

# **Oracle® Revenue Management and Billing**

Version 4.0.0.0.0

## **Information Lifecycle Management (ILM) Implementation Guide**

Revision 4.1

F60122-01

August 2022

## Oracle Revenue Management and Billing Information Lifecycle Management (ILM) Implementation Guide

F60122-01

### **Copyright Notice**

Copyright ©2009, 2022 Oracle and/or its affiliates. All rights reserved.

### **Trademark Notice**

Oracle, Java, JD Edwards, PeopleSoft, and Siebel are registered trademarks of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

### **License Restrictions Warranty/Consequential Damages Disclaimer**

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or de-compilation of this software, unless required by law for interoperability, is prohibited.

### **Warranty Disclaimer**

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

### **Restricted Rights Notice**

If this software or related documentation is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, the following notice is applicable:

#### U.S. GOVERNMENT RIGHTS

Oracle programs, including any operating system, integrated software, any programs installed on the hardware, documentation, and/or technical data delivered to U.S. Government end users are “commercial computer software” or “commercial technical data” pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, documentation, and/or technical data shall be subject to license terms and restrictions as mentioned in Oracle License Agreement, and to the extent applicable, the additional rights set forth in FAR 52.227-19, Commercial Computer Software--Restricted Rights (June 1987). No other rights are granted to the U.S. Government.

**Hazardous Applications Notice**

This software is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure the safe use of this software. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software in dangerous applications.

**Third-Party Content, Products, and Services Disclaimer**

This software and documentation may provide access to or information on content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services unless otherwise set forth in an applicable agreement between you and Oracle. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services.

# Preface

## About This Document

This document provides an overview of the Information Lifecycle Management (ILM) feature. It describes how to implement ILM for the following modules:

- Transaction Feed Management (TFM)
- Billing
- Trial Billing

**Note:** The ILM implementation is certified on Oracle Revenue Management and Billing Version 4.0.0.0.0 which is based on Oracle Utilities Application Framework Version 4.4.0.3.0.

## Intended Audience

This document is intended for the following audience:

- System and Database Administrators
- Consulting Team
- Implementation Team

## Organization of the Document

The information in this document is organized into the following sections:

Section No.	Section Name	Description
Section 1	Information Lifecycle Management (ILM) Overview	Provides an overview of the Information Lifecycle Management (ILM) feature.
Section 2	ILM Implementation Overview	Provides a high-level information about how to implement ILM in Oracle Revenue Management Billing.
Section 3	Scope of ILM Implementation	Lists the modules and maintenance objects for which ILM is implemented.
Section 4	ILM-Specific Option Types in a Maintenance Object	Lists and describes the ILM-specific option types available in a maintenance object.
Section 5	ILM Implementation	Explains how to implement ILM for the TFM, Billing, and Trial Billing modules.
Section 6	ILM Batches	Lists and describes batches which are introduced to implement ILM for the TFM, Billing, and Trial Billing modules.
Section 7	Eligible Table Partitions for Archival	Explains how to view the table partitions which are eligible for archival.

Section No.	Section Name	Description
Section 8	Drop Eligible Table Partitions	Explains how to drop an eligible table partition.
Section 9	Additional Tasks After Dropping Table Partitions	Lists and describes additional tasks that you need to perform after dropping table partitions.

## Conventions

The following conventions are used across the document:

Convention	Meaning
<b>boldface</b>	Boldface indicates graphical user interface elements associated with an action, or terms defined in the text.
<i>italic</i>	Italic indicates a document or book title.
monospace	Monospace indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or information that an end-user needs to enter in the application.

## Acronyms

The following acronyms are used in this document:

Acronym	Meaning
ORMB	Oracle Revenue Management and Billing
OAAF	Oracle Utilities Application Framework
ILM	Information Lifecycle Management
TFM	Transaction Feed Management
DBA	Database Administrator

## Related Documents

You can refer to the following documents for more information:

Document Name	Description
<i>Oracle Utilities Application Framework Business Process Guide</i>	Explains how to get acquainted with the user interface. It explains the different types of pages or portals that you may come across in the application. It explains how to set the user preferences and how to create, manage, assign, and complete a To Do in the application. It also explains how to submit reports and view historic reports in the application.

Document Name	Description
<i>Oracle Utilities Application Framework Administrative Guide</i>	Explains the general, security, user, designing, developing, and scripting options available in Oracle Utilities Application Framework (OUAF). It describes the user interface, database, configuration, and reporting tools available in OUAF. In addition, it provides information about the application viewer, how to configure incoming and outgoing messages, and how to integrate Lightweight Directory Access Protocol (LDAP), Oracle Identity Manager (OIM), and Batch Scheduler with Oracle Revenue Management and Billing (ORMB).
<i>Oracle Revenue Management and Billing Business Process Guide</i>	Explains how to maintain the demographic, geographic, and financial objects (i.e. accounts) of a customer. It explains how to manage a customer's bills, payments, adjustments, credits, collections processing, statements and deposits in Oracle Revenue Management and Billing (ORMB). It also describes the financial transactions, case management, sales and marketing functions, rates engine, quotations, loans, how to monitor and execute job streams, and how to manage workflows, notifications and overdue processing. In addition, it explains how to extract the data from the system using an extract template.  The features listed and described in this document can be used in both financial services and health insurance domains.
<i>Oracle Revenue Management and Billing Administrative Guide</i>	Explains how to configure various features and functionalities in Oracle Revenue Management and Billing (ORMB). For example, billing, payments, adjustments, financial transactions, credits, collections processing, loans, service credits, background processes, quotations, case management, security, overdue processing, batch scheduler, workflow and notifications, etc.  The information available in this document can be used in both financial services and health insurance domains.

Document Name	Description
<i>Oracle Revenue Management and Billing Banking User Guide</i>	<p>Describes various features which are available for the financial services business. For example, customer registration, customer 360° view, invoicing group, pricing management, multi-currency accounts, currency conversion, construct based billing and settlement, trial billing, product lifecycle management, subscription billing, mass pricing update, accrual, foreign exchange gain loss, transaction feed management, upload validated payment and adjustment data, freeze payments on notification, payment request, offset request, funding request, hold request, refund/write off request, dispute request, upload request, earnings credit rate, payment agreement request, invoice request, deal management, etc.</p> <p>It describes all screens related to these features and explains how to perform various tasks related to the feature in the application.</p>
<i>Oracle Revenue Management and Billing Insurance User Guide</i>	<p>Describes various features which are available for the following three lines of health insurance business – fully-insured group, self-funded, and individual. For example, customer registration, customer 360° view, pricing management, trial billing, transaction feed management, upload validated payment and adjustment data, freeze payments on notification, payment request, offset request, funding request, hold request, refund/write off request, upload request, payment agreement request, invoice request, inbound message processing, reconciliation, entity audit, premium repricing, etc.</p> <p>It describes all screens related to these features and explains how to perform various tasks related to the feature in the application.</p>

## Change Log

Revision	Last Update	Updated Section	Comments
4.1	09-Dec-2022	All Sections	Corrected Grammar

# Contents

---

1.	Information Lifecycle Management (ILM) Overview .....	1
2.	ILM Implementation Overview .....	6
3.	Scope of ILM Implementation .....	7
4.	ILM-Specific Option Types in a Maintenance Object.....	8
5.	ILM Implementation .....	10
5.1	Executing the Sample Table Partitioning Scripts.....	10
5.2	Setting the Retention Period in the System .....	16
5.2.1	Setting the Default Retention Period.....	16
5.2.2	Setting the Retention Period for a Maintenance Object .....	17
5.3	Setting the C1_ILM Feature Configuration in the System .....	17
6.	ILM Batches .....	19
6.1	ILM Crawler Initiator (F1-ILMIN).....	19
6.2	ILM Crawler - Adjustments (C1-ADCRL).....	20
6.3	ILM Crawler - Bills and Bill Segments (C1-BLCRL) .....	21
6.4	ILM Crawler - Billable Charges (C1-BCCRL).....	23
6.5	ILM Crawler - Transaction Feed Management (C1-FMCRL) .....	25
6.6	ILM Crawler – Transaction Rating Calc Lines (C1-TCCRL) .....	27
6.7	ILM Crawler – Trial Bills and Trial Bill Segments (C1-TBCRL) .....	28
6.8	ILM Crawler – Trial Financial Transactions (C1-TFCRL).....	30
7.	Eligible Table Partitions for Archival.....	32
8.	Drop Eligible Table Partitions .....	34
9.	Additional Tasks After Dropping Table Partitions.....	35
9.1	Rebuilding the Global Indexes .....	35
9.2	Generating the Database Statistics .....	35



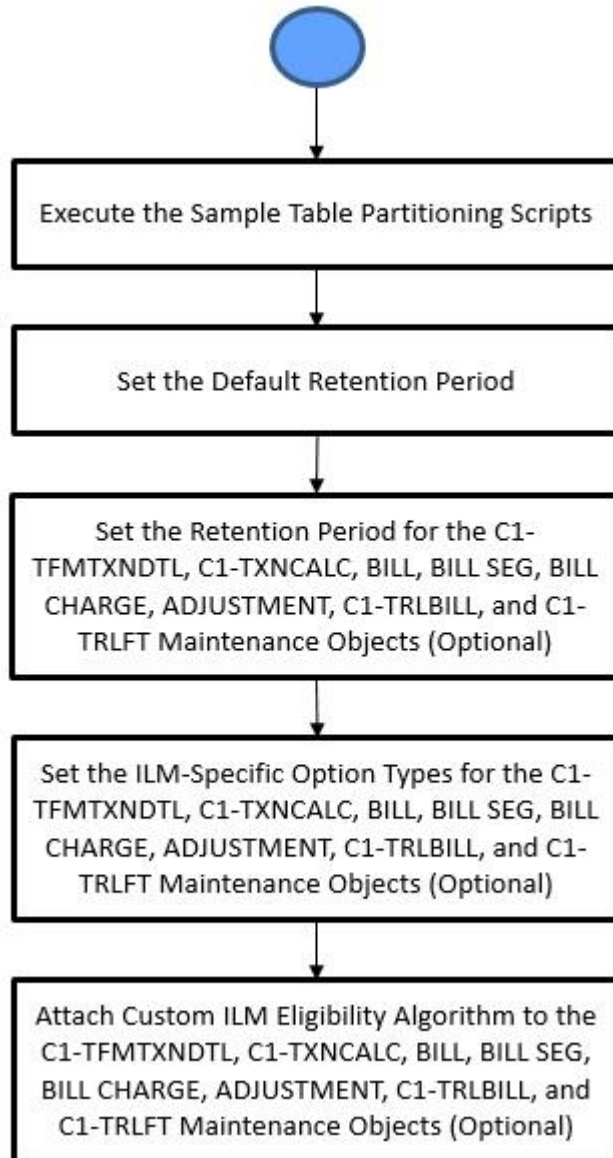
# 1. Information Lifecycle Management (ILM) Overview

---

Information Lifecycle Management (ILM) is a methodology designed to address data management issues. Old data starts becoming an overhead to the overall application not only in terms of storage, but also in terms of performance. The old data, which has completed its lifecycle, can be removed from the system to improve performance, and make an overall savings in terms of cost. Therefore, we recommend you archive voluminous data at regular basis. The archiving process needs to ensure that the referential integrity of the overall system is maintained. Archiving keeps the volume of data in the production database at a manageable level without compromising the system's ability to perform normal operations.

