

**Oracle Financial Services Revenue
Management and Billing**

Version 6.0.0.0.0

**Direct Database Upgrade from 2.5.0.1.0 to
6.0.0.0.0**

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Oracle Financial Services Revenue Management and Billing Direct Database Upgrade from 2.5.0.1.0 to 6.0.0.0.0

Note: To improve the content readability, the Oracle Financial Services Revenue Management and Billing product is referred to as Oracle Revenue Management and Billing throughout this document.

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Preface

About This Document

This document will help you to understand how to directly upgrade the Oracle Revenue Management and Billing database from 2.5.0.1.0 or any later version to 6.0.0.0.0.

This document does not explain how to create a new application environment for ORMB Version 6.0.0.0.0. For more information on how to create the application environment, refer to the *Oracle Revenue Management and Billing Quick Installation Guide* and *Oracle Revenue Management and Billing Installation Guide*.

Note: You need to create a new application environment for ORMB Version 6.0.0.0.0 and not upgrade the existing application environment.

Intended Audience

This document is intended for the following audience:

- 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	Database Upgrade from 2.5.0.1.0 or Any Later Version to 6.0.0.0.0	Explains how to directly upgrade the Oracle Revenue Management and Billing (ORMB) database from 2.5.0.1.0 or any later version to 6.0.0.0.0.
Section 2	Step 1A - Database Upgrade Process	Lists the packages and patches that you need to install in order to upgrade the database.
Section 3	Step 1B - Data Migration Process	Lists the patches that you need to apply and a set of activities that you to perform to migrate the data from 2.5.0.1.0 or any later version to 6.0.0.0.0.
Section 4	Step 1C – Table Partitioning	Explains the need for partitioning tables in the database.
Section 5	Known Issues and Solution	Lists the known issues when you upgrade ORMB database from 2.5.0.1.0 or any later version to 6.0.0.0.0 and how to handle these issues in the database.

Conventions

The following conventions are used across the document:

Convention	Meaning
boldface	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.
<code>monospace</code>	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
FW	Framework
TFM	Transaction Feed Management
SGA	System Global Area
PGA	Program Global Area

Related Documents

You can refer to the following documents for more information:

Document Name	Description
<i>Oracle Revenue Management and Billing Version 6.0.0.0.0 Release Notes</i>	Provides a brief description about the new features, enhancements, and UI level changes introduced in the current release. The new features and enhancements are classified under three distinct heads – Generic (which is intended for both domains), Financial Services, and Health Insurance. It also contains high-level information about the supported platforms, framework upgrade, supported upgrades, and documentation updates. In addition, it contains a list of discontinued features, planned deprecation notices, customer bugs fixed or forward ported and known issues in the current release.

Document Name	Description
<i>Oracle Revenue Management and Billing Installation Guide</i>	<p>Provides an overview about the application architecture. It contains detailed information about the software and hardware requirements, supported platforms, application server and database space requirements, and application server pre-requisites for supported platforms. It explains the installation and configuration menu options which are available during installation and advanced menu options which are available post installation. It also explains how to configure WebSphere application server and how to install OUAF, OUAF rollup packs, ORMB, and ORMB patches or rollup packs.</p> <p>It contains appendices which lists ORMB rollup packs and notices about third-party JAR and other components.</p>
<i>Oracle Revenue Management and Billing Quick Installation Guide</i>	<p>Provides information about the media packs which are available for the current release. It contains information about the supported platforms, space requirements, and release-specific documentation library. In addition, it contains high-level information on how to install ORMB and selected additional software.</p>
<i>Oracle Revenue Management and Billing Database Administrator's Guide</i>	<p>Provides information about the supported database platforms and explains how to install database with or without demo data. It contains the standards and conventions that should be followed while working with ORMB database. In addition, it lists various configurations and implementation guidelines with respect to tablespace, encryption, storage, compression, indexes, initialization parameters, listener, table partitioning, performance monitoring, memory resource management, optimizer statistics and segment advisors, etc.</p> <p>It contains various appendices which lists the new objects added in ORMB, application services configured for default user groups, new objects added in OUAF, information about OUAF system tables and ORMB rollup packs, notices about third-party JAR and other components.</p>

