Oracle® Revenue Management and Billing

Version 2.5.0.1.0

Upgrade Guide

Revision 8.4

E70500-01

January, 2016

ORACLE

Oracle Revenue Management and Billing Upgrade Guide

E70500-01

Copyright Notice

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Trademark Notice

Oracle and Java 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 and/or documentation delivered to U.S. Government end users are "commercial computer software" 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 and/or documentation shall be subject to license terms and restrictions applicable to the programs. 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. 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.

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Preface

About This Document

This document will help you to understand how to upgrade the Oracle Revenue Management and Billing application and its database. It also explains how to upgrade the application framework.

Intended Audience

This document is intended for the following audience:

- End-Users
- 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	Preparing for Upgrade	Provides an overview of the upgrade process. It also lists the prerequisites for upgrading the application.
Section 2	Upgrading from ORMB Version 2.4.0.1.0 to 2.5.0.1.0	Explains how to upgrade from Oracle Revenue Management and Billing Version 2.4.0.1.0 to 2.5.0.1.0.
Section 3	Additional Tasks	Lists and describes the additional tasks that you need to perform after upgrading the application.
Appendix A	ORMB 2.5.0.1.0 Patch Numbers	Lists the ORMB Version 2.5.0.1.0 domain-specific patch numbers along with its contents.
Appendix B	Known Issues	Lists the known issues in the current release of the Oracle Revenue Management and Billing application.
Appendix C	Third Party Software Upgrade	Provides a list of third party software that you need to upgrade before upgrading the application.
Appendix D	New Tables Added in 2.5.0.1.0	Lists and describes the tables that are newly added in the Oracle Revenue Management and Billing Version 2.5.0.1.0 database.

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Section No.	Section Name	Description
Appendix E	Existing Tables Modified in 2.5.0.1.0	Lists the existing tables and their columns that are modified in the Oracle Revenue Management and Billing Version 2.5.0.1.0 database.
Appendix F	Algorithms and Algorithm Types Dropped in 2.5.0.1.0	Lists the algorithms and algorithm types which are dropped in Oracle Revenue Management and Billing Version 2.5.0.1.0.
Appendix G	Parameters Added or Removed from Algorithm Types in 2.5.0.1.0	Lists the parameters which are added or removed from the algorithm types in Oracle Revenue Management and Billing Version 2.5.0.1.0.
Appendix H	Changing the DB User Password	Explains how to change the database user password.

Related Documents

You can refer to the following documents for more information:

Document	Description
Oracle Revenue Management and Billing Version 2.5.0.1.0 Release Notes	Provides a brief description about the new features, enhancements, UI and database level changes, supported platforms, framework upgrade, supported upgrades, and technology upgrade made in this release. It also highlights the discontinued features, bug fixes, and known issues in this release.
Oracle Revenue Management and Billing Upgrade Path Guide	Explains the path and pre-requisites for upgrading Oracle Revenue Management and Billing from one version to another.

Change Log

Revision	Last Update	Updated Section	Comments
8.1	03-Oct-2016	Section 2.4.2: Installing Rollup Pack for OUAF Version 4.3.0.1.0	Updated Information
		Section 2.4.3: Generating Security for Database Objects	Updated Information
		Section 2.7.2: Generating Security for Database Objects	Updated Information
8.2	14-Feb-2017	Appendix H: Changing the DB User Password	Added Section
8.3	22-Sep-2017	Section 2.1: Prerequisites	Added Information

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Revision	Last Update	Updated Section	Comments
8.4	20-Aug-2019	Section 2: Upgrading from ORMB Version 2.4.0.1.0 to 2.5.0.1.0	Added Information about the Single-Step Utility