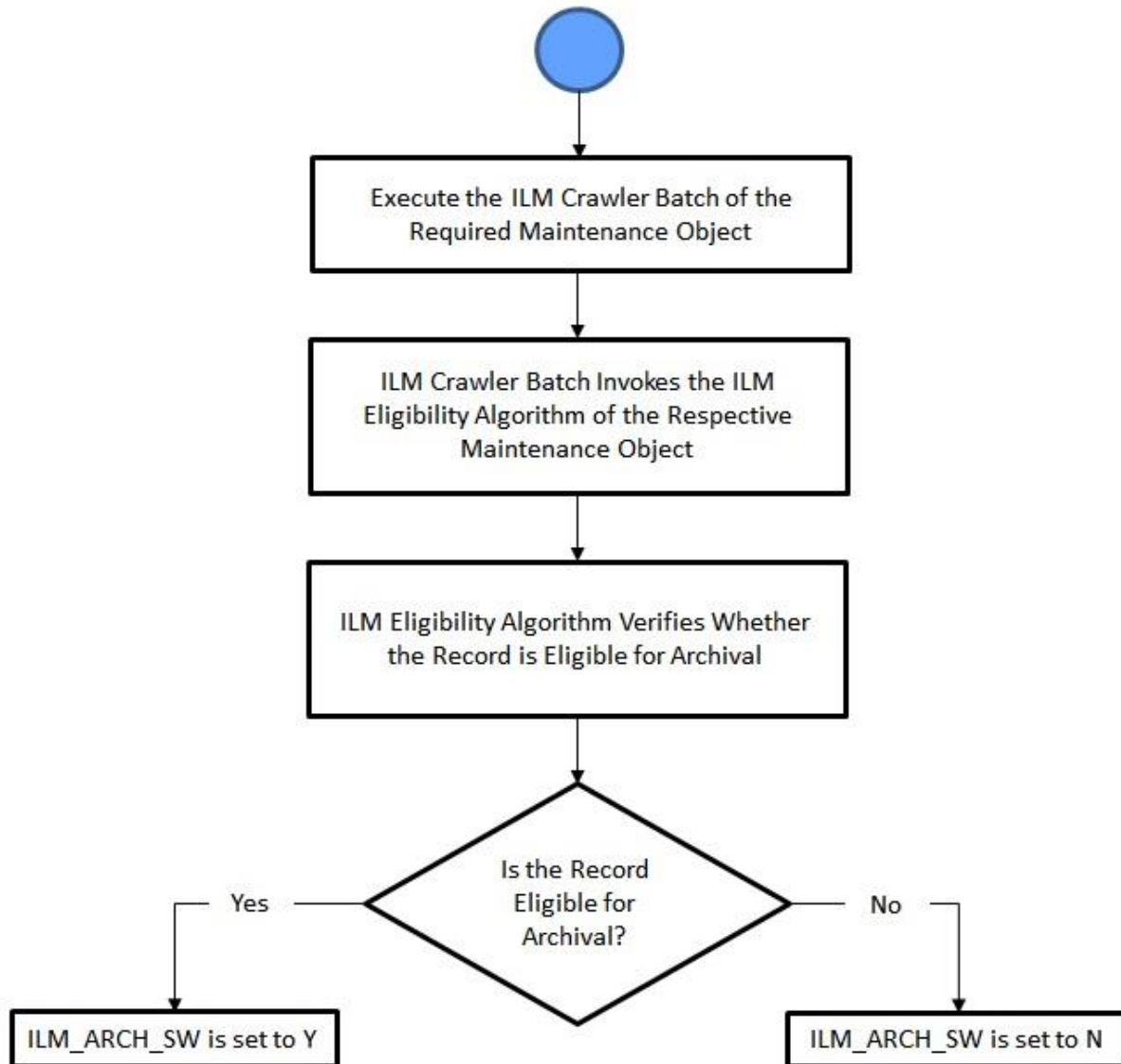
The Information Lifecycle Management (ILM) includes the following three processes:

1. **Setup** – This process is all about how you implement the ILM feature. The following figure indicates the different steps that you need to perform to implement the ILM feature:



**Figure 1: ILM Setup Process**

- Execution** - This is a process where you execute the ILM batches to identify and mark the records which are eligible for archival. You can either execute the required ILM Crawler batch (i.e. **C1-ADCRL**, **C1-BLCRL**, **C1-BCCRL**, **C1-FMCRL**, **C1-TCCRL**, **C1-TBCRL**, or **C1-TFCRL**) or just execute the **ILM Crawler Initiator (F1-ILMIN)** batch. The following figure indicates how an ILM Crawler batch identifies and marks the records which are eligible for archival:



**Figure 2: ILM Crawler Batch Execution Process**

The following figure indicates how the ILM Crawler Initiator batch identifies and marks the records which are eligible for archival:

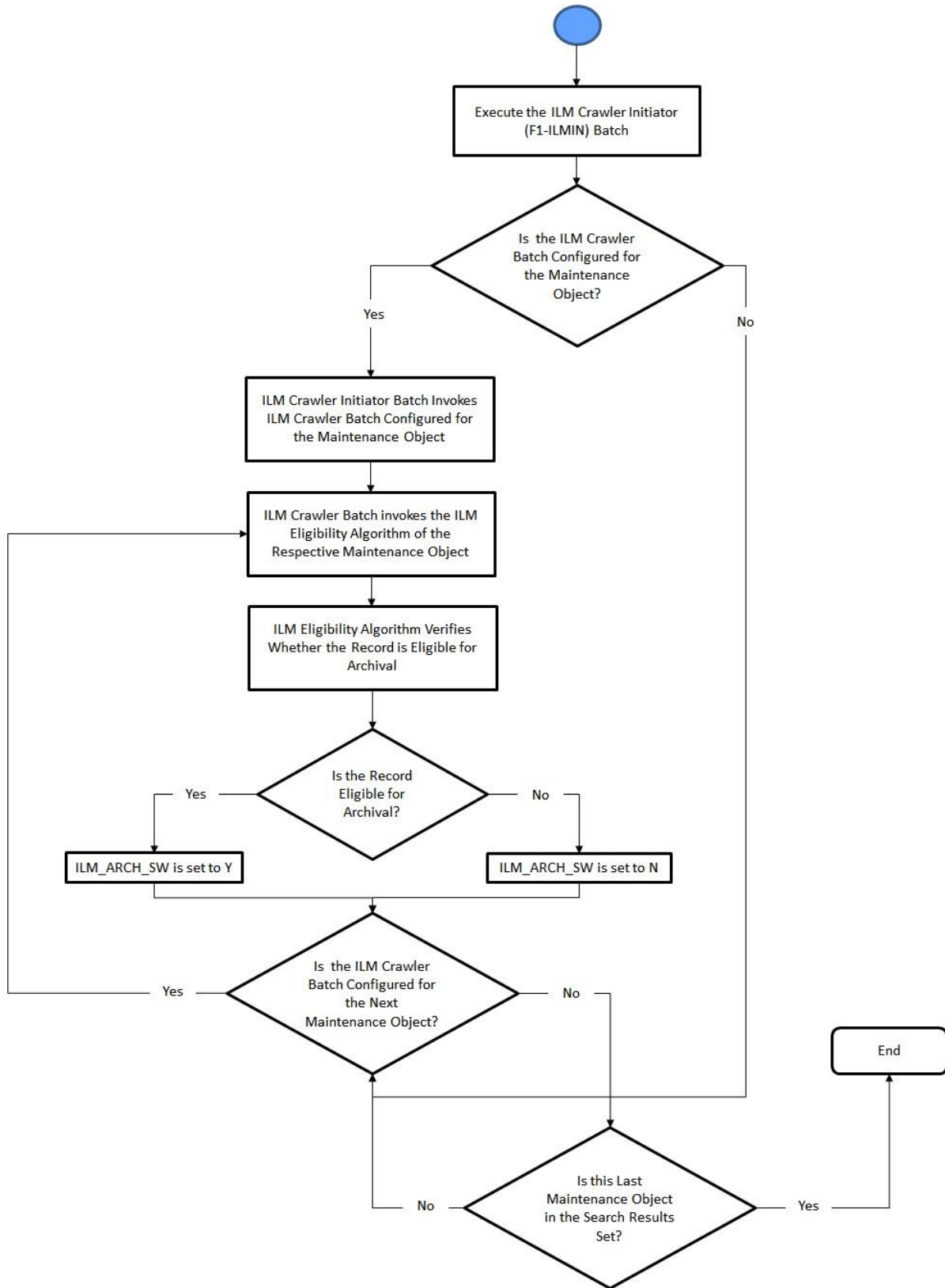
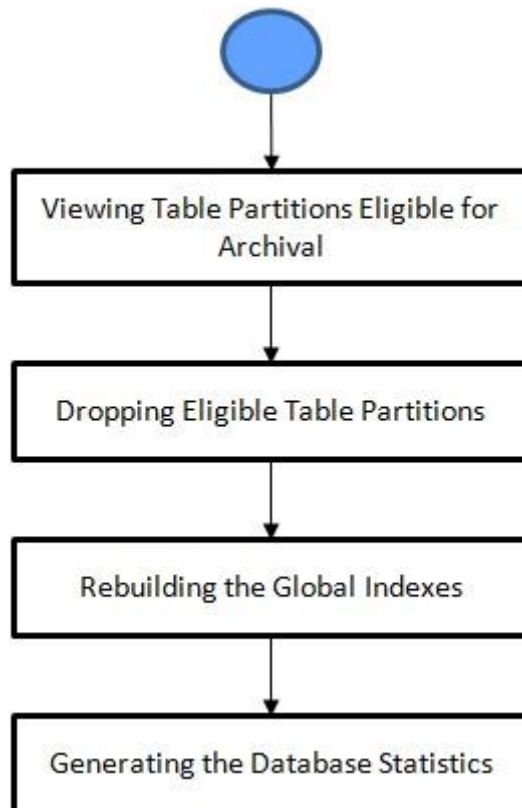


Figure 3: ILM Crawler Initiator Batch Execution Process

3. **Maintenance** – This is a process where you archive the table partitions when all records are eligible for archival. Once the data is archived, you can drop these table partitions. The following figure indicates the steps involved in the maintenance process:



**Figure 4: ILM Maintenance Process**

## 2. ILM Implementation Overview

---

An underlying design principle of the ILM implementation is based on the concept that the age of the data may not only be used as a criterion to determine when a record must be archived. There must be business rules which dictate that some records are still current and must not be archived.