Document Name	Description
<i>Oracle Revenue Management and Billing Server Administration Guide</i>	<p>Provides detailed information about the product architecture, native support, directory structures, environment variables, logs, etc. It explains various concepts related to the batch server and lists and describes the scripts required for installing and configuring ORMB. It explains how to monitor the system and configure Web browser, Web application server, business application server, inbound web services, and batch server. It explains how to provide Oracle Cloud Support and how to integrate and monitor Oracle Scheduler.</p> <p>It contains various appendices which lists and describes the parameters available in the ENVIRON.INI, Web.xml, spl.properties, hibernate.properties, submitbatch.properties, threadpoolworker, coherence-cache.config.xml, and tangosol-coherence-override.xml files.</p>
<i>Oracle Revenue Management and Billing Security Guide</i>	<p>Highlights what's new in security! Describes all the security features available in ORMB for authentication, authorization, user access, database access, LDAP and SSO integration, audit, encryption, web services, and JNDI access. It also describes how to provide support for data masking, Oracle cloud object storage, groovy, HTTP proxy, keystore, truststore, whitelist, federated architecture, and object erasure. In addition, it explains how to garble the customer information.</p>
<i>Oracle Revenue Management and Billing Upgrade Guide</i>	<p>Explains how to upgrade the ORMB application server and database from one version to another. It also explains how to migrate the ORMB data from one version to another and describes the additional tasks that you need to perform after upgrading from one version to another.</p> <p>It includes various appendices that contain information about new tables introduced in the current release, existing tables which are modified in the current release, dropped algorithms and algorithm types, dropped characteristic types, dropped algorithm parameters, dropped option types in feature configurations, ORMB rollup packs, and SQL statements used for data migration.</p>
<i>Oracle Revenue Management and Billing Upgrade Path Guide</i>	<p>Explains the path and pre-requisites for upgrading Oracle Revenue Management and Billing from one version to another.</p>

Change Log

Revision	Last Update	Updated Section	Comments
1.1	12-Oct-2023	Document Title	Updated the document title displayed in the browser.
		Section 2: Step 1A - Database Upgrade Process	Updated Information
1.2	14-Dec-2023	Section 4: Step 1C – Table Partitioning	Added Section
		Section 1.1: Direct Database Upgrade	Updated Information
1.3	8-Jan-2024	Organization of the Document	Updated Information
1.4	14-Mar-2024	Section 2: Step 1A - Database Upgrade Process	Updated Information

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1. Database Upgrade from 2.5.0.1.0 or Any Later Version to 6.0.0.0.0

This section explains how to directly upgrade Oracle Revenue Management and Billing (ORMB) database from 2.5.0.1.0 or any later version to 6.0.0.0.0. It also lists the pre-requisites for upgrading ORMB database from 2.5.0.1.0 or any later version to 6.0.0.0.0. In addition, it lists all packages and patches that you need to download in order to upgrade the database.

1.1 Direct Database Upgrade

There are two ways in which you can upgrade Oracle Revenue Management and Billing (ORMB) database from 2.5.0.1.0 or any later version to 6.0.0.0.0:

- Using the Step-by-Step Upgrade Process (as shown in the left side of the below figure)
- Using the Direct Upgrade Process (as shown in the right side of the below figure)

The following figure indicates the number of steps involved in both the Step-by-Step Upgrade and Direct Upgrade processes:

Step-by-Step Upgrade Process			Direct Upgrade Process		
Step No.	Upgrade Process	Data Migration Process	Step No.	Upgrade Process	Data Migration Process
Step 1	1A From V2.5.0.1.0 to V2.5.0.2.0 (Install FW Rollup, ORMB, ORMB Rollup)	1B Apply Data Migration Patch (i.e. 23013891)	Step 1	1A From V2.5.0.1.0 to V6.0.0.0.0 (Install FW, FW Rollup, ORMB, ORMB Rollup)	1B Apply Data Migration Patch (i.e. 23013891)
Step 2	2A From V2.5.0.2.0 to V2.5.0.3.0 (Install FW Rollup, ORMB, ORMB Rollup)	2B Apply Data Migration Patch (i.e. 24606002)			Apply Data Migration Patch (i.e. 24606002)
Step 3	3A From V2.5.0.3.0 to V2.5.0.4.0 (Install FW, FW Rollup, ORMB, ORMB Rollup)	3B Create and execute the batch control to migrate the data from ORMB Version 2.5.0.3.0 to 2.5.0.4.0			Create and execute the batch control to migrate the data from ORMB Version 2.5.0.3.0 to 2.5.0.4.0
Step 4	4A From V2.5.0.4.0 to V2.6.0.0.0 (Install FW, FW Rollup, ORMB, ORMB Rollup)	4B Create and execute the batch control to migrate the data from ORMB Version 2.5.0.4.0 to 2.6.0.0.0			Create and execute the batch control to migrate the data from ORMB Version 2.5.0.4.0 to 2.6.0.0.0
Step 5	5A From V2.6.0.0.0 to V2.6.0.1.0 (Install FW Rollup, ORMB, ORMB Rollup)	5B			Apply Data Migration Patch (i.e. 28118364)
Step 6	6A From V2.6.0.1.0 to V2.7.0.0.0 (Install FW Rollup, ORMB, ORMB Rollup)	6B Apply Data Migration Patch (i.e. 28118364)			Execute the Pricing Rules Upgrade Batch (C1-PRCUP) batch to migrate the data from ORMB Version 2.7.0.0.0 to 2.7.0.1.0
Step 7	7A From V2.7.0.0.0 to V2.7.0.1.0 (Install FW, FW Rollup, ORMB, ORMB Rollup)	7B Execute the Pricing Rules Upgrade Batch (C1-PRCUP) batch to migrate the data from ORMB Version 2.7.0.0.0 to 2.7.0.1.0			Apply Data Migration Patch (i.e. 31437274)
Step 8	8A From V2.7.0.1.0 to V2.8.0.0.0 (Install FW Rollup, ORMB, ORMB Rollup)	8B			Apply Data Migration Patch (i.e. 32359347)
Step 9	9A From V2.8.0.0.0 to V2.9.0.0.0 (Install FW, FW Rollup, ORMB, ORMB Rollup)	9B Apply Data Migration Patch (i.e. 31437274)			Execute the following data migration batches - F1-BTIDT, C1-LSUB, C1-BLUPG, and C1-PITEM
Step 10	10A From V2.9.0.0.0 to V2.9.0.1.0 (Install FW, FW Rollup, ORMB, ORMB Rollup)	10B			Apply Data Migration Patch (i.e. 34203584)
Step 11	11A From V2.9.0.1.0 to V3.0.0.0.0 (Install FW Rollup, 32905246 Patch, ORMB, ORMB Rollup)	11B Apply Data Migration Patch (i.e. 32866190)			Apply Data Migration Patch (i.e. 35168757)
Step 12	12A From V3.0.0.0.0 to V3.1.0.0.0 (Install FW, FW Rollup, ORMB, ORMB Rollup)	12B Execute the following data migration batches - F1-BTIDT, C1-LSUB, C1-BLUPG, and C1-PITEM			Apply Data Migration Patch (i.e. 35789534)
Step 13	13A From V3.1.0.0.0 to V3.2.0.0.0 (Install FW Rollup, ORMB, ORMB Rollup)	13B			
Step 14	14A From V3.2.0.0.0 to V4.0.0.0.0 (Install FW Rollup, ORMB, ORMB Rollup)	14B			
Step 15	15A From V4.0.0.0.0 to V5.0.0.0.0 (Install FW, FW Rollup, ORMB, ORMB Rollup)	15B			
Step 16	16A From V5.0.0.0.0 to V5.1.0.0.0 (Install FW Rollup, ORMB, ORMB Rollup)	16B Apply Data Migration Patch (i.e. 35168757)			
Step 17	17A From V5.1.0.0.0 to V6.0.0.0.0 (Install FW, FW Rollup, ORMB, ORMB Rollup)	17B Apply Data Migration Patch (i.e. 35789534)			

