Oracle Utilities Customer To Meter

Database Administrator’s Guide

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Preface

Welcome to the Oracle Utilities Customer To Meter Database Administrator’s Guide.

This guide provides instructions to install and maintain the database for Oracle Utilities Customer To Meter.

The preface includes:

- Audience
- Related Documents
- Conventions
- Acronyms

Audience

This guide is intended for database administrators who will be installing and maintaining the database for Oracle Utilities Customer To Meter.

Related Documents

For more information, refer to these Oracle documents:

Installation Guides and Release Notes

- *Oracle Utilities Customer To Meter Release Notes*
- *Oracle Utilities Customer To Meter Quick Install Guide*
- *Oracle Utilities Customer To Meter Installation Guide*
- *Oracle Utilities Customer To Meter Database Administrator's Guide*
- *Oracle Utilities Customer To Meter Optional Products Installation Guide*
- *Oracle Utilities Customer To Meter Licensing Information User Manual*

Administrative and Business User Guides

- *Oracle Utilities Customer To Meter Administrative User Guide*
- *Oracle Utilities Customer To Meter Business User Guide*

Supplemental Documents

- *Oracle Utilities Customer To Meter Server Administration Guide*
- *Oracle Utilities Customer To Meter Security 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.

Convention	Meaning
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.

Acronyms

The following terms are used in this document:

Term	Description
BPEL	Business Process Execution Language
C2M	Oracle Utilities Customer To Meter
CCB (or CC&B)	Oracle Utilities Customer Care and Billing
MDM	Oracle Utilities Meter Data Management
OUAF	Oracle Utilities Application Framework
OSB	Oracle Service Bus
SOA	Service Oriented Architecture
SOM	Oracle Utilities Service Order Management
SGG	Oracle Utilities Smart Grid Gateway
ODM	Oracle Utilities Operational Device Management

Chapter 1

Database Overview

This chapter provides an overview of the Oracle Utilities Customer To Meter database, including:

- Supported Database Platforms
- Database Maintenance Rules

Supported Database Platforms

This section defines the platforms on which Oracle Utilities Customer To Meter is verified to operate.

Supported Platforms Summary Table

Oracle Utilities Customer To Meter is supported on the following platforms:

Platform	**Database Versions**
AIX 7.2 TL4 (POWER 64-bit)	Oracle DB 12.2.0.1+ (64-bit)
Linux 7.x (64-bit) x86_64 (64-bit)	Oracle DB 12.2.0.1+ (64-bit)
Solaris 11.x (SPARC 64-bit)	Oracle DB 12.2.0.1+ (64-bit)
HP UX 11.31 (64-bit)	Oracle DB 12.2.0.1+ (64-bit)

* Oracle Utilities Customer To Meter is tested on both Oracle Database Enterprise Edition and Standard Edition. Some features, such as Advanced Compression and Partitioning, require the Enterprise Edition.

The following Oracle Database Server Editions are supported:

- Oracle Database Enterprise Edition
- Oracle Database Standard Edition

  Note: Oracle Database Enterprise Edition and the Partitioning and Advanced Compression options are not mandatory but recommended. Standard Edition should only be considered suitable for very small, pilot projects or development environments where scalability, performance, and database size-on-disk are not important considerations. Oracle Database Enterprise Edition, including the Advanced Compression and Partitioning options, is strongly recommended in all other situations.

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 Customer To Meter has been tested with.

If it is necessary to apply an upgrade, please do so in a test environment that is running on the same platform as your production environment prior to updating the Oracle Utilities Customer To Meter production environment.

The exceptions from this rule are Hibernate software version 4.0 GA and Oracle Client version 12.1.0.2. These should not be upgraded.

Always contact Oracle Utilities Customer To Meter 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 tablespace and a schema containing the base database objects used by the product.

The installation instructions are outlined in the installation section of this document.

Permitted Database Changes

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. Please make sure to prefix new items with “CM” (for customer modification).
- 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 (base table/index to tablespace, tablespace to data file, data file 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 according to site standards unless otherwise advised by Oracle Support or outlined.

Non-Permitted Database Changes

In order to maintain operability and upgradeability of the product, during and after the installation of the product, the following changes may *not* be performed by the database administration personnel on site.

Base objects must not be removed or altered in the following ways:

- Columns in base tables must not be altered, removed or added in anyway.
- 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 Triggers and Sequences must not be renamed or removed.
- Base indexes must not be altered or removed.

Chapter 2

Installing the C2M 2.7.0.0.0 Database

This chapter provides the instructions to install or upgrade the Oracle Utilities Customer To Meter database. It includes:

- Installation Overview
- Oracle Database Installation

Installation Overview

Refer to Supported Database Platforms for information about the supported platforms on which Oracle Utilities Customer To Meter is verified to operate.

The following types of installation are available for Oracle Utilities Customer To Meter:

- **Initial Install** — a database with no demo data.
- **Upgrade Install** — a database upgrade to V2.7.0.0.0 from V2.6.0.0.0 or V2.6.0.1.0.
- **Demo Install** — a database populated with demo data.

The database installation requires a supported version of the Java Development Kit V8.0 and Oracle 12.2.0.1(+) 32-bit client installed on the Windows 64-bit or 32-bit desktop where the install package is staged and run.

Creating the Database

For an initial install or demo install you will create an empty database on the Unix or Windows database server on which you operate the production instance of Oracle Utilities Customer To Meter.

1. Create the database using the Database Configuration Assistant (DBCA). Refer to the article *Master Note: Overview of Database Configuration Assistant (DBCA) (Doc ID 1488770.1)* on My Oracle Support for more information. Make sure to set character set for database as AL32UTF8.

   Note: While prior versions of the product have included the cdxdba programs (cdxdba.plx for UNIX or CDXDBA.exe for Windows), this is no longer supported going forward, and the Database Configuration Assistant should be used instead.

2. Enable the mandatory software options.
   - Oracle Spatial OR Oracle Locator
   - Oracle Text

3. Run the following SQL to make sure it is successful.

```
SELECT COMP_NAME,STATUS FROM DBA_REGISTRY WHERE COMP_NAME IN
('Spatial','Oracle Text');
```

4. Create the default tablespace CISTS_01 and the required users and roles.

```
CREATE TABLESPACE CISTS_01 LOGGING DATAFILE '/<db_file_location>/
oradata/<DB_NAME>/cists01.dbf' SIZE 1024M REUSE AUTOEXTEND ON NEXT
8192K MAXSIZE UNLIMITED EXTENT MANAGEMENT LOCAL UNIFORM SIZE 1M;
```

5. Create the required roles.

```
CREATE ROLE CIS_USER;
CREATE ROLE CIS_READ;
```

6. Create the users.

```
CREATE USER CISADM IDENTIFIED BY CISADM DEFAULT TABLESPACE CISTS_01
TEMPORARY TABLESPACE TEMP PROFILE DEFAULT;
GRANT UNLIMITED TABLESPACE TO CISADM WITH ADMIN OPTION;
GRANT SELECT ANY TABLE TO CISADM;
GRANT CREATE DATABASE LINK TO CISADM;
GRANT CONNECT TO CISADM;
GRANT RESOURCE TO CISADM;
GRANT DBA TO CISADM WITH ADMIN OPTION;
GRANT CREATE ANY SYNONYM TO CISADM;
GRANT SELECT ANY DICTIONARY TO CISADM;

CREATE USER CISUSER PROFILE DEFAULT IDENTIFIED BY CISUSER DEFAULT
TABLESPACE CISTS_01 TEMPORARY TABLESPACE TEMP;
GRANT SELECT ANY TABLE TO CISUSER;
GRANT CIS_USER TO CISUSER;
GRANT CIS_READ TO CISUSER;
GRANT CONNECT TO CISUSER;

CREATE USER CISOPR PROFILE DEFAULT IDENTIFIED BY OPRPLUS DEFAULT
TABLESPACE CISTS_01 TEMPORARY TABLESPACE TEMP;
GRANT CONNECT,RESOURCE,EXP_FULL_DATABASE TO CISOPR;

CREATE USER CISREAD IDENTIFIED BY CISREAD DEFAULT TABLESPACE
CISTS_01 TEMPORARY TABLESPACE TEMP;
GRANT SELECT ANY TABLE TO CISREAD;
GRANT CIS_READ TO CISREAD;
GRANT CONNECT TO CISREAD;
```

7. Review the Storage.xml file under the FW43060\Install-Upgrade folder prior to an initial install or upgrade install. This file allocates all base tables and indexes to the default tablespace CISTS_01 and the required users and roles. Information in this file is used by ORADBI while installing the Oracle Utilities Customer To Meter database objects. Refer to Updating Storage.xml for more details on updating this file.

   Note: Review the Storage.xml file prior to an initial install to update the default values to custom values (example: TableSpace Name). OraDBI can be executed by a non-schema owner in order to upgrade the database. The Initial Install still needs to be done by the schema owner.

If you decide to allocate some tables or indexes outside of the default tablespace, change the tablespace name from the default value to a custom value in the Storage.xml file.

For instance, if you decide to allocate table CI_ACCT in a tablespace MyTablespace, change Storage.xml as shown:

```
<CI_ACCT>
<TABLESPACE>MyTablespace</TABLESPACE>
</CI_ACCT>
```

For optimum storage allocation, database administrators should create multiple tablespaces with extents sized to store different types of tables/indexes. They can then edit the storage.xml file before install process, to spread tables and indexes across these tablespaces. Tables and indexes can be created in parallel by editing degree of parallelism. Tablespace, storage options, secure file options, Advanced Compression, and parallel information are used only for new objects. Therefore, for initial installs, information for each object should be reviewed. Be careful while editing this file. Make sure that tablespace names being used exist in the database. Do not change the basic format of this file.

> **Note:** Prior to the installation of the database schema for the product, please ensure that the Database Management System software is installed according to your site standards and the installation guide provided by the database vendor. Also please make sure that you have

necessary licenses to use some of the advanced database features such as Advanced Compression.

Oracle Database Installation

This section describes how to install the Oracle Database for Oracle Utilities Customer To Meter V2.7.0.0.0. It includes the following:

- Database Scripts and Utilities
- Initial Install (Installing V2.7.0.0.0 for the First Time)
- Post-Installation Tasks
- Upgrade Install
- Demo Install

Note: The installation tools outlined in this guide run on Windows and UNIX/Linux only. Refer to Supported Database Platforms for more information on supported platforms.

Database Scripts and Utilities

Before you begin installing the database:

1. Copy FW-V4.3.0.6.0-Oracle-Database-Multiplatform, CCB-V2.7.0.0.0-FW-Database-PREREQ-MultiPlatform (if there is any), CCB-V2.7.0.0.0-Oracle-Database-Multiplatform, MDM-V2.2.0.3.0-Oracle-Database-Multiplatform, Oracle Utilities Work and Asset Management V2.2.0.2.0 Oracle Database Multiplatform, and C2M-V2.7.0.0.0-Oracle-Database-Multiplatform directories to your local machine.

   These database folders contain several files that are referred to in the installation process.

2. Starting V2.6.0.0.0, installation scripts can be executed in a Linux or Windows machine. Upgrades from version beyond 2.6.0.0.0 need to set up a Microsoft Windows desktop with the Oracle Client installed.

Initial Install (Installing V2.7.0.0.0 for the First Time)

This section describes an initial installation of the V2.7.0.0.0 database. It focuses on the following:

- Copying and Decompressing Install Media
- Database Creation
- Installing the CISADM Schema
- Installing the Oracle Utilities Application Framework Database Component
- Installing the Oracle Utilities Customer Care and Billing Database Component
- Installing the Oracle Utilities Meter Data Management Database Component

- Installing the Oracle Utilities Operational Device Management Database Component
- Installing the Oracle Utilities Customer To Meter Database Component
- Post-Installation Tasks

  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 Customer To Meter Installation Guide* for more information.

Copying and Decompressing Install Media

To copy and decompress the Oracle Utilities Customer To Meter database:

1. Download Oracle Utilities Application Framework V4.3.0.6.0 Oracle Database, Oracle Utilities Application Framework V4.3.0.6.0 Database Single Fix Prerequisite Rollup for CCB V2.7.0.0.0 (if there is any), Oracle Utilities Customer Care and Billing v2.7.0.0.0 Oracle Database, Oracle Utilities Meter Data Management V2.2.0.2.0 Oracle Database, Oracle Utilities Work and Asset Management v2.2.0.2.0 Oracle Database Multiplatform, and Oracle Utilities Customer to Meter V2.7.0.0.0 Oracle Database from the Oracle Software Delivery Cloud.
2. Copy FW-V4.3.0.6.0-Oracle-Database-Multiplatform, CCB-V2.7.0.0.0-FW-Database-PREREQ-MultiPlatform (if there is any), CCB-V2.7.0.0.0-Oracle-Database- Multiplatform, MDM-V2.2.0.3.0-Oracle-Database-Multiplatform, Oracle Utilities Work and Asset Management V2.2.0.2.0 Oracle Database Multiplatform and C2M-V2.7.0.0.0-Oracle-Database- Multiplatform directories to your local machine.

   These files contain all the database components required to install the Oracle Utilities Application Framework and Oracle Utilities Customer To Meter database.

Database Creation

Note: You must have Oracle Database Server installed on your machine in order to create the database. This step is not required if you are performing a database upgrade from a previous version of Oracle Utilities Customer To Meter.

Creating the Database on UNIX

Create the database using the Database Configuration Assistant (DBCA).

Refer to the article *Master Note: Overview of Database Configuration Assistant (DBCA) (Doc ID 1488770.1)* on My Oracle Support for more information. Make sure to set character set for database as AL32UTF8.

Refer to Creating the Database for steps to create the database.

Creating the Database on Windows

You should be logged in as a user who is a member of the local ORA_DBA group on that server. The ORA_DBA group should have “administrator” privileges assigned to it.

Refer to the article *Master Note: Overview of Database Configuration Assistant (DBCA) (Doc ID 1488770.1)* on My Oracle Support for more information. Make sure to set character set for database as AL32UTF8.

Refer to Creating the Database for steps to create the database.

Database Globalization Support Consideration

Oracle Utilities Application Framework is a multilingual capable application that supports the storage, processing, and retrieval of data in multiple languages by leveraging the Oracle Database globalization support architecture. Use of the AL32UTF8 Unicode character encoding system allows the database to support multiple languages. If your application supports multiple languages with any one of which being multibyte, then consider the use of Character Length Semantics to store data in database columns in terms of CHARACTERS rather than in terms of BYTEs.

At this time, Oracle Utilities Application Framework only supports CHAR NLS_LENGTH_SEMANTICS setting at the instance level. Since this is an instance wide setting, great care should be taken and a thorough evaluation should be performed if custom or third party components utilize the same database instance as the Framework application.

Limitations

The application will only allow for half of the number of characters if the characters are four bytes. In Java, four-byte characters consume two characters in memory. Due to Legacy Program support and performance considerations, the Framework will allocate storage based on the size defined by the Field.

For example, a Field defined as 12 characters will only be able to store 6 four-byte characters. This does not apply to two- or three-byte characters: in those cases, all 12 of the two- or three-byte characters would fit into the allocated memory. This is not a database limitation - but an application limitation.

MAX_STRING_SIZE of EXTENDED is not supported at this time.

By default, the database is created with BYTE length semantics. To store data using CHARACTER length semantics:

Initial Install

1. Set nls_length_semantics=CHAR.

```
SQL> ALTER SYSTEM SET nls_length_semantics=CHAR SCOPE=BOTH;
```

2. Restart the database.
3. Verify that the nls_length_semantics is CHAR.

```
SQL> SHOW PARAMETER nls_length_semantics
```

> **Note**: For pluggable databases ensure to set nls_length_semantics=CHAR.

There are multiple ways to migrate a database from BYTE to CHAR length semantics:

- **By Script**: Refer to the *Doc ID 313175.1* on My Oracle Support.
- **Alternative procedure**: The following is an alternate way to create a schema with character-length semantics, and then importing the date from a byte-based export.

Migrating from BYTE Based Storage to CHARACTER Based Storage

1. Create a database using DBCA.
2. Set nls_length_semantics=CHAR.

   ```
   SQL> ALTER SYSTEM SET nls_length_semantics=CHAR SCOPE=BOTH;
   ```

3. Restart the database.
4. Ensure nls_length_semantics is CHAR.

   ```
   SQL> SHOW PARAMETER nls_length_semantics
   ```

   Note: For pluggable database ensure to set nls_length_semantics=CHAR.

5. Export schema from the database that has nls_semantics_legth=BYTE.

   ```
   expdp userid=system/<code>@<SID> directory=<DIR_NAME>
   schemas=<schema_name> dumpfile=<schema_name>.dmp
   logfile=<schema_name>.log
   ```

6. Generate DDL from dump file using Oracle impdp utility.

   ```
   impdp userid=system/<code>@<SID> directory=<DIR_NAME>
   DUMPFILE=<schema_name>.dmp SCHEMAS=<schema_name>
   SQLFILE=<schema_name>_DDL.sql
   ```

7. Replace “Byte” with “Char” in <schema_name>DDL.sql.

   For vi editor (in Linux), use the following command to replace Byte to Char.

   ```
   :%s/BYTE/CHAR/g
   ```

8. Replace the schema name also if it is required for environment.
9. Execute <schema_name>DDL.sql (generated in step 6) that creates objects in the schema.

   To ensure the number of objects at source and target are equal:

   ```
   SQL>select OWNER || '  ' || OBJECT_TYPE || '  ' ||  COUNT(*) || '  '
   ||  STATUS FROM DBA_OBJECTS WHERE OWNER in ('<SCHEMA_NAMe>') GROUP
   BY OWNER, OBJECT_TYPE , STATUS ORDER BY OBJECT_TYPE;
   ```

10. If an object is missing for any reason, create it by fixing DDL manually (DDL for each object is available in the file which was created in step 6).

    Execute DDL for the objects that are not created.

11. Generate DDL to disable triggers using following command:

    ```
    SQL> SELECT 'ALTER TABLE' || ' ' ||TABLE_NAME || ' ' || 'DISABLE ALL
    TRIGGERS;' FROM USER_TABLES;
    ```

12. Execute the script generated from step 11 to disable all triggers.
13. Import the data only.

    To import data only into the schema created to support CHAR based database storage:

    ```
    impdp userid=system/<code>@<SID> dumpfile=<schema_name>.dmp
    CONTENT=DATA_ONLY SCHEMAS=<schema_name>
    LOGFILE=<schema_name>_import.log
    ```

14. Enable the triggers.

    To generate DDL for triggers:

    ```
    SQL>SELECT 'ALTER TABLE' || ' ' ||TABLE_NAME || ' ' || 'ENABLE ALL
    TRIGGERS;' FROM USER_TABLES;
    ```

15. Execute the script generated from step 14 to enable all triggers.

Installing the CISADM Schema

You should install the Oracle Utilities Application Framework V4.3.0.6.0 Oracle Database, Oracle Utilities Application Framework V4.3.0.6.0 Database Single Fix Prerequisite Rollup for CCB V2.7.0.0.0 (if there is any), Oracle Utilities Customer Care and Billing V2.7.0.0.0 Oracle Database, Oracle Utilities Meter Data Management V2.2.0.3.0 and Oracle Utilities Work and Asset Management V2.2.0.2.0 in the same order as mentioned in this document prior to installing Oracle Utilities Customer To Meter V2.7.0.0.0. The files for Oracle Utilities Application Framework installers are located in ..\FW-V4.3.0.6.0-Oracle-Database-Multiplatform\FW\Install-Upgrade folder.

The installation process prompts you for the following information:

- The target database name in which the product is to be installed.
- A database user that will own the application schema (example: CISADM).
- A database user that has read-write (select/update/insert/delete) privileges to the objects in the application schema. (example: CISUSER).

  The application will access the database as this user.
- A database user with read-only privileges to the objects in the application schema. (example: CISREAD).
- A database role that has read-write (select/update/insert/delete) privileges to the objects in the application schema. The application will access the database as this user. (example: CIS_USER).
- A database role with read-only privileges to the objects in the application schema. (example: CIS_READ).
- Location for jar files. (The Jar files are bundled with the database package.)
- Java Home (example: C:\Java\jdk1.8)

Installing the Oracle Utilities Application Framework Database Component

> **Note**: The Oracle Utilities Application Framework database component can be installed using OraDBI.java. While prior versions of the product have included OraDBI.exe, this is no longer supported going forward as this does not support the latest functionality/features introduced in OraDBI.java.OraDBI.jar is delivered in directory jarfiles.

This section provides the instructions to install the database component.

Installing the Oracle Utilities Application Framework Database Component Using OraDBI.java

OraDBI.java is a tool to install and upgrade database components. It can be run from UNIX or Windows machines that has Oracle 12.1.0.2 (+) or Oracle Client 12.1.0.2(+) installed.

Before installing the database component, ensure the following prerequisites are met.

- JDK 1.8
- Oracle Database
- Schema (such as CISADM) should exist in the database

To install Oracle Utilities Application Framework V4.3.0.6.0:

Using UNIX machine

1. Unzip FW-V4.3.0.6.0-Oracle-Database-Multiplatform.zip package.
2. Set JAVA_HOME, CLASSPATH, and PATH.

```
a.export JAVA_HOME = /scratch/software/jdk1.8.0_102/
b.export CLASSPATH = /../FW-V4.3.0.6.0-Oracle- Database-
Multiplatform/FW/jarfiles/commons-cli-1.3.1.jar:/../FWV4.3.0.6.0-
Oracle- Database-Multiplatform/FW/jarfiles/commonscodec-
1.9.jar:/../FW-V4.3.0.6.0-Oracle- Database-Multiplatform/
FW/jarfiles/commons-collections-3.2.2.jar:/../FW-V4.3.0.6.0-
Oracle- Database-Multiplatform/FW/jarfiles/log4j-api-
2.6.2.jar:/../FW-V4.3.0.6.0-Oracle- Database-Multiplatform/FW/
jarfiles/log4j-core-2.6.2.jar:/../FW-V4.3.0.6.0-Oracle-
Database-Multiplatform/FW/jarfiles/ojdbc7-12.1.0.2.jar:/../
FWV4.3.0.6.0-
Oracle- Database-Multiplatform/FW/jarfiles/
oradbi.jar:/../FW-V4.3.0.6.0-Oracle- Database-Multiplatform/FW/
jarfiles/spl-shared-18.1.0.0.0.jar
```

Note: In CLASSPATH, declare it one after the other.

```
c.Set PATH variable to include JAVA_HOME/bin.
export PATH=$JAVA_HOME/bin:$PATH
export PATH=/scratch/software/jdk1.8.0_102/bin:$PATH
```

3. From /../FW-V4.3.0.6.0-Oracle- Database-Multiplatform/FW/Install-Upgrade directory, run the following command. Modify the values accordingly.

```
java -Xmx1500M com.oracle.ouaf.oem.install.OraDBI -d
jdbc:oracle:thin:@<DB_SERVER>:<PORT>/
<SID>,<DBUSER>,<DBPASS>,<RW_USER>,<R_USER>,< RW_USER_ROLE>,<R_US
ER_ROLE>,<DBUSER> -l 1,2 -j $JAVA_HOME
```

Using Windows machine

1. Install the Oracle Utilities Application Framework database component using command prompt utility of Windows from the ..\FW-V4.3.0.6.0-Oracle-Database-Multiplatform\FW\Install-Upgrade directory.
2. Prepare the configuration parameters listed below:
   - DB_SERVER - Name of the database server
   - SID - Name of the target database
   - PORT - Port number

- DBUSER - Name of the owner of the database schema
- DBPASS - Password for the user
- RWUSER - Oracle user with read-write privileges (CISUSER)
- RUSER - Oracle user with read-only privileges (CISREAD)
- RW_USER_ROLE - Oracle database role with read-write privileges (CIS_USER)
- USER_ROLE - Oracle database role with read-only privileges (CIS_READ)
- JAVA_HOME - Location of JDK 1.8 (C:\Program Files\Java\jdk1.8.0)
- CLASS_PATH - Location of Jarfiles (C:\ FW-V4.3.0.6.0-Oracle-Database-Multiplatform\FW\jarfiles\*)

3. There are two options to run OraDBI.java. Choose any of the two options - Using Interactive Mode or Command on Command Line.

   - **To run OraDBI using Interactive Mode:**

     a. Open command prompt/command line on Windows environment.

     b. Set Java Home.

        In the following example, JDK 1.8 is installed at directory C:\Program Files\Java\jdk1.8.0_101.

        ```
        SET JAVA_HOME=C:\Program Files\Java\jdk1.8.0_101
        ```

     c. Set Class Path.

        In the following example, the required jarfiles (including OraDBI.jar) are available in the directory C:\FW-V4.3.0.6.0-Oracle-Database-Multiplatform\FW\jarfiles\*.

        ```
        SET CLASS_PATH= C:\FW-V4.3.0.6.0-Oracle-Database-
        Multiplatform\FW\jarfiles\*
        ```

     d. Execute the following command at command prompt in Windows environment.

        Using variable paremeters:

        ```
        "%JAVA_HOME%"\bin\java -Xmx1500M -cp %CLASS_PATH%
        com.oracle.ouaf.oem.install.OraDBI
        ```

        Using absolute path of Java home and Jar files:

        ```
        "C:\Program Files\Java\jdk1.8.0_101"\bin\java -Xmx1500M -cp
        C:\FW-V4.3.0.6.0-Oracle-Database-Multiplatform\FW\jarfiles\*
        com.oracle.ouaf.oem.install.OraDBI
        ```

     e. The utility prompts you to enter values for the following parameters:

        - Enter the database server hostname:<SERVER NAME>
        - Enter the database port number:<PORT>
        - Enter the database name/SID:<DB NAME>
        - Enter your database username:<CISADM>
        - Enter your password for username CISADM:

- Enter the location for Java Home: <C:\Program Files\Java\jdk1.8.0_101>
- Enter the Oracle user with read-write privileges to Database Schema:<CISUSER>
- Enter the Oracle user with read-only privileges to Database Schema:<CISREAD>
- Enter the database role with read-write privileges to Database Schema:<CIS_USER>
- Enter the database role with read-only privileges to Database Schema:<CIS_READ>
- Enter the name of the target Schema where you want to install or upgrade:<CISADM>
- Enter the password for CISADM schema:

- **To run OraDBI using Command on Command Line:**

  Run the following command with defined parameters on the command prompt using either absolute value or variable parameters.

  Using variable parameters:

```
"%JAVA_HOME%"\bin\java -Xmx1500M -cp %CLASS_PATH%
com.oracle.ouaf.oem.install.OraDBI -d
jdbc:oracle:thin:@<DB_SERVER>:<PORT>/
<SID>,<DBUSER>,<DBPASS>,<RW_USER>,<R_USER>,<RW_USER_ROLE>,<R_US
ER_ROLE>,<DBUSER> -l 1,2 -j <JAVA_HOME>
```

  Using absolute path of Java home and Jar files:

```
"C:\Program Files\Java\jdk1.8.0_101"\bin\java -Xmx1500M -cp
C:\FW-V4.3.0.6.0-Oracle-Database-Multiplatform\FW\jarfiles\*
com.oracle.ouaf.oem.install.OraDBI -d
jdbc:oracle:thin:@<DB_SERVER>:<PORT>/
<SID>,<DBUSER>,<DBPASS>,<RW_USER>,<R_USER>,<RW_USER_ROLE>,<R_US
ER_ROLE>,<DBUSER> -l 1,2 -j "C:\Program Files\Java\jdk1.8.0_101"
```

  Note: As there is an empty space between the two words ‘Program’ and ‘Files’, it is enclosed in the double quotes in the command above.

This process generates log files in the directory Install-Upgrade\logs.

4. Ensure to check the log files for any errors.

   Note: For OraDBI java, you may receive the following message in the display output or logs. These errors can be safely ignored and the process should proceed to completion.

```
-  2016-05-23 16:31:38,315 [main] ERROR
(common.cryptography.KeyStoreWrapperFactory) The keystore file
'<filename>' does not exist.…
…
This file is either provided by the property
com.oracle.ouaf.system.keystore.file or expected to exist at the
default file location null Attempting to use the legacy
cryptography.
 -  2016-05-23 16:31:38,566 [main] INFO  (oem.install.OraDBI)
```

Installing Prerequisite Database Single Fixes

Before installing any edge products like Oracle Utilities Customer Care and Billing, Oracle Utilities Meter Data Management, Oracle Utilities Work and Asset Management and Oracle Utilities Customer To Meter, you must install Oracle Utilities Framework Prerequisite Database Hot Fixes.

> **Important**: Confirm if there are prerequisite Database Single Fixes. Check if there is a CCB-V2.7.0.0.0-FW-Database-PREREQMultiPlatform folder. If there is, continue with the steps below. If none, skip this step and proceed to apply Oracle Utilities Customer Care and Billing.

Applying Hot Fixes from a Windows Machine

> **Note**: Java 8 JDK should be installed on the machine to use the command. Ensure to install the JDK that is supported for your platform.

1. Copy the ..\CCB-V2.7.0.0.0-FW-Database-PREREQ-MultiPlatform\FW43060-HFix\db_patch_standalone.jar to a directory on Windows, under c:\dbpatch_tools and extract the db_patch_standalone.jar using below command:

```
cd c:\dbpatch_tools
jar xvf db_patch_standalone.jar
```

2. SET TOOLSBIN=c:\dbpatch_tools\bin
3. Apply prerequisite Oracle Utilities Application Framework database single fixes by running the ouafDatabasePatch.cmd utility from the ..\CCB-V2.7.0.0.0-FW-Database-PREREQMultiPlatform\FW43060-HFix directory. The utility will prompt you for the value of the following parameters:
   - Enter the target database type (O/M/D) [O]:
   - Enter the username that owns the schema: <CISADM>
   - Enter the password for the cisadm user: <CISADM Password>
   - Enter the name of the Oracle Database Connection String: <DB_Server:DBPORT:ORACLE_SID>

Applying Hotfixes from a Unix Standalone Server

> **Note**: Java 8 JDK should be installed on the machine to use the command. Ensure to install the JDK that is supported for your platform.

1. Copy the ..\CCB-V2.7.0.0.0-FW-Database-PREREQ-MultiPlatform\FW43060-HFix\db_patch_standalone.jar to a directory on Unix server, under /tmp/dbpatch_tools and extract the db_patch_standalone.jar using below command:

```
cd /tmp/dbpatch_tools
jar xvf db_patch_standalone.jar
```

2. Export TOOLSBIN=/tmp/dbpatch_tools/bin.
3. Navigate to ../CCB-V2.7.0.0.0-FW-Database-PREREQ-MultiPlatform/FW43060-HFix directory and change the permission of ouafDatabasePatch.sh.

```
chmod 755 ouafDatabasePatch.sh
```

4. Apply prerequisite Oracle Utilities Application Framework DB single fixes by running the ouafDatabasePatch.sh utility from the ..\CCB-V2.7.0.0.0-FW-Database-PREREQMultiPlatform\FW43060-HFix directory.

   The utility will prompt you for the value of the following parameters:

   - Enter the target database type (O/M/D) [O]:
   - Enter the username that owns the schema: <CISADM>
   - Enter the password for the cisadm user: <CISADM Password>
   - Enter the name of the Oracle Database Connection String: <DB_Server:DBPORT:ORACLE_SID>

Installing the Oracle Utilities Customer Care and Billing Database Component

> **Note**: The Oracle Utilities Customer Care and Billing database component can be installed using OraDBI.java. While prior versions of the product have included OraDBI.exe, this is no longer supported going forward as this does not support latest functionality/features introduced in OraDBI.java. OraDBI.jar is delivered in directory jarfiles.

This section provides the instructions to install the database component.

Installing the Oracle Utilities Customer Care and Billing Database Component Using OraDBI.java

OraDBI.java is a new tool to install and upgrade database components. It can be run from UNIX or Windows server that has Oracle 12.1.0.2 (+) or Oracle Client 12.1.0.2 (+) installed.

Before installing the Oracle Utilities Customer Care and Billing v2.7.0.0.0, ensure the following prerequisites are met.

- JDK 1.8
- Oracle Database
- Schema (such as CISADM) should exist in the database

To install the Oracle Utilities Customer Care and Billing v2.7.0.0.0 database:

Using UNIX machine

1. Unzip CCB-V2.7.0.0.0-Oracle-Database-Multiplatform.zip package.
2. Set JAVA_HOME, CLASSPATH, and PATH.

```
a.export JAVA_HOME = /scratch/software/jdk1.8.0_102/
b.export CLASSPATH = /../FW-V4.3.0.6.0-Oracle- Database-
Multiplatform/FW/jarfiles/commons-cli-1.3.1.jar:/../FWV4.3.0.6.0-
Oracle- Database-Multiplatform/FW/jarfiles/commonscodec-
1.9.jar:/../FW-V4.3.0.6.0-Oracle- Database-Multiplatform/
FW/jarfiles/commons-collections-3.2.2.jar:/../FW-V4.3.0.6.0-
Oracle- Database-Multiplatform/FW/jarfiles/log4j-api-
2.6.2.jar:/../FW-V4.3.0.6.0-Oracle- Database-Multiplatform/FW/
jarfiles/log4j-core-2.6.2.jar:/../FW-V4.3.0.6.0-Oracle-
Database-Multiplatform/FW/jarfiles/ojdbc7-12.1.0.2.jar:/../
FWV4.3.0.6.0-Oracle- Database-Multiplatform/FW/jarfiles/
oradbi.jar:/../FW-V4.3.0.6.0-Oracle- Database-Multiplatform/FW/
jarfiles/spl-shared-18.1.0.0.0.jar
```

Note: In CLASSPATH, declare it one after the other.

```
c.Set PATH variable to include JAVA_HOME/bin.
export PATH=$JAVA_HOME/bin:$PATH
export PATH=/scratch/software/jdk1.8.0_102/bin:$PATH
```

3. From CCB-V2.7.0.0.0-Oracle-Database-Multiplatform/CCB/Install-Upgrade directory, run the following command. Modify the values accordingly.

```
java -Xmx1500M com.oracle.ouaf.oem.install.OraDBI -d
jdbc:oracle:thin:@<DB_SERVER>:<PORT>/
<SID>,<DBUSER>,<DBPASS>,<RW_USER>,<R_USER>,<RW_USER_ROLE>,<R_US
ER_ROLE>,<DBUSER> -l 1,2 -j $JAVA_HOME
```

Using Windows machine

1. Install the Oracle Utilities Customer Care and Billing database component using the command prompt utility of Windows from ..\CCB-V2.7.0.0.0-Oracle-Database-Multiplatform\CCB\Install-Upgrade\.
2. Prepare the configuration parameters:
   - DB_SERVER – Name of the database server
   - SID - Name of the target database
   - PORT – Port Number
   - DBUSER – Name of the owner of the database schema
   - DBPASS – Password for the user
   - RWUSER – Oracle user with read-write privileges (CISUSER)
   - RUSER – Oracle user with read-only privileges (CISREAD)
   - RW_USER_ROLE - Oracle database role with read-write privileges (CIS_USER)
   - USER_ROLE – Oracle database role with read-only privileges (CIS_READ)
   - JAVA_HOME – Location of JDK 1.8 (C:\Program Files\Java\jdk1.8.0)
   - CLASS_PATH – Location of Jarfiles (C:\FW-V4.3.0.6.0-Oracle-Database-Multiplatform\FW\jarfiles\*)
3. There are two options to run OraDBI.java. Choose any of the two options - Using Interactive Mode or Command on Command Line.

- **To run OraDBI using Interactive Mode:**

  a. Open command prompt / command line on Windows environment.

  b. Set Java Home.

     In the following example, JDK 1.8 is installed at directory C:\Program Files\Java\jdk1.8.0_101.

     ```
     SET JAVA_HOME=C:\Program Files\Java\jdk1.8.0_101
     ```

  c. Set Class Path.

In the following example, the required jarfiles (including OraDBI.jar) are available in the directory C:\FW-V4.3.0.6.0-Oracle-Database-Multiplatform\FW\jarfiles\*.

```
SET CLASS_PATH= C:\FW-V4.3.0.6.0-Oracle-Database-
Multiplatform\FW\jarfiles\*
```

d. Execute the following command at command prompt in Windows environment.

Using variable parameters:

```
"%JAVA_HOME%"\bin\java -Xmx1500M -cp %CLASS_PATH%
com.oracle.ouaf.oem.install.OraDBI
```

Using absolute path of Java home and Jar files:

```
"C:\Program Files\Java\jdk1.8.0_101"\bin\java -Xmx1500M -cp
C:\FW-V4.3.0.6.0-Oracle-Database-Multiplatform\FW\jarfiles\*
com.oracle.ouaf.oem.install.OraDBI
```

e. The utility prompts you to enter values for the following parameters:

- Enter the database server hostname:<SERVER NAME>
- Enter the database port number:<PORT>
- Enter the database name/SID:<DB NAME>
- Enter your database username:<CISADM>
- Enter your password for username CISADM:
- Enter the location for Java Home: <C:\Program Files\Java\jdk1.8.0_101>
- Enter the Oracle user with read-write privileges to Database Schema:<CISUSER>
- Enter the Oracle user with read-only privileges to Database Schema:<CISREAD>
- Enter the database role with read-write privileges to Database Schema:<CIS_USER>
- Enter the database role with read-only privileges to Database Schema:<CIS_READ>
- Enter the name of the target Schema where you want to install or upgrade:<CISADM>
- Enter the password for CISADM schema:

- **To run OraDBI using Command on Command Line:**

  Run the following command with defined parameters on the command prompt using either absolute value or variable parameters.

  Using variable parameters:

```
"%JAVA_HOME%"\bin\java -Xmx1500M -cp %CLASS_PATH%
com.oracle.ouaf.oem.install.OraDBI -d
jdbc:oracle:thin:@<DB_SERVER>:<PORT>/
<SID>,<DBUSER>,<DBPASS>,<RW_USER>,<R_USER>,<RW_USER_ROLE>,<R_US
ER ROLE>,<DBUSER> -l 1,2 -j <JAVA HOME>
```

Using absolute path of Java home and Jar files:

```
"C:\Program Files\Java\jdk1.8.0_101"\bin\java -Xmx1500M -cp
C:\FW-V4.3.0.6.0-Oracle-Database-Multiplatform\FW\jarfiles\*
com.oracle.ouaf.oem.install.OraDBI -d
jdbc:oracle:thin:@<DB_SERVER>:<PORT>/
<SID>,<DBUSER>,<DBPASS>,<RW_USER>,<R_USER>,<RW_USER_ROLE>,<R_US
ER ROLE>,<DBUSER> -l 1,2 -j "C:\Program Files\Java\jdk1.8.0_101"
```

Note: As there is an empty space between the two words 'Program' and 'Files', it is enclosed in the double quotes in the command above.

This process generates log files in the directory Install-Upgrade\logs.

4. Ensure to check the log files for any errors.

Note: For OraDBI java, you may receive the following message in the display output or logs. These errors can be safely ignored and the process should proceed to completion.

```
-  2016-05-23 16:31:38,315 [main] ERROR
(common.cryptography.KeyStoreWrapperFactory) The keystore file
'<filename>' does not exist.…
…
This file is either provided by the property
com.oracle.ouaf.system.keystore.file or expected to exist at the
default file location null Attempting to use the legacy
cryptography.
 -  2016-05-23 16:31:38,566 [main] INFO  (oem.install.OraDBI)
```

Installing the Oracle Utilities Meter Data Management Database Component

Note: The Oracle Utilities Meter Data Management database component can be installed using OraDBI.java. While prior versions of the product have included OraDBI.exe, this is no longer supported going forward as this does not support latest functionality/features introduced in OraDBI.java. OraDBI.jar is delivered in directory jarfiles.

This section provides the instructions to install the database component.

Installing the Oracle Utilities Meter Data Management Component Using OraDBI.java

OraDBI.java is a new tool to install and upgrade database components. It can be run from UNIX or Windows server that has Oracle 12.1.0.2 (+) or Oracle Client 12.1.0.2 (+) installed.

Before installing the Oracle Utilities Meter Data Management v2.2.0.3.0, ensure the following prerequisites are met.

- JDK 1.8
- Oracle Database
- Schema (such as CISADM) should exist in the database

To install the Oracle Utilities Meter Data Management v2.2.0.3.0:

Using UNIX machine

1. Unzip MDM-V2.2.0.3.0-Oracle-Database-Multiplatform.zip package.
2. Set JAVA_HOME, CLASSPATH, and PATH.

```
a.export JAVA_HOME = /scratch/software/jdk1.8.0_102/
b.export CLASSPATH = /../FW-V4.3.0.6.0-Oracle- Database-
Multiplatform/FW/jarfiles/commons-cli-1.3.1.jar:/../FWV4.3.0.6.0-
Oracle- Database-Multiplatform/FW/jarfiles/commonscodec-
1.9.jar:/../FW-V4.3.0.6.0-Oracle- Database-Multiplatform/
FW/jarfiles/commons-collections-3.2.2.jar:/../FW-V4.3.0.6.0-
Oracle- Database-Multiplatform/FW/jarfiles/log4j-api-
2.6.2.jar:/../FW-V4.3.0.6.0-Oracle- Database-Multiplatform/FW/
jarfiles/log4j-core-2.6.2.jar:/../FW-V4.3.0.6.0-Oracle-
Database-Multiplatform/FW/jarfiles/ojdbc7-12.1.0.2.jar:/../
FWV4.3.0.6.0-Oracle- Database-Multiplatform/FW/jarfiles/
oradbi.jar:/../FW-V4.3.0.6.0-Oracle- Database-Multiplatform/FW/
jarfiles/spl-shared-18.1.0.0.0.jar
```

Note: In CLASSPATH, declare it one after the other.

```
c.Set PATH variable to include JAVA_HOME/bin.
export PATH=$JAVA_HOME/bin:$PATH
export PATH=/scratch/software/jdk1.8.0_102/bin:$PATH
```

3. From MDM-V2.2.0.3.0-Oracle-Database-Multiplatform/MDM/Install-Upgrade directory, run the following command. Modify the values accordingly.

```
java -Xmx1500M com.oracle.ouaf.oem.install.OraDBI -d
jdbc:oracle:thin:@<DB_SERVER>:<PORT>/
<SID>,<DBUSER>,<DBPASS>,<RW_USER>,<R_USER>,<RW_USER_ROLE>,<R_US
ER_ROLE>,<DBUSER> -l 1,2 -j $JAVA_HOME
```

Using Windows machine

1. Install the Oracle Utilities Meter Data Management database component using command prompt utility of Windows from ..\MDM-V2.2.0.3.0-Oracle-Database-Multiplatform\MDM\Install-Upgrade\.
2. Prepare the configuration parameters listed below:
   - DB_SERVER - Name of the database server
   - SID- Name of the target database
   - PORT - Port No.
   - DBUSER - Name of the owner of the Database Schema
   - DBPASS - Password for the user
   - RWUSER - Oracle user with read-write privileges (CISUSER)
   - RUSER - Oracle user with read-only privileges (CISREAD)
   - RW_USER_ROLE - Oracle database role with read-write privileges (CIS_USER)
   - USER_ROLE - Oracle database role with read-only privileges (CIS_READ)
   - JAVA_HOME - Location of JDK 1.8 (C:\Program Files\Java\jdk1.8.0)

- CLASS_PATH - Location of Jarfiles (C:\FW-V4.3.0.6.0-Oracle-Database-Multiplatform\FW\jarfiles\*)

3. There are two options to run OraDBI.java. Choose any of the two options - Using Interactive Mode or Command on Command Line.

   - **To run OraDBI using Interactive Mode**:

     a. Open command prompt / command line on Windows environment.

     b. Set Java Home.

     In the following example, JDK 1.8 is installed at directory C:\Program Files\Java\jdk1.8.0_101.

     ```
     SET JAVA_HOME=C:\Program Files\Java\jdk1.8.0_101
     ```

     c. Set Class Path.

     In the following example, the required jarfiles (including OraDBI.jar) are available in the directory C:\FW-V4.3.0.6.0-Oracle-Database-Multiplatform\FW\jarfiles\*.

     ```
     SET CLASS_PATH= C:\FW-V4.3.0.6.0-Oracle-Database-
     Multiplatform\FW\jarfiles\*
     ```

     d. Execute the following command at command prompt in Windows environment.

     Using variable parameters:

     ```
     "%JAVA_HOME%"\bin\java -Xmx1500M -cp %CLASS_PATH%
     com.oracle.ouaf.oem.install.OraDBI
     ```

     Using absolute path of Java home and Jar files:

     ```
     "C:\Program Files\Java\jdk1.8.0_101"\bin\java -Xmx1500M -cp
     C:\FW-V4.3.0.6.0-Oracle-Database-Multiplatform\FW\jarfiles\*
     com.oracle.ouaf.oem.install.OraDBI
     ```

     e. The utility prompts you to enter values for the following parameters:

       - Enter the database server hostname:<SERVER NAME>
       - Enter the database port number:<PORT>
       - Enter the database name/SID:<DB NAME>
       - Enter your database username:<CISADM>
       - Enter your password for username CISADM:
       - Enter the location for Java Home: <C:\Program Files\Java\jdk1.8.0_101>
       - Enter the Oracle user with read-write privileges to Database Schema:<CISUSER>
       - Enter the Oracle user with read-only privileges to Database Schema:<CISREAD>
       - Enter the database role with read-write privileges to Database Schema:<CIS_USER>
       - Enter the database role with read-only privileges to Database Schema:<CIS_READ>

- Enter the name of the target Schema where you want to install or upgrade:<CISADM>
- Enter the password for CISADM schema:

- **To run OraDBI using Command on Command Line**:

  Run the following command with defined parameters on the command prompt using either absolute value or variable parameters.

  Using variable parameters:

```
"%JAVA_HOME%"\bin\java -Xmx1500M -cp %CLASS_PATH%
com.oracle.ouaf.oem.install.OraDBI -d
jdbc:oracle:thin:@<DB_SERVER>:<PORT>/
<SID>,<DBUSER>,<DBPASS>,<RW_USER>,<R_USER>,<RW_USER_ROLE>,<R_US
ER ROLE>,<DBUSER> -l 1,2 -j <JAVA HOME>
```

  Using absolute path of Java home and Jar files:

```
"C:\Program Files\Java\jdk1.8.0_101"\bin\java -Xmx1500M -cp
C:\FW-V4.3.0.6.0-Oracle-Database-Multiplatform\FW\jarfiles\*
com.oracle.ouaf.oem.install.OraDBI -d
jdbc:oracle:thin:@<DB_SERVER>:<PORT>/
<SID>,<DBUSER>,<DBPASS>,<RW_USER>,<R_USER>,<RW_USER_ROLE>,<R_US
ER ROLE>,<DBUSER> -l 1,2 -j "C:\Program Files\Java\jdk1.8.0_101"
```

  Note: As there is an empty space between the two words 'Program' and 'Files', it is enclosed in the double quotes in the command above.

This process generates log files in the directory Install-Upgrade\logs.

4. Ensure to check the log files for any errors.

   Note: For OraDBI java, you may receive the following message in the display output or logs. These errors can be safely ignored and the process should proceed to completion.

```
2016-05-23 16:31:38,315 [main] ERROR
(common.cryptography.KeyStoreWrapperFactory) The keystore file
'<filename>' does not exist.…
…
This file is either provided by the property
com.oracle.ouaf.system.keystore.file or expected to exist at the
default file location null Attempting to use the legacy
cryptography.
- 2016-05-23 16:31:38,566 [main] INFO (oem.install.OraDBI)
```

Optional: This optional step should be executed if you have installed Oracle Utilities Meter Data Analytics 2.5.0.0.2 (2.5 Patch Set 2), or if you plan to install it in the future.

Navigate to ..\MDM-V2.2.0.3.0-Oracle-Database-Multiplatform\MDM\Post-Upgrade folder and run Materialized_View_Creation.sql from sql prompt as follows:

a. Connect to Database Owner Schema. (for example: <CISADM>/<CISADM>@<SERVICE_NAME>)

b. Run Materialized_View_Creation.sql as @Materialized_View_Creation.sql from sql prompt.

After the required changes are complete, configure security by following the steps in the Configuring Security section.

Installing the Oracle Utilities Operational Device Management Database Component

> **Note**: The Oracle Utilities Operational Device Management database component can be installed using OraDBI.java. While prior versions of the product have included OraDBI.exe, this is no longer supported going forward as this does not support latest functionality/features introduced in OraDBI.java. OraDBI.jar is delivered in directory jarfiles.

This section provides the instructions to install the database component.

Installing the Oracle Utilities Operational Device Management Using OraDBI.java

OraDBI.java is a new tool to install and upgrade database components. It can be run from UNIX or Windows server that has Oracle 12.1.0.2 (+) or Oracle Client 12.1.0.2 (+) installed.

Before installing the Oracle Utilities Operational Device Management V2.2.0.2.0, ensure the following prerequisites are met.

- JDK 1.8
- Oracle Database
- Schema (such as CISADM) should exist in the database

To install the Oracle Utilities Operational Device Management V2.2.0.2.0:

Using UNIX machine

1. Unzip the Oracle Utilities Work and Asset Management V2.2.0.2.0 Oracle Database Multiplatform.zip package.
2. Unzip the WAM-V2.2.0.2.0-Database.zip package.
3. Set JAVA_HOME, CLASSPATH, and PATH.

```
a.export JAVA_HOME = /scratch/software/jdk1.8.0_102/
b.export CLASSPATH = /../FW-V4.3.0.6.0-Oracle- Database-
Multiplatform/FW/jarfiles/commons-cli-1.3.1.jar:/../FWV4.3.0.6.0-
Oracle- Database-Multiplatform/FW/jarfiles/commonscodec-
1.9.jar:/../FW-V4.3.0.6.0-Oracle- Database-Multiplatform/
FW/jarfiles/commons-collections-3.2.2.jar:/../FW-V4.3.0.6.0-
Oracle- Database-Multiplatform/FW/jarfiles/log4j-api-
2.6.2.jar:/../FW-V4.3.0.6.0-Oracle- Database-Multiplatform/FW/
jarfiles/log4j-core-2.6.2.jar:/../FW-V4.3.0.6.0-Oracle-
Database-Multiplatform/FW/jarfiles/ojdbc7-12.1.0.2.jar:/../
FWV4.3.0.6.0-
Oracle- Database-Multiplatform/FW/jarfiles/
oradbi.jar:/../FW-V4.3.0.6.0-Oracle- Database-Multiplatform/FW/
jarfiles/spl-shared-18.1.0.0.0.jar
```

> **Note**: In CLASSPATH, declare it one after the other.

```
c.Set PATH variable to include JAVA_HOME/bin.
export PATH=$JAVA_HOME/bin:$PATH
export PATH=/scratch/software/jdk1.8.0_102/bin:$PATH
```

4. From WAM-V2.2.0.2.0-Database/WAM/Install-Upgrade/ directory, run the following command. Modify the values accordingly.

```
java -Xmx1500M com.oracle.ouaf.oem.install.OraDBI -d
jdbc:oracle:thin:@<DB_SERVER>:<PORT>/
<SID>,<DBUSER>,<DBPASS>,<RW_USER>,<R_USER>,<RW_USER_ROLE>,<R_US
```

```
ER_ROLE>,<DBUSER> -l 1,2 -j $JAVA_HOME
```

Using Windows machine

1. Install the Oracle Utilities Operational Device Management database component using command prompt utility of Windows from ...\WAM-V2.2.0.2.0-Database\WAM\Install-Upgrade\.
2. Prepare the configuration parameters listed below:
   - DB_SERVER - Name of the database server
   - SID - Name of the target database
   - PORT - Port Number
   - DBUSER - Name of the owner of the database schema
   - DBPASS - Password for the user
   - RWUSER - Oracle user with read-write privileges (CISUSER)
   - RUSER - Oracle user with read-only privileges (CISREAD)
   - RW_USER_ROLE - Oracle database role with read-write privileges (CIS_USER)
   - USER_ROLE - Oracle database role with read-only privileges (CIS_READ)
   - JAVA_HOME - Location of JDK 1.8 (C:\Program Files\Java\jdk1.8.0)
   - CLASS_PATH - Location of Jarfiles (C:\FW-V4.3.0.6.0-Oracle-Database-Multiplatform\FW\jarfiles\*)
3. There are two options to run OraDBI.java. Choose any of the two options - Using Interactive Mode or Command on Command Line.
   - **To run OraDBI using Interactive Mode**:
     a. Open command prompt/command line on Windows environment.

     b. Set Java Home.

     In the following example, JDK 1.8 is installed at directory C:\Program Files\Java\jdk1.8.0_101.

     ```
     SET JAVA_HOME=C:\Program Files\Java\jdk1.8.0_101
     ```

     c. Set Class Path.

     In the following example, the required jarfiles (including OraDBI.jar) are available in the directory C:\FW-V4.3.0.6.0-Oracle-Database-Multiplatform\FW\jarfiles\*.

     ```
     SET CLASS_PATH= C:\FW-V4.3.0.6.0-Oracle-Database-
     Multiplatform\FW\jarfiles\*
     ```

     d. Execute the following command at command prompt in Windows environment.

     Using variable parameters:

     ```
     "%JAVA_HOME%"\bin\java -Xmx1500M -cp %CLASS_PATH%
     com.oracle.ouaf.oem.install.OraDBI
     ```

Using absolute path of Java home and Jar files:

```
"C:\Program Files\Java\jdk1.8.0_101"\bin\java -Xmx1500M -cp
C:\FW-V4.3.0.6.0-Oracle-Database-Multiplatform\FW\jarfiles\*
com.oracle.ouaf.oem.install.OraDBI
```

e. The utility prompts you to enter values for the following parameters:

- Enter the database server hostname:<SERVER NAME>
- Enter the database port number:<PORT>
- Enter the database name/SID:<DB NAME>
- Enter your database username:<CISADM>
- Enter your password for username CISADM:
- Enter the location for Java Home: <C:\Program Files\Java\jdk1.8.0_101>
- Enter the Oracle user with read-write privileges to Database Schema:<CISUSER>
- Enter the Oracle user with read-only privileges to Database Schema:<CISREAD>
- Enter the database role with read-write privileges to Database Schema:<CIS_USER>
- Enter the database role with read-only privileges to Database Schema:<CIS_READ>
- Enter the name of the target Schema where you want to install or upgrade:<CISADM>
- Enter the password for CISADM schema:

- **To run OraDBI using Command on Command Line**:

  Run the following command with defined parameters on the command prompt using either absolute value or variable parameters.

  Using variable parameters:

```
"%JAVA_HOME%"\bin\java -Xmx1500M -cp %CLASS_PATH%
com.oracle.ouaf.oem.install.OraDBI -d
jdbc:oracle:thin:@<DB_SERVER>:<PORT>/
<SID>,<DBUSER>,<DBPASS>,<RW_USER>,<R_USER>,<RW_USER_ROLE>,<R_US
ER_ROLE>,<DBUSER> -l 1,2 -j <JAVA_HOME>
```

  Using absolute path of Java home and Jar files:

```
"C:\Program Files\Java\jdk1.8.0_101"\bin\java -Xmx1500M -cp
C:\FW-V4.3.0.6.0-Oracle-Database-Multiplatform\FW\jarfiles\*
com.oracle.ouaf.oem.install.OraDBI -d
jdbc:oracle:thin:@<DB_SERVER>:<PORT>/
<SID>,<DBUSER>,<DBPASS>,<RW_USER>,<R_USER>,<RW_USER_ROLE>,<R_US
ER_ROLE>,<DBUSER> -l 1,2 -j "C:\Program Files\Java\jdk1.8.0_101"
```

  Note: As there is an empty space between the two words 'Program' and 'Files', it is enclosed in the double quotes in the command above.

This process generates log files in the directory Install-Upgrade\logs.

4. Ensure to check the log files for any errors.

   Note: For OraDBI java, you may receive the following message in the display output or logs. These errors can be safely ignored and the process should proceed to completion.

   ```
   2016-05-23 16:31:38,315 [main] ERROR
   (common.cryptography.KeyStoreWrapperFactory) The keystore file
   '<filename>' does not exist.…
   …
   This file is either provided by the property
   com.oracle.ouaf.system.keystore.file or expected to exist at the
   default file location null Attempting to use the legacy
   cryptography.
   - 2016-05-23 16:31:38,566 [main] INFO (oem.install.OraDBI)
   ```

Installing the Oracle Utilities Customer To Meter Database Component

Note: The Oracle Utilities Customer To Meter database component can be installed using OraDBI.java. While prior versions of the product have included OraDBI.exe, this is no longer supported going forward as this does not support latest functionality/features introduced in OraDBI.java. OraDBI.jar is delivered in directory jarfiles.

This section provides the instructions to install the database component.

Installing the Oracle Utilities Customer To Meter Component Using OraDBI.java

OraDBI.java is a new tool to install and upgrade database components. It can be run from UNIX or Windows server that has Oracle 12.1.0.2 (+) or Oracle Client 12.1.0.2 (+) installed. Before installing Oracle Utilities Customer To Meter V2.7.0.0.0, ensure the following prerequisites are met.

- JDK 1.8
- Oracle Database
- Schema (such as CISADM) should exist in the database

To install the Oracle Utilities Customer To Meter V2.7.0.0.0:

Using UNIX machine

1. Unzip the C2M-V2.7.0.0.0-Oracle-Database-Multiplatform.zip package.
2. Set JAVA_HOME, CLASSPATH, and PATH.

   ```
   a.export JAVA_HOME = /scratch/software/jdk1.8.0_102/
   b.export CLASSPATH = /../FW-V4.3.0.6.0-Oracle- Database-
   Multiplatform/FW/jarfiles/commons-cli-1.3.1.jar:/../FWV4.3.0.6.0-
   Oracle- Database-Multiplatform/FW/jarfiles/commonscodec-
   1.9.jar:/../FW-V4.3.0.6.0-Oracle- Database-Multiplatform/
   FW/jarfiles/commons-collections-3.2.2.jar:/../FW-V4.3.0.6.0-
   Oracle- Database-Multiplatform/FW/jarfiles/log4j-api-
   2.6.2.jar:/../FW-V4.3.0.6.0-Oracle- Database-Multiplatform/FW/
   jarfiles/log4j-core-2.6.2.jar:/../FW-V4.3.0.6.0-Oracle-
   Database-Multiplatform/FW/jarfiles/ojdbc7-12.1.0.2.jar:/../
   FWV4.3.0.6.0-
   Oracle- Database-Multiplatform/FW/jarfiles/
   oradbi.jar:/../FW-V4.3.0.6.0-Oracle- Database-Multiplatform/FW/
   ```

```
jarfiles/spl-shared-18.1.0.0.0.jar
```

Note: In CLASSPATH, declare it one after the other.

```
c.Set PATH variable to include JAVA_HOME/bin.
export PATH=$JAVA_HOME/bin:$PATH
export PATH=/scratch/software/jdk1.8.0_102/bin:$PATH
```

3. From C2M-V2.7.0.0.0-Oracle-Database-Multiplatform/C2M/Install-Upgrade directory, run the following command. Modify the values accordingly.

```
java -Xmx1500M com.oracle.ouaf.oem.install.OraDBI -d
jdbc:oracle:thin:@<DB_SERVER>:<PORT>/
<SID>,<DBUSER>,<DBPASS>,<RW_USER>,<R_USER>,<RW_USER_ROLE>,<R_US
ER_ROLE>,<DBUSER> -l 1,2 -j $JAVA_HOME
```

Using Windows machine

1. Install the Customer To Meter database component using command prompt utility of Windows from ..\C2M-V2.7.0.0.0-Oracle-Database-Multiplatform\C2M\Install-Upgrade.
2. Prepare the configuration parameters listed below:
   - DB_SERVER - Name of the database server
   - SID - Name of the target database
   - PORT - Port number
   - DBUSER - Name of the owner of the database schema
   - DBPASS - Password for the user
   - RWUSER - Oracle user with read-write privileges (CISUSER)
   - RUSER - Oracle user with read-only privileges (CISREAD)
   - RW_USER_ROLE - Oracle database role with read-write privileges (CIS_USER)
   - USER_ROLE - Oracle database role with read-only privileges (CIS_READ)
   - JAVA_HOME - Location of JDK 1.8 (such as C:\Program Files\Java\jdk1.8.0)
   - CLASS_PATH - Location of Jarfiles (such as C:\FW-V4.3.0.6.0-Oracle-Database-Multiplatform\FW\jarfiles\*)
3. There are two options to run OraDBI.java. Choose any of the two options - Using Interactive Mode or Command on Command Line.
   - **To run OraDBI using Interactive Mode**:
     a. Open command prompt / command line on Windows environment.
     b. Set Java Home.

        In the following example, JDK 1.8 is installed at directory C:\Program Files\Java\jdk1.8.0_101.

        ```
        SET JAVA_HOME=C:\Program Files\Java\jdk1.8.0_101
        ```

c. Set Class Path.

   In the following example, the required jarfiles (including OraDBI.jar) are available in the directory C:\FW-V4.3.0.6.0-Oracle-Database-Multiplatform\FW\jarfiles\*.

```
SET CLASS_PATH= C:\FW-V4.3.0.6.0-Oracle-Database-
Multiplatform\FW\jarfiles\*
```

d. Execute the following command at command prompt in Windows environment.

   Using variable parameters:

```
"%JAVA_HOME%"\bin\java -Xmx1500M -cp %CLASS_PATH%
com.oracle.ouaf.oem.install.OraDBI
```

   Using absolute path of Java home and Jar files:

```
"C:\Program Files\Java\jdk1.8.0_101"\bin\java -Xmx1500M -cp
C:\FW-V4.3.0.6.0-Oracle-Database-Multiplatform\FW\jarfiles\*
com.oracle.ouaf.oem.install.OraDBI
```

e. The utility prompts you to enter values for the following parameters:

   - Enter the database server hostname:<SERVER NAME>
   - Enter the database port number:<PORT>
   - Enter the database name/SID:<DB NAME>
   - Enter your database username:<CISADM>
   - Enter your password for username CISADM:
   - Enter the location for Java Home: <C:\Program Files\Java\jdk1.8.0_101>
   - Enter the Oracle user with read-write privileges to Database Schema:<CISUSER>
   - Enter the Oracle user with read-only privileges to Database Schema:<CISREAD>
   - Enter the database role with read-write privileges to Database Schema:<CIS_USER>
   - Enter the database role with read-only privileges to Database Schema:<CIS_READ>
   - Enter the name of the target Schema where you want to install or upgrade:<CISADM>
   - Enter the password for CISADM schema:

- **To run OraDBI using Command on Command Line**:

  Run the following command with defined parameters on the command prompt using either absolute value or variable parameters.

  Using variable parameters:

```
"%JAVA_HOME%"\bin\java -Xmx1500M -cp %CLASS_PATH%
com.oracle.ouaf.oem.install.OraDBI -d
jdbc:oracle:thin:@<DB_SERVER>:<PORT>/
```

```
<SID>,<DBUSER>,<DBPASS>,<RW_USER>,<R_USER>,<RW_USER_ROLE>,<R_US
ER ROLE>,<DBUSER> -l 1,2 -j <JAVA HOME>
```

Using absolute path of Java home and Jar files:

```
"C:\Program Files\Java\jdk1.8.0_101"\bin\java -Xmx1500M -cp
C:\FW-V4.3.0.6.0-Oracle-Database-Multiplatform\FW\jarfiles\*
com.oracle.ouaf.oem.install.OraDBI -d
jdbc:oracle:thin:@<DB_SERVER>:<PORT>/
<SID>,<DBUSER>,<DBPASS>,<RW_USER>,<R_USER>,<RW_USER_ROLE>,<R_US
ER ROLE>,<DBUSER> -l 1,2 -j "C:\Program Files\Java\jdk1.8.0_101"
```

Note: As there is an empty space between the two words 'Program' and 'Files', it is enclosed in the double quotes in the command above.

This process generates log files in the directory Install-Upgrade\logs.

4. Ensure to check the log files for any errors.

   Note: For OraDBI java, you may receive the following message in the display output or logs. These errors can be safely ignored and the process should proceed to completion.

```
2016-05-23 16:31:38,315 [main] ERROR
(common.cryptography.KeyStoreWrapperFactory) The keystore file
'<filename>' does not exist.…
…
This file is either provided by the property
com.oracle.ouaf.system.keystore.file or expected to exist at the
default file location null Attempting to use the legacy
cryptography.
- 2016-05-23 16:31:38,566 [main] INFO (oem.install.OraDBI)
```

ORADBI Performs the Following Tasks

- 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, 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).
- Verifies whether tablespace names already exist in the Storage.xml file (if not, the process will abort).
- Installs the schema, installs the system data, and configures security.
- Maintains upgrade log tables in the database.
- Updates release ID when the upgrade is completed successfully.
- 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 OraDBI###.log are created in the same folder as OraDBI 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, OraDBI 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.
- Stores the Schema owner and password in the feature configuration table. The password is stored in encrypted format.
- OraDBI can be executed by a non-schema owner.

Post-Installation Tasks

- Enable USER_LOCK Package
- Generating Database Statistics
- Creating Activity Statistics Materialized View
- Creating Index D1T304S3 for Payload Statistic Functionality (Optional)
- Disabling Oracle Utilities Operational Device Management Database Component (Optional)
- Enabling Oracle Utilities Operational Device Management Database Component (Optional)

Enable USER_LOCK Package

For inbound web services to work the USER_LOCK must be enabled at the database level. This is a one-time step. If this is not already enabled please do so as follows:

1. Login as SYS user.
2. On the SQL prompt, run:

   ```
   @?/rdbms/admin/userlock.sql
   ```

3. Grant permission.

   ```
   grant execute on USER_LOCK to public;
   ```

Please note that grant can also be made to the database user which the Application connects to only instead of to public. For example: cisuser

Generating Database Statistics

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

Creating Activity Statistics Materialized View

To improve the performance of drill down queries, use the following procedure to create the materialized view and then refresh it.

1. Navigate to ..\C2M\V2.7.0.0.0\ MDM-V2.2.0.3.0-Oracle-Database-Multiplatform\MDM\Post-Upgrade.
2. Login as CISADM user.
3. At the SQL prompt, run the following:

   @D1_ACTIVITY_STAT_MV.sql

   @D1_MV_REFRESH_PROC.sql

Creating Index D1T304S3 for Payload Statistic Functionality (Optional)

This index does not exist for an initial installation. If you are using the payload statistic functionality, create the index. Connect to CISADM schema and execute the following:

```
CREATE UNIQUE INDEX D1T304S3 ON D1_INIT_MSRMT_DATA
(IMD_EXT_ID,INIT_MSRMT_DATA_ID);
```

Disabling Oracle Utilities Operational Device Management Database Component (Optional)

By default, the Oracle Utilities Operational Device Management database component is enabled. This section is applicable only if you want to disable Oracle Utilities Operational Device Management database component.

1. Change the OWNER_FLG of Oracle Utilities Operational Device Management to a different value from the Installed Product (CI_INSTALL_PROD) table.

   Note: The script can be executed from any machine that has Oracle client installed and can connect to the database.

2. Navigate to ..\C2M-V2.7.0.0.0-Oracle-Database-Multiplatform\C2M\Post-Install\ directory.
3. Login as a schema owner.
4. On SQL prompt, run the command below:

   ```
   @Disable.sql
   ```

5. Execute a flush to clear the cache.
6. Clear browser cache.
7. Restart the application.

   Note: Refer to the *Oracle Utilities Customer to Meter Installation Guide* for more details on the application side configuration.

Enabling Oracle Utilities Operational Device Management Database Component (Optional)

This section is only applicable if you want to enable back the Oracle Utilities Operational Device Management database component.

1. Change the OWNER_FLG of Oracle Utilities Operational Device Management back to W1.

   Note: The script can be executed from any machine that has Oracle client installed and can connect to the database.

2. Navigate to the ..\C2M-V2.7.0.0.0-Oracle-Database-Multiplatform\C2M\Post-Install\ directory.
3. Login as the schema owner.
4. On the SQL prompt, run the command below:

   ```
   @Enable.sql
   ```

5. Execute a flush to clear the cache.
6. Clear browser cache.

7. Restart your application.

   Note: Refer to the *Oracle Utilities Customer to Meter Installation Guide* for more details on the application side configuration.

Upgrade Install

This section describes how to upgrade the database components for Oracle Utilities Customer To Meter, including:

- Copying and Decompressing Install Media
- Upgrading the CISADM Schema to V2.7.0.0.0
- Post-Installation Tasks

Copying and Decompressing Install Media

To copy and decompress the Oracle Utilities Customer To Meter database:

1. Download Oracle Utilities Application Framework V4.3.0.6.0 Oracle Database, Oracle Utilities Application Framework V4.3.0.6.0 Database Single Fix Prerequisite Rollup for CCB V2.7.0.0.0 (if there is any), Oracle Utilities Customer Care and Billing V2.7.0.0.0 Oracle Database, Oracle Utilities Meter Data Management V2.2.0.3.0 Oracle Database, Oracle Utilities Work and Asset Management V2.2.0.2.0 Oracle Database and Oracle Utilities Customer to Meter V2.7.0.0.0 Oracle Database from the Oracle Software Delivery Cloud.
2. Copy FW-V4.3.0.6.0-Oracle-Database-Multiplatform, CCB-V2.7.0.0.0-FW-Database-PREREQ-MultiPlatform, CCB-V2.7.0.0.0-Oracle-Database-Multiplatform (if there is any), MDM-V2.2.0.3.0-Oracle-Database-Multiplatform, Oracle Utilities Work and Asset Management v2.2.0.2.0 Oracle Database Multiplatform and C2M-V2.7.0.0.0-Oracle-Database- Multiplatform directories to your local machine.

   These files contain all the database components required to install the Oracle Utilities Application Framework and Customer To Meter database.

Upgrading the CISADM Schema to V2.7.0.0.0

This section assumes an existing Oracle Utilities Customer To Meter on top of Oracle Utilities Application Framework. The following upgrade paths are described:

- Upgrading from V2.6.0.0.0 or V2.6.0.1.0 to V2.7.0.0.0

Upgrading from V2.6.0.0.0 or V2.6.0.1.0 to V2.7.0.0.0

You must install the Oracle Utilities Application Framework V4.3.0.6.0, Oracle Utilities Application Framework V4.3.0.6.0 Database Single Fix Prerequisite Rollup for Oracle Utilities Customer Care and Billing V2.7.0.0.0 (if there is any), Oracle Utilities Customer Care and Billing V2.7.0.0.0, Oracle Utilities Meter Data Management V2.2.0.3.0, Oracle Utilities Work and Asset Management V2.2.0.2.0 and Oracle Utilities Customer To Meter V2.7.0.0.0. The files for Oracle Utilities Application Framework installer is located in ..\FW-V4.3.0.6.0-Oracle-Database- Multiplatform\FW\Install-Upgrade folder.

Upgrading the Database as Non-Schema Owner

The product allows Non-Schema owners to run the database upgrade.

To perform upgrade, the non-schema owner must have the following database grants:

- grant connect, CREATE SESSION to <Non-Schema owner>;
- grant select on <Schema owner>.CI_WFM to <Non-Schema owner>;
- grant select on <Schema owner>.CI_WFM_OPT to <Non-Schema owner>;

Installing the Oracle Utilities Application Framework Database Component

For instructions, refer to Installing the Oracle Utilities Application Framework Database Component Using OraDBI.java.

Installing Prerequisite Database Single Fixes

For instructions, refer to Installing Prerequisite Database Single Fixes.

Installing the Oracle Utilities Customer Care and Billing Database Component

For instructions, refer to Installing the Oracle Utilities Customer Care and Billing Database Component Using OraDBI.java.

Installing the Oracle Utilities Meter Data Management Database Component

For instructions, refer to Installing the Oracle Utilities Meter Data Management Component Using OraDBI.java.

Installing the Oracle Utilities Operational Device Management Database Component

For instructions, refer to Installing the Oracle Utilities Operational Device Management Using OraDBI.java.

Installing the Oracle Utilities Customer To Meter Database Component

For instructions, refer to Installing the Oracle Utilities Customer To Meter Component Using OraDBI.java.

Post-Installation Tasks

The post-installation steps are as follows:

- Generating Database Statistics
- Creating Activity Statistics Materialized View
- Dropping Index D1T304S3 for Payload Statistic Functionality (Optional)
- Disabling Oracle Utilities Operational Device Management Database Component (Optional)
- Enabling Oracle Utilities Operational Device Management Database Component (Optional)

Generating Database Statistics

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

Creating Activity Statistics Materialized View

To improve the performance of drill down queries, use the following procedure to create the materialized view and then refresh it.

1. Navigate to ..\C2M\V2.7.0.0.0\ MDM-V2.2.0.3.0-Oracle-Database-Multiplatform\MDM\Post-Upgrade.
2. Login as CISADM user.
3. At the SQL prompt, run the following:

   @D1_ACTIVITY_STAT_MV.sql

   @D1_MV_REFRESH_PROC.sql

Dropping Index D1T304S3 for Payload Statistic Functionality (Optional)

For an upgrade installation, this index already exists. If you are not using the Payload statistic functionality, or if you have no other SQL scripts referencing these fields, you may drop the index.

Connect to CISADM schema and execute the following:

```
DROP INDEX D1T304S3;
```

Disabling Oracle Utilities Operational Device Management Database Component (Optional)

By default, the Oracle Utilities Operational Device Management database component is enabled. This section is applicable only if you want to disable Oracle Utilities Operational Device Management database component.

1. Change the OWNER_FLG of Oracle Utilities Operational Device Management to a different value from the Installed Product (CI_INSTALL_PROD) table.

   > **Note**: The script can be executed from any machine that has Oracle client installed and can connect to the database.

2. Navigate to ..\C2M-V2.7.0.0.0-Oracle-Database-Multiplatform\C2M\Post-Install\ directory.
3. Login as a schema owner.
4. On SQL prompt, run the command below:

   ```
   @Disable.sql
   ```

5. Execute a flush to clear the cache.
6. Clear browser cache.
7. Restart the application.

   > **Note**: Refer to the *Oracle Utilities Customer to Meter Installation Guide* for more details on the application side configuration.

Enabling Oracle Utilities Operational Device Management Database Component (Optional)

This section is only applicable if you want to enable back the Oracle Utilities Operational Device Management database component.

1. Change the OWNER_FLG of Oracle Utilities Operational Device Management back to W1.

> **Note**: The script can be executed from any machine that has Oracle client installed and can connect to the database.

2. Navigate to the ..\C2M-V2.7.0.0.0-Oracle-Database-Multiplatform\C2M\Post-Install\ directory.
3. Login as the schema owner.
4. On the SQL prompt, run the command below:

   ```
   @Enable.sql
   ```

5. Execute a flush to clear the cache.
6. Clear browser cache.
7. Restart your application.

> **Note**: Refer to the *Oracle Utilities Customer to Meter Installation Guide* for more details on the application side configuration.

Demo Install

This section describes how to install the demo database components for Oracle Utilities Customer To Meter, including:

- Copying and Decompressing Install Media
- Creating the Database
- Importing the Demo Dump File
- Configuring Security

Copying and Decompressing Install Media

To copy and decompress the Oracle Utilities Customer To Meter database:

1. Download the Oracle Utilities Customer To Meter V2.7.0.0.0 Oracle database from the Oracle Software Delivery Cloud.
2. Copy the C2M-V2.7.0.0.0-Oracle-Database-MultiplatForm directory to your local machine. The database folder contains several files that will be referred to in the installation process.

Creating the Database

> **Note:** You must have Oracle Database Server 12.2.0.1+ installed on your machine in order to create the database.

It is strongly recommended to use DBCA to create the database.

Creating the Database on UNIX

Create the database using the Database Configuration Assistant (DBCA).

Refer to the article *Master Note: Overview of Database Configuration Assistant (DBCA) (Doc ID 1488770.1)* on My Oracle Support for more information. Make sure to set character set for database as AL32UTF8.

Refer to Creating the Database for steps to create the database.

Creating the Database on Windows

You should be logged in as a user who is a member of the local ORA_DBA group on that server. The ORA_DBA group should have "administrator" privileges assigned to it.

Refer to the article *Master Note: Overview of Database Configuration Assistant (DBCA) (Doc ID 1488770.1)* on My Oracle Support for more information. Make sure to set character set for database as AL32UTF8.

Refer to Creating the Database for steps to create the database.

Database Storage BYTES / CHARACTER

Database created by default will store data in BYTES.

To store data in CHARACTER:

Initial Install

1. Set nls_length_semantics=CHAR.

```
SQL> ALTER SYSTEM SET nls_length_semantics=CHAR SCOPE=BOTH;
```

2. Restart the database.
3. Ensure nls_length_semantics is CHAR.

```
SQL> SHOW PARAMETER nls_length_semantics
```

> **Note**: For pluggable database ensure to set nls_length_semantics=CHAR for both container and pluggable database.

Upgrade and Migration from BYTE Based Storage to CHARACTER Based Storage

1. Create a database using DBCA.
2. Set nls_length_semantics=CHAR.

```
SQL> ALTER SYSTEM SET nls_length_semantics=CHAR SCOPE=BOTH;
```

3. Restart the database.
4. Ensure nls_length_semantics is CHAR.

```
SQL> SHOW PARAMETER nls_length_semantics
```

> **Note**: For pluggable database ensure to set nls_length_semantics=CHAR for container and pluggable database both.

5. Export schema from the database that has nls_semantics_legth=BYTE.

```
expdp userid=system/<code>@<SID> directory=<DIR_NAME>
schemas=<schema_name> dumpfile=<schema_name>.dmp
logfile=<schema_name>.log
```

6. Generate DDL from dump file using Oracle impdp utility.

```
impdp userid=system/<code>@<SID> directory=<DIR_NAME>
DUMPFILE=<schema_name>.dmp SCHEMAS=<schema_name>
SQLFILE=<schema_name>_DDL.sql
```

7. Replace “Byte” with “Char” in <schema_name>DDL.sql.

   For the vi editor (in Linux), replace Byte to Char.

   ```
   :%s/BYTE/CHAR/g
   ```

8. Replace the schema name also if it is required for environment.
9. Execute <schema_name>DDL.sql (generated in step 6) that creates objects in the schema.

   Ensure the number of objects at source and target are equal.

   ```
   SQL>select OWNER || '  ' || OBJECT_TYPE || '  ' ||  COUNT(*) || '  '
   ||  STATUS FROM DBA_OBJECTS WHERE OWNER in ('<SCHEMA_NAMe>') GROUP
   BY OWNER, OBJECT_TYPE , STATUS ORDER BY OBJECT_TYPE;
   ```

10. If an object is missing for any reason, create it by fixing DDL manually (DDL for each object is available in the file created in step 6).