ILM enabled tables have two additional columns - **ILM Date (ILM\_DT)** and **ILM Archival Switch (ILM\_ARCH\_SW)**. The **ILM Date** is used to group the data by age during partitioning. The **ILM Archival Switch** is set by a background process when the record meets the business rules specific to the maintenance object and is eligible for archival. The **ILM Archival Switch** allows the database administrator (DBA) to check whether all records in a partition meet the business criteria defined for archival. If the **ILM Archival Switch** is set to **Y** for all records, then the DBA can take the required steps to archive the table partition.

## 3. Scope of ILM Implementation

---

At present, the ILM is implemented for the following maintenance objects:

- Transaction Detail (C1-TFMTXNDTL)
- Transaction Calculation Detail (C1-TXNCALC)
- Bill (BILL)
- Bill Segment (BILL SEG)
- Billable Charge (BILL CHARGE)
- Adjustment (ADJUSTMENT)
- Trial Bill Maintenance (C1-TRLBILL)
- Trial Financial Transaction Maintenance (C1-TRLFT)

In other words, the out of box ILM implementation is provided for the Transaction Feed Management, Billing, and Trial Billing modules. If you want to implement ILM for any other maintenance object or module, you need to do the required configurations and write the custom logic to identify the records which are eligible for archival.

## 4. ILM-Specific Option Types in a Maintenance Object

The following table lists the ILM-specific option types which you can define for each maintenance object:

Option Type	Description	Mandatory (Yes or No)																
ILM Crawler Batch Control	<p>Used to specify the batch control that you want to use to identify and mark the records which are eligible for archival. The system considers the records which are created using the business objects of the respective maintenance object. This option type is already defined in the following maintenance objects:</p> <table border="1"> <thead> <tr> <th>Maintenance Object</th> <th>ILM Crawler Batch Control</th> </tr> </thead> <tbody> <tr> <td>C1-TFMTXNDTL</td> <td>C1-FMCRL</td> </tr> <tr> <td>C1-TXNCALC</td> <td>C1-TCCRL</td> </tr> <tr> <td>BILL</td> <td>C1-BLCRL</td> </tr> <tr> <td>BILL CHARGE</td> <td>C1-BCCRL</td> </tr> <tr> <td>ADJUSTMENT</td> <td>C1-ADCRL</td> </tr> <tr> <td>C1-TRLBILL</td> <td>C1-TBCRL</td> </tr> <tr> <td>C1-TRLFT</td> <td>C1-TFCRL</td> </tr> </tbody> </table>	Maintenance Object	ILM Crawler Batch Control	C1-TFMTXNDTL	C1-FMCRL	C1-TXNCALC	C1-TCCRL	BILL	C1-BLCRL	BILL CHARGE	C1-BCCRL	ADJUSTMENT	C1-ADCRL	C1-TRLBILL	C1-TBCRL	C1-TRLFT	C1-TFCRL	<p>Yes</p> <p><b>Note:</b> This data is required when you want to implement ILM for the maintenance object.</p>
Maintenance Object	ILM Crawler Batch Control																	
C1-TFMTXNDTL	C1-FMCRL																	
C1-TXNCALC	C1-TCCRL																	
BILL	C1-BLCRL																	
BILL CHARGE	C1-BCCRL																	
ADJUSTMENT	C1-ADCRL																	
C1-TRLBILL	C1-TBCRL																	
C1-TRLFT	C1-TFCRL																	
ILM Retention Period In Days	<p>Used to specify the number of days for which you want to retain the records.</p> <p><b>Note:</b> This option type value overrides the default retention period specified in the ILM master configuration.</p>	No																
ILM Restrict By Status	<p>Used to indicate whether you want to verify and mark records which are in a particular status. The valid values are:</p> <ul style="list-style-type: none"> <li>• Y</li> <li>• N</li> </ul> <p>If you set this option type to <b>Y</b>, you can use either the <b>ILM Restrict By BO Final Status</b> or <b>Status Field</b> option type to filter the records based on the status.</p> <p><b>Note:</b> By default, this option type is set to <b>N</b>.</p>	No																



Option Type	Description	Mandatory (Yes or No)
Status Field	Used to indicate the field, which stores the status, based on which you want to filter the records.	No
ILM Final Status Field Value	Used when you want to verify and mark the records which are in a particular status.	No
ILM Restrict By BO Final Status	Used to indicate whether you want to verify and mark the records which are in the status which is defined as final in the lifecycle of the business object. The valid values are: <ul style="list-style-type: none"><li>• Y</li><li>• N</li></ul> <div style="border: 1px solid black; padding: 2px;"><b>Note:</b> By default, this option type is set to <b>N</b>.</div>	No

## 5. ILM Implementation

To implement ILM for the Transaction Feed Management, Billing, and Trial Billing modules, you need to do the following:

1. [Execute the Sample Table Partitioning Scripts](#)
2. [Set the Retention Period in the System](#)
3. [Set the C1 ILM Feature Configuration in the System](#)

### 5.1 Executing the Sample Table Partitioning Scripts

You need to partition the master and child tables in such a way that the referential integrity is not hampered. Partitioning is mandatory for the ILM implementation. This helps to segregate the data into multiple table partitions. There are many partitioning strategies which can be used to partition tables. However, we recommend you partition the TFM, Billing, and Trial Billing related tables using the following partition type and keys:

Table Name	Partition Type	Partition Key	Sub-Partition Key
CI_TXN_DETAIL	RANGE (Date Interval)	CURR_SYS_PRCES_DT	-
CI_TXN_DTL_PRITM	RANGE (Date Interval)	CURR_SYS_PRCES_DT	-
CI_ROLLBACK_TXN_DETAIL	RANGE (Date Interval)	CURR_SYS_PRCES_DT	-
CI_TXN_DETAIL_EXCP	RANGE (Date Interval)	CURR_SYS_PRCES_DT	-
CI_TXN_CALC	RANGE (Date Interval)	ILM_DT	-
CI_TXN_SQ	RANGE (Date Interval)	ILM_DT	-
CI_TXN_CALC_LN	RANGE (Date Interval)	ILM_DT	-
CI_TXN_CALC_LN_CHAR	RANGE (Date Interval)	ILM_DT	-
CI_BILL	RANGE (Date Interval)	ILM_DT	BILL_ID
CI_BILL_CHAR	REFERENCE	BILL_ID	-
CI_BILL_EXCP	REFERENCE	BILL_ID	-
CI_BILL_MSG_PRM	REFERENCE	BILL_ID	-
CI_BILL_ROUTING	REFERENCE	BILL_ID	-
CI_BILL_SA	REFERENCE	BILL_ID	-
CI_BILL_ACH	REFERENCE	BILL_ID	-
CI_BILL_MSGS	REFERENCE	BILL_ID	-
CI_BILL_LOG	REFERENCE	BILL_ID	-
CI_BSEG	RANGE (Date Interval)	ILM_DT	BSEG_ID
CI_BSEG_CALC	REFERENCE	BSEG_ID	-

Table Name	Partition Type	Partition Key	Sub-Partition Key
CI_BSEG_CALC_LN	REFERENCE	BSEG_ID	-
CI_BSEG_CL_CHAR	REFERENCE	BSEG_ID	-
CI_BSEG_EXCP	REFERENCE	BSEG_ID	-
CI_BSEG_ITEM	REFERENCE	BSEG_ID	-
CI_BSEG_MSG	REFERENCE	BSEG_ID	-
CI_BSEG_READ	REFERENCE	BSEG_ID	-
CI_BSEG_SQ	REFERENCE	BSEG_ID	-
CI_BSEG_EXT	REFERENCE	BSEG_ID	-
CI_ADJ	RANGE (Date Interval)	ILM_DT	ADJ_ID
CI_ADJ_APREQ	REFERENCE	ADJ_ID	-
CI_ADJ_CALC_LN	REFERENCE	ADJ_ID	-
CI_ADJ_CHAR	REFERENCE	ADJ_ID	-
CI_ADJ_CL_CHAR	REFERENCE	ADJ_ID	-
CI_BILL_CHG	RANGE (Date Interval)	ILM_DT	BILLABLE_CHG_ID
CI_BCHG_READ	REFERENCE	BILLABLE_CHG_ID	-
CI_BCHG_SQ	REFERENCE	BILLABLE_CHG_ID	-
CI_BILL_CHG_CHAR	REFERENCE	BILLABLE_CHG_ID	-
CI_B_CHG_LINE	REFERENCE	BILLABLE_CHG_ID	-
CI_B_LN_CHAR	REFERENCE	BILLABLE_CHG_ID	-
CI_TRL_BILL	RANGE (Date Interval)	ILM_DT	BILL_ID
CI_TRL_BILL_CHAR	REFERENCE	BILL_ID	-
CI_TRL_BILL_MSGS	REFERENCE	BILL_ID	-
CI_TRL_BILL_EXCP	REFERENCE	BILL_ID	-
CI_TRL_BILL_MSG_PRM	REFERENCE	BILL_ID	-
CI_TRL_BILL_ROUTING	REFERENCE	BILL_ID	-
CI_TRL_BILL_SA	REFERENCE	BILL_ID	-
CI_TRL_BILL_LOG	REFERENCE	BILL_ID	-
CI_TRL_BSEG	RANGE (Date Interval)	ILM_DT	BSEG_ID
CI_TRL_BSCALC	REFERENCE	BSEG_ID	-
CI_TRL_BSCALC_LN	REFERENCE	BSEG_ID	-
CI_TRL_BSCL_CHAR	REFERENCE	BSEG_ID	-