Figure 1: Database Upgrade Process

Note: You need to increase the zoom level of this document to get the close-up view of image and thereby enhance the readability of the contents in the image.

To follow the Step-by-Step Upgrade process, you need to refer the *Oracle Revenue Management and Billing Upgrade Path Guide* and *Oracle Revenue Management and Billing Upgrade Guide* of the respective version.

To follow the Direct Upgrade process, you need to execute the following steps:

Step	For more information, refer to...
1A	Step 1A - Database Upgrade Process
1B	Step 1B - Data Migration Process

We recommend you follow the direct upgrade process while upgrading the ORMB database from 2.5.0.1.0 or any later version to 6.0.0.0.0 because it involves a smaller number of steps and saves time.

Once you upgrade the database, we recommend you partition the tables. For more information, refer to the [Step 1C – Table Partitioning](#) section.

1.2 Prerequisites

If you are already using the Transaction Feed Management feature and want to upgrade to Oracle Revenue Management and Billing Version 6.0.0.0.0, then you need to ensure the following (before upgrading):

- All bills generated in the system are in the **Complete** status. In other words, there should not be any bills in the **Pending** status. If there are any bills in the **Pending** status or if any billable charge (generated through TFM) is not yet billed, disaggregation and cancellation of transactions which are uploaded using 2.5.0.1.0 or any later version will not happen successfully.
- Transactions which are uploaded using 2.5.0.1.0 or any later version must not be in the **Initial Product Determined (INPD)** status. They can be in the **Uploaded (UPLD)**, **Invalid (INVL)**, **Error (EROR)**, **Completed (COMP)**, or **Cancelled (CNCL)** status.
- Equal to (=) or tilde (~) symbol is not used in any existing price item parameter code or value. Otherwise, erroneous results might occur.

If you are already using the On Demand Billing feature and want to upgrade to Oracle Revenue Management and Billing Version 6.0.0.0.0, then you need to ensure the following (before upgrading):

- The billable charges and adhoc bills are generated and completed for the usage data files where billing method is set to **Adhoc Billing**.
- The file types created in 2.5.0.1.0 or any later version must no longer be used in 6.0.0.0.0. You should create new file types in 6.0.0.0.0.

Also, ensure that no data exists in the CI_BCHG_TEMP table before you start the upgrade process. If there is data in the CI_BCHG_TEMP table, it means all billing batches are not yet executed for a set of bills. We recommend you to either complete the billing process for such bills by executing all the billing batches or delete the data from the CI_BCHG_TEMP table. Otherwise, erroneous results might occur when you execute the billing batches after the upgrade.

In addition, you need to ensure the following before upgrading ORMB database from 2.5.0.1.0 or any later version to 6.0.0.0.0:

- ORMB data is imported on Oracle Database Server 19c and the `MAX_STRING_SIZE` parameter is set to `EXTENDED`.

Note: For more information on how to set the `MAX_STRING_SIZE` parameter to `EXTENDED`, refer to the **Setting the MAX_STRING_SIZE Parameter to EXTENDED** topic of the **Initial Install or Installing Version 6.0.0.0.0 for the First Time** section in the *Oracle Revenue Management and Billing Version 6.0.0.0.0 Database Administrator's Guide*.