    Execute DDL for the objects that are not created.
11. Generate DDL to disable triggers.

    ```
    SQL> SELECT 'ALTER TABLE' || ' ' ||TABLE_NAME || ' ' || 'DISABLE ALL
    TRIGGERS;' FROM USER_TABLES;
    ```

12. Execute the script generated from step 11 to disable all triggers.
13. Import the data only into the schema created to support CHAR based database storage.

    ```
    impdp userid=system/<code>@<SID> dumpfile=<schema_name>.dmp
    CONTENT=DATA_ONLY SCHEMAS=<schema_name>
    LOGFILE=<schema_name>_import.log
    ```

14. Enable the triggers. To generate DDL for triggers:

    ```
    SQL>SELECT 'ALTER TABLE' || ' ' ||TABLE_NAME || ' ' || 'ENABLE ALL
    TRIGGERS;' FROM USER_TABLES;
    ```

15. Execute the script generated from step No.14 to enable all triggers.

Importing the Demo Dump File

After a successful database creation, demo data can also be imported by using by following these steps:

1. Set the correct ORACLE_SID and ORACLE_HOME.
2. Import the demo dump.

   NOTE: Ensure the ..\C2M-V2.7.0.0.0-Oracle-Database-Multiplatform\C2M\Demo\exp_demo.dmp.gz file is extracted and available in data_pump_dir's location before running the below import command.

   ```
   impdp directory= data_pump_dir dumpfile= exp_demo.dmp
   logfile=exp_demo.log schemas=CISADM
   ```

Configuring Security

The configuration utility and scripts are located in the ..\C2M-V2.7.0.0.0-Oracle-Database-Multiplatform\C2M\Security folder. You can run this utility from a Linux or a Windows machine.

To configure security for all objects from a Linux Standalone machine, you can either set the parameters as described in Linux Option 1 or using absolute value as described in Linux Option 2.

Linux OPTION 1: Using Variables

1. Set the following parameters:

   a. JAVA_HOME - location of JDK 1.8

   ```
   export JAVA_HOME=/scratch/software/jdk1.8.0_102
   ```

   b. PATH - location of JDK bin

   ```
   export PATH=$JAVA_HOME/bin:$PATH
   ```

   c. CLASS_PATH - location of jarfiles. This can be found in ..\..\CCB-V2.7.0.0.0-Oracle-Database-MultiplatForm\CCB\Security\lib.

   ```
   export CLASS_PATH=..\..\CCB-V2.7.0.0.0-Oracle-Database-
   MultiplatForm\CCB\Security\lib\*
   ```

   d. DB_SERVER - database server

   ```
   export DB_SERVER=<database server>
   ```

   e. PORT - database port number

   ```
   export PORT=<port number>
   ```

   f. SID - database name

   ```
   export SID=<database name>
   ```

   g. DBUSER - database username such as CISADM

   ```
   export DBUSER=<CISADM>
   ```

   h. DBPASS - database password for username

   ```
   export DBPASS=<password>
   ```

   i. RW_USER - database username with read-write privileges (CISUSER)

   ```
   export RW_USER=<CISUSER>
   ```

   j. R_USER - database username with read privileges (CISREAD)

   ```
   export R_USER=<CISREAD>
   ```

   k. RW_USER_ROLE - database role with read-write privileges (CIS_USER)

   ```
   export RW_USER_ROLE =<CIS_USER>
   ```

   l. R_USER_ROLE - database role with read privileges (CIS_READ)

   ```
   export R_USER_ROLE =<CIS_READ>
   ```

2. Execute the OraGenSec utility.

   ```
   $JAVA_HOME/bin/java $CLASS_PATH
   com.oracle.ouaf.oem.install.OraGenSec -d
   $DBUSER,$DBPASS,jdbc:oracle:thin:@$DB_SERVER:$PORT/$SID -a A -r
   $R_USER_ROLE,$RW_USER_ROLE -u $RWUSER,$RUSER
   ```

Linux OPTION 2: Using Absolute Value

1. Set the CLASSPATH parameter.

   ```
   export CLASSPATH = ../../CCB-V2.7.0.0.0-Oracle-Database-
   MultiplatForm/CCB/Security/lib
   ```

2. Execute OraGenSec utility and replace with the actual values.

   ```
   /scratch/software/jdk1.8.0_102/bin/java
   com.oracle.ouaf.oem.install.OraGenSec -d
   <DBUSER>,<DBPASS>,jdbc:oracle:thin:@<DB_SERVER>:<PORT>/<SID> -a A -
   r <R_USER>,<RW_USER> -u <RW_USER_ROLE>,<R_USER ROLE>
   ```

To configure security for all objects from a Windows machine, you can either set the parameters as described in Windows Option 1 or using absolute value as described in Windows Option 2.

Windows OPTION 1: Using Variables

1. Set the following parameters:

   a. JAVA_HOME - location of JDK 1.8

      ```
      set JAVA_HOME= C:\Software\Java\jre1.8.0_91
      ```

   b. PATH - location of JDK bin

      ```
      set PATH=%JAVA_HOME%/bin:%PATH
      ```

   c. CLASS_PATH - location of jarfiles. This can be found in ..\..\CCB-V2.7.0.0.0-Oracle-Database-MultiplatForm\CCB\Security\lib

      ```
      set CLASS_PATH=..\..\CCB-V2.7.0.0.0-Oracle-Database-
      MultiplatForm\CCB\Security\lib\*
      ```

   d. DB_SERVER - database server

      ```
      set DB_SERVER=<database server>
      ```

   e. PORT - database port number

      ```
      set PORT=<port number>
      ```

   f. SID - database name

      ```
      set SID=<database name>
      ```

   g. DBUSER - database username (CISADM)

      ```
      set DBUSER=<CISADM>
      ```

   h. DBPASS - database password for username

      ```
      set DBPASS=<password>
      ```

i. RW_USER - database username with read-write privileges (CISUSER)

```
set RW_USER=<CISUSER>
```

j. R_USER - database username with read privileges (CISREAD)

```
set R_USER=<CISREAD>
```

k. RW_USER_ROLE - database role with read-write privileges (CIS_USER)

```
set RW_USER_ROLE =<CIS_USER>
```

l. R_USER_ROLE - database role with read privileges (CIS_READ)

```
set R_USER_ROLE =<CIS_READ>
```

2. Execute the OraGenSec utility.

```
"%JAVA_HOME%"\bin\java -Xmx1500M -cp %CLASS_PATH%
com.oracle.ouaf.oem.install.OraGenSec -d
%DBUSER%,%DBPASS%,jdbc:oracle:thin:@%DB_SERVER%:%PORT%/%SID% -a A -
r %R_USER_ROLE%,%RW_USER_ROLE% -u %RWUSER%,%RUSER%
```

Windows OPTION 2: Using Absolute Value

1. Execute OraGenSec utility and replace with the actual values.

```
<JAVA_HOME>\bin\java -Xmx1500M -cp <CLASS_PATH>\*
com.oracle.ouaf.oem.install.OraGenSec -d
<DBUSER>,<DBPASS>,jdbc:oracle:thin:@<DB_SERVER>:<PORT>/<SID> -a A -
r <R_USER>,<RW_USER> -u <RW_USER_ROLE>,<R_USER ROLE>
```

Note: Database vault must be disabled before running.

The utility configures security for the application owner schema objects.

Oragensec by default grant permissions to CIS_USER and CIS_READ Role. If you prefer to use site-specific roles then execute Oragensec after providing command line options and specifying the specific roles.

OraGenSec Java Usage:

```
java OraGenSec [-a <arg>] [-d <arg>] [-f <arg>] [-h] [-l <arg>] [-o
<arg>] [-q] [-r <arg>]
       [-u <arg>]
```

OraGenSec Help:

- -a <arg>: generate security for All objects in the database
- -d <arg>: db connection as: db_host:db_port/db_service
- -f <arg>: generate security for specific objects from an input file
- -h: help
- -l <arg>: log file
- -o <arg>: generate security for comma separated list of objects
- -q: silent mode
- -r <arg>: roles as: CIS_READ,CIS_USER
- -u <arg>: comma-separated list of users to create synonyms for

Chapter 3

Database Design

The standard for database objects such as tables, columns, and indexes, for products using the Oracle Utilities Application Framework helps in 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 chapter describes the following:

- 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. Refer to Indexes 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. For customer modification, CM must prefix the column name. 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:

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

- **OF**- Owner Flag. The standard is to use the two characters of the product's owner flag. Note that there may be some older indexes that use only the first character of the owner flag. For client specific implementation of index, use CM for Owner Flag. If implementation creates a CM Index on table-columns for which the base product already provides an index, then the CM Index will be overridden by the based index.
- 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:

- F1C066P0
- F1C066S1

- XT206C2
- CMT206S2

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

Updating Storage.xml

The storage.xml 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.xml file by changing the tablespace name from the default value to a custom value, according to the format shown below:

Format:

```
<Table_Name>
  <TABLESPACE>CISTS_01</TABLESPACE>
  <PARALLEL>1</PARALLEL>
- <LOB>
- <Column Name>
  <TABLESPACE>CISTS_01</TABLESPACE>
  <SECUREFILE>Y</SECUREFILE>
  <CHUNK>8192</CHUNK>
  <CACHE>N</CACHE>
  <LOGGING>Y</LOGGING>
  <INROW>Y</INROW>
  <COMPRESS>N</COMPRESS>
  </Column Name>
  </LOB>
  </Table_Name>
```

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

We recommend creating CLOBs stored as SECUREFILE with Medium compression and Cache enabled. Please note that by default, medium compression is turned-off and must only be enabled if you have the Advanced compression license.

For instance, if a DBA decided to allocate table CI_ACCT in a tablespace MyTablespace, then they would have to change the storage.xml as follows:

```
<CI_ACCT>
<TABLESPACE>MyTablespace</TABLESPACE>
</CI_ACCT>
```

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

The storage.xml 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. For customer modification **CM** must prefix the sequence name. The sequence numbers should be named as below:

1. If the Sequence is used for a specific table, then use the following sequence name:

   [OF][C/M/T]NNN_SEQ

   - OF stands for Owner Flag. For example, for Framework its F1 and for CCB it is C1 and for MDM it is D1.
   - C/M/T stands for Control (Admin)/Master/Transaction Tables.
   - NNN is a three digit unique Identifier for a table on which the sequence is defined.

   For e.g: F1T220_SEQ

2. If more than one sequence is used for a specific table, then use the following Sequence Name:

   [OF][C/M/T]NNN_Column_Name_SEQ

   - C/M/T stands for Control (Admin)/Master/Transaction tables.
   - NNN is a three digit unique identifier for a table on which the sequence is defined.

   For Example: F1T220_BO_STATUS_CD_SEQ and F1T220_BUS_OBJ_CD_SEQ

3. If sequence is used for a generic requirement and not specific to a table, then use the following sequence name.

   [OF]Column_Name_SEQ

   For Example: F1FKVALID_SEQ

   - For a customer modification, CM must prefix the sequence name.

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.

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 Column Support

The product supports Nullable columns. This means that the application can write NULLs instead of a blank space or zero (for numeric columns) by using NULLABLE_SW on CI_MD_TBL_FLD. If REQUIRED_SW is set to 'N' and the NULLABLE_SW is set to 'Y', the application will write a NULL in that column. The artifact generator will create hibernate mapping files with appropriate parameters so that the framework hibernate mapping types will know if a given property supports a null value.

NULLABLE_SW is not new, but has previously been used for certain fields such as dates, and some string and number foreign-key columns. Because of this, there is the possibility that there is incorrect metadata for some columns, and that turning on this new feature could result in incorrect behavior when using that metadata. The upgrade script fixes the metadata to make sure that the existing tables will not be affected.

This new feature only supports tables maintained by Java but NOT a Java program converted from COBOL. Thus, enhancing any existing tables to use null columns must be done only after making sure that the tables are maintained by Java, and not Java converted COBOL programs.

XML Type Support

The product supports XML Type. XML Type provides following advantages

1. The ability to use XQuery for querying nodes in the XML document stored within a column defined as XMLType.
2. The option to use the XML engine, which is built into the Oracle Database, to create indexes using nodes within the XML document stored in the XMLType column.

Cache and Key Validation Flags

By default, the Cache Flag is set to NONE. For most of the admin tables the CACHE Flag should be 'Cached for Batch'. This specifies that the table is cached as L2 cache to reduce database trips.

By default the Key Validation Flag is set to ALL. For tables which have the user defined keys, the KEY_VALIDATION_FLG should be set as 'ALL'. This checks the existence of the key before inserting a new one.

Table Classification and Table Volume Flags

There are multiple types of tables in the application, namely Admin system tables, Admin non-system tables, master tables and transaction tables. The Table Classification flag (TBL_CLASSIFICATION_FLG) sets the appropriate value for this lookup field to give a better view of the table classification.

Table Volume flag (TBL_VOLUME_FLG) is a customer modifiable field which is initially populated by product, but can be overridden by implementation. The field gives an idea of the relative data volume (categorized as highVolume, lowVolume and mediumVolume) of the table to make informed decisions.

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.

Chapter 4

Database Implementation Guidelines

This chapter outlines the general implementation guidelines for database components, including:

- Configuration Guidelines
- Oracle Database Implementation Guidelines

Configuration Guidelines

This section describes the 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
- Table Partitioning Recommendations
- Transparent Data Encryption Recommendations
- Data Compression Recommendations
- Database Vault Recommendations
- Oracle Fuzzy Search Support
- Information Lifecycle Management (ILM) and Data Archiving Support
- Storage Recommendations
- Database Configuration Recommendations
- Database Syntax
- Database Initialization Parameters

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.

   Note: If the implementation creates a CM index on table-columns where the product already provides an index, then the CM index will be overridden by the base index.

Table Partitioning Recommendations

Oracle Utilities recommends using a minimum of 'n' partitions for selective database objects, where 'n' is number of RAC nodes.

Transparent Data Encryption Recommendations

Oracle Utilities supports Oracle Transparent Data Encryption (TDE). Oracle 11gR1 supports tablespace level encryption. The application supports tablespace level encryption for all application data. Make sure that the hardware resources are sufficiently sized for this as TDE uses additional hardware resources. The Oracle Advanced Security license is a prerequisite for using TDE.

Please consider the following when implementing TDE:

- Create a wallet folder to store the master key. By default, the wallet folder should be created under $ORACLE_BASE/admin/<sid>.

- The wallet containing the master key can be created using the following command:

  ```
  alter system set encryption key authenticated by "keypasswd"
  ```

- The wallet can be closed or opened using the following commands:

  ```
  alter system set wallet open identified by "keypasswd";
  alter system set wallet close;
  ```

- Column level encryption can be achieved using the following commands:

  ```
  create table <table_name>
  (name varchar2(200) default ' ' not null,
  bo_data_area CLOB encrypt using 'AES128',
  bo_status_cd char(12)    encrypt using 'AES128')
  lob (bo_data_area) store as securefile (cache compress)
  tablespace <tablespace_name>;
  ```

- AES128 is the default encryption algorithm.
- Tablespace level encryption is also supported using the following command:

  ```
  Create tablespace <tablespace_name> logging datafile '<datafile
  location>' size <initial size> reuse autoextend on next <next
  size>
  maxsize unlimited extent management local uniform size
  <uniform size> encryption using 'AES128' default
  storage(encrypt);
  ```

- Indexed columns can only be encrypted using the NO SALT Option. Salt is a way to strengthen the security of encrypted data. It is a random string added to the data before it is encrypted, causing repetition of text in the clear to appear different when encrypted.

Data Compression Recommendations

Oracle Utilities supports Advanced Data Compression, available with Oracle 11gR1 onwards, to reduce the database storage footprint. Make sure that your resources are sufficiently sized for this as it uses additional system resources. Compression can be enabled at the Tablespace level or at the Table level.

Exadata Hardware

For Exadata hardware the compression recommendations are:

- For the Final Measurement table (D1_MSRMT), keep the current table partition uncompressed. All of the older partitions will be compressed based on QUERY HIGH compression.
- For high volume tables, keep the current table partition uncompressed. All of the older partitions will be compressed based on QUERY HIGH compression.
- For the Initial Measurement Data table (D1_INIT_MSMRT_DATA), always keep CLOBs in securefiles and with MEDIUM compression. Also keep the current table partition uncompressed. All of the older partitions will be compressed based on QUERY HIGH compression.
- For high volume tables with CLOBs, always keep the CLOBs in securefiles with MEDIUM compression. Also keep the current table partition uncompressed. All

of the older partitions will be compressed based on QUERY HIGH compression.

- Load data into the uncompressed table partitions using a conventional load and then, once data is loaded using a CTAS operation, load into a temporary heap table. Then truncate the original partition. Alter the original partition into HCC compressed and then partition exchange this with the temporary heap table.
- All multi column Indexes (primary as well as secondary) will be compressed using the default compression. HCC or OLTP compression is not applicable on the top of compressed Indexes.

Non- Exadata Hardware

For non-Exadata hardware the recommendations are the same as above, except that you cannot use HCC compression (it is only available in Exadata database machine). Instead of HCC you can use any other compression tool available to you for non-Exadata hardware.

CLOB Fields

All CLOB fields should be stored as SecureFiles and Medium compressed. This requires a separate license for Advanced Data Compression. As a part of the schema, we create the product-owned tables with compression turned OFF at the LOB level. If you have the license for Advanced Data Compression, you can enable compression by updating the storage.xml.

Compression Guidelines

- Admin and Metadata tables and their indexes will NOT be compressed.
- All Transactional Tables will be compressed.
  This includes ILM enabled MOs where applicable.
- Compression will be done at the tablespace level.
  - Different MOs will have different tablespaces.
  - Partitioned MOs will have one tablespace per partition.
  - Child tables will use reference partitioning with parent + children sharing the same tablespace. (parent and child will always be managed/archived together).
- All multicolumn indexes on transactional/ILM tables will be compressed.
  - Use ‘compress advanced low’.
  - Local partitioned indexes will reside in the same tablespace as the table.
  - Each MO will have an index tablespace. All MO (Parent-Child Table) indexes will share this tablespace.
  - Do NOT specify standard index compression.
- Securefile medium compression in row for LOBs and CLOBs.

Examples:

Create a Tablespace with Advanced Rowstore Compress

```
CREATE BIGFILE TABLESPACE CM_XT012_P2017JANDATAFILE '+DATA' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
```

Create Table with Subpartitions using Compressed Tablespaces & Securefiles Compression

```
CREATE TABLE CI_ADJ (

ADJ_ID        CHAR(12) NOT NULL ENABLE,

SA_ID         CHAR(10) DEFAULT ' ' NOT NULL ENABLE, ADJ_TYPE_CD
CHAR(8) DEFAULT ' ' NOT NULL ENABLE, ADJ_STATUS_FLG CHAR(2) DEFAULT
' ' NOT NULL ENABLE, CRE_DT DATE,

CAN_RSN_CD   CHAR(4) DEFAULT ' ' NOT NULL ENABLE,

ADJ_AMT     NUMBER(15,2) DEFAULT 0 NOT NULL ENABLE, XFER_ADJ_ID
CHAR(12) DEFAULT ' ' NOT NULL ENABLE, CURRENCY_CD  CHAR(3) DEFAULT
' ' NOT NULL ENABLE, COMMENTS    VARCHAR2(254) DEFAULT ' ' NOT NULL
ENABLE, VERSION     NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
BEHALF_SA_ID CHAR(10) DEFAULT ' ' NOT NULL ENABLE, BASE_AMT
NUMBER(15,2) DEFAULT 0 NOT NULL ENABLE, GEN_REF_DT DATE,

APPR_REQ_ID CHAR(12) DEFAULT ' ' NOT NULL ENABLE,

ADJ_DATA_AREA CLOB, ILM_DT DATE,

ILM_ARCH_SW CHAR(1),)

ENABLE ROW MOVEMENT

PARTITION BY RANGE (ILM_DT)

SUBPARTITION BY RANGE (ADJ_ID) SUBPARTITION TEMPLATE (

SUBPARTITION S01 VALUES LESS THAN ( '124999999999' ), SUBPARTITION
S02 VALUES LESS THAN ( '249999999999' ), SUBPARTITION S03 VALUES
LESS THAN ( '374999999999' ), SUBPARTITION S04 VALUES LESS THAN (
'499999999999' ), SUBPARTITION S05 VALUES LESS THAN (
'624999999999' ), SUBPARTITION S06 VALUES LESS THAN (
'749999999999' ), SUBPARTITION S07 VALUES LESS THAN (
'874999999999' ), SUBPARTITION S08 VALUES LESS THAN ( MAXVALUE )

) (

PARTITION "P2017JAN" VALUES LESS THAN (TO_DATE('2017-02-01
00:00:01',

'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))

tablespace CM_XT012_P2017JAN,

PARTITION "P2017FEB" VALUES LESS THAN (TO_DATE('2017-03-01
00:00:01',

'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))

tablespace CM_XT012_P2017FEB,

PARTITION "P2017MAR" VALUES LESS THAN (TO_DATE('2017-04-01
00:00:01',

'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT012_P2017MAR,

PARTITION "P2017APR" VALUES LESS THAN (TO_DATE('2017-05-01
00:00:01',

'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))

tablespace CM_XT012_P2017APR,

PARTITION "P2017MAY" VALUES LESS THAN (TO_DATE('2017-06-01
00:00:01',

'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))

tablespace CM_XT012_P2017MAY,

PARTITION "P2017JUN" VALUES LESS THAN (TO_DATE('2017-07-01
00:00:01',

'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))

tablespace CM_XT012_P2017JUN,

PARTITION "P2017JUL" VALUES LESS THAN (TO_DATE('2017-08-01
00:00:01',

'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))

tablespace CM_XT012_P2017JUL,

PARTITION "P2017AUG" VALUES LESS THAN (TO_DATE('2017-09-01
00:00:01',

'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))

tablespace CM_XT012_P2017AUG,

PARTITION "P2017SEP" VALUES LESS THAN (TO_DATE('2017-10-01
00:00:01',

'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))

tablespace CM_XT012_P2017SEP,

PARTITION "P2017OCT" VALUES LESS THAN (TO_DATE('2017-11-01
00:00:01',

'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))

tablespace CM_XT012_P2017OCT,

PARTITION "P2017NOV" VALUES LESS THAN (TO_DATE('2017-12-01
00:00:01',

'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))

tablespace CM_XT012_P2017NOV,

PARTITION "P2017DEC" VALUES LESS THAN (TO_DATE('2017-01-01
00:00:01',

'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))

tablespace CM_XT012_P2017DEC,

PARTITION "PMAX" VALUES LESS THAN (MAXVALUE)

tablespace CM_XT012_PMAX

);
```

Create a Compressed Local Index

```
CREATE UNIQUE INDEX XT012S3 ON CI_ADJ ( ILM_DT, ILM_ARCH_SW, ADJ_ID

) TABLESPACE CM_XT012_IND COMPRESS ADVANCED LOW;
```

Create a Compressed Global Partitioned Index

```
CREATE UNIQUE INDEX XT012S2 ON CI_ADJ ( XFER_ADJ_ID, ADJ_ID )
TABLESPACE CM_XT012_IND

GLOBAL PARTITION BY HASH  (XFER_ADJ_ID, ADJ_ID ) (

PARTITION PART1 TABLESPACE CM_XT012_IND, PARTITION PART2 TABLESPACE
CM_XT012_IND, PARTITION PART3 TABLESPACE CM_XT012_IND, PARTITION
PART4 TABLESPACE CM_XT012_IND, PARTITION PART5 TABLESPACE
CM_XT012_IND, PARTITION PART6 TABLESPACE CM_XT012_IND, PARTITION
PART7 TABLESPACE CM_XT012_IND, PARTITION PART8 TABLESPACE
CM_XT012_IND

)

COMPRESS ADVANCED LOW;

Do NOT specify standard index compression.

CREATE INDEX XT012S1 ON CI_ADJ ( SA_ID, ADJ_TYPE_CD ) TABLESPACE
CM_XT012_IND LOCAL COMPRESS 1 COMPRESS ADVANCED LOW;
```

Database Vault Recommendations

The product supports Database Vault. All non-application User IDs can be prevented from using DDL or DML statements against the application schema. So SYS and SYSTEM cannot issue DDL or DML statements against CISADM schema.

The application-specific administration account can issue DDL statements but should not be able to perform any DML or DCL statements.

Application user must be given DML only permissions.

Database Vault can be used to control access during patch process and Install/Upgrade process.

Oracle Fuzzy Search Support

The product supports Oracle Fuzzy searches. To use this feature, Oracle Text must be installed. After Oracle Text is installed, an index must be created on the table where the fuzzy search needs to be performed from the application. This is only an Oracle database option and is not supported by other databases. Additionally, not all languages are supported. Refer to the Oracle database documentation for more information about fuzzy searching.

A typical syntax for implementation of fuzzy searching is as below. For the most updated syntax, please refer to Oracle Fuzzy documentation.

```
GRANT CTXAPP TO <Application schema owner e.g CISADM>;

GRANT EXECUTE ON CTX_DDL TO <Application schema owner e.g CISADM>;

create index <Application schema owner e.g CISADM>.<Index_Name> on
Application schema owner e.g CISADM>.<Table_Name> (<column_name>)
indextype is ctxsys.context parameters ('sync (on commit)');
```

```
begin
ctx_ddl.sync_index(‘Application schema owner e.g
CISADM>.<Index_Name>’);
end
/
```

Information Lifecycle Management (ILM) and Data Archiving Support

The product supports Data Archiving based on Information Lifecycle Management (ILM). If Information Lifecycle Management is part of your implementation, refer to the Information Lifecycle Management and CCB Data Archiving in C2M and Information Lifecycle Management and MDM Data Archiving in C2M chapters for instructions on partitioning objects when using ILM.

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 for Heap Tables should be ENABLE STORAGE IN ROW, CACHE and COMPRESS.
- For the IOT Table the PCTTHRESHOLD 50 OVERFLOW clause should be specified and the storage options with SecureFiles should be ENABLE STORAGE IN ROW, CACHE and COMPRESS.
- The PCTTHRESHOLD should be specified as a percentage of the block size. This value defines the maximum size of the portion of the row that is stored in the Index block when an overflow segment is used.
- The CHUNK option for storage, which is the data size used when accessing or modifying LOB values, can be set to higher than one database block size if big LOBs are used in the IO Operation.
- For SecureFiles, make sure that the initialization parameter db_securefile is set to ALWAYS.
- The Tablespace where you are creating the SecureFiles should be enabled with Automatic Segment Space Management (ASSM). In Oracle Database 11g, the default mode of Tablespace creation is ASSM so it may already be set for the Tablespace. If it's not, then you have to create the SecureFiles on a new ASSM Tablespace.

  Note: To enable compression on SecureFiles, you must have an Oracle Advanced Compression license in addition to Oracle Database Enterprise Edition. This feature is not available for the standard edition of the Oracle database.

  If you are using Oracle Database Enterprise Edition, please verify that the “COMPRESS” flag is turned on by setting it to “Y” in Storage.xml.

Refer to the Database Syntax section for more information on SecureFiles.

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.

Frequent Log Switches impacts the IO performance and can be avoided by having a bigger Redo log File Size.

Database Syntax

SecureFile

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

CREATE TABLE <Table_Name>
     ( COLUMN1 ….,
       COLUMN2 (CLOB)
       CONTRAINT <> PRIMARY KEY(…)
     )
ORGANIZATION INDEX PCTTHRESHOLD 50 OVERFLOW
LOB(COLUMN2) STORE AS SECUREFILE (ENABLE STORAGE IN ROW CHUNK 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=0

db_file_multiblock_read_count=8

transactions=3000

open_cursors=30000

db_writer_processes=10

db_files=1024

dbwr_io_slaves=10 (Only if Asynchronous IO is not Supported)

sessions=4500

memory_target=0

memory_max_target=0

processes=3000

dml_locks=48600

_b_tree_bitmap_plans=FALSE

Oracle Database Implementation Guidelines

This section provides specific guidelines for implementing the Oracle database.

Oracle Partitioning

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

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

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

The upgrade on the partitioned table works 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.

Database Statistic

During an install process, new database objects may be added to the target database. Before starting to use the database, generate the complete statistics for these new objects by using the DBMS_STATS package. You should gather statistics periodically for objects where the statistics become stale over time because of changing data volumes or changes in column values. New statistics should be gathered after a schema object's data or structure are modified in ways that make the previous statistics inaccurate. For example, after loading a significant number of rows into a table, collect new statistics on the number of rows. After updating data in a table, you do not need to collect new statistics on the number of rows, but you might need new statistics on the average row length.

A sample syntax that can be used is as following:

```
BEGIN
SYS.DBMS_STATS.GATHER_SCHEMA_STATS (
OwnName => 'CISADM'
,Degree => 16
,Cascade => TRUE
,Method_opt => 'FOR ALL COLUMNS SIZE AUTO'
, Granularity => 'ALL' );
END;
/
```

Materialized View

Oracle Enterprise Edition supports query rewrite Materialized view. If you use Oracle Enterprise Edition, you can create following Materialized Views to improve performance of the Monitor batch jobs.

Prerequisites

Make sure to set up the following:

1. Set parameter QUERY_REWRITE_ENABLED=TRUE at database level.

   ```
   ALTER SYSTEM SET QUERY_REWRITE_ENABLED=TRUE; OR
   ALTER SYSTEM SET QUERY_REWRITE_ENABLED=TRUE SCOPE=BOTH;
   ```

2. To create a materialized view in another user's schema you must have the **CREATE ANY MATERIALIZED VIEW** system privilege. The owner of the materialized view must have the CREATE TABLE system privilege. The owner must also have access to any master tables of the materialized view that the schema owner does not own (for example: if the master tables are on a remote database) and to any materialized view logs defined on those master tables, either through a **SELECT** object privilege on each of the tables or through the **SELECT ANY TABLE** system privilege.
3. To create a refresh-on-commit materialized view (**ON COMMIT REFRESH** clause), in addition to the preceding privileges, you must have the **ON COMMIT REFRESH** object privilege on any master tables that you do not own or you must have the **ON COMMIT REFRESH** system privilege.

   To create the materialized view with query rewrite enabled, in addition to the preceding privileges: If the schema owner does not own the master tables, then the schema owner must have the **GLOBAL QUERY REWRITE** privilege or the **QUERY REWRITE** object privilege on each table outside the schema.

To debug materialized views, refer the below URLs:

- Oracle 11g - https://docs.oracle.com/cd/B28359_01/server.111/b28313/qrbasic.htm
- Oracle 12c - https://docs.oracle.com/database/121/DWHSG/qrbasic.htm#DWHSG01813
- Troubleshoot Materialized View - http://docs.oracle.com/database/121/ARPLS/d_mview.htm#ARPLS67193

```
CREATE MATERIALIZED VIEW F1_BO_LIFECYCLE_STATUS_MVW
(
BUS_OBJ_CD,
LIFE_CYCLE_BO_CD,
BO_STATUS_CD,
BATCH_CD
)
BUILD IMMEDIATE REFRESH ON COMMIT ENABLE QUERY REWRITE AS
SELECT
BO2.BUS_OBJ_CD,BO.LIFE_CYCLE_BO_CD,BOSA.BO_STATUS_CD,LCBOS.BATCH_CD as
LC_BATCH_CD
FROM
F1_BUS_OBJ BO2,
```

```
F1_BUS_OBJ BO,
F1_BUS_OBJ_STATUS LCBOS,
F1_BUS_OBJ_STATUS_ALG BOSA
WHERE
BO2.LIFE_CYCLE_BO_CD =BO.LIFE_CYCLE_BO_CD AND
BO.BUS_OBJ_CD = BOSA.BUS_OBJ_CD AND
BOSA.BO_STATUS_SEVT_FLG = 'F1AT' AND
LCBOS.BUS_OBJ_CD = BO.LIFE_CYCLE_BO_CD AND
LCBOS.BO_STATUS_CD = BOSA.BO_STATUS_CD
/
```

create synonym SPLUSR.F1_BO_LIFECYCLE_STATUS_MVW for SPLADM.F1_BO_LIFECYCLE_STATUS_MVW;

grant select on F1_BO_LIFECYCLE_STATUS_MVW to FW_DEV;

grant select on F1_BO_LIFECYCLE_STATUS_MVW to SPL_USER;

grant select on F1_BO_LIFECYCLE_STATUS_MVW to SPL_READ;

For more information, refer to the following documents:

- Basic Query Rewrite (Oracle 11g) - https://docs.oracle.com/cd/B28359_01/server.111/b28313/qrbasic.htm
- Basic Query Rewrite for Materialized Views (Oracle 12c) - https://docs.oracle.com/database/121/DWHSG/qrbasic.htm#DWHSG01813
- Troubleshooting Materialized Views - http://docs.oracle.com/database/121/ARPLS/d_mview.htm#ARPLS67193
- Debugging materialized Views - http://docs.oracle.com/cd/B28359_01/server.111/b28313/qradv.htm

Known Issues

The following are some of the known issues at the time of release. For more information, refer to these articles on My Oracle Support:

- Query Did Not Rewrite For A User Other Than The Owner Of the Materialized View (Doc ID 1594725.1) - A patch is available for bug report 14772096 for some platforms.
- Query rewrite not working as expected with SELECT DISTINCT (Doc ID 7661113.8) for Oracle version – 11.2.0.1 and 11.1.0.7 Fixed in version - 12.1.0.1 (Base Release), 11.2.0.2 (Server Patch Set)

Chapter 5

Conversion Tools

This chapter describes the database conversion tools for the following:

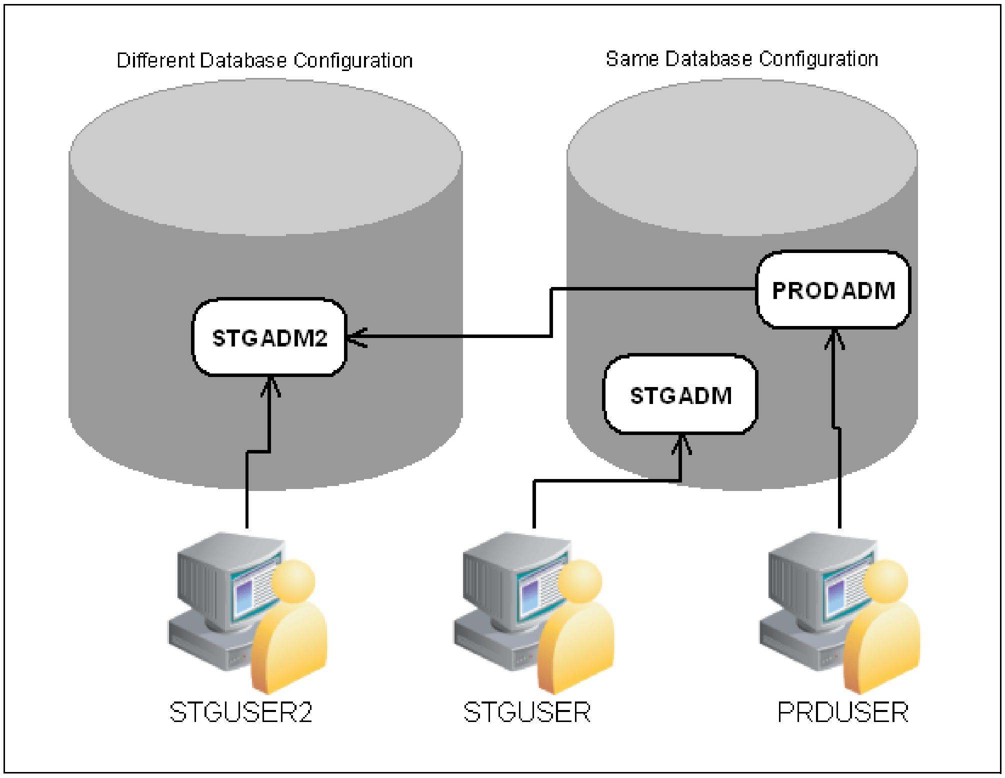
- Database Configuration
- Script Installation
- Preparing the Production Database
- Preparing the Staging Database

Note: All database related single fixes and service packs need to be applied against the production schema. Staging schema should not be updated with database single fixes or service packs. Staging schema need to be rebuilt for any fixes that contain DDL to create new database objects in production schema.

Database Configuration

The Conversion Tool Kit requires at least two sets of schema. One is to hold the staging data that the conversion tool gets the data from and performs validations. We call this schema the staging database. The target schema, which is referred to as the production database, is where the conversion tool inserts the validated data. Both the production database and the staging databases can reside in a single Oracle database or in different databases that are connected via a database link. Only the single database configuration is supported.

The following schematic diagram shows a sample configuration of both the production and staging environments in which the Conversion Tool Kit operates. The production and staging databases must be the same release level.



All the tables and views for the application are defined in the production database. The staging database has the same set of tables and views as the production database, except the tables that are grouped as part of the business configuration (control tables). Details on the differences of the tables of the two databases and of the conversion tool functionality are found in the Conversion Tool document.

Script Installation

The Conversion Setup Utility, ConvSetup.exe, is provided in this release of Oracle Utilities Customer To Meter to set up conversion schemas.

Install the Oracle Client 12c on Windows desktop and configure SQLNet to connect to the target database. The Conversion folder contains the conversion setup utilities - ConvSetup.exe and Conversion.bat.

This section describes how to create the databases for the conversion tool kit.

Preparing the Production Database

If the production database does not exist create the database under the production schema owner (CISADM).

> If the production database is upgraded from the previous version of the application make sure all public synonyms that are created on the application tables are deleted. Instead, each application user should have private synonyms created on the application tables in order for the conversion tool configuration to work.

Preparing the Staging Database

Once you have created a staging owner (STGADM), application user (STGUSER) and read access user (STGREAD), install the initial database option in the staging schema. The rest of the steps are listed below.

Run ConvSetup.exe from under the Conversion folder. The script prompts you for the following values:

- Database Platform: Oracle (O)
- Database connection information
- Database Name
- System Password
- Production Schema Name
- Staging Schema Name
- Read-Write user for Staging Schema.

ConvSetup.exe performs the following tasks:

- Creates cx* views on the master/transaction tables in the production database.
- Grants the privileges on the master/transaction tables in the production database to the staging owner.
- Drops control tables and creates views on production control tables in the staging database.
- Grants privileges on the control tables to the staging owner.
- Grants privileges on the cx* views to the staging application user.
- Creates generated key tables.
- Creates generated table primary key and secondary indexes.

In addition to above tasks ConvSetup.exe also generates the following SQL scripts:

- create_cxviews.sql
- create_ctlviews.sql
- createck_tbls.sql
- create_grants.sql
- createck_pkix.sql

- createck_secix.sql

By default the conversion.bat updates all changes to the staging schema. If you want to generate only the above sql scripts and not apply changes to staging schema then update conversion.bat by removing “-u”. The sql scripts can be applied to the staging schema later. The sqls scripts need to be executed in the same order as described using SQL*PLus.

Once the staging schema has been set up, generate the security for the staging user.

```
oragensec.exe -d stgadm,schemapassword,database_name -r
stg_read,stg_user -u stguser
```

Chapter 6

Information Lifecycle Management and CCB Data Archiving in C2M

Oracle Utilities Customer To Meter provides support for Information Lifecycle Management (ILM) and Data Archiving.

ILM is process to address data management issues, with a combination of processes, policies, software and hardware so that the appropriate technology can be used for each phase of the lifecycle of the data. The lifecycle of data typically refers to the fact that the most recent data is active in the system and as time passes the data is accessed less frequently or not at all. The costs of storing data that are accessed infrequently can be reduced by moving the data to lower cost mass storage media. Typically this involves a trade-off between cost and increased access times. Based on business needs, data may eventually be archived and purged from the database and kept offline ready to be restored if required.

This chapter includes:

- ILM Implementation Overview
- ILM Implementation Components
- ILM Database Administrator’s Tasks

ILM Implementation Overview

The implementation of ILM for products based on Oracle Utilities Application Framework includes a combination of application and database configuration and requires Oracle Partitioning.

An underlying design principle of the Oracle Utilities Application Framework ILM implementation is the concept that the age of the data may not the only criterion used to determine when a record is able to be archived. There may be business rules that dictate that some records are still current and must not be archived yet.

ILM enabled objects have a combination of an ILM date and an ILM Archive Switch. The ILM date is used in conjunction with partitioning to group data by age. The ILM Archive Switch is set by a background process when the record meets the business rules specific to that Maintenance Object if the record is eligible to be archived. The ILM Archive Switch gives Database Administrators an easy method to check when all records in a partition meet the business criteria that make the partition eligible to be archived. If the ILM Archive Switch is set for all records, then the DBA can take the steps required to archive the partition.

Moving data between storage tiers takes advantage of the partitioning by ILM Date but does not require that the ILM Archive Switch is set. Oracle recommends using the Oracle Database ILM Assistant to assist with this process.

ILM Implementation Components

The ILM based solution contains a number of components.

- ILM Specific Table Columns - For any Maintenance Object (MO) that has been configured to support ILM, the primary table of the MO includes two columns: ILM Date and ILM Archive Switch.
    - ILM_DT - This date column is defaulted to an appropriate date (typically the system date) when a new record is inserted, the MO is partitioned on the ILM_DT, so it should only be updated in exceptional circumstances as this would cause the record to be deleted from its current partition and inserted into a different partition, which is a relatively expensive operation.
    - ILM_ARCHIVE_SW - This field is set to N (Not yet eligible for archiving) when a new record is inserted. Subsequent reviews of "old" records may assess the data and change the value to "Y" based on business rules indicating that the record is eligible to be archived.
- Database Referential Integrity Constraints - These are required for reference partitioning of Child tables of ILM enabled MOs
- Partitioning - Partitioning is mandatory for ILM implementation. It is used to separate the data by ILM date so that data of a similar age is kept together.
- One Tablespace per Partition - The ILM implementation requires that each MO partition resides in a dedicated tablespace so that they can be easily managed.
- Naming Convention - This section covers the recommended naming convention to be used for partitions/subpartitions and tablespaces.

ILM Database Administrator’s Tasks

For a database administrator, there are two key phases involved with managing your data using ILM.

- Preparation Phase - This phase covers the database level configuration that needs to be done before the ILM solution runs in a production environment.
- Business FlagOn-going Maintenance Phase - This phase covers the ongoing maintenance tasks such as add partition, archive and restore partitions.

Preparation Phase

> **Note**: In order to successfully implement ILM as described here, the following database version and patch are pre-requisites: version 12.1.0.2.0 and Patch 15996848.

The steps needed to enable ILM functionality differ depending on whether ILM is enabled as part of the initial implementation of the product or enabled ILM on an existing implementation where data already exists in the respective tables.

- **Initial Install** – For an initial installation, the section Module Specific ILM Implementation Details outlines the additional steps to be performed on base delivered ILM Enabled Tables to conform to ILM requirements. In addition, Appendix A: Sample SQL for Enabling ILM in C2M for CC&B (Initial Install) provide sample reference DDLs using two maintenance objects as examples.
- **Transform NON-ILM implementation to ILM Enabled Implementation**: The following steps provide a high level overview of steps that must be performed to implement ILM on enabled MOs for an existing implementation. Please refer to Appendix B: Sample SQL For Enabling ILM in C2M for CCB (Existing Installation) for detailed information using To Do Entry as an example.

1. Rename the existing tables (Parent table followed by child table(s)), and primary key index associated with ILM enabled MOs by renaming the tables.
2. Save the DDLs for the secondary indexes as you will need to recreate them later.
3. Drop secondary indexes on the renamed tables.
4. Create Partitioned table with no secondary indexes for ILM enabled MOs using a CTAS operation (Create Table as Select), which will also load the data into the partitioned table structure.

   > **Functional Note**: ILM enabled MOs should have the ILM date (ILM_DT) populated when data is moved into the new partitioned table. Please refer to the Module Specific ILM Implementation Details section below for initial load details on which date column to use as the basis for populating the ILM date. Often it is based on Create Date (CRE_DTTM). ILM_ARCH_SW should initially be set to ‘N’.

5. Enable logging option.
6. Create Primary Key index.
7. Create Primary Key Constraint of parent table.
8. Create secondary indexes for the newly-created partitioned tables. This includes creating an index used specifically to benefit the ILM Crawler batch. The recommendation for this index name is to prefix it with "ILM".

Note: This can be created specifying parallel index create; remember to turn off parallelism after the index is created.

9. Follow similar operation for all child tables for this MO, such as rename child table, and primary key index, generate DDL for secondary index, drop secondary index etc. Sample DDL for child tables their partitioning and indexes can be found in Appendix B: Sample SQL For Enabling ILM in C2M for CCB (Existing Installation). Please note that child table should be partitioned using reference partitioning of the parent table's partitioning key.
10. Drop the original, renamed tables after verifying the newly created partitioned tables.

On-going Maintenance Phase

The following steps provide a high level overview of what needs to be done for on-going maintenance for ILM on enabled MOs.

Please refer to the Appendix C: Sample SQL for Periodic Maintenance for CCB Data for detailed information using two maintenance objects as examples.

1. Add the partition:
    a. Create Tablespace to be used for the new parent table partition.
    b. Since, we define MAXVALUE Partition; new partition can only be created using "SPLIT" operation. Identify and use next HIGH_VALUE Partition for the split operation.
    c. All the child table(s) partition(s)\LOB(s) must be altered to use the same tablespace as that of the parent table's partition.
    d. Enable advanced compression on all child table(s).
    e. Copy partition level statistics from the previous partition
2. Archive the partition:
    a. Make the tablespace that will be archived READ ONLY.
    b. Check that no records have ILM_ARCH_SW = 'N'.
        - If record count is zero, proceed with further steps.
        - If record count is not zero, then change the tablespace back to READ WRITE MODE as Archive is not Feasible at the time.
    c. Create an archive tablespace for the partition that needs to be archived.
    d. Create staging tables using the new archive tablespace. Load data for all child tables first.
    e. Create staging table using the new archive tablespace and load data for the parent table.
    f. Export tablespace using TRANSPORT_TABLESPACES method.

       Make Sure Tablespace datafile required for further import is preserved.
    g. Drop the partition, partition the tablespace and archive the tablespace (as it is already exported).

3. Restore the partition:
   a. Create a new tablespace to restore the partition.
   b. Add partition using split operation on next greater high value partition.

      If the table contains LOBS, there will an additional statement in split partition DDL indicating tablespace where the LOBs will be stored.
   c. Enable advanced compression on all child table(s).
   d. Import Tablespace using TRANSPORT_TABLESPACES method.
   e. Load data into the parent table first from the staging table
   f. Load data into the child table from the staging table
   g. Drop the archive tablespace after import and data loading is successful.
4. Move Data between different storage tiers:

The ILM facilities can be used within the database to implement storage savings, as follows:

- Use ILM Assistant to define the data groups to be used for the individual objects. Assign those data groups to partitions and storage devices to implement the storage savings.
- Use ILM assistant to generate the necessary commands to implement the data changes manually or use Automatic Storage Management (ASM) to automate the data storage policies.
- Optionally, use Automatic Data Optimization to provide further optimizations.

For more information about ILM Assistant and ILM refer to the following:

- ILM Assistant Users Guide available at:

  http://download.oracle.com/otn/other/ilm/ilma-users-guide.html
- Oracle Database VLDB and Partitioning Guide (11.2) available at:

  http://docs.oracle.com/cd/E11882_01/server.112/e25523/part_lifecycle.htm#CACECAFB
- Oracle Database VLDB and Partitioning Guide (12.1) available at:

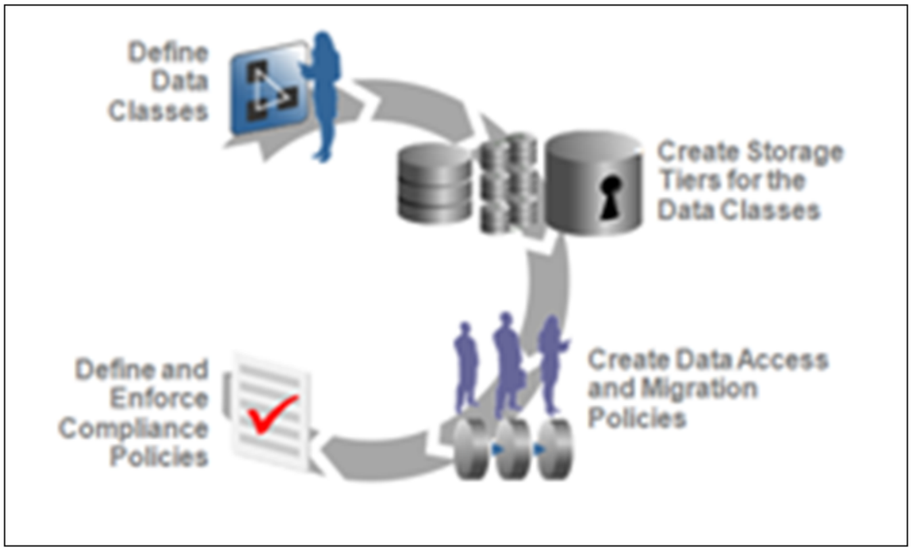
  https://docs.oracle.com/database/121/VLDBG/title.htm

ILM Assistant

The ILM Assistant in the current 11g database implementation can provide the following

- Setup ILM Lifecycle definition - Define different lifecycle definitions for different MOs and say that after what period of time the data is ready to be moved to a slower disk.
- Setup ILM Lifecycle tables - Define the tables you want to manage and assign it to a Lifecycle definition defined above. You can setup policies for when data is moved it can be automatically compressed to desired degree.
- Lifecycle Management - The Lifecycle Management tab alerts the system admin when partitions are eligible for archiving.

ILM Assistant can then be used with the ILM to make sure the records that have ILM_ARCH_SW = 'Y' can be moved to slower and slower disks and possibly get purged.


Define Data Classes
Create Storage Tiers for the Data Classes
Create Data Access and Migration Policies
Define and Enforce Compliance Policies

Note: For further guidelines on ILM Assistant refer to Implementing Information Lifecycle Management Using the ILM Assistant available at: http://www.oracle.com/webfolder/technetwork/tutorials/obe/db/11g/r2/prod/storage/ilm/ilm.htm?cid=4196&ssid=115606280996764

Naming Convention

The naming convention for tablespace, partitions & subpartition is standardized as follows

- Each name consists of some or all of the following parts
- The parts of the name are organized hierarchically
- Each part of the Name is separated with an underscore.
- The maximum name length must not exceed 30 Characters.
- For an MO, the parent table and child table share the same tablespace for the corresponding partition (or sub partition as appropriate).
- Square brackets [ ] indicate that this part of the name should be omitted if not required.

OWNERFLAG_TABLEIDENTIFIER_PARTITIONNAME[_SUBPARTITIONNAME][_ARCHIVEFLAG][_COMPRESSFLAG]

For details on the convention, please refer to the table below:

Convention	Description
OWNERFLAG	Owner flag for the relevant application for example “C1” for CCB

Convention	Description
TABLE IDENTIFIER	The Index Name of the Primary Key index without the "P0" suffix. For example, if the PK index name is XT039P0, the table identifier would be "XT039".
PARTITION NAME	The Partition name should be prefixed with a P followed by a name which conforms to one of the following standards: • 4 digit year and 3 letter month abbreviation PYYYYMON corresponding to the ILM date e.g. P2017JAN • PMAX if it is the Max Value partition
SUBPARTITION NAME	If subpartitions are used, name should be prefixed with S followed by a name of not more than 5 characters which conforms to the following requirements: • SMAX if this is the Max Value sub partition • If the sub partition holds data for a sub retention period use a number equal to that period e.g S91 if the sub retention period < 91 days. • For a range based SubPartition on Primary Key, use an integral number increasing by +1. For example, if there are 8 sub partitions use S01 through S08
ARCHIVEFLAG	This flag is used as a suffix to the table and tablespace name for the staging tables created for the archiving operation. • ARC

Convention	Description
COMPRESS FLAG	This flag is used as a suffix to the tablespace name for the staging tables created when compressing a partition. • C For compression related tasks, this is used as suffix to the tablespace name. • Partition Tablespace Name: It is formed by OWNERFLAG_TABLEIDENTIFIER_PARTITIONNAME. For example: CM_D1T304_PMAX CM_D1T304_P2017JAN • SubPartition Tablespace Name: It is formed by OWNERFLAG_TABLEIDENTIFIER_PARTITIONNAME_SUBPARTITIONNAME. For example: CM_D1T304_PMAX_SMAX CM_D1T304_P2017JAN_SMAX CM_D1T304_PMAX_S001 CM_D1T304_P2017JAN_S181 • Archive Staging Table And Its Tablespace Name (When archiving partition): It is formed by OWNERFLAG_TABLEIDENTIFIER_PARTITIONNAME_ ARCHIVEFLAG. For example: CM_D1T304_P2017JAN_ARC • Archive Staging Table And Its Tablespace Name (When archiving subpartition): It is formed by OWNERFLAG_TABLEIDENTIFIER_PARTITIONNAME_SUBPARTITIONNAME_ ARCHIVEFLAG. For example: CM_D1T304_P2017JAN_S181_ARC • Compressed Tablespace name (When compressing partition): For example: CM_D1T304_P2017JAN_ C

Module Specific ILM Implementation Details

This section outlines each maintenance object that has been configured to support ILM. The parent table is noted. Other tables are child tables of the parent unless otherwise noted. In each case, the partitioning strategy is indicated.

All indexes are listed with a recommendation whether the index should be global or local and whether the index should be partitioned. In addition to the base delivered indexes, each parent table includes a recommended ILM specific local index to build with the ILM_DT, ILM_ARCH_SW and the primary key of the table. The recommended column that should be used to populate the ILM_DT is also shown. Refer to Appendix B: Sample SQL For Enabling ILM in C2M for CCB (Existing Installation) for sample DDL(s).

To Do Entry

This table describes the To Do Entry maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
CI_TD_ENTRY (Parent)	RANGE (ILM_DT, TD_ENTRY_ID)				RANGE (TD_ENTRY_ID)	CI_TD_ENTRY.CRE_DTTM
		XT039P0	TD_ENTRY_ID	Global Partitioned		
		XT039S2	ASSIGNED_TO, TD_ENTRY_ID	Global		
		XT039S3	ENTRY_STATUS_FLG, ASSIGNED_TO	Global		
		XT039S4	ROLE_ID, TD_TYPE_CD, ENTRY_STATUS_FLG, TD_PRIORITY_FLG	Global		
		XT039S5	BATCH_CD, BATCH_NBR, ENTRY_STATUS_FLG	Global		
		XT039S6	TD_ENTRY_ID, ASSIGNED_TO, ENTRY_STATUS_FLG	Global		
		XT039S7	COMPLETE_USER_ID, COMPLETE_DTTM, TD_ENTRY_ID	Global		
		CM_ILM_XT039S8	ILM_DT, ILM_ARCH_SW, TD_ENTRY_ID	Local Partitioned		
CI_TD_ENTRY_CHA	Reference Partitioning	XT701P0	TD_ENTRY_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned		
		XT701S1	SRCH_CHAR_VAL, CHAR_TYPE_CD, TD_ENTRY_ID	Global		

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
		XT701S2	CHAR_VAL_FK1	Global		
CI_TD_DRLKEY	Reference Partitioning	XT037P0	TD_ENTRY_ID, SEQ_NUM	Global Partitioned		
		XT037S1	KEY_VALUE, TD_ENTRY_ID	Global		
CI_TD_LOG	Reference Partitioning	XT721P0	TD_ENTRY_ID, SEQ_NUM	Global Partitioned		
		XT721S1	LOG_DTTM,USER_ID, LOG_TYPE_FLG, TD_ENTRY_ID	Global		
CI_TD_MSG_PARM(Child table of CI_TD_LOG)	Reference Partitioning	XT040P0	TD_ENTRY_ID, SEQ_NUM	Global		
CI_TD_SRTKEY	Reference Partitioning	XT041P0	TD_ENTRY_ID, SEQ_NUM	Global Partitioned		
		XT041S1	KEY_VALUE, TD_ENTRY_ID	Global		

Sync Request (Outbound)

This table describes the Sync Request (Outbound) maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
F1_SYNC_REQ (Parent)	RANGE (ILM_DT, F1_SYNC_REQ_ID)				RANGE (F1_SYNC_REQ_ID)	F1_SYNC_REQ.CRE_DTTM
		F1T014P0	F1_SYNC_REQ_ID	Global Partitioned		
		F1T014S1	BO_STATUS_CD, BUS_OBJ_CD, F1_SYNC_REQ_ID	Global		
		F1T014S2	BO_STATUS_REASON_CD	Global		

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
		F1T014S3	MAINT_OBJ_CD, PK_VALUE1, PK_VALUE2, F1_SYNC_REQ_ID	Global		
		CM_ILM_F1T014S4	ILM_DT, ILM_ARC_SW, F1_SYNC_REQ_ID	Local Partitioned		
F1_SYNC_REQ_CHAR	Reference Partitioning	F1T017P0	F1_SYNC_REQ_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned		
		F1T017S1	SRCH_CHAR_VAL	Global		
F1_SYNC_REQ_EXTRACT	Reference Partitioning	F1T019P0	F1_SYNC_REQ_ID, SEQ_NUM	Global Partitioned		
F1_SYNC_REQ_LOG	Reference Partitioning	F1T015P0	F1_SYNC_REQ_ID, SEQNO	Global Partitioned		
		F1T015S1	CHAR_TYPE_CD, CHAR_VAL_FK1	Global		
		F1T015S2	CHAR_TYPE_CD, CHAR_VAL	Global		
		F1T015S3	BO_STATUS_REASON_CD	Global		
F1_SYNC_REQ_LOG_PARM (Child Table of F1_SYNC_REQ_LOG_PARM)	Reference Partitioning	F1T016P0	F1_SYNC_REQ_ID, SEQNO, PARM_SEQ	Global Partitioned		

Note: It is recommended that data retention policies and rules for this object match the policies and rules implemented for the Inbound Sync Request on the target system to avoid data inconsistencies when auditing.

Inbound Sync Request

This table describes the Inbound Sync Request maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
F1_SYNC_REQ_IN (Parent)	RANGE(ILM_DT, F1_SYNC_REQ_IN_ID)				RANGE (F1_SYNC_REQ_IN_ID)	F1_SYNC_REQ_IN.CRE_DTTM
		F1T191P0	F1_SYNC_REQ_IN_ID	Global Partitioned		
		F1T191S1	BO_STATUS_CD, BUS_OBJ_CD, F1_SYNC_REQ_IN_ID	Global		
		F1T191S2	MAINT_OBJ_CD, EXT_PK_VALUE1, NT_XID_CD, PK_VALUE1	Global		
		F1T191S3	EXT_REFERENCE_ID	Global		
		CM_ILM_F1T191S3	ILM_DT, ILM_ARCH_SW, F1_SYNC_REQ_IN_ID	Local Partitioned		
F1_SYNC_REQ_IN_CHAR	Reference Partitioning	F1T193P0	F1_SYNC_REQ_IN_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned		
		F1T193S1	SRCH_CHAR_VAL	Global		
F1_SYNC_REQ_IN_EXCP	Reference Partitioning	F1T197P0	F1_SYNC_REQ_IN_ID, SEQNO	Global Partitioned		
F1_SYNC_REQ_IN_EXCP_PARM (Child Table of F1_SYNC_REQ_IN_EXCP)	Reference Partitioning	F1T198P0	F1_SYNC_REQ_IN_ID, SEQNO, PARM_SEQ	Global Partitioned		
F1_SYNC_REQ_IN_LOG	Reference Partitioning	F1T194P0	F1_SYNC_REQ_IN_ID, SEQNO	Global Partitioned		
		F1T194S1	CHAR_TYPE_CD, CHAR_VAL_FK1	Global		
		F1T194S2	CHAR_TYPE_CD, CHAR_VAL	Global		

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
F1_SYNC_REQ_IN_LOG_PARM (Child Table of F1_SYNC_REQ_IN_LOG)	Reference Partitioning	F1T195P0	F1_SYNC_REQ_IN_ID, SEQNO, PARM_SEQ	Global Partitioned		
F1_SYNC_REQ_IN_REL_OBJ	Reference Partitioning	F1T192P0	F1_SYNC_REQ_IN_ID, MAINT_OBJ_CD, REL_OBJ_TYPE_FLG	Global Partitioned		
		F1T192S1	PK_VALUE1	Global		

Note: It is recommended that data retention policies and rules for this object match the policies and rules implemented for the Outbound Sync Request on the source system to avoid data inconsistencies when auditing.

Outbound Message

This table describes the Outbound Message maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
F1_OUTMSG (Parent)	RANGE (ILM_DT, OUTMSG_ID)				RANGE (OUMSG_ID)	F1_OUTMSG.CRE_DTTM
		FT010P0	OUTMSG_ID	Global Partitioned		
		FT010S1	OUTMSG_STATUS_FLG, OUTMSG_TYPE_CD	Global		
		CM_ILM_FT010S2	ILM_DT, ILM_ARC_SW, OUTMSG_ID	Local Partitioned		
F1_OUTMSG_ERRPARM	Reference Partitioning	FT011P0	OUTMSG_ID, PARM_SEQ	Global Partitioned		

Service Task

This table describes the Service Task maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
F1_SVC_TASK (Parent)	RANGE (ILM_DT, F1_SVC_TASK_ID)				RANGE (F1_SVC_TASK_ ID_)	F1_SVC_TASK. CRE_DTTM
		F1C474P0	F1_SVC_TASK_ID	Global Partitioned		
		F1C474S1	F1_STASK_TYPE_ CD	Global		
		F1C474S2	BUS_OBJ_CD	Global		
		CM_ILM_F1C474 S3	ILM_DT, ILM_ARC_SW, F1_SVC_TASK_ID	Local Partitioned		
F1_SVC_TASK_ CHAR	Reference Partitioning	F1C476P0	F1_SVC_TASK_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned		
		F1C476S1	SRCH_CHAR_VAL	Global		
F1_SVC_TASK_ LOG	Reference Partitioning	F1C477P0	F1_SVC_TASK_ID, SEQNO	Global Partitioned		
		F1C477S1	CHAR_TYPE_CD, CHAR_VAL_FK1	Global		
		F1C477S2	CHAR_TYPE_CD, CHAR_VAL	Global		
F1_SVC_TASK_ LOG_PARM (Child Table of F1_SVC_TASK_ LOG)	Reference Partitioning	F1C478P0	F1_SVC_TASK_ID, SEQNO, PARM_SEQ	Global Partitioned		
F1_SVC_TASK_ REL_OBJ	Reference Partitioning	F1C479P0	F1_SVC_TASK_ID, MAINT_OBJ_CD, SEQ_NUM	Global Partitioned		

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
		F1C479S1	MAINT_OBJ_CD, PK_VALUE1, PK_VALUE2, PK_VALUE3 PK_VALUE4 PK_VALUE5	Global		

Object Revision

This table describes the Object Revision maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
F1_OBJ_REV (Parent)	RANGE (ILM_DT, REV_ID)				RANGE (REV_ID)	F1_OBJ_REV. STATUS_UPD_DTTM
		FT035P0	REV_ID	Global Partitioned		
		FT035S1	BO_STATUS_CD, BUS_OBJ_CD, REV_ID	Global		
		FT035S2	MAINT_OBJ_CD, PK_VALUE1	Global		
		FT035S3	EXT_REFERENCE_ID, MAINT_OBJ_CD	Global		
		FT035S4	USER_ID, MAINT_OBJ_CD	Global		
		FT035S5	PK_VALUE1	Global		
		CM_ILM_FT035S6	ILM_DT, ILM_ARC_SW, REV_ID	Local Partitioned		

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
F1_OBJ_REV_CHAR	Reference Partitioning	FT037P0	REV_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned		
		FT037S1	SRCH_CHAR_VAL	Global		
F1_OBJ_REV_LOG	Reference Partitioning	FT039P0	REV_ID, SEQNO	Global Partitioned		
F1_OBJ_REV_LOG_PARM (Child Table of F1_OBJ_REV_LOG)	Reference Partitioning	FT040P0	REV_ID, SEQNO, PARM_SEQ	Global Partitioned		

Note: This maintenance object is enabled for ILM, however it is not used in a production environment. It is typically used in a development or configuration environment. Your implementation should review its use of this functionality and consider whether or not it is a candidate for ILM and in which region.

Object Erasure

This table describes the Object Erasure maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
F1_ERASURE_SCHED (Parent)	RANGE (ILM_DT, ERASURE_SCHED_ID)					F1_ERASURE_SCHED.STATUS_UPD_DTTM.
		F1T756P0	ERASURE_SCHED_ID	GLOBAL Partitioned	RANGE (ERASURE_SCHED_ID)	
		CM_ILM_F1T756S1	ILM_DT, ILM_ARCH_SW, ERASURE_SCHED_ID	LOCAL		
F1_ERASURE_SCHED_LOG	Reference partitioning	F1T757P0	ERASURE_SCHED_ID, SEQNO	GLOBAL Partitioned		

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
F1_ERASURE_SCHED_LOG_PARM	Reference partitioning	F1T758P0	ERASURE_SCHED_ID, SEQNO, PARM_SEQ	GLOBAL Partitioned		

Process Flow

This table describes the Process Flow maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
F1_PROC_STORE (Parent)	RANGE (ILM_DT, PROC_STORE_ID)					F1_PROC_STORE. STATUS_UPD_DTTM.
		F1T747P0	PROC_STORE_ID	GLOBAL Partitioned	RANGE (PROC_STORE_ID)	
		CM_ILM_F1T747S1	ILM_DT, ILM_ARCH_SW, PROC_STORE_ID	LOCAL		
F1_PROC_STORE_DTL_ELEMENTS	Reference partitioning	F1T748P0	PROC_STORE_ID, CHAR_TYPE_CD, SEQ_NUM	GLOBAL Partitioned		
F1_PROC_STORE_LOG	Reference partitioning	F1T749P0	PROC_STORE_ID, SEQNO	GLOBAL Partitioned		
F1_PROC_STORE_LOG_PARM	Reference partitioning	F1T750P0	PROC_STORE_ID, SEQNO, PARM_SEQ	GLOBAL Partitioned		

Adjustment

This table describes the Adjustment maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
CI_ADJ (Parent)	RANGE (ILM_DT, ADJ_ID)				RANGE (ADJ_ID)	CI_ADJ.CRE_DT
		XT012P0	ADJ_ID	Global Partitioned		
		XT012S1	SA_ID, ADJ_TYPE_CD	Global		
		XT012S2	XFER_ADJ_ID, ADJ_ID	Global		
		CM_ILM_ XT012S3	ILM_DT, ILM_ARCH_SW, ADJ_ID	Local Partitioned		
CI_ADJ_APREQ	Reference Partitioning	XT160P0	AP_REQ_ID	Global		
		XT160S1	ADJ_ID	Global		
		XT160S2	BATCH_CD, BATCH_NBR	Global		
CI_ADJ_CALC_ LN	Reference Partitioning	XT310P0	ADJ_ID, SEQNO	Global Partitioned		
CI_ADJ_CL_ CHAR	Reference Partitioning	XT309P0	ADJ_ID, SEQNO, CHAR_TYPE_ CD	Global Partitioned		
CI_ADJ_CHAR	Reference Partitioning	XC781P0	ADJ_ID, CHAR_TYPE_ CD, SEQ_NUM	Global Partitioned		
		XC781S1	SRCH_CHAR_VA L	Global		

Approval Request

This table describes the Approval Request maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
CI_APPR_REQ (Parent)	RANGE (ILM_DT, APPR_REQ_ID)				RANGE (APPR_REQ_ID)	MIN(LOG_DTTM) on CI_APPR_REQ_LOG for given APPR_REQ_ID
		XT600P0	APPR_REQ_ID	Global Partitioned		
		CM_ILM_XT600S1	ILM_DT, ILM_ARCH_SW, APPR_REQ_ID	Local partitioned		
CI_APPR_REQ_CHAR	Reference Partitioning	XT601P0	APPR_REQ_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned		
		XT601S1	SRCH_CHAR_VAL	Global		
CI_APPR_REQ_LOG	Reference Partitioning	XT602P0	APPR_REQ_ID, SEQNO	Global Partitioned		
		XT602S1	CHAR_TYPE_CD, CHAR_VAL_FK1	Global		
CI_APPR_REQ_LOG_PARM	Reference Partitioning	XT603P0	APPR_REQ_ID, SEQNO, PARM_SEQ	Global Partitioned		

Bill

This table describes the Bill maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
CI_BILL (Parent)	RANGE (ILM_DT, BILL_ID)				RANGE (BILL_ID)	CI_BILL.CRE_DTTM
		XT033P0	BILL_ID	Global Partitioned		

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
		XT033S1	ACCT_ID, BILL_STAT_FLG, BILL_CYC_CD, WIN_START_DT ,CR_NOTE_FR_BILL_ID	Global		
		XT033S2	CR_NOTE_FR_BILL_ID, BILL_ID	Global		
		XT033S3	ALT_BILL_ID, BILL_STAT_FLG, BILL_ID	Global		
		XT033S4	OFFCYC_BGEN_ID, BILL_ID	Global		
		XT033S5	DOC_ID, DOC_TYPE_FLG, BILL_STAT_FLG , BILL_ID	Global		
		CM_ILM_XT033S6	ILM_DT, ILM_ARCH_SW, BILL_ID	Local Partitioned		
		XT033S7	ACCT_ID, OFFCYC_BGEN_ID, CRE_DTTM	Global		
		XT033S8	LATE_PAY_CHARGE_SW, LATE_PAY_CHARGE_DT, BILL_ID	Global		
CI_BILL_CHAR	Reference Partitioning	XT313P0	BILL_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned		
		XT313S1	SRCH_CHAR_VAL	Global		
CI_BILL_EXCP	Reference Partitioning	XT038P0	BILL_ID	Global Partitioned		
CI_BILL_MSGS	Reference Partitioning	XT091P0	BILL_ID, BILL_MSG_CD	Global Partitioned		

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
CI_BILL_MSG_PRM	Reference Partitioning	XT085P0	BILL_ID, BILL_MSG_CD, SEQ_NUM	Global Partitioned		
CI_BILL_SA	Reference Partitioning	XT046P0	BILL_ID, SA_ID	Global Partitioned		
		XT046S1	SA_ID	Global		
CI_BILL_ROUTING	Reference Partitioning	XT075P0	BILL_ID, SEQNO	Global Partitioned		
		XT075S1	BATCH_CD, BATCH_NBR, BILL_ID, NO_BATCH_PRT_SW	Global		

Bill Segment

This table describes the Bill Segment maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
CI_BSEG (Parent)	RANGE (ILM_DT, BSEG_ID)				RANGE (BSEG_ID)	CI_BSEG.CRE_DTTM
		XT048P0	BSEG_ID	Global Partitioned		
		XT048S1	BILL_ID	Global		
		XT048S2	SA_ID	Global		
		XT048S3	QUOTE_DTL_ID, BSEG_ID	Global		

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
		CM_ILM_XT048S4	ILM_DT, ILM_ARCH_SW, BSEG_ID	Local Partitioned		
CI_BSEG_CALC	Reference partitioning	XT072P0	BSEG_ID, HEADER_SEQ	Global Partitioned		
		XT072S1	BILLABLE_CHG_ID, BSEG_ID	Global		
CI_BSEG_CALC_LN	Reference partitioning	XT050P0	BSEG_ID, HEADER_SEQ, SEQNO	Global Partitioned		
CI_BSEG_CL_CHAR	Reference partitioning	XT056P0	BSEG_ID, HEADER_SEQ, SEQNO, CHAR_TYPE_CD	Global Partitioned		
CI_BSEG_EXCP	Reference partitioning	XT051P0	BSEG_ID	Global Partitioned		
CI_BSEG_MSG	Reference partitioning	XT080P0	BSEG_ID, BILL_MSG_CD	Global Partitioned		
CI_BSEG_READ	Reference partitioning	XT054P0	BSEG_ID, SP_ID, SEQNO	Global Partitioned		
		XT054S1	SP_ID	Global		
		XT054S2	START_REG_READ_ID	Global		
		XT054S3	END_REG_READ_ID	Global		
CI_BSEG_SQ	Reference partitioning	XT055P0	BSEG_ID, UOM_CD, TOU_CD, SQI_CD	Global Partitioned		
CI_BSEG_ITEM	Reference partitioning	XT053P0	BSEG_ID, SEQNO	Global Partitioned		

Statement

This table describes the Statement maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
CI_STM (Parent)	RANGE (ILM_DT, STM_ID)				RANGE (STM_ID)	CI_STM.STM_DT
		XT088P0	STM_ID	Global Partitioned		
		CM_ILM_ XT088S1	ILM_DT, ILM_ARCH_SW, STM_ID	Local Partitioned		
CI_STM_DTL		XT119P0	STM_DTL_ID	Global		
		XT119S1	STM_ID	Global		

Off Cycle Bill Generator

This table describes the Off Cycle Bill Generator maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
C1_OFFCYC_ BGEN (Parent)	RANGE (ILM_DT, OFFCYC_ BGEN_ID)				RANGE (OFFCYC_BGEN _ID)	C1_OFFCYC_BG EN.STATUS_UP D_DTTM
		XT197P0	OFFCYC_BGEN _ID	Global Partitioned		
		XT197S1	ACCT_ID	Global		
		CM_ILM_ XT197S2	ILM_DT, ILM_ARCH_SW, OFFCYC_BGEN _ID	Local Partitioned		

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
C1_OFFCYC_BGEN_ADJ	Reference partitioning	XT285P0	OFFCYC_BGEN_ID, ADJ_ID	Global Partitioned		
		XT285S1	ADJ_ID	Global		
C1_OFFCYC_BGEN_BCHG	Reference partitioning	XT326P0	OFFCYC_BGEN_ID, BILLABLE_CHG_ID	Global Partitioned		
		XT326S1	BILLABLE_CHG_ID	Global		
C1_OFFCYC_BGEN_CHAR	Reference partitioning	XT343P0	OFFCYC_BGEN_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned		
		XT343S1	SRCH_CHAR_VAL	Global		
C1_OFFCYC_BGEN_LOG	Reference partitioning	XT344P0	OFFCYC_BGEN_ID, SEQNO	Global Partitioned		
		XT344S1	CHAR_TYPE_CD, CHAR_VAL_FK1	Global		
C1_OFFCYC_BGEN_LOG_PARM	Reference partitioning	XT357P0	OFFCYC_BGEN_ID, SEQNO, PARM_SEQ	Global Partitioned		
C1_OFFCYC_BGEN_SA	Reference partitioning	XT359P0	OFFCYC_BGEN_ID, SA_ID	Global Partitioned		
		XT359S1	SA_ID	Global		

Billable Charge

This table describes the Billable Charge maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
CI_BILL_CHG (Parent)	RANGE (ILM_DT, BILLABLE_CHG_ID)				RANGE (BILLABLE_CHG_ID)	CI_BILL_CHG.START_DT

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
		XT035P0	BILLABLE_CHG_ID	Global Partitioned		
		XT035S1	SA_ID	Global		
		CM_ILM_XT035S2	ILM_DT, ILM_ARCH_SW, BILLABLE_CHG_ID	Local Partitioned		
CI_BCHG_READ	Reference Partitioning	XT271P0	BILLABLE_CHG_ID, SP_ID, SEQNO	Global Partitioned		
CI_BCHG_SQ	Reference Partitioning	XT081P0	BILLABLE_CHG_ID, SEQ_NUM	Global Partitioned		
CI_B_CHG_LINE	Reference Partitioning	XT001P0	BILLABLE_CHG_ID, LINE_SEQ	Global Partitioned		
CI_B_LN_CHAR	Reference Partitioning	XT083P0	BILLABLE_CHG_ID, LINE_SEQ, CHAR_TYPE_CD	Global Partitioned		

Case

This table describes the Case maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
CI_CASE (Parent)	RANGE (ILM_DT, CASE_ID)				RANGE (CASE_ID)	MIN(LOG_DTTM) on CI_CASE_LOG table for given CASE_ID
		XT220P0	CASE_ID	Global Partitioned		
		XT220S1	PER_ID	Global		

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
		XT220S2	ACCT_ID	Global		
		XT220S3	PREM_ID	Global		
		XT220S4	USER_ID	Global		
		CM_ILM_ XT220S5	ILM_DT, ILM_ARCH_SW, CASE_ID	Local Partitioned		
CI_CASE_CHAR	Reference Partitioning	XT222P0	CASE_ID, CHAR_TYPE_ CD, SEQ_NUM	Global Partitioned		
		XT222S1	SRCH_CHAR_ VAL	Global		
CI_CASE_LOG	Reference Partitioning	XT221P0	CASE_ID, SEQ_NUM	Global Partitioned		
		XT221S1	CHAR_TYPE_ CD, CHAR_VAL_FK1	Global		
CI_CASE_LOG_ PARM	Reference Partitioning	XT290P0	CASE_ID, SEQ_NUM, PARM_SEQ	Global Partitioned		

Field Activity

This table describes the Field Activity maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
CI_FA (Parent)	RANGE (ILM_DT, FA_ID)				RANGE (FA_ID)	CI_FA.CRE_ DTTM
		XT094P0	FA_ID	Global Partitioned		
		XT094S1	SP_ID, FO_ID	Global		

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
		XT094S2	FO_ID, FA_ID	Global		
		XT094S3	FA_STATUS_FLG, ELIG_DISPATCH_SW, FO_ID, FA_ID	Global		
		XT094S4	APP_SCHED_ID, FA_ID	Global		
		XT094S5	TEST_SEL_ID, FA_ID	Global		
		CM_ILM_XT094S6	ILM_DT, ILM_ARCH_SW, FA_ID	Local Partitioned		
		XT094S7	FA_EXT_ID, FA_ID	Global		
CI_FA_CHAR	Reference Partitioning	XT406P0	FA_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned		
		XT406S1	SRCH_CHAR_VAL	Global		
CI_FA_LOG	Reference Partitioning	XT350P0	FA_ID, SEQ_NUM	Global Partitioned		
CI_FA_REM	Reference Partitioning	XT407P0	FA_ID, FA_REM_CD	Global Partitioned		
CI_FA_REM_EXC	Reference Partitioning	XT312P0	FA_ID, FA_REM_CD	Global Partitioned		
CI_FA_REM_EXP	Reference Partitioning	XT405P0	FA_ID, FA_REM_CD, PARM_SEQ	Global Partitioned		
CI_FA_STEP	Reference Partitioning	XT095P0	FA_ID, STEP_SEQ_NBR	Global Partitioned		
		XT095S1	CC_ID	Global		
		XT095S2	SPAWNED_FA_ID, FA_ID	Global		
		XT095S3	MR_ID	Global		