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Contents

1. Preparing for Upgrade 1
1.1 Upgrade Overview 1
1.2 Upgrade Pre-requisites 3
1.3 Supported Upgrades 3
2. Upgrading from ORMB Version 2.4.0.1.0 to 2.5.0.1.0 4
2.1 Prerequisites 4
2.2 Downloading the ORMB Patches 5
2.3 Preparing for Upgrade on the Database 5
2.3.1 Installing ORMB V2.4.0.1.0 ROLLUP PACK 5
2.3.2 Deleting ORMB V2.4.0.1.0 Demo Data with CM Owner Flag 6
2.3.3 Installing ORMB V2.4.0.1.0 POST MANDATORY ROLLUP 7
2.4 Upgrading Framework on the Database 8
2.4.1 Installing OUAF Version 4.3.0.1.0 9
2.4.2 Installing Rollup Pack for OUAF Version 4.3.0.1.0 11
2.4.3 Generating Security for Database Objects 13
2.5 Installing Framework on the Application Environment 14
2.5.1 Installing OUAF Version 4.3.0.1.0 14
2.5.2 Installing Rollup Pack for OUAF Version 4.3.0.1.0 19
2.6 Installing the ORMB Application 21
2.6.1 Installing ORMB Version 2.5.0.1.0 21
2.6.2 Installing the 22076202 Patch 23
2.6.3 Additional Tasks Required for WebSphere Application Server 26
2.6.4 Accessing the ORMB Application 30
2.7 Upgrading the ORMB Database 31
2.7.1 Installing ORMB Version 2.5.0.1.0 31
2.7.2 Generating Security for Database Objects 32
3. Additional Tasks 34
3.1 Generating the Application Viewer 34
3.2 Starting the Thread Pool Worker 35
3.3 Building Javadoc Index 35
Appendix A : ORMB 2.5.0.1.0 Patch Numbers 36
Appendix B : Known Issues 37
Appendix C : Third Party Software Upgrade 38
Appendix D : New Tables Added in 2.5.0.1.0 39
D.1 C1_REF_WO_REQ 39
D.2 C1_REF_WO_REQ_CHAR 40

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

D.3 C1_REF_WO_REQ_DTLS 41
D.4 C1_REF_WO_REQ_K 42
D.5 C1_REF_WO_REQ_LOG 43
D.6 C1_REF_WO_REQ_LOG_PARM 44
D.7 C1_REF_WO_REQ_TYPE 45
D.8 C1_REF_WO_REQ_TYPE_CHAR 46
D.9 C1_REF_WO_REQ_TYPE_L 47
D.10 CI_BATCH_MAPPING 48
D.11 CI_PRICEITEM_REL_CHAR 49
D.12 CI_PROFILE_CHAR 51
Appendix E : Existing Tables Modified in 2.5.0.1.0 53
E.1 C1_PAY_DISTRIBUTION 53
E.2 CI_TXN_REC_TYPE_L 53
E.3 CI_BATCH_RUN_CNTRL 54
E.4 CI_TXN_DETAIL_STG 55
E.5 CI_NAV_OPT 56
E.6 CI_TXN_DETAIL 56
E.7 CI_SCR_L 58
E.8 C1_PAY_MATCH_TYPE 58
E.9 CI_TXN_CALC_LN_CHAR 58
E.10 C1_PAY_DETAILS 59
E.11 CI_BATCH_CTRL_P 59
E.12 CI_PAY_CAN_RSN 59
E.13 CI_TXN_DTL_PRITM_STG 60
E.14 CI_TXN_DTL_PRITM 61
E.15 CI_ZONE_L 62
Appendix F : Algorithms and Algorithm Types Dropped in 2.5.0.1.0 63
F.1 Algorithm Type 63
F.2 Algorithm 63
Appendix G : Parameters Added or Removed from Algorithm Types in 2.5.0.1.0 64
Appendix H : Changing the DB User Password 65

 Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

1. Preparing for Upgrade

This section provides an overview of the upgrade process. It also lists the pre-requisites for upgrading Oracle Revenue Management and Billing from one version to another.

1.1 Upgrade Overview

The following figure provides an overview of the steps that need to be taken for upgrading Oracle Revenue Management and Billing.