- Assign the **Execute** privilege for the `DBMS_CRYPTO` package to the `CISADM` user

Note: For more information on how to assign the privilege, refer to the **Enabling the DBMS_CRYPTO Package** topic of the **Initial Install or Installing Version 6.0.0.0.0 for the First Time** section in the *Oracle Revenue Management and Billing Version 6.0.0.0.0 Database Administrator's Guide*.

- Allocate minimum SGA and PGA memory per node (i.e. approximately 150 to 200 GB for SGA and 60 to 90 GB for PGA) so that you can execute the upgrade process with parallel threads 32/64/128 depending on the number of available CPUs.
- Remove the `ALTER_CI_PRCE_CALC_LN.sql` script from the `CDIIni.Drv` file which is located at `<DESTINATION_FOLDER_1>/RMB/Upgrade/Oracle/Install-Upgrade` and add it in the beginning of the `CDIPost.Drv` file which is located at `<DESTINATION_FOLDER_1>/RMB/Upgrade/Oracle/Install-Upgrade`.

Note: The `<DESTINATION_FOLDER_1>` folder is the location where you have extracted the contents of the **Oracle Financial Services Revenue Management and Billing 6.0.0.0.0 - Oracle Database** package.

- Take a backup of the `CI_BATCH_RUN_CNTRL` table and then truncate this table.

Besides the above changes, you need to ensure the following before upgrading ORMB database from 2.9.0.1.0 to 6.0.0.0.0:

- Execute the `PreprocessingScript.sql` query which is available in the **V30000 MIGRATION PATCH DEPLOYMENT ISSUE AFTER DIRECT UPGRADE FROM 29010 TO 31000** patch (Patch Number: 33459344).

We have articulated some known issues that you may come across while upgrading ORMB database from 2.5.0.1.0 or any later version to 6.0.0.0.0. Please read the [Known Issues and Solution](#) section before you start upgrading the database.

1.3 Downloading the ORMB Packages and Patches

For upgrading from Oracle Revenue Management and Billing Version 2.5.0.1.0 or any later version to 6.0.0.0.0, you must download the following packages from the **Oracle Financial Services Revenue Management and Billing 6.0.0.0.0** media pack which is available on [Oracle Software Delivery Cloud](#):

- Oracle Financial Services Revenue Management and Billing 6.0.0.0.0 - Oracle Utilities Application Framework (4.5.0.1.1) Single Fix Prerequisite Rollup
- Oracle Financial Services Revenue Management and Billing 6.0.0.0.0 - Oracle Database

You must also download the **Oracle Utilities Application Framework 4.5.0.1.1 - Database Installation Media** package from the **Oracle Utilities Application Framework 4.5.0.1.1** media pack which is available on [Oracle Software Delivery Cloud](#).

In addition, you must download the following patches from [My Oracle Support](#):

- UPGRADE FROM 2.5.0.1.0 to 2.5.0.2.0 (Patch Number: 23013891)
- UPGRADE FROM 2.5.0.2.0 to 2.5.0.3.0 (Patch Number: 24606002)
- UPGRADE FROM 2.6.0.1.0 TO 2.7.0.0.0 (Patch Number: 28118364)
- V2.9 UPGRADE - DEFERRED REVENUE RECOGNITION FUNCTIONALITY ISSUES (Patch Number: 31437274)

Note: You must download this patch only when you are upgrading the ORMB database from any version below 2.6.0.1.0 to 6.0.0.0.0.

- UPGRADE FROM 2.9.0.0.0 TO 2.9.0.1.0 (Patch Number: 32359347)
- PRE BLUEPRINT SCRIPT TO BE APPLIED BEFORE UPGRADING TO 3.0.0.0.0 (Patch Number: 32905246)
- UPGRADE FROM 3.2.0.0.0 TO 4.0.0.0.0 (Patch Number: 34203584)
- UPGRADE FROM 5.0.0.0.0 TO 5.1.0.0.0 (Patch Number: 35168757)
- UPGRADE FROM 5.1.0.0.0 TO 6.0.0.0.0 (Patch Number: 35789534)

The downloaded files will be in the ZIP format.