Table Name	Partition Type	Partition Key	Sub-Partition Key
CI_TRL_BSEXP	REFERENCE	BSEG_ID	-
CI_TRL_BSITEM	REFERENCE	BSEG_ID	-
CI_TRL_BSREAD	REFERENCE	BSEG_ID	-
CI_TRL_BSSQ	REFERENCE	BSEG_ID	-
CI_TRL_BSMMSG	REFERENCE	BSEG_ID	-
CI_TRL_BSEXT	REFERENCE	BSEG_ID	-
CI_TRL_FT	RANGE (Date Interval)	ILM_DT	FT_ID
CI_TRL_FT_GL	REFERENCE	FT_ID	-
CI_TRL_FT_PROC	REFERENCE	FT_ID	-

An out of box table partitioning scripts for the ILM implementation are provided by Oracle Revenue Management and Billing for 4.0.0.0.0 release. To use the sample table partitioning scripts:

1. Download the [SAMPLE SQL PARTITIONING SCRIPTS FOR ORMB V4.0.0.0.0](#) patch (Patch Number: 34350312) from [My Oracle Support](#). A zip file is downloaded.
2. Unzip the downloaded file in your local folder. The contents include the following files:
  - [LARGE\\_SAMPLE\\_ILM\\_ONLINE\\_PARTITONING\\_V40000\\_SCRIPTS.zip](#)
  - [Readme.txt](#)
3. Unzip the [LARGE\\_SAMPLE\\_ILM\\_ONLINE\\_PARTITONING\\_V40000\\_SCRIPTS.zip](#) file in your local folder. The contents include the [LARGE\\_SAMPLE\\_ILM\\_ONLINE\\_PARTITONING\\_V40000\\_SCRIPTS](#) folder which contains the sample table partitioning scripts.
4. Verify the downloaded sample table partitioning scripts for the existing indexes and columns in the database.
5. If you have any data in the tables which you want to partition, then take a backup of the existing data and tables.
6. Drop the existing ILM related tables.
7. Partition the tables using the sample partitioning scripts (as mentioned below in this section).
8. Import the backup data in the newly created ILM partitioned tables.

To partition the tables using the sample partitioning scripts:

1. Change to the [LARGE\\_SAMPLE\\_ILM\\_ONLINE\\_PARTITONING\\_V40000\\_SCRIPTS](#) folder using the following command:

```
cd <FOLDER_1>\LARGE_SAMPLE_ILM_ONLINE_PARTITONING_V40000_SCRIPTS
```

**Note:** The [<FOLDER\\_1>](#) folder is the location where you have extracted the contents of the [LARGE\\_SAMPLE\\_ILM\\_ONLINE\\_PARTITONING\\_V40000\\_SCRIPTS.zip](#) file.

The contents include the following TXT files:

- [ONLINE\\_V40000\\_AUDIT\\_table\\_reference\\_part](#)

- ONLINE\_V40000\_CI\_ADJ and referencePartiton\_tables
- ONLINE\_V40000\_CI\_BILL and referencePartiton\_tables
- ONLINE\_V40000\_CI\_BILL\_CHG and referencePartiton\_tables
- ONLINE\_V40000\_CI\_BSEG and referencePartiton\_tables
- ONLINE\_V40000\_CI\_FT\_and referencePartiton\_tables
- ONLINE\_V40000\_CI\_MEMBERSHIP\_and referencePartiton\_tables
- ONLINE\_V40000\_CI\_PAY\_and referencePartiton\_tables
- ONLINE\_V40000\_CI\_TRL\_BILL\_table\_reference\_part
- ONLINE\_V40000\_CI\_TRL\_BSEG\_table\_reference\_part
- ONLINE\_V40000\_CI\_TRL\_FT\_table\_reference\_part
- ONLINE\_V40000\_INBOUND\_MSG\_and referencePartiton\_tables
- ONLINE\_V40000\_match\_evT\_REPRC\_ENTITY\_REPRC\_REQ\_table\_part\_EXA
- ONLINE\_V40000\_PRCE\_CALC\_and referencePartiton\_tables
- ONLINE\_V40000\_TFM\_MODULE\_PARTITIONED\_TABLES

2. Change the extension of all above listed files from TXT to SQL.

**Note:** The following files are available to improve the performance of the fully-insured group health insurance related modules and not for the ILM implementation:

```
>> ONLINE_V40000_AUDIT_table_reference_part
>> ONLINE_V40000_CI_MEMBERSHIP_and referencePartiton_tables
>> ONLINE_V40000_INBOUND_MSG_and referencePartiton_tables
>> ONLINE_V40000_match_evT_REPRC_ENTITY_REPRC_REQ_table_part_EXA
>> ONLINE_V40000_PRCE_CALC_and referencePartiton_tables
```

3. Connect to the ORMB database using a utility named SQL\*Plus and the administrator's (for example, CISADM) credentials.

4. Execute the following SQL queries from the LARGE\_SAMPLE\_ILM\_ONLINE\_PARTITIONING\_V40000\_SCRIPTS folder:

- ONLINE\_V40000\_CI\_ADJ and referencePartiton\_tables
- ONLINE\_V40000\_CI\_BILL and referencePartiton\_tables
- ONLINE\_V40000\_CI\_BILL\_CHG and referencePartiton\_tables
- ONLINE\_V40000\_CI\_BSEG and referencePartiton\_tables
- ONLINE\_V40000\_CI\_TRL\_BILL\_table\_reference\_part
- ONLINE\_V40000\_CI\_TRL\_BSEG\_table\_reference\_part
- ONLINE\_V40000\_CI\_TRL\_FT\_table\_reference\_part
- ONLINE\_V40000\_TFM\_MODULE\_PARTITIONED\_TABLES

The execution logs are generated in the `LARGE_SAMPLE_ILM_ONLINE_PARTITONING_V40000_SCRIPTS` folder which you can use for verification.

Once you execute the sample table partitioning scripts, the tables would be partitioned as shown in the following figure:

Module Name	Table Name	Child Table Name	Partition Type	Partition Key	Sub-Partition Key	
Transaction Feed Management (TFM)	CI_TXN_DETAIL	-	RANGE (DATE INTERVAL)	CURR_SYS_PRCES_DT	-	
	CI_TXN_DTL_PRITM	-	RANGE (DATE INTERVAL)	CURR_SYS_PRCES_DT	-	
Transaction Feed Management (TFM)	CI_ROLLBACK_TXN_DETAIL	-	RANGE (DATE INTERVAL)	CURR_SYS_PRCES_DT	-	
	CI_TXN_DETAIL_EXCP	-	RANGE (DATE INTERVAL)	CURR_SYS_PRCES_DT	-	
	CI_TXN_CALC	-	RANGE (DATE INTERVAL)	ILM_DT	-	
	CI_TXN_SQ	-	RANGE (DATE INTERVAL)	ILM_DT	-	
Transaction Feed Management (TFM)	CI_TXN_CALC_LN	-	RANGE (DATE INTERVAL)	ILM_DT	-	
	CI_TXN_CALC_LN_CHAR	-	RANGE (DATE INTERVAL)	ILM_DT	-	
Billing	CI_BILL		RANGE (DATE INTERVAL)	ILM_DT	BILL_ID	
		CI_BILL_CHAR	REFERENCE	BILL_ID	-	
		CI_BILL_EXCP	REFERENCE	BILL_ID	-	
		CI_BILL_MSG_PRM	REFERENCE	BILL_ID	-	
		CI_BILL_ROUTING	REFERENCE	BILL_ID	-	
		CI_BILL_SA	REFERENCE	BILL_ID	-	
		CI_BILL_ACH	REFERENCE	BILL_ID	-	
		CI_BILL_MSGS	REFERENCE	BILL_ID	-	
		CI_BILL_LOG	REFERENCE	BILL_ID	-	
		CI_BSEG		RANGE (DATE INTERVAL)	ILM_DT	BSEG_ID
			CI_BSEG_CALC	REFERENCE	BSEG_ID	-
			CI_BSEG_CALC_LN	REFERENCE	BSEG_ID	-
			CI_BSEG_CL_CHAR	REFERENCE	BSEG_ID	-
			CI_BSEG_EXCP	REFERENCE	BSEG_ID	-
			CI_BSEG_ITEM	REFERENCE	BSEG_ID	-
			CI_BSEG_MSG	REFERENCE	BSEG_ID	-
			CI_BSEG_READ	REFERENCE	BSEG_ID	-
			CI_BSEG_SQ	REFERENCE	BSEG_ID	-
			CI_BSEG_EXT	REFERENCE	BSEG_ID	-
		CI_ADJ		RANGE (DATE INTERVAL)	ILM_DT	ADJ_ID
			CI_ADJ_APREQ	REFERENCE	ADJ_ID	-
			CI_ADJ_CALC_LN	REFERENCE	ADJ_ID	-
			CI_ADJ_CHAR	REFERENCE	ADJ_ID	-
			CI_ADJ_CL_CHAR	REFERENCE	ADJ_ID	-
		CI_BILL_CHG		RANGE (DATE INTERVAL)	ILM_DT	BILLABLE_CHG_ID
			CI_BCHG_READ	REFERENCE	BILLABLE_CHG_ID	-
			CI_BCHG_SQ	REFERENCE	BILLABLE_CHG_ID	-
			CI_BILL_CHG_CHAR	REFERENCE	BILLABLE_CHG_ID	-
			CI_B_CHG_LINE	REFERENCE	BILLABLE_CHG_ID	-
			CI_B_LN_CHAR	REFERENCE	BILLABLE_CHG_ID	-
	Trial Billing	CI_TRL_BILL		RANGE (DATE INTERVAL)	ILM_DT	BILL_ID
			CI_TRL_BILL_CHAR	REFERENCE	BILL_ID	-
		CI_TRL_BILL_MSGS	REFERENCE	BILL_ID	-	
		CI_TRL_BILL_EXCP	REFERENCE	BILL_ID	-	
		CI_TRL_BILL_MSG_PRM	REFERENCE	BILL_ID	-	
		CI_TRL_BILL_ROUTING	REFERENCE	BILL_ID	-	
		CI_TRL_BILL_SA	REFERENCE	BILL_ID	-	
		CI_TRL_BILL_LOG	REFERENCE	BILL_ID	-	
		CI_TRL_BSEG		RANGE (DATE INTERVAL)	ILM_DT	BSEG_ID
			CI_TRL_BSCALC	REFERENCE	BSEG_ID	-
			CI_TRL_BSCALC_LN	REFERENCE	BSEG_ID	-
			CI_TRL_BSCL_CHAR	REFERENCE	BSEG_ID	-
			CI_TRL_BSEXCP	REFERENCE	BSEG_ID	-
			CI_TRL_BSITEM	REFERENCE	BSEG_ID	-
			CI_TRL_BSREAD	REFERENCE	BSEG_ID	-
			CI_TRL_BSSQ	REFERENCE	BSEG_ID	-
			CI_TRL_BSMMSG	REFERENCE	BSEG_ID	-
			CI_TRL_BSEXT	REFERENCE	BSEG_ID	-
		CI_TRL_FT		RANGE (DATE INTERVAL)	ILM_DT	FT_ID
			CI_TRL_FT_GL	REFERENCE	FT_ID	-
		CI_TRL_FT_PROC	REFERENCE	FT_ID	-	