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

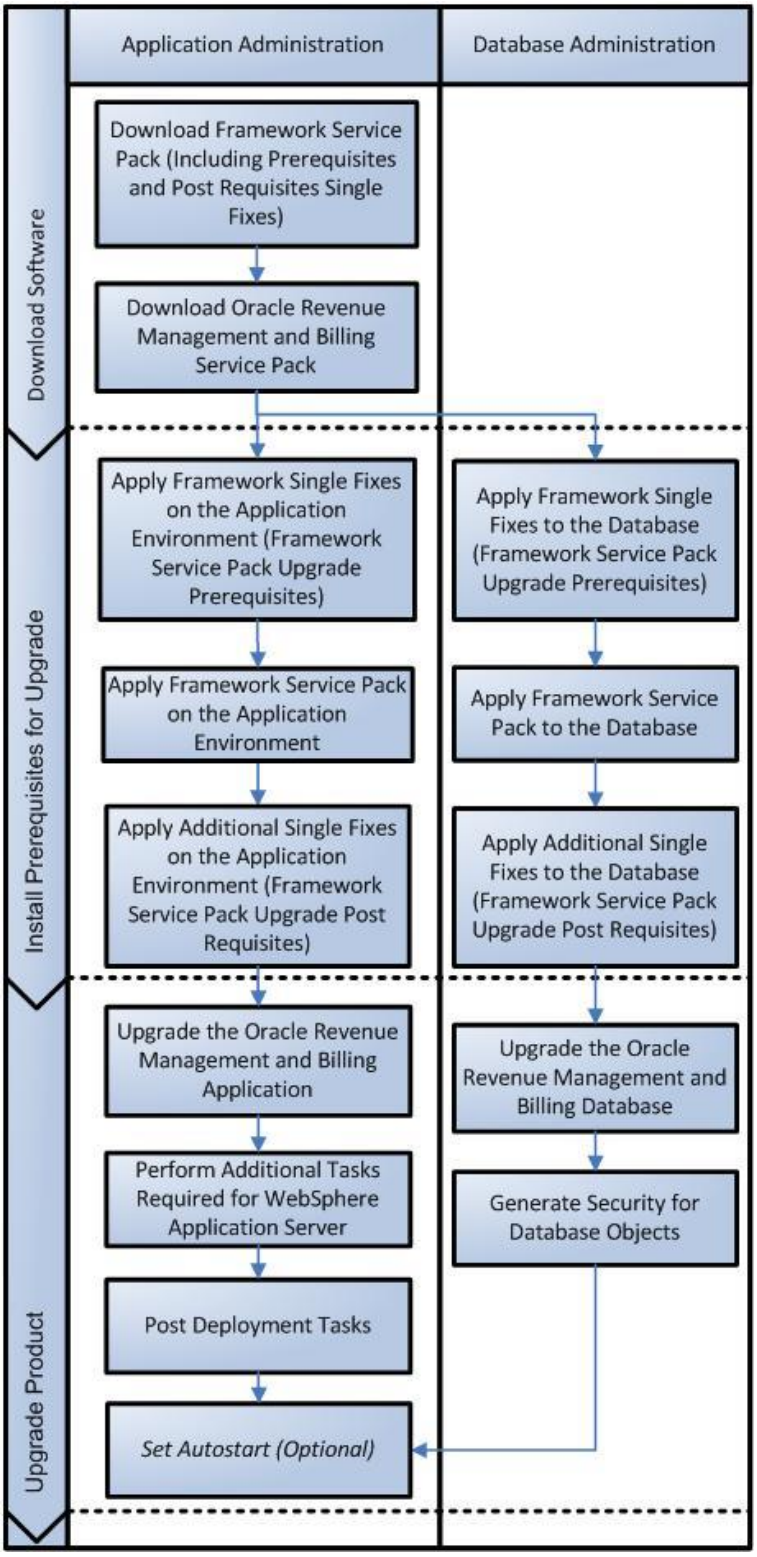

Figure 1 : Upgrade Process

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

1.2 Upgrade Pre-requisites

Before you upgrade Oracle Revenue Management and Billing, you need to upgrade the application framework as mentioned in the *Oracle Revenue Management and Billing Upgrade Path Guide*. While upgrading the application framework, you might have to apply some patches (additional single fixes) as pre-requisites or post-requisites.