Enrollment (Order)

This table describes the Enrollment (Order) maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
CI_ENRL (Parent)	RANGE (ILM_DT, ENRL_ID)				RANGE (ENRL_ID)	CI_ENRL. START_DT
		XT193P0	ENRL_ID	Global Partitioned		
		XT193S1	PER_ID	Global		
		XT193S2	ACCT_ID	Global		
		XT193S3	PREM_ID	Global		
		CM_ILM_XT193S4	ILM_DT, ILM_ARCH_SW, ENRL_ID	Local Partitioned		
CI_ENRL_ADDR	Reference Partitioning	XT200P0	ENRL_ID, ENRL_ADDR_ENT_FLG	Global Partitioned		
		XT200S1	ADDRESS1_UPR, ENRL_ID	Global		
		XT200S2	CITY_UPR, ENRL_ID	Global		
CI_ENRL_FLD	Reference Partitioning	XT191P0	ENRL_ID, SEQ_NUM	Global Partitioned		
CI_ENRL_LOG	Reference Partitioning	XT198P0	ENRL_ID, SEQ_NUM	Global Partitioned		
CI_ENRL_PER_ID	Reference Partitioning	XT199P0	ENRL_ID, ID_TYPE_CD	Global Partitioned		
		XT199S1	HASH_PER_ID_NBR, ENRL_ID, ID_TYPE_CD	Global		
CI_ENRL_PER_NM	Reference Partitioning	XT194P0	ENRL_ID, SEQ_NUM	Global Partitioned		
		XT194S1	ENTITY_NAME_UPR, ENRL_ID	Global		
CI_ENRL_PER_PHN	Reference Partitioning	XT195P0	ENRL_ID, SEQ_NUM	Global Partitioned		

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
C1_ENRL_CONTDET	Reference Partitioning	C1T011S1	C1_ENRL_CONTACT_ID	Global Partitioned		

Payment Event

This table describes the Payment Event maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
CI_PAY_EVENT (Parent)	RANGE (ILM_DT, PAY_EVENT_ID)				RANGE (PAY_EVENT_ID)	CI_PAY_EVENT.PAY_DT
		XT159P0	PAY_EVENT_ID	Global Partitioned		
		XT159S1	PAY_DT, PAY_EVENT_ID	Global		
		XT159S2	DOC_ID, PAY_EVENT_ID	Global		
		CM_ILM_XT159S3	ILM_DT, ILM_ARCH_SW, PAY_EVENT_ID	Local Partitioned		
CI_PAY_EVT_CHAR	Reference Partitioning	XT244P0	PAY_EVENT_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned		
		XT244S1	SRCH_CHAR_VAL	Global		
CI_PAY_EVT_EXCP	Reference Partitioning	XT161P0	PAY_EVENT_ID	Global Partitioned		
CI_PAY_TNDR	Reference Partitioning	XT265P0	PAY_TENDER_ID	Global		
		XT265S1	MICR_ID	Global		
		XT265S2	TENDER_AMT, PAY_TENDER_ID	Global		

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
		XT265S3	PAY_EVENT_ID	Global		
		XT265S4	PAYOR_ACCT_ID, TENDER_AMT	Global		
		XT265S5	TNDR_CTL_ID, PAY_EVENT_ID	Global		
		XT265S6	ADJ_ID	Global		
		XT265S7	HASH_MICR_ID, PAY_TENDER_ID	Global		
CI_APAY_CLR_STG		XT003P0	APAY_CLR_ID	Global		
		XT003S1	BILL_ID	Global		
		XT003S2	PAY_TENDER_ID	Global		
		XT003S3	BATCH_CD, BATCH_NBR, SCHED_EXTRACT_DT	Global		
		XT003S4	ACCT_APAY_ID	Global		
CI_PAY_TNDR_CHAR		XT413P0	PAY_TENDER_ID, CHAR_TYPE_CD, SEQ_NUM	Global		
		XT413S1	SRCH_CHAR_VAL	Global		
CI_PEVT_DST_DTL	Reference Partitioning	XT730P0	PAY_EVENT_ID, SEQ_NUM	Global Partitioned		
		XT730S1	SRCH_CHAR_VAL	Global		

Payment

This table describes the Payment maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
CI_PAY (Parent)	RANGE (ILM_DT, PAY_ID)				RANGE (PAY_ID)	CI_PAY_EVENT. PAY_DT
		XT156P0	PAY_ID	Global Partitioned		
		XT156S1	ACCT_ID	Global		
		XT156S2	PAY_EVENT_ID	Global		
		XT156S3	PAY_AMT, PAY_ID	Global		
		CM_ILM_ XT156S4	ILM_DT, ILM_ARCH_SW, PAY_ID	Local Partitioned		
CI_PAY_CHAR	Reference Partitioning	XT412P0	PAY_ID, CHAR_TYPE_ CD, SEQ_NUM	Global Partitioned		
		XT412S1	SRCH_CHAR_ VAL	Global		
CI_PAY_EXCP	Reference Partitioning	XT163P0	PAY_ID	Global Partitioned		
CI_PAY_SEG	Reference Partitioning	XT165P0	PAY_SEG_ID	Global		
		XT165S1	PAY_ID	Global		
		XT165S2	SA_ID	Global		

Match Event

This table describes the Match Event maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
CI_MATCH_EVT (Parent)	RANGE (ILM_DT, MATCH_EVT_ID)				RANGE (MATCH_EVT_ID)	CI_MATCH_EVT.CREATE_DT
		XT266P0	MATCH_EVT_ID	Global Partitioned		
		XT266S1	ACCT_ID, MEVT_STATUS_FLG	Global		
		XT266S2	PAY_ID	Global		
		CM_ILM_XT266S3	ILM_DT, ILM_ARCH_SW, MATCH_EVT_ID	Local Partitioned		

Usage Request

This table describes the Usage Request maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
C1_USAGE (Parent)	RANGE (ILM_DT, USAGE_ID)				RANGE (USAGE_ID)	C1_USAGE.CRE_DTTM
		CT368S2	BSEG_ID	Global		
		CT368S3	USER_ID, USAGE_ID	Global		
	Reference Partitioning	XT368P0	USAGE_ID	Global Partitioned		

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
		XT368S1	BUS_OBJ_CD, BO_STATUS_CD, WIN_START_DT , BILL_CYC_CD, USAGE_ID	Global		
		CT368S2	BSEG_ID			
		CT368S3	USER_ID, USAGE_ID			
		XT368S4	SA_ID	Global		
		CT368S4	MASTER_USAGE_ID			
		CT368S5	SA_REL_ID			
		CM_ILM_ XT368S5	ILM_DT, ILM_ARCH_SW, USAGE_ID	Local Partitioned		
C1_USAGE_ CHAR	Reference Partitioning	XT387P0	USAGE_ID, CHAR_TYPE_ CD, SEQ_NUM	Global Partitioned		
		XT387S1	SRCH_CHAR_ VAL	Global		
C1_USAGE_LOG	Reference Partitioning	XT388P0	USAGE_ID, SEQNO	Global Partitioned		
		XT388S1	CHAR_TYPE_ CD, CHAR_VAL_FK1	Global		
C1_USAGE_LOG _PARM	Reference Partitioning	XT389P0	USAGE_ID, SEQNO, PARM_SEQ	Global Partitioned		

Business Flag

This table describes the Business Flag maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
F1_BUS_FLG (Parent)	RANGE (ILM_DT,BUS_FLG_ID)				RANGE(BUS_FLG_ID)	F1_BUS_FLG. CRE_DTTM
		F1T681P0	BUS_FLG_ID	Global Partitioned		
		F1T681S1	BUS_OBJ_CD, BO_STATUS_CD, BUS_FLG_ID	Global		
		CM_ILM_ F1T681S2	ILM_DT, ILM_ARCH_SW, BUS_FLG_ID	Local Partitioned		
F1_BUS_FLG_ CHAR	Reference Partitioning	F1T684P0	BUS_FLG_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned		
		F1T684S0	SRCH_CHAR_VAL	Global		
F1_BUS_FLG_ LOG	Reference Partitioning	F1T685P0	BUS_FLG_ID, SEQNO	Global Partitioned		
		F1T685S1	CHAR_TYPE_CD, CHAR_VAL_FK1	Global		
		F1T685S2	CHAR_TYPE_CD, CHAR_VAL	Global		
F1_BUS_FLG_ LOG_PARM	Reference Partitioning	F1T686P0	BUS_FLG_ID, SEQNO, PARM_SEQ	Global Partitioned		
F1_BUS_FLG_ REL	Reference Partitioning	F1T682P0	BUS_FLG_ID, BUS_FLG_REL_ TYPE_FLG, SEQ_NUM	Global Partitioned		
F1_BUS_FLG_ REL_OBJ	Reference Partitioning	F1T683P0	BUS_FLG_ID, BUS_FLG_REL_ OBJ_TYPE_FLG, SEQ_NUM	Global Partitioned		

Remote Message

This table describes the Remote Message maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
F1_REMOTE_MSG (Parent)	RANGE (ILM_DT,F1_REMOTE_MSG_ID)				RANGE(F1_REMOTE_MSG_ID)	F1_REMOTE_MSG.CRE_DTTM
		F1T735P0	F1_REMOTE_MSG_ID	Global Partitioned		
		F1T735S1	CRE_DTTM	Global		
		F1T735S2	F1_MDT_ID	Global		
		F1T735S3	MAINT_OBJ_CD	Global		
		F1T735S4	PK_VALUE1	Global		
		F1T735S5	F1_DEVICE_MSG_ID	Global		
		F1T735S6	F1_MDT_ID, F1_MSG_CLASS_FLG, F1_DELIVERY_STATE_FLG	Global		
		CM_ILM_F1T735S7	ILM_DT, ILM_ARCH_SW, F1_REMOTE_MSG_ID	Local Partitioned		
F1_REMOTE_MSG_CHA	Reference Partitioning	F1T736P0	F1_REMOTE_MSG_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned		
		F1T736S1	SRCH_CHAR_VAL	Global		
F1_REMOTE_MSG_LOG	Reference Partitioning	F1T737P0	F1_REMOTE_MSG_ID, SEQNO	Global Partitioned		
		F1T737S1	CHAR_TYPE_CD, CHAR_VAL_FK1	Global		
		F1T737S2	CHAR_TYPE_CD, CHAR_VAL	Global		
F1_REMOTE_MSG_LOG_PARM	Reference Partitioning	F1T738P0	F1_REMOTE_MSG_ID, SEQNO, PARM_SEQ	Global Partitioned		

Statistics Snapshot

This table describes the Statistics Snapshot maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
F1_STATS_ SNPSHT(Parent)	RANGE (ILM_DT, SNAPSHOT_ID)				RANGE (SNAPSHOT_ID)	F1_STATS_ SNPSHT. CRE_DTTM
		F1C706P0	SNAPSHOT_ID	Global Partitioned		
		F1C706S1	BUS_OBJ_CD, BO_STATUS_CD, SNAPSHOT_ID	Global		
		CM_ILM_ F1C706S2	ILM_DT, ILM_ARCH_SW, SNAPSHOT_ID	Local		
F1_STATS_ SNPSHT_CHAR	Reference Partitioning	F1C707P0	SNAPSHOT_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned		
		F1C707S1	SRCH_CHAR_VAL	Global		
F1_STATS_ SNPSHT_LOG	Reference Partitioning	F1C708P0	SNAPSHOT_ID, SEQNO	Global Partitioned		
		F1C708S1	CHAR_TYPE_CD, CHAR_VAL_FK1	Global		
		F1C708S2	CHAR_TYPE_CD, CHAR_VAL	Global		
F1_STATS_SNPS HT_LOG_PARM	Reference Partitioning	F1C709P0	SNAPSHOT_ID, SEQNO, PARM_SEQ	Global Partitioned		
F1_STATS_ SNPSHT_REL_ OBJ	Reference Partitioning	F1C710P0	SNAPSHOT_ID, STATS_SNPSHT_ REL_OBJ_TYPE_ FLG, SEQ_NUM	Global Partitioned		

Customer Relationship Request

This table describes the Customer Relationship Request maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
C1_CUST_REL_REQ	RANGE(ILM_DT ,CUST_REL_REQ_ID)				RANGE(CUST_REL_REQ_ID)	C1_CUST_REL_REQ.CRE_DTTM
		C1T017P0	CUST_REL_REQ_ID	Global Partitioned		
		C1T017S1	CUST_REL_REQ_ID, BUS_OBJ_CD, BO_STATUS_CD	Global		
		CM_ILM_C1T017S2	ILM_DT, ILM_ARCH_SW, CUST_REL_REQ_ID	Local		
C1_CUST_REL_REQ_CHAR	Reference Partitioning	C1T014P0	CUST_REL_REQ_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned		
		C1T014S1	SRCH_CHAR_VAL	Global		
C1_CUST_REL_REQ_LOG	Reference Partitioning	C1T015P0	CUST_REL_REQ_ID, SEQNO	Global Partitioned		
		C1T015S1	CHAR_TYPE_CD, CHAR_VAL_FK1	Global		
		C1T015S2	CHAR_TYPE_CD, CHAR_VAL	Global		
C1_CUST_REL_REQ_LOG_PARM	Reference Partitioning	C1T016P0	CUST_REL_REQ_ID, SEQNO, PARM_SEQ	Global Partitioned		
C1_CUST_REL_REQ_REL_OBJ	Reference Partitioning	C1T018P0	CUST_REL_REQ_ID, CRR_REL_OBJ_TY_FLG, SEQ_NUM	Global Partitioned		

Notification Communication Preference

This table describes the Notification Communication Preference maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
C1_NTF_PREF	RANGE(ILM_DT ,NTF_PREF_ID)				RANGE(NTF_PREF_ID)	C1_NTF_PREF.STATUS_UPD_DTTM
		C1T002P0	NTF_PREF_ID	Global Partitioned		
		C1T002S1	ACCT_ID	Global		
		C1T002S2	NTF_PREF_ID, BO_STATUS_CD, STATUS_UPD_DTTM	Global		
		C1T002S3	C1_CONTACT_ID	Global		
		C1T002S4	F1_SVC_TASK_ID	Global		
		CM_ILM_C1T002S5	ILM_DT, ILM_ARCH_SW, NTF_PREF_ID	Local		
C1_NTF_PREF_CHAR	Reference Partitioning	C1T003P0	NTF_PREF_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned		
		C1T003S1	SRCH_CHAR_VAL	Global		
C1_NTF_PREF_ID	Reference Partitioning	C1T006P0	NTF_PREF_ID, NTF_PREF_ID_TYPE_FLG	Global Partitioned		
C1_NTF_PREF_LOG	Reference Partitioning	C1T004P0	NTF_PREF_ID, SEQNO	Global Partitioned		
		C1T004S1	CHAR_TYPE_CD, CHAR_VAL_FK1	Global		
		C1T004S2	CHAR_TYPE_CD, CHAR_VAL	Global		
C1_NTF_PREF_LOG_PARM	Reference Partitioning	C1T005P0	NTF_PREF_ID, SEQNO, PARM_SEQ	Global Partitioned		

Customer Contact

This table describes the Customer Contact maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
CI_CC	RANGE(ILM_DT,CC_ID)				RANGE(CC_ID)	CI_CC. CC_DTTM, CI_CC. LETTER_PRINT_DTTM
		XT057P0	CC_ID	Global Partitioned		
		XT057S1	PER_ID	Global		
		XT057S2	BATCH_CD, BATCH_NBR, CC_ID, PRINT_LETTER_SW	Global		
		XT057S3	CC_TYPE_CD, CC_CL_CD, CC_ID	Global		
		XT057S4	ACCT_ID	Global		
		XT057S6	C1_CONTACT_ID	Global		
		CM_ILM_XT057S7	ILM_DT,ILM_ARCH_SW,CC_ID	Local		
CI_CC_CHAR	Partitioning		CHAR_TYPE_CD	Partitioned	RANGE(CC_ID)	
		C1T007S1	SRCH_CHAR_VAL	Global		
CI_CC_LOG	Reference Partitioning	XT281P0	CC_LOG_ID	Global Partitioned	RANGE(CC_LOG_ID)	
		XT281S1	CC_ID	Global		

Collection Process

This table describes the Collection Process maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
CI_COLL_PROC	RANGE(CRE_DTTM,COLL_PROC_ID)				RANGE (COLL_PROC_ID)	N/A

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
		XT073P0	COLL_PROC_ID	Global Partitioned		
		XT073S1	ACCT_ID	Global		
			COLL_STATUS_ FLG			
CI_COLL_EVT	Reference Partitioning	XT069P0	COLL_PROC_ID, EVT_SEQ	Global Partitioned		
		XT069S0	TRIGGER_BP_SW, COLL_PROC_ID, EVT_SEQ, COLL_EVT_TYP_ CD	Global		
CI_COLL_EVT_ CC	Reference Partitioning	XT070P0	COLL_PROC_ID, EVT_SEQ, CC_ID	Global Partitioned		
		XT070S1	CC_ID	Global		
CI_COLL_PROC _SA	Reference Partitioning	XT074P0	COLL_PROC_ID, SA_ID	Global Partitioned		
		XT074S1	SA_ID	Global		

Cut Process

This table describes the Cut Process maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
CI_CUT_PROC	RANGE(CRE_D TTM,CUT_PROC _ID)				RANGE (CUT_PROC_ID)	N/A
		XT324P0	CUT_PROC_ID	Global Partitioned		
		XT324S1	OD_PROC_ID, OD_EVT_SEQ	Global		
CI_CUT_EVT	Reference Partitioning	XT322P0	CUT_PROC_ID, EVT_SEQ	Global Partitioned		
CI_CUT_EVT_ DEP	Reference Partitioning	XT323P0	CUT_PROC_ID, EVT_SEQ, SEQ_NUM	Global Partitioned		

Financial Transaction

This table describes the Financial Transaction maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
CI_FT	RANGE(CRE_DTTM,FT_ID)				RANGE (FT_ID)	N/A
		XT112P0	FT_ID	Global Partitioned		
		XT112S1	SA_ID, REDUNDANT_SW, BILL_ID	Global		
		XT112S2	BILL_ID	Global		
		XT112S3	PARENT_ID	Global		
		XT112S4	SIBLING_ID	Global		
		XT112S5	MATCH_EVT_ID, FT_ID	Global		
		XT112S6	GL_DISTRIB_STATUS, SCHED_DISTRIB_DT, FT_ID	Global		
		XT112S7	BAL_CTL_GRP_ID, FT_ID	Global		
CI_FT_GL	Reference Partitioning	XT113P0	FT_ID, GL_SEQ_NBR	Global Partitioned		
		XT113S1	GL_ACCT, FT_ID	Global		
CI_FT_PROC	Reference Partitioning	XT097P0	FT_ID, SEQ_NUM	Global Partitioned		
		XT097S1	BATCH_CD, BATCH_NBR	Global		

Overdue Process

This table describes the Overdue Process maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
CI_OD_PROC	RANGE(CRE_DTTM,OD_PROC_ID)				RANGE (OD_PROC_ID)	N/A
		XT315P0	OD_PROC_ID	Global Partitioned		
CI_OD_EVT	Reference Partitioning	XT318P0	OD_PROC_ID, EVT_SEQ	Global Partitioned		
CI_OD_EVT_DEP	Reference Partitioning	XT319P0	OD_PROC_ID, EVT_SEQ, SEQ_NUM	Global Partitioned		
CI_OD_PROC_LOG	Reference Partitioning	XT320P0	OD_PROC_ID, LOG_SEQ	Global Partitioned		
		XT320S1	CHAR_TYPE_CD, CHAR_VAL_FK1	Global		
CI_OD_PROC_LOGPARM	Reference Partitioning	XT321P0	OD_PROC_ID, LOG_SEQ, PARM_SEQ	Global Partitioned		
CI_OD_PROC_OBJ	Reference Partitioning	XT317P0	OD_PROC_ID, SEQ_NUM	Global Partitioned		

Severance Event

This table describes the Severance Event maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
CI_SEV_PROC	RANGE(CRE_DTTM,SEV_PROC_ID)				RANGE (SEV_PROC_ID)	N/A
		XT118P0	SEV_PROC_ID	Global Partitioned		
		XT118S1	SA_ID, SEV_PROC_ID	Global		
		XT118S2	COLL_PROC_ID, EVT_SEQ	Global		
CI_SEV_EVT	Reference Partitioning	XT214P0	SEV_PROC_ID, EVT_SEQ	Global Partitioned		

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
CI_SEV_EVT_DEP	Reference Partitioning	XT216P0	SEV_PROC_ID, EVT_SEQ, SEQ_NUM	Global Partitioned		
CI_SEV_EVT_FA	Reference Partitioning	XT217P0	SEV_PROC_ID, EVT_SEQ, FA_ID	Global Partitioned		
		XT217S1	FA_ID	Global		
CI_SEV_EVT_CC	Reference Partitioning	XT215P0	SEV_PROC_ID, EVT_SEQ, CC_ID	Global Partitioned		
		XT215S1	CC_ID	Global		

WO Process

This table describes the WO Process maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
CI_WO_PROC	RANGE(CRE_DTTM,WO_PROC_ID)				RANGE (WO_PROC_ID)	N/A
		XT061P0	WO_PROC_ID	Global Partitioned		
		XT061S1	ACCT_ID, WO_STATUS_FLG	Global		
CI_WO_EVT	Reference Partitioning	XT059P0	WO_PROC_ID, EVT_SEQ	Global Partitioned		
CI_WO_EVT_CC	Reference Partitioning	XT060P0	WO_PROC_ID, EVT_SEQ, CC_ID	Global Partitioned		
		XT060S1	CC_ID	Global		
CI_WO_PROC_SA	Reference Partitioning	XT062P0	WO_PROC_ID, SA_ID	Global Partitioned		
		XT062S1	SA_ID, WO_SA_STAT_FLG	Global		

General Audit

This table describes the General Audit maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
F1_GNRL_AUDIT	RANGE(ILM_DT, AUDIT_ID)				RANGE (AUDIT_ID)	F1_GNRL_AUDIT.CRE_DTTM
		F1T901P0	AUDIT_ID	Global Partitioned		
		F1T901S1	USER_ID	Global		
		F1T901S1	AUDIT_ID, USER_ID, CRE_DTTM	Global		
		CM_ILM_F1T901S3	ILM_DT, ILM_ARCH_SW, AUDIT_ID	Local		
F1_GNRL_AUDIT_CHAR	Reference Partitioning	F1C504P0	AUDIT_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned		
		F1C504S1	SRCH_CHAR_VAL	Global		
F1_GNRL_AUDIT_VAL	Reference Partitioning	F1T902P0	AUDIT_ID, FLD_NAME	Global Partitioned		
		F1T902S1	AUDIT_ID, FLD_NAME, FLD_VAL	Global		

Chapter 7

Information Lifecycle Management and MDM Data Archiving in C2M

Oracle Utilities Customer To Meter provides support for Information Lifecycle Management (ILM) and Data Archiving.

ILM is process to address data management issues, with a combination of processes, policies, software and hardware so that the appropriate technology can be used for each phase of the lifecycle of the data. The lifecycle of data typically refers to the fact that the most recent data is active in the system and as time passes the data is accessed less frequently or not at all. The costs of storing data that are accessed infrequently can be reduced by moving the data to lower cost mass storage media. Typically this involves a trade-off between cost and increased access times.   Based on business needs, data may eventually be archived and purged from the database and kept offline ready to be restored if required.

This chapter includes:

- ILM Implementation Overview
- ILM Implementation Components
- ILM Database Administrator’s Tasks

ILM Implementation Overview

The implementation of ILM for products based on Oracle Utilities Application Framework includes a combination of application and database configuration and requires Oracle Partitioning.

An underlying design principle of the Oracle Utilities Application Framework ILM implementation is the concept that the age of the data may not the only criterion used to determine when a record is able to be archived. There may be business rules that dictate that some records are still current and must not be archived yet.

ILM enabled objects have a combination of an ILM date and an ILM Archive Switch. The ILM date is used in conjunction with partitioning to group data by age. The ILM Archive Switch is set by a background process when the record meets the business rules specific to that Maintenance Object if the record is eligible to be archived. The ILM Archive Switch gives Database Administrators an easy method to check when all records in a partition meet the business criteria that make the partition eligible to be archived. If the ILM Archive Switch is set for all records, then the DBA can take the steps required to archive the partition.

Moving data between storage tiers takes advantage of the partitioning by ILM Date but does not require that the ILM Archive Switch is set. Oracle recommends using the Oracle Database ILM Assistant to assist with this process.

ILM Implementation Components

The ILM based solution contains a number of components.

- ILM Specific Table Columns - For any Maintenance Object (MO) that has been configured to support ILM, the primary table of the MO includes two columns: ILM Date and ILM Archive Switch.
  - ILM_DT - This date column is defaulted to an appropriate date (typically the system date) when a new record is inserted, the MO is partitioned on the ILM_DT, so it should only be updated in exceptional circumstances as this would cause the record to be deleted from its current partition and inserted into a different partition, which is a relatively expensive operation.
  - ILM_ARCHIVE_SW - This field is set to N (Not yet eligible for archiving) when a new record is inserted. Subsequent reviews of "old" records may assess the data and change the value to "Y" based on business rules indicating that the record is eligible to be archived.
- Database Referential Integrity Constraints - These are required for reference partitioning of Child tables of ILM enabled MOs
- Partitioning - Partitioning is mandatory for ILM implementation. It is used to separate the data by ILM date so that data of a similar age is kept together.
- One Tablespace per Partition - The ILM implementation requires that each MO partition resides in a dedicated tablespace so that they can be easily managed.
- Naming Convention - This section covers the recommended naming convention to be used for partitions/subpartitions and tablespaces.

ILM Database Administrator’s Tasks

For a database administrator, there are two key phases involved with managing your data using ILM.

- Preparation Phase - This phase covers the database level configuration that needs to be done before the ILM solution runs in a production environment.
- On-going Maintenance Phase - This phase covers the ongoing maintenance tasks.

Preparation Phase

> Note: In order to successfully implement ILM as described here, the following DB Version and Patch are pre-requisites: database version 12.1.0.2.0 Enterprise Edition and Patch 15996848.

The steps needed to enable ILM functionality differ depending on whether ILM is enabled as part of the initial implementation of the product or enabled ILM on an existing implementation where data already exists in the respective tables.

- Initial Install – For an initial installation, the section Module Specific ILM Implementation Details outlines the additional steps to be performed on base delivered ILM Enabled Tables to conform to ILM requirements. In addition, Appendix E: Sample SQL for Enabling ILM in C2M for MDM (Initial Install) provides sample reference DDLs using two maintenance objects as examples.
- Transform NON-ILM implementation to ILM Enabled Implementation: The following steps provide a high level overview of steps that must be performed to implement ILM on enabled MOs for an existing implementation. The Appendix F: Sample SQL For Enabling ILM in C2M for MDM (Existing Installation) provides detailed information using To Do Entry as an example. Also refer to Appendix C: Sample SQL for Enabling ILM with Sub Retention in MDM (Existing Installation) or detailed information using D1_INIT_MSRMT_DATA as an example.

1. Rename the existing tables (Parent table followed by child table), and primary key index associated with ILM enabled MOs by renaming the tables.
2. Save the DDLs for the secondary indexes as you will need to recreate them later.
3. Drop secondary indexes on the renamed tables.
4. Create Partitioned table with no secondary indexes for ILM enabled MOs using a CTAS operation (Create Table as Select), which will also load the data into the partitioned table structure.

   Functional Note: ILM enabled MOs should have the ILM date (ILM_DT) populated when data is moved into the new partitioned table. Please refer to the Module Specific ILM Implementation Details section below for initial load details on which date column to use as the basis for populating the ILM date. Often it is based on Create Date (CRE_DTTM). ILM_ARCH_SW should initially be set to ‘N’.

   Note: Certain ILM enabled MOs, specifically IMD, Device Event, and Activity, support more than one retention period also known as sub retention periods. For these MOs the table will be sub-partitioned based on the retention period. Furthermore, a more detailed approach will be required to set both the ILM date (ILM_DT) and the retention period (<field name>). If your implementation does not wish to leverage the ability to define multiple retention periods for these MOs, this note can be ignored and the general guidelines for ILM enablement can be followed. If your implementation wishes to leverage the multiple retention period capability then please refer to the section Module Specific ILM Implementation Details For Sub Retention below.

5. Enable logging option.
6. Create Primary Key index.
7. Create Primary Key Constraint of parent table.
8. Create secondary indexes for the newly-created partitioned tables. This includes creating an index used specifically to benefit the ILM Crawler batch. The recommendation for this index name is to prefix it with "ILM".

    Note: This can be created specifying parallel index create; remember to turn off parallelism after the index is created.

9. Follow a similar operation for all child tables for this MO, such as rename child table, and primary key index, generate DDL for secondary index, drop secondary index etc. Sample DDL for child tables their partitioning and indexes can be found in Appendix B: Sample SQL for Enabling ILM in MDM (Existing Installation). If sub retention is supported, sample DDL for child tables can be found in Appendix C: Sample SQL for Enabling ILM with Sub Retention in MDM (Existing Installation). Please note that child table should be partitioned using reference partitioning of the parent table's partitioning key.
10. Drop the original, renamed tables after verifying the newly created partitioned tables.
11. If sub-retention is not supported, create the ILM specific indexes from section Module Specific ILM Implementation Details.

Table Name	Index Name
CI_TD_ENTRY	CM_ILM_XT039S8
D1_ACTIVITY	CM_ILM_D1T319S1
D1_COMM_IN	CM_ILM_D1T386S1
D1_COMM_OUT	CM_ILM_D1T380S1
D1_COMPL_EVT	CM_ILM_D1T340S1
D1_DVC_EVT	CM_ILM_D1T400S4
D1_INIT_MSRMT_DATA	CM_ILM_D1T304S4
D1_USAGE	CM_ILM_D1T281S2
D1_USAGE_EXCP	CM_ILM_D1T443S1
D1_VEE_EXCP	CM_ILM_D1T308S2
D1_SNAPSHOT_DL_CTRL	CM_ILM_D1T433S1
D1_SP_SNAP_DL	CM_ILM_D1T434S1
D1_SP_UNR_USG_SNAP_DL	CM_ILM_D1T438S1

Table Name	Index Name
D1_SP_USG_SNAP_DL	CM_ILM_D1T436S1
D1_SP_VEE_EXCP_SNAP_DL	CM_ILM_D1T440S1
F1_BUS_FLG	CM_ILM_F1T681S2
F1_ERASURE_SCHED	CM_ILM_F1T756S1
F1_OBJ_REV	CM_ILM_FT035S6
F1_OUTMSG	CM_ILM_FT010S2
F1_PROC_STORE	CM_ILM_F1T747S1
F1_REMOTE_MSG	CM_ILM_F1T735S7
F1_STATS_SNPSHT	CM_ILM_F1C706S2
F1_SVC_TASK	CM_ILM_F1C474S3
F1_SYNC_REQ	CM_ILM_F1T014S4
F1_SYNC_REQ_IN	CM_ILM_F1T191S3

12. If sub-retention is supported, create the following ILM specific indexes from the Module Specific ILM Implementation Details section:

Table Name	Index Name
CI_TD_ENTRY	CM_ILM_XT039S8
D1_COMM_IN	CM_ILM_D1T386S1
D1_COMM_OUT	CM_ILM_D1T380S1
D1_COMPL_EVT	CM_ILM_D1T340S1
D1_USAGE	CM_ILM_D1T281S2
D1_USAGE_EXCP	CM_ILM_D1T443S1
D1_VEE_EXCP	CM_ILM_D1T308S2
D1_SNAPSHOT_DL_CTRL	CM_ILM_D1T433S1
D1_SP_SNAP_DL	CM_ILM_D1T434S1
D1_SP_UNR_USG_SNAP_DL	CM_ILM_D1T438S1
D1_SP_USG_SNAP_DL	CM_ILM_D1T436S1
D1_SP_VEE_EXCP_SNAP_DL	CM_ILM_D1T440S1
F1_BUS_FLG	CM_ILM_F1T681S2
F1_ERASURE_SCHED	CM_ILM_F1T756S1
F1_OBJ_REV	CM_ILM_FT035S6
F1_OUTMSG	CM_ILM_FT010S2
F1_PROC_STORE	CM_ILM_F1T747S1

Table Name	Index Name
F1_REMOTE_MSG	CM_ILM_F1T735S7
F1_STATS_SNPSHT	CM_ILM_F1C706S2
F1_SVC_TASK	CM_ILM_F1C474S3
F1_SYNC_REQ	CM_ILM_F1T014S4
F1_SYNC_REQ_IN	CM_ILM_F1T191S3

and the ILM subretention specific indexes from the Module Specific ILM Implementation Details For Sub Retention section:

Table Name	Index Name
D1_ACTIVITY	CM_ILM_D1T319S1
D1_DVC_EVT	CM_ILM_D1T400S4
D1_INIT_MSRMT_DATA	CM_ILM_D1T304S4

Module Specific ILM Implementation Details

This section outlines each maintenance object that has been configured to support ILM. The parent table is noted. Other tables are child tables of the parent unless otherwise noted. In each case, the partitioning strategy is indicated.

All indexes are listed with a recommendation whether the index should be global or local and whether the index should be partitioned. In addition to the base delivered indexes, each parent table includes a recommended ILM specific local index to build with the ILM_DT, ILM_ARCH_SW and the primary key of the table. The recommended column that should be used to populate the ILM_DT is also shown.

This section details the following maintenance objects:

- To Do Entry
- Sync Request (Outbound)
- Inbound Sync Request
- Outbound Message
- Service Task
- Object Revision
- Business Flag
- Remote Message
- Statistics Snapshot
- Object Erasure
- Process Flow
- Activity
- Communication In
- Communication Out

- Device Event
- Completion Event
- Initial Measurement Data
- Usage Transaction
- Usage Transaction Exception
- VEE Exception
- Snapshot Tables

To Do Entry

This table describes the To Do Entry maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
CI_TD_ENTRY (Parent)	RANGE (ILM_DT, TD_ENTRY_ID)					CI_TD_ENTRY.CRE_DTTM
		XT039P0	TD_ENTRY_ID	Global Partitioned	RANGE (TD_ENTRY_ID)	
		XT039S2	ASSIGNED_TO, TD_ENTRY_ID	Global		
		XT039S3	ENTRY_STATUS_FLG, ASSIGNED_TO	Global		
		XT039S4	ROLE_ID, TD_TYPE_CD, ENTRY_STATUS_FLG, TD_PRIORITY_FLG	Global		
		XT039S5	BATCH_CD, BATCH_NBR, ENTRY_STATUS_FLG	Global		
		XT039S6	TD_ENTRY_ID, ASSIGNED_TO, ENTRY_STATUS_FLG	Global		
		XT039S7	COMPLETE_USER_ID, COMPLETE_DTTM, TD_ENTRY_ID	Global		
		CM_ILM_XT039S8	ILM_DT, ILM_ARCH_SW, TD_ENTRY_ID	Local Partitioned		
CI_TD_ENTRY_CHA	Reference Partitioning	XT701P0	TD_ENTRY_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned		
		XT701S1	SRCH_CHAR_VAL, CHAR_TYPE_CD, TD_ENTRY_ID	Global		

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
		XT701S2	CHAR_VAL_FK1	Global		
CI_TD_DRLKEY	Reference Partitioning	XT037P0	TD_ENTRY_ID, SEQ_NUM	Global Partitioned		
		XT037S1	KEY_VALUE, TD_ENTRY_ID	Global		
CI_TD_LOG	Reference Partitioning	XT721P0	TD_ENTRY_ID, SEQ_NUM	Global Partitioned		
		XT721S1	LOG_DTTM,USER_ID, LOG_TYPE_FLG, TD_ENTRY_ID	Global		
CI_TD_MSG_PARM(Child table of CI_TD_LOG)	Reference Partitioning	XT040P0	TD_ENTRY_ID, SEQ_NUM	Global		
CI_TD_SRTKEY	Reference Partitioning	XT041P0	TD_ENTRY_ID, SEQ_NUM	Global Partitioned		
		XT041S1	KEY_VALUE, TD_ENTRY_ID	Global		

Sync Request (Outbound)

This table describes the Sync Request (Outbound) maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
F1_SYNC_REQ (Parent)	RANGE (ILM_DT, F1_SYNC_REQ_ID)				RANGE (F1_SYNC_REQ_ID)	F1_SYNC_REQ.CRE_DTTM
		F1T014P0	F1_SYNC_REQ_ID	Global Partitioned		
		F1T014S1	BO_STATUS_CD, BUS_OBJ_CD, F1_SYNC_REQ_ID	Global		
		F1T014S2	BO_STATUS_REASON_CD	Global		

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
		F1T014S3	MAINT_OBJ_CD, PK_VALUE1, PK_VALUE2, F1_SYNC_REQ_ID	Global		
		CM_ILM_F1T014S4	ILM_DT, ILM_ARC_SW, F1_SYNC_REQ_ID	Local Partitioned		
F1_SYNC_REQ_CHAR	Reference Partitioning	F1T017P0	F1_SYNC_REQ_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned		
		F1T017S1	SRCH_CHAR_VAL	Global		
F1_SYNC_REQ_EXTRACT	Reference Partitioning	F1T019P0	F1_SYNC_REQ_ID, SEQ_NUM	Global Partitioned		
F1_SYNC_REQ_LOG	Reference Partitioning	F1T015P0	F1_SYNC_REQ_ID, SEQNO	Global Partitioned		
		F1T015S1	CHAR_TYPE_CD, CHAR_VAL_FK1	Global		
		F1T015S2	CHAR_TYPE_CD, CHAR_VAL	Global		
		F1T015S3	BO_STATUS_REASON_CD	Global		
F1_SYNC_REQ_LOG_PARM (Child Table of F1_SYNC_REQ_LOG_PARM)	Reference Partitioning	F1T016P0	F1_SYNC_REQ_ID, SEQNO, PARM_SEQ	Global Partitioned		

Note: It is recommended that data retention policies and rules for this object match the policies and rules implemented for the Inbound Sync Request on the target system to avoid data inconsistencies when auditing.

Inbound Sync Request

This table describes the Inbound Sync Request maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
F1_SYNC_REQ_IN (Parent)	RANGE(ILM_DT, F1_SYNC_REQ_IN_ID)				RANGE (F1_SYNC_REQ_IN_ID)	F1_SYNC_REQ_IN.CRE_DTTM
		F1T191P0	F1_SYNC_REQ_IN_ID	Global Partitioned		
		F1T191S1	BO_STATUS_CD, BUS_OBJ_CD, F1_SYNC_REQ_IN_ID	Global		
		F1T191S2	MAINT_OBJ_CD, EXT_PK_VALUE1, NT_XID_CD, PK_VALUE1	Global		
		CM_ILM_F1T191S3	ILM_DT, ILM_ARCH_SW, F1_SYNC_REQ_IN_ID	Local Partitioned		
F1_SYNC_REQ_IN_CHAR	Reference Partitioning	F1T193P0	F1_SYNC_REQ_IN_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned		
		F1T193S1	SRCH_CHAR_VAL	Global		
F1_SYNC_REQ_IN_EXCP	Reference Partitioning	F1T197P0	F1_SYNC_REQ_IN_ID, SEQNO	Global Partitioned		
F1_SYNC_REQ_IN_EXCP_PARM (Child Table of F1_SYNC_REQ_IN_EXCP)	Reference Partitioning	F1T198P0	F1_SYNC_REQ_IN_ID, SEQNO, PARM_SEQ	Global Partitioned		
F1_SYNC_REQ_IN_LOG	Reference Partitioning	F1T194P0	F1_SYNC_REQ_IN_ID, SEQNO	Global Partitioned		
		F1T194S1	CHAR_TYPE_CD, CHAR_VAL_FK1	Global		
		F1T194S2	CHAR_TYPE_CD, CHAR_VAL	Global		
F1_SYNC_REQ_IN_LOG_PARM (Child Table of F1_SYNC_REQ_IN_LOG)	Reference Partitioning	F1T195P0	F1_SYNC_REQ_IN_ID, SEQNO, PARM_SEQ	Global Partitioned		

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
F1_SYNC_REQ_ IN_REL_OBJ	Reference Partitioning	F1T192P0	F1_SYNC_REQ_IN_ID, MAINT_OBJ_CD, REL_OBJ_TYPE_FLG	Global Partitioned		

Note: It is recommended that data retention policies and rules for this object match the policies and rules implemented for the Outbound Sync Request on the source system to avoid data inconsistencies when auditing.

Outbound Message

This table describes the Outbound Message maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
F1_OUTMSG (Parent)	RANGE (ILM_DT, OUTMSG_ID)				RANGE (OUMSG_ID)	F1_OUTMSG. CRE_DTTM
		FT010P0	OUTMSG_ID	Global Partitioned		
		FT010S1	OUTMSG_STATUS_FLG, OUTMSG_TYPE_CD	Global		
		CM_ILM_FT010S2	ILM_DT, ILM_ARC_SW, OUTMSG_ID	Local Partitioned		
F1_OUTMSG_ ERRPARM	Reference Partitioning	FT011P0	OUTMSG_ID, PARM_SEQ	Global Partitioned		

Service Task

This table describes the Service Task maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
F1_SVC_TASK (Parent)	RANGE (ILM_DT, F1_SVC_TASK_ID)				RANGE (F1_SVC_TASK_ ID_)	F1_SVC_TASK. CRE_DTTM
		F1C474P0	F1_SVC_TASK_ID	Global Partitioned		
		F1C474S1	F1_STASK_TYPE_ CD	Global		
		F1C474S2	BUS_OBJ_CD	Global		
		CM_ILM_F1C474 S2	ILM_DT, ILM_ARC_SW, F1_SVC_TASK_ID	Local Partitioned		
F1_SVC_TASK_ CHAR	Reference Partitioning	F1C476P0	F1_SVC_TASK_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned		
		F1C476S1	SRCH_CHAR_VAL	Global		
F1_SVC_TASK_ LOG	Reference Partitioning	F1C477P0	F1_SVC_TASK_ID, SEQNO	Global Partitioned		
		F1C477S1	CHAR_TYPE_CD, CHAR_VAL_FK1	Global		
		F1C477S2	CHAR_TYPE_CD, CHAR_VAL	Global		
F1_SVC_TASK_ LOG_PARM (Child Table of F1_SVC_TASK_ LOG)	Reference Partitioning	F1C478P0	F1_SVC_TASK_ID, SEQNO, PARM_SEQ	Global Partitioned		
F1_SVC_TASK_ REL_OBJ	Reference Partitioning	F1C479P0	F1_SVC_TASK_ID, MAINT_OBJ_CD, SEQ_NUM	Global Partitioned		
		F1C479S1	MAINT_OBJ_CD, PK_VALUE1, PK_VALUE2, PK_VALUE3	Global		

Object Revision

This table describes the Object Revision maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
F1_OBJ_REV (Parent)	RANGE (ILM_DT, REV_ID)				RANGE (REV_ID)	F1_OBJ_REV. STATUS_UPD_DTTM
		FT035P0	REV_ID	Global Partitioned		
		FT035S1	BO_STATUS_CD, BUS_OBJ_CD, REV_ID	Global		
		FT035S2	MAINT_OBJ_CD, PK_VALUE1	Global		
		FT035S3	EXT_REFERENCE_ID, MAINT_OBJ_CD	Global		
		FT035S4	USER_ID, MAINT_OBJ_CD	Global		
		FT035S5	PK_VALUE1	Global		
		CM_ILM_FT035S6	ILM_DT, ILM_ARC_SW, REV_ID	Local Partitioned		
F1_OBJ_REV_CHAR	Reference Partitioning	FT037P0	REV_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned		
		FT037S1	SRCH_CHAR_VAL	Global		
F1_OBJ_REV_LOG	Reference Partitioning	FT039P0	REV_ID, SEQNO	Global Partitioned		
F1_OBJ_REV_LOG_PARM (Child Table of F1_OBJ_REV_LOG)	Reference Partitioning	FT040P0	REV_ID, SEQNO, PARM_SEQ	Global Partitioned		

Note: This maintenance object is enabled for ILM, however it is not used in a production environment. It is typically used in a development or configuration environment. Your implementation should review its use of this functionality and consider whether or not it is a candidate for ILM and in which region.

Business Flag

This table describes the Business Flag maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
F1_BUS_FLG (Parent)	RANGE (ILM_DT,BUS_FLG_ID)				RANGE(BUS_FLG_ID)	F1_BUS_FLG.CRE_DTTM
		F1T681P0	BUS_FLG_ID	Global Partitioned		
		F1T681S1	BUS_OBJ_CD, BO_STATUS_CD, BUS_FLG_ID	Global		
		CM_ILM_F1T681S2	ILM_DT, ILM_ARCH_SW, BUS_FLG_ID	Local Partitioned		
F1_BUS_FLG_CHAR	Reference Partitioning	F1T684P0	BUS_FLG_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned		
		F1T684S0	SRCH_CHAR_VAL	Global		
F1_BUS_FLG_LOG	Reference Partitioning	F1T685P0	BUS_FLG_ID, SEQNO	Global Partitioned		
		F1T685S1	CHAR_TYPE_CD, CHAR_VAL_FK1	Global		
		F1T685S2	CHAR_TYPE_CD, CHAR_VAL	Global		
F1_BUS_FLG_LOG_PARM	Reference Partitioning	F1T686P0	BUS_FLG_ID, SEQNO, PARM_SEQ	Global Partitioned		
F1_BUS_FLG_REL	Reference Partitioning	F1T682P0	BUS_FLG_ID, BUS_FLG_REL_TYPE_FLG, SEQ_NUM	Global Partitioned		
F1_BUS_FLG_REL_OBJ	Reference Partitioning	F1T683P0	BUS_FLG_ID, BUS_FLG_REL_OBJ_TYPE_FLG, SEQ_NUM	Global Partitioned		

Remote Message

This table describes the Remote Message maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
F1_REMOTE_MSG (Parent)	RANGE (ILM_DT,F1_REMOTE_MSG_ID)				RANGE(F1_REMOTE_MSG_ID)	F1_REMOTE_MSG.CRE_DTTM
		F1T735P0	F1_REMOTE_MSG_ID	Global Partitioned		
		F1T735S1	CRE_DTTM	Global		
		F1T735S2	F1_MDT_ID	Global		
		F1T735S3	MAINT_OBJ_CD	Global		
		F1T735S4	PK_VALUE1	Global		
		F1T735S5	F1_DEVICE_MSG_ID	Global		
		F1T735S6	F1_MDT_ID, F1_MSG_CLASS_FLG, F1_DELIVERY_STATE_FLG	Global		
		CM_ILM_F1T735S7	ILM_DT, ILM_ARCH_SW, F1_REMOTE_MSG_ID	Local Partitioned		
F1_REMOTE_MSG_CHAR	Reference Partitioning	F1T736P0	F1_REMOTE_MSG_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned		
		F1T736S1	SRCH_CHAR_VAL	Global		
F1_REMOTE_MSG_LOG	Reference Partitioning	F1T737P0	F1_REMOTE_MSG_ID, SEQNO	Global Partitioned		
		F1T737S1	CHAR_TYPE_CD, CHAR_VAL_FK1	Global		
		F1T737S2	CHAR_TYPE_CD, CHAR_VAL	Global		
F1_REMOTE_MSG_LOG_PARM	Reference Partitioning	F1T738P0	F1_REMOTE_MSG_ID, SEQNO, PARM_SEQ	Global Partitioned		

Statistics Snapshot

This table describes the Statistics Snapshot maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
F1_STATS_ SNPSHT(Parent)	RANGE (ILM_DT, SNAPSHOT_ID)				RANGE (SNAPSHOT_ID)	F1_STATS_ SNPSHT. CRE_DTTM
		F1C706P0	SNAPSHOT_ID	Global Partitioned		
		F1C706S1	BUS_OBJ_CD, BO_STATUS_CD, SNAPSHOT_ID	Global		
		CM_ILM_F1C706 S2	ILM_DT, ILM_ARCH_SW, SNAPSHOT_ID	Local Partitioned		
F1_STATS_ SNPSHT_CHAR	Reference Partitioning	F1C707P0	SNAPSHOT_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned		
		F1C707S1	SRCH_CHAR_VAL	Global		
F1_STATS_ SNPSHT_LOG	Reference Partitioning	F1C708P0	SNAPSHOT_ID, SEQNO	Global Partitioned		
		F1C708S1	CHAR_TYPE_CD, CHAR_VAL_FK1	Global		
		F1C708S2	SNAPSHOT_ID, SEQNO, PARM_SEQ	Global Partitioned		
F1_STATS_ SNPSHT_REL_ OBJ	Reference Partitioning	F1C710P0	SNAPSHOT_ID, STATS_SNPSHT_ REL_OBJ_TYPE_ FLG, SEQ_NUM	Global Partitioned		

Object Erasure

This table describes the Object Erasure maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
F1_ERASURE_SCHED (Parent)	RANGE (ILM_DT, ERASURE_SCHED_ID)					F1_ERASURE_SCHED.STATUS_UPD_DTTM
		F1T756P0	ERASURE_SCHED_ID	GLOBAL Partitioned	RANGE (ERASURE_SCHED_ID)	
		CM_ILM_F1T756S1	ILM_DT, ILM_ARCH_SW, ERASURE_SCHED_ID	LOCAL		
F1_ERASURE_SCHED_LOG	Reference partitioning	F1T757P0	ERASURE_SCHED_ID, SEQNO	GLOBAL Partitioned		
F1_ERASURE_SCHED_LOG_PARM	Reference partitioning	F1T758P0	ERASURE_SCHED_ID, SEQNO, PARM_SEQ	GLOBAL Partitioned		

Process Flow

This table describes the Process Flow maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
F1_PROC_STORE (Parent)	RANGE(ILM_DT, PROC_STORE_ID)					F1_PROC_STORE.STATUS_UPD_DTTM
		F1T747P0	PROC_STORE_ID	GLOBAL Partitioned	RANGE(PROC_STORE_ID)	
		CM_ILM_F1T747S1	ILM_DT, ILM_ARCH_SW, PROC_STORE_ID	LOCAL		
F1_PROC_STORE_DTL_ELEMENTS	Reference partitioning	F1T748P0	PROC_STORE_ID, CHAR_TYPE_CD, SEQ_NUM	GLOBAL Partitioned		
F1_PROC_STORE_LOG	Reference partitioning	F1T749P0	PROC_STORE_ID, SEQNO	GLOBAL Partitioned		

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
F1_PROC_STORE_LOG_PARM	Reference partitioning	F1T750P0	PROC_STORE_ID SEQNO, PARM_SEQ	GLOBAL Partitioned		

Activity

If sub retention periods will be defined for this MO, then please follow the guidelines set forth in section Module Specific ILM Implementation Details For Sub Retention.

This table describes the Activity maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
D1_ACTIVITY (Parent)	RANGE (ILM_DT, D1_ACTIVITY_ID) **Note**: Default is to use sub-retention or use RANGE (ILM_DT, D1_ACTIVITY_ID) if not using sub-retention.					D1_ACTIVITY. CRE_DTTM
		D1T319P0	D1_ACTIVITY_ID	Global Partitioned	RANGE (D1_ACTIVITY_ID)	
		D1T319S0	BUS_OBJ_CD, BO_STATUS_CD, D1_ACTIVITY_ID	Global Partitioned	HASH(BUS_OBJ_CD, BO_STATUS_CD, D1_ACTIVITY_ID)	
		CM_ILM_D1T319S1	ILM_DT, ILM_ARCH_SW, D1_ACTIVITY_ID	Local		
D1_ACTIVITY_CHAR	REFERENCE (D1_ACTIVITY_CHAR_FK)					
		D1T320P0	D1_ACTIVITY_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned	RANGE(D1_ACTIVITY_ID)	
		D1T320S0	SRCH_CHAR_VAL	Global Partitioned	HASH(SRCH_CHAR_VAL)	
D1_ACTIVITY_IDENTIFIER	REFERENCE (D1_ACTIVITY_IDENTIFIER_FK)					

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
		D1T330P0	D1_ACTIVITY_ID, ACTIVITY_ID_TYPE_FLG	Global Partitioned	RANGE(D1_ACTIVITY_ID)	
		D1T330S0	ACTIVITY_ID_TYPE_FLG, ID_VALUE	Global Partitioned	HASH(ACTIVITY_ID_TYPE_FLG, ID_VALUE)	
		D1T330S1	ACTIVITY_ID_TYPE_FLG, UPPER(ID_VALUE)			
D1_ACTIVITY_LOG	REFERENCE (D1_ACTIVITY_LOG_FK)					
		D1T321P0	D1_ACTIVITY_ID, SEQNO	Global Partitioned	RANGE(D1_ACTIVITY_ID)	
		D1T321S1	CHAR_TYPE_CD, CHAR_VAL_FK1	Global Partitioned	HASH(CHAR_TYPE_CD, CHAR_VAL_FK1)	
		D1T321S2	CHAR_TYPE_CD, CHAR_VAL	Global Partitioned	HASH(CHAR_TYPE_CD, CHAR_VAL)	
D1_ACTIVITY_LOG_PARM	REFERENCE (D1_ACTIVITY_LOG_PARM_FK)					
		D1T322P0	D1_ACTIVITY_ID, SEQNO PARM_SEQ	Global Partitioned	RANGE(D1_ACTIVITY_ID)	
D1_ACTIVITY_REL	REFERENCE (D1_ACTIVITY_REL_FK)					
		D1T323P0	D1_ACTIVITY_ID, ACTIVITY_REL_TYPE_FLG	Global Partitioned	RANGE(D1_ACTIVITY_ID)	
		D1T323S0	REL_ACTIVITY_ID	Global Partitioned	HASH(REL_ACTIVITY_ID)	
D1_ACTIVITY_REL_OBJ	REFERENCE (D1_ACTIVITY_REL_OBJ_FK)					
		D1T324P0	D1_ACTIVITY_ID, MAINT_OBJ_CD, ACTIVITY_REL_OBJ_TYPE_FLG	Global Partitioned	RANGE(D1_ACTIVITY_ID)	
		D1T324S0	PK_VALUE1, PK_VALUE2, PK_VALUE3, PK_VALUE4, PK_VALUE5, MAINT_OBJ_CD	Global Partitioned	HASH(PK_VALUE1, PK_VALUE2, PK_VALUE3, PK_VALUE4)	

Communication In

This table describes the Communication In maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
D1_COMM_IN (Parent)	RANGE(ILM_DT, D1_COMM_ID)					D1_COMM_IN. CRE_DTTM
		D1T386P0	D1_COMM_ID	Global Partitioned	RANGE (D1_COMM_ID)	
		D1T386S1	BUS_OBJ_CD, BO_STATUS_CD, D1_COMM_ID	Global Partitioned	HASH(BUS_OBJ_CD, BO_STATUS_CD, D1_COMM_ID)	
		CM_ILM_ D1T386S1	ILM_DT, ILM_ARCH_SW, D1_COMM_ID	Local		
D1_COMM_IN_ CHAR	REFERENCE (D1_COMM_IN_ CHAR_FK)					
		D1T387P0	D1_COMM_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned	RANGE (D1_COMM_ID)	
		D1T387S0	SRCH_CHAR_VAL	Global Partitioned	HASH(SRCH_CHAR _VAL)	
D1_COMM_IN_ IDENTIFIER	REFERENCE (D1_COMM_IN_ IDENTIFIER_FK)					
		D1T391P0	D1_COMM_ID, COMM_ID_TYPE_FLG	Global Partitioned	RANGE(D1_COMM _ID)	
		D1T391S0	COMM_ID_TYPE_FLG, ID_VALUE	Global Partitioned	HASH(COMM_ID_ TYPE_FLG, ID_VALUE)	
		D1T391S1	COMM_ID_TYPE_FLG, UPPER(ID_VALUE)			
D1_COMM_IN_ LOG	REFERENCE (D1_COMM_IN_ LOG_FK)					
		D1T388P0	D1_COMM_ID, SEQNO	Global Partitioned	RANGE(D1_COMM _ID)	
		D1T388S1	CHAR_TYPE_CD, CHAR_VAL_FK1	Global Partitioned	HASH(CHAR_ TYPE_CD, CHAR_VAL_FK1)	
		D1T388S2	CHAR_TYPE_CD, CHAR_VAL	Global Partitioned	HASH(CHAR_ TYPE_CD, CHAR_VAL)	
D1_COMM_IN_ LOG_PARM	REFERENCE (D1_COMM_IN_ LOG_PARM_FK)					

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
		D1T389P0	D1_COMM_ID, SEQNO PARM_SEQ	Global Partitioned	RANGE(D1_COMM_ID)	
D1_COMM_IN_REL_OBJ	REFERENCE (D1_COMM_IN_REL_OBJ_FK)					
		D1T390P0	D1_COMM_ID, MAINT_OBJ_CD, COMM_REL_OBJ_TYPE_FLG	Global Partitioned	RANGE(D1_COMM_ID)	
		D1T390S0	PK_VALUE1, PK_VALUE2, PK_VALUE3, PK_VALUE4, PK_VALUE5, MAINT_OBJ_CD	Global Partitioned	HASH(PK_VALUE1, PK_VALUE2, PK_VALUE3, PK_VALUE4)	

Communication Out

This table describes the Communication Out maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
D1_COMM_OUT (Parent)	RANGE(ILM_DT, D1_COMM_ID)					D1_COMM_OUT.CRE_DTTM
		D1T380P0	D1_COMM_ID	Global Partitioned	RANGE (D1_COMM_ID)	
		D1T380S1	BUS_OBJ_CD, BO_STATUS_CD, D1_COMM_ID	Global Partitioned	HASH(BUS_OBJ_CD, BO_STATUS_CD, D1_COMM_ID)	
		CM_ILM_D1T380S1	ILM_DT, ILM_ARCH_SW, D1_COMM_ID	Local		
D1_COMM_OUT_CHAR	REFERENCE (D1_COMM_OUT_CHAR_FK)					
		D1T381P0	D1_COMM_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned	RANGE (D1_COMM_ID)	
		D1T381S0	SRCH_CHAR_VAL	Global Partitioned	HASH(SRCH_CHAR_VAL)	

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
D1_COMM_OUT_IDENTIFIER	REFERENCE (D1_COMM_OUT_IDENTIFIER_FK)					
		D1T385P0	D1_COMM_ID, COMM_ID_TYPE_FLG	Global Partitioned	RANGE(D1_COMM_ID)	
		D1T385S0	COMM_ID_TYPE_FLG, ID_VALUE	Global Partitioned	HASH(COMM_ID_TYPE_FLG, ID_VALUE)	
		D1T385S1	COMM_ID_TYPE_FLG, UPPER(ID_VALUE)			
D1_COMM_OUT_LOG	REFERENCE (D1_COMM_OUT_LOG_FK)					
		D1T382P0	D1_COMM_ID, SEQNO	Global Partitioned	RANGE(D1_COMM_ID)	
		D1T382S1	CHAR_TYPE_CD, CHAR_VAL_FK1	Global Partitioned	HASH(CHAR_TYPE_CD, CHAR_VAL_FK1)	
		D1T382S2	CHAR_TYPE_CD, CHAR_VAL	Global Partitioned	HASH(CHAR_TYPE_CD, CHAR_VAL)	
D1_COMM_OUT_LOG_PARM	REFERENCE (D1_COMM_OUT_LOG_PARM_FK)					
		D1T383P0	D1_COMM_ID, SEQNO PARM_SEQ	Global Partitioned	RANGE(D1_COMM_ID)	
D1_COMM_OUT_REL_OBJ	REFERENCE (D1_COMM_OUT_REL_OBJ_FK)					
		D1T384P0	D1_COMM_ID, MAINT_OBJ_CD, COMM_REL_OBJ_TYPE_FLG	Global Partitioned	RANGE(D1_COMM_ID)	
		D1T384S0	PK_VALUE1, PK_VALUE2, PK_VALUE3, PK_VALUE4, PK_VALUE5, MAINT_OBJ_CD	Global Partitioned	HASH(PK_VALUE1, PK_VALUE2, PK_VALUE3, PK_VALUE4)	

Device Event

If sub retention periods will be defined for this MO, then please follow the guidelines set forth in section Module Specific ILM Implementation Details For Sub Retention.

This table describes the Device Event maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
D1_DVC_EVT (Parent)	RANGE(ILM_DT, DVC_EVT_ID) **Note**: Default is to use sub-retention or use RANGE (ILM_DT,DVC_EVT_ID) if not using sub-retention.					D1_DVC_EVT. CRE_DTTM
		D1T400P0	DVC_EVT_ID	Global Partitioned	RANGE (DVC_EVT_ID)	
		D1T400S1	BUS_OBJ_CD, BO_STATUS_CD, DVC_EVT_ID	Global Partitioned	HASH(BUS_OBJ_CD,BO_STATUS_CD, DVC_EVT_ID)	
		D1T400S2	D1_DEVICE_ID, DVC_EVT_DTTM	Global Partitioned	HASH(D1_DEVICE_ID, DVC_EVT_DTTM)	
		D1T400S3	BUS_OBJ_CD, BO_STATUS_CD, D1_DEVICE_ID, DVC_EVT_ID	Global Partitioned	HASH(BUS_OBJ_CD,BO_STATUS_CD, D1_DEVICE_ID, DVC_EVT_ID)	
		CM_ILM_D1T400S4	ILM_DT, ILM_ARCH_SW, DVC_EVT_ID	Local		
D1_DVC_EVT_CHAR	REFERENCE (D1_DVC_EVT_CHAR_FK)					
		D1T401P0	DVC_EVT_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned	RANGE(DVC_EVT_ID)	
		D1T401S0	SRCH_CHAR_VAL	Global Partitioned	HASH(SRCH_CHAR_VAL)	
D1_DVC_EVT_IDENTIFIER	REFERENCE (D1_DVC_EVT_IDENTIFIER_FK)					
		D1T405P0	DVC_EVT_ID, DVC_EVT_ID_TYPE_FLG	Global Partitioned	RANGE(DVC_EVT_ID)	
		D1T405S0	DVC_EVT_ID_TYPE_FLG, ID_VALUE	Global Partitioned	HASH(DVC_EVT_ID_TYPE_FLG, ID_VALUE)	
		D1T405S1	DVC_EVT_ID_TYPE_FLG, UPPER(ID_VALUE)			

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
D1_DVC_EVT_LOG	REFERENCE (D1_DVC_EVT_LOG_FK)					
		D1T402P0	DVC_EVT_ID, SEQNO	Global Partitioned	RANGE(DVC_EVT_ID)	
		D1T402S1	CHAR_TYPE_CD, CHAR_VAL_FK1	Global Partitioned	HASH(CHAR_TYPE_CD, CHAR_VAL_FK1)	
		D1T402S2	CHAR_TYPE_CD, CHAR_VAL	Global Partitioned	HASH(CHAR_TYPE_CD, CHAR_VAL)	
D1_DVC_EVT_LOG_PARM	REFERENCE (D1_DVC_EVT_LOG_PARM_FK)					
		D1T403P0	DVC_EVT_ID, SEQNO PARM_SEQ	Global Partitioned	RANGE(DVC_EVT_ID)	
D1_DVC_EVT_REL_OBJ	REFERENCE (D1_DVC_EVT_REL_OBJ_FK)					
		D1T404P0	DVC_EVT_ID, MAINT_OBJ_CD, DVC_EVT_REL_OBJ_TYPE_FLG	Global Partitioned	RANGE(DVC_EVT_ID)	
		D1T404S0	PK_VALUE1, PK_VALUE2, PK_VALUE3, PK_VALUE4, PK_VALUE5, MAINT_OBJ_CD	Global Partitioned	HASH(PK_VALUE1, PK_VALUE2, PK_VALUE3, PK_VALUE4)	

Completion Event

This table describes the Completion Event maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
D1_COMPL_EVT (Parent)	RANGE(ILM_DT, COMPL_EVT_ID)					D1_COMPL_EVT.CRE_DTTM
		D1T340P0	COMPL_EVT_ID	Global Partitioned	RANGE (COMPL_EVT_ID)	

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
		D1T340S0	D1_ACTIVITY_ID	Global Partitioned	HASH(D1_ ACTIVITY_ID)	
		CM_ILM_ D1T340S1	ILM_DT, ILM_ARCH_SW, DVC_EVT_ID	Local		
D1_COMPL_EVT _CHAR	REFERENCE (D1_COMPL_ EVT_CHAR_FK)					
		D1T341P0	COMPL_EVT_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned	RANGE(COMPL_ EVT_ID)	
		D1T341S1	SRCH_CHAR_VAL	Global Partitioned	HASH(SRCH_CHAR _VAL)	
D1_COMPL_EVT _LOG	REFERENCE (D1_COMPL_EVT _LOG_FK)					
		D1T342P0	COMPL_EVT_ID, SEQNO	Global Partitioned	RANGE(COMPL_ EVT_ID)	
		D1T342S1	CHAR_TYPE_CD, CHAR_VAL_FK1	Global Partitioned	HASH(CHAR_ TYPE_CD, CHAR_VAL_FK1)	
		D1T342S2	CHAR_TYPE_CD, CHAR_VAL	Global Partitioned	HASH(CHAR_ TYPE_CD, CHAR_VAL)	
D1_COMPL_EVT _LOG_PARM	REFERENCE (D1_COMPL_EVT _LOG_PARM_FK)					
		D1T343P0	COMPL_EVT_ID, SEQNO PARM_SEQ	Global Partitioned	RANGE(COMPL_ EVT_ID)	
D1_COMPL_EVT _REL_OBJ	REFERENCE (D1_COMPL_EVT _REL_OBJ_FK)					
		D1T344P0	COMPL_EVT_ID, MAINT_OBJ_CD, COMPL_EVT_REL_OBJ_T YP_FLG	Global Partitioned	RANGE(COMPL_ EVT_ID)	
		D1T344S0	PK_VALUE1, PK_VALUE2, PK_VALUE3, PK_VALUE4, PK_VALUE5, MAINT_OBJ_CD	Global Partitioned	HASH(PK_VALUE1, PK_VALUE2, PK_VALUE3, PK_VALUE4)	

Initial Measurement Data

If sub retention periods will be defined for this MO, then please follow the guidelines set forth in section Module Specific ILM Implementation Details For Sub Retention.

This table describes the Initial Measurement Data maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
D1_INIT_MSRMT_DATA (Parent)	RANGE (ILM_DT,MEASR_COMP_ID) Note: Default is to use sub-retention or use RANGE (ILM_DT,MEASR_COMP_ID) if not using sub-retention.					D1_INIT_MSRMT_DATA. CRE_DTTM
		D1T304P0	INIT_MSRMT_DATA_ID	Global Partitioned	RANGE (INIT_MSRMT_DATA_ID)	
		D1T304S1	MEASR_COMP_ID, BO_STATUS_CD, BUS_OBJ_CD, D1_TO_DTTM, D1_FROM_DTTM	Global Partitioned	RANGE (MEASR_COMP_ID)	
		CM_ILM_D1T304S4	ILM_DT, ILM_ARCH_SW, INIT_MSRMT_DATA_ID	Local		
D1_INIT_MSRMT_DATA_CHAR	REFERENCE (D1_INIT_MSRMT_DATA_CHAR_FK)					
		D1T305P0	INIT_MSRMT_DATA_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned	RANGE(INIT_MSRMT_DATA_ID)	
		D1T305S1	SRCH_CHAR_VAL	Global Partitioned	HASH(SRCH_CHAR_VAL)	
D1_INIT_MSRMT_DATA_LOG	REFERENCE (D1_INIT_MSRMT_DATA_LOG_FK)					
		D1T306P0	INIT_MSRMT_DATA_ID, SEQNO	Global Partitioned	RANGE (INIT_MSRMT_DATA_ID)	
D1_INIT_MSRMT_DATA_LOG_PARM	REFERENCE (D1_INIT_MSRMT_DATA_LOG_PARM_FK)					
		D1T307P0	INIT_MSRMT_DATA_ID, SEQNO PARM_SEQ	Global Partitioned	RANGE (INIT_MSRMT_DATA_ID)	

Usage Transaction

This table describes the Usage Transaction maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
D1_USAGE (Parent)	RANGE(ILM_DT, D1_USAGE_ID)					D1_USAGE. CRE_DTTM
		D1T281P0	D1_USAGE_ID	Global Partitioned	RANGE (D1_USAGE_ID)	
		D1T281S0	US_ID, START_DTTM	Global Partitioned	RANGE (US_ID)	
		D1T281S1	BUS_OBJ_CD, BO_STATUS_CD, D1_USAGE_ID	Global Partitioned	HASH(BUS_OBJ_CD, BO_STATUS_CD, D1_USAGE_ID)	
		CM_ILM_D1T281S2	ILM_DT, ILM_ARCH_SW, D1_USAGE_ID	Local		
		D1T419S1	USG_EXT_ID, D1_USAGE_ID	Global Partitioned	RANGE (USG_EXT_ID)	
D1_USAGE_CHAR	REFERENCE (D1_USAGE_CHAR_FK)					
		D1T285P0	D1_USAGE_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned	RANGE(D1_USAGE_ID)	
		D1T285S1	SRCH_CHAR_VAL	Global Partitioned	HASH(SRCH_CHAR_VAL)	
D1_USAGE_LOG	REFERENCE (D1_USAGE_LOG_FK)					
		D1T286P0	D1_USAGE_ID, SEQNO	Global Partitioned	RANGE(D1_USAGE_ID)	
		D1T286S1	CHAR_TYPE_CD, CHAR_VAL_FK1	Global Partitioned	HASH(CHAR_TYPE_CD, CHAR_VAL_FK1)	
		D1T286S2	CHAR_TYPE_CD, CHAR_VAL	Global Partitioned	HASH(CHAR_TYPE_CD, CHAR_VAL)	
D1_USAGE_LOG_PARM	REFERENCE(D1_USAGE_LOG_PARM_FK)					
		D1T287P0	D1_USAGE_ID, SEQNO PARM_SEQ	Global Partitioned	RANGE (D1_USAGE_ID)	

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
D1_USAGE_PERIOD	REFERENCE(D1_USAGE_PERIOD_FK)					
		D1T283P0	D1_USAGE_ID, PERIOD_SEQ_NUM	Global Partitioned	RANGE(D1_USAGE_ID)	
D1_USAGE_PERIOD_ITEM_DET	REFERENCE(D1_USAGE_PERIOD_ITEM_DET_FK)					
		D1T431P0	D1_USAGE_ID, PERIOD_SEQ_NUM, ITEM_SEQ_NUM	Global Partitioned	RANGE(D1_USAGE_ID)	
D1_USAGE_PERIOD_SQ	REFERENCE(D1_USAGE_PERIOD_SQ_FK)					
		D1T284P0	D1_USAGE_ID, PERIOD_SEQ_NUM, SQ_SEQ_NUM	Global Partitioned	RANGE(D1_USAGE_ID)	
D1_USAGE_PERIOD_SQ_DATA	REFERENCE(D1_USAGE_PERIOD_SQ_DATA_FK)					
		D1T497P0	D1_USAGE_ID, PERIOD_SEQ_NUM, SQ_SEQ_NUM, SQ_DATA_DTTM	Global Partitioned	RANGE(D1_USAGE_ID)	
D1_USAGE_REL	REFERENCE (D1_USAGE_REL_FK)					
		D1T316P0	D1_USAGE_ID, USAGE_REL_TYPE_FLG	Global Partitioned	RANGE(D1_USAGE_ID)	
		D1T316S0	REL_USAGE_ID, USAGE_REL_TYPE_FLG, D1_USAGE_ID	Global Partitioned	HASH(REL_USAGE_ID, USAGE_REL_TYPE_FLG, D1_USAGE_ID)	
D1_USAGE_SCALAR_DTL	REFERENCE(D1_USAGE_SCALAR_DTL_FK)					
		D1T282P0	D1_USAGE_ID, D1_SP_ID, SEQ_NUM	Global Partitioned	RANGE(D1_USAGE_ID)	

Usage Transaction Exception

This table describes the Usage Transaction Exception maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
D1_USAGE_EXCP (Parent)	RANGE (ILM_DT, USAGE_EXCP_ID)					D1_USAGE_EXCP. CRE_DTTM
		D1T443P0	USAGE_EXCP_ID	Global Partitioned	RANGE (USAGE_EXCP_ID)	
		CM_ILM_D1T443S1	ILM_DT, ILM_ARCH_SW, USAGE_EXCP_ID	Local Partitioned		
D1_USAGE_EXCP_CHAR	REFERENCE (D1_USAGE_EXCP_CHAR_FK)	D1T446P0	USAGE_EXCP_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned	RANGE (USAGE_EXCP_ID)	
		D1T446S1	SRCH_CHAR_VAL	Global Partitioned	HASH (SRCH_CHAR_VAL)	
D1_USAGE_EXCP_PARM	REFERENCE (D1_USAGE_EXCP_PARM_FK)	D1T445P0	USAGE_EXCP_ID, PARM_SEQ	Global Partitioned	RANGE (USAGE_EXCP_ID)	

VEE Exception

This table describes the VEE Exception maintenance object.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
D1_VEE_EXCP (Parent)	RANGE(ILM_DT, VEE_EXCP_ID)					D1_VEE_EXCP. CRE_DTTM
		D1T308P0	VEE_EXCP_ID	Global Partitioned	RANGE (VEE_EXCP_ID)	
		D1T308S1	INIT_MSRMT_DATA_ID	Global Partitioned	HASH(INIT_MSRMT_DATA_ID)	

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
		CM_ILM_D1T308S2	ILM_DT, ILM_ARCH_SW, VEE_EXCP_ID	Local		
D1_VEE_EXCP_CHAR	REFERENCE (D1_VEE_EXCP_CHAR_FK)					
		D1T310P0	VEE_EXCP_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned	RANGE(VEE_EXCP_ID)	
		D1T310S1	SRCH_CHAR_VAL	Global Partitioned	HASH(SRCH_CHAR_VAL)	
D1_VEE_EXCP_PARM	REFERENCE (D1_VEE_EXCP_PARM_FK)					
		D1T309P0	VEE_EXCP_ID, PARM_SEQ	Global Partitioned	RANGE(VEE_EXCP_ID))	

Snapshot Tables

This table below describes the snapshot tables.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
D1_SNAPSHOT_DL_CTRL	RANGE(ILM_DT)					D1_SNAPSHOT_DL_CTRL.SNAPSHOT_DTTM
		D1T433P0	SNAPSHOT_FACT_NAME_CD	Global Partitioned		
		CM_ILM_D1T433S1	ILM_DT, ILM_ARCH_SW, SNAPSHOT_FACT_NAME_CD, SNAPSHOT_DTTM	Local		
D1_SP_SNAP_DL	RANGE(ILM_DT, SP_SNAP_ID)					D1_SP_SNAP_DL.SNAPSHOT_DTTM
		D1T434P0	SP_SNAP_ID	Global Partitioned	RANGE(SP_SNAP_ID)	
		D1T434S0	D1_SP_ID, SNAPSHOT_DTTM, SNAPSHOT_TYPE_FLG	Global Partitioned		

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
		CM_ILM_D1T434S1	ILM_DT, ILM_ARCH_SW, SP_SNAP_ID	Local		
D1_SP_UNR_USG_SNAP_DL	RANGE(ILM_DT, SP_UNR_USG_SNAP_ID)					D1_SP_UNR_USG_SNAP_DL.SNAPSHOT_DTTM
		D1T438P0	SP_UNR_USG_SNAP_ID	Global Partitioned	RANGE(SP_USG_SNAP_ID)	
		D1T436S0	D1_SP_ID, SNAPSHOT_DTTM, MEASR_COMP_ID, USG_SNAPSHOT_TYPE_FLG, D1_TOU_CD, MSRMT_COND_FLG, SNAPSHOT_TYPE_FLG	Global Partitioned		
		CM_ILM_D1T436S1	ILM_DT, ILM_ARCH_SW, SP_USG_SNAP_ID	Local		
D1_SP_VEE_EXCP_SNAP_DL	RANGE(ILM_DT, SP_VEE_EXCP_SNAP_ID)					D1_SP_VEE_EXCP_SNAP_DL.SNAPSHOT_DTTM
		D1T440P0	SP_VEE_EXCP_SNAP_ID	Global Partitioned	RANGE(SP_VEE_EXCP_SNAP_ID)	
		D1T440S0	D1_SP_ID, SNAPSHOT_DTTM, MEASR_COMP_ID, EXCP_TYPE_CD, D1_IMD_TYPE_FLG, EXCP_SEVERITY_FLG, VEE_GRP_CD, VEE_RULE_CD, SNAPSHOT_TYPE_FLG			
		CM_ILM_D1T440S1	ILM_DT, ILM_ARCH_SW, SP_VEE_EXCP_SNAP_ID	Local		

Module Specific ILM Implementation Details For Sub Retention

This section outlines each maintenance object that has been configured to support ILM as well as sub retention periods. This differs from the standard ILM enabled tables in that the partitioning strategy is inclusive of an additional column that defines the retention period for each record. In each case, the recommendation of the initial load of the ILM_DT and the <field name for retention period> for existing records is noted. The CTAS operation for these tables includes an extra step of generating a temporary mapping table that will allow the select for the ILM_DT to also identify the appropriate <retention period field name> for each record.