Figure 5: Tables Partitioned

The range interval of each partition for a table could vary as per the client's volume. For example, the Transaction Feed Management (TFM) related tables can have one partition per day, whereas the Billing related tables can have one partition per month. This range interval is used for partitioning tables in the sample table partitioning scripts.

If you want to change the range interval (i.e. to daily, monthly or quarterly), you need to accordingly modify the sample table partitioning scripts. You need to ensure that the range interval is same for all tables highlighted in the same color (as shown in the above figure). For example, you must use the same range interval for the **CI\_TXN\_DETAIL**, **CI\_ROLLBACK\_TXN\_DETAIL**, **CI\_TXN\_DETAIL\_EXCP**, and **CI\_TXN\_DTL\_PRITM** tables. However, this range interval may vary from the range interval which is defined for the **CI\_TXN\_CALC**, **CI\_TXN\_CALC\_LN**, **CI\_TXN\_CALC\_LN\_CHAR**, and **CI\_TXN\_SQ** tables or for the **CI\_BILL**, **CI\_BSEG**, **CI\_BILL\_CHG**, and **CI\_ADJ** tables.


The partitioning key for any table where the **Owner** flag is set to **Base** should not be changed in any case as it will violate the support from ORMB team.

## 5.2 Setting the Retention Period in the System

The retention period is the number of days you want to retain the data in the application. The system enables you to define the default retention period through the ILM master configuration. This default retention period is applicable for all maintenance objects which are defined in the system. Alternatively, you can define the retention period for each maintenance object. It will override the default retention period defined in the ILM master configuration.

### 5.2.1 Setting the Default Retention Period

To set the default retention period through the ILM master configuration:

1. Login to Oracle Revenue Management and Billing Version 4.0.0.0.0.
2. Click the **Admin** link in the **Application** toolbar. A list appears.
3. From the **Admin** menu, select **M** and then click **Master Configuration**. The **Master Configuration** screen appears.
4. In the **Master Configuration** zone, click the **Edit**  icon corresponding to the ILM Configuration whose details you want to edit. The **ILM Configuration** screen appears. It contains the following section:
  - **Main** – Used to specify information for the ILM configuration.

The **Main** section contains the following fields:

Field Name	Field Description	Mandatory (Yes or No)
Business Object	Indicates the business object using which the ILM master configuration is created.	Not applicable
Default Retention Period	Used to specify the number of days for which you want to retain the data in the application.	Yes

**Tip:** Alternatively, you can edit the ILM configuration by clicking the **Edit** button in the **Master Configuration Details** zone.

5. Enter the default retention period in days.



6. Click **Save**. The changes made to the ILM configuration are saved.

## 5.2.2 Setting the Retention Period for a Maintenance Object

To set the retention period for a maintenance object:

1. Login to Oracle Revenue Management and Billing Version 4.0.0.0.0.
2. Click the **Admin** link in the **Application** toolbar. A list appears.
3. From the **Admin** menu, select **M** and then click **Maintenance Object**. A sub-menu appears.
4. Click the **Search** option from the **Maintenance Object** sub-menu. The **Maintenance Object Query** screen appears.
5. Enter the required search criteria in the **Maintenance Object Search** zone.

### Note:

You must specify at least one search criterion while searching for a maintenance object.

ORMB search engine supports wildcard search, where you can substitute the percentage (%) symbol as a stand in for any word or letter in a search criteria. You can use the '%' wildcard character in all input fields except the date and ID fields. The '%' wildcard character is suffixed automatically at the end of the partial search criteria. Therefore, you may or may not specify the wildcard character at the end of the partial search criteria. However, you have to prefix the wildcard character manually wherever required.

6. Click **Search**. A list of maintenance objects that meet the search criteria appears in the **Search Results** section.
7. In the **Search Results** section, click the link in the **Description** column corresponding to the maintenance object whose details you want to edit. The **Maintenance Object** screen appears.
8. Click the **Options** tab. The **Options** tab appears.
9. Click the **Add (+)** icon corresponding to an option type. A new row is added in the grid.
10. Select the **ILM Retention Period In Days** option from the **Option Type** list.
11. Enter the sequence number in the respective field.
12. Enter the number of days for which you want to retain the records (which are created using the business objects of the respective maintenance object) in the **Option Value** field.
13. Click **Save**. The changes made to the maintenance object are saved.

## 5.3 Setting the C1\_ILM Feature Configuration in the System

The **C1\_ILM** feature configuration enables the system to determine whether certain validations should be executed while identifying the records which are eligible for archival. If a customer is not using the GL Distribution or Foreign Exchange Gain Loss feature, the system enables you to skip the respective validation when an ILM eligibility algorithm (i.e. which are shipped from the product) is executed.

To set the **C1\_ILM** feature configuration:

1. Login to Oracle Revenue Management and Billing Version 4.0.0.0.0.
2. Click the **Admin** link in the **Application** toolbar. A list appears.
3. From the **Admin** menu, select **F** and then click **Feature Configuration**. A sub-menu appears.

4. Click the **Search** option from the **Feature Configuration** sub-menu. The **Feature Configuration Query** screen appears.
5. In the **Feature Configuration Search** zone, enter **C1\_ILM** in the **Feature Name** field.
6. Click **Search**. A list of feature configurations that meet the search criteria appears in the **Search Results** section.
7. In the **Search Results** section, click the link in the **Description** column corresponding to the feature configuration whose details you want to edit. The **Feature Configuration** screen appears. It contains the following option types:

Option Type	Description	Mandatory (Yes or No)
ILM Enabled	<p>Used when you want the system to check whether the entity (i.e. transaction, bill, bill segment, billable charge, adjustment, trial bill, trial bill segment, and trial financial transaction) is archived if it is not available in the system. The system then accordingly displays the appropriate message when you search for these entities. However, note that the relevant message appears only when you search for an entity using the entity ID. The valid values are:</p> <ul style="list-style-type: none"> <li>• Y</li> <li>• N</li> </ul> <p><b>Note:</b> By default, the value is set to <b>Y</b>.</p>	Yes
GL Extraction Used	<p>Used to indicate whether the GL Distribution status of the financial transaction should be validated while identifying the eligible records for archival. The valid values are:</p> <ul style="list-style-type: none"> <li>• Y</li> <li>• N</li> </ul> <p><b>Note:</b> If you do not specify any value for this option type, by default, it is set to <b>N</b>.</p>	No
FX Loss Gain Used	<p>Used to indicate whether the Foreign Exchange Gain Loss Calculation status of the financial transaction should be validated while identifying the eligible records for archival. The valid values are:</p> <ul style="list-style-type: none"> <li>• Y</li> <li>• N</li> </ul> <p><b>Note:</b> If you do not specify any value for this option type, by default, it is set to <b>N</b>.</p>	No

8. Enter the values for the required option types in the **Feature Configuration** screen.
9. Click the **Save** button in the **Page Title** area. The changes made to the feature configuration are saved.

## 6. ILM Batches

The following batches are introduced to implement ILM for the TFM, Billing, and Trial Billing modules:

- [ILM Crawler - Initiator \(F1-ILMIN\)](#)
- [ILM Crawler - Adjustments \(C1-ADCRL\)](#)
- [ILM Crawler - Bills and Bill Segments \(C1-BLCRL\)](#)
- [ILM Crawler - Billable Charges \(C1-BCCRL\)](#)
- [ILM Crawler - Transaction Feed Management \(C1-FMCRL\)](#)
- [ILM Crawler - Transaction Rating Calc Lines \(C1-TCCRL\)](#)
- [ILM Crawler - Trial Bills and Trial Bill Segments \(C1-TBCRL\)](#)
- [ILM Crawler - Trial Financial Transactions \(C1-TFCRL\)](#)

You can execute the above mentioned each batch individually or just execute the **ILM Crawler Initiator (F1-ILMIN)** batch.

### 6.1 ILM Crawler - Initiator (F1-ILMIN)

The **ILM Crawler Initiator (F1-ILMIN)** batch is used when you want to execute ILM Crawler batch for each maintenance object. It checks whether a batch control is specified in the **ILM Crawler Batch Control** option type of the maintenance object. If a batch control is specified in the **ILM Crawler Batch Control** option type, it executes the batch control. However, if a batch control is not specified in the **ILM Crawler Batch Control** option type, it skips the maintenance object and moves to the next maintenance object in the search results set. For the next maintenance object, it checks whether an ILM crawler batch is configured and accordingly executes the batch control. This process continues until the system checks and executes the ILM Crawler batch configured for all existing maintenance objects.

This batch is a multi-threaded batch. The multi-threading is based on maintenance object and chunks for multi-threading are created based on alphabetical distribution of maintenance object. You can specify the following parameters while executing this batch:

Parameter Name	Mandatory (Yes or No)	Description
Thread Pool Name	No	Used to specify the thread pool on which you want to execute the batch.
Override Maximum Errors	No	Used to override the maximum number of errors after which the batch must be terminated.