Also, before you upgrade the application framework, you might have to upgrade some of the third party software. For more information, refer to the Upgrade Prerequisites section in the *Oracle Revenue Management and Billing Upgrade Path Guide.*

1.3 Supported Upgrades

In this release, we support the following upgrades:

- Upgrade from Oracle Revenue Management and Billing Version 2.4.0.1.0 to 2.5.0.1.0

Note: For upgrading from any other version of Oracle Revenue Management and Billing other than 2.4.0.1.0, consult with Oracle Support, Oracle Partner, or Oracle Consulting that may be supporting your implementation and upgrade process.

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

2. Upgrading from ORMB Version 2.4.0.1.0 to 2.5.0.1.0

This section explains how to upgrade from Oracle Revenue Management and Billing Version 2.4.0.1.0 to 2.5.0.1.0. The high-level steps include:

1. Downloading the ORMB Patches
2. Preparing for Upgrade on the Database
3. Upgrading Framework on the Database
4. Installing Framework on the Application Environment
5. Installing the Oracle Revenue Management and Billing Application
6. Upgrading the Oracle Revenue Management and Billing Database

Note: Before you upgrade the application, you must take a backup of the application and the database.

You can upgrade the database either manually by following the steps listed in this document or automatically using the single-step utility. Oracle Revenue Management and Billing provides the single-step utility which helps to upgrade the database from any previous version (not older than V2.3.0.2.0) to the current version. You can download the single-step utility from the UTILITIES PROVIDING A SINGLE STEP PROCESS FOR DATABASE UPGRADE patch (Patch Number: 25895460) which is available on My Oracle Support. To understand how to execute the single-step utility, refer to the documentation available in the patch. At present, the single-step utility is only supported on the Windows environment.

To improve the performance of the SQL queries executed for data migration, you can execute a Java utility for setting degree of parallelism. This Java utility must be used in conjunction with the single-step utility. It must be executed before executing the single-step utility. You can download this utility from the JAVA UTILITY FOR SETTING DEGREE OF PARALLELISM IN DATA MIGRATIONS SQLS patch (Patch Number: 28226772) which is available on My Oracle Support. To understand how to execute this Java utility, refer to the documentation available in the patch. At present, this utility is only supported on the Windows environment.

2.1 Prerequisites

If you are already using the Transaction Feed Management feature and want to upgrade to Oracle Revenue Management and Billing Version 2.5.0.1.0, 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 2.4.0.1.0 will not happen successfully.
- Transactions which are uploaded using 2.4.0.1.0 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 product parameter code or value. Otherwise, erroneous results might occur.

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

In addition, you need to take a backup of the **CI_BATCH_RUN_CNTRL** table and then truncate this table from the database. Otherwise, erroneous results might occur.

2.2 Downloading the ORMB Patches

For upgrading from Oracle Revenue Management and Billing Version 2.4.0.1.0 to 2.5.0.1.0, you must download the following patches from My Oracle Support:

- RMB V2.4.0.1.0 ROLLUP PACK (Patch Number: 21619977)
- 2.4.0.1.0 ROLL UP PACK POST MANDATORY ROLLUP (Patch Number: 22319157)
- RMB V2.5.0.1.0 - <Domain>

Note: For more details about the patch number, refer to Appendix A: ORMB 2.5.0.1.0 Patch Numbers.

- PAYMENT DELETE, CONCURRENCY ERROR IN INFINITE LOOP (Patch Number: 22076202)

The downloaded files will be in the ZIP format.