This section details the following maintenance objects that support ILM as well as sub retention periods:

- Activity
- Device Event
- Initial Measurement Data

Activity

If sub retention periods will not be defined for this MO, then please follow the guidelines set forth in section Module Specific ILM Implementation Details.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
D1_ACTIVITY (Parent)	RANGE (ILM_DT, RETENTION_ PERIOD)					D1_ACTIVITY. CRE_DTTM
		D1T319P0	D1_ACTIVITY_ID	Global Partitioned	RANGE (D1_ACTIVITY_ID)	
		D1T319S0	BUS_OBJ_CD, BO_STATUS_CD, D1_ACTIVITY_ID	Global Partitioned	HASH(BUS_OBJ_CD, BO_STATUS_CD, D1_ACTIVITY_ID)	
		CM_ILM_ D1T319S1	ILM_DT, RETENTION_PERIOD, ILM_ARCH_SW, D1_ACTIVITY_ID	Local		
D1_ACTIVITY_ CHAR	REFERENCE (D1_ACTIVITY_ CHAR_FK)					
		D1T320P0	D1_ACTIVITY_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned	RANGE(D1_ ACTIVITY_ID)	
		D1T320S0	SRCH_CHAR_VAL	Global Partitioned	HASH(SRCH_CHAR _VAL)	
D1_ACTIVITY_ IDENTIFIER	REFERENCE (D1_ACTIVITY_ID ENTIFIER_FK)					
		D1T330P0	D1_ACTIVITY_ID, ACTIVITY_ID_TYPE_ FLG	Global Partitioned	RANGE(D1_ ACTIVITY_ID)	
		D1T330S0	ACTIVITY_ID_TYPE_ FLG, ID_VALUE	Global Partitioned	HASH(ACTIVITY_I D_TYPE_FLG, ID_VALUE)	
		D1T330S1	ACTIVITY_ID_TYPE_FL G, UPPER(ID_VALUE)			

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
D1_ACTIVITY_ LOG	REFERENCE (D1_ACTIVITY_ LOG_FK)					
		D1T321P0	D1_ACTIVITY_ID, SEQNO	Global Partitioned	RANGE(D1_ ACTIVITY_ID)	
		D1T321S1	CHAR_TYPE_CD, CHAR_VAL_FK1	Global Partitioned	HASH(CHAR_TYPE _CD, CHAR_VAL_FK1)	
		D1T321S2	CHAR_TYPE_CD, CHAR_VAL	Global Partitioned	HASH(CHAR_TYPE _CD, CHAR_VAL)	
D1_ACTIVITY_ LOG_PARM	REFERENCE (D1_ACTIVITY_ LOG_PARM_FK)					
		D1T322P0	D1_ACTIVITY_ID, SEQNO PARM_SEQ	Global Partitioned	RANGE(D1_ ACTIVITY_ID)	
D1_ACTIVITY_ REL	REFERENCE (D1_ACTIVITY_ REL_FK)					
		D1T323P0	D1_ACTIVITY_ID, ACTIVITY_REL_TYPE_ FLG	Global Partitioned	RANGE(D1_ ACTIVITY_ID)	
		D1T323S0	REL_ACTIVITY_ID	Global Partitioned	HASH(REL_ ACTIVITY_ID)	
D1_ACTIVITY_ REL_OBJ	REFERENCE (D1_ACTIVITY_ REL_OBJ_FK)					
		D1T324P0	D1_ACTIVITY_ID, MAINT_OBJ_CD, ACTIVITY_REL_OBJ_ TYPE_FLG	Global Partitioned	RANGE(D1_ ACTIVITY_ID)	
		D1T324S0	PK_VALUE1, PK_VALUE2, PK_VALUE3, PK_VALUE4, PK_VALUE5, MAINT_OBJ_CD	Global Partitioned	HASH(PK_VALUE1, PK_VALUE2, PK_VALUE3, PK_VALUE4)	

Query for Setting the Retention Period

The following query should be used to create a temporary table to create a mapping table that will identify the retention period for each measuring component type. This table will then be used during in the CTAS operation for Activity to identify the retention period for each record.

Please refer to Appendix G: Sample SQL for ILM in C2M with Sub Retention (Existing Installation) for detailed information using Initial Measurement Data as an example.

> **Note**: A pre-requisite to executing this query is configuring the appropriate retention periods in the ILM master configuration in the Oracle Utilities Meter Data Management application.

```
    /*****ACTIVITY*****/
    CREATE TABLE ILM_ACTIVITY_RETENTION_TMP
    AS
    select acty.activity_type_cd
    /*retrieve the retention period for Activity Types in this order of
precedence:
    1. The category based retention period from the MDM master
configuration
    2. The MO level retention period from the MO options
    3. The installation level retention period from the FW master
configuration
    */
    , CAST(coalesce(catMap.retPeriod --Category level
    , (select maint_obj_opt_val
    from ci_md_mo_opt mmo
    where maint_obj_cd = 'D1-ACTIVITY'
    and maint_obj_opt_flg ='FLRP'
    and seq_num =
    (select max(seq_num)
    from ci_md_mo_opt mmo
    where maint_obj_cd = 'D1-ACTIVITY'
    and maint_obj_opt_flg ='FLRP')) --MO level
    , extractvalue( xmlparse(content fw_mcfg.mst_config_data)
    ,'generalMasterConfiguration/defaultRetentionPeriod') --Install
level
    ) as NUMBER(5)) retPeriod
    from d1_activity_type acty
    , (select extractvalue(value(p),
    'activityTypeCategoryRetentionPeriodList/activityTypeCategory'
    )ACTIVITY_TYPE_CAT_FLG
    , extractvalue(value(p),
    'activityTypeCategoryRetentionPeriodList/retentionPeriod'
    )retPeriod
    from f1_mst_config mdm_mcfg ,
    table(xmlsequence(extract(xmlparse(content
mdm_mcfg.mst_config_data),
    'activityRetentionPeriod/activityTypeCategoryRetentionPeriods/
activityTypeCategoryRetentionPeriodList'
    ))) p
    where mdm_mcfg.bus_obj_cd = 'D1-ILMMSConfig')catMap
    , f1_mst_config fw_mcfg
    where fw_mcfg.bus_obj_cd = 'F1-ILMMSConfig'
    and acty.ACTIVITY_TYPE_CAT_FLG = catMap.ACTIVITY_TYPE_CAT_FLG (+)
    order by 1;
```

Device Event

Note: If sub retention periods will not be defined for this MO, then please follow the guidelines set forth in section Module Specific ILM Implementation Details.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
D1_DVC_EVT (Parent)	RANGE(ILM_DT, RETENTION_ PERIOD)					D1_DVC_EVT. CRE_DTTM
		D1T400P0	DVC_EVT_ID	Global Partitioned	RANGE (DVC_EVT_ID)	
		D1T400S1	BUS_OBJ_CD, BO_STATUS_CD, DVC_EVT_ID	Global Partitioned	HASH(BUS_OBJ_C D,BO_STATUS_CD, DVC_EVT_ID)	
		D1T400S2	D1_DEVICE_ID, DVC_EVT_DTTM	Global Partitioned	HASH(D1_DEVICE _ID, DVC_EVT_DTTM)	
		D1T400S3	BUS_OBJ_CD, BO_STATUS_CD, D1_DEVICE_ID, DVC_EVT_ID	Global Partitioned	HASH(BUS_OBJ_C D,BO_STATUS_CD, D1_DEVICE_ID, DVC_EVT_ID)	
		CM_ILM_ D1T400S4	ILM_DT, RETENTION_PERIOD, ILM_ARCH_SW, DVC_EVT_ID	Local		
D1_DVC_EVT_ CHAR	REFERENCE (D1_DVC_EVT_ CHAR_FK)					
		D1T401P0	DVC_EVT_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned	RANGE(DVC_EVT _ID)	
		D1T401S0	SRCH_CHAR_VAL	Global Partitioned	HASH(SRCH_CHAR _VAL)	
D1_DVC_EVT_ IDENTIFIER	REFERENCE (D1_DVC_EVT_ IDENTIFIER_FK)					
		D1T405P0	DVC_EVT_ID, DVC_EVT_ID_TYPE_FLG	Global Partitioned	RANGE(DVC_EVT _ID)	
		D1T405S0	DVC_EVT_ID_TYPE_FLG , ID_VALUE	Global Partitioned	HASH(DVC_EVT_I D_TYPE_FLG, ID_VALUE)	
		D1T405S1	DVC_EVT_ID_TYPE_FLG , UPPER(ID_VALUE)			
D1_DVC_EVT_ LOG	REFERENCE (D1_DVC_EVT_ LOG_FK)					
		D1T402P0	DVC_EVT_ID, SEQNO	Global Partitioned	RANGE(DVC_EVT _ID)	

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
		D1T402S1	CHAR_TYPE_CD, CHAR_VAL_FK1	Global Partitioned	HASH(CHAR_TYPE_CD, CHAR_VAL_FK1)	
		D1T402S2	CHAR_TYPE_CD, CHAR_VAL	Global Partitioned	HASH(CHAR_TYPE_CD, CHAR_VAL)	
D1_DVC_EVT_LOG_PARM	REFERENCE (D1_DVC_EVT_LOG_PARM_FK)					
		D1T403P0	DVC_EVT_ID, SEQNO PARM_SEQ	Global Partitioned	RANGE(DVC_EVT_ID)	
D1_DVC_EVT_REL_OBJ	REFERENCE (D1_DVC_EVT_REL_OBJ_FK)					
		D1T404P0	DVC_EVT_ID, MAINT_OBJ_CD, DVC_EVT_REL_OBJ_TYPE_FLG	Global Partitioned	RANGE(DVC_EVT_ID)	
		D1T404S0	PK_VALUE1, PK_VALUE2, PK_VALUE3, PK_VALUE4, PK_VALUE5, MAINT_OBJ_CD	Global Partitioned	HASH(PK_VALUE1, PK_VALUE2, PK_VALUE3, PK_VALUE4)	

Query for Setting the Retention Period

The following query should be used to create a temporary table to create a mapping table that will identify the retention period for each measuring component type. This table will then be used during in the CTAS operation for Device Event to identify the retention period for each record.

Please refer to Appendix G: Sample SQL for ILM in C2M with Sub Retention (Existing Installation) for detailed information using Initial Measurement Data as an example.

> **Note**: A pre-requisite to executing this query is configuring the appropriate retention periods in the ILM master configuration in the Oracle Utilities Meter Data Management application.

```
    CREATE TABLE ILM_DVC_EVT_RETENTION_TMP
    AS
    select det.dvc_evt_type_cd
    /*retrieve the retention period for Device Event Types in this
order of precedence:
    1. The category based retention period from the MDM master
configuration
    2. The MO level retention period from the MO options
    3. The installation level retention period from the FW master
configuration
    */
    , CAST(coalesce(catMap.retPeriod --Category level
    , (select maint_obj_opt_val
    from ci_md_mo_opt mmo
    where maint_obj_cd = 'D1-DVCEVENT'
    and maint_obj_opt_flg ='FLRP'
    and seq_num = (select max(seq_num)
    from ci_md_mo_opt mmo
    where maint_obj_cd = 'D1-DVCEVENT'
    and maint_obj_opt_flg ='FLRP')) --MO level
    , extractvalue( xmlparse(content
    fw_mcfg.mst_config_data),
    'generalMasterConfiguration/defaultRetentionPeriod') --Install
level
    ) as NUMBER(5)) retPeriod
    from d1_dvc_evt_type det
    , (select extractvalue(value(p),
    'deviceEventCategoryRetentionPeriodList/deviceEventCategory')
dvc_evt_cat_flg
    , extractvalue(value(p),
    'deviceEventCategoryRetentionPeriodList/retentionPeriod')
retPeriod
    from f1_mst_config mdm_mcfg ,
    table(xmlsequence(extract(xmlparse(content
    mdm_mcfg.mst_config_data),
    'deviceEventRetentionPeriod/deviceEventCategoryRetentionPeriods/
deviceEventCategoryRetentionPeriodList'
    ))) p
    where mdm_mcfg.bus_obj_cd = 'D1-ILMMSConfig')catMap
    , f1_mst_config fw_mcfg
    where fw_mcfg.bus_obj_cd = 'F1-ILMMSConfig'
    and det.dvc_evt_cat_flg = catMap.dvc_evt_cat_flg (+)
    order by 1;
```

Initial Measurement Data

If sub retention periods will not be defined for this MO, then please follow the guidelines set forth in section Module Specific ILM Implementation Details.

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
D1_INIT_MSRMT_DATA (Parent)	RANGE (ILM_DT, RETENTION_PERIOD)					D1_INIT_MSRMT_DATA. CRE_DTTM
		D1T304P0	INIT_MSRMT_DATA_ID	Global Partitioned	RANGE (INIT_MSRMT_DATA_ID)	
		D1T304S1	MEASR_COMP_ID, BO_STATUS_CD, BUS_OBJ_CD, D1_TO_DTTM, D1_FROM_DTTM	Global Partitioned	RANGE (MEASR_COMP_ID)	

Table Name	Table Partitioning Type (Partitioning, Sub-Partitioning Key)	Index Name	Index Columns	Index Type Global or Local	Index Partitioning Sub-Partitioning Key	ILM_DT Initial Load
		CM_ILM_D1T304S4	ILM_DT, RETENTION_PERIOD, ILM_ARCH_SW, INIT_MSRMT_DATA_ID	Local		
D1_INIT_MSRMT_DATA_CHAR	REFERENCE (D1_INIT_MSRMT_DATA_CHAR_FK)					
		D1T305P0	INIT_MSRMT_DATA_ID, CHAR_TYPE_CD, SEQ_NUM	Global Partitioned	RANGE(INIT_MSRMT_DATA_ID)	
		D1T305S1	SRCH_CHAR_VAL	Global Partitioned	HASH(SRCH_CHAR_VAL)	
D1_INIT_MSRMT_DATA_LOG	REFERENCE (D1_INIT_MSRMT_DATA_LOG_FK)					
		D1T306P0	INIT_MSRMT_DATA_ID, SEQNO	Global Partitioned	RANGE (INIT_MSRMT_DATA_ID)	
D1_INIT_MSRMT_DATA_LOG_PARM	REFERENCE (D1_INIT_MSRMT_DATA_LOG_PARM_FK)					
		D1T307P0	INIT_MSRMT_DATA_ID, SEQNO PARM_SEQ	Global Partitioned	RANGE (INIT_MSRMT_DATA_ID)	

Query for Setting the Retention Period

The following query should be used to create a temporary table to create a mapping table that will identify the retention period for each measuring component type. This table will then be used during in the CTAS operation for Initial Measurement Data to identify the retention period for each record.

Please refer to Appendix B: Sample SQL for Enabling ILM in MDM (Existing Installation) for detailed information using Initial Measurement Data as an example.

> **Note**: A pre-requisite to executing this query is configuring the appropriate retention periods in the ILM master configuration in the Oracle Utilities Meter Data Management application.

```
CREATE TABLE ILM_IMD_RETENTION_TMP
AS
select mct.measr_comp_type_cd
/*retrieve the retention period for MC Types in this order of
precedence:
1. The UOM based retention period from the MDM master configuration
2. The interval IMD retention period from the MDM master configuration
3. The MO level retention period from the MO options
```

```
4. The installation level retention period from the FW master
configuration
*/
, CAST(coalesce( (select retPeriod
from (select 'D1IN' interval_scalar_flg
, extractvalue(value(p),'uomRetentionPeriodList/uom') D1_UOM_CD
, extractvalue(value(p),'uomRetentionPeriodList/retentionPeriod')
retPeriod
from f1_mst_config mdm_mcfg
, table(xmlsequence(extract(xmlparse(content
mdm_mcfg.mst_config_data),
'imdRetentionPeriod/intervalImdRetentionPeriods/uomRetentionPeriods/
uomRetentionPeriodList'))) p
where mdm_mcfg.bus_obj_cd = 'D1-ILMMSConfig'
union
select 'D1SC' INTERVAL_SCALAR_FLG
, extractvalue(value(p),'uomRetentionPeriodList/uom') D1_UOM_CD
, extractvalue(value(p),'uomRetentionPeriodList/retentionPeriod')
retPeriod
from f1_mst_config mdm_mcfg
, table(xmlsequence(extract(xmlparse(content
mdm_mcfg.mst_config_data),
'imdRetentionPeriod/scalarImdRetentionPeriods/uomRetentionPeriods/
uomRetentionPeriodList'))) p
where mdm_mcfg.bus_obj_cd = 'D1-ILMMSConfig') uomMap
where uomMap.interval_scalar_flg = mct.interval_scalar_flg
and trim(mctvi.d1_uom_cd) = trim(uomMap.d1_uom_cd))--UOM
, DECODE(mct.interval_scalar_flg
,'D1IN'
,extractvalue( xmlparse(content mdm_mcfg.mst_config_data),
'imdRetentionPeriod/intervalImdRetentionPeriods/
intervalRetentionPeriod') --interval IMD
,extractvalue( xmlparse(content mdm_mcfg.mst_config_data),
'imdRetentionPeriod/scalarImdRetentionPeriods/scalarRetentionPeriod')
--scalar IMD
)
, (select maint_obj_opt_val
from ci_md_mo_opt mmo
where maint_obj_cd = 'D1-IMD'
and maint_obj_opt_flg ='FLRP'
and seq_num = (select max(seq_num)
from ci_md_mo_opt mmo
where maint_obj_cd = 'D1-IMD'
and maint_obj_opt_flg ='FLRP')) --IMD
, extractvalue( xmlparse(content fw_mcfg.mst_config_data),
'generalMasterConfiguration/defaultRetentionPeriod') --Install
) as NUMBER(5)) retPeriod
from d1_measr_comp_type mct
, d1_mc_type_value_identifier mctvi
, f1_mst_config fw_mcfg
, f1_mst_config mdm_mcfg
where mct.measr_comp_type_cd = mctvi.measr_comp_type_cd
and mctvi.value_id_type_flg = 'D1MS'
and fw_mcfg.bus_obj_cd = 'F1-ILMMSConfig'
and mdm_mcfg.bus_obj_cd = 'D1-ILMMSConfig'
order by 1;
```

On-going Maintenance Phase

The following steps provide a high level overview of what needs to be done for on-going maintenance for ILM on enabled MOs.

Please refer to the Appendix D: Sample SQL for Periodic Maintenance for detailed information using To Do Entry(Without LOB), F1_SYNC_REC_IN(With LOB-Tablespace per Partition), Initial Measurement Data (With LOB-Tablespace per Subpartition), and the D1_MSRMT table (Partition Compression) as examples.

1. Add the partition:
   a. Create Tablespace to be used for the new parent table partition.
   b. Since, we define MAXVALUE Partition; new partition can only be created using "SPLIT" operation. Identify and use next HIGH_VALUE Partition for the split operation.
   c. All the child table(s) partition(s)\LOB(s) must be altered to use the same tablespace as that of the parent table's partition.
   d. Enable advanced compression on all child table(s).
   e. Copy partition level statistics from the previous partition.
2. Archive the partition/subpartition:
   a. Make the tablespace that will be archived READ ONLY.
   b. Check that no records have ILM_ARCH_SW = 'N'.
      - If record count is zero, then proceed for further steps.
      - If record count is not zero, then change the tablespace back to READ WRITE MODE as Archive is not Feasible at the time.
   c. Create an archive tablespace for the partition/subpartition that needs to be archived.
   d. Create staging tables using the new archive tablespace. Load data for all child tables first.
   e. Create staging table using the new archive tablespace and load data for the parent table.
   f. Export tablespace using TRANSPORT_TABLESPACES method.

      Make Sure Tablespace datafile required for further import is preserved.
   g. Drop the partition, partition the tablespace and archive the tablespace (as it is already exported).
3. Restore the partition:
   a. Create a new tablespace to restore the partition/subpartition.
   b. Add partition using split operation on next greater high value partition.

      If the table contains LOBS, there will an additional statement in split partition DDL indicating tablespace where the LOBs will be stored.
   c. Enable advanced compression on all child table(s).
   d. Import Tablespace using TRANSPORT_TABLESPACES method.

   e. Load data into the parent table first from the staging table.
   f. Load data into the child table from the staging table.
   g. Drop the archive tablespace after import and data loading is successful.

4. Compress D1_MSRMT table Partition:
   a. Create new compressed tablespace.
   b. Create a table using CTAS for each subpartition of the partition being compressed in the new compressed tablespace.
   c. Create a unique primary index for each subpartition of the partition being compressed in the new compressed tablespace. Then alter table to create the primary key.
   d. Exchange the subpartition of the D1_MSRMT table with the newly created table for each subpartition.
   e. Drop the original uncompressed tablespace.
   f. Alter the partition level metadata to reflect the new compressed tablespace.
   g. Rename the new compressed tablespace to the original tablespace name.
5. Move Data between different storage tiers:

The ILM facilities can be used within the database to implement storage savings, as follows:

- Use ILM Assistant to define the data groups to be used for the individual objects. Assign those data groups to partitions and storage devices to implement the storage savings. Remember to assign transportable tablespaces for the archive/dormant data stage to allow for safe removal of the data.
- Use ILM assistant to generate the necessary commands to implement the data changes manually or use Automatic Storage Management (ASM) to automate the data storage policies.
- Optionally, use Automatic Data Optimization to provide further optimizations.

For more information about ILM Assistant and ILM refer to the following:

- ILM Assistant Users Guide available at:

  http://download.oracle.com/otn/other/ilm/ilma-users-guide.html
- Oracle Database VLDB and Partitioning Guide (11.2) available at:

  http://docs.oracle.com/cd/E11882_01/server.112/e25523/part_lifecycle.htm#CACECAFB
- Oracle Database VLDB and Partitioning Guide (12.1) available at:

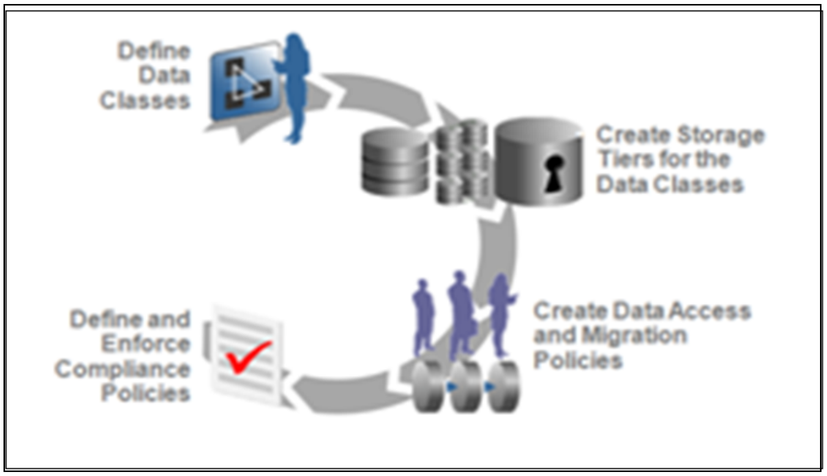
  https://docs.oracle.com/database/121/VLDBG/title.htm

ILM Assistant

The ILM Assistant can provide the following:

- Setup ILM Lifecycle definition - Here you can define different lifecycle definitions for different MOs and configure when the data is ready to be moved to a slower disk.
- Setup ILM Lifecycle tables - Here you define the tables you want to manage and assign it to a Lifecycle definition defined above. You can setup policies so that when data is moved from one partition to another it will be automatically compressed to a desired degree.
- Lifecycle Management - There is a tab called Lifecycle Management where the system admin will be alerted when partitions are eligible for archiving.

ILM Assistant can then be used to ensure the records that have ILM_ARCH_SW = 'Y' can be archived or purged, as deemed appropriate by the business.


Define Data Classes
Create Storage Tiers for the Data Classes
Create Data Access and Migration Policies
Define and Enforce Compliance Policies

Note: For further guidelines on ILM Assistant refer to Implementing Information Lifecycle Management Using the ILM Assistant available at: http://www.oracle.com/webfolder/technetwork/tutorials/obe/db/11g/r2/prod/storage/ilm/ilm.htm?cid=4196&ssid=115606280996764

Naming Convention

The naming convention for tablespace, partitions & subpartition is standardized as follows:

- Each name consists of some or all of the following parts.
- The parts of the name are organized hierarchically.
- Each part of the Name is separated with an underscore.
- The maximum name length must not exceed 30 Characters.
- For an MO, the parent table and child table share the same tablespace for the corresponding partition (or sub partition as appropriate).
- Square brackets [ ] indicate that this part of the name should be omitted if not required.

OWNERFLAG_TABLEIDENTIFIER_PARTITIONNAME[_SUBPARTITIONNAME][_ARCHIVEFLAG][_COMPRESSFLAG]

For details on the convention, please refer to the table below:

Convention	Description
OWNERFLAG	Owner flag for the relevant application for example “D1” for MDM
TABLE IDENTIFIER	The Index Name of the Primary Key index without the “P0” suffix. For example, if the PK index name is XT039P0, the table identifier would be “XT039”.
PARTITION NAME	The Partition name should be prefixed with a P followed by a name which conforms to one of the following standards: • 4 digit year and 3 letter month abbreviation PYYYYMON corresponding to the ILM date e.g. P2011JAN • PMAX if it is the Max Value partition
SUBPARTITION NAME	If subpartitions are used, name should be prefixed with S followed by a name of not more than 5 characters which conforms to the following requirements: • SMAX if this is the Max Value sub partition • If the sub partition holds data for a sub retention period use a number equal to that period e.g S91 if the sub retention period < 91 days. • For a range based SubPartition on Primary Key, use an integral number increasing by +1. For example, if there are 8 sub partitions use S01 through S08
ARCHIVEFLAG	This flag is used as a suffix to the table and tablespace name for the staging tables created for the archiving operation. • ARC

Convention	Description
COMPRESS FLAG	This flag is used as a suffix to the tablespace name for the staging tables created when compressing a partition. • C For compression related tasks, this is used as suffix to the tablespace name. • Partition Tablespace Name: It is formed by OWNERFLAG_TABLEIDENTIFIER_PARTITIONNAME For example: CM_D1T304_PMAX CM_D1T304_P2011JAN • SubPartition Tablespace Name: It is formed by OWNERFLAG_TABLEIDENTIFIER_PARTITIONNAME _SUBPARTITIONNAME For example: CM_D1T304_PMAX_SMAX CM_D1T304_P2011JAN_SMAX CM_D1T304_PMAX_S001 CM_D1T304_P2011JAN_S181 • Archive Staging Table And Its Tablespace Name (When archiving partition): It is formed by OWNERFLAG_TABLEIDENTIFIER_PARTITIONNAME _ ARCHIVEFLAG. For example: CM_D1T304_P2011JAN_ARC • Archive Staging Table And Its Tablespace Name (When archiving subpartition): It is formed by OWNERFLAG_TABLEIDENTIFIER_PARTITIONNAME _SUBPARTITIONNAME_ ARCHIVEFLAG. For example: CM_D1T304_P2011JAN_S181_ARC • Compressed Tablespace name (When compressing partition): For example: CM_D1T304_P2011JAN_ C

Appendix A

Sample SQL for Enabling ILM in C2M for CC&B (Initial Install)

This section provides more detail about steps needed to fully support ILM on tables for maintenance objects that support the functionality. Two maintenance objects are shown:

- To Do Entry, which does not include a LOB field.
- Sync Request, which does include a LOB field.

  Other maintenance object's implementations can follow the appropriate pattern based on whether there is a LOB field or not.

The following DDL(s):

- Follow Naming convention recommendations for partitions\subpartitions\tablespaces.
- Ensure all the ILM Storage requirements are incorporated, failing which, ILM functionality will not be achieved.
  - Partitions are defined with respective Tablespace.
  - Child Tables are referenced partitioned.
- Ensure all compression recommendations are incorporated.

Maintenance Object: TO DO ENTRY

Parent Table: CI_TD_ENTRY

```
CREATE BIGFILE TABLESPACE CM_XT039_P2017JAN DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_XT039_P2017FEB DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_XT039_P2017MAR DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_XT039_P2017APR DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
```

```
CREATE BIGFILE TABLESPACE CM_XT039_P2017MAY DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_XT039_P2017JUN DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_XT039_P2017JUL DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_XT039_P2017AUG DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_XT039_P2017SEP DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_XT039_P2017OCT DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_XT039_P2017NOV DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_XT039_P2017DEC DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_XT039_PMAX DATAFILE '+DATADG' SIZE 50M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED;

CREATE TABLE CI_TD_ENTRY (
TD_ENTRY_ID     CHAR(14) NOT NULL ENABLE,
BATCH_CD        CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
BATCH_NBR       NUMBER(10,0) DEFAULT 0 NOT NULL ENABLE,
MESSAGE_CAT_NBR NUMBER(5,0) DEFAULT 0 NOT NULL ENABLE,
MESSAGE_NBR     NUMBER(5,0) DEFAULT 0 NOT NULL ENABLE,
ASSIGNED_TO     CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
TD_TYPE_CD      CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
ROLE_ID         CHAR(10) DEFAULT ' ' NOT NULL ENABLE,
ENTRY_STATUS_FLG CHAR(2) DEFAULT ' ' NOT NULL ENABLE,
VERSION         NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
CRE_DTTM DATE,
ASSIGNED_DTTM DATE,
COMPLETE_DTTM DATE,
COMPLETE_USER_ID CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
COMMENTS        VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
ASSIGNED_USER_ID CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
TD_PRIORITY_FLG CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
ILM_DT DATE,
ILM_ARCH_SW CHAR(1)
)
ENABLE ROW MOVEMENT
PARTITION BY RANGE (ILM_DT)
SUBPARTITION BY RANGE (TD_ENTRY_ID) SUBPARTITION TEMPLATE
(
SUBPARTITION S01 VALUES LESS THAN ( '12499999999999' ),
SUBPARTITION S02 VALUES LESS THAN ( '24999999999999' ),
SUBPARTITION S03 VALUES LESS THAN ( '37499999999999' ),
SUBPARTITION S04 VALUES LESS THAN ( '49999999999999' ),
SUBPARTITION S05 VALUES LESS THAN ( '62499999999999' ),
SUBPARTITION S06 VALUES LESS THAN ( '74999999999999' ),
SUBPARTITION S07 VALUES LESS THAN ( '87499999999999' ),
SUBPARTITION SMAX VALUES LESS THAN ( MAXVALUE )
)
(
PARTITION "P2017JAN" VALUES LESS THAN (TO_DATE('2017-02-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT039_P2017JAN,
PARTITION "P2017FEB" VALUES LESS THAN (TO_DATE('2017-03-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT039_P2017FEB,
PARTITION "P2017MAR" VALUES LESS THAN (TO_DATE('2017-04-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT039_P2017MAR,
PARTITION "P2017APR" VALUES LESS THAN (TO_DATE('2017-05-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT039_P2017APR,
PARTITION "P2017MAY" VALUES LESS THAN (TO_DATE('2017-06-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT039_P2017MAY,
PARTITION "P2017JUN" VALUES LESS THAN (TO_DATE('2017-07-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT039_P2017JUN,
PARTITION "P2017JUL" VALUES LESS THAN (TO_DATE('2017-08-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT039_P2017JUL,
PARTITION "P2017AUG" VALUES LESS THAN (TO_DATE('2017-09-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT039_P2017AUG,
PARTITION "P2017SEP" VALUES LESS THAN (TO_DATE('2017-10-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT039_P2017SEP,
PARTITION "P2017OCT" VALUES LESS THAN (TO_DATE('2017-11-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT039_P2017OCT,
PARTITION "P2017NOV" VALUES LESS THAN (TO_DATE('2017-12-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT039_P2017NOV,
PARTITION "P2017DEC" VALUES LESS THAN (TO_DATE('2018-01-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT039_P2017DEC,
PARTITION "PMAX" VALUES LESS THAN (MAXVALUE)
tablespace CM_XT039_PMAX
);
```

INDEX

```
CREATE BIGFILE TABLESPACE CM_XT039_IND DATAFILE '+DATADG' SIZE 50M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED;

CREATE UNIQUE INDEX XT039P0 ON CI_TD_ENTRY ( TD_ENTRY_ID ) TABLESPACE
CM_XT039_IND
GLOBAL PARTITION BY RANGE (TD_ENTRY_ID)
(
PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
);

ALTER TABLE CI_TD_ENTRY ADD CONSTRAINT XT039P0 PRIMARY
KEY(TD_ENTRY_ID) USING INDEX;
```

```
CREATE UNIQUE INDEX XT039S2 ON CI_TD_ENTRY ( ASSIGNED_TO, TD_ENTRY_ID
) TABLESPACE CM_XT039_IND COMPRESS ADVANCED LOW;

CREATE INDEX XT039S3 ON CI_TD_ENTRY ( ENTRY_STATUS_FLG, ASSIGNED_TO )
TABLESPACE CM_XT039_IND COMPRESS ADVANCED LOW;

CREATE INDEX XT039S4 ON CI_TD_ENTRY ( ROLE_ID, TD_TYPE_CD,
ENTRY_STATUS_FLG, CM_PRIORITY_FLG ) TABLESPACE CM_XT039_IND COMPRESS
ADVANCED LOW;

CREATE INDEX XT039S5 ON CI_TD_ENTRY ( BATCH_CD, BATCH_NBR,
ENTRY_STATUS_FLG ) TABLESPACE CM_XT039_IND COMPRESS ADVANCED LOW;

CREATE UNIQUE INDEX XT039S6 ON CI_TD_ENTRY ( TD_ENTRY_ID, ASSIGNED_TO,
ENTRY_STATUS_FLG )TABLESPACE CM_XT039_IND COMPRESS ADVANCED LOW;

CREATE UNIQUE INDEX XT039S7 ON CI_TD_ENTRY ( COMPLETE_USER_ID,
COMPLETE_DTTM, TD_ENTRY_ID ) TABLESPACE CM_XT039_IND COMPRESS ADVANCED
LOW;

CREATE UNIQUE INDEX ILM_XT039S8 ON CI_TD_ENTRY ( ILM_DT, ILM_ARCH_SW,
TD_ENTRY_ID ) LOCAL COMPRESS ADVANCED LOW;
```

Child Table: CI_TD_DRLKEY

```
CREATE TABLE CI_TD_DRLKEY
(
TD_ENTRY_ID CHAR(14) NOT NULL ENABLE,
SEQ_NUM    NUMBER(3,0) NOT NULL ENABLE,
KEY_VALUE  VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
VERSION    NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
CONSTRAINT CI_TD_DRLKEY_FK FOREIGN KEY(TD_ENTRY_ID) REFERENCES
CI_TD_ENTRY ON DELETE CASCADE
)
PARTITION BY REFERENCE (CI_TD_DRLKEY_FK)
ENABLE ROW MOVEMENT;
```

INDEX

```
CREATE UNIQUE INDEX XT037P0 ON CI_TD_DRLKEY ( TD_ENTRY_ID, SEQ_NUM )
TABLESPACE CM_XT039_IND
GLOBAL PARTITION BY RANGE (TD_ENTRY_ID)
(
PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW;

ALTER TABLE CI_TD_DRLKEY ADD CONSTRAINT XT037P0 PRIMARY
KEY(TD_ENTRY_ID, SEQ_NUM) USING INDEX;
```

```
CREATE INDEX XT037S1 ON CI_TD_DRLKEY ( KEY_VALUE, TD_ENTRY_ID )
TABLESPACE CM_XT039_IND COMPRESS ADVANCED LOW;
```

Child Table: CI_TD_ENTRY_CHA

```
CREATE TABLE CI_TD_ENTRY_CHA
(
TD_ENTRY_ID   CHAR(14) NOT NULL ENABLE,
CHAR_TYPE_CD   CHAR(8) NOT NULL ENABLE,
SEQ_NUM       NUMBER(3,0) DEFAULT 0 NOT NULL ENABLE,
CHAR_VAL       CHAR(16) DEFAULT ' ' NOT NULL ENABLE,
VERSION        NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
ADHOC_CHAR_VAL VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
CHAR_VAL_FK1   VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
CHAR_VAL_FK2   VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
CHAR_VAL_FK3   VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
CHAR_VAL_FK4   VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
CHAR_VAL_FK5   VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
SRCH_CHAR_VAL  VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
CONSTRAINT CI_TD_ENTRY_CHA_FK FOREIGN KEY(TD_ENTRY_ID) REFERENCES
CI_TD_ENTRY ON DELETE CASCADE
)
PARTITION BY REFERENCE (CI_TD_ENTRY_CHA_FK)
ENABLE ROW MOVEMENT;
```

INDEX

```
CREATE UNIQUE INDEX XT701P0 ON CI_TD_ENTRY_CHA ( TD_ENTRY_ID,
CHAR_TYPE_CD, SEQ_NUM ) TABLESPACE CM_XT039_IND
GLOBAL PARTITION BY RANGE (TD_ENTRY_ID)
(
PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW;

ALTER TABLE CI_TD_ENTRY_CHA ADD CONSTRAINT XT701P0 PRIMARY
KEY(TD_ENTRY_ID, CHAR_TYPE_CD, SEQ_NUM) USING INDEX;

CREATE INDEX XT701S1 ON CI_TD_ENTRY_CHA ( SRCH_CHAR_VAL, CHAR_TYPE_CD,
TD_ENTRY_ID ) TABLESPACE CM_XT039_IND COMPRESS ADVANCED LOW;
```

Child Table: CI_TD_LOG

```
CREATE TABLE CI_TD_LOG
(
TD_ENTRY_ID CHAR(14) NOT NULL ENABLE,
SEQ_NUM    NUMBER(3,0) NOT NULL ENABLE,
LOG_DTTM DATE NOT NULL ENABLE,
LOG_TYPE_FLG CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
USER_ID     CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
ASSIGNED_TO CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
VERSION     NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
DESCRLONG   VARCHAR2(4000) DEFAULT ' ' NOT NULL ENABLE,
CONSTRAINT CI_TD_LOG_FK FOREIGN KEY(TD_ENTRY_ID) REFERENCES
CI_TD_ENTRY ON DELETE CASCADE
)
PARTITION BY REFERENCE (CI_TD_LOG_FK)
ENABLE ROW MOVEMENT;
```

INDEX

```
CREATE UNIQUE INDEX XT721P0 ON CI_TD_LOG ( TD_ENTRY_ID, SEQ_NUM )
TABLESPACE CM_XT039_IND
GLOBAL PARTITION BY RANGE (TD_ENTRY_ID)
(
PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW;

ALTER TABLE CI_TD_LOG ADD CONSTRAINT XT721P0 PRIMARY KEY(TD_ENTRY_ID,
SEQ_NUM) USING INDEX;

CREATE INDEX XT721S1 ON CI_TD_LOG ( LOG_DTTM,  USER_ID, LOG_TYPE_FLG,
TD_ENTRY_ID ) TABLESPACE CM_XT039_IND COMPRESS ADVANCED LOW;
```

Child Table: CI_TD_MSG_PARM

```
CREATE TABLE CI_TD_MSG_PARM
(
TD_ENTRY_ID CHAR(14) NOT NULL ENABLE,
SEQ_NUM     NUMBER(3,0) NOT NULL ENABLE,
MSG_PARM_VAL VARCHAR2(30) DEFAULT ' ' NOT NULL ENABLE,
VERSION     NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
CONSTRAINT CI_TD_MSG_PARM_FK FOREIGN KEY(TD_ENTRY_ID) REFERENCES
CI_TD_ENTRY ON DELETE CASCADE
)
PARTITION BY REFERENCE (CI_TD_MSG_PARM_FK)
ENABLE ROW MOVEMENT;
```

INDEX

```
CREATE UNIQUE INDEX XT040P0 ON CI_TD_MSG_PARM ( TD_ENTRY_ID, SEQ_NUM )
TABLESPACE CM_XT039_IND
GLOBAL PARTITION BY RANGE (TD_ENTRY_ID)
 (
   PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
   PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
   PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
   PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
   PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
    PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
    PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
    PARTITION P8 VALUES LESS THAN ( MAXVALUE )
 )
COMPRESS ADVANCED LOW;

ALTER TABLE CI_TD_MSG_PARM ADD CONSTRAINT XT040P0 PRIMARY
KEY(TD_ENTRY_ID, SEQ_NUM) USING INDEX;
```

Child Table: CI_TD_SRTKEY

```
CREATE TABLE CI_TD_SRTKEY
(
TD_ENTRY_ID CHAR(14) NOT NULL ENABLE,
SEQ_NUM    NUMBER(3,0) NOT NULL ENABLE,
KEY_VALUE  VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
VERSION    NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
CONSTRAINT CI_TD_SRTKEY_FK FOREIGN KEY(TD_ENTRY_ID) REFERENCES
CI_TD_ENTRY ON DELETE CASCADE
)
PARTITION BY REFERENCE (CI_TD_SRTKEY_FK)
ENABLE ROW MOVEMENT;
```

INDEX

```
CREATE UNIQUE INDEX XT041P0 ON CI_TD_SRTKEY ( TD_ENTRY_ID, SEQ_NUM )
TABLESPACE CM_XT039_IND
GLOBAL PARTITION BY RANGE (TD_ENTRY_ID)
(
PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW;

ALTER TABLE CI_TD_SRTKEY ADD CONSTRAINT XT041P0 PRIMARY
KEY(TD_ENTRY_ID, SEQ_NUM) USING INDEX;

CREATE INDEX XT041S1 ON CI_TD_SRTKEY ( KEY_VALUE, TD_ENTRY_ID )
TABLESPACE CM_XT039_IND COMPRESS ADVANCED LOW;
```

Maintenance Object:F1-SYNCREQIN

Parent Table: F1_SYNC_REQ_IN

```
CREATE BIGFILE TABLESPACE CM_F1T191_P2017JAN DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
```

```
CREATE BIGFILE TABLESPACE CM_F1T191_P2017FEB DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_F1T191_P2017MAR DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_F1T191_P2017APR DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_F1T191_P2017MAY DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_F1T191_P2017JUN DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_F1T191_P2017JUL DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_F1T191_P2017AUG DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_F1T191_P2017SEP DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_F1T191_P2017OCT DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_F1T191_P2017NOV DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_F1T191_P2017DEC DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_F1T191_PMAX DATAFILE '+DATADG' SIZE 50M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED;

CREATE TABLE F1_SYNC_REQ_IN
  (
    F1_SYNC_REQ_IN_ID CHAR(14) NOT NULL ENABLE,
    BUS_OBJ_CD        CHAR(30) DEFAULT ' ' NOT NULL ENABLE,
    CRE_DTTM DATE NOT NULL ENABLE,
    BO_STATUS_CD CHAR(12) DEFAULT ' ' NOT NULL ENABLE,
    STATUS_UPD_DTTM DATE,
    MAINT_OBJ_CD  CHAR(12) DEFAULT ' ' NOT NULL ENABLE,
    NT_XID_CD     CHAR(30) DEFAULT ' ' NOT NULL ENABLE,
    EXT_PK_VALUE1 VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    EXT_PK_VALUE2 VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    EXT_PK_VALUE3 VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    EXT_PK_VALUE4 VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    EXT_PK_VALUE5 VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    PK_VALUE1     VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    BO_DATA_AREA CLOB,
    PRE_TRN_INIT_BO_DATA_AREA CLOB,
    PRE_TRN_FIN_BO_DATA_AREA CLOB,
    POST_TRN_BO_DATA_AREA CLOB,
    VERSION                  NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
    EXT_REFERENCE_ID         CHAR(36) DEFAULT ' ' NOT NULL ENABLE,
    F1_INITIAL_LOAD_SYNC_FLG CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
    F1_COMPOSITE_SYNC_FLG    CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
    ILM_DT DATE,
    ILM_ARCH_SW CHAR(1)
   )
```

```
ENABLE ROW MOVEMENT
LOB   (BO_DATA_AREA)   STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE)
LOB   (PRE_TRN_INIT_BO_DATA_AREA)   STORE AS SECUREFILE (ENABLE STORAGE
IN ROW COMPRESS MEDIUM CACHE)
LOB   (PRE_TRN_FIN_BO_DATA_AREA)   STORE AS SECUREFILE (ENABLE STORAGE
IN ROW COMPRESS MEDIUM CACHE)
LOB   (POST_TRN_BO_DATA_AREA)   STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE)
PARTITION BY RANGE(ILM_DT)
SUBPARTITION BY RANGE(F1_SYNC_REQ_IN_ID)
SUBPARTITION TEMPLATE
(
    SUBPARTITION S01 VALUES LESS THAN ( '12499999999999' ),
    SUBPARTITION S02 VALUES LESS THAN ( '24999999999999' ),
    SUBPARTITION S03 VALUES LESS THAN ( '37499999999999' ),
    SUBPARTITION S04 VALUES LESS THAN ( '49999999999999' ),
    SUBPARTITION S05 VALUES LESS THAN ( '62499999999999' ),
    SUBPARTITION S06 VALUES LESS THAN ( '74999999999999' ),
    SUBPARTITION S07 VALUES LESS THAN ( '87499999999999' ),
    SUBPARTITION SMAX VALUES LESS THAN ( MAXVALUE )
 )
(

PARTITION "P2017JAN" VALUES LESS THAN (TO_DATE('2017-02-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB(BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS
MEDIUM CACHE tablespace CM_F1T191_P2017JAN )
LOB(PRE_TRN_INIT_ BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017JAN )
LOB(PRE_TRN_FIN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017JAN )
LOB(POST_TRN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE
tablespace CM_F1T191_P2017JAN )
tablespace CM_F1T191_P2017JAN,
PARTITION "P2017FEB" VALUES LESS THAN (TO_DATE('2017-03-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB(BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS
MEDIUM CACHE tablespace CM_F1T191_P2017FEB )
LOB(PRE_TRN_INIT_ BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017FEB )
LOB(PRE_TRN_FIN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017FEB )
LOB(POST_TRN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017FEB )
tablespace CM_F1T191_P2017FEB,
PARTITION "P2017MAR" VALUES LESS THAN (TO_DATE('2017-04-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB(BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS
MEDIUM CACHE tablespace CM_F1T191_P2017MAR )
LOB(PRE_TRN_INIT_ BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017MAR )
LOB(PRE_TRN_FIN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017MAR )
LOB(POST_TRN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017MAR )
tablespace CM_F1T191_P2017MAR,
PARTITION "P2017APR" VALUES LESS THAN (TO_DATE('2017-05-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB(BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS
MEDIUM CACHE tablespace CM_F1T191_P2017APR )
```

```
LOB(PRE_TRN_INIT_ BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017APR )
LOB(PRE_TRN_FIN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017APR )
LOB(POST_TRN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE
tablespace CM_F1T191_P2017APR )
tablespace CM_F1T191_P2017APR,
PARTITION "P2017MAY" VALUES LESS THAN (TO_DATE('2017-06-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB(BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS
MEDIUM CACHE tablespace CM_F1T191_P2017MAY )
LOB(PRE_TRN_INIT_ BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017MAY )
LOB(PRE_TRN_FIN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017MAY )
LOB(POST_TRN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE
tablespace CM_F1T191_P2017MAY )
tablespace CM_F1T191_P2017MAY,
PARTITION "P2017JUN" VALUES LESS THAN (TO_DATE('2017-07-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB(BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS
MEDIUM CACHE tablespace CM_F1T191_P2017JUN )
LOB(PRE_TRN_INIT_ BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017JUN )
LOB(PRE_TRN_FIN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017JUN )
LOB(POST_TRN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017JUN )
tablespace CM_F1T191_P2017JUN,
PARTITION "P2017JUL" VALUES LESS THAN (TO_DATE('2017-08-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB(BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS
MEDIUM CACHE tablespace CM_F1T191_P2017JUL )
LOB(PRE_TRN_INIT_ BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017JUL )
LOB(PRE_TRN_FIN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017JUL )
LOB(POST_TRN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE
tablespace CM_F1T191_P2017JUL )
tablespace CM_F1T191_P2017JUL,
PARTITION "P2017AUG" VALUES LESS THAN (TO_DATE('2017-09-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB(BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS
MEDIUM CACHE tablespace CM_F1T191_P2017AUG )
LOB(PRE_TRN_INIT_ BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017AUG )
LOB(PRE_TRN_FIN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017AUG )
LOB(POST_TRN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017AUG )
tablespace CM_F1T191_P2017AUG,
PARTITION "P2017SEP" VALUES LESS THAN (TO_DATE('2017-10-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB(BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS
MEDIUM CACHE tablespace CM_F1T191_P2017SEP )
LOB(PRE_TRN_INIT_ BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017SEP )
LOB(PRE_TRN_FIN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017SEP )
```

```
LOB(POST_TRN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017SEP )
tablespace CM_F1T191_P2017SEP,
PARTITION "P2017OCT" VALUES LESS THAN (TO_DATE('2017-11-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB(BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS
MEDIUM CACHE tablespace CM_F1T191_P2017OCT )
LOB(PRE_TRN_INIT_ BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017OCT )
LOB(PRE_TRN_FIN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017OCT )
LOB(POST_TRN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE
tablespace CM_F1T191_P2017OCT )
tablespace CM_F1T191_P2017OCT,
PARTITION "P2017NOV" VALUES LESS THAN (TO_DATE('2017-12-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB(BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS
MEDIUM CACHE tablespace CM_F1T191_P2017NOV )
LOB(PRE_TRN_INIT_ BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017NOV )
LOB(PRE_TRN_FIN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017NOV )
LOB(POST_TRN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017NOV )
tablespace CM_F1T191_P2017NOV,
PARTITION "P2017DEC" VALUES LESS THAN (TO_DATE('2018-01-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB(BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS
MEDIUM CACHE tablespace CM_F1T191_P2017DEC )
LOB(PRE_TRN_INIT_ BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017DEC )
LOB(PRE_TRN_FIN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017DEC )
LOB(POST_TRN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE tablespace CM_F1T191_P2017DEC )
tablespace CM_F1T191_P2017DEC,
PARTITION "PMAX" VALUES LESS THAN (MAXVALUE)
LOB(BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS
MEDIUM CACHE tablespace CM_F1T191_PMAX )
LOB(PRE_TRN_INIT_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE tablespace CM_F1T191_PMAX )
LOB(PRE_TRN_FIN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE tablespace CM_F1T191_PMAX )
LOB(POST_TRN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE
tablespace CM_F1T191_PMAX )
tablespace CM_F1T191_PMAX
);
```

INDEX

```
CREATE BIGFILE TABLESPACE CM_F1T191_IND DATAFILE '+DATADG' SIZE 50M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED;

CREATE UNIQUE INDEX F1T191P0 ON F1_SYNC_REQ_IN(F1_SYNC_REQ_IN_ID)
TABLESPACE CM_F1T191_IND
GLOBAL PARTITION BY RANGE (F1_SYNC_REQ_IN_ID)
(
PARTITION P1 VALUES LESS THAN ( '124999999999999' ),
PARTITION P2 VALUES LESS THAN ( '249999999999999' ),
PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
);

ALTER TABLE F1_SYNC_REQ_IN ADD CONSTRAINT F1T191P0 PRIMARY KEY
(F1_SYNC_REQ_IN_ID) USING INDEX;

CREATE UNIQUE INDEX F1T191S1 ON F1_SYNC_REQ_IN (BO_STATUS_CD,
BUS_OBJ_CD, F1_SYNC_REQ_IN_ID) TABLESPACE CM_F1T191_IND COMPRESS
ADVANCED LOW;

CREATE INDEX F1T191S2 ON
F1_SYNC_REQ_IN(MAINT_OBJ_CD,EXT_PK_VALUE1,NT_XID_CD,PK_VALUE1)
TABLESPACE CM_F1T191_IND COMPRESS ADVANCED LOW;

CREATE UNIQUE INDEX CM_ILM_F1T191S3 ON F1_SYNC_REQ_IN(ILM_DT,
ILM_ARCH_SW, F1_SYNC_REQ_IN_ID) LOCAL COMPRESS ADVANCED LOW;
```

Child Table: F1_SYNC_REQ_IN_CHAR

```
CREATE TABLE F1_SYNC_REQ_IN_CHAR
  (
    F1_SYNC_REQ_IN_ID CHAR(14) NOT NULL ENABLE,
    CHAR_TYPE_CD      CHAR(8) NOT NULL ENABLE,
    SEQ_NUM           NUMBER(3,0) NOT NULL ENABLE,
    CHAR_VAL          CHAR(16) DEFAULT ' ' NOT NULL ENABLE,
    ADHOC_CHAR_VAL    VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK1      VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK2      VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK3      VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK4      VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK5      VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    SRCH_CHAR_VAL     VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    VERSION           NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
   CONSTRAINT F1_SYNC_REQ_IN_CHAR_FK FOREIGN KEY(F1_SYNC_REQ_IN_ID)
REFERENCES F1_SYNC_REQ_IN ON DELETE CASCADE
)
PARTITION BY REFERENCE (F1_SYNC_REQ_IN_CHAR_FK)
ENABLE ROW MOVEMENT;
```

INDEX

```
CREATE UNIQUE INDEX F1T193P0 ON F1_SYNC_REQ_IN_CHAR(F1_SYNC_REQ_IN_ID,
CHAR_TYPE_CD, SEQ_NUM) TABLESPACE CM_F1T191_IND
GLOBAL PARTITION BY RANGE (F1_SYNC_REQ_IN_ID)
(
PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
```

```
COMPRESS ADVANCED LOW;

ALTER TABLE F1_SYNC_REQ_IN_CHAR ADD CONSTRAINT F1T193P0 PRIMARY KEY
(F1_SYNC_REQ_IN_ID, CHAR_TYPE_CD, SEQ_NUM) USING INDEX;

CREATE INDEX F1T193S1 ON F1_SYNC_REQ_IN_CHAR(SRCH_CHAR_VAL) TABLESPACE
CM_F1T191_IND ;
```

Child Table: F1_SYNC_REQ_IN_EXCP

```
CREATE TABLE F1_SYNC_REQ_IN_EXCP
  (
    F1_SYNC_REQ_IN_ID CHAR(14) NOT NULL ENABLE,
    SEQNO             NUMBER(5,0) NOT NULL ENABLE,
    MESSAGE_CAT_NBR   NUMBER(5,0) DEFAULT 0 NOT NULL ENABLE,
    MESSAGE_NBR       NUMBER(5,0) DEFAULT 0 NOT NULL ENABLE,
    VERSION           NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
   CONSTRAINT F1_SYNC_REQ_IN_EXCP_FK FOREIGN KEY(F1_SYNC_REQ_IN_ID)
REFERENCES F1_SYNC_REQ_IN ON DELETE CASCADE
)
PARTITION BY REFERENCE (F1_SYNC_REQ_IN_EXCP_FK)
ENABLE ROW MOVEMENT;
```

INDEX

```
CREATE UNIQUE INDEX F1T197P0 ON
F1_SYNC_REQ_IN_EXCP(F1_SYNC_REQ_IN_ID,SEQNO) TABLESPACE CM_F1T191_IND
GLOBAL PARTITION BY RANGE (F1_SYNC_REQ_IN_ID)
(
PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW;

ALTER TABLE F1_SYNC_REQ_IN_EXCP ADD CONSTRAINT F1T197P0 PRIMARY KEY
(F1_SYNC_REQ_IN_ID,SEQNO) USING INDEX;
```

Child Table: F1_SYNC_REQ_IN_EXCP_PARM

```
CREATE TABLE F1_SYNC_REQ_IN_EXCP_PARM
  (
    F1_SYNC_REQ_IN_ID CHAR(14) NOT NULL ENABLE,
    SEQNO             NUMBER(5,0) NOT NULL ENABLE,
    PARM_SEQ          NUMBER(3,0) NOT NULL ENABLE,
    MSG_PARM_VAL      VARCHAR2(30) DEFAULT ' ' NOT NULL ENABLE,
    MSG_PARM_TYP_FLG  CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
    VERSION           NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
   CONSTRAINT F1_SYNC_REQ_IN_EXCP_PARM_FK FOREIGN
KEY(F1_SYNC_REQ_IN_ID) REFERENCES F1_SYNC_REQ_IN ON DELETE CASCADE
)
PARTITION BY REFERENCE (F1_SYNC_REQ_IN_EXCP_PARM_FK)
ENABLE ROW MOVEMENT;
```

INDEX

```
CREATE UNIQUE INDEX F1T198P0 ON
F1_SYNC_REQ_IN_EXCP_PARM(F1_SYNC_REQ_IN_ID,SEQNO,PARM_SEQ) TABLESPACE
CM_F1T191_IND
GLOBAL PARTITION BY RANGE (F1_SYNC_REQ_IN_ID)
(
PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW;

ALTER TABLE F1_SYNC_REQ_IN_EXCP_PARM ADD CONSTRAINT F1T198P0 PRIMARY
KEY (F1_SYNC_REQ_IN_ID,SEQNO,PARM_SEQ) USING INDEX;
```

Child Table: F1_SYNC_REQ_IN_LOG

```
CREATE TABLE F1_SYNC_REQ_IN_LOG
  (
    F1_SYNC_REQ_IN_ID  CHAR(14) NOT NULL ENABLE,
    SEQNO              NUMBER(5,0) NOT NULL ENABLE,
    LOG_ENTRY_TYPE_FLG CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
    LOG_DTTM DATE NOT NULL ENABLE,
    BO_STATUS_CD    CHAR(12) DEFAULT ' ' NOT NULL ENABLE,
    MESSAGE_CAT_NBR NUMBER(5,0) DEFAULT 0 NOT NULL ENABLE,
    MESSAGE_NBR     NUMBER(5,0) DEFAULT 0 NOT NULL ENABLE,
    CHAR_TYPE_CD    CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL        CHAR(16) DEFAULT ' ' NOT NULL ENABLE,
    ADHOC_CHAR_VAL  VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK1    VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK2    VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK3    VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK4    VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK5    VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    DESCRLONG       VARCHAR2(4000) DEFAULT ' ' NOT NULL ENABLE,
    USER_ID         CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
    VERSION         NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
   CONSTRAINT F1_SYNC_REQ_IN_LOG_FK FOREIGN KEY(F1_SYNC_REQ_IN_ID)
REFERENCES F1_SYNC_REQ_IN ON DELETE CASCADE
)
PARTITION BY REFERENCE (F1_SYNC_REQ_IN_LOG_FK)
ENABLE ROW MOVEMENT;
```

INDEX

```
CREATE UNIQUE INDEX F1T194P0 ON
F1_SYNC_REQ_IN_LOG(F1_SYNC_REQ_IN_ID,SEQNO) TABLESPACE CM_F1T191_IND
GLOBAL PARTITION BY RANGE (F1_SYNC_REQ_IN_ID)
(
PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW;

ALTER TABLE F1_SYNC_REQ_IN_LOG ADD CONSTRAINT F1T194P0 PRIMARY KEY
(F1_SYNC_REQ_IN_ID,SEQNO) USING INDEX;

CREATE INDEX F1T194S1 ON F1_SYNC_REQ_IN_LOG(CHAR_TYPE_CD,CHAR_VAL_FK1)
TABLESPACE CM_F1T191_IND COMPRESS ADVANCED LOW;

CREATE INDEX F1T194S2 ON F1_SYNC_REQ_IN_LOG(CHAR_TYPE_CD,CHAR_VAL)
TABLESPACE CM_F1T191_IND COMPRESS ADVANCED LOW;
```

Child Table: F1_SYNC_REQ_IN_LOG_PARM

```
CREATE TABLE F1_SYNC_REQ_IN_LOG_PARM
  (
    F1_SYNC_REQ_IN_ID CHAR(14) NOT NULL ENABLE,
    SEQNO             NUMBER(5,0) NOT NULL ENABLE,
    PARM_SEQ          NUMBER(3,0) NOT NULL ENABLE,
    MSG_PARM_VAL      VARCHAR2(30) DEFAULT ' ' NOT NULL ENABLE,
    MSG_PARM_TYP_FLG  CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
    VERSION           NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
    CONSTRAINT F1_SYNC_REQ_IN_LOG_PARM_FK FOREIGN
KEY(F1_SYNC_REQ_IN_ID) REFERENCES F1_SYNC_REQ_IN ON DELETE CASCADE
)
PARTITION BY REFERENCE (F1_SYNC_REQ_IN_LOG_PARM_FK)
ENABLE ROW MOVEMENT;
```

INDEX

```
CREATE UNIQUE INDEX F1T195P0 ON
F1_SYNC_REQ_IN_LOG_PARM(F1_SYNC_REQ_IN_ID,SEQNO,PARM_SEQ) TABLESPACE
CM_F1T191_IND
GLOBAL PARTITION BY RANGE (F1_SYNC_REQ_IN_ID)
(
PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW;

ALTER TABLE F1_SYNC_REQ_IN_LOG_PARM ADD CONSTRAINT F1T195P0 PRIMARY
KEY (F1_SYNC_REQ_IN_ID,SEQNO,PARM_SEQ) USING INDEX;
```

Child Table: F1_SYNC_REQ_IN_REL_OBJ

```
CREATE TABLE F1_SYNC_REQ_IN_REL_OBJ
  (
    F1_SYNC_REQ_IN_ID CHAR(14) NOT NULL ENABLE,
    MAINT_OBJ_CD      CHAR(12) DEFAULT ' ' NOT NULL ENABLE,
    REL_OBJ_TYPE_FLG  CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
    PK_VALUE1         VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    PK_VALUE2         VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    PK_VALUE3         VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    PK_VALUE4         VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    PK_VALUE5         VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    VERSION           NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
   CONSTRAINT F1_SYNC_REQ_IN_REL_OBJ_FK FOREIGN KEY(F1_SYNC_REQ_IN_ID)
REFERENCES F1_SYNC_REQ_IN ON DELETE CASCADE
)
PARTITION BY REFERENCE (F1_SYNC_REQ_IN_REL_OBJ_FK)
ENABLE ROW MOVEMENT;
```

INDEX

```
CREATE UNIQUE INDEX F1T192P0 ON
F1_SYNC_REQ_IN_REL_OBJ(F1_SYNC_REQ_IN_ID, MAINT_OBJ_CD,
REL_OBJ_TYPE_FLG) TABLESPACE CM_F1T191_IND
GLOBAL PARTITION BY RANGE (F1_SYNC_REQ_IN_ID)
(
PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW;

ALTER TABLE F1_SYNC_REQ_IN_REL_OBJ ADD CONSTRAINT F1T192P0 PRIMARY KEY
(F1_SYNC_REQ_IN_ID, MAINT_OBJ_CD, REL_OBJ_TYPE_FLG) USING INDEX;

CREATE INDEX F1T192S1 ON F1_SYNC_REQ_IN_REL_OBJ(PK_VALUE1) TABLESPACE
CM_F1T191_IND;
```

Appendix B

Sample SQL For Enabling ILM in C2M for CCB (Existing Installation)

This section provides additional details related to supporting ILM in an existing installation. It includes the sample syntax for each step using the To Do Entry maintenance object as an example. Other maintenance object's implementations can follow a similar pattern.

1. Rename existing table CI_TD_ENTRY and primary key index as a backup. It is suggested to use an ILM_ prefix. The following are sample statements:

```
ALTER TABLE CI_TD_ENTRY RENAME TO ILM_TD_ENTRY;
ALTER INDEX XT039P0 RENAME TO ILM_XT039P0;
```

2. Generate DDL for the secondary index.

```
set heading off;
set echo off;
Set pages 999;
set long 90000;

spool ddl_list.sql
select dbms_metadata.get_ddl('INDEX','XT039S2','CISADM') from dual;
select dbms_metadata.get_ddl('INDEX','XT039S3','CISADM') from dual;
select dbms_metadata.get_ddl('INDEX','XT039S4','CISADM') from dual;
select dbms_metadata.get_ddl('INDEX','XT039S5','CISADM') from dual;
select dbms_metadata.get_ddl('INDEX','XT039S6','CISADM') from dual;
select dbms_metadata.get_ddl('INDEX','XT039S7','CISADM') from dual;
select dbms_metadata.get_ddl('INDEX','XT039S8','CISADM') from dual;
spool off;
```

3. Drop secondary indexes.

```
DROP INDEX CISADM.XT039S2;
DROP INDEX CISADM.XT039S3;
DROP INDEX CISADM.XT039S4;
DROP INDEX CISADM.XT039S5;
DROP INDEX CISADM.XT039S6;
DROP INDEX CISADM.XT039S7;
DROP INDEX CISADM.XT039S8;
```

4. Create Partitioned Table.

   In the following example ILM_DT value is inserted from column CRE_DTTM. The degree setting of 'parallel' in the DDL can be adjusted according to the table's data, its means and its size.

```
CREATE TABLE CI_TD_ENTRY (
TD_ENTRY_ID     CHAR(14) NOT NULL ENABLE,
BATCH_CD        CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
BATCH_NBR       NUMBER(10,0) DEFAULT 0 NOT NULL ENABLE,
MESSAGE_CAT_NBR NUMBER(5,0) DEFAULT 0 NOT NULL ENABLE,
MESSAGE_NBR     NUMBER(5,0) DEFAULT 0 NOT NULL ENABLE,
ASSIGNED_TO      CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
TD_TYPE_CD       CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
ROLE_ID          CHAR(10) DEFAULT ' ' NOT NULL ENABLE,
ENTRY_STATUS_FLG CHAR(2) DEFAULT ' ' NOT NULL ENABLE,
VERSION          NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
CRE_DTTM DATE,
ASSIGNED_DTTM DATE,
COMPLETE_DTTM DATE,
COMPLETE_USER_ID CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
COMMENTS         VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
ASSIGNED_USER_ID CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
TD_PRIORITY_FLG CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
ILM_DT DATE,
ILM_ARCH_SW CHAR(1)
) NOLOGGING PARALLEL
ENABLE ROW MOVEMENT
PARTITION BY RANGE (ILM_DT)
SUBPARTITION BY RANGE (TD_ENTRY_ID) SUBPARTITION TEMPLATE
(
SUBPARTITION S01 VALUES LESS THAN ( '12499999999999' ),
SUBPARTITION S02 VALUES LESS THAN ( '24999999999999' ),
SUBPARTITION S03 VALUES LESS THAN ( '37499999999999' ),
SUBPARTITION S04 VALUES LESS THAN ( '49999999999999' ),
SUBPARTITION S05 VALUES LESS THAN ( '62499999999999' ),
SUBPARTITION S06 VALUES LESS THAN ( '74999999999999' ),
SUBPARTITION S07 VALUES LESS THAN ( '87499999999999' ),
SUBPARTITION SMAX VALUES LESS THAN ( MAXVALUE )
)
(
PARTITION "P2017JAN" VALUES LESS THAN (TO_DATE('2017-02-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT039_P2017JAN,
PARTITION "P2017FEB" VALUES LESS THAN (TO_DATE('2017-03-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT039_P2017FEB,
PARTITION "P2017MAR" VALUES LESS THAN (TO_DATE('2017-04-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT039_P2017MAR,
PARTITION "P2017APR" VALUES LESS THAN (TO_DATE('2017-05-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT039_P2017APR,
PARTITION "P2017MAY" VALUES LESS THAN (TO_DATE('2017-06-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT039_P2017MAY,
PARTITION "P2017JUN" VALUES LESS THAN (TO_DATE('2017-07-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT039_P2017JUN,
PARTITION "P2017JUL" VALUES LESS THAN (TO_DATE('2017-08-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT039_P2017JUL,
PARTITION "P2017AUG" VALUES LESS THAN (TO_DATE('2017-09-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT039_P2017AUG,
PARTITION "P2017SEP" VALUES LESS THAN (TO_DATE('2017-10-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT039_P2017SEP,
PARTITION "P2017OCT" VALUES LESS THAN (TO_DATE('2017-11-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT039_P2017OCT,
PARTITION "P2017NOV" VALUES LESS THAN (TO_DATE('2017-12-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT039_P2017NOV,
PARTITION "P2017DEC" VALUES LESS THAN (TO_DATE('2018-01-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT039_P2017DEC,
PARTITION "PMAX" VALUES LESS THAN (MAXVALUE)
tablespace CM_XT039_PMAX
)as select /* PARALLEL */
)as select /* PARALLEL */
TD_ENTRY_ID,
BATCH_CD,
BATCH_NBR,
MESSAGE_CAT_NBR,
MESSAGE_NBR,
ASSIGNED_TO,
TD_TYPE_CD,
ROLE_ID,
ENTRY_STATUS_FLG,
VERSION,
CRE_DTTM,
ASSIGNED_DTTM,
COMPLETE_DTTM,
COMPLETE_USER_ID,
COMMENTS,
ASSIGNED_USER_ID,
TD_PRIORITY_FLG,
CRE_DTTM as ILM_DT,
ILM_ARCH_SW
from ILM_TD_ENTRY
/
```

5. Enable logging option for table CI_TD_ENTRY.

   ```
   ALTER TABLE CI_TD_ENTRY NOPARALLEL LOGGING;
   ```

6. Create Primary Index for Parent table CI_TD_ENTRY.

   ```
   CREATE BIGFILE TABLESPACE CM_XT039_IND DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
   MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED;

   CREATE UNIQUE INDEX XT039P0 ON CI_TD_ENTRY NOLOGGING PARALLEL (
   TD_ENTRY_ID
   )
   GLOBAL PARTITION BY RANGE (TD_ENTRY_ID) (
   PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
   PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
   PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
   PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
   PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
   PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
   PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
   PARTITION P8 VALUES LESS THAN ( MAXVALUE )
   ) TABLESPACE CM_XT039_IND
   /

   ALTER INDEX XT039P0 LOGGING NOPARALLEL;
   ```

7. Add Primary Key for Parent table CI_TD_ENTRY.

   ```
   ALTER TABLE CI_TD_ENTRY ADD CONSTRAINT XT039P0 PRIMARY KEY(TD_ENTRY_ID) USING INDEX
   /
   ```

8. Create Secondary Indexes for Parent table CI_TD_ENTRY.

   ```
   CREATE UNIQUE INDEX CM_ILM_XT039S8 ON CI_TD_ENTRY ( ILM_DT, ILM_ARCH_SW, TD_ENTRY_ID )
   LOCAL COMPRESS ADVANCED LOW
   /

   CREATE UNIQUE INDEX XT039S2 ON CI_TD_ENTRY ( ASSIGNED_TO, TD_ENTRY_ID ) TABLESPACE
   CM_XT039_IND COMPRESS ADVANCED LOW
   /

   CREATE INDEX XT039S3 ON CI_TD_ENTRY ( ENTRY_STATUS_FLG, ASSIGNED_TO ) TABLESPACE
   CM_XT039_IND COMPRESS ADVANCED LOW
   /

   CREATE INDEX XT039S4 ON CI_TD_ENTRY ( ROLE_ID, TD_TYPE_CD, ENTRY_STATUS_FLG,
   TD_PRIORITY_FLG ) TABLESPACE CM_XT039_IND COMPRESS ADVANCED LOW
   /

   CREATE INDEX XT039S5 ON CI_TD_ENTRY ( BATCH_CD, BATCH_NBR, ENTRY_STATUS_FLG )
   TABLESPACE CM_XT039_IND COMPRESS ADVANCED LOW
   /

   CREATE UNIQUE INDEX XT039S6 ON CI_TD_ENTRY ( TD_ENTRY_ID, ASSIGNED_TO,
   ENTRY_STATUS_FLG )TABLESPACE CM_XT039_IND COMPRESS ADVANCED LOW
   /

   CREATE UNIQUE INDEX XT039S7 ON CI_TD_ENTRY ( COMPLETE_USER_ID, COMPLETE_DTTM,
   TD_ENTRY_ID ) TABLESPACE CM_XT039_IND COMPRESS ADVANCED LOW
   /
   ```

9. After verification of the ILM based tables, user can drop the backup tables “ILM” renamed table.

10. Create all child Tables, Primary Key, Primary Indexes and Secondary Indexes as shown below.

Repeat the following steps for all child tables.

Create Child Table CI_TD_DRLKEY

```
CREATE TABLE CI_TD_DRLKEY
(
TD_ENTRY_ID NOT NULL ENABLE,
```

```
SEQ_NUM    NOT NULL ENABLE,
KEY_VALUE  DEFAULT ' ' NOT NULL ENABLE,
VERSION    DEFAULT 1 NOT NULL ENABLE,
CONSTRAINT CI_TD_DRLKEY_FK FOREIGN KEY(TD_ENTRY_ID) REFERENCES CI_TD_ENTRY ON DELETE
CASCADE
)
PARTITION BY REFERENCE (CI_TD_DRLKEY_FK)
ENABLE ROW MOVEMENT
AS SELECT /*+ PARALLEL */ * FROM ILM_CI_TD_DRLKEY;
```

Create Index

```
CREATE UNIQUE INDEX XT037P0 ON CI_TD_DRLKEY ( TD_ENTRY_ID, SEQ_NUM ) TABLESPACE
CM_XT039_IND NOLOGGING PARALLEL
GLOBAL PARTITION BY RANGE (TD_ENTRY_ID)
(
PARTITION P1 VALUES LESS THAN ( '124999999999' ),
PARTITION P2 VALUES LESS THAN ( '249999999999' ),
PARTITION P3 VALUES LESS THAN ( '374999999999' ),
PARTITION P4 VALUES LESS THAN ( '499999999999' ),
PARTITION P5 VALUES LESS THAN ( '624999999999' ),
PARTITION P6 VALUES LESS THAN ( '749999999999' ),
PARTITION P7 VALUES LESS THAN ( '874999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW;

ALTER INDEX XT037P0 LOGGING NOPARALLEL;

ALTER TABLE CI_TD_DRLKEY ADD CONSTRAINT XT037P0 PRIMARY KEY(TD_ENTRY_ID, SEQ_NUM) USING
INDEX;

CREATE INDEX XT037S1 ON CI_TD_DRLKEY ( KEY_VALUE, TD_ENTRY_ID ) TABLESPACE CM_XT039_IND
COMPRESS ADVANCED LOW;
```

Appendix C

Sample SQL for Periodic Maintenance for CCB Data

This appendix provides additional details related to creating new partitions over time, as well as archiving and restoring partitions.

- Add Partition
- Archive Partition
- Restore Partition

The To Do Entry and Inbound Sync Request maintenance objects are used as examples.

Add Partition

1. Create separate tablespace for new partition

   ```
   CREATE BIGFILE TABLESPACE CM_XT039_P2016JAN DATAFILE '+DATA' SIZE
   50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
   ADVANCED;
   ```

2. Add partition using split operation on MAXVALUE Partition

   ```
   ALTER TABLE CISADM.CI_TD_ENTRY SPLIT PARTITION PMAX AT
   (TO_DATE('2016-02-01 00:00:01','SYYYY-MM-DD HH24:MI:SS'))
   INTO
   (
   PARTITION P2016JAN TABLESPACE CM_XT039_P2016JAN, PARTITION PMAX
   )
   UPDATE INDEXES;
   ```

   In case table contains LOBS like F1_SYNC_REQ_IN, there will be additional statement in split partition DDL indicating tablespace on which LOB should go.