**Note:** If the **ILM Crawler Initiator (F1-ILMIN)** batch fails or aborts due to some reason, you can restart the batch over and over again with the same set of parameters.

#### Post Execution Check/Clean Up:

On successful completion of this batch, the records which are eligible for archival are marked for each maintenance object where the **ILM Crawler Batch Control** option type is defined.

## 6.2 ILM Crawler - Adjustments (C1-ADCRL)

The **ILM Crawler - Adjustments (C1-ADCRL)** batch is used to identify and mark the adjustments which are eligible for archival. It considers the system date minus retention period as the cutoff date. It uses the retention period which is defined for the **ADJUSTMENT** maintenance object. If the retention period is not defined for the **ADJUSTMENT** maintenance object, it uses the default retention period defined in the ILM master configuration.

It considers those adjustments where the **ILM Archival** flag is set to **N** and ILM date is earlier than the cutoff date, and then executes the ILM eligibility algorithm for each such record.

**Note:** While creating an adjustment, the system sets the ILM date to the date when the adjustment is created in the system.

The ILM eligibility algorithm validates the following:

- The adjustment creation date is earlier than or equal to the cutoff date.
- The adjustment is in the **Frozen** status.
- The adjustment is not linked to a pay tender or statement.
- The dispute request is in the **Processed**, **Rejected**, or **Canceled** status when the adjustment is created against a dispute request.
- The deferred revenue recognition is in the **Closed** or **Canceled** status when the adjustment is created for a deferred revenue recognition.
- All financial transactions related to the adjustment are in the **Frozen** status.
- The GL Distribution Status of the adjustment financial transaction is set to **D** (i.e. Distributed).

**Note:** The GL Distribution Status is verified only when the **GL Extraction Used** option type of the **C1\_ILM** feature configuration is set to **Y**.

- The Foreign Exchange Gain Loss Calculation Status of the adjustment financial transaction is not set to **N** or **NULL**.

**Note:** The Foreign Exchange Gain Loss Calculation Status is verified only when the **FX Loss Gain Used** option type of the **C1\_ILM** feature configuration is set to **Y**.

- The adjustment financial transaction is linked to a balanced match event when the account for which the adjustment is created belongs a customer class where the **Open Item Accounting** option is selected.

If any of the above conditions fail, the adjustment is not eligible for archival. It also checks whether the bill on which the adjustment is swept has ILM date later than the adjustment's ILM date. If so, the adjustment's ILM date is set to the Bill's ILM date and the **ILM Archival** flag is set to **N**. In addition, it checks whether the adjustment is associated to any transfer adjustment. If the adjustment is associated to a transfer adjustment, it also verifies whether the transfer adjustment is eligible for archival. If so, it marks both the adjustments as eligible for archival. However, if the transfer adjustment is not yet eligible for archival, it moves both the adjustments on the same table partition and marks them as not eligible for archival.

**Note:** The system enables you to add additional conditions which should be considered while verifying whether the records are eligible for archival. You can define a custom algorithm and attach it to the **ILM Eligibility** system event of the **ADJUSTMENT** maintenance object.

This batch is a multi-threaded batch. The multi-threading is based on adjustment ID and chunks for multi-threading are created based on numerical distribution of adjustment ID. You can specify the following parameters while executing this batch:

Parameter Name	Mandatory (Yes or No)	Description
Maintenance Object	Yes	Used to indicate that you want to verify the adjustments which are created using the business objects of a particular maintenance object.  <b>Note:</b> By default, the parameter value is set to <b>ADJUSTMENT</b> .
Override Cutoff Date	No	Used when you want to override the calculated cutoff date (i.e. system date minus retention period).  <b>Note:</b> You must specify a date which is earlier than or equal to the calculated cutoff date. You must specify the date in the YYYY-MM-DD format.
Thread Pool Name	No	Used to specify the thread pool on which you want to execute the batch.

**Note:** If the **ILM Crawler - Adjustments (C1-ADCRL)** batch fails or aborts due to some reason, you can restart the batch over and over again with the same set of parameters.

#### Post Execution Check/Clean Up:

On successful completion of this batch, the **ILM\_ARCH\_SW** column corresponding to the adjustments, which are eligible for archival, is set to **Y** in the **CI\_ADJ** table.

**Note:** When you archive the eligible records from the **CI\_ADJ** table, the corresponding child records from the **CI\_ADJ\_APREQ**, **CI\_ADJ\_CALC\_LN**, **CI\_ADJ\_CHAR**, and **CI\_ADJ\_CL\_CHAR** tables are also archived.

## 6.3 ILM Crawler - Bills and Bill Segments (C1-BLCRL)

The **ILM Crawler - Bills and Bill Segments (C1-BLCRL)** batch is used to identify and mark the bills and their bill segments which are eligible for archival. It identifies and marks the regular and adhoc bills which are created from the user interface or through a background process. It does not identify and mark the trial bills which are created in the system. It considers the system date minus retention period as the cutoff date. It uses the retention period which is defined for the **BILL** maintenance object. If the retention period is not defined for the **BILL** maintenance object, it uses the default retention period defined in the ILM master configuration.

It considers those bills where the **ILM Archival** flag is set to **N** and ILM date is earlier than the cutoff date, and then executes the ILM eligibility algorithm for each such bill.

**Note:** While creating a bill or bill segment, the system sets the ILM date to the date when the bill or bill segment is created in the system.

The ILM eligibility algorithm validates the following:

- The bill date is earlier than or equal to the cutoff date.
- The bill is in the **Complete** status.
- The bill is not a credit note bill or is not linked to a credit note bill.
- The bill is not linked to a statement.
- The dispute request is in the **Processed**, **Rejected**, or **Canceled** status when it is created for the bill or its bill segment.
- All financial transactions related to the bill segments are in the **Frozen** status.
- The GL Distribution Status of the bill segment financial transactions is set to **D** (i.e. Distributed).

**Note:** The GL Distribution Status is verified only when the **GL Extraction Used** option type of the **C1\_ILM** feature configuration is set to **Y**.

- The Foreign Exchange Gain Loss Calculation Status of the bill segment financial transactions is not set to **N** or **NULL**.

**Note:** The Foreign Exchange Gain Loss Calculation Status is verified only when the **FX Loss Gain Used** option type of the **C1\_ILM** feature configuration is set to **Y**.

- The bill segment financial transactions are linked to balanced match events when the account for which the bill is created belongs a customer class where the **Open Item Accounting** option is selected.
- The Bill ID, Parent ID, and the Presentment Bill ID on the bill segment financial transaction are same.

If any of the above conditions fail, the bill and its bill segments are not eligible for archival. It checks whether the end date of any billable charge which is swept on the bill is later than the cutoff date. If so, the bill's and bill segment's ILM date is set to the billable charge's ILM date and the **ILM Archival** flag is set to **N**. And it also checks whether the bill date of the bill is later than the ILM date of the bill. If so, the bill's and bill segment's ILM date is set to the bill date and the **ILM Archival** flag is set to **N**.

**Note:** The system enables you to add additional conditions which should be considered while verifying whether the records are eligible for archival. You can define a custom algorithm and attach it to the **ILM Eligibility** system event of the **BILL** maintenance object.

This batch is a multi-threaded batch. The multi-threading is based on bill ID and chunks for multi-threading are created based on numerical distribution of bill ID. You can specify the following parameters while executing this batch:

Parameter Name	Mandatory (Yes or No)	Description
Maintenance Object	Yes	Used to indicate that you want to verify the bills which are created using the business objects of a particular maintenance object.  <b>Note:</b> By default, the parameter value is set to <b>BILL</b> .

Parameter Name	Mandatory (Yes or No)	Description
Override Cutoff Date	No	Used when you want to override the calculated cutoff date (i.e. system date minus retention period).  <div style="border: 1px solid black; padding: 5px;"> <p><b>Note:</b> You must specify a date which is earlier than or equal to the calculated cutoff date.  You must specify the date in the YYYY-MM-DD format.</p> </div>
Thread Pool Name	No	Used to specify the thread pool on which you want to execute the batch.

**Note:** If the **ILM Crawler - Bills and Bill Segments (C1-BLCRL)** batch fails or aborts due to some reason, you can restart the batch over and over again with the same set of parameters.

#### Post Execution Check/Clean Up:

On successful completion of this batch, the **ILM\_ARCH\_SW** column corresponding to the bills and their bill segments, which are eligible for archival, is set to **Y** in the **CI\_BILL** and **CI\_BSEG** tables, respectively.

**Note:** When you archive the eligible records from the **CI\_BILL** table, the corresponding child records from the **CI\_BILL\_CHAR**, **CI\_BILL\_EXCP**, **CI\_BILL\_MSG\_PRM**, **CI\_BILL\_ROUTING**, **CI\_BILL\_SA**, **CI\_BILL\_ACH**, **CI\_BILL\_MSGS**, and **CI\_BILL\_LOG** tables are also archived. And, when you archive the eligible records from the **CI\_BSEG** table, the corresponding child records from the **CI\_BSEG\_CALC**, **CI\_BSEG\_CALC\_LN**, **CI\_BSEG\_CL\_CHAR**, **CI\_BSEG\_EXCP**, **CI\_BSEG\_ITEM**, **CI\_BSEG\_MSG**, **CI\_BSEG\_READ**, **CI\_BSEG\_SQ**, and **CI\_BSEG\_EXT** tables are also archived.

## 6.4 ILM Crawler - Billable Charges (C1-BCCRL)

The **ILM Crawler - Billable Charges (C1-BCCRL)** batch is used to identify and mark the billable charges which are eligible for archival. It considers the system date minus retention period as the cutoff date. It uses the retention period which is defined for the **BILL CHARGE** maintenance object. If the retention period is not defined for the **BILL CHARGE** maintenance object, it uses the default retention period defined in the ILM master configuration.

It considers those billable charges where the **ILM Archival** flag is set to **N** and ILM date is earlier than the cutoff date, and then executes the ILM eligibility algorithm for each such billable charge.

**Note:** While creating a billable charge, the system sets the ILM date to the date when the billable charge is created in the system.