2.3 Preparing for Upgrade on the Database

Before you upgrade the Oracle Revenue Management and Billing database, you need to do the following:

1. Install ORMB V2.4.0.1.0 ROLLUP PACK
2. Delete ORMB V2.4.0.1.0 Demo Data with CM Owner Flag
3. Install ORMB V2.4.0.1.0 POST MANDATORY ROLLUP

To perform the above mentioned activities on the database, you must have the following:

- Oracle Database Client 12.1.0.2 installed on the Windows machine from where you want to prepare and upgrade the database
- Ability to connect to the database

2.3.1 Installing ORMB V2.4.0.1.0 ROLLUP PACK

To install the rollup pack for Oracle Revenue Management and Billing (ORMB) Version 2.4.0.1.0 on the database:

1. Login to the database server using the administrator's credentials.
2. Create a temporary folder or directory (for example, `TEMPDIR`) on the database server using the following command:

   ```
   mkdir TEMPDIR
   ```

3. Copy the RMB V2.4.0.1.0 ROLLUP PACK patch to the `TEMPDIR` folder using the following command:

   ```
   copy <PATH>\<filename>.zip <PATH>\TEMPDIR
   ```

Note: You can also use File Transfer Protocol (FTP) to transfer the downloaded file from one host to another. You must use the binary mode while copying files through FTP.

4. Change to the `TEMPDIR` folder using the following command:

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

```
cd <PATH>\TEMPDIR
```

5. Unzip the RMB V2.4.0.1.0 ROLLUP PACK patch using the following command:

   ```
   unzip <filename>.zip –d <PATH>\<DESTINATION_FOLDER>
   ```

   The contents of the zip file are extracted in the `<DESTINATION_FOLDER>` folder. The contents include two sub-folders - `RMB_V2.4.0.1.0_App_Rollup` and `RMB_V2.4.0.1.0_DB_Rollup`.

6. Change to the `RMB_V2.4.0.1.0_DB_Rollup` folder using the following command:

   ```
   cd <Destination_Folder>\RMB_V2.4.0.1.0_DB_Rollup
   ```

7. Execute the `CDXPatch` utility using the following command:

   ```
   CDXPatch.exe
   ```

Note: Ensure that you execute the `CDXPatch` utility from the Window 32-bit or 64-bit desktop that has Oracle Database Client 12.1.0.2 (32-bit) and Java Development Kit Version 7.0 installed. The database must be listed in the `tnsnames.ora` file on your local machine.

This utility prompts you to enter values for the following parameters:

Parameter	Value
Enter the target database type (O/M/D) [O]	`O` (if you have Oracle database) OR `M` (if you have MySQL database)
Enter the username that owns the schema	`<DB_USER>` Example: `CISADM`
Enter the password for the <DB_USER> user	`<DB_USER_PASSWORD>`
Enter the name of the Oracle database	`<DB_NAME>`

8. Enter the required parameter values. The following message appears in the command line:

   ```
   Ready to process patches, Do you want to continue? (Y/N)
   ```

9. Type **Y** and then press **Enter**. A message appears indicating that the process has been completed successfully.

2.3.2 Deleting ORMB V2.4.0.1.0 Demo Data with CM Owner Flag

To delete the ORMB V2.4.0.1.0 demo data with the CM owner flag, execute the following SQL commands:

1. DELETE FROM SC_ACCESS_CNTL WHERE USR_GRP_ID = 'ALL_SERVICES' AND APP_SVC_ID = 'CIPRICEPARM' AND ACCESS_MODE='A' AND OWNER_FLG='CM';
2. DELETE FROM SC_ACCESS_CNTL WHERE USR_GRP_ID = 'ALL_SERVICES' AND APP_SVC_ID = 'CIPRICEPARM' AND ACCESS_MODE='C' AND OWNER_FLG='CM';
3. DELETE FROM SC_ACCESS_CNTL WHERE USR_GRP_ID = 'ALL_SERVICES' AND APP_SVC_ID = 'CIPRICEPARM' AND ACCESS_MODE='D' AND OWNER_FLG='CM';
4. DELETE FROM SC_ACCESS_CNTL WHERE USR_GRP_ID = 'ALL_SERVICES' AND APP_SVC_ID = 'CIPRICEPARM' AND ACCESS_MODE='F1EX' AND OWNER_FLG='CM';