   ```
   ALTER TABLE CISADM.F1_SYNC_REQ_IN SPLIT PARTITION PMAX AT
   (TO_DATE('2016-02-01 00:00:01','SYYYY-MM-DD HH24:MI:SS'))
    INTO
    (
    PARTITION P2016JAN TABLESPACE CM_F1T191_P2016JAN
    LOB(BO_DATA_AREA, POST_TRN_BO_DATA_AREA, PRE_TRN_FIN_BO_DATA_AREA,
   PRE_TRN_INIT_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
   ROW COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2016JAN )
   ,
    PARTITION PMAX
    )
    UPDATE INDEXES;
   ```

3. Enable advanced compression after SPLIT partition as it will disable the compression.

   ```
   ALTER TABLE CISADM.CI_TD_SRTKEY ROW STORE COMPRESS ADVANCED;
   ALTER TABLE CISADM.CI_TD_MSG_PARM ROW STORE COMPRESS ADVANCED;
   ALTER TABLE CISADM.CI_TD_DRLKEY ROW STORE COMPRESS ADVANCED;
   ALTER TABLE CISADM.CI_TD_ENTRY_CHA ROW STORE COMPRESS ADVANCED;
   ALTER TABLE CISADM.CI_TD_LOG ROW STORE COMPRESS ADVANCED;
   ```

Archive Partition

1. Make the tablespace to be archived READ ONLY.

   ```
   ALTER TABLESPACE CM_XT039_P2017JAN READ ONLY;
   ```

2. Check the feasibility of archive using ILM_ARCH_SW = ‘N’.

   ```
   Select count(1) from CISADM.CI_TD_ENTRY PARTITION P2017JAN where
   ILM_ARCH_SW = ‘N’;
   ```

   - If Yes (count of records of above query is ZERO), then proceed for further steps.
   - If No (count of records of above query is Non ZERO), then make the tablespace back to READ WRITE MODE as Archive is not Feasible at the time.

```
ALTER TABLESPACE CM_XT039_P2017JAN READ WRITE;
```

3. Create separate archive tablespace for partition need to be archived.

```
CREATE BIGFILE TABLESPACE CM_XT039_P2017JAN_ARC DATAFILE  '+DATA' 
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS 
ADVANCED;
```

4. Create staging tables and load data for all child tables for the MO first.

   a. CI_TD_ENTRY_CHA

```
CREATE TABLE CM_XT701_P2017JAN_ARC PARALLEL NOLOGGING 
TABLESPACE CM_XT039_P2017JAN_ARC
AS
(
SELECT /*+ PARALLEL */ * FROM CISADM.CI_TD_ENTRY_CHA PARTITION 
(P2017JAN_S01)
UNION ALL
SELECT /*+ PARALLEL */ * FROM CI_TD_ENTRY_CHA PARTITION 
(P2017JAN_S02)
UNION ALL
.
.
.
.
UNION ALL
SELECT /*+ PARALLEL */ * FROM CI_TD_ENTRY_CHA PARTITION 
(P2017JAN_S08)
);
ALTER TABLE CM_XT701_P2017JAN_ARC NOPARALLEL LOGGING;
```

   b. **CI_TD_MSG_PARM**

```
CREATE TABLE CM_XT04_P2017JAN_ARC PARALLEL NOLOGGING TABLESPACE 
CM_XT039_P2017JAN_ARC
AS
(
SELECT /*+ PARALLEL */ * FROM CISADM.CI_TD_MSG_PARM PARTITION 
(P2017JAN_S01)
UNION ALL
SELECT /*+ PARALLEL */ * FROM CI_TD_MSG_PARM  PARTITION 
(P2017JAN_S02)
UNION ALL
.
.
.
.
UNION ALL
SELECT /*+ PARALLEL */ * FROM CI_TD_MSG_PARM  PARTITION 
(P2017JAN_S08)
);
ALTER TABLE CM_XT04_P2017JAN_ARC NOPARALLEL LOGGING;
```

   c. CI_TD_LOG

```
CREATE TABLE CM_XT721_P2017JAN_ARC PARALLEL NOLOGGING 
TABLESPACE CM_XT039_P2017JAN_ARC
AS
(
SELECT /*+ PARALLEL */ * FROM CISADM.CI_TD_LOG PARTITION 
(P2017JAN_S01)
UNION ALL
SELECT /*+ PARALLEL */ * FROM CI_TD_LOG PARTITION (P2017JAN_S02)
UNION ALL
.
.
.
.
UNION ALL
SELECT /*+ PARALLEL */ * FROM CI_TD_LOG PARTITION (P2017JAN_S08)
);
ALTER TABLE CM_XT721_P2017JAN_ARC NOPARALLEL LOGGING;
```

d. CI_TD_SRTKEY

```
CREATE TABLE CM_XT041_P2017JAN_ARC PARALLEL NOLOGGING
TABLESPACE CM_XT039_P2017JAN_ARC
AS
(
SELECT /*+ PARALLEL */ * FROM CISADM.CI_TD_SRTKEY PARTITION
(P2017JAN_S01)
UNION ALL
SELECT /*+ PARALLEL */ * FROM CI_TD_SRTKEY PARTITION
(P2017JAN_S02)
UNION ALL
.
.
.
.
UNION ALL
SELECT /*+ PARALLEL */ * FROM CI_TD_SRTKEY PARTITION
(P2017JAN_S08)
);
ALTER TABLE CM_XT041_P2017JAN_ARC NOPARALLEL LOGGING;
```

e. CI_TD_DRLKEY

```
CREATE TABLE CM_XT037_P2017JAN_ARC PARALLEL NOLOGGING
TABLESPACE CM_XT039_P2017JAN_ARC
AS
(
SELECT /*+ PARALLEL */ * FROM CISADM.CI_TD_DRLKEY PARTITION
(P2017JAN_S01)
UNION ALL
SELECT /*+ PARALLEL */ * FROM CISADM.CI_TD_DRLKEY PARTITION
(P2017JAN_S02)
UNION ALL
.
.
.
.
UNION ALL
SELECT /*+ PARALLEL */ * FROM CISADM.CI_TD_DRLKEY PARTITION
(P2017JAN_S08)
);
ALTER TABLE CM_XT037_P2017JAN_ARC NOPARALLEL LOGGING;
```

5. Create staging table and load data for parent table.

```
CREATE TABLE CM_XT039_P2017JAN_ARC NOLOGGING PARALLEL
TABLESPACE CM_XT039_P2017JAN_ARC AS
SELECT /*+ PARALLEL */ * FROM CISADM.CI_TD_ENTRY PARTITION
(P2017JAN);

ALTER TABLE CM_XT039_P2017JAN_ARC NOPARALLEL LOGGING;
```

6. Export tablespace using TRANSPORT_TABLESPACES method.

```
ALTER TABLESPACE CM_XT039_P2017JAN_ARC READ ONLY;

expdp system/manager DIRECTORY=DUMP_DIR DUMPFILE=
CM_XT039_P2017JAN_ARC.DMP TRANSPORT_TABLESPACES =
CM_XT039_P2017JAN_ARC LOGFILE=EXP_ CM_XT039_P2017JAN_ARC.LOG
TRANSPORT_FULL_CHECK=Y
```

Ensure tablespace datafile required for further import should be preserved.

```
<<Transport THE FILE to LOCAL DB DIRECTORY DUMP_DIR like
connected to asmcmd and copied the file from cp
cm_xt039_p201701_tbs_ar.553.913864937  /tugbu_perf_02/BACKUPS/
test_verification/ >>
```

7. Drop the partition, partition tablespace and archive tablespace (as it is already exported).

```
ALTER TABLE CISADM.CI_TD_ENTRY  DROP PARTITION P2017JAN UPDATE
INDEXES;
DROP TABLESPACE CM_XT039_P2017JAN INCLUDING CONTENTS AND
DATAFILES;
DROP TABLESPACE CM_XT039_P2017JAN_ARC INCLUDING CONTENTS AND
DATAFILES;
```

Restore Partition

1. Create separate tablespace to restore the partition.

```
CREATE BIGFILE TABLESPACE CM_XT039_P2017JAN DATAFILE '+DATA'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE
COMPRESS ADVANCED;
```

2. Add partition using split operation on next greater value partition

```
ALTER TABLE CISADM.CI_TD_ENTRY SPLIT PARTITION P2017FEB AT
(TO_DATE('2017-02-01 00:00:01','SYYYY-MM-DD HH24:MI:SS'))
 INTO
 (
 PARTITION P2017JAN TABLESPACE CM_XT039_P2017JAN , PARTITION
P2017FEB
 )
 UPDATE INDEXES;
```

In case table contains LOBS like F1_SYNC_REQ_IN, there will be additional statement in split partition DDL indicating tablespace on which LOB should go.

```
ALTER TABLE CISADM.F1_SYNC_REQ_IN SPLIT PARTITION P2017FEB AT
(TO_DATE('2017-02-01 00:00:01','SYYYY-MM-DD HH24:MI:SS'))
 INTO
 (
 PARTITION P2017JAN TABLESPACE CM_F1T191_P2017JAN
LOB(BO_DATA_AREA,PRE_TRN_INIT_BO_DATA_AREA,PRE_TRN_FIN_BO_DATA_
AREA,POST_TRN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE
IN ROW COMPRESS MEDIUM CACHE TABLESPACE
CM_F1T191_P2017JAN )
, PARTITION P2017FEB
 )
 UPDATE INDEXES;
```

3. Enable advanced compression after SPLIT partition as it will disable the compression.

```
ALTER TABLE CISADM.CI_TD_SRTKEY ROW STORE COMPRESS ADVANCED;
ALTER TABLE CISADM.CI_TD_MSG_PARM ROW STORE COMPRESS ADVANCED;
ALTER TABLE CISADM.CI_TD_DRLKEY ROW STORE COMPRESS ADVANCED;
ALTER TABLE CISADM.CI_TD_ENTRY_CHA ROW STORE COMPRESS ADVANCED;
ALTER TABLE CISADM.CI_TD_LOG ROW STORE COMPRESS ADVANCED;
```

4. Import tablespace using TRANSPORT_TABLESPACES method.

```
impdp system/manager DIRECTORY=DUMP_DIR DUMPFILE=
CM_XT039_P2017JAN_ARC.DMP PARTITION_OPTIONS=DEPARTITION
LOGFILE=IMP_CM_XT039_P2017JAN_ARC.LOG TRANSPORT_DATAFILES=/
tugbu_perf_02/BACKUPS/test_verification/
cm_xt039_p201701jan_ar.553.913864937
```

5. Load data into parent table first from the staging table

```
 ALTER SESSION ENABLE PARALLEL DML;

INSERT /*+ APPEND PARALLEL */   INTO CISADM.CI_TD_ENTRY SELECT /
*+ PARALLEL */  * FROM CM_XT039_P2017JAN_ARC;
COMMIT;
```

6. Load data into child table from the staging table

   For each Child IN LIST OF CHILD TABLES, perform the following:

```
INSERT /*+ APPEND PARALLEL */   INTO CISADM.CI_TD_ENTRY_CHA
SELECT /*+ PARALLEL */ * FROM CM_XT701_P2017JAN_ARC;
COMMIT;
INSERT /*+ APPEND PARALLEL */   INTO CISADM.CI_TD_MSG_PARM
SELECT /*+ PARALLEL */ * FROM CM_XT04_P2017JAN_ARC;
COMMIT;

INSERT /*+ APPEND PARALLEL */   INTO CISADM.CI_TD_LOG SELECT /*+
PARALLEL */ * FROM CM_XT721_P2017JAN_ARC;
COMMIT;

INSERT /*+ APPEND PARALLEL */   INTO CISADM.CI_TD_SRTKEY SELECT
/*+ PARALLEL */ * FROM CM_XT041_P2017JAN_ARC;
COMMIT;

INSERT /*+ APPEND PARALLEL */   INTO CISADM.CI_TD_DRLKEY SELECT
/*+ PARALLEL */ * FROM CM_XT037_P2017JAN_ARC;
COMMIT;
```

7. Drop the archive tablespace after import is import and data loading is successful.

```
DROP TABLESPACE CM_XT039_P2017JAN_ARC INCLUDING CONTENTS AND
DATAFILES;
```

Appendix D

Sample SQL for Partitioning with ILM in C2M for CC&B

These are the sample SQL scripts which has the recommended way to partition the Bill Segment and Adjustment tables and Indexes. Implementations can further customize these scripts and update the partition names, tablespace names and date ranges to make sure they are suited to the implementation.

This appendix consists:

- Maintenance Object: Adjustment
- Maintenance Object: Bill Segment

Maintenance Object: Adjustment

This section contains the sample SQL for the following tables:

- Parent Table: CI_ADJ
    - Child Table: CI_ADJ_APREQ
    - Child Table: CI_ADJ_CALC_LN
        - Child Table: CI_ADJ_CL_CHAR
    - Child Table: CI_ADJ_CHAR

Parent Table: CI_ADJ

```
CREATE BIGFILE TABLESPACE CM_XT012_P2017JAN DATAFILE '+DATA' SIZE 100M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED
/
CREATE BIGFILE TABLESPACE CM_XT012_P2017FEB DATAFILE '+DATA' SIZE 100M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED
/
CREATE BIGFILE TABLESPACE CM_XT012_P2017MAR DATAFILE '+DATA' SIZE 100M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED
/
CREATE BIGFILE TABLESPACE CM_XT012_P2017APR DATAFILE '+DATA' SIZE 100M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED
/
CREATE BIGFILE TABLESPACE CM_XT012_P2017MAY DATAFILE '+DATA' SIZE 100M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED
/
CREATE BIGFILE TABLESPACE CM_XT012_P2017JUN DATAFILE '+DATA' SIZE 100M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED
/
CREATE BIGFILE TABLESPACE CM_XT012_P2017JUL DATAFILE '+DATA' SIZE 100M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED
/
CREATE BIGFILE TABLESPACE CM_XT012_P2017AUG DATAFILE '+DATA' SIZE 100M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED
/
CREATE BIGFILE TABLESPACE CM_XT012_P2017SEP DATAFILE '+DATA' SIZE 100M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED
/
CREATE BIGFILE TABLESPACE CM_XT012_P2017OCT DATAFILE '+DATA' SIZE 100M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED
/
CREATE BIGFILE TABLESPACE CM_XT012_P2017NOV DATAFILE '+DATA' SIZE 100M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED
/
CREATE BIGFILE TABLESPACE CM_XT012_P2017DEC DATAFILE '+DATA' SIZE 100M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED
/
CREATE BIGFILE TABLESPACE CM_XT012_PMAX DATAFILE '+DATA' SIZE 100M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED
/

CREATE TABLE CI_ADJ
(   CHAR(12) NOT NULL ENABLE,
ADJ_ID
SA_IDCHAR(10) DEFAULT ' ' NOT NULL ENABLE,
ADJ_TYPE_CDCHAR(8) DEFAULT' ' NOT NULL ENABLE,
ADJ_STATUS_FLG CHAR(2) DEFAULT' ' NOT NULL ENABLE,
CRE_DT DATE,CHAR(4) DEFAULT '' NOT NULL ENABLE,
CAN_RSN_CD
ADJ_AMTNUMBER(15,2) DEFAULT 0NOT NULL ENABLE,
XFER_ADJ_IDCHAR(12) DEFAULT ' ' NOT NULL ENABLE,
CURRENCY_CDCHAR(3) DEFAULT '' NOT NULL ENABLE,
COMMENTSVARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
VERSIONNUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
BEHALF_SA_IDCHAR(10) DEFAULT ' ' NOT NULL ENABLE,
BASE_AMTNUMBER(15,2) DEFAULT 0NOT NULL ENABLE,
GEN_REF_DT DATE,

APPR_REQ_ID CHAR(12) DEFAULT ' ' NOT NULL ENABLE,
ADJ_DATA_AREA CLOB,
ILM_DT DATE,
ILM_ARCH_SW CHAR(1),
)
ENABLE ROW MOVEMENT
PARTITION BY RANGE (ILM_DT)
SUBPARTITION BY RANGE (ADJ_ID) SUBPARTITION TEMPLATE (
SUBPARTITION S01 VALUES LESS THAN ( '124999999999' ),
SUBPARTITION S02 VALUES LESS THAN ( '249999999999' ),
SUBPARTITION S03 VALUES LESS THAN ( '374999999999' ),
SUBPARTITION S04 VALUES LESS THAN ( '499999999999' ),
SUBPARTITION S05 VALUES LESS THAN ( '624999999999' ),
SUBPARTITION S06 VALUES LESS THAN ( '749999999999' ),
SUBPARTITION S07 VALUES LESS THAN ( '874999999999' ),
SUBPARTITION S08 VALUES LESS THAN ( MAXVALUE )
)

(
PARTITION "P2017JAN" VALUES LESS THAN (TO_DATE('2017-02-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT012_P2017JAN,
PARTITION "P2017FEB" VALUES LESS THAN (TO_DATE('2017-03-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT012_P2017FEB,
PARTITION "P2017MAR" VALUES LESS THAN (TO_DATE('2017-04-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT012_P2017MAR,

PARTITION "P2017APR" VALUES LESS THAN (TO_DATE('2017-05-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT012_P2017APR,
PARTITION "P2017MAY" VALUES LESS THAN (TO_DATE('2017-06-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT012_P2017MAY,
PARTITION "P2017JUN" VALUES LESS THAN (TO_DATE('2017-07-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT012_P2017JUN,
PARTITION "P2017JUL" VALUES LESS THAN (TO_DATE('2017-08-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT012_P2017JUL,
PARTITION "P2017AUG" VALUES LESS THAN (TO_DATE('2017-09-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT012_P2017AUG,
PARTITION "P2017SEP" VALUES LESS THAN (TO_DATE('2017-10-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT012_P2017SEP,
PARTITION "P2017OCT" VALUES LESS THAN (TO_DATE('2017-11-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT012_P2017OCT,
PARTITION "P2017NOV" VALUES LESS THAN (TO_DATE('2017-12-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT012_P2017NOV,
PARTITION "P2017DEC" VALUES LESS THAN (TO_DATE('2018-01-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT012_P2017DEC,
PARTITION "PMAX" VALUES LESS THAN (MAXVALUE)
tablespace CM_XT012_PMAX
)

/
```

INDEX

```
CREATE BIGFILE TABLESPACE CM_XT012_IND DATAFILE '+DATA' SIZE 50M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED
/

CREATE UNIQUE INDEX XT012P0 ON CI_ADJ ( ADJ_ID ) TABLESPACE
CM_XT012_IND
GLOBAL PARTITION BY RANGE (ADJ_ID)
(
PARTITION P1 VALUES LESS THAN ( '124999999999' ),
PARTITION P2 VALUES LESS THAN ( '249999999999' ),
PARTITION P3 VALUES LESS THAN ( '374999999999' ),
PARTITION P4 VALUES LESS THAN ( '499999999999' ),
PARTITION P5 VALUES LESS THAN ( '624999999999' ),
PARTITION P6 VALUES LESS THAN ( '749999999999' ),
PARTITION P7 VALUES LESS THAN ( '874999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
/

ALTER TABLE CI_ADJ ADD CONSTRAINT XT012P0 PRIMARY KEY(ADJ_ID) USING
INDEX
/
CREATE INDEX XT012S1 ON CI_ADJ ( SA_ID, ADJ_TYPE_CD ) TABLESPACE
CM_XT012_IND COMPRESS ADVANCED LOW
/
CREATE UNIQUE INDEX XT012S2 ON CI_ADJ ( XFER_ADJ_ID, ADJ_ID )
TABLESPACE CM_XT012_IND COMPRESS ADVANCED LOW
/
CREATE UNIQUE INDEX XT012S3 ON CI_ADJ ( ILM_DT, ILM_ARCH_SW, ADJ_ID )
TABLESPACE CM_XT012_IND COMPRESS ADVANCED LOW
/
```

Child Table: CI_ADJ_APREQ

```
CREATE TABLE CI_ADJ_APREQ
  (
    AP_REQ_ID      CHAR(12) NOT NULL ENABLE,
    COUNTRY        CHAR(3) DEFAULT ' ' NOT NULL ENABLE,
    ADDRESS1       VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    ADJ_ID         CHAR(12) DEFAULT ' ' NOT NULL ENABLE,
    ADDRESS2       VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    ADDRESS3       VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    ADDRESS4       VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    CITY           VARCHAR2(90) DEFAULT ' ' NOT NULL ENABLE,
    NUM1           CHAR(6) DEFAULT ' ' NOT NULL ENABLE,
    NUM2           CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
    COUNTY         VARCHAR2(90) DEFAULT ' ' NOT NULL ENABLE,
    HOUSE_TYPE     CHAR(2) DEFAULT ' ' NOT NULL ENABLE,
    STATE          CHAR(6) DEFAULT ' ' NOT NULL ENABLE,
    POSTAL         CHAR(12) DEFAULT ' ' NOT NULL ENABLE,
    CURRENCY_PYMNT CHAR(3) DEFAULT ' ' NOT NULL ENABLE,
    GEO_CODE       CHAR(11) DEFAULT ' ' NOT NULL ENABLE,
    IN_CITY_LIMIT  CHAR(1) DEFAULT ' ' NOT NULL ENABLE,
    PAID_AMT       NUMBER(15,2) DEFAULT 0 NOT NULL ENABLE,
    SCHEDULED_PAY_DT DATE,
    PYMNT_DT DATE,
    ENTITY_NAME VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    PAY_DOC_ID  VARCHAR2(20) DEFAULT ' ' NOT NULL ENABLE,
    PAY_DOC_DT DATE,
    PYMNT_ID           CHAR(36) DEFAULT ' ' NOT NULL ENABLE,
    PYMNT_METHOD_FLG   CHAR(3) DEFAULT ' ' NOT NULL ENABLE,
    PYMNT_SEL_STAT_FLG CHAR(1) DEFAULT ' ' NOT NULL ENABLE,
    VERSION            NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
    BATCH_CD           CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
    BATCH_NBR          NUMBER(10,0) DEFAULT 0 NOT NULL ENABLE,
CONSTRAINT CI_ADJ_APREQ_FK FOREIGN KEY(ADJ_ID) REFERENCES CI_ADJ ON
DELETE CASCADE
)
PARTITION BY REFERENCE (CI_ADJ_APREQ_FK)
ENABLE ROW MOVEMENT
/
```

INDEX

```
CREATE UNIQUE INDEX XT160P0 ON CI_ADJ_APREQ ( AP_REQ_ID ) TABLESPACE
CM_XT012_IND
GLOBAL PARTITION BY RANGE (AP_REQ_ID)
(
PARTITION P1 VALUES LESS THAN ( '124999999999' ),
PARTITION P2 VALUES LESS THAN ( '249999999999' ),
PARTITION P3 VALUES LESS THAN ( '374999999999' ),
PARTITION P4 VALUES LESS THAN ( '499999999999' ),
PARTITION P5 VALUES LESS THAN ( '624999999999' ),
PARTITION P6 VALUES LESS THAN ( '749999999999' ),
PARTITION P7 VALUES LESS THAN ( '874999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW
/

ALTER TABLE CI_ADJ_APREQ ADD CONSTRAINT XT160P0 PRIMARY KEY(AP_REQ_ID)
USING INDEX
/
CREATE INDEX XT160S1 ON CI_ADJ_APREQ ( ADJ_ID ) TABLESPACE
CM_XT012_IND
/
CREATE INDEX XT160S2 ON CI_ADJ_APREQ ( BATCH_CD, BATCH_NBR )
TABLESPACE CM_XT012_IND COMPRESS ADVANCED LOW
/
```

Child Table: CI_ADJ_CALC_LN

```
CREATE TABLE CI_ADJ_CALC_LN
  (
    ADJ_ID CHAR(12) NOT NULL ENABLE,
    SEQNO  NUMBER(5,0) NOT NULL ENABLE,
    TOU_CD CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
    UOM_CD CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
    SQI_CD CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
    RS_CD  CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
    EFFDT DATE,
    RC_SEQ          NUMBER(4,0) DEFAULT 0 NOT NULL ENABLE,
    DST_ID          CHAR(10) DEFAULT ' ' NOT NULL ENABLE,
    CURRENCY_CD     CHAR(3) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_TYPE_CD    CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL        CHAR(16) DEFAULT ' ' NOT NULL ENABLE,
    PRT_SW          CHAR(1) DEFAULT ' ' NOT NULL ENABLE,
    APP_IN_SUMM_SW  CHAR(1) DEFAULT ' ' NOT NULL ENABLE,
    CALC_AMT        NUMBER(15,2) DEFAULT 0 NOT NULL ENABLE,
    EXEMPT_AMT      NUMBER(15,2) DEFAULT 0 NOT NULL ENABLE,
    BASE_AMT        NUMBER(15,2) DEFAULT 0 NOT NULL ENABLE,
    MSR_PEAK_QTY_SW CHAR(1) DEFAULT ' ' NOT NULL ENABLE,
    VERSION         NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
    DESCR_ON_BILL   VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    BILL_SQ         NUMBER(18,6) DEFAULT 0 NOT NULL ENABLE,
    AUDIT_CALC_AMT  NUMBER(18,5) DEFAULT 0 NOT NULL ENABLE,
    CALC_GRP_CD     VARCHAR2(30) DEFAULT ' ' NOT NULL ENABLE,
    CALC_RULE_CD    VARCHAR2(30) DEFAULT ' ' NOT NULL ENABLE,
CONSTRAINT CI_ADJ_CALC_LN_FK FOREIGN KEY(ADJ_ID) REFERENCES CI_ADJ ON
DELETE CASCADE
)
PARTITION BY REFERENCE (CI_ADJ_CALC_LN_FK)
ENABLE ROW MOVEMENT
/
```

INDEX

```
CREATE UNIQUE INDEX XT310P0 ON CI_ADJ_CALC_LN ( ADJ_ID, SEQNO )
TABLESPACE CM_XT012_IND
GLOBAL PARTITION BY RANGE (ADJ_ID)
(
PARTITION P1 VALUES LESS THAN ( '124999999999' ),
PARTITION P2 VALUES LESS THAN ( '249999999999' ),
PARTITION P3 VALUES LESS THAN ( '374999999999' ),
PARTITION P4 VALUES LESS THAN ( '499999999999' ),
PARTITION P5 VALUES LESS THAN ( '624999999999' ),
PARTITION P6 VALUES LESS THAN ( '749999999999' ),
PARTITION P7 VALUES LESS THAN ( '874999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW
/

ALTER TABLE CI_ADJ_CALC_LN ADD CONSTRAINT XT310P0 PRIMARY KEY(ADJ_ID,
SEQNO) USING INDEX
/
```

Child Table: CI_ADJ_CL_CHAR

```
CREATE TABLE CI_ADJ_CL_CHAR
  (
    ADJ_ID         CHAR(12) NOT NULL ENABLE,
    SEQNO          NUMBER(5,0) NOT NULL ENABLE,
    CHAR_TYPE_CD   CHAR(8) NOT NULL ENABLE,
    VERSION        NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
    CHAR_VAL       CHAR(16) DEFAULT ' ' NOT NULL ENABLE,
    ADHOC_CHAR_VAL VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK1   VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK2   VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK3   VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK4   VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK5   VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
CONSTRAINT CI_ADJ_CL_CHAR_FK FOREIGN KEY(ADJ_ID) REFERENCES CI_ADJ ON
DELETE CASCADE
)
PARTITION BY REFERENCE (CI_ADJ_CL_CHAR_FK)
ENABLE ROW MOVEMENT
/
```

INDEX

```
CREATE UNIQUE INDEX XT309P0 ON CI_ADJ_CL_CHAR ( ADJ_ID, SEQNO,
CHAR_TYPE_CD ) TABLESPACE CM_XT012_IND
GLOBAL PARTITION BY RANGE (ADJ_ID)
(
PARTITION P1 VALUES LESS THAN ( '124999999999' ),
PARTITION P2 VALUES LESS THAN ( '249999999999' ),
PARTITION P3 VALUES LESS THAN ( '374999999999' ),
PARTITION P4 VALUES LESS THAN ( '499999999999' ),
PARTITION P5 VALUES LESS THAN ( '624999999999' ),
PARTITION P6 VALUES LESS THAN ( '749999999999' ),
PARTITION P7 VALUES LESS THAN ( '874999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW
/

ALTER TABLE CI_ADJ_CL_CHAR ADD CONSTRAINT XT309P0 PRIMARY KEY(ADJ_ID,
SEQNO, CHAR_TYPE_CD) USING INDEX
/
```

Child Table: CI_ADJ_CHAR

```
CREATE TABLE CI_ADJ_CHAR
  (
    ADJ_ID         CHAR(12) NOT NULL ENABLE,
    CHAR_TYPE_CD   CHAR(8) NOT NULL ENABLE,
    SEQ_NUM        NUMBER(3,0) NOT NULL ENABLE,
    VERSION        NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
    CHAR_VAL       CHAR(16) DEFAULT ' ' NOT NULL ENABLE,
    ADHOC_CHAR_VAL VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK1   VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK2   VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK3   VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK4   VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK5   VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    SRCH_CHAR_VAL  VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
CONSTRAINT CI_ADJ_CHAR_FK FOREIGN KEY(ADJ_ID) REFERENCES CI_ADJ ON
DELETE CASCADE
)
PARTITION BY REFERENCE (CI_ADJ_CHAR_FK)
ENABLE ROW MOVEMENT
/
```

INDEX

```
CREATE UNIQUE INDEX XC781P0 ON CI_ADJ_CHAR (ADJ_ID, CHAR_TYPE_CD,
SEQ_NUM) TABLESPACE CM_XT012_IND
GLOBAL PARTITION BY RANGE(ADJ_ID)
 (
 PARTITION PART1 VALUES LESS THAN ('124999999999'),
 PARTITION PART2 VALUES LESS THAN ('249999999999'),
 PARTITION PART3 VALUES LESS THAN ('374999999999'),
 PARTITION PART4 VALUES LESS THAN ('499999999999'),
 PARTITION PART5 VALUES LESS THAN ('624999999999'),
 PARTITION PART6 VALUES LESS THAN ('749999999999'),
 PARTITION PART7 VALUES LESS THAN ('874999999999'),
 PARTITION PART8 VALUES LESS THAN (MAXVALUE)
 )
COMPRESS ADVANCED LOW
/

ALTER TABLE CI_ADJ_CHAR ADD CONSTRAINT XC781P0 PRIMARY KEY (ADJ_ID,
CHAR_TYPE_CD, SEQ_NUM) USING INDEX;

CREATE INDEX XC781S1 ON CI_ADJ_CHAR(SRCH_CHAR_VAL)
GLOBAL PARTITION BY HASH(SRCH_CHAR_VAL)
 (
 PARTITION PART1 TABLESPACE CM_XT012_IND,
 PARTITION PART2 TABLESPACE CM_XT012_IND,
 PARTITION PART3 TABLESPACE CM_XT012_IND,
 PARTITION PART4 TABLESPACE CM_XT012_IND,
 PARTITION PART5 TABLESPACE CM_XT012_IND,
 PARTITION PART6 TABLESPACE CM_XT012_IND,
 PARTITION PART7 TABLESPACE CM_XT012_IND,
 PARTITION PART8 TABLESPACE CM_XT012_IND
)
/
```

Maintenance Object: Bill Segment

This section contains the sample SQL for the following tables:

- Parent Table: CI_BSEG
  - Child Table: CI_BSEG_CALC
  - Child Table: CI_BSEG_CALC_LN
    - Child Table: CI_BSEG_CL_CHAR
      - Child Table: CI_BSEG_EXCP
  - Child Table: CI_BSEG_MSG
  - Child Table: CI_BSEG_READ
  - Child Table: CI_BSEG_SQ
  - Child Table: CI_BSEG_ITEM

Parent Table: CI_BSEG

```
CREATE BIGFILE TABLESPACE CM_XT048_P2017JAN DATAFILE '+DATA' SIZE 100M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED
/
CREATE BIGFILE TABLESPACE CM_XT048_P2017FEB DATAFILE '+DATA' SIZE 100M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED
/
CREATE BIGFILE TABLESPACE CM_XT048_P2017MAR DATAFILE '+DATA' SIZE 100M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED
/
CREATE BIGFILE TABLESPACE CM_XT048_P2017APR DATAFILE '+DATA' SIZE 100M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED
/
CREATE BIGFILE TABLESPACE CM_XT048_P2017MAY DATAFILE '+DATA' SIZE 100M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED
/
CREATE BIGFILE TABLESPACE CM_XT048_P2017JUN DATAFILE '+DATA' SIZE 100M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED
/
CREATE BIGFILE TABLESPACE CM_XT048_P2017JUL DATAFILE '+DATA' SIZE 100M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED
/
CREATE BIGFILE TABLESPACE CM_XT048_P2017AUG DATAFILE '+DATA' SIZE 100M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED
/
CREATE BIGFILE TABLESPACE CM_XT048_P2017SEP DATAFILE '+DATA' SIZE 100M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED
/
CREATE BIGFILE TABLESPACE CM_XT048_P2017OCT DATAFILE '+DATA' SIZE 100M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED
/
CREATE BIGFILE TABLESPACE CM_XT048_P2017NOV DATAFILE '+DATA' SIZE 100M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED
/
CREATE BIGFILE TABLESPACE CM_XT048_P2017DEC DATAFILE '+DATA' SIZE 100M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED
/
CREATE BIGFILE TABLESPACE CM_XT048_PMAX DATAFILE '+DATA' SIZE 100M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED
/
```

```
CREATE TABLE CI_BSEG
(   CHAR(12) NOTNULL ENABLE,
BSEG_ID
BILL_CYC_CDCHAR(4) DEFAULT ' ' NOT NULL ENABLE,
WIN_START_DT DATE,
CAN_RSN_CDCHAR(4) DEFAULT ' ' NOT NULL ENABLE,
CAN_BSEG_IDCHAR(12) DEFAULT ' 'NOT NULL ENABLE,
SA_IDCHAR(10) DEFAULT ' 'NOT NULL ENABLE,
BILL_IDCHAR(12) DEFAULT ' 'NOT NULL ENABLE,
START_DT DATE,
END_DT DATE,CHAR(1)DEFAULT' ' NOT NULL ENABLE,
EST_SW
CLOSING_BSEG_SWCHAR(1)DEFAULT' ' NOT NULL ENABLE,
SQ_OVERRIDE_SWCHAR(1)DEFAULT' ' NOT NULL ENABLE,
ITEM_OVERRIDE_SW CHAR(1)DEFAULT' ' NOT NULL ENABLE,
PREM_IDCHAR(10) DEFAULT ' ' NOT NULL ENABLE,
BSEG_STAT_FLGCHAR(2)DEFAULT' ' NOT NULL ENABLE,
CRE_DTTM DATE,
STAT_CHG_DTTM DATE,
REBILL_SEG_IDCHAR(12) DEFAULT ' 'NOT NULL ENABLE,
VERSIONNUMBER(5,0) DEFAULT 1NOTNULL ENABLE,
MASTER_BSEG_IDCHAR(12) DEFAULT ' 'NOT NULL ENABLE,
QUOTE_DTL_IDCHAR(12)DEFAULT ''NOT NULL ENABLE,
BILL_SCNR_IDCHAR(12)DEFAULT''NOT NULL ENABLE,
MDM_START_DTTM DATE,
MDM_END_DTTM DATE,
BSEG_DATA_AREA CLOB,
ILM_DT DATE,
ILM_ARCH_SW CHAR(1)
)
ENABLE ROW MOVEMENT
PARTITION BY RANGE (ILM_DT)
SUBPARTITION BY RANGE (BSEG_ID) SUBPARTITION TEMPLATE (
SUBPARTITION S01 VALUES LESS THAN ( '124999999999' ),
SUBPARTITION S02 VALUES LESS THAN ( '249999999999' ),
SUBPARTITION S03 VALUES LESS THAN ( '374999999999' ),
SUBPARTITION S04 VALUES LESS THAN ( '499999999999' ),
SUBPARTITION S05 VALUES LESS THAN ( '624999999999' ),
SUBPARTITION S06 VALUES LESS THAN ( '749999999999' ),
SUBPARTITION S07 VALUES LESS THAN ( '874999999999' ),
SUBPARTITION S08 VALUES LESS THAN ( MAXVALUE )
)

(
PARTITION "P2017JAN" VALUES LESS THAN (TO_DATE('2017-02-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT048_P2017JAN,
PARTITION "P2017FEB" VALUES LESS THAN (TO_DATE('2017-03-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT048_P2017FEB,
PARTITION "P2017MAR" VALUES LESS THAN (TO_DATE('2017-04-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT048_P2017MAR,
PARTITION "P2017APR" VALUES LESS THAN (TO_DATE('2017-05-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT048_P2017APR,
PARTITION "P2017MAY" VALUES LESS THAN (TO_DATE('2017-06-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT048_P2017MAY,
PARTITION "P2017JUN" VALUES LESS THAN (TO_DATE('2017-07-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT048_P2017JUN,
PARTITION "P2017JUL" VALUES LESS THAN (TO_DATE('2017-08-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT048_P2017JUL,
PARTITION "P2017AUG" VALUES LESS THAN (TO_DATE('2017-09-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT048_P2017AUG,
PARTITION "P2017SEP" VALUES LESS THAN (TO_DATE('2017-10-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT048_P2017SEP,
PARTITION "P2017OCT" VALUES LESS THAN (TO_DATE('2017-11-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT048_P2017OCT,
PARTITION "P2017NOV" VALUES LESS THAN (TO_DATE('2017-12-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT048_P2017NOV,
PARTITION "P2017DEC" VALUES LESS THAN (TO_DATE('2018-01-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
tablespace CM_XT048_P2017DEC,
PARTITION "PMAX" VALUES LESS THAN (MAXVALUE)
tablespace CM_XT048_PMAX
)

/
CREATE BIGFILE TABLESPACE CM_XT048_IND DATAFILE '+DATA' SIZE 100M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED;
```

INDEX

```
CREATE UNIQUE INDEX XT048P0 ON CI_BSEG ( BSEG_ID ) TABLESPACE
CM_XT048_IND
GLOBAL PARTITION BY RANGE (BSEG_ID)
(
PARTITION P1 VALUES LESS THAN ( '124999999999' ),
PARTITION P2 VALUES LESS THAN ( '249999999999' ),
PARTITION P3 VALUES LESS THAN ( '374999999999' ),
PARTITION P4 VALUES LESS THAN ( '499999999999' ),
PARTITION P5 VALUES LESS THAN ( '624999999999' ),
PARTITION P6 VALUES LESS THAN ( '749999999999' ),
PARTITION P7 VALUES LESS THAN ( '874999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
/
ALTER TABLE CI_BSEG ADD CONSTRAINT XT048P0 PRIMARY KEY(BSEG_ID) USING
INDEX
/
CREATE INDEX XT048S1 ON CI_BSEG ( BILL_ID ) TABLESPACE CM_XT048_IND
/
CREATE INDEX XT048S2 ON CI_BSEG ( SA_ID ) TABLESPACE CM_XT048_IND
/
CREATE UNIQUE INDEX XT048S3 ON CI_BSEG ( QUOTE_DTL_ID, BSEG_ID
)TABLESPACE CM_XT048_IND COMPRESS ADVANCED LOW
/
CREATE UNIQUE INDEX XT048S4 ON CI_BSEG ( ILM_DT, ILM_ARCH_SW, BSEG_ID )
TABLESPACE CM_XT048_IND COMPRESS ADVANCED LOW
/
```

Child Table: CI_BSEG_CALC

```
CREATE TABLE CI_BSEG_CALC
(
BSEG_ID    CHAR(12) NOT NULL ENABLE,
HEADER_SEQ NUMBER(3,0) NOT NULL ENABLE,
START_DT DATE NOT NULL ENABLE,
CURRENCY_CD CHAR(3) DEFAULT ' ' NOT NULL ENABLE,
END_DT DATE NOT NULL ENABLE,
RS_CD CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
EFFDT DATE,
BILLABLE_CHG_ID CHAR(12) DEFAULT ' ' NOT NULL ENABLE,
CALC_AMT        NUMBER(15,2) DEFAULT 0 NOT NULL ENABLE,
DESCR_ON_BILL   VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
VERSION         NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
CONSTRAINT CI_BSEG_CALC_FK FOREIGN KEY(BSEG_ID) REFERENCES CI_BSEG ON
DELETE CASCADE
)
PARTITION BY REFERENCE (CI_BSEG_CALC_FK)
ENABLE ROW MOVEMENT
/
```

INDEX

```
CREATE UNIQUE INDEX XT072P0 ON CI_BSEG_CALC ( BSEG_ID, HEADER_SEQ )
TABLESPACE CM_XT048_IND
GLOBAL PARTITION BY RANGE (BSEG_ID)
(
PARTITION P1 VALUES LESS THAN ( '124999999999' ),
PARTITION P2 VALUES LESS THAN ( '249999999999' ),
PARTITION P3 VALUES LESS THAN ( '374999999999' ),
PARTITION P4 VALUES LESS THAN ( '499999999999' ),
PARTITION P5 VALUES LESS THAN ( '624999999999' ),
PARTITION P6 VALUES LESS THAN ( '749999999999' ),
PARTITION P7 VALUES LESS THAN ( '874999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW
/

ALTER TABLE CI_BSEG_CALC ADD CONSTRAINT XT072P0 PRIMARY KEY(BSEG_ID,
HEADER_SEQ) USING INDEX
/
CREATE INDEX XT072S1 ON CI_BSEG_CALC ( BILLABLE_CHG_ID,  BSEG_ID )
TABLESPACE CM_XT048_IND COMPRESS ADVANCED LOW
/
```

Child Table: CI_BSEG_CALC_LN

```
CREATE TABLE CI_BSEG_CALC_LN
  (
    BSEG_ID         CHAR(12) NOT NULL ENABLE,
    HEADER_SEQ      NUMBER(3,0) NOT NULL ENABLE,
    SEQNO           NUMBER(5,0) NOT NULL ENABLE,
    CHAR_TYPE_CD    CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
    CURRENCY_CD     CHAR(3) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL        CHAR(16) DEFAULT ' ' NOT NULL ENABLE,
    DST_ID          CHAR(10) DEFAULT ' ' NOT NULL ENABLE,
    UOM_CD          CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
    TOU_CD          CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
    RC_SEQ          NUMBER(4,0) DEFAULT 0 NOT NULL ENABLE,
    PRT_SW          CHAR(1) DEFAULT ' ' NOT NULL ENABLE,
    APP_IN_SUMM_SW  CHAR(1) DEFAULT ' ' NOT NULL ENABLE,
    CALC_AMT        NUMBER(15,2) DEFAULT 0 NOT NULL ENABLE,
    EXEMPT_AMT      NUMBER(15,2) DEFAULT 0 NOT NULL ENABLE,
    BASE_AMT        NUMBER(15,2) DEFAULT 0 NOT NULL ENABLE,
    SQI_CD          CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
    BILL_SQ         NUMBER(18,6) DEFAULT 0 NOT NULL ENABLE,
    MSR_PEAK_QTY_SW CHAR(1) DEFAULT ' ' NOT NULL ENABLE,
    DESCR_ON_BILL   VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    VERSION         NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
    AUDIT_CALC_AMT  NUMBER(18,5) DEFAULT 0 NOT NULL ENABLE,
    CALC_GRP_CD     VARCHAR2(30) DEFAULT ' ' NOT NULL ENABLE,
    CALC_RULE_CD    VARCHAR2(30) DEFAULT ' ' NOT NULL ENABLE,
 CONSTRAINT CI_BSEG_CALC_LN_FK FOREIGN KEY(BSEG_ID) REFERENCES CI_BSEG 
ON DELETE CASCADE
)
PARTITION BY REFERENCE (CI_BSEG_CALC_LN_FK)
ENABLE ROW MOVEMENT
/
```

INDEX

```
CREATE UNIQUE INDEX XT050P0 ON CM_BSEG_CALC_LN ( BSEG_ID, 
HEADER_SEQ,SEQNO) TABLESPACE CM_XT048_IND
GLOBAL PARTITION BY RANGE (BSEG_ID)
(
PARTITION P1 VALUES LESS THAN ( '124999999999' ),
PARTITION P2 VALUES LESS THAN ( '249999999999' ),
PARTITION P3 VALUES LESS THAN ( '374999999999' ),
PARTITION P4 VALUES LESS THAN ( '499999999999' ),
PARTITION P5 VALUES LESS THAN ( '624999999999' ),
PARTITION P6 VALUES LESS THAN ( '749999999999' ),
PARTITION P7 VALUES LESS THAN ( '874999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW
/

ALTER TABLE CI_BSEG_CALC_LN ADD CONSTRAINT XT050P0 PRIMARY 
KEY(BSEG_ID, HEADER_SEQ,SEQNO) USING INDEX
/
```

Child Table: CI_BSEG_CL_CHAR

```
CREATE TABLE CI_BSEG_CL_CHAR
  (
    BSEG_ID        CHAR(12) NOT NULL ENABLE,
    HEADER_SEQ     NUMBER(3,0) NOT NULL ENABLE,
    SEQNO          NUMBER(5,0) NOT NULL ENABLE,
    CHAR_TYPE_CD   CHAR(8) NOT NULL ENABLE,
    CHAR_VAL       CHAR(16) DEFAULT ' ' NOT NULL ENABLE,
    ADHOC_CHAR_VAL VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK1   VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK2   VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK3   VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK4   VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK5   VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    VERSION        NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
 CONSTRAINT CI_BSEG_CL_CHAR_FK FOREIGN KEY(BSEG_ID) REFERENCES CI_BSEG 
ON DELETE CASCADE
)
PARTITION BY REFERENCE (CI_BSEG_CL_CHAR_FK)
ENABLE ROW MOVEMENT
/
```

INDEX

```
CREATE UNIQUE INDEX XT056P0 ON CI_BSEG_CL_CHAR ( BSEG_ID, HEADER_SEQ,
SEQNO, CHAR_TYPE_CD ) TABLESPACE CM_XT048_IND
GLOBAL PARTITION BY RANGE (BSEG_ID)
(
PARTITION P1 VALUES LESS THAN ( '124999999999' ),
PARTITION P2 VALUES LESS THAN ( '249999999999' ),
PARTITION P3 VALUES LESS THAN ( '374999999999' ),
PARTITION P4 VALUES LESS THAN ( '499999999999' ),
PARTITION P5 VALUES LESS THAN ( '624999999999' ),
PARTITION P6 VALUES LESS THAN ( '749999999999' ),
PARTITION P7 VALUES LESS THAN ( '874999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW
/

ALTER TABLE CI_BSEG_CL_CHAR ADD CONSTRAINT XT056P0 PRIMARY
KEY(BSEG_ID, HEADER_SEQ, SEQNO, CHAR_TYPE_CD) USING INDEX
/
```

Child Table: CI_BSEG_EXCP

```
CREATE TABLE CI_BSEG_EXCP
  (
    BSEG_ID         CHAR(12) NOT NULL ENABLE,
    MESSAGE_CAT_NBR NUMBER(5,0) DEFAULT 0 NOT NULL ENABLE,
    MESSAGE_NBR     NUMBER(5,0) DEFAULT 0 NOT NULL ENABLE,
    BSEG_EXCP_FLG   CHAR(2) DEFAULT ' ' NOT NULL ENABLE,
    EXP_MSG         VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    MESSAGE_PARM1   VARCHAR2(2000) DEFAULT ' ' NOT NULL ENABLE,
    MESSAGE_PARM2   VARCHAR2(2000) DEFAULT ' ' NOT NULL ENABLE,
    MESSAGE_PARM3   VARCHAR2(2000) DEFAULT ' ' NOT NULL ENABLE,
    MESSAGE_PARM4   VARCHAR2(2000) DEFAULT ' ' NOT NULL ENABLE,
    MESSAGE_PARM5   VARCHAR2(2000) DEFAULT ' ' NOT NULL ENABLE,
    MESSAGE_PARM6   VARCHAR2(2000) DEFAULT ' ' NOT NULL ENABLE,
    MESSAGE_PARM7   VARCHAR2(2000) DEFAULT ' ' NOT NULL ENABLE,
    MESSAGE_PARM8   VARCHAR2(2000) DEFAULT ' ' NOT NULL ENABLE,
    MESSAGE_PARM9   VARCHAR2(2000) DEFAULT ' ' NOT NULL ENABLE,
    CALL_SEQ        VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    USER_ID         CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
    CRE_DTTM DATE,
    REVIEW_COMP    CHAR(1) DEFAULT ' ' NOT NULL ENABLE,
    REVIEW_USER_ID CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
    REVIEW_DT DATE,
    COMMENTS VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    VERSION  NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
  CONSTRAINT CI_BSEG_EXCP_FK FOREIGN KEY(BSEG_ID) REFERENCES CI_BSEG
ON DELETE CASCADE
)
PARTITION BY REFERENCE (CI_BSEG_EXCP_FK)
ENABLE ROW MOVEMENT
/
```

INDEX

```
CREATE UNIQUE INDEX XT051P0 ON CI_BSEG_EXCP ( BSEG_ID ) TABLESPACE
CM_XT048_IND
GLOBAL PARTITION BY RANGE (BSEG_ID)
```

```
(
PARTITION P1 VALUES LESS THAN ( '124999999999' ),
PARTITION P2 VALUES LESS THAN ( '249999999999' ),
PARTITION P3 VALUES LESS THAN ( '374999999999' ),
PARTITION P4 VALUES LESS THAN ( '499999999999' ),
PARTITION P5 VALUES LESS THAN ( '624999999999' ),
PARTITION P6 VALUES LESS THAN ( '749999999999' ),
PARTITION P7 VALUES LESS THAN ( '874999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW
/

ALTER TABLE CI_BSEG_EXCP ADD CONSTRAINT XT051P0 PRIMARY KEY(BSEG_ID)
USING INDEX
/
```

Child Table: CI_BSEG_MSG

```
CREATE TABLE CI_BSEG_MSG
  (
    BSEG_ID     CHAR(12) NOT NULL ENABLE,
    BILL_MSG_CD CHAR(4) NOT NULL ENABLE,
    VERSION     NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
 CONSTRAINT CI_BSEG_MSG_FK FOREIGN KEY(BSEG_ID) REFERENCES CI_BSEG ON
DELETE CASCADE
)
PARTITION BY REFERENCE (CI_BSEG_MSG_FK)
ENABLE ROW MOVEMENT
/
```

INDEX

```
CREATE UNIQUE INDEX XT080P0 ON CI_BSEG_MSG ( BSEG_ID, BILL_MSG_CD )
TABLESPACE CM_XT048_IND
GLOBAL PARTITION BY RANGE (BSEG_ID)
(
PARTITION P1 VALUES LESS THAN ( '124999999999' ),
PARTITION P2 VALUES LESS THAN ( '249999999999' ),
PARTITION P3 VALUES LESS THAN ( '374999999999' ),
PARTITION P4 VALUES LESS THAN ( '499999999999' ),
PARTITION P5 VALUES LESS THAN ( '624999999999' ),
PARTITION P6 VALUES LESS THAN ( '749999999999' ),
PARTITION P7 VALUES LESS THAN ( '874999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW
/

ALTER TABLE CI_BSEG_MSG ADD CONSTRAINT XT080P0 PRIMARY KEY(BSEG_ID,
BILL_MSG_CD) USING INDEX
/
```

Child Table: CI_BSEG_READ

```
CREATE TABLE CI_BSEG_READ
  (
    BSEG_ID           CHAR(12) NOT NULL ENABLE,
    SP_ID             CHAR(10) NOT NULL ENABLE,
    REG_CONST         NUMBER(12,6) DEFAULT 0 NOT NULL ENABLE,
    SEQNO            NUMBER(5,0) NOT NULL ENABLE,
    USAGE_FLG        CHAR(2) DEFAULT ' ' NOT NULL ENABLE,
    USE_PCT          NUMBER(3,0) DEFAULT 0 NOT NULL ENABLE,
    HOW_TO_USE_FLG   CHAR(2) DEFAULT ' ' NOT NULL ENABLE,
    MSR_PEAK_QTY_SW  CHAR(1) DEFAULT ' ' NOT NULL ENABLE,
    UOM_CD           CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
    TOU_CD           CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
    START_REG_READ_ID CHAR(12) DEFAULT ' ' NOT NULL ENABLE,
    START_READ_DTTM DATE NOT NULL ENABLE,
    START_REG_READING NUMBER(15,6) DEFAULT 0 NOT NULL ENABLE,
    END_REG_READ_ID  CHAR(12) DEFAULT ' ' NOT NULL ENABLE,
    END_READ_DTTM DATE NOT NULL ENABLE,
    END_REG_READING NUMBER(15,6) DEFAULT 0 NOT NULL ENABLE,
    MSR_QTY        NUMBER(18,6) DEFAULT 0 NOT NULL ENABLE,
    FINAL_UOM_CD   CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
    FINAL_TOU_CD   CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
    FINAL_REG_QTY  NUMBER(18,6) DEFAULT 0 NOT NULL ENABLE,
    VERSION        NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
    SQI_CD         CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
    FINAL_SQI_CD   CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
 CONSTRAINT CI_BSEG_READ_FK FOREIGN KEY(BSEG_ID) REFERENCES CI_BSEG ON 
DELETE CASCADE
)
PARTITION BY REFERENCE (CI_BSEG_READ_FK)
ENABLE ROW MOVEMENT
/
```

INDEX

```
CREATE UNIQUE INDEX XT054P0 ON CI_BSEG_READ ( BSEG_ID, SP_ID, SEQNO )
TABLESPACE CM_XT048_IND
GLOBAL PARTITION BY RANGE (BSEG_ID)
(
PARTITION P1 VALUES LESS THAN ( '124999999999' ),
PARTITION P2 VALUES LESS THAN ( '249999999999' ),
PARTITION P3 VALUES LESS THAN ( '374999999999' ),
PARTITION P4 VALUES LESS THAN ( '499999999999' ),
PARTITION P5 VALUES LESS THAN ( '624999999999' ),
PARTITION P6 VALUES LESS THAN ( '749999999999' ),
PARTITION P7 VALUES LESS THAN ( '874999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW
/

ALTER TABLE CI_BSEG_READ ADD CONSTRAINT XT054P0 PRIMARY KEY(BSEG_ID, 
SP_ID, SEQNO) USING INDEX
/
CREATE INDEX XT054S1 ON CI_BSEG_READ ( SP_ID ) TABLESPACE CM_XT048_IND
/
CREATE INDEX XT054S2 ON CI_BSEG_READ ( START_REG_READ_ID ) TABLESPACE 
CM_XT048_IND
/
CREATE INDEX XT054S3 ON CI_BSEG_READ ( END_REG_READ_ID ) TABLESPACE 
CM_XT048_IND
/
```

Child Table: CI_BSEG_SQ

```
CREATE TABLE CI_BSEG_SQ
  (
    BSEG_ID CHAR(12) NOT NULL ENABLE,
    UOM_CD  CHAR(4) NOT NULL ENABLE,
    TOU_CD  CHAR(8) NOT NULL ENABLE,
    SQI_CD  CHAR(8) NOT NULL ENABLE,
    INIT_SQ NUMBER(18,6) DEFAULT 0 NOT NULL ENABLE,
    BILL_SQ NUMBER(18,6) DEFAULT 0 NOT NULL ENABLE,
    VERSION NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
 CONSTRAINT CI_BSEG_SQ_FK FOREIGN KEY(BSEG_ID) REFERENCES CI_BSEG ON
DELETE CASCADE
)
PARTITION BY REFERENCE (CI_BSEG_SQ_FK)
ENABLE ROW MOVEMENT
/
```

INDEX

```
CREATE UNIQUE INDEX XT055P0 ON CI_BSEG_SQ ( BSEG_ID, UOM_CD, TOU_CD,
SQI_CD ) TABLESPACE CM_XT048_IND
GLOBAL PARTITION BY RANGE (BSEG_ID)
(
PARTITION P1 VALUES LESS THAN ( '124999999999' ),
PARTITION P2 VALUES LESS THAN ( '249999999999' ),
PARTITION P3 VALUES LESS THAN ( '374999999999' ),
PARTITION P4 VALUES LESS THAN ( '499999999999' ),
PARTITION P5 VALUES LESS THAN ( '624999999999' ),
PARTITION P6 VALUES LESS THAN ( '749999999999' ),
PARTITION P7 VALUES LESS THAN ( '874999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW
/
ALTER TABLE CI_BSEG_SQ ADD CONSTRAINT XT055P0 PRIMARY KEY(BSEG_ID,
UOM_CD, TOU_CD, SQI_CD) USING INDEX
/
```

Child Table: CI_BSEG_ITEM

```
CREATE TABLE CI_BSEG_ITEM
  (
    BSEG_ID      CHAR(12) NOT NULL ENABLE,
    SEQNO        NUMBER(5,0) NOT NULL ENABLE,
    ITEM_TYPE_CD VARCHAR(30) DEFAULT ' ' NOT NULL ENABLE,
    ITEM_ID      CHAR(10) DEFAULT ' ' NOT NULL ENABLE,
    START_DT DATE NOT NULL ENABLE,
    END_DT DATE NOT NULL ENABLE,
    ITEM_CNT NUMBER(11,2) DEFAULT 0 NOT NULL ENABLE,
    UOM_CD   CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
    SVC_QTY  NUMBER(18,6) DEFAULT 0 NOT NULL ENABLE,
    VERSION  NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
CONSTRAINT CI_BSEG_ITEM_FK FOREIGN KEY(BSEG_ID) REFERENCES CI_BSEG ON
DELETE CASCADE
)
PARTITION BY REFERENCE (CI_BSEG_ITEM_FK)
ENABLE ROW MOVEMENT
/
```

INDEX

```
CREATE UNIQUE INDEX XT053P0 ON CI_BSEG_ITEM ( BSEG_ID, SEQNO )
TABLESPACE CM_XT048_IND
GLOBAL PARTITION BY RANGE (BSEG_ID)
```

```
(
PARTITION P1 VALUES LESS THAN ( '124999999999' ),
PARTITION P2 VALUES LESS THAN ( '249999999999' ),
PARTITION P3 VALUES LESS THAN ( '374999999999' ),
PARTITION P4 VALUES LESS THAN ( '499999999999' ),
PARTITION P5 VALUES LESS THAN ( '624999999999' ),
PARTITION P6 VALUES LESS THAN ( '749999999999' ),
PARTITION P7 VALUES LESS THAN ( '874999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW
/
ALTER TABLE CI_BSEG_ITEM ADD CONSTRAINT XT053P0 PRIMARY KEY(BSEG_ID,
SEQNO) USING INDEX
/
```

Appendix E

Sample SQL for Enabling ILM in C2M for MDM (Initial Install)

This section provides more detail about steps needed to fully support ILM on tables for maintenance objects that support the functionality.

Three maintenance objects are shown:

- To Do Entry - does not include a LOB field.
- Sync Request - does include a LOB field and has one tablespace per partition.
- Initial Measurement Data - includes LOB fields and has one tablespace per subpartition (shown using subretention). Other maintenance object's implementations can follow the appropriate pattern based on whether there is a LOB field or not.

The following DDL(s):

- Follows Naming convention recommendations for partitions\subpartitions\tablespaces.
- Ensures all the ILM Storage requirements are incorporated, failing which, ILM functionality will not be achieved.
  - Partitions/subpartitions are defined with respective Tablespace.
  - Child Tables are referenced partitioned.
- Ensures all Compression recommendations are incorporated.

Maintenance Object: TO DO ENTRY

Parent Table: CI_TD_ENTRY

```
CREATE BIGFILE TABLESPACE CM_XT039_P2011JAN DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_XT039_P2011FEB DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_XT039_P2011MAR DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
```

```
CREATE BIGFILE TABLESPACE CM_XT039_P2011APR DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_XT039_P2011MAY DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_XT039_P2011JUN DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_XT039_P2011JUL DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_XT039_P2011AUG DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_XT039_P2011SEP DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_XT039_P2011OCT DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_XT039_P2011NOV DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_XT039_P2011DEC DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_XT039_PMAX DATAFILE '+DATADG' SIZE 50M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED;

CREATE TABLE CI_TD_ENTRY (
TD_ENTRY_ID     CHAR(14) NOT NULL ENABLE,
BATCH_CD        CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
BATCH_NBR       NUMBER(10,0) DEFAULT 0 NOT NULL ENABLE,
MESSAGE_CAT_NBR NUMBER(5,0) DEFAULT 0 NOT NULL ENABLE,
MESSAGE_NBR     NUMBER(5,0) DEFAULT 0 NOT NULL ENABLE,
ASSIGNED_TO     CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
TD_TYPE_CD      CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
ROLE_ID         CHAR(10) DEFAULT ' ' NOT NULL ENABLE,
ENTRY_STATUS_FLG CHAR(2) DEFAULT ' ' NOT NULL ENABLE,
VERSION         NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
CRE_DTTM DATE,
ASSIGNED_DTTM DATE,
COMPLETE_DTTM DATE,
COMPLETE_USER_ID CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
COMMENTS        VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
ASSIGNED_USER_ID CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
TD_PRIORITY_FLG CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
ILM_DT DATE,
ILM_ARCH_SW CHAR(1)
)
ENABLE ROW MOVEMENT
PARTITION BY RANGE (ILM_DT)
SUBPARTITION BY RANGE (TD_ENTRY_ID) SUBPARTITION TEMPLATE
(
SUBPARTITION S01 VALUES LESS THAN ( '12499999999999' ),
SUBPARTITION S02 VALUES LESS THAN ( '24999999999999' ),
SUBPARTITION S03 VALUES LESS THAN ( '37499999999999' ),
SUBPARTITION S04 VALUES LESS THAN ( '49999999999999' ),
SUBPARTITION S05 VALUES LESS THAN ( '62499999999999' ),
SUBPARTITION S06 VALUES LESS THAN ( '74999999999999' ),
SUBPARTITION S07 VALUES LESS THAN ( '87499999999999' ),
SUBPARTITION SMAX VALUES LESS THAN ( MAXVALUE )
)
(
PARTITION "P2011JAN" VALUES LESS THAN (TO_DATE('2011-02-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_XT039_P2011JAN,
PARTITION "P2011FEB" VALUES LESS THAN (TO_DATE('2011-03-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_XT039_P2011FEB,
PARTITION "P2011MAR" VALUES LESS THAN (TO_DATE('2011-04-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_XT039_P2011MAR,
PARTITION "P2011APR" VALUES LESS THAN (TO_DATE('2011-05-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_XT039_P2011APR,
PARTITION "P2011MAY" VALUES LESS THAN (TO_DATE('2011-06-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_XT039_P2011MAY,
PARTITION "P2011JUN" VALUES LESS THAN (TO_DATE('2011-07-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_XT039_P2011JUN,
PARTITION "P2011JUL" VALUES LESS THAN (TO_DATE('2011-08-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_XT039_P2011JUL,
PARTITION "P2011AUG" VALUES LESS THAN (TO_DATE('2011-09-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_XT039_P2011AUG,
PARTITION "P2011SEP" VALUES LESS THAN (TO_DATE('2011-10-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_XT039_P2011SEP,
PARTITION "P2011OCT" VALUES LESS THAN (TO_DATE('2011-11-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_XT039_P2011OCT,
PARTITION "P2011NOV" VALUES LESS THAN (TO_DATE('2011-12-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_XT039_P2011NOV,
PARTITION "PMAX" VALUES LESS THAN (MAXVALUE)
TABLESPACE CM_XT039_PMAX
);
```

INDEX

```
CREATE BIGFILE TABLESPACE CM_XT039_IND DATAFILE '+DATADG' SIZE 50M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED;

CREATE UNIQUE INDEX XT039P0 ON CI_TD_ENTRY ( TD_ENTRY_ID ) TABLESPACE
CM_XT039_IND
GLOBAL PARTITION BY RANGE (TD_ENTRY_ID)
(
PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
);

ALTER TABLE CI_TD_ENTRY ADD CONSTRAINT XT039P0 PRIMARY
KEY(TD_ENTRY_ID) USING INDEX;
```

```
CREATE UNIQUE INDEX XT039S2 ON CI_TD_ENTRY ( ASSIGNED_TO, TD_ENTRY_ID
) TABLESPACE CM_XT039_IND COMPRESS ADVANCED LOW;

CREATE INDEX XT039S3 ON CI_TD_ENTRY ( ENTRY_STATUS_FLG, ASSIGNED_TO )
TABLESPACE CM_XT039_IND COMPRESS ADVANCED LOW;

CREATE INDEX XT039S4 ON CI_TD_ENTRY ( ROLE_ID, TD_TYPE_CD,
ENTRY_STATUS_FLG, TD_PRIORITY_FLG ) TABLESPACE CM_XT039_IND COMPRESS
ADVANCED LOW;

CREATE INDEX XT039S5 ON CI_TD_ENTRY ( BATCH_CD, BATCH_NBR,
ENTRY_STATUS_FLG ) TABLESPACE CM_XT039_IND COMPRESS ADVANCED LOW;

CREATE UNIQUE INDEX XT039S6 ON CI_TD_ENTRY ( TD_ENTRY_ID, ASSIGNED_TO,
ENTRY_STATUS_FLG ) TABLESPACE CM_XT039_IND COMPRESS ADVANCED LOW;

CREATE UNIQUE INDEX XT039S7 ON CI_TD_ENTRY ( COMPLETE_USER_ID,
COMPLETE_DTTM, TD_ENTRY_ID ) TABLESPACE CM_XT039_IND COMPRESS ADVANCED
LOW;

CREATE UNIQUE INDEX CM_ILM_XT039S8 ON CI_TD_ENTRY ( ILM_DT,
ILM_ARCH_SW, TD_ENTRY_ID ) LOCAL COMPRESS ADVANCED LOW;
```

Child Table: CI_TD_DRLKEY

```
CREATE TABLE CI_TD_DRLKEY
(
TD_ENTRY_ID CHAR(14) NOT NULL ENABLE,
SEQ_NUM    NUMBER(3,0) NOT NULL ENABLE,
KEY_VALUE  VARCHAR2(50 BYTE) DEFAULT ' ' NOT NULL ENABLE,
VERSION    NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
CONSTRAINT CI_TD_DRLKEY_FK FOREIGN KEY(TD_ENTRY_ID) REFERENCES
CI_TD_ENTRY
ON DELETE CASCADE)
PARTITION BY REFERENCE (CI_TD_DRLKEY_FK)
ENABLE ROW MOVEMENT;
```

INDEX

```
CREATE UNIQUE INDEX XT037P0 ON CI_TD_DRLKEY ( TD_ENTRY_ID, SEQ_NUM )
TABLESPACE CM_XT039_IND
GLOBAL PARTITION BY RANGE (TD_ENTRY_ID)
(
PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW;

ALTER TABLE CI_TD_DRLKEY ADD CONSTRAINT XT037P0 PRIMARY
KEY(TD_ENTRY_ID, SEQ_NUM) USING INDEX;

CREATE INDEX XT037S1 ON CI_TD_DRLKEY ( KEY_VALUE, TD_ENTRY_ID )
TABLESPACE CM_XT039_IND COMPRESS ADVANCED LOW;
```

Child Table: CI_TD_ENTRY_CHA

```
CREATE TABLE CI_TD_ENTRY_CHA
(
TD_ENTRY_ID   CHAR(14) NOT NULL ENABLE,
CHAR_TYPE_CD   CHAR(8) NOT NULL ENABLE,
SEQ_NUM       NUMBER(3,0) DEFAULT 0 NOT NULL ENABLE,
CHAR_VAL       CHAR(16) DEFAULT ' ' NOT NULL ENABLE,
VERSION        NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
ADHOC_CHAR_VAL VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
CHAR_VAL_FK1   VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
CHAR_VAL_FK2   VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
CHAR_VAL_FK3   VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
CHAR_VAL_FK4   VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
CHAR_VAL_FK5   VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
SRCH_CHAR_VAL  VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
CONSTRAINT CI_TD_ENTRY_CHA_FK FOREIGN KEY(TD_ENTRY_ID) REFERENCES
CI_TD_ENTRY
ON DELETE CASCADE)
PARTITION BY REFERENCE (CI_TD_ENTRY_CHA_FK)
ENABLE ROW MOVEMENT;
```

INDEX

```
CREATE UNIQUE INDEX XT701P0 ON CI_TD_ENTRY_CHA ( TD_ENTRY_ID,
CHAR_TYPE_CD, SEQ_NUM ) TABLESPACE CM_XT039_IND
GLOBAL PARTITION BY RANGE (TD_ENTRY_ID)
(
PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW;

ALTER TABLE CI_TD_ENTRY_CHA ADD CONSTRAINT XT701P0 PRIMARY
KEY(TD_ENTRY_ID, CHAR_TYPE_CD, SEQ_NUM) USING INDEX;

CREATE INDEX XT701S1 ON CI_TD_ENTRY_CHA ( SRCH_CHAR_VAL, CHAR_TYPE_CD,
TD_ENTRY_ID ) TABLESPACE CM_XT039_IND COMPRESS ADVANCED LOW;

CREATE INDEX XT701S2 ON CI_TD_ENTRY_CHA ( CHAR_VAL_FK1 ) TABLESPACE
CM_XT039_IND
COMPRESS ADVANCED LOW;
```

Child Table: CI_TD_LOG

```
CREATE TABLE CI_TD_LOG
(
TD_ENTRY_ID CHAR(14) NOT NULL ENABLE,
SEQ_NUM    NUMBER(3,0) NOT NULL ENABLE,
LOG_DTTM DATE NOT NULL ENABLE,
LOG_TYPE_FLG CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
USER_ID     CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
ASSIGNED_TO CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
VERSION     NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
DESCRLONG   VARCHAR2(4000) DEFAULT ' ' NOT NULL ENABLE,
CONSTRAINT CI_TD_LOG_FK FOREIGN KEY(TD_ENTRY_ID) REFERENCES
CI_TD_ENTRY ON DELETE CASCADE)
PARTITION BY REFERENCE (CI_TD_LOG_FK)
ENABLE ROW MOVEMENT;
```

INDEX

```
CREATE UNIQUE INDEX XT721P0 ON CI_TD_LOG ( TD_ENTRY_ID, SEQ_NUM )
TABLESPACE CM_XT039_IND
GLOBAL PARTITION BY RANGE (TD_ENTRY_ID)
(
PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW;

ALTER TABLE CI_TD_LOG ADD CONSTRAINT XT721P0 PRIMARY KEY(TD_ENTRY_ID,
SEQ_NUM) USING INDEX;

CREATE INDEX XT721S1 ON CI_TD_LOG ( LOG_DTTM,  USER_ID, LOG_TYPE_FLG,
TD_ENTRY_ID ) TABLESPACE CM_XT039_IND COMPRESS ADVANCED LOW;
```

Child Table: CI_TD_MSG_PARM

```
CREATE TABLE CI_TD_MSG_PARM
(
TD_ENTRY_ID CHAR(14) NOT NULL ENABLE,
SEQ_NUM     NUMBER(3,0) NOT NULL ENABLE,
MSG_PARM_VAL VARCHAR2(2000) DEFAULT ' ' NOT NULL ENABLE,
VERSION     NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
CONSTRAINT CI_TD_MSG_PARM_FK FOREIGN KEY(TD_ENTRY_ID) REFERENCES
CI_TD_ENTRY ON DELETE CASCADE)
PARTITION BY REFERENCE (CI_TD_MSG_PARM_FK)
ENABLE ROW MOVEMENT;
```

INDEX

```
CREATE UNIQUE INDEX XT040P0 ON CI_TD_MSG_PARM ( TD_ENTRY_ID, SEQ_NUM )
TABLESPACE CM_XT039_IND
GLOBAL PARTITION BY RANGE (TD_ENTRY_ID)
 (
   PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
   PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
   PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
   PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
   PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
   PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
   PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
   PARTITION P8 VALUES LESS THAN ( MAXVALUE )
 )
COMPRESS ADVANCED LOW;
```

```
ALTER TABLE CI_TD_MSG_PARM ADD CONSTRAINT XT040P0 PRIMARY
KEY(TD_ENTRY_ID, SEQ_NUM) USING INDEX;
```

Child Table: CI_TD_SRTKEY

```
CREATE TABLE CI_TD_SRTKEY
(
TD_ENTRY_ID CHAR(14) NOT NULL ENABLE,
SEQ_NUM    NUMBER(3,0) NOT NULL ENABLE,
KEY_VALUE VARCHAR2(50 BYTE) DEFAULT ' ' NOT NULL ENABLE,
VERSION    NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
CONSTRAINT CI_TD_SRTKEY_FK FOREIGN KEY(TD_ENTRY_ID) REFERENCES
CI_TD_ENTRY ON DELETE CASCADE)
PARTITION BY REFERENCE (CI_TD_SRTKEY_FK)
ENABLE ROW MOVEMENT;
```

INDEX

```
CREATE UNIQUE INDEX XT041P0 ON CI_TD_SRTKEY ( TD_ENTRY_ID, SEQ_NUM )
TABLESPACE CM_XT039_IND
GLOBAL PARTITION BY RANGE (TD_ENTRY_ID)
(
PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW;

ALTER TABLE CI_TD_SRTKEY ADD CONSTRAINT XT041P0 PRIMARY
KEY(TD_ENTRY_ID, SEQ_NUM) USING INDEX;

CREATE INDEX XT041S1 ON CI_TD_SRTKEY ( KEY_VALUE, TD_ENTRY_ID )
TABLESPACE CM_XT039_IND COMPRESS ADVANCED LOW;
```

Maintenance Object:F1-SYNCREQIN

Parent Table: F1_SYNC_REQ_IN

```
CREATE BIGFILE TABLESPACE CM_F1T191_P2011JAN DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_F1T191_P2011FEB DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_F1T191_P2011MAR DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_F1T191_P2011APR DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
```

```
CREATE BIGFILE TABLESPACE CM_F1T191_P2011MAY DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_F1T191_P2011JUN DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_F1T191_P2011JUL DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_F1T191_P2011AUG DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_F1T191_P2011SEP DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_F1T191_P2011OCT DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_F1T191_P2011NOV DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_F1T191_P2011DEC DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_F1T191_PMAX DATAFILE '+DATADG' SIZE 50M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED;

CREATE TABLE F1_SYNC_REQ_IN
  (
    F1_SYNC_REQ_IN_ID CHAR(14) NOT NULL ENABLE,
    BUS_OBJ_CD        CHAR(30) DEFAULT ' ' NOT NULL ENABLE,
    CRE_DTTM DATE NOT NULL ENABLE,
    BO_STATUS_CD CHAR(12) DEFAULT ' ' NOT NULL ENABLE,
    STATUS_UPD_DTTM DATE,
    MAINT_OBJ_CD  CHAR(12 BYTE) DEFAULT ' ' NOT NULL ENABLE,
    NT_XID_CD     CHAR(30 BYTE) DEFAULT ' ' NOT NULL ENABLE,
    EXT_PK_VALUE1 VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    EXT_PK_VALUE2 VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    EXT_PK_VALUE3 VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    EXT_PK_VALUE4 VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    EXT_PK_VALUE5 VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    PK_VALUE1     VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    BO_DATA_AREA CLOB,
    PRE_TRN_INIT_BO_DATA_AREA CLOB,
    PRE_TRN_FIN_BO_DATA_AREA CLOB,
    POST_TRN_BO_DATA_AREA CLOB,
    VERSION                  NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
    EXT_REFERENCE_ID         CHAR(36) DEFAULT ' ' NOT NULL ENABLE,
    F1_INITIAL_LOAD_SYNC_FLG CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
    F1_COMPOSITE_SYNC_FLG    CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
    ILM_DT DATE,
    ILM_ARCH_SW CHAR(1)
   )
ENABLE ROW MOVEMENT
LOB   (BO_DATA_AREA)   STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE)
LOB   (PRE_TRN_INIT_BO_DATA_AREA)   STORE AS SECUREFILE (ENABLE STORAGE
IN ROW COMPRESS MEDIUM CACHE)
LOB   (PRE_TRN_FIN_BO_DATA_AREA)   STORE AS SECUREFILE (ENABLE STORAGE
IN ROW COMPRESS MEDIUM CACHE)
LOB   (POST_TRN_BO_DATA_AREA)   STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE)
```

```
PARTITION BY RANGE(ILM_DT)
SUBPARTITION BY RANGE(F1_SYNC_REQ_IN_ID)
SUBPARTITION TEMPLATE
(
    SUBPARTITION S01 VALUES LESS THAN ( '124999999999999' ),
    SUBPARTITION S02 VALUES LESS THAN ( '249999999999999' ),
    SUBPARTITION S03 VALUES LESS THAN ( '374999999999999' ),
    SUBPARTITION S04 VALUES LESS THAN ( '499999999999999' ),
    SUBPARTITION S05 VALUES LESS THAN ( '624999999999999' ),
    SUBPARTITION S06 VALUES LESS THAN ( '749999999999999' ),
    SUBPARTITION S07 VALUES LESS THAN ( '874999999999999' ),
    SUBPARTITION SMAX VALUES LESS THAN ( MAXVALUE )
 )
(
PARTITION "P2011JAN" VALUES LESS THAN (TO_DATE('2011-02-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB(BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS
MEDIUM CACHE TABLESPACE CM_F1T191_P2011JAN )
LOB(PRE_TRN_INIT_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011JAN )
LOB(PRE_TRN_FIN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011JAN )
LOB(POST_TRN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011JAN )
TABLESPACE CM_F1T191_P2011JAN,
PARTITION "P2011FEB" VALUES LESS THAN (TO_DATE('2011-03-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB(BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS
MEDIUM CACHE TABLESPACE CM_F1T191_P2011FEB )
LOB(PRE_TRN_INIT_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011FEB )
LOB(PRE_TRN_FIN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011FEB )
LOB(POST_TRN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011FEB )
TABLESPACE CM_F1T191_P2011FEB,
PARTITION "P2011MAR" VALUES LESS THAN (TO_DATE('2011-04-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB(BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS
MEDIUM CACHE TABLESPACE CM_F1T191_P2011MAR )
LOB(PRE_TRN_INIT_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011MAR )
LOB(PRE_TRN_FIN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011MAR )
LOB(POST_TRN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011MAR )
TABLESPACE CM_F1T191_P2011MAR,
PARTITION "P2011APR" VALUES LESS THAN (TO_DATE('2011-05-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB(BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS
MEDIUM CACHE TABLESPACE CM_F1T191_P2011APR )
LOB(PRE_TRN_INIT_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011APR )
LOB(PRE_TRN_FIN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011APR )
LOB(POST_TRN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011APR )
TABLESPACE CM_F1T191_P2011APR,
PARTITION "P2011MAY" VALUES LESS THAN (TO_DATE('2011-06-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB(BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS
MEDIUM CACHE TABLESPACE CM_F1T191_P2011MAY )
```

```
LOB(PRE_TRN_INIT_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011MAY )
LOB(PRE_TRN_FIN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011MAY )
LOB(POST_TRN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011MAY )
TABLESPACE CM_F1T191_P2011MAY,
PARTITION "P2011JUN" VALUES LESS THAN (TO_DATE('2011-07-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB(BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS
MEDIUM CACHE TABLESPACE CM_F1T191_P2011JUN )
LOB(PRE_TRN_INIT_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011JUN )
LOB(PRE_TRN_FIN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011JUN )
LOB(POST_TRN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011JUN )
TABLESPACE CM_F1T191_P2011JUN,
PARTITION "P2011JUL" VALUES LESS THAN (TO_DATE('2011-08-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB(BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS
MEDIUM CACHE TABLESPACE CM_F1T191_P2011JUL )
LOB(PRE_TRN_INIT_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011JUL )
LOB(PRE_TRN_FIN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011JUL )
LOB(POST_TRN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011JUL )
TABLESPACE CM_F1T191_P2011JUL,
PARTITION "P2011AUG" VALUES LESS THAN (TO_DATE('2011-09-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB(BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS
MEDIUM CACHE TABLESPACE CM_F1T191_P2011AUG )
LOB(PRE_TRN_INIT_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011AUG )
LOB(PRE_TRN_FIN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011AUG )
LOB(POST_TRN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011AUG )
TABLESPACE CM_F1T191_P2011AUG,
PARTITION "P2011SEP" VALUES LESS THAN (TO_DATE('2011-10-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB(BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS
MEDIUM CACHE TABLESPACE CM_F1T191_P2011SEP )
LOB(PRE_TRN_INIT_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011SEP )
LOB(PRE_TRN_FIN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011SEP )
LOB(POST_TRN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011SEP )
TABLESPACE CM_F1T191_P2011SEP,
PARTITION "P2011OCT" VALUES LESS THAN (TO_DATE('2011-11-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB(BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS
MEDIUM CACHE TABLESPACE CM_F1T191_P2011OCT )
LOB(PRE_TRN_INIT_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011OCT )
LOB(PRE_TRN_FIN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011OCT )
LOB(POST_TRN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011OCT )
TABLESPACE CM_F1T191_P2011OCT,
PARTITION "P2011NOV" VALUES LESS THAN (TO_DATE('2011-12-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB(BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS
MEDIUM CACHE TABLESPACE CM_F1T191_P2011NOV )
LOB(PRE_TRN_INIT_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011NOV )
LOB(PRE_TRN_FIN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011NOV )
LOB(POST_TRN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011NOV )
TABLESPACE CM_F1T191_P2011NOV,
PARTITION "P2011DEC" VALUES LESS THAN (TO_DATE('2012-01-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB(BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS
MEDIUM CACHE TABLESPACE CM_F1T191_P2011DEC )
LOB(PRE_TRN_INIT_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011DEC )
LOB(PRE_TRN_FIN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011DEC )
LOB(POST_TRN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_P2011DEC )
TABLESPACE CM_F1T191_P2011DEC,
PARTITION "PMAX" VALUES LESS THAN (MAXVALUE)
LOB(BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS
MEDIUM CACHE TABLESPACE CM_F1T191_PMAX )
LOB(PRE_TRN_INIT_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_PMAX )
LOB(PRE_TRN_FIN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN
ROW COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_PMAX )
LOB(POST_TRN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE TABLESPACE CM_F1T191_PMAX )
TABLESPACE CM_F1T191_PMAX
);
```

INDEX

```
CREATE BIGFILE TABLESPACE CM_F1T191_IND DATAFILE '+DATADG' SIZE 50M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED;

CREATE UNIQUE INDEX F1T191P0 ON F1_SYNC_REQ_IN(F1_SYNC_REQ_IN_ID)
TABLESPACE CM_F1T191_IND
GLOBAL PARTITION BY RANGE (F1_SYNC_REQ_IN_ID)
(
PARTITION P1 VALUES LESS THAN ( '1249999999999' ),
PARTITION P2 VALUES LESS THAN ( '2499999999999' ),
PARTITION P3 VALUES LESS THAN ( '3749999999999' ),
PARTITION P4 VALUES LESS THAN ( '4999999999999' ),
PARTITION P5 VALUES LESS THAN ( '6249999999999' ),
PARTITION P6 VALUES LESS THAN ( '7499999999999' ),
PARTITION P7 VALUES LESS THAN ( '8749999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
);

ALTER TABLE F1_SYNC_REQ_IN ADD CONSTRAINT F1T191P0 PRIMARY KEY
(F1_SYNC_REQ_IN_ID) USING INDEX;

CREATE UNIQUE INDEX F1T191S1 ON F1_SYNC_REQ_IN (BO_STATUS_CD,
BUS_OBJ_CD, F1_SYNC_REQ_IN_ID) TABLESPACE CM_F1T191_IND COMPRESS
ADVANCED LOW;
```

```
CREATE INDEX F1T191S2 ON
F1_SYNC_REQ_IN(MAINT_OBJ_CD,EXT_PK_VALUE1,NT_XID_CD,PK_VALUE1)
TABLESPACE CM_F1T191_IND COMPRESS ADVANCED LOW;

CREATE INDEX F1T191S3 ON F1_SYNC_REQ_IN(EXT_REFERENCE_ID) TABLESPACE
CM_F1T191_IND;
CREATE UNIQUE INDEX CM_ILM_F1T191S3 ON F1_SYNC_REQ_IN(ILM_DT,
ILM_ARCH_SW, F1_SYNC_REQ_IN_ID) LOCAL COMPRESS ADVANCED LOW;
```

