_STATUS, F1_BUS_OBJ_STATUS_L, F1_BUS_OBJ_STATUS_ALG, F1_BUS_OBJ_STATUS_OPT, F1_BUS_OBJ_STATUS_RSN, F1_BUS_OBJ_STATUS_RSN_L, F1_BUS_OBJ_STATUS_RSN_CHAR F1_BUS_OBJ_TR_RULE, F1_BUS_OBJ_TR_RULE_L
Standard Data Fields	Business Object (BUS_OBJ_CD)
Customer Modification	Batch Control (BATCH_CD), Alert (BO_ALERT_FLG), Sequence (SORT_SEQ5), Status Reason (STATUS_REASON_FLG) fields on Business Object Status Table (F1_BUS_OBJ_STATUS). Instance Control (INSTANCE_CTRL_FLG), Application Service (APP_SVC_ID) on Business Object Table (F1_BUS_OBJ). Status Reason Selection (STATUS_REASON_SELECT_FLG) on Status Reason Table (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, CI_CHAR_ENTITY, CI_CHAR_VAL, 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_ENTITY)

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, CI_LOOKUP_VAL, CI_LOOKUP_VAL_L, F1_EXT_LOOKUP_VAL, F1_EXT_LOOKUP_VAL_L

Properties	Description
Standard Data Fields	Field Name (FIELD_NAME) • 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. Field Value (FIELD_VALUE) • 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. • 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. Introduced in V 4.0.1: Value (F1_EXT_LOOKUP_VALUE) • This will allow storing longer value keys rather than the normal 4byte lookup values.
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, F1_MANAG_CONTENT_L
Standard Data Fields	Managed Content (MANAG_CONTENT_CD)
Customer Modification	None

Messages

Properties	Description
Tables	CI_MSG_CATEGORY, CI_MSG_CATEGORY_L, CI_MSG, CI_MSG_L

Properties	Description
Standard Data Fields	Message Category (MESSAGE_CAT_NBR) • 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. • Oracle Utilities Customer Care and Billing and Oracle Utilities Business Intelligence - 00001 thru 00100 • Oracle Utilities Application Framework Java - 11001 thru 11100 • Oracle Utilities Customer Care and Billing Java - 11101 thru 11200 • Oracle Utilities Business Intelligence Java - 11201 thru 11300 • Implementer COBOL - 90000 • Implementer WSS - 90001 • Implementer Java - 90002 • Reserved for Tests - 99999 Message Number (MESSAGE_NBR) for COBOL message categories • Message numbers below 1000 are reserved for common messages. Implementers must not use message numbers below 1000. Message Number (MESSAGE_NBR) for Java message categories • Subsystem Standard Messages - 00001 thru 02000 • Reserved - 02001 thru 09999 • Published Messages - 10001 thru 11000 • Package Messages - 10001 thru 90000 • Reserved - 90001 thru 99999 • Each package is allocated 100 message numbers, each starting from 101. • 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 • Reserved message number ranges are for future use and therefore must not be used by all products.

Properties	Description
Customer Modification	Override Description (DESCRLONG_OVRD), Message Text Override (MESSAGE_TEXT_OVRD)

Meta Data - Table and Field

Properties	Description
Tables	CI_MD_TBL, CI_MD_TBL_FLD, CI_MD_TBL_L, CI_MD_TBL_FLD_L, CI_MD_FLD, CI_MD_FLD_L, F1_DB_OBJECTS_REPO
Standard Data Fields	Table Name (TBL_NAME) • Table names must match with the physical table name or view name in the database. • 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. • 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)
Customer Modification	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.