2. Step 1A - Database Upgrade Process

While upgrading from Oracle Revenue Management and Billing Version 2.5.0.1.0 or any later version to 6.0.0.0.0, you need to install the following on the database (in the specified order):

1. Oracle Utilities Application Framework (OUAF) Version 4.5.0.1.1
2. Rollup Pack for Oracle Utilities Application Framework (OUAF) Version 4.5.0.1.1
3. Oracle Revenue Management and Billing (ORMB) Version 6.0.0.0.0

Once you install ORMB Version 6.0.0.0.0, you need to apply the release-specific patches on the database. To view the list of patches that you need to apply on the database, refer to the [ORMB V6.0.0.0.0 Patch Guide](#) (Document ID: 2978216.1) on [My Oracle Support](#).

Note: There might be situations when you do not want to recreate one or more table indexes. You can skip the recreation process of one or more table indexes by adding the following line in the <DESTINATION_FOLDER_1>/RMB/Upgrade/Oracle/Install-Upgrade/OraSchUpg.inp file:

```
-INDEX: 'INDEX1', 'INDEX2', 'INDEX3'
```

For example, -INDEX: 'XXT033P0', 'XXT034P0', 'XXT035P0'

For more information on how to install the packages and patches on the database, refer to the respective section in the *Oracle Revenue Management and Billing Version 6.0.0.0.0 Upgrade Guide*.

Alternatively, instead of individually applying the patches, you can download and install the rollup packs, if available, to apply a set of patches at once. For more information about the rollup packs, refer to **Appendix L: ORMB V6.0.0.0.0 Rollup Packs** in the *Oracle Revenue Management and Billing Version 6.0.0.0.0 Upgrade Guide*.

Once you install the packages and patches on the database, you need to drop few columns and tables from the database using the following SQL commands:

```
ALTER TABLE CI_BSEG_CALC_LN DROP COLUMN PRICEITEM_PARM_GRP_ID;
ALTER TABLE CI_TXN_REC_TYPE DROP COLUMN RULE_VAL_ALG_CD;
ALTER TABLE CI_CC DROP COLUMN DESCR254;
ALTER TABLE CI_TXN_DTL_PRITM_SUMMARY DROP COLUMN AGG_FREQ;
ALTER TABLE CI_TXN_DTL_PRITM_SUMMARY DROP COLUMN CIS_DIVISION;
ALTER TABLE CI_TXN_DTL_PRITM_SUMMARY DROP COLUMN FINAL_PRICE_ITEM_CD;
ALTER TABLE CI_TXN_DTL_PRITM_SUMMARY DROP COLUMN FINAL_TOU_CD;
ALTER TABLE CI_TXN_DTL_PRITM_SUMMARY DROP COLUMN INITIAL_PRICE_ITEM_CD;
ALTER TABLE CI_TXN_DTL_PRITM_SUMMARY DROP COLUMN INTIAL_TOU_CD;
ALTER TABLE CI_TXN_DTL_PRITM_SUMMARY DROP COLUMN TXN_END_DT;
ALTER TABLE CI_TXN_DTL_PRITM_SUMMARY DROP COLUMN TXN_M softwareYYY;
DROP TABLE CI_ACCT_EXTN;
DROP TABLE CI_ACCT_EXTN_K;
```

```
DROP TABLE CI_CIS_DIV_EXT;  
DROP TABLE CI_PER_EXTN;  
DROP TABLE CI_PER_EXTN_K;  
DROP TABLE CI_TXN_DTL_PRITM_SUMMARY_GTT;  
DROP TABLE CI_TXN_DTL_PRITM_VP_CHUNK_GTT;  
DROP TABLE CI_TXN_DTL_PRITM_VP_GTT;  
DROP TABLE SNP_CHECK_TAB;
```

Note: If any of the above table or column does not exist in the database, ignore the error message and proceed further.