Child Table: F1_SYNC_REQ_IN_CHAR

```
CREATE TABLE F1_SYNC_REQ_IN_CHAR
  (
    F1_SYNC_REQ_IN_ID CHAR(14) NOT NULL ENABLE,
    CHAR_TYPE_CD      CHAR(8) NOT NULL ENABLE,
    SEQ_NUM           NUMBER(3,0) NOT NULL ENABLE,
    CHAR_VAL          CHAR(16) DEFAULT ' ' NOT NULL ENABLE,
    ADHOC_CHAR_VAL    VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK1      VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK2      VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK3      VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK4      VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK5      VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    SRCH_CHAR_VAL     VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    VERSION           NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
   CONSTRAINT F1_SYNC_REQ_IN_CHAR_FK FOREIGN KEY(F1_SYNC_REQ_IN_ID)
REFERENCES F1_SYNC_REQ_IN ON DELETE CASCADE)
PARTITION BY REFERENCE (F1_SYNC_REQ_IN_CHAR_FK)
ENABLE ROW MOVEMENT;
```

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```
CREATE UNIQUE INDEX F1T193P0 ON F1_SYNC_REQ_IN_CHAR(F1_SYNC_REQ_IN_ID,
CHAR_TYPE_CD, SEQ_NUM) TABLESPACE CM_F1T191_IND
GLOBAL PARTITION BY RANGE (F1_SYNC_REQ_IN_ID)
(
PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW;

ALTER TABLE F1_SYNC_REQ_IN_CHAR ADD CONSTRAINT F1T193P0 PRIMARY KEY
(F1_SYNC_REQ_IN_ID, CHAR_TYPE_CD, SEQ_NUM) USING INDEX;

CREATE INDEX F1T193S1 ON F1_SYNC_REQ_IN_CHAR(SRCH_CHAR_VAL) TABLESPACE
CM_F1T191_IND ;
```

Child Table: F1_SYNC_REQ_IN_EXCP

```
CREATE TABLE F1_SYNC_REQ_IN_EXCP
(
    F1_SYNC_REQ_IN_ID CHAR(14) NOT NULL ENABLE,
    SEQNO             NUMBER(5,0) NOT NULL ENABLE,
    MESSAGE_CAT_NBR   NUMBER(5,0) DEFAULT 0 NOT NULL ENABLE,
    MESSAGE_NBR       NUMBER(5,0) DEFAULT 0 NOT NULL ENABLE,
    VERSION           NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
   CONSTRAINT F1_SYNC_REQ_IN_EXCP_FK FOREIGN KEY(F1_SYNC_REQ_IN_ID)
REFERENCES F1_SYNC_REQ_IN ON DELETE CASCADE)
PARTITION BY REFERENCE (F1_SYNC_REQ_IN_EXCP_FK)
ENABLE ROW MOVEMENT;
```

INDEX

```
CREATE UNIQUE INDEX F1T197P0 ON
F1_SYNC_REQ_IN_EXCP(F1_SYNC_REQ_IN_ID,SEQNO) TABLESPACE CM_F1T191_IND
GLOBAL PARTITION BY RANGE (F1_SYNC_REQ_IN_ID)
(
PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW;

ALTER TABLE F1_SYNC_REQ_IN_EXCP ADD CONSTRAINT F1T197P0 PRIMARY KEY
(F1_SYNC_REQ_IN_ID,SEQNO) USING INDEX;
```

Child Table: F1_SYNC_REQ_IN_EXCP_PARM

```
CREATE TABLE F1_SYNC_REQ_IN_EXCP_PARM
  (
    F1_SYNC_REQ_IN_ID CHAR(14) NOT NULL ENABLE,
    SEQNO             NUMBER(5,0) NOT NULL ENABLE,
    PARM_SEQ          NUMBER(3,0) NOT NULL ENABLE,
    MSG_PARM_VAL      VARCHAR2(2000) DEFAULT ' ' NOT NULL ENABLE,
    MSG_PARM_TYP_FLG  CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
    VERSION           NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
   CONSTRAINT F1_SYNC_REQ_IN_EXCP_PARM_FK FOREIGN
KEY(F1_SYNC_REQ_IN_ID) REFERENCES F1_SYNC_REQ_IN ON DELETE CASCADE)
PARTITION BY REFERENCE (F1_SYNC_REQ_IN_EXCP_PARM_FK)
ENABLE ROW MOVEMENT;
```

INDEX

```
CREATE UNIQUE INDEX F1T198P0 ON
F1_SYNC_REQ_IN_EXCP_PARM(F1_SYNC_REQ_IN_ID,SEQNO,PARM_SEQ) TABLESPACE
CM_F1T191_IND
GLOBAL PARTITION BY RANGE (F1_SYNC_REQ_IN_ID)
(
PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW;

ALTER TABLE F1_SYNC_REQ_IN_EXCP_PARM ADD CONSTRAINT F1T198P0 PRIMARY
KEY (F1_SYNC_REQ_IN_ID,SEQNO,PARM_SEQ) USING INDEX;
```

Child Table: F1_SYNC_REQ_IN_LOG

```
CREATE TABLE F1_SYNC_REQ_IN_LOG
(
    F1_SYNC_REQ_IN_ID  CHAR(14) NOT NULL ENABLE,
    SEQNO              NUMBER(5,0) NOT NULL ENABLE,
    LOG_ENTRY_TYPE_FLG CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
    LOG_DTTM DATE NOT NULL ENABLE,
    BO_STATUS_CD    CHAR(12) DEFAULT ' ' NOT NULL ENABLE,
    MESSAGE_CAT_NBR NUMBER(5,0) DEFAULT 0 NOT NULL ENABLE,
    MESSAGE_NBR     NUMBER(5,0) DEFAULT 0 NOT NULL ENABLE,
    CHAR_TYPE_CD    CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL        CHAR(16) DEFAULT ' ' NOT NULL ENABLE,
    ADHOC_CHAR_VAL  VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK1    VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK2    VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK3    VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK4    VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK5    VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    DESCRLONG       VARCHAR2(4000) DEFAULT ' ' NOT NULL ENABLE,
    USER_ID         CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
    VERSION         NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
   CONSTRAINT F1_SYNC_REQ_IN_LOG_FK FOREIGN KEY(F1_SYNC_REQ_IN_ID)
REFERENCES F1_SYNC_REQ_IN ON DELETE CASCADE)
PARTITION BY REFERENCE (F1_SYNC_REQ_IN_LOG_FK)
ENABLE ROW MOVEMENT;
```

INDEX

```
CREATE UNIQUE INDEX F1T194P0 ON
F1_SYNC_REQ_IN_LOG(F1_SYNC_REQ_IN_ID,SEQNO) TABLESPACE CM_F1T191_IND
GLOBAL PARTITION BY RANGE (F1_SYNC_REQ_IN_ID)
(
PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW;

ALTER TABLE F1_SYNC_REQ_IN_LOG ADD CONSTRAINT F1T194P0 PRIMARY KEY
(F1_SYNC_REQ_IN_ID,SEQNO) USING INDEX;

CREATE INDEX F1T194S1 ON F1_SYNC_REQ_IN_LOG(CHAR_TYPE_CD,CHAR_VAL_FK1)
TABLESPACE CM_F1T191_IND COMPRESS ADVANCED LOW;

CREATE INDEX F1T194S2 ON F1_SYNC_REQ_IN_LOG(CHAR_TYPE_CD,CHAR_VAL)
TABLESPACE CM_F1T191_IND COMPRESS ADVANCED LOW;
```

Child Table: F1_SYNC_REQ_IN_LOG_PARM

```
CREATE TABLE F1_SYNC_REQ_IN_LOG_PARM
  (
    F1_SYNC_REQ_IN_ID CHAR(14) NOT NULL ENABLE,
    SEQNO             NUMBER(5,0) NOT NULL ENABLE,
    PARM_SEQ          NUMBER(3,0) NOT NULL ENABLE,
    MSG_PARM_VAL      VARCHAR2(2000) DEFAULT ' ' NOT NULL ENABLE,
    MSG_PARM_TYP_FLG  CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
    VERSION           NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
    CONSTRAINT F1_SYNC_REQ_IN_LOG_PARM_FK FOREIGN
KEY(F1_SYNC_REQ_IN_ID) REFERENCES F1_SYNC_REQ_IN ON DELETE CASCADE)
PARTITION BY REFERENCE (F1_SYNC_REQ_IN_LOG_PARM_FK)
ENABLE ROW MOVEMENT;
```

INDEX

```
CREATE UNIQUE INDEX F1T195P0 ON
F1_SYNC_REQ_IN_LOG_PARM(F1_SYNC_REQ_IN_ID,SEQNO,PARM_SEQ) TABLESPACE
CM_F1T191_IND
GLOBAL PARTITION BY RANGE (F1_SYNC_REQ_IN_ID)
(
PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW;

ALTER TABLE F1_SYNC_REQ_IN_LOG_PARM ADD CONSTRAINT F1T195P0 PRIMARY
KEY (F1_SYNC_REQ_IN_ID,SEQNO,PARM_SEQ) USING INDEX;
```

Child Table: F1_SYNC_REQ_IN_REL_OBJ

```
CREATE TABLE F1_SYNC_REQ_IN_REL_OBJ
  (
    F1_SYNC_REQ_IN_ID CHAR(14) NOT NULL ENABLE,
    MAINT_OBJ_CD      CHAR(12) DEFAULT ' ' NOT NULL ENABLE,
    REL_OBJ_TYPE_FLG  CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
    PK_VALUE1         VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    PK_VALUE2         VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    PK_VALUE3         VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    PK_VALUE4         VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    PK_VALUE5         VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    VERSION           NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
   CONSTRAINT F1_SYNC_REQ_IN_REL_OBJ_FK FOREIGN KEY(F1_SYNC_REQ_IN_ID)
REFERENCES F1_SYNC_REQ_IN ON DELETE CASCADE)
PARTITION BY REFERENCE (F1_SYNC_REQ_IN_REL_OBJ_FK)
ENABLE ROW MOVEMENT;
```

INDEX

```
CREATE UNIQUE INDEX F1T192P0 ON
F1_SYNC_REQ_IN_REL_OBJ(F1_SYNC_REQ_IN_ID, MAINT_OBJ_CD,
REL_OBJ_TYPE_FLG) TABLESPACE CM_F1T191_IND
```

```
GLOBAL PARTITION BY RANGE (F1_SYNC_REQ_IN_ID)
(
PARTITION P1 VALUES LESS THAN ( '124999999999999' ),
PARTITION P2 VALUES LESS THAN ( '249999999999999' ),
PARTITION P3 VALUES LESS THAN ( '374999999999999' ),
PARTITION P4 VALUES LESS THAN ( '499999999999999' ),
PARTITION P5 VALUES LESS THAN ( '624999999999999' ),
PARTITION P6 VALUES LESS THAN ( '749999999999999' ),
PARTITION P7 VALUES LESS THAN ( '874999999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW;

ALTER TABLE F1_SYNC_REQ_IN_REL_OBJ ADD CONSTRAINT F1T192P0 PRIMARY KEY
(F1_SYNC_REQ_IN_ID, MAINT_OBJ_CD, REL_OBJ_TYPE_FLG) USING INDEX;

CREATE INDEX F1T192S1 ON F1_SYNC_REQ_IN_REL_OBJ(PK_VALUE1) TABLESPACE
CM_F1T191_IND;
```

Maintenance Object: D1-IMD

Parent Table: D1_INIT_MSRMT_DATA

```
CREATE BIGFILE TABLESPACE CM_D1T304_P2011JAN_S181 DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011JAN_SMAX DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011FEB_S181 DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011FEB_SMAX DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011MAR_S181 DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011MAR_SMAX DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011APR_S181 DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011APR_SMAX DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011MAY_S181 DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011MAY_SMAX DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011JUN_S181 DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
```

```
CREATE BIGFILE TABLESPACE CM_D1T304_P2011JUN_SMAX DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011JUL_S181 DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011JUL_SMAX DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011AUG_S181 DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011AUG_SMAX DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011SEP_S181 DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011SEP_SMAX DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011OCT_S181 DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011OCT_SMAX DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011NOV_S181 DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011NOV_SMAX DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011DEC_S181 DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011DEC_SMAX DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_PMAX_S181 DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_PMAX_SMAX DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;

CREATE TABLE D1_INIT_MSRMT_DATA
  (
   INIT_MSRMT_DATA_ID CHAR(14) NOT NULL ENABLE,
    MEASR_COMP_ID      CHAR(12) DEFAULT ' ' NOT NULL ENABLE,
    D1_FROM_DTTM DATE,
    D1_TO_DTTM DATE,
    DATA_SRC_FLG        CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
    TIME_ZONE_CD        CHAR(10) DEFAULT ' ' NOT NULL ENABLE,
    BUS_OBJ_CD          CHAR(30) DEFAULT ' ' NOT NULL ENABLE,
    BO_STATUS_CD        CHAR(12) DEFAULT ' ' NOT NULL ENABLE,
    BO_STATUS_REASON_CD VARCHAR2(30) DEFAULT ' ' NOT NULL ENABLE,
    IMD_BO_DATA_AREA CLOB,
    STATUS_UPD_DTTM DATE NOT NULL ENABLE,
    CRE_DTTM DATE NOT NULL ENABLE,
    VERSION    NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
    IMD_EXT_ID VARCHAR2(120),
    PREVEE_BO_DATA_AREA CLOB,
    POSTVEE_BO_DATA_AREA CLOB,
    TRACE_BO_DATA_AREA CLOB,
    RAW_BO_DATA_AREA CLOB,
    LAST_UPDATE_DTTM DATE,
    ILM_DT DATE,
    ILM_ARCH_SW CHAR(1),
    RETENTION_PERIOD NUMBER(5,0) DEFAULT 99999 NOT NULL ENABLE
   )
ENABLE ROW MOVEMENT PCTFREE 50
LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE)
LOB ( POSTVEE_BO_DATA_AREA ) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE)
LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE)
LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE)
LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE)
PARTITION BY RANGE (ILM_DT)
SUBPARTITION BY range (RETENTION_PERIOD)
(
PARTITION "P2011JAN" VALUES LESS THAN (TO_DATE('2011-02-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))(
SUBPARTITION P2011JAN_S181 VALUES LESS THAN (181) TABLESPACE
CM_D1T304_P2011JAN_S181
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JAN_S181)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JAN_S181)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JAN_S181)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JAN_S181)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JAN_S181)
,
SUBPARTITION P2011JAN_SMAX VALUES LESS THAN (MAXVALUE) TABLESPACE
CM_D1T304_P2011JAN_SMAX
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JAN_SMAX)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JAN_SMAX)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JAN_SMAX)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JAN_SMAX)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JAN_SMAX)
),
PARTITION "P2011FEB" VALUES LESS THAN (TO_DATE('2011-03-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))(
SUBPARTITION P2011FEB_S181 VALUES LESS THAN (181) TABLESPACE
CM_D1T304_P2011FEB_S181
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011FEB_S181)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011FEB_S181)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011FEB_S181)
```

```
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011FEB_S181)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011FEB_S181)
,
SUBPARTITION P2011FEB_SMAX VALUES LESS THAN (MAXVALUE) TABLESPACE
CM_D1T304_P2011FEB_SMAX
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011FEB_SMAX)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011FEB_SMAX)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011FEB_SMAX)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011FEB_SMAX)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011FEB_SMAX)
),
PARTITION "P2011MAR" VALUES LESS THAN (TO_DATE('2011-04-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))(
SUBPARTITION P2011MAR_S181 VALUES LESS THAN (181) TABLESPACE
CM_D1T304_P2011MAR_S181
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAR_S181)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAR_S181)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAR_S181)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAR_S181)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAR_S181)
,
SUBPARTITION P2011MAR_SMAX VALUES LESS THAN (MAXVALUE) TABLESPACE
CM_D1T304_P2011MAR_SMAX
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAR_SMAX)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAR_SMAX)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAR_SMAX)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAR_SMAX)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAR_SMAX)
),
PARTITION "P2011APR" VALUES LESS THAN (TO_DATE('2011-05-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))(
SUBPARTITION P2011APR_S181 VALUES LESS THAN (181) TABLESPACE
CM_D1T304_P2011APR_S181
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011APR_S181)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011APR_S181)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011APR_S181)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011APR_S181)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011APR_S181)
,
SUBPARTITION P2011APR_SMAX VALUES LESS THAN (MAXVALUE) TABLESPACE
CM_D1T304_P2011APR_SMAX
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011APR_SMAX)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011APR_SMAX)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011APR_SMAX)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011APR_SMAX)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011APR_SMAX)
),
PARTITION "P2011MAY" VALUES LESS THAN (TO_DATE('2011-06-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))(
SUBPARTITION P2011MAY_S181 VALUES LESS THAN (181) TABLESPACE
CM_D1T304_P2011MAY_S181
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAY_S181)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAY_S181)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAY_S181)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAY_S181)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAY_S181)
,
SUBPARTITION P2011MAY_SMAX VALUES LESS THAN (MAXVALUE) TABLESPACE
CM_D1T304_P2011MAY_SMAX
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAY_SMAX)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAY_SMAX)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAY_SMAX)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAY_SMAX)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAY_SMAX)
),
PARTITION "P2011JUN" VALUES LESS THAN (TO_DATE('2011-07-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))(
SUBPARTITION P2011JUN_S181 VALUES LESS THAN (181) TABLESPACE
CM_D1T304_P2011JUN_S181
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JUN_S181)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JUN_S181)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JUN_S181)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JUN_S181)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JUN_S181)
,
SUBPARTITION P2011JUN_SMAX VALUES LESS THAN (MAXVALUE) TABLESPACE
CM_D1T304_P2011JUN_SMAX
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JUN_SMAX)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JUN_SMAX)
```

```
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011JUN_SMAX)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011JUN_SMAX)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011JUN_SMAX)
),
PARTITION "P2011JUL" VALUES LESS THAN (TO_DATE('2011-08-01 00:00:01', 
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))(
SUBPARTITION P2011JUL_S181 VALUES LESS THAN (181) TABLESPACE 
CM_D1T304_P2011JUL_S181
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011JUL_S181)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011JUL_S181)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011JUL_S181)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011JUL_S181)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011JUL_S181)
,
SUBPARTITION P2011JUL_SMAX VALUES LESS THAN (MAXVALUE) TABLESPACE 
CM_D1T304_P2011JUL_SMAX
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011JUL_SMAX)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011JUL_SMAX)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011JUL_SMAX)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011JUL_SMAX)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011JUL_SMAX)
),
PARTITION "P2011AUG" VALUES LESS THAN (TO_DATE('2011-09-01 00:00:01', 
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))(
SUBPARTITION P2011AUG_S181 VALUES LESS THAN (181) TABLESPACE 
CM_D1T304_P2011AUG_S181
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011AUG_S181)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011AUG_S181)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011AUG_S181)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011AUG_S181)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011AUG_S181)
,
SUBPARTITION P2011AUG_SMAX VALUES LESS THAN (MAXVALUE) TABLESPACE 
CM_D1T304_P2011AUG_SMAX
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011AUG_SMAX)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011AUG_SMAX)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011AUG_SMAX)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011AUG_SMAX)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011AUG_SMAX)
```

```
),
PARTITION "P2011SEP" VALUES LESS THAN (TO_DATE('2011-10-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))(
SUBPARTITION P2011SEP_S181 VALUES LESS THAN (181) TABLESPACE
CM_D1T304_P2011SEP_S181
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011SEP_S181)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011SEP_S181)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011SEP_S181)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011SEP_S181)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011SEP_S181)
,
SUBPARTITION P2011SEP_SMAX VALUES LESS THAN (MAXVALUE) TABLESPACE
CM_D1T304_P2011SEP_SMAX
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011SEP_SMAX)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011SEP_SMAX)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011SEP_SMAX)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011SEP_SMAX)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011SEP_SMAX)
),
PARTITION "P2011OCT" VALUES LESS THAN (TO_DATE('2011-11-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))(
SUBPARTITION P2011OCT_S181 VALUES LESS THAN (181) TABLESPACE
CM_D1T304_P2011OCT_S181
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011OCT_S181)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011OCT_S181)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011OCT_S181)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011OCT_S181)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011OCT_S181)
,
SUBPARTITION P2011OCT_SMAX VALUES LESS THAN (MAXVALUE) TABLESPACE
CM_D1T304_P2011OCT_SMAX
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011OCT_SMAX)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011OCT_SMAX)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011OCT_SMAX)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011OCT_SMAX)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011OCT_SMAX)
),
PARTITION "P2011NOV" VALUES LESS THAN (TO_DATE('2011-12-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))(
SUBPARTITION P2011NOV_S181 VALUES LESS THAN (181) TABLESPACE
CM_D1T304_P2011NOV_S181
```

```
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011NOV_S181)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011NOV_S181)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011NOV_S181)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011NOV_S181)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011NOV_S181)
,
SUBPARTITION P2011NOV_SMAX VALUES LESS THAN (MAXVALUE) TABLESPACE 
CM_D1T304_P2011NOV_SMAX
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011NOV_SMAX)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011NOV_SMAX)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011NOV_SMAX)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011NOV_SMAX)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011NOV_SMAX)
),
PARTITION "P2011DEC" VALUES LESS THAN (TO_DATE('2012-01-01 00:00:01', 
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))(
SUBPARTITION P2011DEC_S181 VALUES LESS THAN (181) TABLESPACE 
CM_D1T304_P2011DEC_S181
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011DEC_S181)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011DEC_S181)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011DEC_S181)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011DEC_S181)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011DEC_S181)
,
SUBPARTITION P2011DEC_SMAX VALUES LESS THAN (MAXVALUE) TABLESPACE 
CM_D1T304_P2011DEC_SMAX
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011DEC_SMAX)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011DEC_SMAX)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011DEC_SMAX)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011DEC_SMAX)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_P2011DEC_SMAX)
),
PARTITION "PMAX" VALUES LESS THAN (MAXVALUE)(
SUBPARTITION PMAX_S181 VALUES LESS THAN (181) TABLESPACE 
CM_D1T304_PMAX_S181
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_PMAX_S181)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_PMAX_S181)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_PMAX_S181)
```

```
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_PMAX_S181)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_PMAX_S181)
,
SUBPARTITION PMAX_SMAX VALUES LESS THAN (MAXVALUE) TABLESPACE 
CM_D1T304_PMAX_SMAX
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_PMAX_SMAX)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_PMAX_SMAX)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_PMAX_SMAX)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_PMAX_SMAX)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE 
CM_D1T304_PMAX_SMAX)
)
);
```

INDEX

```
CREATE BIGFILE TABLESPACE CM_D1T304_IND DATAFILE '+DATA' SIZE 50M 
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED;

CREATE UNIQUE INDEX D1T304P0 ON D1_INIT_MSRMT_DATA(INIT_MSRMT_DATA_ID) 
TABLESPACE CM_D1T304_IND
GLOBAL PARTITION BY RANGE (INIT_MSRMT_DATA_ID)
(  PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
   PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
   PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
   PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
   PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
   PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
   PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
   PARTITION P8 VALUES LESS THAN ( MAXVALUE )
);

ALTER TABLE D1_INIT_MSRMT_DATA ADD CONSTRAINT D1T304P0 PRIMARY 
KEY(INIT_MSRMT_DATA_ID) USING INDEX;

CREATE INDEX D1T304S1 ON D1_INIT_MSRMT_DATA (MEASR_COMP_ID, 
BO_STATUS_CD, BUS_OBJ_CD, D1_TO_DTTM, D1_FROM_DTTM) TABLESPACE 
CM_D1T304_IND
GLOBAL PARTITION BY RANGE (MEASR_COMP_ID)
(  PARTITION P1 VALUES LESS THAN ( '124999999999' ),
   PARTITION P2 VALUES LESS THAN ( '249999999999' ),
   PARTITION P3 VALUES LESS THAN ( '374999999999' ),
   PARTITION P4 VALUES LESS THAN ( '499999999999' ),
   PARTITION P5 VALUES LESS THAN ( '624999999999' ),
   PARTITION P6 VALUES LESS THAN ( '749999999999' ),
   PARTITION P7 VALUES LESS THAN ( '874999999999' ),
   PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW;
```

```
CREATE UNIQUE INDEX CM_ILM_D1T304S4 ON D1_INIT_MSRMT_DATA (ILM_DT,
RETENTION_PERIOD, ILM_ARCH_SW, INIT_MSRMT_DATA_ID) LOCAL COMPRESS
ADVANCED LOW;
```

Child Table: D1_INIT_MSRMT_DATA_CHAR

```
CREATE TABLE D1_INIT_MSRMT_DATA_CHAR
  (
    INIT_MSRMT_DATA_ID CHAR(14) NOT NULL ENABLE,
    CHAR_TYPE_CD       CHAR(8) NOT NULL ENABLE,
    SEQ_NUM            NUMBER(3,0) NOT NULL ENABLE,
    CHAR_VAL           CHAR(16) DEFAULT ' ' NOT NULL ENABLE,
    ADHOC_CHAR_VAL     VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK1       VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK2       VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK3       VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK4       VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK5       VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    SRCH_CHAR_VAL      VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    VERSION            NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
    LAST_UPDATE_DTTM DATE,
   CONSTRAINT D1_INIT_MSRMT_DATA_CHAR_FK FOREIGN
KEY(INIT_MSRMT_DATA_ID) REFERENCES D1_INIT_MSRMT_DATA ON DELETE
CASCADE)
PARTITION BY REFERENCE (D1_INIT_MSRMT_DATA_CHAR_FK)
ENABLE ROW MOVEMENT;
```

INDEX

```
CREATE UNIQUE INDEX D1T305P0 ON
D1_INIT_MSRMT_DATA_CHAR(INIT_MSRMT_DATA_ID, CHAR_TYPE_CD, SEQ_NUM)
TABLESPACE CM_D1T304_IND
GLOBAL PARTITION BY RANGE(INIT_MSRMT_DATA_ID)
 (
 PARTITION P1 VALUES LESS THAN ('12499999999999'),
 PARTITION P2 VALUES LESS THAN ('24999999999999'),
 PARTITION P3 VALUES LESS THAN ('37499999999999'),
 PARTITION P4 VALUES LESS THAN ('49999999999999'),
 PARTITION P5 VALUES LESS THAN ('62499999999999'),
 PARTITION P6 VALUES LESS THAN ('74999999999999'),
 PARTITION P7 VALUES LESS THAN ('87499999999999'),
 PARTITION P8 VALUES LESS THAN (MAXVALUE)
 ) COMPRESS ADVANCED LOW;

ALTER TABLE D1_INIT_MSRMT_DATA_CHAR ADD CONSTRAINT D1T305P0 PRIMARY
KEY (INIT_MSRMT_DATA_ID, CHAR_TYPE_CD, SEQ_NUM) USING INDEX;


CREATE INDEX D1T305S1 ON D1_INIT_MSRMT_DATA_CHAR(SRCH_CHAR_VAL)
GLOBAL PARTITION BY HASH(SRCH_CHAR_VAL)
 (
 PARTITION P1 TABLESPACE CM_D1T304_IND,
 PARTITION P2 TABLESPACE CM_D1T304_IND,
 PARTITION P3 TABLESPACE CM_D1T304_IND,
 PARTITION P4 TABLESPACE CM_D1T304_IND,
 PARTITION P5 TABLESPACE CM_D1T304_IND,
 PARTITION P6 TABLESPACE CM_D1T304_IND,
 PARTITION P7 TABLESPACE CM_D1T304_IND,
 PARTITION P8 TABLESPACE CM_D1T304_IND
 );
```

Child Table: D1_INIT_MSRMT_DATA_LOG

```
CREATE TABLE D1_INIT_MSRMT_DATA_LOG
  (
    INIT_MSRMT_DATA_ID  CHAR(14) NOT NULL ENABLE,
    SEQNO               NUMBER(5,0) NOT NULL ENABLE,
    BO_STATUS_CD        CHAR(12) DEFAULT ' ' NOT NULL ENABLE,
    BO_STATUS_REASON_CD VARCHAR2(30) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_TYPE_CD        CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL            CHAR(16) DEFAULT ' ' NOT NULL ENABLE,
    ADHOC_CHAR_VAL      VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK1        VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK2        VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK3        VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK4        VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK5        VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    DESCRLONG           VARCHAR2(4000) DEFAULT ' ' NOT NULL ENABLE,
    LOG_DTTM            DATE NOT NULL ENABLE,
    LOG_ENTRY_TYPE_FLG  CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
    MESSAGE_CAT_NBR     NUMBER(5,0) DEFAULT 0 NOT NULL ENABLE,
    MESSAGE_NBR         NUMBER(5,0) DEFAULT 0 NOT NULL ENABLE,
    USER_ID             CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
    VERSION             NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
    LAST_UPDATE_DTTM DATE,
   CONSTRAINT D1_INIT_MSRMT_DATA_LOG_FK FOREIGN
KEY(INIT_MSRMT_DATA_ID) REFERENCES D1_INIT_MSRMT_DATA ON DELETE
CASCADE)
PARTITION BY REFERENCE (D1_INIT_MSRMT_DATA_LOG_FK)
ENABLE ROW MOVEMENT;
```

INDEX

```
CREATE UNIQUE INDEX D1T306P0 ON D1_INIT_MSRMT_DATA_LOG
(INIT_MSRMT_DATA_ID, SEQNO)  TABLESPACE CM_D1T304_IND
GLOBAL PARTITION BY RANGE(INIT_MSRMT_DATA_ID)
 (
 PARTITION P1 VALUES LESS THAN ('12499999999999'),
 PARTITION P2 VALUES LESS THAN ('24999999999999'),
 PARTITION P3 VALUES LESS THAN ('37499999999999'),
 PARTITION P4 VALUES LESS THAN ('49999999999999'),
 PARTITION P5 VALUES LESS THAN ('62499999999999'),
 PARTITION P6 VALUES LESS THAN ('74999999999999'),
 PARTITION P7 VALUES LESS THAN ('87499999999999'),
 PARTITION P8 VALUES LESS THAN (MAXVALUE)
 )COMPRESS ADVANCED LOW;


ALTER TABLE D1_INIT_MSRMT_DATA_LOG ADD CONSTRAINT D1T306P0 PRIMARY KEY
(INIT_MSRMT_DATA_ID, SEQNO) USING INDEX;
```

Child Table: D1_INIT_MSRMT_DATA_LOG_PARM

```
CREATE TABLE D1_INIT_MSRMT_DATA_LOG_PARM
  (
    INIT_MSRMT_DATA_ID CHAR(14) NOT NULL ENABLE,
    SEQNO              NUMBER(5,0) NOT NULL ENABLE,
    PARM_SEQ           NUMBER(3,0) NOT NULL ENABLE,
    MSG_PARM_VAL       VARCHAR2(2000) DEFAULT ' ' NOT NULL ENABLE,
    MSG_PARM_TYP_FLG   CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
    VERSION            NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
    LAST_UPDATE_DTTM DATE,
    CONSTRAINT D1_INIT_MSRMT_DATA_LOG_PARM_FK FOREIGN
KEY(INIT_MSRMT_DATA_ID) REFERENCES D1_INIT_MSRMT_DATA ON DELETE
CASCADE)
PARTITION BY REFERENCE (D1_INIT_MSRMT_DATA_LOG_PARM_FK)
ENABLE ROW MOVEMENT;
```

INDEX

```
CREATE UNIQUE INDEX D1T307P0 ON
D1_INIT_MSRMT_DATA_LOG_PARM(INIT_MSRMT_DATA_ID, SEQNO, PARM_SEQ)
TABLESPACE CM_D1T304_IND
GLOBAL PARTITION BY RANGE(INIT_MSRMT_DATA_ID)
 (
 PARTITION P1 VALUES LESS THAN ('12499999999999'),
 PARTITION P2 VALUES LESS THAN ('24999999999999'),
 PARTITION P3 VALUES LESS THAN ('37499999999999'),
 PARTITION P4 VALUES LESS THAN ('49999999999999'),
 PARTITION P5 VALUES LESS THAN ('62499999999999'),
 PARTITION P6 VALUES LESS THAN ('74999999999999'),
 PARTITION P7 VALUES LESS THAN ('87499999999999'),
 PARTITION P8 VALUES LESS THAN (MAXVALUE)
 ) COMPRESS ADVANCED LOW;

ALTER TABLE D1_INIT_MSRMT_DATA_LOG_PARM ADD CONSTRAINT D1T307P0
PRIMARY KEY (INIT_MSRMT_DATA_ID, SEQNO, PARM_SEQ) USING INDEX;
```

Child Table: D1_INIT_MSRMT_DATA_K

```
CREATE BIGFILE TABLESPACE CM_D1T314_IND DATAFILE '+DATA' SIZE 50M
AUTOEXTEND ON MAXSIZE UNLIMITED;


CREATE TABLE D1_INIT_MSRMT_DATA_K
  (
    INIT_MSRMT_DATA_ID CHAR(14) NOT NULL ENABLE,
    ENV_ID             NUMBER(6,0) NOT NULL ENABLE,
    CONSTRAINT D1T314P0 PRIMARY KEY (INIT_MSRMT_DATA_ID, ENV_ID) ENABLE
  )
  ORGANIZATION INDEX
  Partition by range(INIT_MSRMT_DATA_ID)
(
PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
TABLESPACE CM_D1T314_IND;
```

Appendix F

Sample SQL For Enabling ILM in C2M for MDM (Existing Installation)

This section provides additional details related to supporting ILM in an existing installation. It includes the sample syntax for each step using the To Do Entry maintenance object as an example. Other maintenance object's implementations can follow a similar pattern.

1. Rename existing table CI_TD_ENTRY and primary key index as a backup. It is suggested to use an ILM_ prefix. The following are sample statements:

```
ALTER TABLE CI_TD_ENTRY RENAME TO ILM_TD_ENTRY;
ALTER INDEX XT039P0 RENAME TO ILM_XT039P0;
```

2. Generate DDL for the secondary index.

```
set heading off;
set echo off;
Set pages 999;
set long 90000;

spool ddl_list.sql
select dbms_metadata.get_ddl('INDEX','XT039S2','CISADM') from dual;
select dbms_metadata.get_ddl('INDEX','XT039S3','CISADM') from dual;
select dbms_metadata.get_ddl('INDEX','XT039S4','CISADM') from dual;
select dbms_metadata.get_ddl('INDEX','XT039S5','CISADM') from dual;
select dbms_metadata.get_ddl('INDEX','XT039S6','CISADM') from dual;
select dbms_metadata.get_ddl('INDEX','XT039S7','CISADM') from dual;
select dbms_metadata.get_ddl('INDEX','XT039S8','CISADM') from dual;
spool off;
```

3. Drop secondary indexes.

```
DROP INDEX CISADM.XT039S2;
DROP INDEX CISADM.XT039S3;
DROP INDEX CISADM.XT039S4;
DROP INDEX CISADM.XT039S5;
DROP INDEX CISADM.XT039S6;
DROP INDEX CISADM.XT039S7;
DROP INDEX CISADM.XT039S8;
```

4. Create Partitioned Table.

   In the following example ILM_DT value is inserted from column CRE_DTTM. The degree setting of 'parallel' in the DDL can be adjusted according to the table’s data, its means and its size.

```
CREATE TABLE CI_TD_ENTRY (
TD_ENTRY_ID     CHAR(14) NOT NULL ENABLE,
BATCH_CD        CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
BATCH_NBR       NUMBER(10,0) DEFAULT 0 NOT NULL ENABLE,
MESSAGE_CAT_NBR NUMBER(5,0) DEFAULT 0 NOT NULL ENABLE,
MESSAGE_NBR     NUMBER(5,0) DEFAULT 0 NOT NULL ENABLE,
ASSIGNED_TO     CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
TD_TYPE_CD      CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
ROLE_ID         CHAR(10) DEFAULT ' ' NOT NULL ENABLE,
ENTRY_STATUS_FLG CHAR(2) DEFAULT ' ' NOT NULL ENABLE,
VERSION         NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
CRE_DTTM DATE,
ASSIGNED_DTTM DATE,
COMPLETE_DTTM DATE,
COMPLETE_USER_ID CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
COMMENTS        VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
ASSIGNED_USER_ID CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
TD_PRIORITY_FLG CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
ILM_DT DATE,
ILM_ARCH_SW CHAR(1)
) NOLOGGING PARALLEL
ENABLE ROW MOVEMENT
PARTITION BY RANGE (ILM_DT)
SUBPARTITION BY RANGE (TD_ENTRY_ID) SUBPARTITION TEMPLATE
(
SUBPARTITION S01 VALUES LESS THAN ( '12499999999999' ),
SUBPARTITION S02 VALUES LESS THAN ( '24999999999999' ),
SUBPARTITION S03 VALUES LESS THAN ( '37499999999999' ),
SUBPARTITION S04 VALUES LESS THAN ( '49999999999999' ),
SUBPARTITION S05 VALUES LESS THAN ( '62499999999999' ),
SUBPARTITION S06 VALUES LESS THAN ( '74999999999999' ),
SUBPARTITION S07 VALUES LESS THAN ( '87499999999999' ),
SUBPARTITION SMAX VALUES LESS THAN ( MAXVALUE )
)
(
PARTITION "P2011JAN" VALUES LESS THAN (TO_DATE('2011-02-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_XT039_P2011JAN,
PARTITION "P2011FEB" VALUES LESS THAN (TO_DATE('2011-03-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_XT039_P2011FEB,
PARTITION "P2011MAR" VALUES LESS THAN (TO_DATE('2011-04-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_XT039_P2011MAR,
PARTITION "P2011APR" VALUES LESS THAN (TO_DATE('2011-05-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_XT039_P2011APR,
PARTITION "P2011MAY" VALUES LESS THAN (TO_DATE('2011-06-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_XT039_P2011MAY,
PARTITION "P2011JUN" VALUES LESS THAN (TO_DATE('2011-07-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_XT039_P2011JUN,
PARTITION "P2011JUL" VALUES LESS THAN (TO_DATE('2011-08-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_XT039_P2011JUL,
PARTITION "P2011AUG" VALUES LESS THAN (TO_DATE('2011-09-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_XT039_P2011AUG,
PARTITION "P2011SEP" VALUES LESS THAN (TO_DATE('2011-10-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_XT039_P2011SEP,
PARTITION "P2011OCT" VALUES LESS THAN (TO_DATE('2011-11-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_XT039_P2011OCT,
PARTITION "P2011NOV" VALUES LESS THAN (TO_DATE('2011-12-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_XT039_P2011NOV,
PARTITION "PMAX" VALUES LESS THAN (MAXVALUE)
TABLESPACE CM_XT039_PMAX
)as select /* PARALLEL */
TD_ENTRY_ID,
BATCH_CD,
BATCH_NBR,
MESSAGE_CAT_NBR,
MESSAGE_NBR,
ASSIGNED_TO,
TD_TYPE_CD,
ROLE_ID,
ENTRY_STATUS_FLG,
VERSION,
CRE_DTTM,
ASSIGNED_DTTM,
COMPLETE_DTTM,
COMPLETE_USER_ID,
COMMENTS,
ASSIGNED_USER_ID,
TD_PRIORITY_FLG,
CRE_DTTM as ILM_DT,
ILM_ARCH_SW
from ILM_TD_ENTRY
```

```
/
```

5. Enable logging option for table CI_TD_ENRY.

   ```
   ALTER TABLE CI_TD_ENTRY NOPARALLEL LOGGING;
   ```

6. Create Primary Index for Parent table CI_TD_ENTRY.

   ```
   CREATE BIGFILE TABLESPACE CM_XT039_IND DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
   MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED;

   CREATE UNIQUE INDEX XT039P0 ON CI_TD_ENTRY NOLOGGING PARALLEL (
   TD_ENTRY_ID
   )
   PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
   PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
   PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
   PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
   PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
   PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
   PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
   PARTITION P8 VALUES LESS THAN ( MAXVALUE )
   ) TABLESPACE CM_XT039_IND
   /

   ALTER INDEX XT039P0 LOGGING NOPARALLEL;
   ```

7. Add Primary Key for Parent table CI_TD_ENTRY

   ```
   ALTER TABLE CI_TD_ENTRY ADD CONSTRAINT XT039P0 PRIMARY KEY(TD_ENTRY_ID) USING INDEX
   /
   ```

8. Create Secondary Indexes for Parent table CI_TD_ENTRY

   ```
   CREATE UNIQUE INDEX CM_ILM_XT039S8 ON CI_TD_ENTRY ( ILM_DT, ILM_ARCH_SW, TD_ENTRY_ID )
   LOCAL COMPRESS ADVANCED LOW
   /


   CREATE UNIQUE INDEX XT039S2 ON CI_TD_ENTRY ( ASSIGNED_TO, TD_ENTRY_ID ) TABLESPACE
   CM_XT039_IND COMPRESS ADVANCED LOW
   /

   CREATE INDEX XT039S3 ON CI_TD_ENTRY ( ENTRY_STATUS_FLG, ASSIGNED_TO ) TABLESPACE
   CM_XT039_IND COMPRESS ADVANCED LOW
   /

   CREATE INDEX XT039S4 ON CI_TD_ENTRY ( ROLE_ID, TD_TYPE_CD, ENTRY_STATUS_FLG,
   TD_PRIORITY_FLG ) TABLESPACE CM_XT039_IND COMPRESS ADVANCED LOW
   /

   CREATE INDEX XT039S5 ON CI_TD_ENTRY ( BATCH_CD, BATCH_NBR, ENTRY_STATUS_FLG )
   TABLESPACE CM_XT039_IND COMPRESS ADVANCED LOW
   /

   CREATE UNIQUE INDEX XT039S6 ON CI_TD_ENTRY ( TD_ENTRY_ID, ASSIGNED_TO,
   ENTRY_STATUS_FLG )TABLESPACE CM_XT039_IND COMPRESS ADVANCED LOW
   /

   CREATE UNIQUE INDEX XT039S7 ON CI_TD_ENTRY ( COMPLETE_USER_ID, COMPLETE_DTTM,
   TD_ENTRY_ID ) TABLESPACE CM_XT039_IND COMPRESS ADVANCED LOW
   /
   ```

9. After verification of the ILM based tables, user can drop the backup tables “ILM” renamed table.

10. Create all child Tables, Primary Key, Primary Indexes and Secondary Indexes as shown below.

Repeat the following steps for all child tables.

Create Child Table CI_TD_DRLKEY

```
CREATE TABLE CI_TD_DRLKEY
(
TD_ENTRY_ID NOT NULL ENABLE,
SEQ_NUM     NOT NULL ENABLE,
KEY_VALUE   DEFAULT ' ' NOT NULL ENABLE,
VERSION     DEFAULT 1 NOT NULL ENABLE,
CONSTRAINT CI_TD_DRLKEY_FK FOREIGN KEY(TD_ENTRY_ID) REFERENCES CI_TD_ENTRY
```

```
ON DELETE CASCADE)
PARTITION BY REFERENCE (CI_TD_DRLKEY_FK)
ENABLE ROW MOVEMENT
AS SELECT /*+ PARALLEL */ * FROM ILM_CI_TD_DRLKEY;
```

Create Index

```
CREATE UNIQUE INDEX XT037P0 ON CI_TD_DRLKEY ( TD_ENTRY_ID, SEQ_NUM ) TABLESPACE
CM_XT039_IND NOLOGGING PARALLEL
GLOBAL PARTITION BY RANGE (TD_ENTRY_ID)
(
PARTITION P1 VALUES LESS THAN ( '124999999999' ),
PARTITION P2 VALUES LESS THAN ( '249999999999' ),
PARTITION P3 VALUES LESS THAN ( '374999999999' ),
PARTITION P4 VALUES LESS THAN ( '499999999999' ),
PARTITION P5 VALUES LESS THAN ( '624999999999' ),
PARTITION P6 VALUES LESS THAN ( '749999999999' ),
PARTITION P7 VALUES LESS THAN ( '874999999999' ),
PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW;

ALTER INDEX XT037P0 LOGGING NOPARALLEL;

ALTER TABLE CI_TD_DRLKEY ADD CONSTRAINT XT037P0 PRIMARY KEY(TD_ENTRY_ID, SEQ_NUM) USING
INDEX;

CREATE INDEX XT037S1 ON CI_TD_DRLKEY ( KEY_VALUE, TD_ENTRY_ID ) TABLESPACE CM_XT039_IND
COMPRESS ADVANCED LOW;
```

Appendix G

Sample SQL for ILM in C2M with Sub Retention (Existing Installation)

This section provides additional details including the sample syntax for each step using the Initial Measurement Data maintenance object as an example. Other maintenance object's implementations can follow a similar pattern.

1. Rename existing D1_INIT_MSRMT_DATA tables and primary key indexes and constraints as a backup. It is suggested to use an ILM_ prefix. The following are sample statements:

```
ALTER TABLE D1_INIT_MSRMT_DATA RENAME TO ILM_D1_INIT_MSRMT_DATA;

ALTER TABLE D1_INIT_MSRMT_DATA RENAME CONSTRAINT D1T304P0 TO
ILM_D1T304P0;

ALTER INDEX D1T304P0 RENAME TO ILM_D1T304P0;

ALTER TABLE D1_INIT_MSRMT_DATA_CHAR RENAME TO
ILM_D1_INIT_MSRMT_DATA_CHAR;

ALTER TABLE D1_INIT_MSRMT_DATA_CHAR RENAME CONSTRAINT D1T305P0 TO
ILM_D1T305P0;

ALTER INDEX D1T305P0 RENAME TO ILM_D1T305P0;

ALTER TABLE D1_INIT_MSRMT_DATA_LOG RENAME TO
ILM_D1_INIT_MSRMT_DATA_LOG;

ALTER TABLE D1_INIT_MSRMT_DATA_LOG RENAME CONSTRAINT D1T306P0 TO
ILM_D1T306P0;

ALTER INDEX D1T306P0 RENAME TO ILM_D1T306P0;

ALTER TABLE D1_INIT_MSRMT_DATA_LOG_PARM RENAME TO
ILM_D1_INIT_MSRMT_DATA_LOG_PARM;

ALTER TABLE D1_INIT_MSRMT_DATA_LOG_PARM RENAME CONSTRAINT D1T307P0
TO ILM_D1T307P0;

ALTER INDEX D1T307P0 RENAME TO ILM_D1T307P0;

ALTER TABLE D1_INIT_MSRMT_DATA_K RENAME TO
ILM_D1_INIT_MSRMT_DATA_K;
```

```
ALTER TABLE D1_INIT_MSRMT_DATA_K RENAME CONSTRAINT D1T314P0 TO
ILM_D1T314P0;

ALTER INDEX D1T314P0 RENAME TO ILM_D1T314P0;
```

2. Generate DDL for the secondary index.

```
set heading off;
set echo off;
Set pages 999;
set long 90000;

spool ddl_list.sql
select dbms_metadata.get_ddl('INDEX','D1T304S1','CISADM') from
dual;
spool off;
```

3. Drop secondary indexes.

```
DROP INDEX CISADM.D1T304S1;
```

4. Create Partitioned Table.

   In the following example ILM_DT value is inserted from column CRE_DTTM. The degree setting of 'parallel' in the DDL can be adjusted according to the table's data, its means and its size. Use the CTAS queries listed in Chapter 5 to create temporary tables for ACTIVITY, DEVICE EVENT, and INITIAL MEASUREMENT DATA and use the following statements to create the partitioned tables.

Activity

```
CREATE TABLE D1_ACTIVITY (
D1_ACTIVITY_ID      NOT NULL,
BUS_OBJ_CD          NOT NULL,
BO_STATUS_CD        NOT NULL,
ACTIVITY_TYPE_CD    NOT NULL,
START_DTTM          NOT NULL,
END_DTTM,
CRE_DTTM            NOT NULL,
STATUS_UPD_DTTM     NOT NULL,
BO_STATUS_REASON_CD NOT NULL,
VERSION             NOT NULL,
EFF_DTTM,
BO_DATA_AREA,
FIELD_TASK_TYPE,
CANCEL_REASON,
ILM_DT,
ILM_ARCH_SW,
RETENTION_PERIOD    NOT NULL
)
AS
SELECT
A.D1_ACTIVITY_ID,
A.BUS_OBJ_CD,
A.BO_STATUS_CD,
A.ACTIVITY_TYPE_CD,
A.START_DTTM,
A.END_DTTM,
A.CRE_DTTM,
A.STATUS_UPD_DTTM,
A.BO_STATUS_REASON_CD,
A.VERSION,
A.EFF_DTTM,
A.BO_DATA_AREA,
A.FIELD_TASK_TYPE,
A.CANCEL_REASON,
A.CRE_DTTM as ILM_DT,
'N' as ILM_ARCH_SW,
CAST(COALESCE((SELECT B.RETPERIOD
FROM ILM_ACTIVITY_RETENTION_TMP B
WHERE  B.ACTIVITY_TYPE_CD = A.ACTIVITY_TYPE_CD)
,CAST((select maint_obj_opt_val
from ci_md_mo_opt mmouni
where maint_obj_cd = 'D1-ACTIVITY'
and maint_obj_opt_flg ='FLRP'
and seq_num =
(select max(seq_num)
from ci_md_mo_opt mmo
where maint_obj_cd = 'D1-ACTIVITY'
and maint_obj_opt_flg ='FLRP')) as NUMBER(5))
,CAST((select extractvalue( xmlparse(content fw_mcfg.mst_config_data)
,'generalMasterConfiguration/defaultRetentionPeriod')
from f1_mst_config fw_mcfg
where fw_mcfg.bus_obj_cd = 'F1-ILMMSConfig') as NUMBER(5))
, 99999) as NUMBER(5)) as RETENTION_PERIOD
FROM ILM_D1_ACTIVITY A
/
```

Device Event

```
CREATE TABLE D1_DVC_EVT(
DVC_EVT_ID          NOT NULL,
DVC_EVT_TYPE_CD,
BUS_OBJ_CD          NOT NULL,
EXT_EVT_NAME_FLG,
D1_SPR_CD,
BO_STATUS_CD        NOT NULL,
STATUS_UPD_DTTM     NOT NULL,
BO_STATUS_REASON_CD NOT NULL,
DVC_EVT_DTTM        NOT NULL,
CRE_DTTM            NOT NULL,
VERSION             NOT NULL,
DVC_EVT_END_DTTM,
BO_DATA_AREA,
D1_DEVICE_ID,
ILM_DT              NOT NULL,
ILM_ARCH_SW,
RETENTION_PERIOD    NOT NULL)
AS
SELECT
A.DVC_EVT_ID,
A.DVC_EVT_TYPE_CD,
A.BUS_OBJ_CD,
A.EXT_EVT_NAME_FLG,
A.D1_SPR_CD,
A.BO_STATUS_CD,
A.STATUS_UPD_DTTM,
A.BO_STATUS_REASON_CD,
A.DVC_EVT_DTTM,
A.CRE_DTTM,
A.VERSION,
A.DVC_EVT_END_DTTM,
A.BO_DATA_AREA,
A.D1_DEVICE_ID,
A.CRE_DTTM as ILM_DT,
'N' as ILM_ARCH_SW,
CAST(COALESCE((SELECT B.RETPERIOD
FROM ILM_DVC_EVT_RETENTION_TMP B
WHERE  B.DVC_EVT_TYPE_CD = A.DVC_EVT_TYPE_CD)
,CAST((select maint_obj_opt_val
from ci_md_mo_opt mmouni
where maint_obj_cd = 'D1-DVCEVENT'
and maint_obj_opt_flg ='FLRP'
and seq_num =
(select max(seq_num)
from ci_md_mo_opt mmo
where maint_obj_cd = 'D1-DVCEVENT'
and maint_obj_opt_flg ='FLRP')) as NUMBER(5))
,CAST((select extractvalue( xmlparse(content fw_mcfg.mst_config_data)
,'generalMasterConfiguration/defaultRetentionPeriod')
from f1_mst_config fw_mcfg
where fw_mcfg.bus_obj_cd = 'F1-ILMMSConfig') as NUMBER(5))
, 99999) as NUMBER(5)) as RETENTION_PERIOD
FROM ILM_D1_DVC_EVT A
/
```

Initial Measurement Data

```
CREATE TABLE ILM_IMD_RETENTION_TMP
AS
select mct.measr_comp_type_cd
/*retrieve the retention period for MC Types in this order of
precedence:
1. The UOM based retention period from the MDM master configuration
2. The interval IMD retention period from the MDM master configuration
3. The MO level retention period from the MO options
4. The installation level retention period from the FW master
configuration
*/
, CAST(coalesce( (select retPeriod
from (select 'D1IN' interval_scalar_flg
, extractvalue(value(p),'uomRetentionPeriodList/uom') D1_UOM_CD
, extractvalue(value(p),'uomRetentionPeriodList/retentionPeriod')
retPeriod
from f1_mst_config mdm_mcfg
, table(xmlsequence(extract(xmlparse(content
mdm_mcfg.mst_config_data),
'imdRetentionPeriod/intervalImdRetentionPeriods/uomRetentionPeriods/
uomRetentionPeriodList'))) p
where mdm_mcfg.bus_obj_cd = 'D1-ILMMSConfig'
union
select 'D1SC' INTERVAL_SCALAR_FLG
, extractvalue(value(p),'uomRetentionPeriodList/uom') D1_UOM_CD
, extractvalue(value(p),'uomRetentionPeriodList/retentionPeriod')
retPeriod
from f1_mst_config mdm_mcfg
, table(xmlsequence(extract(xmlparse(content
mdm_mcfg.mst_config_data),
'imdRetentionPeriod/scalarImdRetentionPeriods/uomRetentionPeriods/
uomRetentionPeriodList'))) p
where mdm_mcfg.bus_obj_cd = 'D1-ILMMSConfig') uomMap
where uomMap.interval_scalar_flg = mct.interval_scalar_flg
and trim(mctvi.d1_uom_cd) = trim(uomMap.d1_uom_cd))--UOM
, DECODE(mct.interval_scalar_flg
,'D1IN'
,extractvalue( xmlparse(content mdm_mcfg.mst_config_data),
'imdRetentionPeriod/intervalImdRetentionPeriods/
intervalRetentionPeriod') --interval IMD
,extractvalue( xmlparse(content mdm_mcfg.mst_config_data),
'imdRetentionPeriod/scalarImdRetentionPeriods/scalarRetentionPeriod')
--scalar IMD
)
, (select maint_obj_opt_val
from ci_md_mo_opt mmo
where maint_obj_cd = 'D1-IMD'
and maint_obj_opt_flg ='FLRP'
and seq_num = (select max(seq_num)
from ci_md_mo_opt mmo
where maint_obj_cd = 'D1-IMD'
and maint_obj_opt_flg ='FLRP')) --IMD
, extractvalue( xmlparse(content fw_mcfg.mst_config_data),
'generalMasterConfiguration/defaultRetentionPeriod') --Install
) as NUMBER(5)) retPeriod
from d1_measr_comp_type mct
, d1_mc_type_value_identifier mctvi
, f1_mst_config fw_mcfg
, f1_mst_config mdm_mcfg
where mct.measr_comp_type_cd = mctvi.measr_comp_type_cd
and mctvi.value_id_type_flg = 'D1MS'
and fw_mcfg.bus_obj_cd = 'F1-ILMMSConfig'
and mdm_mcfg.bus_obj_cd = 'D1-ILMMSConfig'
order by 1;


CREATE BIGFILE TABLESPACE CM_D1T304_P2011JAN_S181 DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011JAN_SMAX DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011FEB_S181 DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011FEB_SMAX DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011MAR_S181 DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011MAR_SMAX DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011APR_S181 DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011APR_SMAX DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011MAY_S181 DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011MAY_SMAX DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
```

```
CREATE BIGFILE TABLESPACE CM_D1T304_P2011JUN_S181 DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011JUN_SMAX DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011JUL_S181 DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011JUL_SMAX DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011AUG_S181 DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011AUG_SMAX DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011SEP_S181 DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011SEP_SMAX DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011OCT_S181 DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011OCT_SMAX DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011NOV_S181 DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011NOV_SMAX DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011DEC_S181 DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011DEC_SMAX DATAFILE '+DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_PMAX_S181 DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
CREATE BIGFILE TABLESPACE CM_D1T304_PMAX_SMAX DATAFILE '+DATADG' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;


CREATE TABLE D1_INIT_MSRMT_DATA
(
INIT_MSRMT_DATA_ID   NOT NULL,
MEASR_COMP_ID        NOT NULL,
D1_FROM_DTTM,
D1_TO_DTTM,
DATA_SRC_FLG         NOT NULL,
TIME_ZONE_CD         NOT NULL,
BUS_OBJ_CD           NOT NULL,
BO_STATUS_CD         NOT NULL,
BO_STATUS_REASON_CD  NOT NULL,
IMD_BO_DATA_AREA,
STATUS_UPD_DTTM      NOT NULL,
CRE_DTTM             NOT NULL,
VERSION              NOT NULL,
IMD_EXT_ID,
PREVEE_BO_DATA_AREA,
POSTVEE_BO_DATA_AREA,
TRACE_BO_DATA_AREA,
RAW_BO_DATA_AREA,
LAST_UPDATE_DTTM,
ILM_DT,
ILM_ARCH_SW,
RETENTION_PERIOD     NOT NULL
)
nologging  parallel (degree 10)
LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE)
LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE)
LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE)
LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE)
LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE)
PARTITION BY RANGE (ILM_DT) SUBPARTITION BY RANGE (RETENTION_PERIOD)
(
PARTITION "P2011JAN" VALUES LESS THAN (TO_DATE('2011-02-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))(
SUBPARTITION P2011JAN_S181 VALUES LESS THAN (181) TABLESPACE
CM_D1T304_P2011JAN_S181
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JAN_S181)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JAN_S181)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JAN_S181)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JAN_S181)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JAN_S181)
,
SUBPARTITION P2011JAN_SMAX VALUES LESS THAN (MAXVALUE) TABLESPACE
CM_D1T304_P2011JAN_SMAX
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JAN_SMAX)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JAN_SMAX)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JAN_SMAX)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JAN_SMAX)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JAN_SMAX)
),
PARTITION "P2011FEB" VALUES LESS THAN (TO_DATE('2011-03-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))(
SUBPARTITION P2011FEB_S181 VALUES LESS THAN (181) TABLESPACE
CM_D1T304_P2011FEB_S181
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011FEB_S181)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011FEB_S181)
```

```
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011FEB_S181)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011FEB_S181)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011FEB_S181)
,
SUBPARTITION P2011FEB_SMAX VALUES LESS THAN (MAXVALUE) TABLESPACE
CM_D1T304_P2011FEB_SMAX
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011FEB_SMAX)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011FEB_SMAX)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011FEB_SMAX)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011FEB_SMAX)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011FEB_SMAX)
),
PARTITION "P2011MAR" VALUES LESS THAN (TO_DATE('2011-04-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))(
SUBPARTITION P2011MAR_S181 VALUES LESS THAN (181) TABLESPACE
CM_D1T304_P2011MAR_S181
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAR_S181)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAR_S181)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAR_S181)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAR_S181)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAR_S181)
,
SUBPARTITION P2011MAR_SMAX VALUES LESS THAN (MAXVALUE) TABLESPACE
CM_D1T304_P2011MAR_SMAX
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAR_SMAX)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAR_SMAX)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAR_SMAX)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAR_SMAX)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAR_SMAX)
),
PARTITION "P2011APR" VALUES LESS THAN (TO_DATE('2011-05-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))(
SUBPARTITION P2011APR_S181 VALUES LESS THAN (181) TABLESPACE
CM_D1T304_P2011APR_S181
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011APR_S181)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011APR_S181)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011APR_S181)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011APR_S181)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011APR_S181)
```

```
,
SUBPARTITION P2011APR_SMAX VALUES LESS THAN (MAXVALUE) TABLESPACE
CM_D1T304_P2011APR_SMAX
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011APR_SMAX)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011APR_SMAX)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011APR_SMAX)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011APR_SMAX)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011APR_SMAX)
),
PARTITION "P2011MAY" VALUES LESS THAN (TO_DATE('2011-06-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))(
SUBPARTITION P2011MAY_S181 VALUES LESS THAN (181) TABLESPACE
CM_D1T304_P2011MAY_S181
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAY_S181)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAY_S181)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAY_S181)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAY_S181)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAY_S181)
,
SUBPARTITION P2011MAY_SMAX VALUES LESS THAN (MAXVALUE) TABLESPACE
CM_D1T304_P2011MAY_SMAX
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAY_SMAX)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAY_SMAX)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAY_SMAX)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAY_SMAX)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011MAY_SMAX)
),
PARTITION "P2011JUN" VALUES LESS THAN (TO_DATE('2011-07-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))(
SUBPARTITION P2011JUN_S181 VALUES LESS THAN (181) TABLESPACE
CM_D1T304_P2011JUN_S181
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JUN_S181)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JUN_S181)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JUN_S181)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JUN_S181)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JUN_S181)
,
SUBPARTITION P2011JUN_SMAX VALUES LESS THAN (MAXVALUE) TABLESPACE
CM_D1T304_P2011JUN_SMAX
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JUN_SMAX)
```

```
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JUN_SMAX)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JUN_SMAX)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JUN_SMAX)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JUN_SMAX)
),
PARTITION "P2011JUL" VALUES LESS THAN (TO_DATE('2011-08-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))(
SUBPARTITION P2011JUL_S181 VALUES LESS THAN (181) TABLESPACE
CM_D1T304_P2011JUL_S181
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JUL_S181)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JUL_S181)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JUL_S181)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JUL_S181)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JUL_S181)
,
SUBPARTITION P2011JUL_SMAX VALUES LESS THAN (MAXVALUE) TABLESPACE
CM_D1T304_P2011JUL_SMAX
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JUL_SMAX)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JUL_SMAX)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JUL_SMAX)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JUL_SMAX)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011JUL_SMAX)
),
PARTITION "P2011AUG" VALUES LESS THAN (TO_DATE('2011-09-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))(
SUBPARTITION P2011AUG_S181 VALUES LESS THAN (181) TABLESPACE
CM_D1T304_P2011AUG_S181
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011AUG_S181)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011AUG_S181)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011AUG_S181)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011AUG_S181)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011AUG_S181)
,
SUBPARTITION P2011AUG_SMAX VALUES LESS THAN (MAXVALUE) TABLESPACE
CM_D1T304_P2011AUG_SMAX
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011AUG_SMAX)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011AUG_SMAX)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011AUG_SMAX)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011AUG_SMAX)
```

```
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011AUG_SMAX)
),
PARTITION "P2011SEP" VALUES LESS THAN (TO_DATE('2011-10-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))(
SUBPARTITION P2011SEP_S181 VALUES LESS THAN (181) TABLESPACE
CM_D1T304_P2011SEP_S181
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011SEP_S181)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011SEP_S181)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011SEP_S181)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011SEP_S181)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011SEP_S181)
,
SUBPARTITION P2011SEP_SMAX VALUES LESS THAN (MAXVALUE) TABLESPACE
CM_D1T304_P2011SEP_SMAX
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011SEP_SMAX)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011SEP_SMAX)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011SEP_SMAX)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011SEP_SMAX)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011SEP_SMAX)
),
PARTITION "P2011OCT" VALUES LESS THAN (TO_DATE('2011-11-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))(
SUBPARTITION P2011OCT_S181 VALUES LESS THAN (181) TABLESPACE
CM_D1T304_P2011OCT_S181
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011OCT_S181)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011OCT_S181)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011OCT_S181)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011OCT_S181)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011OCT_S181)
,
SUBPARTITION P2011OCT_SMAX VALUES LESS THAN (MAXVALUE) TABLESPACE
CM_D1T304_P2011OCT_SMAX
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011OCT_SMAX)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011OCT_SMAX)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011OCT_SMAX)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011OCT_SMAX)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011OCT_SMAX)
),
PARTITION "P2011NOV" VALUES LESS THAN (TO_DATE('2011-12-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))(
SUBPARTITION P2011NOV_S181 VALUES LESS THAN (181) TABLESPACE
CM_D1T304_P2011NOV_S181
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011NOV_S181)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011NOV_S181)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011NOV_S181)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011NOV_S181)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011NOV_S181)
,
SUBPARTITION P2011NOV_SMAX VALUES LESS THAN (MAXVALUE) TABLESPACE
CM_D1T304_P2011NOV_SMAX
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011NOV_SMAX)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011NOV_SMAX)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011NOV_SMAX)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011NOV_SMAX)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011NOV_SMAX)
),
PARTITION "P2011DEC" VALUES LESS THAN (TO_DATE('2012-01-01 00:00:01',
'SYYYY-MM-DD HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))(
SUBPARTITION P2011DEC_S181 VALUES LESS THAN (181) TABLESPACE
CM_D1T304_P2011DEC_S181
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011DEC_S181)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011DEC_S181)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011DEC_S181)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011DEC_S181)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011DEC_S181)
,
SUBPARTITION P2011DEC_SMAX VALUES LESS THAN (MAXVALUE) TABLESPACE
CM_D1T304_P2011DEC_SMAX
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011DEC_SMAX)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011DEC_SMAX)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011DEC_SMAX)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011DEC_SMAX)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_P2011DEC_SMAX)
),
PARTITION "PMAX" VALUES LESS THAN (MAXVALUE)(
SUBPARTITION PMAX_S181 VALUES LESS THAN (181) TABLESPACE
CM_D1T304_PMAX_S181
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_PMAX_S181)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_PMAX_S181)
```

```
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_PMAX_S181)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_PMAX_S181)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_PMAX_S181)
,
SUBPARTITION PMAX_SMAX VALUES LESS THAN (MAXVALUE) TABLESPACE
CM_D1T304_PMAX_SMAX
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_PMAX_SMAX)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_PMAX_SMAX)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_PMAX_SMAX)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_PMAX_SMAX)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE
CM_D1T304_PMAX_SMAX)
)) ENABLE ROW MOVEMENT AS
SELECT
A.INIT_MSRMT_DATA_ID,
A.MEASR_COMP_ID,
A.D1_FROM_DTTM,
A.D1_TO_DTTM,
A.DATA_SRC_FLG,
A.TIME_ZONE_CD,
A.BUS_OBJ_CD,
A.BO_STATUS_CD,
A.BO_STATUS_REASON_CD,
A.IMD_BO_DATA_AREA,
A.STATUS_UPD_DTTM,
A.CRE_DTTM,
A.VERSION,
A.IMD_EXT_ID,
A.PREVEE_BO_DATA_AREA,
A.POSTVEE_BO_DATA_AREA,
A.TRACE_BO_DATA_AREA,
A.RAW_BO_DATA_AREA,
A.LAST_UPDATE_DTTM,
A.CRE_DTTM as ILM_DT,
'N' as ILM_ARCH_SW,
CAST(COALESCE((SELECT C.RETPERIOD
FROM D1_MEASR_COMP B, ILM_IMD_RETENTION_TMP C
WHERE B.MEASR_COMP_ID = A.MEASR_COMP_ID
AND C.MEASR_COMP_TYPE_CD = B.MEASR_COMP_TYPE_CD)
,CAST((select maint_obj_opt_val
from ci_md_mo_opt mmo
where maint_obj_cd = 'D1-IMD'
and maint_obj_opt_flg ='FLRP'
and seq_num =
(select max(seq_num)
from ci_md_mo_opt mmo
where maint_obj_cd = 'D1-IMD'
and maint_obj_opt_flg ='FLRP')) as NUMBER(5))
,CAST((select extractvalue( xmlparse(content fw_mcfg.mst_config_data)
,'generalMasterConfiguration/defaultRetentionPeriod')
from f1_mst_config fw_mcfg
where fw_mcfg.bus_obj_cd = 'F1-ILMMSConfig') as NUMBER(5))
, 99999) as NUMBER(5)) as RETENTION_PERIOD
FROM ILM_D1_INIT_MSRMT_DATA A
/
```

5. Enable logging option for table D1_INIT_MSRMT_DATA.

```
ALTER TABLE D1_INIT_MSRMT_DATA NOPARALLEL LOGGING;
```

6. Create Primary Index for Parent table D1_INIT_MSRMT_DATA.

```
CREATE BIGFILE TABLESPACE CM_D1T304_IND DATAFILE '+DATA' SIZE 50M
AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;

CREATE UNIQUE INDEX D1T304P0 ON D1_INIT_MSRMT_DATA NOLOGGING
PARALLEL (INIT_MSRMT_DATA_ID)
GLOBAL PARTITION BY RANGE (INIT_MSRMT_DATA_ID) (
PARTITION P1 VALUES LESS THAN ('12499999999999'),
  PARTITION P2 VALUES LESS THAN ('24999999999999'),
  PARTITION P3 VALUES LESS THAN ('37499999999999'),
  PARTITION P4 VALUES LESS THAN ('49999999999999'),
  PARTITION P5 VALUES LESS THAN ('62499999999999'),
  PARTITION P6 VALUES LESS THAN ('74499999999999'),
  PARTITION P7 VALUES LESS THAN ('87499999999999'),
  PARTITION P8 VALUES LESS THAN (MAXVALUE)
) COMPRESS ADVANCED LOW
/

ALTER INDEX D1T304P0 LOGGING NOPARALLEL;
```

7. Add Primary Key for Parent table D1_INIT_MSRMT_DATA

```
ALTER TABLE D1_INIT_MSRMT_DATA ADD CONSTRAINT D1T304P0 PRIMARY
KEY(INIT_MSRMT_DATA_ID) USING INDEX
 /
```

8. Create Secondary Indexes for Parent table D1_INIT_MSRMT_DATA

```
 CREATE INDEX D1T304S1 ON D1_INIT_MSRMT_DATA (MEASR_COMP_ID,
BO_STATUS_CD, BUS_OBJ_CD, D1_TO_DTTM, D1_FROM_DTTM)
GLOBAL PARTITION BY RANGE (MEASR_COMP_ID) (
PARTITION P1 VALUES LESS THAN ( '124999999999' ),
 PARTITION P2 VALUES LESS THAN ( '249999999999' ),
 PARTITION P3 VALUES LESS THAN ( '374999999999' ),
 PARTITION P4 VALUES LESS THAN ( '499999999999' ),
 PARTITION P5 VALUES LESS THAN ( '624999999999' ),
 PARTITION P6 VALUES LESS THAN ( '749999999999' ),
 PARTITION P7 VALUES LESS THAN ( '874999999999' ),
 PARTITION P8 VALUES LESS THAN ( MAXVALUE )
) COMPRESS ADVANCED LOW
/

CREATE UNIQUE INDEX CM_ILM_D1T304S4 ON D1_INIT_MSRMT_DATA (ILM_DT,
RETENTION_PERIOD, ILM_ARCH_SW, INIT_MSRMT_DATA_ID) LOCAL COMPRESS
ADVANCED LOW
/
```

9. Create Child Tables, Primary Key, Primary Indexes and Secondary Indexes as shown below.

Create Child Table D1_INIT_MSRMT_DATA_CHAR

```
CREATE TABLE D1_INIT_MSRMT_DATA_CHAR
(
INIT_MSRMT_DATA_ID  NOT NULL ENABLE,
CHAR_TYPE_CD  NOT NULL ENABLE,
   SEQ_NUM  NOT NULL ENABLE,
   CHAR_VAL  DEFAULT ' ' NOT NULL ENABLE,
   ADHOC_CHAR_VAL  DEFAULT ' ' NOT NULL ENABLE,
   CHAR_VAL_FK1  DEFAULT ' ' NOT NULL ENABLE,
   CHAR_VAL_FK2  DEFAULT ' ' NOT NULL ENABLE,
   CHAR_VAL_FK3  DEFAULT ' ' NOT NULL ENABLE,
   CHAR_VAL_FK4  DEFAULT ' ' NOT NULL ENABLE,
   CHAR_VAL_FK5  DEFAULT ' ' NOT NULL ENABLE,
   SRCH_CHAR_VAL DEFAULT ' ' NOT NULL ENABLE,
   VERSION  DEFAULT 1 NOT NULL ENABLE,
   LAST_UPDATE_DTTM ,
   CONSTRAINT D1_INIT_MSRMT_DATA_CHAR_FK FOREIGN
KEY(INIT_MSRMT_DATA_ID) REFERENCES
   D1_INIT_MSRMT_DATA ON DELETE CASCADE)
   PARTITION BY REFERENCE (D1_INIT_MSRMT_DATA_CHAR_FK) ENABLE ROW
MOVEMENT NOLOGGING PARALLEL
   AS SELECT /*+ PARALLEL */ * FROM ILM_D1_INIT_MSRMT_DATA_CHAR
   /

   ALTER TABLE D1_INIT_MSRMT_DATA_CHAR LOGGING NOPARALLEL
   /
```

Create Primary Index for Child Table D1_INIT_MSRMT_DATA_CHAR

```
   CREATE UNIQUE INDEX D1T305P0 ON
D1_INIT_MSRMT_DATA_CHAR(INIT_MSRMT_DATA_ID, CHAR_TYPE_CD, SEQ_NUM)
   TABLESPACE CM_D1T304_IND NOLOGGING PARALLEL
   GLOBAL PARTITION BY RANGE(INIT_MSRMT_DATA_ID) (
   PARTITION P1 VALUES LESS THAN ('12499999999999'),
    PARTITION P2 VALUES LESS THAN ('24999999999999'),
    PARTITION P3 VALUES LESS THAN ('37499999999999'),
    PARTITION P4 VALUES LESS THAN ('49999999999999'),
    PARTITION P5 VALUES LESS THAN ('62499999999999'),
    PARTITION P6 VALUES LESS THAN ('74999999999999'),
    PARTITION P7 VALUES LESS THAN ('87499999999999'),
    PARTITION P8 VALUES LESS THAN (MAXVALUE)
   ) COMPRESS ADVANCED LOW
   /

   ALTER INDEX D1T305P0 LOGGING NOPARALLEL
   /
```

Create Primary Key for Child Table D1_INIT_MSRMT_DATA_CHAR

```
   ALTER TABLE D1_INIT_MSRMT_DATA_CHAR ADD CONSTRAINT D1T305P0 PRIMARY
KEY (INIT_MSRMT_DATA_ID, CHAR_TYPE_CD, SEQ_NUM) USING INDEX
   /
```

Create Secondary Indexes for Child Table D1_INIT_MSRMT_DATA_CHAR

```
   CREATE INDEX D1T305S1 ON D1_INIT_MSRMT_DATA_CHAR(SRCH_CHAR_VAL)
GLOBAL PARTITION BY HASH(SRCH_CHAR_VAL)
   (
   PARTITION P1 TABLESPACE CM_D1T304_IND,
     PARTITION P2 TABLESPACE CM_D1T304_IND,
     PARTITION P3 TABLESPACE CM_D1T304_IND,
     PARTITION P4 TABLESPACE CM_D1T304_IND,
     PARTITION P5 TABLESPACE CM_D1T304_IND,
     PARTITION P6 TABLESPACE CM_D1T304_IND,
     PARTITION P7 TABLESPACE CM_D1T304_IND,
     PARTITION P8 TABLESPACE CM_D1T304_IND
   )
   /
```

Create Child Table D1_INIT_MSRMT_DATA_LOG

```
   CREATE TABLE D1_INIT_MSRMT_DATA_LOG (

   INIT_MSRMT_DATA_ID   NOT NULL ENABLE,
       SEQNO                NOT NULL ENABLE,
       BO_STATUS_CD         DEFAULT ' ' NOT NULL ENABLE,
       BO_STATUS_REASON_CD  DEFAULT ' ' NOT NULL ENABLE,
       CHAR_TYPE_CD         DEFAULT ' ' NOT NULL ENABLE,
       CHAR_VAL             DEFAULT ' ' NOT NULL ENABLE,
       ADHOC_CHAR_VAL       DEFAULT ' ' NOT NULL ENABLE,
       CHAR_VAL_FK1         DEFAULT ' ' NOT NULL ENABLE,
       CHAR_VAL_FK2         DEFAULT ' ' NOT NULL ENABLE,
       CHAR_VAL_FK3         DEFAULT ' ' NOT NULL ENABLE,
       CHAR_VAL_FK4         DEFAULT ' ' NOT NULL ENABLE,
       CHAR_VAL_FK5         DEFAULT ' ' NOT NULL ENABLE,
       DESCRLONG            DEFAULT ' ' NOT NULL ENABLE,
       LOG_DTTM             NOT NULL ENABLE,
       LOG_ENTRY_TYPE_FLG   DEFAULT ' ' NOT NULL ENABLE,
       MESSAGE_CAT_NBR      DEFAULT 0 NOT NULL ENABLE,
       MESSAGE_NBR          DEFAULT 0 NOT NULL ENABLE,
       USER_ID              DEFAULT ' ' NOT NULL ENABLE,
       VERSION              DEFAULT 1 NOT NULL ENABLE,
       LAST_UPDATE_DTTM,
   CONSTRAINT D1_INIT_MSRMT_DATA_LOG_FK FOREIGN
KEY(INIT_MSRMT_DATA_ID) REFERENCES D1_INIT_MSRMT_DATA ON DELETE
CASCADE)
   PARTITION BY REFERENCE (D1_INIT_MSRMT_DATA_LOG_FK) ENABLE ROW
MOVEMENT NOLOGGING PARALLEL
   AS SELECT /*+ PARALLEL */ * FROM ILM_D1_INIT_MSRMT_DATA_LOG
   /

   ALTER TABLE D1_INIT_MSRMT_DATA_LOG LOGGING NOPARALLEL
   /
```

Create Primary Index for Child Table D1_INIT_MSRMT_DATA_LOG

```
   CREATE UNIQUE INDEX D1T306P0 ON
D1_INIT_MSRMT_DATA_LOG(INIT_MSRMT_DATA_ID, SEQNO)
   TABLESPACE CM_D1T304_IND NOLOGGING PARALLEL
   GLOBAL PARTITION BY RANGE(INIT_MSRMT_DATA_ID) (
   PARTITION P1 VALUES LESS THAN ('12499999999999'),
    PARTITION P2 VALUES LESS THAN ('24999999999999'),
    PARTITION P3 VALUES LESS THAN ('37499999999999'),
    PARTITION P4 VALUES LESS THAN ('49999999999999'),
    PARTITION P5 VALUES LESS THAN ('62499999999999'),
    PARTITION P6 VALUES LESS THAN ('74999999999999'),
    PARTITION P7 VALUES LESS THAN ('87499999999999'),
    PARTITION P8 VALUES LESS THAN (MAXVALUE)
   ) COMPRESS ADVANCED LOW
   /

   ALTER INDEX D1T306P0 LOGGING NOPARALLEL
   /
```

Create Primary Key for Child Table D1_INIT_MSRMT_DATA_LOG

```
   ALTER TABLE D1_INIT_MSRMT_DATA_LOG ADD CONSTRAINT D1T306P0 PRIMARY
KEY (INIT_MSRMT_DATA_ID, SEQNO) USING INDEX
   /
```

Create Child Table D1_INIT_MSRMT_DATA_LOG_PARM

```
   CREATE TABLE D1_INIT_MSRMT_DATA_LOG_PARM (
   INIT_MSRMT_DATA_ID  NOT NULL ENABLE,
   SEQNO  NOT NULL ENABLE,
   PARM_SEQ  NOT NULL ENABLE,
   MSG_PARM_VAL DEFAULT ' ' NOT NULL ENABLE,
   MSG_PARM_TYP_FLG  DEFAULT ' ' NOT NULL ENABLE,
   VERSION  DEFAULT 1 NOT NULL ENABLE,
   LAST_UPDATE_DTTM ,
   CONSTRAINT D1_INIT_MSRMT_DATA_LOG_PARM_FK FOREIGN
KEY(INIT_MSRMT_DATA_ID) REFERENCE D1_INIT_MSRMT_DATA ON DELETE
CASCADE)
   PARTITION BY REFERENCE (D1_INIT_MSRMT_DATA_LOG_PARM_FK) ENABLE ROW
MOVEMENT NOLOGGING PARALLEL
   AS SELECT /*+ PARALLEL */ * FROM ILM_D1_INIT_MSRMT_DATA_LOG_PARM
   /

   ALTER TABLE D1_INIT_MSRMT_DATA_LOG_PARM LOGGING NOPARALLEL
   /
```

Create Primary Index for Child Table D1_INIT_MSRMT_DATA_LOG_PARM

```
   CREATE UNIQUE INDEX D1T307P0 ON
D1_INIT_MSRMT_DATA_LOG_PARM(INIT_MSRMT_DATA_ID, SEQNO, PARM_SEQ)
   TABLESPACE CM_D1T304_IND NOLOGGING PARALLEL GLOBAL PARTITION BY
RANGE(INIT_MSRMT_DATA_ID) (

   PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
   PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
   PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
   PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
   PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
   PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
   PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
   PARTITION P8 VALUES LESS THAN ( MAXVALUE )
   ) COMPRESS ADVANCED LOW
   /

   ALTER INDEX D1T306P0 LOGGING NOPARALLEL
   /
```

Create Primary Key for Child Table D1_INIT_MSRMT_DATA_LOG_PARM

```
   ALTER TABLE D1_INIT_MSRMT_DATA_LOG ADD CONSTRAINT D1T307P0 PRIMARY
KEY (INIT_MSRMT_DATA_ID, SEQNO, PARM_SEQ) USING INDEX
   /
```

Create Child Table D1_INIT_MSRMT_DATA_K

```
   CREATE BIGFILE TABLESPACE CM_D1T314_IND DATAFILE '+DATA' SIZE 50M
AUTOEXTEND ON MAXSIZE UNLIMITED;

   CREATE TABLE D1_INIT_MSRMT_DATA_K (
   INIT_MSRMT_DATA_ID NOT NULL ENABLE,
   ENV_ID             NOT NULL ENABLE,
   CONSTRAINT D1T314P0 PRIMARY KEY (INIT_MSRMT_DATA_ID, ENV_ID) ENABLE
   )
   ORGANIZATION INDEX
   Partition by range(INIT_MSRMT_DATA_ID) (
   PARTITION P1 VALUES LESS THAN ( '12499999999999' ),
   PARTITION P2 VALUES LESS THAN ( '24999999999999' ),
   PARTITION P3 VALUES LESS THAN ( '37499999999999' ),
   PARTITION P4 VALUES LESS THAN ( '49999999999999' ),
   PARTITION P5 VALUES LESS THAN ( '62499999999999' ),
   PARTITION P6 VALUES LESS THAN ( '74999999999999' ),
   PARTITION P7 VALUES LESS THAN ( '87499999999999' ),
   PARTITION P8 VALUES LESS THAN ( MAXVALUE )
   )
   TABLESPACE CM_D1T314_IND
   AS SELECT /*+ PARALLEL */ * FROM ILM_D1_INIT_MSRMT_DATA_K
   /

    ALTER TABLE D1_INIT_MSRMT_DATA_K LOGGING NOPARALLEL
   /
```

10. After verification of the ILM based tables, the user can drop the backup “ILM” renamed tables.

Appendix H

Sample SQL for Periodic Maintenance for MDM Data

This section provides additional details related to creating new partitions over time as well as archiving and restoring partitions. The To Do Entry, Inbound Sync Request and Initial Measurement Data maintenance objects are used as examples.

The section includes the following:

- Adding Partition
- Archiving Partition
- Archiving Subpartition
- Restoring Partition
- Restoring Subpartition
- Compressing Partition (D1_MSRMT table only)

Adding Partition

To add a partition, follow these steps:

1. Create separate tablespace for new partition.

   ```
   CREATE BIGFILE TABLESPACE CM_XT039_P2016JAN DATAFILE '+DATA' SIZE
   50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
   ADVANCED;
   ```

2. Add partition using split operation on MAXVALUE Partition.

   ```
   ALTER TABLE CISADM.CI_TD_ENTRY SPLIT PARTITION PMAX AT
   (TO_DATE('2016-02-01 00:00:01','SYYYY-MM-DD HH24:MI:SS'))
   INTO
   (
   PARTITION P2016JAN TABLESPACE CM_XT039_P2016JAN, PARTITION PMAX
   )
   UPDATE INDEXES;
   ```

   - If the contains LOBS like F1_SYNC_REQ_IN, there will be additional statement in split partition DDL indicating tablespace on which LOB should go.

     ```
     ALTER TABLE CISADM.F1_SYNC_REQ_IN SPLIT PARTITION PMAX AT
     (TO_DATE('2016-02-01 00:00:01','SYYYY-MM-DD HH24:MI:SS'))
     INTO
     (
     PARTITION P2016JAN TABLESPACE CM_F1T191_P2016JAN
     LOB(BO_DATA_AREA, POST_TRN_BO_DATA_AREA,
     PRE_TRN_FIN_BO_DATA_AREA, PRE_TRN_INIT_BO_DATA_AREA) STORE AS
     SECUREFILE (ENABLE STORAGE IN ROW COMPRESS MEDIUM CACHE
     TABLESPACE  CM_F1T191_P2016JAN )
     ,
     PARTITION PMAX
     )
     UPDATE INDEXES;
     ```

3. Enable advanced compression after SPLIT partition as it will disable the compression.

   ```
   ALTER TABLE CISADM.CI_TD_SRTKEY ROW STORE COMPRESS ADVANCED;
   ALTER TABLE CISADM.CI_TD_MSG_PARM ROW STORE COMPRESS ADVANCED;
   ALTER TABLE CISADM.CI_TD_DRLKEY ROW STORE COMPRESS ADVANCED;
   ALTER TABLE CISADM.CI_TD_ENTRY_CHA ROW STORE COMPRESS ADVANCED;
   ALTER TABLE CISADM.CI_TD_LOG ROW STORE COMPRESS ADVANCED;
   ```

Archiving Partition

To archive a partition, follow these steps:

1. Make the tablespace to be archived READ ONLY.

   ```
   ALTER TABLESPACE CM_XT039_P2011JAN READ ONLY;
   ```

2. Check the feasibility of archive using ILM_ARCH_SW = 'N'.

   ```
   Select count(1) from CISADM.CI_TD_ENTRY PARTITION P2011JAN where
   ILM_ARCH_SW = 'N';
   ```

- IF the above query has a count of greater than ZERO records - Change the tablespace back to read and write mode. Archive cannot be done. Do not execute further steps. Stop archiving partition.