Meta Data - Constraints

Properties	Description
Tables	CI_MD_CONST, CI_MD_CONST_FLD
Standard Data Fields	Constraint Id (CONST_ID) • Index Name for Primary Constraints • <Index Name>Rnn for Foreign Key Constraints Where 　• nn: integer, 01 through 99
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, CI_MD_MENU_ITEM, CI_MD_MENU_ITEM_L, CI_MD_MENU_LINE, 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, CI_MD_PRG_LOC, CI_MD_SVC, CI_MD_SVC_L, CI_MD_SVC_PRG, CI_MD_PRG_REF, CI_MD_PRG_MOD, CI_MD_PRG_EL_AT, CI_MD_PRG_ELEM, CI_MD_PRG_SEC, CI_MD_PRG_SQL, 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 Componets 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, CI_NAV_OPT_CTXT, CI_NAV_OPT_USG, CI_MD_NAV
Standard Data Fields	Navigation Option Code (NAV_OPT_CD), Navigation Key (NAVIGATION_KEY)
Customer Modification	None

Portal and Zone

Properties	Description
Tables	CI_PORTAL, CI_PORTAL_L, CI_PORTAL_ZONE, CI_ZONE, CI_ZONE_L, CI_ZONE_PRM, CI_ZONE_HDL, CI_ZONE_HDL_L, CI_ZONE_HDL_PRM, CI_ZONE_HDL_PRM_L, CI_UI_ZONE
Standard Data Fields	Portal Code (PORTAL_CD), Zone Code (ZONE_CD), Zone Type Code (ZONE_HDL_CD) • A new Zone can be added to the Product owned Portal Pages. • The existing Zones cannot be removed from the Product owned Portal Pages.
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) 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, CI_SCR_CRT_GRP, CI_SCR_CRT_GRP_L, CI_SCR_DA, CI_SCR_FLD_MAP, CI_SCR_PRMPT, CI_SCR_PRMPT_L, CI_SCR_STEP, 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, CI_TD_SRTKEY_TY, CI_TD_DRLKEY_TY, CI_TD_SRTKEY_TY_L
Standard Data Fields	To Do Type Code (TD_TYPE_CD)
Customer Modification	Creation Batch Code (CRE_BATCH_CD), Route Batch Code (RTE_BATCH_CD), Priority Flag (TD_PRIORITY_FLG) on To Do Type Table (CI_TD_TYPE)

XAI configuration

Properties	Description
Tables	CI_XAI_ADAPTER, CI_XAI_ADAPTER_L, CI_XAI_CLASS, CI_XAI_CLASS_L, CI_XAI_ENV_HNDL, CI_XAI_ENV_HNDL_L, CI_XAI_FORMAT, CI_XAI_FORMAT_L, 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, CI_XAI_OPTION
Standard Data Fields	Adapter Id (XAI_ADAPTER_ID), Class Id (XAI_CLASS_ID), Envelope Handler Id (XAI_ENV_HNDL_ID), XAI Format Id (XAI_FORMAT_ID), Receiver Id (XAI_RCVR_ID), Sender Id (XAI_SENDER_ID)
Customer Modification	Option Value (OPTION_VALUE on XAI Option Table (CI_XAI_OPTION)

The following XAI tables might have system data installed upon the initial installation but a subsequence 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, CI_XAI_SVC_PARM, CI_XAI_SVC_VERS, CI_XAI_SVC_VERS_L
Standard Data Fields	XAI Inbound Service Id (XAI_IN_SVC_ID), XAI Inbound Service Name (XAI_IN_SVC_NAME)
Customer Modification	XAI Version (XAI_VERSION_ID), Trace (TRACE_SW), Debug (DEBUG_SW), Request XSL (INPUT_XSL), Response XSL (RESPONSE_XSL), Record XSL (RECORD_XSL and Post Error (POST_ERROR_SW) on XAI Inbound 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_PRMPT	MG	Script Prompt
CI_SCR_PRMPT_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_ALG	MG	Business Object Status Algorithm
F1_BUS_OBJ_STATUS_L	MG	Business Object Status Language
F1_BUS_OBJ_STATUS_OPT	MG	Business Object Status Option
F1_BUS_OBJ_STATUS_RSN	MG	Status Reason
F1_BUS_OBJ_STATUS_RSN_CHAR	KP	Status Reason Characteristic
F1_BUS_OBJ_STATUS_RSN_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 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_L	MG	Extendable Lookup Language
F1_INSTALLATION	KP	Installation Option - Framework
F1_MANAG_CONTENT	MG	Managed Content
F1_MANAG_CONTENT_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

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