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

5. DELETE FROM SC_ACCESS_CNTL WHERE USR_GRP_ID = 'ALL_SERVICES' AND APP_SVC_ID = 'CIPRICEPARM' AND ACCESS_MODE='R' AND OWNER_FLG='CM';
6. DELETE FROM SC_USR_GRP_PROF WHERE USR_GRP_ID = 'ALL_SERVICES' AND APP_SVC_ID = 'CIPRICEPARM' AND OWNER_FLG='CM';

2.3.3 Installing ORMB V2.4.0.1.0 POST MANDATORY ROLLUP

To install the post mandatory rollup pack for Oracle Revenue Management and Billing (ORMB) Version 2.4.0.1.0 on the database:

1. Copy the 2.4.0.1.0 ROLL UP PACK POST MANDATORY ROLLUP patch to the `TEMPDIR` folder using the following command:

   ```
   copy <PATH>\<filename>.zip <PATH>\TEMPDIR
   ```

Note: You can also use File Transfer Protocol (FTP) to transfer the downloaded file from one host to another. You must use the binary mode while copying files through FTP.

2. Change to the `TEMPDIR` folder using the following command:

   ```
   cd <PATH>\TEMPDIR
   ```

3. Unzip the 2.4.0.1.0 ROLL UP PACK POST MANDATORY ROLLUP patch using the following command:

   ```
   unzip <filename>.zip –d <PATH>\<DESTINATION_FOLDER1>
   ```

   The contents of the zip file are extracted in the `<DESTINATION_FOLDER1>` folder. The contents include two sub-folders - `RMB_V2.4.0.1.0_App_Rollup` and `RMB_V2.4.0.1.0_DB_Rollup`.

4. Change to the `RMB_V2.4.0.1.0_DB_Rollup` folder using the following command:

   ```
   cd <Destination_Folder1>\RMB_V2.4.0.1.0_DB_Rollup
   ```

5. Execute the `CDXPatch` utility using the following command:

   ```
   CDXPatch.exe
   ```

Note: Ensure that you execute the `CDXPatch` utility from the Window 32-bit or 64-bit desktop that has Oracle Database Client 12.1.0.2 (32-bit) and Java Development Kit Version 7.0 installed. The database must be listed in the `tnsnames.ora` file on your local machine.

This utility prompts you to enter values for the following parameters:

Parameter	Value
Enter the target database type (O/M/D) [O]	`O` (if you have Oracle database) OR `M` (if you have MySQL database)
Enter the username that owns the schema	`<DB_USER>` Example: `CISADM`
Enter the password for the <DB_USER> user	`<DB_USER_PASSWORD>`
Enter the name of the Oracle database	`<DB_NAME>`

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

6. Enter the required parameter values. The following message appears in the command line:

   ```
   Ready to process patches, Do you want to continue? (Y/N)
   ```

7. Type **Y** and then press **Enter**. A message appears indicating that the process has been completed successfully.

2.4 Upgrading Framework on the Database

While upgrading from Oracle Revenue Management and Billing Version 2.4.0.1.0 to 2.5.0.1.0, you need to install the following on the database:

1. Oracle Utilities Application Framework (OUAF) Version 4.3.0.1.0
2. Rollup Pack for Oracle Utilities Application Framework (OUAF) Version 4.3.0.1.0

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

To install the framework and its service packs on the database, you must have the following:

- Oracle Database Client 12.1.0.2 installed on the Windows machine from where you want to install the framework and its service packs
- Ability to connect to the database