  ```
  ALTER TABLESPACE CM_XT039_P2011JAN READ WRITE;
  ```

- IF above query has ZERO records - Archive can be performed. Continue executing the remainder of the procedure.

3. Create separate archive tablespace for the partition that needs to be archived.

   ```
   CREATE BIGFILE TABLESPACE CM_XT039_P2011JAN_ARC DATAFILE  '+DATA'
   SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
   ADVANCED;
   ```

4. Create staging tables and load data for all child tables for the MO first.

   a. CI_TD_ENTRY_CHA

   ```
   CREATE TABLE CM_XT701_P2011JAN_ARC PARALLEL NOLOGGING
   TABLESPACE CM_XT039_P2011JAN_ARC
   AS
   (
   SELECT /*+ PARALLEL */ * FROM CISADM.CI_TD_ENTRY_CHA PARTITION
   (P2011JAN_S01)
   UNION ALL
   SELECT /*+ PARALLEL */ * FROM CI_TD_ENTRY_CHA PARTITION
   (P2011JAN_S02)
   UNION ALL
   .
   .
   .
   .
   UNION ALL
   SELECT /*+ PARALLEL */ * FROM CI_TD_ENTRY_CHA PARTITION
   (P2011JAN_S08)
   );
   ALTER TABLE CM_XT701_P2011JAN_ARC NOPARALLEL LOGGING;
   ```

   b. CI_TD_MSG_PARM

   ```
   CREATE TABLE CM_XT04_P2011JAN_ARC PARALLEL NOLOGGING TABLESPACE
   CM_XT039_P2011JAN_ARC
   AS
   (
   SELECT /*+ PARALLEL */ * FROM CISADM.CI_TD_MSG_PARM PARTITION
   (P2011JAN_S01)
   UNION ALL
   SELECT /*+ PARALLEL */ * FROM CI_TD_MSG_PARM  PARTITION
   (P2011JAN_S02)
   UNION ALL
   .
   .
   .
   .
   UNION ALL
   SELECT /*+ PARALLEL */ * FROM CI_TD_MSG_PARM  PARTITION
   (P2011JAN_S08)
   );
   ALTER TABLE CM_XT04_P2011JAN_ARC NOPARALLEL LOGGING;
   ```

c. CI_TD_LOG

```
CREATE TABLE CM_XT721_P2011JAN_ARC PARALLEL NOLOGGING
TABLESPACE CM_XT039_P2011JAN_ARC
AS
(
SELECT /*+ PARALLEL */ * FROM CISADM.CI_TD_LOG PARTITION
(P2011JAN_S01)
UNION ALL
SELECT /*+ PARALLEL */ * FROM CI_TD_LOG PARTITION (P2011JAN_S02)
UNION ALL
.
.
.
.
UNION ALL
SELECT /*+ PARALLEL */ * FROM CI_TD_LOG PARTITION (P2011JAN_S08)
);
ALTER TABLE CM_XT721_P2011JAN_ARC NOPARALLEL LOGGING;
```

d. CI_TD_SRTKEY

```
CREATE TABLE CM_XT041_P2011JAN_ARC PARALLEL NOLOGGING
TABLESPACE CM_XT039_P2011JAN_ARC
AS
(
SELECT /*+ PARALLEL */ * FROM CISADM.CI_TD_SRTKEY PARTITION
(P2011JAN_S01)
UNION ALL
SELECT /*+ PARALLEL */ * FROM CI_TD_SRTKEY PARTITION
(P2011JAN_S02)
UNION ALL
.
.
.
.
UNION ALL
SELECT /*+ PARALLEL */ * FROM CI_TD_SRTKEY PARTITION
(P2011JAN_S08)
);
ALTER TABLE CM_XT041_P2011JAN_ARC NOPARALLEL LOGGING;
```

e. CI_TD_DRLKEY

```
CREATE TABLE CM_XT037_P2011JAN_ARC PARALLEL NOLOGGING
TABLESPACE CM_XT039_P2011JAN_ARC
AS
(
SELECT /*+ PARALLEL */ * FROM CISADM.CI_TD_DRLKEY PARTITION
(P2011JAN_S01)
UNION ALL
SELECT /*+ PARALLEL */ * FROM CISADM.CI_TD_DRLKEY PARTITION
(P2011JAN_S02)
UNION ALL
.
.
.
.
UNION ALL
SELECT /*+ PARALLEL */ * FROM CISADM.CI_TD_DRLKEY PARTITION
(P2011JAN_S08)
);
ALTER TABLE CM_XT037_P2011JAN_ARC NOPARALLEL LOGGING;
```

5. Create staging table and load data for parent table.

```
CREATE TABLE CM_XT039_P2011JAN_ARC NOLOGGING PARALLEL TABLESPACE
CM_XT039_P2011JAN_ARC AS
SELECT /*+ PARALLEL */ * FROM CISADM.CI_TD_ENTRY PARTITION
(P2011JAN);

ALTER TABLE CM_XT039_P2011JAN_ARC NOPARALLEL LOGGING;
```

6. Export tablespace using TRANSPORT_TABLESPACES method.

```
ALTER TABLESPACE CM_XT039_P2011JAN_ARC READ ONLY;

expdp system/manager DIRECTORY=DUMP_DIR DUMPFILE=
CM_XT039_P2011JAN_ARC.DMP TRANSPORT_TABLESPACES =
CM_XT039_P2011JAN_ARC LOGFILE=EXP_ CM_XT039_P2011JAN_ARC.LOG
TRANSPORT_FULL_CHECK=Y
```

Make sure tablespace datafile required for further import should be preserved.

```
<<Transport THE FILE to LOCAL DB DIRECTORY DUMP_DIR like connected
to asmcmd and copied the file from cp
cm_xt039_p201101_tbs_ar.553.913864937  /tugbu_perf_02/BACKUPS/
test_verification/ >>
```

7. Drop the partition, partition tablespace and archive tablespace(as it is already exported).

```
ALTER TABLE CISADM.CI_TD_ENTRY  DROP PARTITION P2011JAN UPDATE
INDEXES;
DROP TABLESPACE CM_XT039_P2011JAN INCLUDING CONTENTS AND DATAFILES;
DROP TABLESPACE CM_XT039_P2011JAN_ARC INCLUDING CONTENTS AND
DATAFILES;
```

Archiving Subpartition

To archive a subpartition, follow these steps:

1. Make the tablespace to be archived READ ONLY.

```
ALTER TABLESPACE CM_D1T304_P2011JAN_S181 READ ONLY;
```

2. Check the feasibility of archive using ILM_ARCH_SW = ‘N’.

```
Select count(1) from cisadm.D1_INIT_MSRMT_DATA SUBPARTITION
P2011JAN_S181 where ILM_ARCH_SW = ‘N’;
```

IF the above query has a count of greater than ZERO records - Change the tablespace back to read and write mode. Archive cannot be done. Do not execute further steps. Stop archiving partition.

```
ALTER TABLESPACE CM_D1T304_P2011JAN_S181 READ WRITE;
```

IF the above query has ZERO records - Archive can be performed. Continue executing the remainder of the procedure.

3. Create separate archive tablespace for partition that needs to be archived.

```
CREATE BIGFILE TABLESPACE CM_D1T304_P2011JAN_S181_ARC DATAFILE
'+DATA' SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE
COMPRESS ADVANCED;
```

4. Create staging tables and load data for all child tables for the MO first.

   ```
   CREATE TABLE CM_D1T305_P2011JAN_S181_ARC PARALLEL NOLOGGING
   TABLESPACE CM_D1T304_P2011JAN_S181_ARC
   AS
   (
   SELECT /*+ PARALLEL */ * FROM CISADM.D1_INIT_MSRMT_DATA_CHAR
   PARTITION (P2011JAN_S181)
   );

   CREATE TABLE CM_D1T306_P2011JAN_S181_ARC PARALLEL NOLOGGING
   TABLESPACE CM_D1T304_P2011JAN_S181_ARC
   AS
   (
   SELECT /*+ PARALLEL */ * FROM CISADM.D1_INIT_MSRMT_DATA_LOG
   PARTITION (P2011JAN_S181)
   );

   CREATE TABLE CM_D1T307_P2011JAN_S181_ARC PARALLEL NOLOGGING
   TABLESPACE CM_D1T304_P2011JAN_S181_ARC
   AS
   (
   SELECT /*+ PARALLEL */ * FROM CISADM.D1_INIT_MSRMT_DATA_LOG_PARM
   PARTITION (P2011JAN_S181)
   );

   ALTER TABLE CM_D1T305_P2011JAN_S181_ARC NOPARALLEL LOGGING;

   ALTER TABLE CM_D1T306_P2011JAN_S181_ARC NOPARALLEL LOGGING;

   ALTER TABLE CM_D1T307_P2011JAN_S181_ARC NOPARALLEL LOGGING;
   ```

5. Create staging table and load data for parent table

   ```
   CREATE TABLE ALTER TABLE CM_D1T304_P2011JAN_S181_ARC NOPARALLEL
   LOGGING; NOLOGGING PARALLEL TABLESPACE CM_D1T304_P2011JAN_S181_ARC
   AS
   SELECT /*+ PARALLEL */ * FROM D1_INIT_MSRMT_DATA SUBPARTITION
   (P2011JAN_S181);

   ALTER TABLE CM_D1T304_P2011JAN_S181_ARC NOPARALLEL LOGGING;
   ```

6. Export tablespace using TRANSPORT_TABLESPACES method.

   ```
   ALTER TABLESPACE CM_D1T304_P2011JAN_S181_ARC READ ONLY;
   expdp system/manager DIRECTORY=DUMP_DIR
   DUMPFILE=CM_D1T304_P2011JAN_S181_ARC.DMP
   TRANSPORT_TABLESPACES=CM_D1T304_P2011JAN_S181_ARC
   LOGFILE=EXP_CM_D1T304_P2011JAN_S181_ARC.LOG TRANSPORT_FULL_CHECK=Y
   ```

   Make sure the tablespace datafile required for future import should be preserved.

   ```
   <<Transport THE DATAFILE to the LOCAL DB DIRECTORY DUMP_DIR.  For
   example if connected to asmcmd copy the file
   cp cm_d1t304_p2011jan_tbs_ar.553.913864937  /tugbu_perf_02/BACKUPS/
   test_verification/ >>
   ```

7. Drop the partition, partition tablespace and archive tablespace (since they have been exported).

```
ALTER TABLE D1_INIT_MSRMT_DATA DROP SUBPARTITION P2011JAN_S181
UPDATE INDEXES;
DROP TABLESPACE CM_D1T304_P2011JAN_S181 INCLUDING CONTENTS AND
DATAFILES;
DROP TABLESPACE CM_D1T304_P2011JAN_S181_ARC INCLUDING CONTENTS AND
DATAFILES;
```

Restoring Partition

To restore the partition, perform the follow steps:

1. Create separate tablespace to restore the partition.

```
CREATE BIGFILE TABLESPACE CM_XT039_P2011JAN DATAFILE '+DATA' SIZE
50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
```

2. Add partition using split operation on next greater value partition.

```
ALTER TABLE CISADM.CI_TD_ENTRY SPLIT PARTITION P2011FEB AT
(TO_DATE('2011-02-01 00:00:01','SYYYY-MM-DD HH24:MI:SS'))
 INTO
 (
 PARTITION P2011JAN TABLESPACE CM_XT039_P2011JAN , PARTITION
P2011FEB
 )
UPDATE INDEXES;
```

In case table contains LOBS like F1_SYNC_REQ_IN, there will be additional statement in split partition DDL indicating tablespace on which LOB should go.

```
ALTER TABLE CISADM.F1_SYNC_REQ_IN SPLIT PARTITION P2011FEB AT
(TO_DATE('2011-02-01 00:00:01','SYYYY-MM-DD HH24:MI:SS'))
 INTO
 (
 PARTITION P2011JAN TABLESPACE CM_F1T191_P2011JAN
LOB(BO_DATA_AREA,PRE_TRN_INIT_BO_DATA_AREA,PRE_TRN_FIN_BO_DATA_ARE
A,POST_TRN_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW
COMPRESS MEDIUM CACHE TABLESPACE        CM_F1T191_P2011JAN )
, PARTITION P2011FEB
 )
 UPDATE INDEXES;
```

3. Enable advanced compression after SPLIT partition as it will disable the compression.

```
ALTER TABLE CISADM.CI_TD_SRTKEY ROW STORE COMPRESS ADVANCED;
ALTER TABLE CISADM.CI_TD_MSG_PARM ROW STORE COMPRESS ADVANCED;
ALTER TABLE CISADM.CI_TD_DRLKEY ROW STORE COMPRESS ADVANCED;
ALTER TABLE CISADM.CI_TD_ENTRY_CHA ROW STORE COMPRESS ADVANCED;
ALTER TABLE CISADM.CI_TD_LOG ROW STORE COMPRESS ADVANCED;
```

4. Import tablespace using TRANSPORT_TABLESPACES method.

```
impdp system/manager DIRECTORY=DUMP_DIR
DUMPFILE=CM_D1T304_P2011JAN_S181_ARC.DMP
PARTITION_OPTIONS=DEPARTITION
LOGFILE=IMP_CM_D1T304_P2011JAN_S181_ARC.LOG TRANSPORT_DATAFILES=/
tugbu_perf_02/BACKUPS/test_verification/
cm_d1t304_p2011jan_tbs_ar.553.913864937
```

5. Load data into parent table first from the staging table.

```
ALTER SESSION ENABLE PARALLEL DML;
```

```
INSERT /*+ APPEND PARALLEL */   INTO CISADM.CI_TD_ENTRY SELECT /*+
PARALLEL */  * FROM CM_XT039_P2011JAN_ARC;
COMMIT;
```

6. Load data into child table from the staging table.

For each Child IN LIST OF CHILD TABLES, perform the following:

```
INSERT /*+ APPEND PARALLEL */   INTO CISADM.CI_TD_ENTRY_CHA SELECT
/*+ PARALLEL */ * FROM CM_XT701_P2011JAN_ARC;
COMMIT;
INSERT /*+ APPEND PARALLEL */   INTO CISADM.CI_TD_MSG_PARM SELECT /
*+ PARALLEL */ * FROM CM_XT04_P2011JAN_ARC;
COMMIT;
```

```
INSERT /*+ APPEND PARALLEL */   INTO CISADM.CI_TD_LOG SELECT /*+
PARALLEL */ * FROM CM_XT721_P2011JAN_ARC;
COMMIT;
```

```
INSERT /*+ APPEND PARALLEL */   INTO CISADM.CI_TD_SRTKEY SELECT /*+
PARALLEL */ * FROM CM_XT041_P2011JAN_ARC;
COMMIT;
```

```
INSERT /*+ APPEND PARALLEL */   INTO CISADM.CI_TD_DRLKEY SELECT /*+
PARALLEL */ * FROM CM_XT037_P2011JAN_ARC;
COMMIT;
```

7. Drop the archive tablespace after import is import and data loading is successful.

```
DROP TABLESPACE CM_XT039_P2011JAN_ARC INCLUDING CONTENTS AND
DATAFILES;
```

Restoring Subpartition

To restore the subpartition, follow these steps:

1. Create separate tablespace to restore the partition.

```
CREATE BIGFILE TABLESPACE CM_D1T304_P2011JAN_S181 DATAFILE 'DATADG'
SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
ADVANCED;
```

2. Add partition using split operation on next greater value partition.

```
ALTER TABLE CISADM.D1_INIT_MSRMT_DATA SPLIT SUBPARTITION
P2011JAN_SMAX AT (181)
 INTO
 (
SUBPARTITION P2011JAN_S181 TABLESPACE CM_D1T304_P2011JAN_S181
LOB(IMD_BO_DATA_AREA, PREVEE_BO_DATA_AREA, POSTVEE_BO_DATA_AREA,
TRACE_BO_DATA_AREA, RAW_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE
STORAGE IN ROW COMPRESS MEDIUM CACHE TABLESPACE
CM_D1T304_P2011JAN_S181)
, SUBPARTITION P2011JAN_SMAX) UPDATE INDEXES;
```

3. Enable advanced compression after SPLIT partition as it will disable the compression.

   ```
   ALTER TABLE D1_INIT_MSRMT_DATA_CHAR ROW STORE COMPRESS ADVANCED;
   ALTER TABLE D1_INIT_MSRMT_DATA_LOG ROW STORE COMPRESS ADVANCED;
   ALTER TABLE D1_INIT_MSRMT_DATA_LOG_PARM ROW STORE COMPRESS
   ADVANCED;
   ```

4. Import tablespace using TRANSPORT_TABLESPACES method.

   ```
   impdp system/manager DIRECTORY=DUMP_DIR
   DUMPFILE=CM_D1T304_P2011JAN_S181_ARC.DMP
   PARTITION_OPTIONS=DEPARTITION
   LOGFILE=IMP_CM_D1T304_P2011JAN_S181_ARC.LOG TRANSPORT_DATAFILES=/
   tugbu_perf_02/BACKUPS/test_verification/
   cm_d1t304_p2011jan_tbs_ar.553.913864937
   ```

5. Load data into parent table first from the staging table.

   ```
   ALTER SESSION ENABLE PARALLEL DML;

   INSERT /*+ APPEND PARALLEL */   INTO CISADM.D1_INIT_MSRMT_DATA
   SELECT /*+ PARALLEL */  * FROM CM_D1T304_P2011JAN_S181_ARC;

   COMMIT;
   ```

6. Load data into child table from the staging table.

   For each Child IN LIST OF CHILD TABLES, perform the following:

   ```
   INSERT /*+ APPEND PARALLEL */   INTO D1_INIT_MSRMT_DATA_CHAR SELECT
   /*+ PARALLEL */  * FROM CM_D1T305_P2011JAN_S181_ARC;

   COMMIT;
   INSERT /*+ APPEND PARALLEL */   INTO D1_INIT_MSRMT_DATA_LOG SELECT
   /*+ PARALLEL */  * FROM CM_D1T306_P2011JAN_S181_ARC;

   COMMIT;

   INSERT /*+ APPEND PARALLEL */   INTO D1_INIT_MSRMT_DATA_LOG_PARM
   SELECT /*+ PARALLEL */  * FROM CM_D1T307_P2011JAN_S181_ARC;

   COMMIT;
   ```

7. Drop the archive tablespace after import is import and data loading is successful.

   ```
   DROP TABLESPACE CM_D1T304_P2011JAN_S181_ARC INCLUDING CONTENTS AND
   DATAFILES;
   ```

Compressing Partition (D1_MSRMT table only)

To compress a partition, perform the steps below:

1. Create Compressed Partition Tablespace.

   ```
   CREATE BIGFILE TABLESPACE CM_D1T298_P2011JAN_C DATAFILE '+DATADG'
   SIZE 50M
   AUTOEXTEND ON MAXSIZE UNLIMITED DEFAULT ROW STORE COMPRESS
   ADVANCED;
   ```

Note: Perform Steps 2 - 9 for each subpartition (S01 – SMAX)

2. Create and Load Data Into Staging Table.

```
CREATE TABLE D1_MSRMT_P2011JAN_S01 PARALLEL NOLOGGING TABLESPACE
CM_D1T298_P2011JAN_C
AS
SELECT /*+ PARALLEL */ * FROM D1_MSRMT SUBPARTITION(P2011JAN_S01)
ORDER BY MEASR_COMP_ID, MSRMT_DTTM;
```

3. Enable Logging on Newly Created Staging Table.

```
ALTER TABLE D1_MSRMT_P2011JAN_S01 NOPARALLEL LOGGING;
```

4. Create Primary Unique Index on Staging Table.

```
CREATE UNIQUE INDEX D1T298P0_P2011JAN_S01
ON D1_MSRMT_P2011JAN_S01(MEASR_COMP_ID, MSRMT_DTTM)
PARALLEL NOLOGGING COMPRESS ADVANCED LOW TABLESPACE
CM_D1T298_P2011JAN_C;
```

5. Create Primary Key Constraint on Staging Table.

```
ALTER TABLE D1_MSRMT_P2011JAN_S01 ADD CONSTRAINT
D1T298P0_P2011JAN_S01 PRIMARY KEY(MEASR_COMP_ID, MSRMT_DTTM) USING
INDEX;
```

6. Enable Logging on Primary Key Index.

```
ALTER INDEX D1T298P0_P2011JAN_S01 NOPARALLEL LOGGING;
```

7. Exchange D1_MSRMT Table Subpartition With Newly Created Staging Table.

```
ALTER TABLE D1_MSRMT EXCHANGE SUBPARTITION(P2011JAN_S01) WITH TABLE
D1_MSRMT_P2011JAN_S01 INCLUDING INDEXES;
```

Note: Ensure that steps 2-9 have been executed for each subpartition (S01 – SMAX) before continuing:

8. Drop Original Uncompressed Tablespace.

```
DROP TABLESPACE CM_D1T298_P2011JAN INCLUDING CONTENTS AND
DATAFILES;
```

9. Change Partition Metadata to Reflect Compression Tablespace.

```
ALTER TABLE D1_MSRMT MODIFY DEFAULT ATTRIBUTES FOR PARTITION
P2011JAN TABLESPACE CM_D1T298_P2011JAN_C;
```

10. Rename Tablespace to Original Tablespace Name.

```
ALTER TABLESPACE CM_D1T298_P2011JAN_C RENAME TO CM_D1T298_P2011JAN;
```

Appendix I

Sample Scripts for Customer Contact Enhancement

In this release of Oracle Utilities Customer To Meter, there are enhancements that change the behavior of some objects. Upgrading customers may wish to update existing data to align with how newly created data will behave.

The following sample scripts are provided to help upgrading clients. Customers are advised to review, edit, and test these sample script to ensure they meet business and data requirement.

All scripts are delivered with logic to run in threads. In the format that the script is delivered, these scripts will not process any records. The scripts must be edited to set specific key ranges so that it can be run in parallel or process all records.

This appendix consists of the following:

- Updating Customer Contact Account and Premise
- Updating Preferred Contact Method on Legacy Values

Updating Customer Contact Account and Premise

In this release of Oracle Utilities Customer To Meter, the customer contact capability has been enhanced so that customer contacts can be linked to a person, account and/or premise. This section contains sample SQL that upgrading implementations can use to update the account ID and premise ID fields on existing customer contacts.

All Oracle Utilities Customer To Meter system processes that create customer contacts have been enhanced to populate account and/or premise. Not all of these areas retain a link to the customer contact created and the SQL provided is just a sample.

These scripts update Customer Contact Account and Premise from the following sources:

- Customer Contact Characteristics
- Collection Events
- Severance Events
- Write off Events
- Overdue Process Logs

The other Oracle Utilities Customer To Meter process enhanced are algorithm types delivered for the below plug-in spots. Examine your organization's customer contacts to determine if you should update customer contacts created from the following:

- FA Remark Algorithm
- Meter read Remark Algorithm
- Case Type Enter Status Algorithm
- Customer Class Order Completion
- SA Type SA Stop
- SA Type - SA Activation
- Service Credit Membership Type - Membership Activation
- Service Credit Membership Type - Membership Creation
- Campaign - Order Completion
- Lead Event Type (BO) - Lead Event Completion
- Notification Type (BO) - Create Notification

Since existing customer contact records are all person-based, all account updates should occur before premise updates to ensure the premise is associated with the account.

These are intended to be run in the following order:

1. Update Account ID from characteristic.

   Note the following about this SQL:

   - This cannot handle two characteristic types that are both linked to Acct FK Ref with different char values. If this exists such as FROM_ACCT and TO_ACCT with different values, this will not update.
   - Limited to accounts linked to CC person to not violate new CC validations.

- Change FK Ref if your implementation has introduced new FK Ref values for ACCT.

```
UPDATE CI_CC X
SET X.ACCT_ID =
  (SELECT DISTINCT(a.CHAR_VAL_FK1)
  FROM CI_CC_CHAR A,
    CI_CHAR_TYPE B,
    CI_CC C
  WHERE a.CHAR_TYPE_CD = B.CHAR_TYPE_CD
  AND A.CC_ID          = C.CC_ID
  AND B.FK_REF_CD     <> ' '
  AND b.fk_ref_cd      = 'ACCT'
  AND a.CC_ID          = X.CC_ID
  AND EXISTS
    (SELECT'x'
    FROM CI_ACCT_PER D
    WHERE D.PER_ID = C.PER_ID
    AND D.ACCT_ID  = a.CHAR_VAL_FK1
    )
  )
WHERE CC_ID =
  (SELECT A.CC_ID
  FROM CI_CC_CHAR A,
    CI_CHAR_TYPE B,
    CI_CC C
  WHERE a.CHAR_TYPE_CD = B.CHAR_TYPE_CD
  AND A.CC_ID          = C.CC_ID
  AND B.FK_REF_CD     <> ' '
  AND b.fk_ref_cd      = 'ACCT'
  AND a.CC_ID          = X.CC_ID
  AND EXISTS
    (SELECT'x'
    FROM CI_ACCT_PER D
    WHERE D.PER_ID = C.PER_ID
    AND D.ACCT_ID  = a.CHAR_VAL_FK1
    )
  )
AND 1 =
  (SELECT COUNT (DISTINCT a.CHAR_VAL_FK1)
  FROM CI_CC_CHAR A,
    CI_CHAR_TYPE B,
    CI_CC C
  WHERE a.CHAR_TYPE_CD = B.CHAR_TYPE_CD
  AND A.CC_ID          = C.CC_ID
  AND B.FK_REF_CD     <> ' '
  AND b.fk_ref_cd      = 'ACCT'
  AND a.CC_ID          = X.CC_ID
  )
AND X.ACCT_ID IS NULL
--AND X.CC_ID BETWEEN '0000000000' AND '9999999999';
AND X.CC_ID BETWEEN '0000000000' AND '0000000000';
```

2. Update Account ID from Coll event.

```
UPDATE CI_CC X
SET X.ACCT_ID =
  (SELECT a.acct_id
  FROM CI_COLL_PROC A,
    CI_COLL_EVT_CC C
  WHERE a.coll_proc_id = c.coll_proc_ID
  AND c.cc_id          = x.cc_id
  )
WHERE X.CC_ID IN
  (SELECT CC_ID FROM CI_COLL_EVT_CC
  )
AND X.ACCT_ID IS NULL
--AND X.CC_ID BETWEEN '0000000000' AND '9999999999';
AND X.CC_ID BETWEEN '0000000000' AND '0000000000';
```

3. Update Account ID from Sev event.

```
UPDATE CI_CC X
SET X.ACCT_ID =
  (SELECT a.acct_id
  FROM CI_SA A,
    CI_SEV_PROC B,
    CI_SEV_EVT_CC C
  WHERE a.SA_ID      = B.SA_ID
  AND B.sev_proc_id = c.sev_proc_id
  AND c.cc_id       = x.cc_id
  )
WHERE X.CC_ID IN
  (SELECT CC_ID FROM CI_SEV_EVT_CC
  )
AND X.ACCT_ID IS NULL
--AND X.CC_ID BETWEEN '0000000000' AND '9999999999';
AND X.CC_ID BETWEEN '0000000000' AND '0000000000';
```

4. Update Premise ID from Sev event.

   Using premise linked to SP linked to FA linked to same Sev Proc First.

```
UPDATE CI_CC X
SET X.PREM_ID =
  (SELECT DISTINCT h.prem_id
  FROM CI_SEV_EVT_CC D,
    CI_SEV_EVT_FA E,
    CI_FA G,
    CI_SP H
  WHERE D.SEV_PROC_ID = E.SEV_PROC_ID
  AND e.fa_id         = g.fa_id
  AND g.sp_id         = h.sp_id
  AND d.cc_id         = x.cc_id
  )
WHERE X.CC_ID IN
  (SELECT CC_ID
  FROM CI_SEV_EVT_CC D,
    CI_SEV_EVT_FA E
  WHERE D.SEV_PROC_ID = E.SEV_PROC_ID
  )
AND X.PREM_ID IS NULL
--AND X.CC_ID BETWEEN '0000000000' AND '9999999999';
AND X.CC_ID BETWEEN '0000000000' AND '0000000000';
```

5. Update Premise ID from Sev event.

   Using premise linked to SA via Char Premise second.

   Note: There is no SQL that will try to find a premise via SASP. The likelihood of more than one premise is too high.

```
UPDATE CI_CC X
SET X.PREM_ID =
  (SELECT NVL(a.char_prem_id,NULL)
  FROM CI_SA A,
    CI_SEV_PROC B,
    CI_SEV_EVT_CC C
  WHERE a.SA_ID     = B.SA_ID
  AND B.sev_proc_id = c.sev_proc_id
  AND A.CHAR_PREM_ID <> ' '
  AND c.cc_id       = x.cc_id
  )
WHERE X.CC_ID IN
  (SELECT CC_ID FROM CI_SEV_EVT_CC
  )
AND X.PREM_ID IS NULL
--AND X.CC_ID BETWEEN '0000000000' AND '9999999999';
AND X.CC_ID BETWEEN '0000000000' AND '0000000000';
```

6. Update Account ID from WO event.

```
UPDATE CI_CC X
SET X.ACCT_ID =
  (SELECT a.acct_id
  FROM CI_WO_PROC A,
    CI_WO_EVT_CC C
  WHERE a.wo_proc_id = c.wo_proc_ID
  AND c.cc_id        = x.cc_id
  )
WHERE X.CC_ID IN
  (SELECT CC_ID FROM CI_WO_EVT_CC
  )
AND X.ACCT_ID IS NULL
--AND X.CC_ID BETWEEN '0000000000' AND '9999999999';
AND X.CC_ID BETWEEN '0000000000' AND '0000000000';
```

7. Update Account ID from Overdue and Cut Processes via the Overdue Process Logs.

   NOTE: You must hardcode the Char Type Code your implementation has introduced.

```
UPDATE CI_CC X
SET X.ACCT_ID =
  (SELECT b.acct_id
  FROM CI_OD_PROC_LOG A,
    CI_OD_PROC B
  WHERE a.char_type_cd = 'CCID'
  AND a.OD_PROC_ID     = B.OD_PROC_ID
  AND trim(a.char_val_fk1)   = x.cc_id
  )
WHERE X.CC_ID IN
  (SELECT a.char_val_fk1
  FROM CI_OD_PROC_LOG A,
    CI_OD_PROC B
  WHERE a.char_type_cd = 'CCID'
  AND a.OD_PROC_ID     = B.OD_PROC_ID
  )
AND X.ACCT_ID IS NULL
--AND X.CC_ID BETWEEN '0000000000' AND '9999999999';
AND X.CC_ID BETWEEN '0000000000' AND '0000000000';
```

8. Update Premise ID from CC Char.

   Some notes about this SQL:

- This cannot handle two characteristic types that are both linked to Prem FK Ref with different char values. If this exists such as OLD_PREM and NEW_PREM with different values, this will not update.
- Limited to premise associated with account if acct is populated on the CC to not violate new CC validations.
- Change FK Ref if your implementation has introduced new FK Ref values for PREM.

```
UPDATE CI_CC X
SET X.PREM_ID =
  (SELECT DISTINCT(a.CHAR_VAL_FK1)
  FROM CI_CC_CHAR A,
    CI_CHAR_TYPE B,
    CI_CC C
  WHERE a.CHAR_TYPE_CD = B.CHAR_TYPE_CD
  AND A.CC_ID          = C.CC_ID
  AND B.FK_REF_CD     <> ' '
  AND b.fk_ref_cd      = 'PREM'
  AND a.CC_ID          = X.CC_ID
  AND (C.ACCT_ID      IS NULL
  OR C.ACCT_ID        IS NOT NULL
  AND a.CHAR_VAL_FK1  IN
    (SELECT E.char_prem_id FROM CI_SA E WHERE E.ACCT_ID = C.ACCT_ID
    UNION
    SELECT H.PREM_ID
    FROM CI_SA F,
      CI_SA_SP G,
      CI_SP H
    WHERE f.ACCT_ID = C.ACCT_ID
    AND F.SA_ID     = G.SA_ID
    AND G.SP_ID     = H.SP_ID
    ) )
  )
WHERE CC_ID =
  (SELECT A.CC_ID
  FROM CI_CC_CHAR A,
    CI_CHAR_TYPE B,
    CI_CC C
  WHERE a.CHAR_TYPE_CD = B.CHAR_TYPE_CD
  AND A.CC_ID          = C.CC_ID
  AND B.FK_REF_CD     <> ' '
  AND b.fk_ref_cd      = 'PREM'
  AND a.CC_ID          = X.CC_ID
  AND (C.ACCT_ID      IS NULL
  OR C.ACCT_ID        IS NOT NULL
  AND a.CHAR_VAL_FK1  IN
    (SELECT E.char_prem_id FROM CI_SA E WHERE E.ACCT_ID = C.ACCT_ID
    UNION
    SELECT H.PREM_ID
    FROM CI_SA F,
      CI_SA_SP G,
      CI_SP H
    WHERE f.ACCT_ID = C.ACCT_ID
    AND F.SA_ID     = G.SA_ID
    AND G.SP_ID     = H.SP_ID
    ) )
  )
AND 1 =
  (SELECT COUNT (DISTINCT a.CHAR_VAL_FK1)
  FROM CI_CC_CHAR A,
    CI_CHAR_TYPE B,
    CI_CC C
  WHERE a.CHAR_TYPE_CD = B.CHAR_TYPE_CD
  AND A.CC_ID          = C.CC_ID
  AND B.FK_REF_CD     <> ' '
  AND b.fk_ref_cd      = 'PREM'
  AND a.CC_ID          = X.CC_ID
  )
AND X.PREM_ID IS NULL
--AND X.CC_ID BETWEEN '0000000000' AND '9999999999';
AND X.CC_ID BETWEEN '0000000000' AND '0000000000';
```

Updating Preferred Contact Method on Legacy Values

In this release of Oracle Utilities Customer To Meter, a feature is introduced that some system processes use to determine if person phone and email or person contacts is being used.

If moving to using person contacts, some contact method values on case and customer contact are suppressed and existing records show as <invalid value>.

These scripts update the preferred contact method on cases and customer contacts from legacy values to person contact.

1. Update Case Preferred Contact Method from Email to Primary Email Person Contact:

```
UPDATE CI_CASE X
SET X.CONTACT_METH_FLG = 'C1PC',
  X.C1_CONTACT_ID      =
  (SELECT B.C1_CONTACT_ID
  FROM CI_CASE A,
    CISADM.C1_PER_CONTDET B,
    CISADM.C1_COMM_RTE_TYPE C
  WHERE CONTACT_METH_FLG  = 'EM'
  AND A.CONTACT_PER_ID    = B.PER_ID
  AND B.COMM_RTE_TYPE_CD  = C.COMM_RTE_TYPE_CD
  AND B.CND_PRIMARY_FLG   = 'C1YS'
  AND C.COMM_RTE_METH_FLG = 'EMAIL'
  AND X.CASE_ID           = A.CASE_ID
  )
WHERE X.CASE_ID IN
  (SELECT A.CASE_ID
  FROM CI_CASE A,
    CISADM.C1_PER_CONTDET B,
    CISADM.C1_COMM_RTE_TYPE C
  WHERE CONTACT_METH_FLG  = 'EM'
  AND A.CONTACT_PER_ID    = B.PER_ID
  AND B.COMM_RTE_TYPE_CD  = C.COMM_RTE_TYPE_CD
  AND B.CND_PRIMARY_FLG   = 'C1YS'
  AND C.COMM_RTE_METH_FLG = 'EMAIL'
  )
--AND X.CASE_ID BETWEEN '0000000000' AND '9999999999';
AND X.CASE_ID BETWEEN '0000000000' AND '0000000000';
```

2. Update Case Preferred Contact Method from Fax to Primary Fax Person Contact:

```
UPDATE CI_CASE X
SET X.CONTACT_METH_FLG = 'C1PC',
  X.C1_CONTACT_ID      =
  (SELECT B.C1_CONTACT_ID
  FROM CI_CASE A,
    CISADM.C1_PER_CONTDET B,
    CISADM.C1_COMM_RTE_TYPE C
  WHERE CONTACT_METH_FLG  = 'FAX'
  AND A.CONTACT_PER_ID    = B.PER_ID
  AND B.COMM_RTE_TYPE_CD  = C.COMM_RTE_TYPE_CD
  AND B.CND_PRIMARY_FLG   = 'C1YS'
  AND C.COMM_RTE_METH_FLG = 'FAX'
  AND X.CASE_ID           = A.CASE_ID
  )
WHERE X.CASE_ID IN
  (SELECT A.CASE_ID
  FROM CI_CASE A,
    CISADM.C1_PER_CONTDET B,
    CISADM.C1_COMM_RTE_TYPE C
  WHERE CONTACT_METH_FLG  = 'FAX'
  AND A.CONTACT_PER_ID    = B.PER_ID
  AND B.COMM_RTE_TYPE_CD  = C.COMM_RTE_TYPE_CD
  AND B.CND_PRIMARY_FLG   = 'C1YS'
  AND C.COMM_RTE_METH_FLG = 'FAX'
  )
--AND X.CASE_ID BETWEEN '0000000000' AND '9999999999';
AND X.CASE_ID BETWEEN '0000000000' AND '0000000000';
```

3. Update Case Preferred Contact Method from Phone to Primary Phone Person Contact:

```
UPDATE CI_CASE X
SET X.CONTACT_METH_FLG = 'C1PC',
  X.C1_CONTACT_ID      =
  (SELECT B.C1_CONTACT_ID
  FROM CI_CASE A,
    CISADM.C1_PER_CONTDET B,
    CISADM.C1_COMM_RTE_TYPE C
  WHERE CONTACT_METH_FLG  = 'PH'
  AND A.CONTACT_PER_ID    = B.PER_ID
  AND B.COMM_RTE_TYPE_CD  = C.COMM_RTE_TYPE_CD
  AND B.CND_PRIMARY_FLG   = 'C1YS'
  AND C.COMM_RTE_METH_FLG = 'PHONE'
  AND X.CASE_ID           = A.CASE_ID
  )
WHERE X.CASE_ID IN
  (SELECT A.CASE_ID
  FROM CI_CASE A,
    CISADM.C1_PER_CONTDET B,
    CISADM.C1_COMM_RTE_TYPE C
  WHERE CONTACT_METH_FLG  = 'PH'
  AND A.CONTACT_PER_ID    = B.PER_ID
  AND B.COMM_RTE_TYPE_CD  = C.COMM_RTE_TYPE_CD
  AND B.CND_PRIMARY_FLG   = 'C1YS'
  AND C.COMM_RTE_METH_FLG = 'PHONE'
  )
--AND X.CASE_ID BETWEEN '0000000000' AND '9999999999';
AND X.CASE_ID BETWEEN '0000000000' AND '0000000000';
```

4. Update Customer Contact Preferred Contact Method from Email to Primary Email Person Contact:

```
UPDATE CI_CC X
SET X.CONTACT_METH_FLG = 'C1PC',
  X.C1_CONTACT_ID      =
  (SELECT B.C1_CONTACT_ID
  FROM CI_CC A,
    CISADM.C1_PER_CONTDET B,
    CISADM.C1_COMM_RTE_TYPE C
  WHERE CONTACT_METH_FLG  = 'EM'
  AND A.PER_ID    = B.PER_ID
  AND B.COMM_RTE_TYPE_CD  = C.COMM_RTE_TYPE_CD
  AND B.CND_PRIMARY_FLG   = 'C1YS'
  AND C.COMM_RTE_METH_FLG = 'EMAIL'
  AND X.CC_ID           = A.CC_ID
  )
WHERE X.CC_ID IN
  (SELECT A.CC_ID
  FROM CI_CC A,
    CISADM.C1_PER_CONTDET B,
    CISADM.C1_COMM_RTE_TYPE C
  WHERE CONTACT_METH_FLG  = 'EM'
  AND A.PER_ID    = B.PER_ID
  AND B.COMM_RTE_TYPE_CD  = C.COMM_RTE_TYPE_CD
  AND B.CND_PRIMARY_FLG   = 'C1YS'
  AND C.COMM_RTE_METH_FLG = 'EMAIL'
  )
--AND X.CC_ID BETWEEN '0000000000' AND '9999999999';
AND X.CC_ID BETWEEN '0000000000' AND '0000000000';
```

5. Update Customer Contact Preferred Contact Method from Fax to Primary Fax Person Contact:

```
UPDATE CI_CC X
SET X.CONTACT_METH_FLG = 'C1PC',
  X.C1_CONTACT_ID      =
  (SELECT B.C1_CONTACT_ID
  FROM CI_CC A,
    CISADM.C1_PER_CONTDET B,
    CISADM.C1_COMM_RTE_TYPE C
  WHERE CONTACT_METH_FLG  = 'FAX'
  AND A.PER_ID    = B.PER_ID
  AND B.COMM_RTE_TYPE_CD  = C.COMM_RTE_TYPE_CD
  AND B.CND_PRIMARY_FLG   = 'C1YS'
  AND C.COMM_RTE_METH_FLG = 'FAX'
  AND X.CC_ID           = A.CC_ID
  )
WHERE X.CC_ID IN
  (SELECT A.CC_ID
  FROM CI_CC A,
    CISADM.C1_PER_CONTDET B,
    CISADM.C1_COMM_RTE_TYPE C
  WHERE CONTACT_METH_FLG  = 'FAX'
  AND A.PER_ID    = B.PER_ID
  AND B.COMM_RTE_TYPE_CD  = C.COMM_RTE_TYPE_CD
  AND B.CND_PRIMARY_FLG   = 'C1YS'
  AND C.COMM_RTE_METH_FLG = 'FAX'
  )
--AND X.CC_ID BETWEEN '0000000000' AND '9999999999';
AND X.CC_ID BETWEEN '0000000000' AND '0000000000';
```

6. Update Customer Contact Preferred Contact Method from Phone to Primary Phone Person Contact:

```
UPDATE CI_CC X
SET X.CONTACT_METH_FLG = 'C1PC',
  X.C1_CONTACT_ID      =
  (SELECT B.C1_CONTACT_ID
  FROM CI_CC A,
    CISADM.C1_PER_CONTDET B,
    CISADM.C1_COMM_RTE_TYPE C
  WHERE CONTACT_METH_FLG  = 'PH'
  AND A.PER_ID    = B.PER_ID
  AND B.COMM_RTE_TYPE_CD  = C.COMM_RTE_TYPE_CD
  AND B.CND_PRIMARY_FLG   = 'C1YS'
  AND C.COMM_RTE_METH_FLG = 'PHONE'
  AND X.CC_ID           = A.CC_ID
  )
WHERE X.CC_ID IN
  (SELECT A.CC_ID
  FROM CI_CC A,
    CISADM.C1_PER_CONTDET B,
    CISADM.C1_COMM_RTE_TYPE C
  WHERE CONTACT_METH_FLG  = 'PH'
  AND A.PER_ID    = B.PER_ID
  AND B.COMM_RTE_TYPE_CD  = C.COMM_RTE_TYPE_CD
  AND B.CND_PRIMARY_FLG   = 'C1YS'
  AND C.COMM_RTE_METH_FLG = 'PHONE'
  )
--AND X.CC_ID BETWEEN '0000000000' AND '9999999999';
AND X.CC_ID BETWEEN '0000000000' AND '0000000000';
```

7. The following shows remaining cases that need to be investigated manually:

```
SELECT *
FROM CI_CASE
WHERE CONTACT_METH_FLG <> ' '
 AND CONTACT_METH_FLG NOT IN ('N/A','POST','C1PC');
```

8. The following shows remaining Customer Contacts that need to be investigated manually:

```
SELECT *
FROM CI_CC
WHERE CONTACT_METH_FLG <> ' '
 AND CONTACT_METH_FLG NOT IN ('N/A','POST','C1PC');
```

Appendix J

Partitioning and Compression Recommendations

This section specifies the partitioning and compression strategies recommended for an initial Oracle Utilities Meter Data Management database configuration. It includes the following topics:

- *Partitioning Recommendations*
- *Compression Recommendations*

  Note: If Information Lifecycle Management is part of your implementation, please refer to the chapter *Information Lifecycle Management and Data Archiving in MDM* in this guide for instructions on partitioning objects when using ILM.

Partitioning Recommendations

In general, the recommendation is for a minimum of 'n' partitions for selective database objects, where 'n' is number of RAC nodes. The specific table level partitioning recommendations are as follows:

- The Table Partitioning scheme for Transaction tables is focused primarily on tables associated with Measurement MO, Measurement Log MO and Initial-Measurement-Data MO.
- D1_MSRMT, D1_MSRMT_CHAR, D1_MSRMT_LOG, D1_MSRMT_LOG_PARM tables can be partitioned by MSRMT_DTTM. Bi-monthly partitions is a good start. Subpartition these tables by MEASR_COMP_ID (8 subpartitions should be a good number to start with).
- D1_INIT_MSRMT_DATA table can be partitioned by D1_TO_DTTM. Bi-monthly partitions is a good start. Subpartition D1_INIT_MSRMT_DATA table by MEASR_COMP_ID (8 subpartitions should be a good number to start with).
- D1_INIT_MSRMT_DATA_CHAR, D1_INIT_MSRMT_DATA_LOG, D1_INIT_MSRMT_DATA_LOG_PARM tables are reference partitioned to the parent table.
- D1_INIT_MSRMT_DATA_K table can be partitioned by INIT_MSRMT_DATA_ID (8 sub partitions should be a good number to start with).

The following sections gives partition recommendation and can be used as reference. Create one tablespace per partition as needed. It includes the following:

- *D1_MSRMT*
- *D1_MSRMT_CHAR*
- *D1_MSRMT_LOG*
- *D1_MSRMT_LOG_PARM*
- *D1_INIT_MSRMT_DATA*
- *D1_INIT_MSRMT_DATA_CHAR*
- *D1_INIT_MSRMT_DATA_K*
- *D1_INIT_MSRMT_DATA_LOG*
- *D1_INIT_MSRMT_DATA_LOG_PARM*

D1_MSRMT

```
CREATE BIGFILE TABLESPACE CM_D1T298_P2011JAN DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T298_P2011MAR DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T298_P2011MAY DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T298_P2011JUL DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T298_P2011SEP DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T298_P2011NOV DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T298_PMAX DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON MAXSIZE
UNLIMITED ;
```

```
CREATE TABLE D1_MSRMT (

MEASR_COMP_ID CHAR(12) NOT NULL ENABLE, MSRMT_DTTM DATE NOT NULL ENABLE,
BO_STATUS_CD   CHAR(12) DEFAULT ' ' NOT NULL ENABLE, MSRMT_COND_FLG CHAR(6 BYTE) DEFAULT '
' NOT NULL ENABLE, MSRMT_USE_FLG  CHAR(4) DEFAULT ' ' NOT NULL ENABLE, MSRMT_LOCAL_DTTM
DATE NOT NULL ENABLE,
MSRMT_VAL          NUMBER(16,6) DEFAULT 0 NOT NULL ENABLE, ORIG_INIT_MSRMT_ID CHAR(14)
DEFAULT ' ' NOT NULL ENABLE, PREV_MSRMT_DTTM DATE,
MSRMT_VAL1  NUMBER(16,6) DEFAULT 0 NOT NULL ENABLE, MSRMT_VAL2  NUMBER(16,6) DEFAULT 0 NOT
NULL ENABLE, MSRMT_VAL3  NUMBER(16,6) DEFAULT 0 NOT NULL ENABLE, MSRMT_VAL4  NUMBER(16,6)
DEFAULT 0 NOT NULL ENABLE, MSRMT_VAL5  NUMBER(16,6) DEFAULT 0 NOT NULL ENABLE, MSRMT_VAL6
NUMBER(16,6) DEFAULT 0 NOT NULL ENABLE, MSRMT_VAL7  NUMBER(16,6) DEFAULT 0 NOT NULL ENABLE,
MSRMT_VAL8  NUMBER(16,6) DEFAULT 0 NOT NULL ENABLE, MSRMT_VAL9  NUMBER(16,6) DEFAULT 0 NOT
NULL ENABLE, MSRMT_VAL10 NUMBER(16,6) DEFAULT 0 NOT NULL ENABLE, BUS_OBJ_CD  CHAR(30)
DEFAULT ' ' NOT NULL ENABLE, CRE_DTTM DATE NOT NULL ENABLE,
STATUS_UPD_DTTM DATE NOT NULL ENABLE,
USER_EDITED_FLG CHAR(4) DEFAULT ' ' NOT NULL ENABLE, VERSION        NUMBER(5,0) DEFAULT 1
NOT NULL ENABLE,
LAST_UPDATE_DTTM DATE, READING_VAL NUMBER(16,6), COMBINED_MULTIPLIER NUMBER(12,6),
READING_COND_FLG CHAR(6)
) ENABLE ROW MOVEMENT
PARTITION BY RANGE (MSRMT_DTTM) SUBPARTITION BY range (MEASR_COMP_ID) SUBPARTITION
TEMPLATE(
subpartition S01 values less than (124999999999),
subpartition S02 values less than (249999999999),
subpartition S03 values less than (374999999999),
subpartition S04 values less than (499999999999),
subpartition S05 values less than (624999999999),
subpartition S06 values less than (744999999999),
subpartition S07 values less than (874999999999),
subpartition SMAX values less than (maxvalue)
)
(
PARTITION "P2011JAN" VALUES LESS THAN (TO_DATE('2011-02-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_D1T298_P2011JAN,
PARTITION "P2011MAR" VALUES LESS THAN (TO_DATE('2011-04-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_D1T298_P2011MAR,
PARTITION "P2011MAY" VALUES LESS THAN (TO_DATE('2011-06-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_D1T298_P2011MAY,
PARTITION "P2011JUL" VALUES LESS THAN (TO_DATE('2011-08-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_D1T298_P2011JUL,
PARTITION "P2011SEP" VALUES LESS THAN (TO_DATE('2011-10-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_D1T298_P2011SEP,
PARTITION "P2011NOV" VALUES LESS THAN (TO_DATE('2011-12-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_D1T298_P2011NOV,
PARTITION "PMAX" VALUES LESS THAN (MAXVALUE)
TABLESPACE CM_D1T298_PMAX
);

CREATE UNIQUE INDEX D1T298P0 ON D1_MSRMT(MEASR_COMP_ID, MSRMT_DTTM) LOCAL COMPRESS ADVANCED
LOW;

ALTER TABLE D1_MSRMT ADD CONSTRAINT D1T298P0 PRIMARY KEY(MEASR_COMP_ID, MSRMT_DTTM) USING
INDEX;
```

D1_MSRMT_CHAR

```
CREATE BIGFILE TABLESPACE CM_D1T299_P2011JAN DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T299_P2011MAR DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T299_P2011MAY DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T299_P2011JUL DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T299_P2011SEP DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T299_P2011NOV DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T299_PMAX DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON MAXSIZE
UNLIMITED ;

CREATE TABLE D1_MSRMT_CHAR (
MEASR_COMP_ID CHAR(12) NOT NULL ENABLE, MSRMT_DTTM DATE NOT NULL ENABLE,
CHAR_TYPE_CD   CHAR(8) NOT NULL ENABLE, SEQ_NUM        NUMBER(3,0) NOT NULL ENABLE,
CHAR_VAL      CHAR(16) DEFAULT ' ' NOT NULL ENABLE, ADHOC_CHAR_VAL VARCHAR2(254) DEFAULT '
' NOT NULL ENABLE, CHAR_VAL_FK1   VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE, CHAR_VAL_FK2
VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE, CHAR_VAL_FK3   VARCHAR2(50) DEFAULT ' ' NOT NULL
ENABLE, CHAR_VAL_FK4   VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE, CHAR_VAL_FK5
VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE, SRCH_CHAR_VAL  VARCHAR2(50) DEFAULT ' ' NOT NULL
ENABLE, VERSION        NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
LAST_UPDATE_DTTM DATE, READING_VAL NUMBER(16,6), COMBINED_MULTIPLIER NUMBER(12,6),
READING_COND_FLG CHAR(6)
) ENABLE ROW MOVEMENT
PARTITION BY RANGE (MSRMT_DTTM) SUBPARTITION BY range (MEASR_COMP_ID) SUBPARTITION
TEMPLATE(
subpartition S01 values less than (124999999999),
subpartition S02 values less than (249999999999),
subpartition S03 values less than (374999999999),
subpartition S04 values less than (499999999999),
subpartition S05 values less than (624999999999),
subpartition S06 values less than (744999999999),
subpartition S07 values less than (874999999999),
subpartition SMAX values less than (maxvalue)
)
(
PARTITION "P2011JAN" VALUES LESS THAN (TO_DATE('2011-02-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_D1T299_P2011JAN,
PARTITION "P2011MAR" VALUES LESS THAN (TO_DATE('2011-04-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_D1T299_P2011MAR,
PARTITION "P2011MAY" VALUES LESS THAN (TO_DATE('2011-06-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_D1T299_P2011MAY,
PARTITION "P2011JUL" VALUES LESS THAN (TO_DATE('2011-08-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_D1T299_P2011JUL,
PARTITION "P2011SEP" VALUES LESS THAN (TO_DATE('2011-10-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_D1T299_P2011SEP,
PARTITION "P2011NOV" VALUES LESS THAN (TO_DATE('2011-12-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_D1T299_P2011NOV,
PARTITION "PMAX" VALUES LESS THAN (MAXVALUE)
TABLESPACE CM_D1T299_PMAX
);

CREATE BIGFILE TABLESPACE CM_D1T299_IND DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON MAXSIZE
UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED;

CREATE UNIQUE INDEX  D1T299P0 ON D1_MSRMT_CHAR (
MEASR_COMP_ID, MSRMT_DTTM, CHAR_TYPE_CD, SEQ_NUM
)  LOCAL COMPRESS ADVANCED LOW;

ALTER TABLE D1_MSRMT_CHAR  ADD CONSTRAINT D1T299P0 PRIMARY KEY (MEASR_COMP_ID, MSRMT_DTTM,
CHAR_TYPE_CD, SEQ_NUM) USING INDEX ;

CREATE INDEX D1T299S1 ON D1_MSRMT_CHAR(SRCH_CHAR_VAL)
GLOBAL PARTITION BY HASH(SRCH_CHAR_VAL)
 (
 PARTITION P1 TABLESPACE CM_D1T299_IND,
 PARTITION P2 TABLESPACE CM_D1T299_IND,
 PARTITION P3 TABLESPACE CM_D1T299_IND,
 PARTITION P4 TABLESPACE CM_D1T299_IND,
 PARTITION P5 TABLESPACE CM_D1T299_IND,
 PARTITION P6 TABLESPACE CM_D1T299_IND,
 PARTITION P7 TABLESPACE CM_D1T299_IND,
 PARTITION P8 TABLESPACE CM_D1T299_IND
 )
 TABLESPACE CM_D1T304_IND;
```

D1_MSRMT_LOG

```
CREATE BIGFILE TABLESPACE CM_D1T300_P2011JAN DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T300_P2011MAR DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T300_P2011MAY DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T300_P2011JUL DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T300_P2011SEP DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T300_P2011NOV DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
```

```
CREATE BIGFILE TABLESPACE CM_D1T300_PMAX DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON MAXSIZE
UNLIMITED ;

CREATE TABLE D1_MSRMT_LOG (
MEASR_COMP_ID CHAR(12), MSRMT_DTTM DATE,
SEQNO              NUMBER(5,0),
ORIG_INIT_MSRMT_ID CHAR(14) DEFAULT ' ' NOT NULL ENABLE, BUS_OBJ_CD         CHAR(30)
DEFAULT ' ' NOT NULL ENABLE,
CHAR_TYPE_CD   CHAR(8) DEFAULT ' ' NOT NULL ENABLE, CHAR_VAL      CHAR(16) DEFAULT ' ' NOT
NULL ENABLE, ADHOC_CHAR_VAL VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE, CHAR_VAL_FK1
VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE, CHAR_VAL_FK2   VARCHAR2(50) DEFAULT ' ' NOT NULL
ENABLE, CHAR_VAL_FK3   VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE, CHAR_VAL_FK4
VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE, CHAR_VAL_FK5   VARCHAR2(50) DEFAULT ' ' NOT NULL
ENABLE, DESCRLONG      VARCHAR2(4000) DEFAULT ' ' NOT NULL ENABLE, LOG_DTTM DATE NOT NULL
ENABLE,
MESSAGE_CAT_NBR          NUMBER(5,0) DEFAULT 0 NOT NULL ENABLE, MESSAGE_NBR
NUMBER(5,0) DEFAULT 0 NOT NULL ENABLE, USER_ID                            CHAR(8) DEFAULT
' ' NOT
NULL ENABLE,
VERSION                             NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
MSRMT_LOG_ENTRY_TYPE_FLG CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
BO_DATA_AREA CLOB
)
  LOB (BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS MEDIUM CACHE)
ENABLE ROW MOVEMENT
PARTITION BY RANGE (MSRMT_DTTM) SUBPARTITION BY range (MEASR_COMP_ID) SUBPARTITION
TEMPLATE(
subpartition S01 values less than (124999999999),
subpartition S02 values less than (249999999999),
subpartition S03 values less than (374999999999),
subpartition S04 values less than (499999999999),
subpartition S05 values less than (624999999999),
subpartition S06 values less than (744999999999),
subpartition S07 values less than (874999999999),
subpartition SMAX values less than (maxvalue)
)
(
PARTITION "P2011JAN" VALUES LESS THAN (TO_DATE('2011-02-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB (BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS MEDIUM CACHE
TABLESPACE CM_D1T300_P2011JAN )
TABLESPACE CM_D1T300_P2011JAN,
PARTITION "P2011MAR" VALUES LESS THAN (TO_DATE('2011-04-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB (BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS MEDIUM CACHE
TABLESPACE CM_D1T300_P2011MAR )
TABLESPACE CM_D1T300_P2011MAR,
PARTITION "P2011MAY" VALUES LESS THAN (TO_DATE('2011-06-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB (BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS MEDIUM CACHE
TABLESPACE CM_D1T300_P2011MAY )
TABLESPACE CM_D1T300_P2011MAY,
PARTITION "P2011JUL" VALUES LESS THAN (TO_DATE('2011-08-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB (BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS MEDIUM CACHE
TABLESPACE CM_D1T300_P2011JUL )
TABLESPACE CM_D1T300_P2011JUL,
PARTITION "P2011SEP" VALUES LESS THAN (TO_DATE('2011-10-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB (BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS MEDIUM CACHE
TABLESPACE CM_D1T300_P2011SEP )
TABLESPACE CM_D1T300_P2011SEP,
PARTITION "P2011NOV" VALUES LESS THAN (TO_DATE('2011-12-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
LOB (BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS MEDIUM CACHE
TABLESPACE CM_D1T300_P2011NOV )
TABLESPACE CM_D1T300_P2011NOV,
PARTITION "PMAX" VALUES LESS THAN (MAXVALUE)
LOB (BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS MEDIUM CACHE
TABLESPACE CM_D1T300_PMAX )
TABLESPACE CM_D1T300_PMAX
);

CREATE UNIQUE INDEX D1T300P0 ON D1_MSRMT_LOG (
MEASR_COMP_ID, MSRMT_DTTM, SEQNO
)   LOCAL COMPRESS ADVANCED LOW;

ALTER TABLE D1_MSRMT_LOG ADD CONSTRAINT D1T300P0 PRIMARY KEY (MEASR_COMP_ID, MSRMT_DTTM,
SEQNO) USING INDEX ;
```

D1_MSRMT_LOG_PARM

```
CREATE BIGFILE TABLESPACE CM_D1T301_P2011JAN DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T301_P2011MAR DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T301_P2011MAY DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T301_P2011JUL DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T301_P2011SEP DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T301_P2011NOV DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T301_PMAX DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON MAXSIZE
UNLIMITED ;



CREATE TABLE D1_MSRMT_LOG_PARM (
MEASR_COMP_ID CHAR(12), MSRMT_DTTM DATE,
SEQNO                NUMBER(5,0), PARM_SEQ         NUMBER(3,0),
MSG_PARM_VAL     VARCHAR2(30) DEFAULT ' ' NOT NULL ENABLE, MSG_PARM_TYP_FLG CHAR(4) DEFAULT
' ' NOT NULL ENABLE, VERSION                  NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE
)
ENABLE ROW MOVEMENT
PARTITION BY RANGE (MSRMT_DTTM) SUBPARTITION BY range (MEASR_COMP_ID) SUBPARTITION
TEMPLATE(
subpartition S01 values less than (124999999999),
subpartition S02 values less than (249999999999),
subpartition S03 values less than (374999999999),
subpartition S04 values less than (499999999999),
subpartition S05 values less than (624999999999),
subpartition S06 values less than (744999999999),
subpartition S07 values less than (874999999999),
subpartition SMAX values less than (maxvalue)
)
(
PARTITION "P2011JAN" VALUES LESS THAN (TO_DATE('2011-02-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_D1T301_P2011JAN,
PARTITION "P2011MAR" VALUES LESS THAN (TO_DATE('2011-04-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_D1T301_P2011MAR,
PARTITION "P2011MAY" VALUES LESS THAN (TO_DATE('2011-06-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_D1T301_P2011MAY,
PARTITION "P2011JUL" VALUES LESS THAN (TO_DATE('2011-08-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_D1T301_P2011JUL,
PARTITION "P2011SEP" VALUES LESS THAN (TO_DATE('2011-10-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_D1T301_P2011SEP,
PARTITION "P2011NOV" VALUES LESS THAN (TO_DATE('2011-12-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
TABLESPACE CM_D1T301_P2011NOV,
PARTITION "PMAX" VALUES LESS THAN (MAXVALUE)
TABLESPACE CM_D1T301_PMAX
);
CREATE UNIQUE INDEX D1T301P0 ON D1_MSRMT_LOG_PARM (
MEASR_COMP_ID, MSRMT_DTTM, SEQNO, PARM_SEQ
)  INDEX LOCAL COMPRESS ADVANCED LOW;

ALTER TABLE D1_MSRMT_LOG_PARM ADD CONSTRAINT D1T301P0 PRIMARY KEY (MEASR_COMP_ID,
MSRMT_DTTM, SEQNO, PARM_SEQ) USING INDEX;
```

D1_INIT_MSRMT_DATA

```
CREATE BIGFILE TABLESPACE CM_D1T304_P2011JAN DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011MAR DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011MAY DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011JUL DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011SEP DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T304_P2011NOV DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON
MAXSIZE UNLIMITED ;
CREATE BIGFILE TABLESPACE CM_D1T304_PMAX DATAFILE '+DATADG' SIZE 50M AUTOEXTEND ON MAXSIZE
UNLIMITED ;
```

```
CREATE TABLE D1_INIT_MSRMT_DATA
  (
   INIT_MSRMT_DATA_ID CHAR(14) NOT NULL ENABLE,
    MEASR_COMP_ID      CHAR(12) DEFAULT ' ' NOT NULL ENABLE,
    D1_FROM_DTTM DATE,
    D1_TO_DTTM DATE,
    DATA_SRC_FLG        CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
    TIME_ZONE_CD        CHAR(10) DEFAULT ' ' NOT NULL ENABLE,
    BUS_OBJ_CD          CHAR(30) DEFAULT ' ' NOT NULL ENABLE,
    BO_STATUS_CD        CHAR(12) DEFAULT ' ' NOT NULL ENABLE,
    BO_STATUS_REASON_CD VARCHAR2(30) DEFAULT ' ' NOT NULL ENABLE,
    IMD_BO_DATA_AREA CLOB,
    STATUS_UPD_DTTM DATE NOT NULL ENABLE,
    CRE_DTTM DATE NOT NULL ENABLE,
    VERSION    NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
    IMD_EXT_ID VARCHAR2(120),
    PREVEE_BO_DATA_AREA CLOB,
    POSTVEE_BO_DATA_AREA CLOB,
    TRACE_BO_DATA_AREA CLOB,
    RAW_BO_DATA_AREA CLOB,
    LAST_UPDATE_DTTM DATE,
    ILM_DT DATE,
    ILM_ARCH_SW CHAR(1),
    RETENTION_PERIOD NUMBER(5,0) DEFAULT 99999 NOT NULL ENABLE
  )
ENABLE ROW MOVEMENT
LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS MEDIUM CACHE)
LOB ( POSTVEE_BO_DATA_AREA ) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS MEDIUM
CACHE)
LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS MEDIUM CACHE)
LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS MEDIUM CACHE)
LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (ENABLE STORAGE IN ROW COMPRESS MEDIUM CACHE)
PARTITION BY RANGE (D1_TO_DTTM)
SUBPARTITION BY range (MEASR_COMP_ID)
SUBPARTITION TEMPLATE(
SUBPARTITION S01 VALUES LESS THAN (124999999999),
SUBPARTITION S02 VALUES LESS THAN (249999999999),
SUBPARTITION S03 VALUES LESS THAN (374999999999),
SUBPARTITION S04 VALUES LESS THAN (499999999999),
SUBPARTITION S05 VALUES LESS THAN (624999999999),
SUBPARTITION S06 VALUES LESS THAN (749999999999),
SUBPARTITION S07 VALUES LESS THAN (874999999999),
SUBPARTITION SMAX VALUES LESS THAN (MAXVALUE)
)
(
PARTITION "P2011JAN" VALUES LESS THAN (TO_DATE('2011-02-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011JAN)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011JAN)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011JAN)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011JAN)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011JAN)
TABLESPACE CM_D1T304_P2011JAN,
PARTITION "P2011MAR" VALUES LESS THAN (TO_DATE('2011-04-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011MAR)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011MAR)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011MAR)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011MAR)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011MAR)
TABLESPACE CM_D1T304_P2011MAR,
PARTITION "P2011MAY" VALUES LESS THAN (TO_DATE('2011-06-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011MAY)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011MAY)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011MAY)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011MAY)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011MAY)
TABLESPACE CM_D1T304_P2011MAY,
PARTITION "P2011JUL" VALUES LESS THAN (TO_DATE('2011-08-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011JUL)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011JUL)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011JUL)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011JUL)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011JUL)
TABLESPACE CM_D1T304_P2011JUL,
PARTITION "P2011SEP" VALUES LESS THAN (TO_DATE('2011-10-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011SEP)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011SEP)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011SEP)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011SEP)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011SEP)
TABLESPACE CM_D1T304_P2011SEP,
PARTITION "P2011NOV" VALUES LESS THAN (TO_DATE('2011-12-01 00:00:01', 'SYYYY-MM-DD
HH24:MI:SS', 'NLS_CALENDAR=GREGORIAN'))
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011NOV)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011NOV)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011NOV)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011NOV)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_P2011NOV)
TABLESPACE CM_D1T304_P2011NOV,
PARTITION "PMAX" VALUES LESS THAN (MAXVALUE)
    LOB (PREVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_PMAX)
    LOB (POSTVEE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_PMAX)
    LOB (TRACE_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_PMAX)
    LOB (RAW_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_PMAX)
    LOB (IMD_BO_DATA_AREA) STORE AS SECUREFILE (TABLESPACE CM_D1T304_PMAX)
TABLESPACE CM_D1T304_PMAX
);

CREATE BIGFILE TABLESPACE CM_D1T304_IND DATAFILE '+DATA' SIZE 50M AUTOEXTEND ON MAXSIZE
UNLIMITED DEFAULT ROW STORE COMPRESS ADVANCED;

CREATE UNIQUE INDEX D1T304P0 ON D1_INIT_MSRMT_DATA (
INIT_MSRMT_DATA_ID
) TABLESPACE CM_D1T304_IND
GLOBAL PARTITION BY RANGE (INIT_MSRMT_DATA_ID)
(PARTITION P1 values less than (12499999999999),
PARTITION P2 values less than (24999999999999),
PARTITION P3 values less than (37499999999999),
PARTITION P4 values less than (49999999999999),
PARTITION P5 values less than (62499999999999),
PARTITION P6 values less than (74499999999999),
PARTITION P7 values less than (87499999999999),
PARTITION P8 values less than (maxvalue));

ALTER TABLE D1_INIT_MSRMT_DATA ADD CONSTRAINT D1T304P0 PRIMARY KEY (INIT_MSRMT_DATA_ID)
USING INDEX ;

CREATE INDEX D1T304S1 ON D1_INIT_MSRMT_DATA (MEASR_COMP_ID, BO_STATUS_CD, BUS_OBJ_CD,
D1_TO_DTTM, D1_FROM_DTTM) TABLESPACE CM_D1T304_IND
GLOBAL PARTITION BY RANGE (MEASR_COMP_ID)
(   PARTITION P1 VALUES LESS THAN ( '124999999999' ),
    PARTITION P2 VALUES LESS THAN ( '249999999999' ),
    PARTITION P3 VALUES LESS THAN ( '374999999999' ),
    PARTITION P4 VALUES LESS THAN ( '499999999999' ),
    PARTITION P5 VALUES LESS THAN ( '624999999999' ),
    PARTITION P6 VALUES LESS THAN ( '749999999999' ),
    PARTITION P7 VALUES LESS THAN ( '874999999999' ),
    PARTITION P8 VALUES LESS THAN ( MAXVALUE )
)
COMPRESS ADVANCED LOW;
```

D1_INIT_MSRMT_DATA_CHAR

```
CREATE TABLE D1_INIT_MSRMT_DATA_CHAR
  (
    INIT_MSRMT_DATA_ID CHAR(14) NOT NULL ENABLE,
    CHAR_TYPE_CD       CHAR(8) NOT NULL ENABLE,
    SEQ_NUM            NUMBER(3,0) NOT NULL ENABLE,
    CHAR_VAL           CHAR(16) DEFAULT ' ' NOT NULL ENABLE,
    ADHOC_CHAR_VAL     VARCHAR2(254) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK1       VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK2       VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK3       VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK4       VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK5       VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    SRCH_CHAR_VAL      VARCHAR2(50) DEFAULT ' ' NOT NULL ENABLE,
    VERSION            NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
    LAST_UPDATE_DTTM DATE,
    CONSTRAINT D1_INIT_MSRMT_DATA_CHAR_FK FOREIGN KEY(INIT_MSRMT_DATA_ID) REFERENCES
D1_INIT_MSRMT_DATA ON DELETE CASCADE)
PARTITION BY REFERENCE (D1_INIT_MSRMT_DATA_CHAR_FK)
ENABLE ROW MOVEMENT;