The ILM eligibility algorithm validates the following:

- The billable charge end date is earlier than or equal to the cutoff date.
- The billable charge is in the **Billable** or **Canceled** status when the **Recurring** flag is set to **NULL**. If the billable charge is in the **Billable** status, then:
  - The corresponding bill segments are not in the **Error** status.
  - All financial transactions related to the corresponding bill segment are in the **Frozen** status.
- The billable charge is in the **Billable** or **Canceled** status when the **Recurring** flag is set to **NOT NULL**. If the billable charge is in the **Billable** status, then:
  - The corresponding bill segments are not in the **Error** status.
  - All financial transactions related to the corresponding bill segment are in the **Frozen** status.
- The GL Distribution Status of the corresponding bill segment financial transactions is set to **D** (i.e. Distributed).

**Note:** The GL Distribution Status is verified only when the **GL Extraction Used** option type of the **C1\_ILM** feature configuration is set to **Y**.

- The Foreign Exchange Gain Loss Calculation Status of the corresponding bill segment financial transactions is not set to **N** or **NULL**.

**Note:** The Foreign Exchange Gain Loss Calculation Status is verified only when the **FX Loss Gain Used** option type of the **C1\_ILM** feature configuration is set to **Y**.

- The corresponding bill segment financial transactions are linked to balanced match events when the account for which the billable charge is created belongs a customer class where the **Open Item Accounting** option is selected.
- The Bill ID, Parent ID, and the Presentment Bill ID on the corresponding bill segment financial transaction are same.

If any of the above conditions fail, the billable charge is not eligible for archival. It also checks whether the billable charge end date is later than the cutoff date or ILM date. If so, the billable charge's ILM date is set to the billable charge's end date and the **ILM Archival** flag is set to **N**.

**Note:** The system enables you to add additional conditions which should be considered while verifying whether the records are eligible for archival. You can define a custom algorithm and attach it to the **ILM Eligibility** system event of the **BILL CHARGE** maintenance object.

This batch is a multi-threaded batch. The multi-threading is based on billable charge ID and chunks for multi-threading are created based on numerical distribution of billable charge ID.



You can specify the following parameters while executing this batch:

Parameter Name	Mandatory (Yes or No)	Description
Maintenance Object	Yes	Used to indicate that you want to verify the billable charges which are created using the business objects of a particular maintenance object.  <b>Note:</b> By default, the parameter value is set to <b>BILL CHARGE</b> .
Override Cutoff Date	No	Used when you want to override the calculated cutoff date (i.e. system date minus retention period).  <b>Note:</b> You must specify a date which is earlier than or equal to the calculated cutoff date. You must specify the date in the YYYY-MM-DD format.
Thread Pool Name	No	Used to specify the thread pool on which you want to execute the batch.

**Note:** If the **ILM Crawler - Billable Charges (C1-BCCRL)** batch fails or aborts due to some reason, you can restart the batch over and over again with the same set of parameters.

#### Post Execution Check/Clean Up:

On successful completion of this batch, the **ILM\_ARCH\_SW** column corresponding to the billable charges, which are eligible for archival, is set to **Y** in the **CI\_BILL\_CHG** table.

**Note:** When you archive the eligible records from the **CI\_BILL\_CHG** table, the corresponding child records from the **CI\_BCHG\_READ**, **CI\_BCHG\_SQ**, **CI\_BILL\_CHG\_CHAR**, **CI\_B\_CHG\_LINE**, and **CI\_B\_LN\_CHAR** tables are also archived.

## 6.5 ILM Crawler - Transaction Feed Management (C1-FMCRL)

The **ILM Crawler - Transaction Feed Management (C1-FMCRL)** batch is used to identify and mark the transactions and their transaction legs which are eligible for archival. It considers the system date minus retention period as the cutoff date. It uses the retention period which is defined for the **C1-TFMTXNDTL** maintenance object. If the retention period is not defined for the **C1-TFMTXNDTL** maintenance object, it uses the default retention period defined in the ILM master configuration.

It considers those transactions where the **ILM Archival** flag is set to **N** and the current system processing date (**CURR\_SYS\_PRCS\_DT**) is earlier than the cutoff date, and then executes the ILM eligibility algorithm for each such transaction.

**Note:** While creating or uploading a transaction, the system sets the ILM date to the date when the transaction is created or uploaded in the system.

The ILM eligibility algorithm validates the following:

- The status of the transaction is **Invalid**, **Ignored**, or **Cancelled**.
- The status of the transaction is **Compete** and its transaction legs are either in the **Ignore** status or belong to a frozen bill segment.
- The status of the transaction and its transaction legs is **Error**.

If the above conditions fail, the transaction and its transaction legs are not eligible for archival.

**Note:** The system enables you to add additional conditions which should be considered while verifying whether the records are eligible for archival. You can define a custom algorithm and attach it to the **ILM Eligibility** system event of the **C1-TFMTXNDTL** maintenance object.

This batch is a multi-threaded batch. The multi-threading is based on transaction ID and chunks for multi-threading are created based on numerical distribution of transaction ID. You can specify the following parameters while executing this batch:

Parameter Name	Mandatory (Yes or No)	Description
Maintenance Object	Yes	Used to indicate that you want to verify the transactions which are created using the business objects of a particular maintenance object.  <b>Note:</b> By default, the parameter value is set to <b>C1-TFMTXNDTL</b> .
Override Cutoff Date	No	Used when you want to override the calculated cutoff date (i.e. system date minus retention period).  <b>Note:</b> You must specify a date which is earlier than or equal to the calculated cutoff date. You must specify the date in the YYYY-MM-DD format.
Chunk Size	Yes	Used to specify the number of transactions you want to verify in each work unit.  <b>Note:</b> By default, the parameter value is set to <b>500</b> .
Thread Pool Name	No	Used to specify the thread pool on which you want to execute the batch.

**Note:** If the **ILM Crawler - Transaction Feed Management (C1-FMCRL)** batch fails or aborts due to some reason, you can restart the batch over and over again with the same set of parameters.

**Post Execution Check/Clean Up:**

On successful completion of this batch, the **ILM\_ARCH\_SW** column corresponding to the transactions, which are eligible for archival, is set to **Y** in the **CI\_TXN\_DETAIL** table.

## 6.6 ILM Crawler – Transaction Rating Calc Lines (C1-TCCRL)

The **ILM Crawler - Transaction Rating Calc Lines (C1-TCCRL)** batch is used to identify and mark the transaction leg calculation records which are eligible for archival. It considers the system date minus retention period as the cutoff date. It uses the retention period which is defined for the **C1-TXNCALC** maintenance object. If the retention period is not defined for the **C1-TXNCALC** maintenance object, it uses the default retention period defined in the ILM master configuration.

It considers those transaction leg calculation records where the **ILM Archival** flag is set to **N** and ILM date is earlier than the cutoff date, and then executes the ILM eligibility algorithm for each such transaction leg calculation record.

**Note:** While creating a transaction leg calculation record, the system sets the ILM date to the date when the transaction leg calculation record is created in the system.

The ILM eligibility algorithm validates the following:

- The **ILM Archival** flag of the corresponding transaction leg is set to **Y**.

If the above condition fails, the transaction leg calculation records are not eligible for archival.

**Note:** The system enables you to add additional conditions which should be considered while verifying whether the records are eligible for archival. You can define a custom algorithm and attach it to the **ILM Eligibility** system event of the **C1-TXNCALC** maintenance object.

This batch is a multi-threaded batch. The multi-threading is based on transaction calculation ID and chunks for multi-threading are created based on numerical distribution of transaction calculation ID. You can specify the following parameters while executing this batch:

Parameter Name	Mandatory (Yes or No)	Description
Maintenance Object	Yes	Used to indicate that you want to verify the transaction leg calculation records which are created using the business objects of a particular maintenance object.  <b>Note:</b> By default, the parameter value is set to <b>C1-TXNCALC</b> .
Override Cutoff Date	No	Used when you want to override the calculated cutoff date (i.e. system date minus retention period).  <b>Note:</b> You must specify a date which is earlier than or equal to the calculated cutoff date. You must specify the date in the YYYY-MM-DD format.

Parameter Name	Mandatory (Yes or No)	Description
Chunk Size	Yes	Used to specify the number of transaction leg calculation records you want to verify in each work unit. <b>Note:</b> By default, the parameter value is set to <b>500</b> .
Thread Pool Name	No	Used to specify the thread pool on which you want to execute the batch.

**Note:** If the **ILM Crawler - Transaction Rating Calc Lines (C1-TCCRL)** batch fails or aborts due to some reason, you can restart the batch over and over again with the same set of parameters.

#### Post Execution Check/Clean Up:

On successful completion of this batch, the **ILM\_ARCH\_SW** column corresponding to the transaction leg calculation records, which are eligible for archival, is set to **Y** in the **CI\_TXN\_CALC** table.

## 6.7 ILM Crawler – Trial Bills and Trial Bill Segments (C1-TBCRL)

The **ILM Crawler – Trial Bills and Trial Bill Segments (C1-TBCRL)** batch is used to identify and mark the trial bills and their bill segments which are eligible for archival. It considers the system date minus retention period as the cutoff date. It uses the retention period which is defined for the **C1-TRLBILL** maintenance object. If the retention period is not defined for the **C1-TRLBILL** maintenance object, it uses the default retention period defined in the ILM master configuration.

It considers those trial bills where the **ILM Archival** flag is set to **N** and ILM date is earlier than the cutoff date, and then executes the ILM eligibility algorithm for each such trial bill.

**Note:** While creating a trial bill or trial bill segment, the system sets the ILM date to the date when the trial bill or trial bill segment is created in the system.

The ILM eligibility algorithm validates the following:

- The trial bill date is earlier than or equal to the cutoff date.
- If the trial bill is linked to an actual bill, then the **ILM\_ARCH\_SW** flag of the actual bill is set to **Y**.
- The GL Distribution Status of the trial bill segment financial transactions is set to **D** (i.e. Distributed).

**Note:** The GL Distribution Status is verified only when the **GL Extraction Used** option type of the **C1\_ILM** feature configuration is set to **Y**.

- The Bill ID, Parent ID, and the Presentment Bill ID on the trial bill segment financial transaction are same.

If any of the above conditions fail, the trial bill and its bill segments are not eligible for archival.

**Note:** The system enables you to add additional conditions which should be considered while verifying whether the records are eligible for archival. You can define a custom algorithm and attach it to the **ILM Eligibility** system event of the **C1-TRLBILL** maintenance object.