3. Step 1B - Data Migration Process

Once you upgrade the ORMB database, you need to do the following to migrate the data from 2.5.0.1.0 to 6.0.0.0.0:

1. **Apply the UPGRADE FROM 2.5.0.1.0 to 2.5.0.2.0 Patch (Patch Number: 23013891)** – For more information on how to apply this patch, refer to the **Migrating Data** section in the *Oracle Revenue Management and Billing Version 2.5.0.2.0 Upgrade Guide*.
2. **Apply the UPGRADE FROM 2.5.0.2.0 to 2.5.0.3.0 Patch (Patch Number: 24606002)** - For more information on how to apply this patch, refer to the **Migrating Data** section in the *Oracle Revenue Management and Billing Version 2.5.0.3.0 Upgrade Guide*.
3. **Create and Execute the Batch Control to Migrate the Data from ORMB Version 2.5.0.3.0 to 2.5.0.4.0** - For more information on how to create the batch, refer to the **Migrating Data** section in the *Oracle Revenue Management and Billing Version 2.5.0.4.0 Upgrade Guide*.
4. **Create and Execute the Batch Control to Migrate the Data from ORMB Version 2.5.0.4.0 to 2.6.0.0.0** - For more information on how to create the batch, refer to the **Migrating Data** section in the *Oracle Revenue Management and Billing Version 2.6.0.0.0 Upgrade Guide*.
5. **Apply the UPGRADE FROM 2.6.0.1.0 TO 2.7.0.0.0 Patch (Patch Number: 28118364)** - For more information on how to apply this patch, refer to the **Migrating Data** section in the *Oracle Revenue Management and Billing Version 2.7.0.0.0 Upgrade Guide*.

Note: If you are directly upgrading the ORMB database from 2.5.0.1.0 or any later version earlier than 2.6.0.1.0 to 6.0.0.0.0, you should not execute the **Upgrade Batch for Deferred Revenue Recognition (C1-RRUPG)** and **Revenue Recognition Division Upgrade Batch (C1-RRDIV)** batches mentioned in the **Data Migration** section of the *Oracle Revenue Management and Billing Version 2.7.0.0.0 Upgrade Guide*. Otherwise, erroneous results might occur.

6. **Execute the Pricing Rules Upgrade Batch (C1-PRCUP) Batch to Migrate the Data from ORMB Version 2.7.0.0.0 to 2.7.0.1.0** - For more information about this batch, refer to the **Migrating Data** section in the *Oracle Revenue Management and Billing Version 2.7.0.1.0 Upgrade Guide*.
7. **Apply the V2.9 UPGRADE - DEFERRED REVENUE RECOGNITION FUNCTIONALITY ISSUES Patch (Patch Number: 31437274)** - For more information on how to apply this patch, refer to the **Migrating Data from ORMB Version Below 2.6.0.1.0 to 2.9.0.0.0** section in the *Oracle Revenue Management and Billing Version 2.9.0.0.0 Upgrade Guide*.

Note: You must execute the above step (7) only when you are upgrading the ORMB database from any version below 2.6.0.1.0 to 6.0.0.0.0.

8. **Apply the UPGRADE FROM 2.9.0.0.0 TO 2.9.0.1.0 Patch (Patch Number: 32359347)** - For more information on how to apply this patch, refer to the **Migrating Data** section in the *Oracle Revenue Management and Billing Version 2.9.0.1.0 Upgrade Guide*.
9. **Execute the following data migration batches: F1-BTIDT, C1-LSUB, C1-BLUPG, and C1-PITEM** - For more information about the **C1-LSUB**, **C1-BLUPG**, and **C1-PITEM** batches, refer to the **Data Migration** section in the *Oracle Revenue Management and Billing Version 3.1.0.0.0 Upgrade Guide*. And, for more information about the **F1-BTIDT** batch, refer to the **Start Date, End Date, and**

Time Added to Batch Thread Instance section in the *Oracle Revenue Management and Billing Version 3.1.0.0.0 Release Notes* or refer to the detailed description of the batch in the application.