CREATE UNIQUE INDEX D1T305P0 ON D1_INIT_MSRMT_DATA_CHAR(INIT_MSRMT_DATA_ID, CHAR_TYPE_CD,
SEQ_NUM) TABLESPACE CM_D1T304_IND
GLOBAL PARTITION BY RANGE(INIT_MSRMT_DATA_ID)
 (
 PARTITION P1 VALUES LESS THAN ('12499999999999'),
 PARTITION P2 VALUES LESS THAN ('24999999999999'),
 PARTITION P3 VALUES LESS THAN ('37499999999999'),
 PARTITION P4 VALUES LESS THAN ('49999999999999'),
 PARTITION P5 VALUES LESS THAN ('62499999999999'),
 PARTITION P6 VALUES LESS THAN ('74999999999999'),
 PARTITION P7 VALUES LESS THAN ('87499999999999'),
 PARTITION P8 VALUES LESS THAN (MAXVALUE)
 ) COMPRESS ADVANCED LOW;


ALTER TABLE D1_INIT_MSRMT_DATA_CHAR ADD CONSTRAINT D1T305P0 PRIMARY KEY
(INIT_MSRMT_DATA_ID, CHAR_TYPE_CD, SEQ_NUM) USING INDEX ;

CREATE INDEX D1T305S1 ON D1_INIT_MSRMT_DATA_CHAR(SRCH_CHAR_VAL)
GLOBAL PARTITION BY HASH(SRCH_CHAR_VAL)
 (
 PARTITION P1 TABLESPACE CM_D1T304_IND,
 PARTITION P2 TABLESPACE CM_D1T304_IND,
 PARTITION P3 TABLESPACE CM_D1T304_IND,
 PARTITION P4 TABLESPACE CM_D1T304_IND,
 PARTITION P5 TABLESPACE CM_D1T304_IND,
 PARTITION P6 TABLESPACE CM_D1T304_IND,
 PARTITION P7 TABLESPACE CM_D1T304_IND,
 PARTITION P8 TABLESPACE CM_D1T304_IND
 );
```

D1_INIT_MSRMT_DATA_K

```
CREATE TABLE D1_INIT_MSRMT_DATA_K (
INIT_MSRMT_DATA_ID CHAR(14),
ENV_ID             NUMBER(6,0) NOT NULL ENABLE,
CONSTRAINT D1T314P0 PRIMARY KEY (INIT_MSRMT_DATA_ID, ENV_ID) ENABLE
)
ORGANIZATION INDEX  ENABLE ROW MOVEMENT
PARTITION BY RANGE (INIT_MSRMT_DATA_ID)
(PARTITION P1 values less than (12499999999999),
PARTITION P2 values less than (24999999999999),
PARTITION P3 values less than (37499999999999),
PARTITION P4 values less than (49999999999999),
PARTITION P5 values less than (62499999999999),
PARTITION P6 values less than (74499999999999),
PARTITION P7 values less than (87499999999999),
PARTITION P8 values less than (maxvalue))
TABLESPACE CM_D1T314_IND ;
```

D1_INIT_MSRMT_DATA_LOG

```
CREATE TABLE D1_INIT_MSRMT_DATA_LOG
  (
    INIT_MSRMT_DATA_ID  CHAR(14) NOT NULL ENABLE,
    SEQNO               NUMBER(5,0) NOT NULL ENABLE,
    BO_STATUS_CD        CHAR(12) DEFAULT ' ' NOT NULL ENABLE,
    BO_STATUS_REASON_CD VARCHAR2(30 BYTE) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_TYPE_CD        CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL            CHAR(16) DEFAULT ' ' NOT NULL ENABLE,
    ADHOC_CHAR_VAL      VARCHAR2(254 BYTE) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK1        VARCHAR2(50 BYTE) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK2        VARCHAR2(50 BYTE) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK3        VARCHAR2(50 BYTE) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK4        VARCHAR2(50 BYTE) DEFAULT ' ' NOT NULL ENABLE,
    CHAR_VAL_FK5        VARCHAR2(50 BYTE) DEFAULT ' ' NOT NULL ENABLE,
    DESCRLONG           VARCHAR2(4000) DEFAULT ' ' NOT NULL ENABLE,
    LOG_DTTM            DATE NOT NULL ENABLE,
    LOG_ENTRY_TYPE_FLG  CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
    MESSAGE_CAT_NBR     NUMBER(5,0) DEFAULT 0 NOT NULL ENABLE,
    MESSAGE_NBR         NUMBER(5,0) DEFAULT 0 NOT NULL ENABLE,
    USER_ID             CHAR(8) DEFAULT ' ' NOT NULL ENABLE,
    VERSION             NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
    LAST_UPDATE_DTTM DATE,
    CONSTRAINT D1_INIT_MSRMT_DATA_LOG_FK FOREIGN KEY(INIT_MSRMT_DATA_ID) REFERENCES
D1_INIT_MSRMT_DATA ON DELETE CASCADE)
PARTITION BY REFERENCE (D1_INIT_MSRMT_DATA_LOG_FK)
ENABLE ROW MOVEMENT;

CREATE UNIQUE INDEX D1T306P0 ON D1_INIT_MSRMT_DATA_LOG (INIT_MSRMT_DATA_ID, SEQNO)
TABLESPACE CM_D1T304_IND
GLOBAL PARTITION BY RANGE(INIT_MSRMT_DATA_ID)
 (
 PARTITION P1 VALUES LESS THAN ('12499999999999'),
 PARTITION P2 VALUES LESS THAN ('24999999999999'),
 PARTITION P3 VALUES LESS THAN ('37499999999999'),
 PARTITION P4 VALUES LESS THAN ('49999999999999'),
 PARTITION P5 VALUES LESS THAN ('62499999999999'),
 PARTITION P6 VALUES LESS THAN ('74999999999999'),
 PARTITION P7 VALUES LESS THAN ('87499999999999'),
 PARTITION P8 VALUES LESS THAN (MAXVALUE)
 )COMPRESS ADVANCED LOW;

ALTER TABLE D1_INIT_MSRMT_DATA_LOG ADD CONSTRAINT D1T306P0 PRIMARY KEY
(INIT_MSRMT_DATA_ID, SEQNO) USING INDEX  ;
```

D1_INIT_MSRMT_DATA_LOG_PARM

```
CREATE TABLE D1_INIT_MSRMT_DATA_LOG_PARM
  (
    INIT_MSRMT_DATA_ID CHAR(14) NOT NULL ENABLE,
    SEQNO              NUMBER(5,0) NOT NULL ENABLE,
    PARM_SEQ           NUMBER(3,0) NOT NULL ENABLE,
    MSG_PARM_VAL       VARCHAR2(30) DEFAULT ' ' NOT NULL ENABLE,
    MSG_PARM_TYP_FLG   CHAR(4) DEFAULT ' ' NOT NULL ENABLE,
    VERSION            NUMBER(5,0) DEFAULT 1 NOT NULL ENABLE,
    LAST_UPDATE_DTTM DATE,
    CONSTRAINT D1_INIT_MSRMT_DATA_LOG_PARM_FK FOREIGN KEY(INIT_MSRMT_DATA_ID) REFERENCES
D1_INIT_MSRMT_DATA ON DELETE CASCADE)
PARTITION BY REFERENCE (D1_INIT_MSRMT_DATA_LOG_PARM_FK)
ENABLE ROW MOVEMENT;


CREATE UNIQUE INDEX D1T307P0 ON D1_INIT_MSRMT_DATA_LOG_PARM(INIT_MSRMT_DATA_ID, SEQNO,
PARM_SEQ) TABLESPACE CM_D1T304_IND
GLOBAL PARTITION BY RANGE(INIT_MSRMT_DATA_ID)
 (
 PARTITION P1 VALUES LESS THAN ('12499999999999'),
 PARTITION P2 VALUES LESS THAN ('24999999999999'),
 PARTITION P3 VALUES LESS THAN ('37499999999999'),
 PARTITION P4 VALUES LESS THAN ('49999999999999'),
 PARTITION P5 VALUES LESS THAN ('62499999999999'),
 PARTITION P6 VALUES LESS THAN ('74999999999999'),
 PARTITION P7 VALUES LESS THAN ('87499999999999'),
 PARTITION P8 VALUES LESS THAN (MAXVALUE)
 ) COMPRESS ADVANCED LOW;


ALTER TABLE D1_INIT_MSRMT_DATA_LOG_PARM ADD CONSTRAINT D1T307P0
PRIMARY KEY (INIT_MSRMT_DATA_ID, SEQNO, PARM_SEQ) USING INDEX ;
```

Compression Recommendations

It is highly recommended to use the following guidelines with regard to compression.

1. For all transactional data tables including ILM enabled tables (except D1_MSRMT* tables):

    a. For easier operational manageability, it is recommended to enable the compression at tablespace level while creating separate tablespaces for each logical unit of archival (like a parent table partition and the corresponding referenced child table partitions).

    b. Use securefile medium compression for LOBs.

    c. On Oracle database 12c:

    - Use advanced compression for table data compression.
    - Compress indexes using advanced low compression (using 'compress advanced low' clause).

    d. On Oracle database 11g:

    - Use OLTP compression for table data and compression indexes using default compression.

2. For D1_MSRMT* tables:
   a. Keep current table partitions uncompressed for D1_MSRMT. Other D1_MSRMT* tables should use compressed tablespaces for all partitions.
   b. For the D1_MSRMT table- Periodically (recommended monthly), compress the data by reloading into a staging table followed by partition exchange. It is highly recommended to use bulk load CTAS operation with parallel clause during the reload.
      - Use ‘QUERY HIGH’ compression for Exadata implementations.
      - For non-Exadata implementations, on 12c use ‘row store compress advanced’ and on 11g use OLTP compression.
   c. For indexes
      - On Oracle database 12c, Compress indexes using advanced low compression (using ‘compress advanced low’ clause).
      - On Oracle database 11g, use default index compression.

Appendix K

Upgrades to the Oracle Utilities Customer To Meter 2.7.0.0.0 Database

This appendix describes database upgrades for the Oracle Utilities Customer To Meter V2.7.0.0.0. It highlights changes made to the administrative tables and how those changes should be applied to the data in order for your current database to work with the V2.7.0.0.0 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 section of the document. The tasks that need to be performed after running the upgrade scripts are included.

- Oracle Utilities Customer Care and Billing Database Changes
- Oracle Utilities Meter Data Management Database Changes

The added functionality of V2.7.0.0.0 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 V2.7.0.0.0 User Guides. The list of the new tables added in this release is also included.

Oracle Utilities Customer Care and Billing Database Changes

This section describes database upgrades for the Oracle Utilities Customer Care and Billing V2.7.0.0.0. release, including:

- Schema Changes
- New System Data

Schema Changes

Column Format Changes

The following columns are modified in this Oracle Utilities Customer To Meter release.

Table_Name	Column_Name	From	To
CI_BF_VAL	VAL	NUMBER (18,7)	NUMBER (19,8)
CI_CVAL_TMPL	VAL	NUMBER (18,7)	NUMBER (19,8)
CI_CVAL_TOU_TMP	VAL	NUMBER (18,7)	NUMBER (19,8)
CI_RC	VAL	NUMBER (18,7)	NUMBER (19,8)
CI_TOU_BF_VAL	VAL	NUMBER (18,7)	NUMBER (19,8)
CI_TOU_CONT_VAL	VAL	NUMBER (18,7)	NUMBER (19,8)
CI_SA_CONTERM	VAL	NUMBER (18,7)	NUMBER (19,8)

New System Data

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

New Tables

There are no new tables are added to Oracle Utilities Customer Care and Billing in this release.

New Columns

The following columns are added to Oracle Utilities Customer Care and Billing in this release.

Table_Name	Column_Name	Description
CI_CC_TYPE	CC_PER_FLG	CHAR(4)
CI_CC_TYPE	CC_ACCT_FLG	CHAR(4)
CI_CC_TYPE	CC_PREM_FLG	CHAR(4)
CI_CC_TYPE	ENTITY_REL_FLG	CHAR(4)

New Indexes

The following indexes are added in this release of Oracle Utilities Customer To Meter.

Table_Name	Index_Name	Column_Name
C1_NTF_PREF	C1T002S3	C1_CONTACT_ID
C1_NTF_PREF	C1T002S4	F1_SVC_TASK_ID

New Functions

There are no new functions added to Oracle Utilities Customer To Meter in this release.

New Batch Control Application Services

The following batch controls use the designated application services:

Batch Control	Description	New Application Service
ACTVTAPY	Activate auto-pay	C1-APAY
ADM	Account debt monitor	ADM
ADM2	Account debt monitor, minimum days review	ADM2
ANLYZSAR	Analyze SA relationship	ANLYZSAR
APAYACH	Auto pay extract - ACH	C1-APAY
APAYCRET	Create autopay on extract date	C1-APAY
APAYDSFR	Distribute and freeze autopay	C1-APAY
APDL	Accounts payable download	APDL
ASSGNSBN	Assign sequential bill numbers	ASSGNSBN
BALAPY	Create autopay tender controls	BALAPY
BCASSIGN	Assign balance control id to FTs	C1-BCG
BCGNEW	Create new balance control group	C1-BCG
BCGSNAP	Create/validate balance control snapshot	C1-BCG
BCU1	Billable Charge Upload 1 - Validate Staging	C1-BCU
BCU2	Billable Charge Upload 2 - Populate	C1-BCU
BILLING	Create bills using bill cycle	BILLING
BUDMON	Monitor budgets	BUDMON
BUDTRUP	True up budgets	BUDTRUP
C1-ACAMT	Update Bill Segment Audit Calc Amount	C1-ACAMT
C1-ACTRQ	Activity Request Monitor (Deferred)	C1-ACTREQ
C1-ADAMT	Update Adjustment Audit Calc Amount	C1-ADAMT

Batch Control	Description	New Application Service
C1-ADMOV	Overdue Monitor	C1-ADMOV
C1-ADUP1	Adjustment Upload Preprocessor	C1-ADUP
C1-ADUP2	Adjustment Upload	C1-ADUP
C1-ADURS	Resolve Suspense Adjustments	C1-ADURS
C1-APACH	Auto pay extract - ACH (with offset days parameter)	C1-APAY
C1-APRPR	Approval Request Monitor	C1-APRREQ
C1-APRTR	Approval Request Monitor (Deferred)	C1-APRREQ
C1-ARQPR	Activity Request Monitor	C1-ACTREQ
C1-BILL	Billing	BILLING
C1-BLAPC	Balance Autopay Control Tables	BALAPY
C1-BLCMP	Freeze and Complete Pending Bills	C1-BLCMP
C1-BLEIL	Billing Data Initial Load for DataConnect	C1-DATACON
C1-BLRVI	Bill Review Insertion	C1-BLRV
C1-BLRVV	Bill Review Validation	C1-BLRV
C1-BLRVW	Review Bills for Settlement of Held GL Amounts	C1-BLRVW
C1-BNBAS	Assign Bill Document Numbers	C1-DOCNBR
C1-BSYEX	Billing Data Extract for DataConnect	C1-DATACON
C1-CPRPR	Conservation Program Monitor Process	C1-CONSRVMON
C1-CPRQ	Conservation Program Monitor Process (Deferred)	C1-CONSRVMON
C1-CRRMP	Customer Relationship Request Periodic Monitor Process	C1-CRRMP
C1-CSTRS	Case Scheduled Transition	C1-CASETRAN
C1-CTCOE	Complete To Do Entry of Contract Option Event Exception	C1-CTCOE
C1-CTIDS	Complete To Do Entry of Interval Data Set Exception	C1-CTIDS
C1-CTRDS	Complete To Do Entry of Interval Register Data Set Exception	C1-CTRDS
C1-CTTDS	Complete To Do Entry of TOU Data Set Exception	C1-CTTDS
C1-DVTSC	Cancel Device Test Selection	C1-DVTSC
C1-ECRVL	Encrypt Legacy Order Field Col Ref Value	C1-ENCR

Batch Control	Description	New Application Service
C1-INITR	Initiative Periodic Monitor Process	C1-INITIATIVE
C1-INPUS	Create Person Contact from Person Phone/ Email	C1-INPUS
C1-ISSCT	Issuing Center Monitor	C1-ISSCT
C1-LDEVT	Lead Event Periodic Monitor Process	C1-INITIATIVE
C1-LDEXT	Advanced Analysis System Lead - Extract	C1-LEAD
C1-LDRTY	Advanced Analysis System Lead - Retry	C1-LEAD
C1-LDTR	Lead Periodic Monitor Process	C1-INITIATIVE
C1-LEADD	Lead Disposition	C1-INITIATIVBOAS
C1-LEADG	Lead Generation	C1-INITIATIVBOAS
C1-MMTPR	Market Message Type Monitor	C1-MMTPR
C1-NEMDF	NEM Scheduled Monitor Process (Deferred)	C1-NEMDF
C1-OCBG	Off Cycle Bill Generator Monitor	C1-OCBG
C1-ODET	Overdue and Cut Event Manager	C1-ODET
C1-PAYTP	Payment Template Monitor	C1-PAYTP
C1-PEPL1	Payment Event Upload Stage 1	C1-PEPL
C1-PEPL2	Payment Event Upload Stage 2	C1-PEPL
C1-PEPL3	Balance Tender Controls	C1-PEPL
C1-PNBAS	Assign Payment Event Document Numbers	C1-DOCNBR
C1-PPBER	Prepay Biller Task - Error	C1-PPB
C1-PPBTR	Prepay Biller Task	C1-PPB
C1-PUBAL	Payment upload balance control tables	C1-PUPL
C1-RCTRQ	Rebate Claim Monitor	C1-RCTRQ
C1-RDFPR	Conservation Program Rebate Definition Monitor	C1-CONSRVMON
C1-SAEIL	SA-Based Initial Load for DataConnect	C1-DATACON
C1SAFTCT	SAFT-PT Audit Extract Concatenator	C1-SAFTPT
C1SAFTPT	SAFT-PT Audit Extract	C1-SAFTPT
C1-SASYX	SA-Based Extract for DataConnect	C1-DATACON
C1-SDDCE	SEPA Direct Debit Payment Extract	C1-SDDCE
C1-SMEIL	Meter History Initial Load for DataConnect	C1-DATACON

Batch Control	Description	New Application Service
C1-SMISL	Synchronize Meter/Item Stock Location	C1-SMISL
C1-SMSYX	Meter History Extract for DataConnect	C1-DATACON
C1-SPEIL	SP-Based Initial Load for DataConnect	C1-DATACON
C1-SPSYX	SP-Based Extract for DataConnect	C1-DATACON
C1-SRDS	Service Route Download Staging	C1-SRDS
C1-SYNIL	Generic Sync Request Initial Load	C1-SYNIL
C1-TCRNB	Transition OCBG for Replacement Read Process	C1-TCRNB
C1-TDCOE	Create To Do Entry for Contract Option Event Exception	C1-TDCOE
C1-TDIDS	Create To Do Entry for Interval Data Set Exception	C1-TDIDS
C1-TDRDS	Create To Do Entry for Interval Register Data Set Exception	C1-TDRDS
C1-TDTDS	Create To Do Entry for TOU Data Set Exception	C1-TDTDS
C1-TOUTR	TOU Map Data Generation Monitor	C1-TOUTR
C1-UPDBF	Update Calc Rules Mapping	C1-UPDBF
C1-UPDNT	Update Notification Tasks	C1-UPDNT
C1-UPDPT	Update Payment Tender Alternate Currency	C1-UPDPT
C1-USGDF	Usage Scheduled Monitor Process (Deferred)	C1-USAGE
C1-USGTR	Usage Periodic Monitor Process	C1-USAGE
C1-WAMAS	Extract asset data for work and asset management	C1-WAMEXTRACT
C1-WAMEX	Extract customer data for work and asset management	C1-WAMEXTRACT
C1-WFSUB	Workflow event trigger - Batch scheduler	C1-WORKFLOW
CAREPROG	Create customer contact for expiring SA char	CAREPROG
CASETRAN	Case Status Automatic Transition Process	C1-CASETRAN
CET	Collection event trigger	CET
CLOSEQTE	Close expired quotes	CLOSEQTE
CPCRALOC	Capital credit allocation	C1-CAPCRE
CPCRRETR	Capital credit retirement	C1-CAPCRE
CPM	Collection process monitor	CPM

Batch Control	Description	New Application Service
DEPINTRF	Deposit interest refund	C1-DEPOSIT
DEPRFND	Deposit refund	C1-DEPOSIT
DEPRVW	Deposit review	C1-DEPOSIT
DSGPFODL	Dispatch Group Field Order Print	C1-FODWNLD
DWLDBILC	Download billable charge	DWLDBILC
DWLDCOLL	Download collection agency ref	DWLDCOLL
DWLDCONS	Download consumption	DWLDCONS
F1-ENCRS	Encrypt Legacy Schema Field Data	C1-ENCR
F1-ENCRT	Encrypt Legacy Table Field Data	C1-ENCR
FACOMPL	Field activity completion	C1-FAUPLD
FACT	Field activity remark activation	C1-FAUPLD
FANRMRCO	Complete FA using a recent MR	FANRMRCO
FAXROUT	Fax Routing	FAXROUT
FDS	Field order download staging	C1-FODWNLD
FOD	Automatic dispatch of FA's	C1-FODWNLD
FODL	Field order download extract	C1-FODWNLD
GLASSIGN	Populates GL_ACCT on CI_FT_GL	C1-GL
GLDL	GL download extract	C1-GL
GLS	Create GL download staging	C1-GL
IB-SPDB	Interval data set derivation	C1-INTERVAL
IB-STDB	SA specific TOU data creation	C1-INTERVAL
IPDSDVB	Interval prof data validation	C1-INTERVAL
IPDSIDB	Determine profile for datasets	C1-INTERVAL
IREGDVB	Interval reg. data validation	C1-INTERVAL
IREGIDB	Determine register for datasets	C1-INTERVAL
LATEPYMT	Create late payment charges	LATEPYMT
LTRPRT	Letter Extract	LTRPRT
MASSCNCL	Mass bill cancellation	MASSCNCL
MASSROBL	Mass re-open of bills	MASSROBL
MDL	Meter read download extract	MDL
MDS	Create MR download staging	C1-MRDWNLD
MRRA	Execute MR remark algorithms	MRRA

Batch Control	Description	New Application Service
MSR	Create MR schedule routes	C1-MRDWNLD
MUP1	Meter Read upload 1 - populate meter confg	C1-MRUPLD
MUP2	Meter Read upload 2 - populate meter read	C1-MRUPLD
NBBAPAY	Create autopay for NBBs	C1-NBB
NBBPS	Process NBB scheduled payments	C1-NBB
NDSXTR	Notif download staging extract	NDSXTR
PAYSPR	Pay service provider	PAYSPR
POSTROUT	Postal bill routing	C1-BILLPRINT
PPAPAY	Generate autopay for pay plans	C1-PAYPLAN
PPM	Pay plan monitor	C1-PAYPLAN
PSASPM	Pending SA/SP monitor	PSASPM
PUPL	Payment upload	C1-PUPL
PY-RPE	Resolve payments in error	PY-RPE
QUOTROUT	Quote routing	QUOTROUT
REACH	YTD charitable contributions	REACH
REDSAAMT	Update old FT's as redundant	REDSAAMT
REGCNST	Register constant validation	REGCNST
RTTYPOST	Postal bill routing using bill print software	C1-BILLPRINT
SAACT	Activate pending start/stop SA	SAACT
SAEXPIRE	Stop expired SAs	SAEXPIRE
SARENEW	Renew Service Agreement	SARENEW
SASP	Find read for SA/SP	SASP
SEC	Severance event completion	C1-SEVEVT
SED	Severance event set dependency date	C1-SEVEVT
SET	Severance event trigger	C1-SEVEVT
STMDWLD	Download statements	STMDWLD
STMPRD	Create statements	STMPRD
TD-BCUPL	To Do for Billable Charge in Error	C1-BILLERR
TD-BIERR	To Do for Bills in Error	C1-BILLERR
TD-BSERR	To Do for Bill Segment in Error	C1-BILLERR
TD-BTERR	To Do for Batch Errors	TD-BTERR
TD-CCCB	To Do for Customer Contact	TD-CCCB

Batch Control	Description	New Application Service
TD-CEVT	To Do for C&C Events	TD-CEVT
TD-DTCS1	Create To Do for Deposit/Tender Upload Error	TD-DTCS1
TD-DTCS2	Complete To Do for Deposit/Tender Upload Error	TD-DTCS2
TD-DTCST	To Do for Deposit/Tender Upload Error	TD-DTCST
TD-ECBK	To Do for Callback Orders	TD-ECBK
TD-EPND	To Do for Pending Orders	TD-EPND
TD-FACT	To Do for Field Activity Remark Exception	TD-FACT
TD-FAUPL	To Do for Field Activity Upload in Error	TD-FAUPL
TD-HILO	To Do for Meter Read High/Low Errors	TD-HILO
TD-MODTL	To Do for Open-Dispute Match Event	TD-MODTL
TD-MONTL	To Do for Open/non-Dispute Match Event	TD-MONTL
TD-MRRER	To Do for Meter Read Remarks in Error	TD-MRRER
TD-MRUPL	To Do for Meter Read Upload in Error	TD-MRUPL
TD-NCDEX	To Do for Non Cash Deposit	TD-NCDEX
TD-NOBC	To Do for Account without a Bill Cycle	TD-NOBC
TD-NOMR	To Do for SP without Meter Read Cycle	TD-NOMR
TD-NTDWN	To Do for NT Download in Error	TD-NTDWN
TD-NTUPL	To Do for Notification Upload in Error	TD-NTUPL
TD-PYERR	To Do for Payments in Error/Unfrozen	TD-PYERR
TD-PYUPL	To Do for Payment Staging Error	TD-PYUPL
TD-SEVT	To Do for Severance Events	TD-SEVT
TD-SPRO	To Do for Severance Processes	TD-SPRO
TD-SSFTL	To Do for Old Pending Start/Stops	TD-SSFTL
TD-UNBAL	To Do for Unbalanced Pay Event	TD-UNBAL
TD-WEXTL	To Do for Workflow Events in Error	TD-WEXTL
TD-WOEVT	To Do for Write-Off Events	TD-WOEVT
TD-XAIDN	To Do for XAI Download Staging in error	TD-XAIDN
TD-XAIUP	To Do for XAI Upload Staging in error	TD-XAIUP
TREND	Trend update	TREND
UARENEW	Umbrella Agreement Renewal	UARENEW
UPDERR	Update Batch Run/Thread Status	UPDERR

Batch Control	Description	New Application Service
WAITCOM	Completes a WF Event in Waiting state	C1-WORKFLOW
WAITFA	Wait for field actv completion	C1-WORKFLOW
WAITMAN	Workflow timeout manual wait	C1-WORKFLOW
WAITNT	Wait for notification response	C1-WORKFLOW
WET	Write off event trigger	WET
WFET	Workflow event trigger	C1-WORKFLOW
WFPRINIT	Workflow process initiation	C1-WORKFLOW
WPM	Write off monitor process	WPM
WX-NOTIF	Self-Service Notification Monitor	WX-NOTIF

Conversion Batch Control Application Services

The following batch controls use the C1-CONVERSION application service:

Batch Control	Description
CIPVAAPI	Insert CI_ACCT_APAY
CIPVAAPK	Generate CI_ACCT_APAY keys
CIPVAAPV	Foreign Key validation for CI_ACCT_APAY
CIPVACCI	Insert CI_ACCT
CIPVACCK	Generate CI_ACCT keys
CIPVACHI	Insert CI_ACCT_CHAR
CIPVACHV	Foreign Key validation for CI_ACCT_CHAR
CIPVACPI	Insert CI_ACCT_PER
CIPVACPV	Foreign Key validation for CI_ACCT_PER
CIPVADCI	Insert CI_ADJ_CHAR
CIPVADCV	Foreign Key validation for CI_ADJ_CHAR
CIPVADJI	Insert CI_ADJ
CIPVADJK	Generate CI_ADJ keys
CIPVADJV	Foreign Key validation for CI_ADJ
CIPVAPAI	Insert CI_PRM_ALT_ADDR
CIPVAPAK	Generate CI_PRM_ALT_ADDR keys
CIPVAPAV	Foreign Key validation for CI_PRM_ALT_ADDR
CIPVAPRI	Insert CI_ADJ_APREQ
CIPVAPRK	Generate CI_ADJ_APREQ keys
CIPVAPRV	Foreign Key validation for CI_ADJ_APREQ
CIPVARHI	Insert CI_COLL_AGY_HIS
CIPVARHV	Foreign Key validation for CI_COLL_AGY_HIS
CIPVARSI	Insert CI_ADM_RVW_SCH
CIPVARSV	Foreign Key validation for CI_ADM_RVW_SCH
CIPVBCCI	Insert CI_BSEG_CL_CHAR
CIPVBCCV	Foreign Key validation for CI_BSEG_CL_CHAR
CIPVBCGI	Insert CI_BILL_CHG
CIPVBCGK	Generate CI_BILL_CHG keys
CIPVBCGV	Foreign Key validation for CI_BILL_CHG
CIPVBCHI	Insert CI_BILL_CHAR
CIPVBCHV	Foreign Key validation for CI_BILL_CHAR

Batch Control	Description
CIPVBCLI	Insert CI_B_CHG_LINE
CIPVBCLV	Foreign Key validation for CI_B_CHG_LINE
CIPVBFVI	Insert CI_BF_VAL
CIPVBFVV	Foreign Key validation for CI_BF_VAL
CIPVBILK	Generate CI_BILL keys
CIPVBLLI	Insert CI_BILL
CIPVBLLV	Foreign Key validation for CI_BILL
CIPVBLMI	Insert CI_BILL_MSGS
CIPVBLMV	Foreign Key validation for CI_BILL_MSGS
CIPVBLRI	Insert CI_BILL_ROUTING
CIPVBLRV	Foreign Key validation for CI_BILL_ROUTING
CIPVBRVI	Insert CI_BILL_RVW_SCH
CIPVBRVV	Foreign Key validation for CI_BILL_RVW_SCH
CIPVBSAI	Insert CI_BILL_SA
CIPVBSAV	Foreign Key validation for CI_BILL_SA
CIPVBSCI	Insert CI_BSEG_CALC
CIPVBSCV	Foreign Key validation for CI_BILL_CALC
CIPVBSGK	Generate CI_BSEG keys
CIPVBSII	Insert CI_BSEG_ITEM
CIPVBSIV	Foreign Key validation for CI_BSEG_ITEM
CIPVBSLI	Insert CI_BSEG_CALC_LN
CIPVBSLV	Foreign Key validation for CI_BSEG_CALC_LN
CIPVCARI	Insert CI_COLL_AGY_REF
CIPVCARK	Generate CI_COLL_AGY_REF keys
CIPVCARV	Foreign Key validation for CI_COLL_AGY_REF
CIPVCCAI	Insert CI_COP_CHAR
CIPVCCFV	Foreign Key validation for CI_COP_CHAR
CIPVCCHI	Insert CI_CC_CHAR
CIPVCCHV	Foreign Key validation for CI_CC_CHAR
CIPVCCLI	Insert CI_CC_LOG
CIPVCCLV	Foreign Key validation for CI_CC_LOG
CIPVCCTK	Generate CI_CC keys
CIPVCECI	Insert CI_COLL_EVT_CC

Batch Control	Description
CIPVCECV	Foreign Key validation for CI_COLL_EVT_CC
CIPVCEVI	Insert CI_COP_EVT
CIPVCEVK	Generate CI_COP_EVT keys
CIPVCLPI	Insert CI_COLL_PROC
CIPVCLPK	Generate CI_COLL_PROC keys
CIPVCLPV	Foreign Key validation for CI_COLL_PROC
CIPVCLSI	Insert CI_COLL_PROC_SA
CIPVCLSV	Foreign Key validation for CI_COLL_PROC_SA
CIPVCOLI	Insert CI_COP_L
CIPVCOLV	Foreign Key validation for CI_COP_L
CIPVCOPI	Insert CI_COP
CIPVCOPK	Generate CI_COP keys
CIPVCRRK	Generate CI_CR_RAT_HIST keys
CIPVCRTI	Insert CI_CR_RAT_HIST
CIPVCRTV	Foreign Key validation for CI_CR_RAT_HIST
CIPVCSCI	Insert CI_CC
CIPVCSCV	Foreign Key validation for CI_CC
CIPVCVCI	Insert CI_COP_EVT_CHAR
CIPVCVCV	Foreign Key validation for CI_COP_EVT_CHAR
CIPVCVNI	Insert CI_COLL_EVT
CIPVCVNV	Foreign Key validation for CI_COLL_EVT
CIPVDCRI	Insert CI_DCL
CIPVDCRK	Generate CI_DCL keys
CIPVDTCI	Insert CI_DV_TEST_CHAR
CIPVDTCV	Foreign Key validation for CI_DV_TEST_CHAR
CIPVDTMI	Insert CI_DV_TEST_COMP
CIPVDTMV	Foreign Key validation for CI_DV_TEST_COMP
CIPVDTRI	Insert CI_DV_TEST_RES
CIPVDTRV	Foreign Key validation for CI_DV_TEST_RES
CIPVDTTI	Insert CI_DV_TEST
CIPVDTTK	Generate CI_DV_TEST keys
CIPVDTTV	Foreign Key validation for CI_DV_TEST
CIPVFACI	Insert CI_FA

Batch Control	Description
CIPVFACK	Generate CI_FA keys
CIPVFAFV	Foreign Key validation for CI_FA
CIPVFAHI	Insert CI_FA_CHAR
CIPVFAHV	Foreign Key validation for CI_FA_CHAR
CIPVFALI	Insert CI_FA_LOG
CIPVFALV	Foreign Key validation for CI_FA_LOG
CIPVFARI	Insert CI_FA_REM
CIPVFARV	Foreign Key validation for CI_FA_REM
CIPVFORI	Insert CI_FO
CIPVFORK	Generate CI_FO keys
CIPVFORV	Foreign Key validation for CI_FO
CIPVFSTI	Insert CI_FA_STEP
CIPVFSTV	Foreign Key validation for CI_FA_STEP
CIPVFTFI	Insert CI_FT
CIPVFTFV	Foreign Key validation for CI_FT
CIPVFTGI	Insert CI_FT_GL
CIPVFTGV	Foreign Key validation for CI_FT_GL
CIPVFTPI	Insert CI_FT_PROC
CIPVFTPV	Foreign Key validation for CI_FT_PROC
CIPVFTXK	Generate CI_FT keys
CIPVIDSI	Insert CI_INTV_DATA_SET
CIPVIDSK	Generate CI_INTV_DATA_SET keys
CIPVIEQI	Insert CI_ITEM_EQ
CIPVIEQV	Foreign Key validation for CI_ITEM_EQ
CIPVILHI	Insert CI_ITEM_LOC_HIS
CIPVILHK	Generate CI_ITEM_LOC_HIS keys
CIPVILHV	Foreign Key validation for CI_ITEM_LOC_HIS
CIPVINLI	Insert CI_INTV_PF_L
CIPVINLV	Foreign Key validation for CI_INTV_PF_L
CIPVINPI	Insert CI_INTV_PF
CIPVINPK	Generate CI_INTV_PF keys
CIPVIRSI	Insert CI_REG_DATA_SET
CIPVIRSK	Generate CI_REG_DATA_SET keys

Batch Control	Description
CIPVITCI	Insert CI_ITEM_CHAR
CIPVITCV	Foreign Key validation for CI_ITEM_CHAR
CIPVITDI	Insert CI_INTV_DATA
CIPVITFV	Foreign Key validation for CI_INTV_DATA
CIPVITMI	Insert CI_ITEM
CIPVITMK	Generate CI_ITEM keys
CIPVITVI	Insert CI_INTV_VAL
CIPVITVV	Foreign Key validation for CI_INTV_VAL
CIPVIVSI	Insert CI_INTV_VAL_SET
CIPVIVSK	Generate CI_INTV_VAL_SET keys
CIPVLLDI	Insert CI_LL_DETAIL
CIPVLLDV	Foreign Key validation for CI_LL_DETAIL
CIPVLNDI	Insert CI_LANDLORD
CIPVLNDK	Generate CI_LANDLORD keys
CIPVMEQI	Insert CI_MTR_EQ
CIPVMEQV	Foreign Key validation for CI_MTR_EQ
CIPVMIDI	Insert CI_MTR_ID
CIPVMIDV	Foreign Key validation for CI_MTR_ID
CIPVMLHI	Insert CI_MTR_LOC_HIS
CIPVMLHK	Generate CI_MTR_LOC_HIS keys
CIPVMLHV	Foreign Key validation for CI_MTR_LOC_HIS
CIPVMRCI	Insert CI_MR_CHAR
CIPVMRCV	Foreign Key validation for CI_MR_CHAR
CIPVMRDI	Insert CI_MR
CIPVMRDK	Generate CI_MR keys
CIPVMRDV	Foreign Key validation for CI_MR
CIPVMRMI	Insert CI_MR_REM
CIPVMRMV	Foreign Key validation for CI_MR_REM
CIPVMSGI	Insert CI_ACCT_MSG
CIPVMSGV	Foreign Key validation for CI_ACCT_MSG
CIPVMTCI	Insert CI_MTR_CHAR
CIPVMTCV	Foreign Key validation for CI_MTR_CHAR
CIPVMTGI	Insert CI_MTR_CONFIG

Batch Control	Description
CIPVMTGK	Generate CI_MTR_CONFIG keys
CIPVMTRI	Insert CI_MTR
CIPVMTRK	Generate CI_MTR keys
CIPVNBSI	Insert CI_NB_SA
CIPVNBSV	Foreign Key validation for CI_NB_SA
CIPVNCDI	Insert CI_NCD
CIPVNCDV	Foreign Key validation for CI_NCD
CIPVNPMI	Insert CI_SA_NB_PARM
CIPVNPMV	Foreign Key validation for CI_SA_NB_PARM
CIPVNSPI	Insert CI_NB_SCHED_PAY
CIPVNSPK	Generate CI_NB_SCHED_PAY keys
CIPVNSPV	Foreign Key validation for CI_NB_SCHED_PAY
CIPVPAOI	Insert CI_PER_ADDR_OVRD
CIPVPAOV	Foreign Key validation for CI_PER_ADDR_OVRD
CIPVPAYI	Insert CI_PAY
CIPVPAYK	Generate CI_PAY keys
CIPVPAYV	Foreign Key validation for CI_PAY
CIPVPCHI	Insert CI_PREM_CHAR
CIPVPCHV	Foreign Key validation for CI_PREM_CHAR
CIPVPCNI	Insert C1_PER_CONTDET
CIPVPCNK	Generate C1_PER_CONTDET keys
CIPVPCNV	Foreign Key validation for C1_PER_CONTDET
CIPVPECI	Insert CI_PAY_EVT_CHAR
CIPVPECV	Foreign Key validation for CI_PAY_EVT_CHAR
CIPVPERI	Insert CI_PER
CIPVPERK	Generate CI_PERSON keys
CIPVPGOI	Insert CI_PREM_GEO
CIPVPGOV	Foreign Key validation for CI_PREM_GEO
CIPVPIDI	Insert CI_PER_ID
CIPVPIDV	Foreign Key validation for CI_PER_ID
CIPVPNMI	Insert CI_PER_NAME
CIPVPNMV	Foreign Key validation for CI_PER_NAME
CIPVPPEI	Insert CI_PER_PER

Batch Control	Description
CIPVPPEV	Foreign Key validation for CI_PER_PER
CIPVPPHI	Insert CI_PER_PHONE
CIPVPPHV	Foreign Key validation for CI_PER_PHONE
CIPVPRCI	Insert CI_PER_CHAR
CIPVPRCV	Foreign Key validation for CI_PER_CHAR
CIPVPRMI	Insert CI_PREM
CIPVPRMK	Generate CI_PREM keys
CIPVPSAI	Insert CI_PER_ADDR_SEAS
CIPVPSAV	Foreign Key validation for CI_PER_ADDR_SEAS
CIPVPSGI	Insert CI_PAY_SEG
CIPVPSGK	Generate CI_PAY_SEG keys
CIPVPSGV	Foreign Key validation for CI_PAY_SEG
CIPVPYCI	Insert CI_PAY_CHAR
CIPVPYCV	Foreign Key validation for CI_PAY_CHAR
CIPVPYEI	Insert CI_PAY_EVENT
CIPVPYEK	Generate CI_PAY_EVENT keys
CIPVREDI	Insert CI_REG_DATA
CIPVREFV	Foreign Key validation for CI_REG_DATA
CIPVREGI	Insert CI_REG
CIPVREGK	Generate CI_REG keys
CIPVREGV	Foreign Key validation for CI_REG
CIPVRGCI	Insert CI_REG_CHAR
CIPVRGCV	Foreign Key validation for CI_REG_CHAR
CIPVRGRI	Insert CI_REG_READ
CIPVRGRV	Foreign Key validation for CI_REG_READ
CIPVRRDK	Generate CI_REG_READ keys
CIPVSACI	Insert CI_SA_CHAR
CIPVSACV	Foreign Key validation for CI_SA_CHAR
CIPVSAHI	Insert CI_SA_RS_HIST
CIPVSAHV	Foreign Key validation for CI_SA_RS_HIST
CIPVSAOI	Insert CI_SA_CONTERM
CIPVSAOV	Foreign Key validation for CI_SA_CONTERM
CIPVSAPI	Insert CI_SA_SP

Batch Control	Description
CIPVSAPV	Foreign Key validation for CI_SA_SP
CIPVSAQI	Insert CI_SA_CONT_QTY
CIPVSAQV	Foreign Key validation for CI_SA_CONT_QTY
CIPVSARI	Insert CI_SA_RCHG_HIST
CIPVSARV	Foreign Key validation for CI_SA_RCHG_HIST
CIPVSCAI	Insert CI_SCM_ACCT
CIPVSCAV	Foreign Key validation for CI_SCM_ACCT
CIPVSCBV	Foreign Key validation for CI_SCM
CIPVSCCI	Insert CI_SCM_CHAR
CIPVSCCV	Foreign Key validation for CI_SCM_CHAR
CIPVSCFI	Insert CI_SC_EVT_FT
CIPVSCFK	Generate CI_SC_EVT_FT keys
CIPVSCFV	Foreign Key validation for CI_SC_EVT_FT
CIPVSCMI	Insert CI_SCM
CIPVSCMK	Generate CI_SCM keys
CIPVSCOI	Insert CI_SA_COP_OVRD
CIPVSCOV	Foreign Key validation for CI_SA_COP_OVRD
CIPVSCPI	Insert CI_SA_COP
CIPVSCPK	Generate CI_SA_COP keys
CIPVSCPV	Foreign Key validation for CI_SA_COP
CIPVSCVI	Insert CI_SC_EVT
CIPVSCVK	Generate CI_SC_EVT keys
CIPVSCVV	Foreign Key validation for CI_SC_EVT
CIPVSECI	Insert CI_SEV_EVT_CC
CIPVSECV	Foreign Key validation for CI_SEV_EVT_CC
CIPVSEDI	Insert CI_SEV_EVT_DEP
CIPVSEDV	Foreign Key validation for CI_SEV_EVT_DEP
CIPVSEFI	Insert CI_SEV_EVT_FA
CIPVSEFV	Foreign Key validation for CI_SEV_EVT_FA
CIPVSEGI	Insert CI_BSEG
CIPVSEGV	Foreign Key validation for CI_BSEG
CIPVSEPI	Insert CI_SEV_PROC
CIPVSEPK	Generate CI_SEV_PROC keys

Batch Control	Description
CIPVSEPV	Foreign Key validation for CI_SEV_PROC
CIPVSEQI	Insert CI_SP_EQ
CIPVSEQV	Foreign Key validation for CI_SP_EQ
CIPVSEVI	Insert CI_SEV_EVT
CIPVSEVV	Foreign Key validation for CI_SEV_EVT
CIPVSIEI	Insert CI_SP_ITEM_EVT
CIPVSIEV	Foreign Key validation for CI_SP_ITEM_EVT
CIPVSIFV	Foreign Key validation for CI_SA_INTV_PF
CIPVSIHI	Insert CI_SP_ITEM_HIST
CIPVSIHK	Generate CI_SP_ITEM_HIST keys
CIPVSIHV	Foreign Key validation for CI_SP_ITEM_HIST
CIPVSIPI	Insert CI_SA_INTV_PF
CIPVSMEI	Insert CI_SP_MTR_EVT
CIPVSMEV	Foreign Key validation for CI_SP_MTR_EVT
CIPVSMGI	Insert CI_SA_MSG
CIPVSMGV	Foreign Key validation for CI_SA_MSG
CIPVSMHI	Insert CI_SP_MTR_HIST
CIPVSMHK	Generate CI_SP_MTR_HIST keys
CIPVSMHV	Foreign Key validation for CI_SP_MTR_HIST
CIPVSMII	Insert CI_MULT_ITEM
CIPVSMIV	Foreign Key validation for CI_MULT_ITEM
CIPVSPCI	Insert CI_SP_CHAR
CIPVSPCV	Foreign Key validation for CI_SP_CHAR
CIPVSPGI	Insert CI_SP_GEO
CIPVSPGV	Foreign Key validation for CI_SP_GEO
CIPVSPMI	Insert CI_SP_MULT_ITEM
CIPVSPMV	Foreign Key validation for CI_SP_MULT_ITEM
CIPVSPOI	Insert CI_SP_OP_AREA
CIPVSPOV	Foreign Key validation for CI_SP_OP_AREA
CIPVSPPI	Insert CI_SP
CIPVSPPK	Generate CI_SP keys
CIPVSPRI	Insert CI_SP_RTE
CIPVSPRV	Foreign Key validation for CI_SP_RTE

Batch Control	Description
CIPVSQTI	Insert CI_BSEG_SQ
CIPVSQTV	Foreign Key validation for CI_BSEG_SQ
CIPVSRCI	Insert CI_SP_RTE_CFG
CIPVSRCV	Foreign Key validation for CI_SP_RTE_CFG
CIPVSRLI	Insert CI_SA_REL
CIPVSRLK	Generate CI_SA_REL keys
CIPVSRLV	Foreign Key validation for CI_SA_REL
CIPVSRRI	Insert CI_BSEG_READ
CIPVSRRV	Foreign Key validation for CI_BSEG_READ
CIPVSSCI	Insert CI_SA_SP_CHAR
CIPVSSCV	Foreign Key validation for CI_SA_SP_CHAR
CIPVSSFI	Insert CI_SA_SP_FA
CIPVSSFV	Foreign Key validation for CI_SA_SP_FA
CIPVSSPK	Generate CI_SA_SP keys
CIPVSTMI	Insert CI_SA_TOU_MAP
CIPVSTMV	Foreign Key validation for CI_SA_TOU_MAP
CIPVSVAI	Insert CI_SA
CIPVSVAK	Generate CI_SA keys
CIPVTBVI	Insert CI_TOU_BF_VAL
CIPVTBVV	Foreign Key validation for CI_TOU_BF_VAL
CIPVTCVI	Insert CI_TOU_CONT_VAL
CIPVTCVV	Foreign Key validation for CI_TOU_CONT_VAL
CIPVTDSI	Insert CI_TOU_DATA_SET
CIPVTDSK	Generate CI_TOU_DATA_SET keys
CIPVTMAI	Insert CI_TOU_MAP
CIPVTMAK	Generate CI_TOU_MAP keys
CIPVTMLI	Insert CI_TOU_MAP_L
CIPVTMLV	Foreign Key validation for CI_TOU_MAP_L
CIPVTNCI	Insert CI_PAY_TNDR_CHAR
CIPVTNCV	Foreign Key validation for CI_PAY_TNDR_CHAR
CIPVTNDI	Insert CI_PAY_TNDR
CIPVTNDK	Generate CI_PAY_TNDR keys
CIPVTNDV	Foreign Key validation for CI_PAY_TNDR

Batch Control	Description
CIPVTODI	Insert CI_TOU_DATA
CIPVTOFV	Foreign Key validation for CI_TOU_DATA
CIPVTRNI	Insert CI_TREND
CIPVTRNV	Foreign Key validation for CI_TREND
CIPVWECI	Insert CI_WF_EVT_CTXT
CIPVWECV	Foreign Key validation for CI_WF_EVT_CTXT
CIPVWEDI	Insert CI_WF_EVT_DEP
CIPVWEDV	Foreign Key validation for CI_WF_EVT_DEP
CIPVWEVI	Insert CI_WF_EVT
CIPVWEVV	Foreign Key validation for CI_WF_EVT
CIPVWOCI	Insert CI_WO_EVT_CC
CIPVWOCV	Foreign Key validation for CI_WO_EVT_CC
CIPVWOPI	Insert CI_WO_PROC
CIPVWOPK	Generate CI_WO_PROC keys
CIPVWOPV	Foreign Key validation for CI_WO_PROC
CIPVWOSI	Insert CI_WO_PROC_SA
CIPVWOSV	Foreign Key validation for CI_WO_PROC_SA
CIPVWOVI	Insert CI_WO_EVT
CIPVWOVV	Foreign Key validation for CI_WO_EVT
CIPVWPCI	Insert CI_WF_PROC_CTXT
CIPVWPCV	Foreign Key validation for CI_WF_PROC_CTXT
CIPVWPRI	Insert CI_WF_PROC
CIPVWPRK	Generate CI_WF_PROC keys
CIPVWPRV	Foreign Key validation for CI_WF_PROC
CNV-BCG	Conversion-clear balance control ID
CNV-ADM	Conversion-create ADM triggers
CNV-BAL	Conversion-tidy balances

Validation Batch Control Application Services

The following batch controls use the C1-VALIDATE application service:

Batch Control	Description
VAL-ACCT	Validate account

Batch Control	Description
VAL-BCHG	Validate billable charge
VAL-CEVT	Validate contract option event
VAL-CFG	Validate meter configuration
VAL-COLL	Validate collection process
VAL-COP	Validate contract option
VAL-DCL	Validate declaration
VAL-DTST	Validate device test
VAL-FA	Validate field activity
VAL-FO	Validate field order
VAL-IDS	Validate interval data set
VAL-INPF	Validate interval profile
VAL-IRDS	Validate interval register data set
VAL-ITEM	Validate items
VAL-IVS	Validate interval value set
VAL-LL	Validate landlord
VAL-MTR	Validate meter
VAL-PER	Validate person
VAL-PREM	Validate premise
VAL-SA	Validate service agreement
VAL-SARL	Validate SA relationships
VAL-SCM	Validate service credit membership
VAL-SEVP	Validate severance process
VAL-SP	Validate service point
VAL-TDS	Validate TOU data set
VAL-TMAP	Validate TOU map
VAL-WFP	Validate workflow process
VAL-WOP	Validate write off process

Purge Batch Control Application Services

The following batch controls use the C1-PURGE application service:

Batch Control	Description
BCUP-PRG	Purge billable charge upload

Batch Control	Description
FAUP-PRG	Purge completed FA upload
MRUP-PRG	Purge completed MR upload
PYUP-PRG	Purge completed payment upload
C1-PRGST	Purge Completed Service Tasks
TD-PURGE	Purge Completed ToDo Entries
XMLUP-PR	Purge completed XAI upload staging records
C1-PRGSY	Purge Sync Requests
BCUP-PRG	Purge billable charge upload

ILM Batch Control Application Services

The following batch controls use the C1-ILM application service:

Batch Control	Description
C1-ADCRL	ILM Crawler - Adjustment
C1-BLCRL	ILM Crawler - Bill
C1-BSCRL	ILM Crawler - Bill Segment
C1-BCCRL	ILM Crawler - Billable Charge
C1-CACRL	ILM Crawler - Case
C1-CRCRL	ILM Crawler - Customer Relationship Request
C1-FACRL	ILM Crawler - Field Activity
C1-MECRL	ILM Crawler - Match Event
C1-MRCRL	ILM Crawler - Meter Read
C1-ORCRL	ILM Crawler - Order
C1-PECRL	ILM Crawler - Payment Event
C1-URCRL	ILM Crawler - Usage Request

Oracle Utilities Meter Data Management Database Changes

This section describes database upgrades for the Oracle Utilities Meter Data Management v2.2.0.3 release, including:

- New Tables
- New Views
- Dropped Columns
- Added Columns
- Renamed Columns
- Column Format Change
- Primary Key Change
- Added Indexes
- Dropped Indexes
- Index Changes

New Tables

Table_Name
D1_IMD_CTRL_SEEDER
D1_STG_MSRMT

New Views

There are no new tables in the Oracle Utilities Meter Data Management v2.2.0.2 release.

Dropped Columns

No columns have been dropped in the Oracle Utilities Meter Data Management v2.2.0.2 release.

Added Columns

Table_Name	Column_Name	Required
D1_GTT3	D1_UOM_CD	N
D1_GTT3	INSTALL_OVRD_QTY	N
D1_US	MOST_RECENT_TRANS_DTTM	N
D1_USAGE	LINKED_TO_FRZN_BSEG_FLG	N
D1_USAGE	USED_ON_BILL_FLG	N

Table_Name	Column_Name	Required
D1_USAGE_PERIOD_SQ	MKT_CONTRACT_ID	N
D1_USG_GRP	USG_GRP_CLASS_FLG	N
D1_US_TYPE	COMM_TYPE_CD	N
D1_US_TYPE	TRANS_BUS_OBJ_CD	N
D1_US_TYPE	US_CLASS_FLG	Y

Renamed Columns

No columns have been renamed in the Oracle Utilities Meter Data Management v2.2.0.2 release.

Column Format Change

Table/View Name	Column_Name	From	To	Type
D1_INBOUND_ COMM_VW	CITY	VARCHAR2(30)	VARCHAR 2(90)	VIEW
D1_OUTBOUND_CO MM_VW	CITY	VARCHAR2(30)	VARCHAR 2(90)	VIEW
D1_SP	CITY	VARCHAR2(30)	VARCHAR 2(90)	TABLE
D1_SP	CITY_UPPER	VARCHAR2(30)	VARCHAR 2(90)	TABLE
D1_USAGE_PERIOD _ITEM_DET	ITEM_SEQ_ NUM	NUMBER(5)	NUMBER(3)	TABLE

Primary Key Change

There are no primary key changes in the Oracle Utilities Meter Data Management v2.2.0.2 release.

Added Indexes

Table_Name	Index_Name
D1_IMD_CTRL_SEEDER	D1T500P0
D1_IMD_CTRL_SEEDER	D1T500S1
D1_STG_MSRMT	D1T543P0

Dropped Indexes

Table_Name	Index_Name
D1_MSRMT	D1T298S1
D1_IMD_CTRL	D1T418S3

Index Changes

From/To Table_Name	Index_Name	Column_Name	Position
From D1_ACTIVITY	D1T319S0	BO_STATUS_CD	1
From D1_ACTIVITY	D1T319S0	BUS_OBJ_CD	2
From D1_ACTIVITY	D1T319S0	D1_ACTIVITY_ ID	3
To D1_ACTIVITY	D1T319S0	BUS_OBJ_CD	1
To D1_ACTIVITY	D1T319S0	BO_STATUS_CD	2
To D1_ACTIVITY	D1T319S0	D1_ACTIVITY_ ID	3
From D1_USAGE	D1T281S1	BO_STATUS_CD	1
From D1_USAGE	D1T281S1	BUS_OBJ_CD	2
From D1_USAGE	D1T281S1	D1_USAGE_ID	3
To D1_USAGE	D1T281S1	BUS_OBJ_CD	1
To D1_USAGE	D1T281S1	BO_STATUS_CD	2
To D1_USAGE	D1T281S1	D1_USAGE_ID	3

Appendix L

Upgrades to the Oracle Utilities Application Framework Database

This section describes the database upgrade process for the Oracle Utilities Application Framework database since the last release. It highlights changes made to the administrative tables and how those changes should be applied to the data in order for your current database to work with the Oracle Utilities Application Framework 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.

> **Note**: Upgrade scripts do not automatically enable the newly added functionality by default. Please refer to the release notes for more information.

The section provides information on upgrading the Oracle Utilities Application Framework database including:

- Upgrading from Oracle Utilities Application Framework V4.3.0.4.0 to V4.3.0.5.0
- Upgrading from Oracle Utilities Application Framework V4.3.0.5.0 to V4.3.0.6.0

Upgrading from Oracle Utilities Application Framework V4.3.0.4.0 to V4.3.0.5.0

New Tables

Table	Description	Type of Table
F1_DEPLOYMENT	Deployment	Transaction
F1_DEPLOYMENT_ITEM	Deployment Item	Transaction
F1_DEPLOYMENT_ITEM_METADATA	Deployment Item Meta Data	Transaction
F1_DEPLOYMENT_PART	Deployment Part	Master
F1_DEPLOYMENT_PART_L	Deployment Part Language	Master
F1_DEPLOYMENT_TYPE	Deployment Type	Master
F1_DEPLOYMENT_TYPE_L	Deployment Type Language	Master
F1_DEPTYP_DEPPART	Deployment Type / Deployment Part	Transaction
F1_DEPTYP_MDT_TYPE	Deployment Type / MDT Type	Transaction
F1_DEPTYP_MSG_CAT	Deployment Type Message Category	Transaction
F1_DEPTYP_USR_GRP	Deployment Type User Group	Transaction
F1_MDT	Mobile Data Terminal	Transaction
F1_MDT_CHAR	Mobile Data Terminal Characteristics	Transaction
F1_MDT_TYPE	Mobile Data Terminal Type	Master
F1_MDT_TYPE_CHAR	Mobile Data Terminal Type Characteristics	Master
F1_MDT_TYPE_L	Mobile Data Terminal Type Language	Master
F1_MOB_COMP_CHAR	Mobile Component Characteristics	Admin - System
F1_MOB_COMP_CNT	Mobile Component Content	Admin - System
F1_MOBILE_COMPONENT	Mobile Component	Admin - System
F1_MOBILE_COMPONENT_L	Mobile Component Language	Admin - System

F1_REMOTE_MSG	Remote Message	Transaction
F1_REMOTE_MSG_CHAR	Remote Message Characteristics	Transaction
F1_REMOTE_MSG_LOG	Remote Message Log	Transaction
F1_REMOTE_MSG_LOG_PARM	Remote Message Log Parameters	Transaction
F1_WEB_CAT_L	Web Service Category Language	Admin - System
F1_WEB_CAT_INCL_SVC	Web Service Category - Included Services	Admin - System
F1_WEB_CAT	Web Service Category	Admin - System

Note that in addition, the following table was added to 4.3.0.4.0 via a hot fix, but was not included in 4.3.0.5.0 until after the final build and is therefore added as a hot fix. Clients upgrading to 4.3.0.5.0 may see that the table is dropped via the blueprint and then reinstated after applying the bug fixes.

Table	Description	Type of Table
F1_MIGR_OBJ_SQL_PK	Migration Object SQL Primary Key	Transaction

New Views

None

Dropped Tables

Table
F1_IWS_ANN_CHAR
F1_IWS_ANN_TYPE_CHAR

Unsupported Tables

None

Added Columns

Table	Column	Required
CI_MD_SVC	APP_SVC_ID	N
F1_OUTMSG	BO_XML_DATA_AREA	N
F1_OUTMSG_TYPE	OUTMSG_PRIOR_FLG	Y
F1_OUTMSG_TYPE	OWNER_FLG	N
F1_OUTMSG_TYPE	TYPE_BUS_OBJ_CD	N

Table	Column	Required
F1_OUTMSG_TYPE_L	OWNER_FLG	N

Dropped Columns

None

Unsupported Table Columns

None

Column Format Change

None

Primary Key Change

None

Index Changes

Index S1C675S1 for table F1_EXT_LOOKUP_VAL_CHAR has been renamed to F1C675S1.

Upgrading from Oracle Utilities Application Framework V4.3.0.5.0 to V4.3.0.6.0

New Tables

Table	Description	Type of Table
F1_ATTACHMENT_K	Attachment Key	Transaction
F1_CRYPTO_KEY	Key Ring Key	Admin
F1_CRYPTO_KEY_RING	Key Ring	Admin
F1_CRYPTO_KEY_RING_L	Key Ring Language	Admin
F1_CRYPTO_KEY_RING_LOG	Key Ring Log	Admin
F1_CRYPTO_KEY_RING_LOG_PARM	Key Ring Log Parameter	Admin
F1_CUBE_TYPE	Cube Type	Admin
F1_CUBE_TYPE_L	Cube Type Language	Admin
F1_CUBE_VIEW	Cube View	Transaction
F1_CUBE_VIEW_L	Cube View Language	Transaction
F1_CUBE_VIEW_LOG	Cube View Log	Transaction
F1_CUBE_VIEW_LOG_PARM	Cube View Log Parameters	Transaction
F1_DEPLOYMENT_K	Deployment Key	Transaction
F1_ERASURE_SCHED	Object Erasure Schedule	Transaction
F1_ERASURE_SCHED_K	Object Erasure Schedule Key	Transaction
F1_ERASURE_SCHED_LOG	Object Erasure Schedule Log	Transaction
F1_ERASURE_SCHED_LOG_PARM	Object Erasure Schedule Log Parameter	Transaction
F1_MDT_K	Mobile Data Terminal Key	Transaction
F1_MIGR_OBJ_SQL_PK	Migration Object SQL Primary Key	Transaction
F1_PROC_DEFN	Process Flow Type	Admin
F1_PROC_DEFN_L	Process Flow Type Language	Admin
F1_PROC_NEXT_PANEL	Next Panel	Admin
F1_PROC_PANEL	Process Panel	Admin
F1_PROC_STORE	Process Flow	Transaction

F1_PROC_STORE_DTL_ELEMENTS	Process Flow Detail Elements	Transaction
F1_PROC_STORE_K	Process Flow Key	Transaction
F1_PROC_STORE_LOG	Process Flow Log	Transaction
F1_PROC_STORE_LOG_PARM	Process Flow Log Parameters	Transaction
F1_REMOTE_MSG_K	Mobile Remote Message Key	Transaction
F1_STATS_SNPSHT_K	Statistics Snapshot Key	Transaction

Note that the following tables have system generated keys but do not have a separate key table. Per the new table list, the key tables are provided and these tables are updated accordingly.

Table	Description
F1_ATTACHMENT	Attachment
F1_DEPLOYMENT	Deployment
F1_MDT	Mobile Data Terminal
F1_REMOTE_MSG	Mobile Remote Message
F1_STATS_SNPSHT	Statistics Snapshot

New Views

None

Dropped Tables

Table
F1_IWS_SVC_OPER_L

Unsupported Tables

The table below has been added for future functionality and is not currently in use.

Table
F1_CRYPTO_KEY_RING_LINK

Added Columns

Table	Column	Required
CI_BATCH_RUN	END_DTTM	N
CI_BATCH_RUN	START_DTTM	N

Table	Column	Required
CI_COUNTRY	ADDR1_USG_FLG	Y
CI_COUNTRY	ADDR2_USG_FLG	Y
CI_COUNTRY	ADDR3_USG_FLG	Y
CI_COUNTRY	ADDR4_USG_FLG	Y
CI_COUNTRY	CITY_USG_FLG	Y
CI_COUNTRY	COUNTY_USG_FLG	Y
CI_COUNTRY	GEO_CODE_USG_FLG	Y
CI_COUNTRY	HOUSE_TYPE_USG_FLG	Y
CI_COUNTRY	IN_CITY_LIM_USG_FLG	Y
CI_COUNTRY	NUM1_USG_FLG	Y
CI_COUNTRY	NUM2_USG_FLG	Y
CI_COUNTRY	POSTAL_USG_FLG	Y
CI_COUNTRY	STATE_USG_FLG	Y
F1_ATTACHMENT	ATTACHMENT_EXT_ID	N
F1_ATTACHMENT	COMMENT_LONG	N
F1_IWS_SVC	RESOURCE_CAT_XFLG	N
F1_IWS_SVC	WEB_SVC_CLASS_FLG	Y
F1_IWS_SVC_OPER	RESOURCE_URI	N
F1_IWS_SVC_OPER	REST_HTTP_METHOD_FLG	N
F1_SVC_CATALOG	WEB_SVC_CLASS_FLG	Y

Dropped Columns

None

Column Format Change

None

Primary Key Change

None

Index Changes

None

Appendix M

Oracle Utilities Customer To Meter System Table Guide

This appendix lists the system tables owned by Oracle Utilities Customer To Meter V2.7.0.0.0 and explains the data standards of the system tables, including:

- Business Configuration Tables

The data standards are required for Oracle Utilities Customer To Meter installation, development within Oracle Utilities Customer To Meter, configuration of Oracle Utilities products, and customization of the Oracle Utilities products. Adhering to the data standards is a prerequisite for a seamless upgrade to the next release of the product.

For general information about System Tables, refer to the *System Table Guide* for Oracle Utilities Application Framework.

Business Configuration Tables

Installation Options

The installation option has only one row that is shipped with the initial installation of Oracle Utilities Customer To Meter. The updateable 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	C0_INSTALLATION
Initial Data	Create Field Activity Str Stop: Yes Premise Geo Type Usage: Required Alternate Representation: None CTI Integration : No Person ID Usage: Required Start Stop Detail Threshold : 30 Bill Segment Freeze Option: Freeze At Will Accounting Date Freeze Option: Change If Period Is Closed Rollover Threshold Factor : 0.7 User Can Override Bill Date : Yes Use High/Low Failures on Bill : Yes Base Time : 01/01/1900 02:00:00 AM Start Day Option: Current Day Use Alternative Bill ID : No (Yes, for upgrading customers that use Sequential Numbers) Alternative Bill ID Option : None ('Sequential Numbers', for upgrading customers that use Sequential Numbers) Use Credit Notes: No Autopay Creation Option: Create At Bill Completion Fund Accounting: Not Practiced Alternate Currency : Not Allowed

Appendix N

Oracle Application Framework System Table Guide

This section lists the system tables owned by the Oracle Utilities Application Framework V4.3.0.6.0 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. They also 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)

Display Profile

The Display Profile Code is referenced in the User (SC_USER) table.

Properties	Description
Tables	CI_DISP_PROF, CI_DISP_PROF_L

Properties	Description
Initial Data	North America (NORTHAM) and Europe (EURO) and HIJRI Format (HIJRI) **Configuration Note**: In order to use HIJRI Format display profile, additional configuration is needed to define the mappings between Hijri dates and Gregorian dates. Refer to the Display Profile documentation for more information.

Configuration Note: In order to use HIJRI Format display profile, additional configuration is needed to define the mappings between Hijri dates and Gregorian dates.

Refer to the Display Profile documentation for more information.

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)

Time Zone

The installation options require a valid time zone. A value for UTC (Coordinated Universl Time) is provided. Implementations should define the appropriate time zone and update the installation option value accordingly.

Properties	Description
Tables	CI_TIME_ZONE, CI_TIME_ZONE_L
Initial Data	UTC

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 To Meter 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.

Note that the system supports a system upgrade rule called 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, C1_PORTAL_OPT, 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 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)

Properties	Description
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) and Security flag (TEXT_SECURITY_FLG) 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), Status Reason (BO_STATUS_REASON_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) Characteristic Value (CHAR_VAL) on CI_CHAR_VAL If the characteristic type is customizable, Customer Modification can insert new characteristic values. CM must prefix when implementers introduce a new characteristic value.
Customer Modification	Adhoc Characteristic Value Validation Rule (ADHOC_VAL_ALG_CD), Allow Search by Characteristic Value (SEARCH_FLG)

Configuration Migration Assistant

Properties	Description
Tables	F1_MIGR_PLAN,F1_MIGR_PLAN_L,F1_MIGR_PLAN_INSTR,F1_MIGR_PLAN_INSTR_L, F1_MIGR_PLAN_INSTR_ALG, F1_MIGR_REQ, F1_MIGR_REQ_L, F1_MIGR_REQ_INSTR, F1_MIGR_REQ_INST R_L, F1_MIGR_REQ_INSTR_ENTITY, F1_MIGR_REQ_INCL_REQ
Standard Data Fields	Migration Plan Code (MIGR_PLAN_CD), Migration Request Code (MIGR_REQ_CD)
Customer Modification	None

Data Area

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

Deployment Part

Properties	Description
Tables	F1_DEPLOYMENT_PART, F1_DEPLOYMENT_PART_L, F1_DEPLOYMENT_ITEM
Standard Data Fields	Deployment ID (F1_DEPLOYMENT_ID)
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

Extendable Lookup

Properties	Description
Tables	F1_EXT_LOOKUP_VAL, F1_EXT_LOOKUP_VAL_L, F1_EXT_LOOKUP_VAL_CHAR
Standard Data Fields	Business Object (BUS_OBJ_CD), Extendable Lookup Value (F1_EXT_LOOKUP_VALUE)
Customer Modification	Business Object Data Area (BO_DATA_AREA) Override Description (DESCR_OVRD) on Extendable Lookup Field Value Language Table (F1_EXT_LOOKUP_VAL_L) **Note:** When the product releases base owned records in Extendable Lookup, if there are additional elements the business object will map the element to the BO_DATA_AREA if the value is allowed to be modified by an implementation.

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)

Inbound Web Service

Properties	Description
Tables	F1_IWS_SVC_L, F1_IWS_SVC, F1_IWS_SVC_OPER_L, F1_IWS_SVC_OPER, F1_IWS_ANN_L, F1_IWS_ANN_PARM, F1_IWS_ANN, F1_IWS_ANN_TYPE_L, F1_IWS_ANN_TYPE, F1_IWS_ANN_TYPE_PARM, F1_IWS_ANN_TYPE_PARM_L
Standard Data Fields	Webservice Name (IN_SVC_NAME), Annotation (ANN_CD), Annotation Type (ANN_TYPE_CD)

Properties	Description
Customer Modification	Debug (DEBUG_SW), Active (ACTIVE_SW), Trace (TRACE_SW), Request XSL (REQUEST_XSL), Response XSL (RESPONSE_XSL)

Unsupported Metadata

Properties	Description
Tables	F1_LGCY_OBJ
Standard Data Fields	Object ID (LGCY_OBJ_ID)
Customer Modification	None

Lookup

Properties	Description
Tables	CI_LOOKUP_FIELD, CI_LOOKUP_VAL, CI_LOOKUP_VAL_L
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 may add lookup values to a Oracle Utilities Application Framework owned lookup field's value. When extended new value is added, the Owner Flag is used to prefix the value. For example: When the Oracle Utilities Customer Care and Billing product adds a new value to the algorithm entity flag (ALG_ENTITY_FLG), it is prefixed with C1.
Customer Modification	Override Description (DESCR_OVRD) on Lookup Field Value Language Table (CI_LOOKUP_VAL_L)

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. An implementation may only use categories assigned for customization use. • Implementer Message Categories are 80000 and 90000 • Reserved for Tests - 99999 Message Number (MESSAGE_NBR) for 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.
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	AuditSwitches(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_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
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 Components 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

Mobile Component

Properties	Description
Tables	F1_MOBILE_COMPONENT, F1_MOBILE_COMPONENT_L, F1_MOB_COMP_CNT, F1_MOBILE_COMP_CHAR
Standard Data Fields	Mobile Component Code (F1_MOB_COMP_TYPE_CD)
Customer Modification	Expiration Days (F1_EXPIRATION_TIME_DUR)

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

Outbound Message Type

Properties	Description
Tables	F1_OUTMSG_TYPE, F1_OUTMSG_TYPE_L
Standard Data Fields	Outbound Message Type Code (OUTMSG_TYPE_CD)
Customer Modification	Priority (OUTMSG_PRIOR_FLG)

Portal and Zone

Properties	Description
Tables	CI_PORTAL, CI_PORTAL_L, CI_PORTAL_ZONE, CI_PORTAL_OPT, 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).

Process Flow Type

Properties	Description
Tables	F1_PROC_DEFN F1_PROC_DEFN_L F1_PROC_NEXT_PANEL F1_PROC_PANEL
Standard Data Fields	Process Flow Type (PROCESS_CD)
Customer Modification	None

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)

Web Service Category

Properties	Description
Tables	F1_WEB_CAT, F1_WEB_CAT_L, F1_WEB_CAT_INCL_SVC
Standard Data Fields	Web Service Category code (WEB_SVC_CAT_CD)
Customer Modification	None

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 Message Option Table (CI_XAI_OPTION)

XAI Services

Properties	Description
Tables	CI_XAI_IN_SVC, CI_XAI_IN_SVC_L, CI_XAI_SVC_PARM
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)

System Table List

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

Keep (KP): The data in 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 in 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. The product does not support customer specific data in these tables.

> **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	MG	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_DISP_ICON	MG	Display Icon
CI_DISP_ICON_L	MG	Display Icon 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_CONST	MG	Constraints
CI_MD_CONST_FLD	MG	Constraint Fields
CI_MD_FLD	MG	Field
CI_MD_FLD_L	MG	Field Language
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_NAV	MG	Navigation Key
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

Table Name	Upgrade Action	Description
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
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_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_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
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

Table Name	Upgrade Action	Description
CI_PORTAL	MG	Portal
CI_PORTAL_L	MG	Portal Language
C1_PORTAL_OPT	MG	Portal Option
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_UI_ZONE	MG	Context Sensitive Zone
CI_USR_NAV_LINK	MG	User Favorite Links
CI_XAI_ADAPTER	MG	XAI Adapter
CI_XAI_ADAPTER_L	MG	XAI Adapter Lang
CI_XAI_CLASS	MG	Message Class
CI_XAI_CLASS_L	MG	Message Class Language
CI_XAI_ENV_HNDL	MG	XAI Envelope Handler
CI_XAI_ENV_HNDL_L	MG	XAI Envelope Handler Language
CI_XAI_IN_SVC	MG	XAI Inbound Service
CI_XAI_IN_SVC_L	MG	XAI Inbound Service Language
CI_XAI_SVC_PARM	MG	XAI Inbound Service Parameters

Table Name	Upgrade Action	Description
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
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_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_DEPLOYMENT_ITEM	MG	Deployment Part Item
F1_DEPLOYMENT_PART	MG	Deployment Part
F1_DEPLOYMENT_PART_L	MG	Deployment Part Language
F1_EXT_LOOKUP_VAL	MG	Extendable Lookup
F1_EXT_LOOKUP_VAL_L	MG	Extendable Lookup Language
F1_EXT_LOOKUP_VAL_CHAR	MG	Extendable Lookup Characteristics
F1_IWS_ANN	MG	Web Service Annotation

Table Name	Upgrade Action	Description
F1_IWS_ANN_L	MG	Web Service Annotation Language
F1_IWS_ANN_PARM	MG	Web Service Annotation Parameter
F1_IWS_ANN_TYPE	MG	Web Service Annotation Type
F1_IWS_ANN_TYPE_L	MG	Web Service Annotation Type Language
F1_IWS_ANN_TYPE_PARM	MG	Web Service Annotation Type Parm
F1_IWS_ANN_TYPE_PARM_L	MG	Web Service Annotation Type Parameter Language
F1_IWS_SVC	MG	Inbound Web Service
F1_IWS_SVC_L	MG	Inbound Web Service Language
F1_IWS_SVC_OPER	MG	Inbound Web Service Operations
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_MIGR_PLAN	MG	Migration Plan
F1_MIGR_PLAN_INSTR	MG	Migration Plan Instruction
F1_MIGR_PLAN_INSTR_ALG	MG	Migration Plan Instruction Algorithm
F1_MIGR_PLAN_INSTR_L	MG	Migration Plan Instruction Language
F1_MIGR_PLAN_L	MG	Migration Plan Language
F1_MIGR_REQ	MG	Migration Request
F1_MIGR_REQ_INCL_REQ	MG	Migration Request Grouping
F1_MIGR_REQ_INSTR	MG	Migration Request Instruction
F1_MIGR_REQ_INSTR_ENTITY	MG	Migration Request Instruction Entity
F1_MIGR_REQ_INSTR_L	MG	Migration Request Instruction Language
F1_MIGR_REQ_L	MG	Migration Request Language
F1_MOBILE_COMPONENT	MG	Mobile Component
F1_MOBILE_COMPONENT_L	MG	Mobile Component Language
F1_MOB_COMP_CHAR	MG	Mobile Component Characteristics
F1_MOB_COMP_CNT	MG	Mobile Component Content
F1_OUTMSG_TYPE	MG	Outbound Message Type
F1_OUTMSG_TYPE_L	MG	Outbound Message Type Language

Table Name	Upgrade Action	Description
F1_PROC_DEFN	MG	Process Flow Type
F1_PROC_DEFN_L	MG	Process Flow Type Language
F1_PROC_NEXT_PANEL	MG	Next Panel
F1_PROC_PANEL	MG	Process Panels
F1_SCHEMA	MG	Schema
F1_WEB_CAT	MG	Web Service Category
F1_WEB_CAT_L	MG	Web Service Category Language
F1_WEB_CAT_INCL_SVC	MG	Web Service Category Included Services
SC_ACCESS_CNTL	MG	User Group Access Control
SC_APP_SERVICE	MG	Application Service
SC_APP_SERVICE_L	MG	Application Service Language
SC_USR_GRP_PROF	MG	User Group Profile
CI_CURRENCY_CD	KP	Currency Code
CI_CURRENCY_CD_L	KP	Currency Code Language
CI_DISP_PROF	KP	Display Profile
CI_DISP_PROF_L	KP	Display Profile Language
CI_TIME_ZONE	KP	Time Zone
CI_TIME_ZONE_L	KP	Time Zone Language
CI_USR_PORTAL	KP	User Portal
CI_XAI_JNDI_SVR	KP	XAI JNDI Server
CI_XAI_JNDI_SVR_L	KP	XAI JNDI Server Language
CI_XAI_OPTION	KP	Message Option
CI_XAI_SENDER	KP	Message Sender
CI_XAI_SENDER_L	KP	Message Sender Language
CI_XAI_SNDR_CTX	KP	Message Sender Context
F1_BUS_OBJ_STATUS_RSN_CHAR	KP	Status Reason Characteristic
F1_INSTALLATION	KP	Installation Option - Framework
SC_USER	KP	User
SC_USER_CHAR	KP	User Characteristic
SC_USER_GROUP	KP	User Group
SC_USER_GROUP_L	KP	User Group Language

Table Name	Upgrade Action	Description
SC_USR_GRP_USR	KP	User Group User
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_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_LOOKUP_F	RF	MD Lookup Field
CI_MD_MSG	RF	MD Message
CI_MD_MSG_L	RF	MD Message Language
CI_MD_PDF	RF	Predefined Fields
CI_MD_PDF_VAL	RF	Predefined Values
CI_MD_SRC_TYPE	RF	Source Type
CI_MD_SRC_TYPE_L	RF	Source Type 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_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
F1_LGCY_OBJ	RF	Unsupported Metadata