This batch is a multi-threaded batch. The multi-threading is based on trial bill ID and chunks for multi-threading are created based on numerical distribution of trial bill ID. You can specify the following parameters while executing this batch:

Parameter Name	Mandatory (Yes or No)	Description
Maintenance Object	Yes	Used to indicate that you want to verify the trial bills which are created using the business objects of a particular maintenance object.  <b>Note:</b> By default, the parameter value is set to <b>C1-TRLBILL</b> .
Override Cutoff Date	No	Used when you want to override the calculated cutoff date (i.e. system date minus retention period).  <b>Note:</b> You must specify a date which is earlier than or equal to the calculated cutoff date.  You must specify the date in the YYYY-MM-DD format.
Thread Pool Name	No	Used to specify the thread pool on which you want to execute the batch.

**Note:** If the **ILM Crawler – Trial Bills and Trial Bill Segments (C1-TBCRL)** batch fails or aborts due to some reason, you can restart the batch over and over again with the same set of parameters.

#### Post Execution Check/Clean Up:

On successful completion of this batch, the **ILM\_ARCH\_SW** column corresponding to the trial bills and their bill segments, which are eligible for archival, is set to **Y** in the **CI\_TRL\_BILL** and **CI\_TRL\_BSEG** tables, respectively.

**Note:** When you archive the eligible records from the **CI\_TRL\_BILL** table, the corresponding child records from the **CI\_TRL\_BILL\_CHAR**, **CI\_TRL\_BILL\_MSGS**, **CI\_TRL\_BILL\_EXCP**, **CI\_TRL\_BILL\_MSG\_PRM**, **CI\_TRL\_BILL\_ROUTING**, **CI\_TRL\_BILL\_SA**, and **CI\_TRL\_BILL\_LOG** tables are also archived. And, when you archive the eligible records from the **CI\_TRL\_BSEG** table, the corresponding child records from the **CI\_TRL\_BSCALC**, **CI\_TRL\_BSCALC\_LN**, **CI\_TRL\_BSCL\_CHAR**, **CI\_TRL\_BSEXCP**, **CI\_TRL\_BSITEM**, **CI\_TRL\_BSREAD**, **CI\_TRL\_BSSQ**, **CI\_TRL\_BSMMSG**, and **CI\_TRL\_BSEXT** tables are also archived.

## 6.8 ILM Crawler – Trial Financial Transactions (C1-TFCRL)

The **ILM Crawler – Trial Financial Transactions (C1-TFCRL)** batch is used to identify and mark the trial financial transactions which are eligible for archival. It considers the system date minus retention period as the cutoff date. If the retention period is not defined for the **C1-TRLFT** maintenance object, it uses the default retention period defined in the ILM master configuration.

It considers those trial financial transactions where the **ILM Archival** flag is set to **N** and ILM date is earlier than the cutoff date, and then executes the ILM eligibility algorithm for each such trial financial transaction.

**Note:** While creating a trial financial transaction, the system sets the ILM date to the date when the trial financial transaction is created in the system.

The ILM eligibility algorithm validates the following:

- The trial financial transaction creation date is earlier than or equal to the cutoff date.
- The corresponding entity of the trial financial transaction (i.e. trial bill, trial bill segment, adjustment) is also marked as eligible for archival.

If any of the above conditions fail, the trial financial transaction is not eligible for archival.

**Note:** The system enables you to add additional conditions which should be considered while verifying whether the records are eligible for archival. You can define a custom algorithm and attach it to the **ILM Eligibility** system event of the **C1-TRLFT** maintenance object.

This batch is a multi-threaded batch. The multi-threading is based on trial financial transaction ID and chunks for multi-threading are created based on numerical distribution of trial financial transaction ID. You can specify the following parameters while executing this batch:

Parameter Name	Mandatory (Yes or No)	Description
Maintenance Object	Yes	Used to indicate that you want to verify the trial financial transactions which are created using the business objects of a particular maintenance object.  <b>Note:</b> By default, the parameter value is set to <b>C1-TRLFT</b> .

Parameter Name	Mandatory (Yes or No)	Description
Override Cutoff Date	No	Used when you want to override the calculated cutoff date (i.e. system date minus retention period).  <div style="border: 1px solid black; padding: 5px;"> <p><b>Note:</b> You must specify a date which is earlier than or equal to the calculated cutoff date. You must specify the date in the YYYY-MM-DD format.</p> </div>
Thread Pool Name	No	Used to specify the thread pool on which you want to execute the batch.

**Note:** If the **ILM Crawler – Trial Financial Transactions (C1-TFCRL)** batch fails or aborts due to some reason, you can restart the batch over and over again with the same set of parameters.

**Post Execution Check/Clean Up:**

On successful completion of this batch, the **ILM\_ARCH\_SW** column corresponding to the trial financial transactions, which are eligible for archival, is set to **Y** in the **CI\_TRL\_FT** table.

**Note:** When you archive the eligible records from the **CI\_TRL\_FT** table, the corresponding child records from the **CI\_TRL\_FT\_GL** and **CI\_FT\_TRL\_PROC** tables are also archived.

## 7. Eligible Table Partitions for Archival

Once you execute the ILM Crawler batches, you can view the table partitions which are eligible for archival. A table partition is eligible for archival only when:

- All records in the table partition are eligible for archival.
- The high value of the table partition is earlier than or equal to the cutoff date.

To view the table partitions which are eligible for archival:

1. Login to Oracle Revenue Management and Billing Version 4.0.0.0.0.
2. Click the **Admin** link in the **Application** toolbar. A list appears.
3. From the **Admin** menu, select **I** and then click **ILM Archival**. The **ILM Archival** screen appears. It contains the **Search** zone which allows you to search for table partitions which are eligible for archival. It contains the following fields:

Field Name	Field Description	Mandatory (Yes or No)
Module	Used to search table partitions of a particular module which are eligible for archival. The valid values are: <ul style="list-style-type: none"> <li>• Billing</li> <li>• Transaction Feed Management</li> <li>• Trial Billing</li> </ul>	No
Cutoff Date	Used to search table partitions whose high value date is earlier than or equal to the cutoff date.	Yes

4. Enter the required search criteria and then click **Search**. A list of table partitions which are eligible for archival appears in the search results. The **Search Results** section contains the following columns:

Column Name	Column Description
Table Name	Displays the parent table name.
Partition Name	Displays the name of the table partition.
High Value	Displays the upper boundary date for the range-based table partition.
Eligible to Move	Indicates whether the table partition is eligible for dropping. The valid values are: <ul style="list-style-type: none"> <li>• Y</li> <li>• N</li> </ul>

### Note:

In the Transaction Feed Management (TFM) module, there is no physical enforcement of referential integrity between parent and child table partitions. However, if a particular partition of a parent TFM table is eligible for archival, then the corresponding child table is also eligible for archival.



**Note:**

Please note that the parent and child table partition date range (i.e. daily, monthly, quarterly, etc.) must be same for the following TFM tables:

>> **CI\_TXN\_DETAIL**

>> **CI\_TXN\_DTL\_PRITM**

>> **CI\_ROLLBACK\_TXN\_DETAIL**

>> **CI\_TXN\_DETAIL\_EXCP**

The ILM crawler algorithm only marks the **ILM\_ARCH\_SW** column corresponding to the records to **Y** or **N** in the **CI\_TXN\_DETAIL** table. However, when you search for the eligible table partitions of the TFM module, the system lists the corresponding eligible partitions from the child tables along with the eligible partitions from the parent table.

## 8. Drop Eligible Table Partitions

Once you identify the table partitions which are eligible for dropping, you can drop the eligible table partitions. However, we recommend you take a backup of the eligible table partitions before dropping them.

To drop an eligible table partition:

1. Connect to the ORMB database using a utility named SQL\*Plus and the administrator's (for example, CISADM) credentials.
2. Execute the following command:

```
ALTER TABLE <TABLE_NAME> DROP PARTITION <PARTITION_NAME>
```

For example, `ALTER TABLE CI_BSEG DROP PARTITION SYS_P0264`

**Note:**

When a partition from the parent table is dropped, the corresponding partitions from the child tables are automatically dropped due to reference partitioning. For example, the **CI\_ADJ** is a parent table and the **CI\_ADJ\_APREQ**, **CI\_ADJ\_CALC\_LN**, **CI\_ADJ\_CHAR**, and **CI\_ADJ\_CL\_CHAR** are its child tables. When you drop a partition from the **CI\_ADJ** table, all corresponding partitions from all child tables are dropped, automatically.

While dropping the table partitions for the Billing module, ensure that all eligible partitions on the **CI\_BILL**, **CI\_BSEG**, **CI\_BILL\_CHG**, and **CI\_ADJ** tables are dropped together for a particular high value date.

This activity of dropping eligible table partitions should be taken up during non-peak hours to avoid performance issues.

## 9. Additional Tasks After Dropping Table Partitions

Once you drop the eligible table partitions, you need to do the following:

1. [Rebuild the Global Indexes](#)
2. [Generate the Database Statistics](#)

### 9.1 Rebuilding the Global Indexes

You need to rebuild all global indexes of the tables whose partitions are dropped. To rebuild the global indexes:

1. Connect to the ORMB database using a utility named SQL\*Plus and the administrator's (for example, CISADM) credentials.
2. Execute the following command:

```
select 'ALTER INDEX' || INDEX_NAME || 'REBUILD PARTITION' ||  
PARTITION_NAME || ';' from DBA_ind_partitions where status = 'UNUSABLE' AND  
INDEX_OWNER = 'CISADM';
```

**Note:**

This activity of rebuilding global indexes should be taken up during non-peak hours to avoid performance issues.

Adequate disk space must be allocated for redo logs as considerable amount of redo is expected to be generated during the index rebuild activity.

### 9.2 Generating the Database Statistics

You need to gather the statistics for all tables whose partitions are dropped, and indexes are rebuilt. To generate the database statistics for individual table, use the following statement:

```
BEGIN
```

```
DBMS_STATS.GATHER_TABLE_STATS(OWNNAME=>'CISADM',  
TABNAME=>'<Table_Name>', GRANULARITY=>'ALL', CASCADE=>TRUE, METHOD_OPT=>  
'FOR ALL COLUMNS SIZE AUTO', DEGREE=>32);
```

```
END;
```