Note: You must execute the above step (9) only when you are upgrading the ORMB database from any version below 3.1.0.0.0 to 6.0.0.0.0 and not when you are upgrading the ORMB database from 3.1.0.0.0, 3.2.0.0.0, 4.0.0.0.0, 5.0.0.0.0, or 5.1.0.0.0 to 6.0.0.0.0.

10. **Apply the UPGRADE FROM 3.2.0.0.0 TO 4.0.0.0.0 Patch (Patch Number: 34203584)** - For more information on how to apply this patch, refer to the **Migrating Data** section in the *Oracle Revenue Management and Billing Version 4.0.0.0.0 Upgrade Guide*.
11. **Apply the UPGRADE FROM 5.0.0.0.0 TO 5.1.0.0.0 Patch (Patch Number: 35168757)** - For more information on how to apply this patch, refer to the **Migrating Data** section in the *Oracle Revenue Management and Billing Version 5.1.0.0.0 Upgrade Guide*.
12. **Apply the UPGRADE FROM 5.1.0.0.0 TO 6.0.0.0.0 Patch (Patch Number: 35789534)** - For more information on how to apply this patch, refer to the **Migrating Data** section in the *Oracle Revenue Management and Billing Version 6.0.0.0.0 Upgrade Guide*.

If you upgrade the ORMB database from a version later than 2.5.0.1.0 to 6.0.0.0.0, you need to accordingly perform the steps listed above to migrate the data. For example, if you want to directly upgrade the ORMB database from 2.9.0.0.0 to 6.0.0.0.0, you just need to follow the steps from 8 to 12 to migrate the data.

4. Step 1C – Table Partitioning

Once the database is upgraded, we recommend you partition the tables which has considerable amount of data. This will help you to manage data and ensure consistent system performance with the increasing data. For more information about the table partitioning, refer to the **Table Partitioning Strategy** section in the *Oracle Revenue Management and Billing Database Administrator's Guide*.

Note: An out of box sample release-specific table partitioning scripts are provided by Oracle Revenue Management and Billing on [My Oracle Support](#). You can partition the tables using these sample scripts. For more information, refer to *Oracle Revenue Management and Billing ILM Implementation Guide*.

5. Known Issues and Solution

This section lists the known issues that may occur when you upgrade ORMB database from 2.5.0.1.0 or any later version to 6.0.0.0.0 and how to handle these issues in the database.

Issue	ORA-38824: A CREATE OR REPLACE command may not change the EDITIONABLE property of an existing object
Solution	Drop all views and functions before you upgrade ORMB database from 2.5.0.1.0 or any later version to 6.0.0.0.0. The Oracle Financial Services Revenue Management and Billing 6.0.0.0.0 - Oracle Database package will recreate the required views and functions in the ORMB database.

Issue	ORA-01451: Column to be modified to NULL cannot be modified to NULL
Solution	<p>Drop the primary key from the table using the following command: ALTER TABLE <TABLE_NAME> DROP PRIMARY KEY</p> <p>Example 1 Error: ALTER TABLE CI_CONSTRUCT_LOG MODIFY SEQ_NUM NULL; Solution: ALTER TABLE CI_CONSTRUCT_LOG DROP PRIMARY KEY</p> <p>Example 2 Error: ALTER TABLE CI_ACCUM_GRP_SL_PRICEITEM MODIFY HCC_CD NULL; Solution: ALTER TABLE CI_ACCUM_GRP_SL_PRICEITEM DROP PRIMARY KEY</p> <p>Note: The primary key will be automatically created for such tables while installing Oracle Revenue Management and Billing (ORMB) Version 6.0.0.0.0.</p>

Issue	ORA-01439: column to be modified must be empty to change datatype
Solution	Backup data from the tables where the issue occurs and then truncate the table. Once the ORMB database is upgraded, you need to insert the backup data in the respective tables before you proceed with the data migration process.