2.4.1 Installing OUAF Version 4.3.0.1.0

To install Oracle Utilities Application Framework (OUAF) Version 4.3.0.1.0 on the database:

1. Login to the database server using the administrator's credentials.
2. Copy the RMB V2.5.0.1.0 - <Domain> patch to the `TEMPDIR` folder using the following command:

   ```
   copy <PATH>\<filename>.zip <PATH>\TEMPDIR
   ```

Note: You can also use File Transfer Protocol (FTP) to transfer the downloaded file from one host to another. You must use the binary mode while copying files through FTP.

3. Change to the `TEMPDIR` folder using the following command:

   ```
   cd <PATH>\TEMPDIR
   ```

4. Unzip the RMB V2.5.0.1.0 - <Domain patch using the following command:

   ```
   unzip <filename>.zip –d <PATH>\<DESTINATION_FOLDER2>
   ```

   The contents of the zip file are extracted in the `<DESTINATION_FOLDER2>` folder. For more information about the contents of the RMB V2.5.0.1.0 - <Domain> patch, refer to Appendix A: ORMB 2.5.0.1.0 Patch Numbers.

5. Unzip the `RMB-V2.5.0.1.0-Oracle-Database-MultiPlatform` file using the following command:

   ```
   unzip RMB-V2.5.0.1.0-Oracle-Database-MultiPlatform.zip –d
   <PATH>\<DESTINATION_FOLDER_3>
   ```

   The contents of the zip file are extracted in the `<DESTINATION_FOLDER_3>` folder. The contents include the following sub-folders:

   - `Demo_dump`
   - `FW`
   - `RMB`

6. Change to the `Install-Upgrade` folder using the following command:

   ```
   cd <DESTINATION_FOLDER_3>\FW\FW43010\Install-Upgrade
   ```

7. Execute the `OraDBI` utility using the following command:

   ```
   OraDBI.exe
   ```

Note: Ensure that you execute the `OraDBI` utility from the Window 32-bit or 64-bit desktop that has Oracle Database Client 12.1.0.2 (32-bit) and Java Development Kit Version 7.0 installed. The database must be listed in the `tnsnames.ora` file on your local machine.

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

This utility prompts you to enter values for the following parameters:

Parameter	Value
Enter the name of the target database	<DB_NAME>
Enter your database username	<DB_USER> Example: CISADM
Enter your password username	<DB_USER_PASSWORD>
Enter the location for Java Home (e.g. C:\Java\jdk1.6.0_18)	..\jdk1.7.0_21
Enter the TUGBU jarfiles location (e.g. C:\Database-Install\Jarfiles)	..\FW\FW43010\jarfiles
Enter the Oracle user with read-write privileges to Database Schema	<DB_USER> Example: CISUSER
Enter the Oracle user with read-only privileges to Database Schema	<DB_USER> Example: CISREAD
Enter the database role with read-write privileges to Database Schema	<DB_USER_ROLE> Example: CIS_USER
Enter the database role with read-only privileges to Database Schema	<DB_USER_ROLE> Example: CIS_READ
Enter the name of the target Schema where you want to install or upgrade	<Schema_Name>
Enter the password for <DB_USER> schema	<DB_USER_PASSWORD>
Re-enter the password	<DB_USER_PASSWORD>

8. Enter the required parameter values. The following message appears in the command line:

   ```
   Ready to upgrade the target database from V4.2.0.3.0 to V4.3.0.1.0, do you want to continue (Y/N)?
   ```

9. Type **Y** and then press **Enter**. The following message appears in the command line:

   ```
   Ready to upgrade the target database, Do you want to continue? (Y/N)
   ```

10. Type **Y** and then press **Enter**. A message appears indicating that the process has completed successfully.

 Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

2.4.2 Installing Rollup Pack for OUAF Version 4.3.0.1.0

To install the rollup pack for Oracle Utilities Application Framework (OUAF) Version 4.3.0.1.0 on the database:

1. Login to the database server using the administrator's credentials.
2. Unzip the `RMB-V2.5.0.1.0-FW-PREREQ-MultiPlatform` file using the following command:

   ```
   unzip RMB-V2.5.0.1.0-FW-PREREQ-MultiPlatform.zip –d
   <PATH>\<DESTINATION_FOLDER_4>
   ```

   The contents of the zip file are extracted in the `<DESTINATION_FOLDER_4>` folder. The contents include the `ORMB-V25010-FW-PREREQ-MultiPlatform.jar` file.

Note: The `RMB-V2.5.0.1.0-FW-PREREQ-MultiPlatform.zip` file is available at the location where you have extracted the contents of the RMB V2.5.0.1.0 - <Domain> patch.

3. Change to <DESTINATION_FOLDER_4> using the following command:

   cd <PATH>\<DESTINATION_FOLDER_4>

4. Decompress the JAR file using the following command:

   ```
   jar -xvf ORMB-V25010-FW-PREREQ-MultiPlatform.jar
   ```

   A sub-directory named `FW-V4.3.0.1.0-Rollup` is extracted. It contains the following two sub-folders:

   - Application
   - Database

5. Change to the `TEMPDIR` folder using the following command:

   ```
   cd <PATH>\TEMPDIR
   ```

6. Create a directory named `dbpatch_tools` using the following command:

   ```
   mkdir dbpatch_tools
   ```

7. Copy the `db_patch_standalone.jar` file to the `dbpatch_tools` directory using the following command:

   ```
   copy <DESTINATION_FOLDER_5>\FW-V4.3.0.1.0-
   Rollup\Database\db_patch_standalone.jar TEMPDIR\dbpatch_tools
   ```

Note: The `<DESTINATION_FOLDER_5>` folder is the location where you have extracted the contents of the `ORMB-V25010-FW-PREREQ-MultiPlatform.jar` file.

8. Change to the `dbpatch_tools` folder using the following command:

   ```
   cd <PATH>\TEMPDIR\dbpatch_tools
   ```

9. Decompress the JAR file using the following command:

   ```
   jar -xvf db_patch_standalone.jar
   ```

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

The contents are extracted in the dbpatch_tools folder. The contents include the following three sub-folders:

- bin
- config
- lib

10. Set the TOOLSBIN environment variable using the following command:

    SET TOOLSBIN=TEMPDIR\dbpatch_tools\bin

11. Change to the Database directory using the following command:

    cd <DESTINATION_FOLDER_5>\FW-V4.3.0.1.0-Rollup\Database

Note: The <DESTINATION_FOLDER_5> folder is the location where you have extracted the contents of the ORMB-V25010-FW-PREREQ-MultiPlatform.jar file.

12. Execute the ouafDatabasePatch utility using the following command:

    ouafDatabasePatch.cmd

Note:

In the previous versions of Oracle Revenue Management and Billing, you used to execute the cdxpatch utility while installing the rollup pack for Oracle Utilities Application Framework. Henceforth, the cdxpatch utility is no longer supported and you need to use the ouafDatabasePatch utility.

Ensure that you execute the ouafDatabasePatch utility from the Window 32-bit or 64-bit desktop that has Oracle Database Client 12.1.0.2 (32-bit) and Java Development Kit Version 7.0 installed. The database must be listed in the tnsnames.ora file on your local machine.

This utility prompts you to enter values for the following parameters:

Parameter	Value
Enter the target database type (O/M/D) [O]	O (if you have Oracle database) OR M (if you have MySQL database)
Enter the username that owns the schema	<DB_USER> Example: CISADM
Enter the password for the <DB_USER> user	<DB_USER_PASSWORD>
Enter the name of the Oracle Database Connection String	<DB_Server:DBPORT:ORACLE_SID>

Note: If you have changed the database user password, you will not be able to install the rollup pack for Oracle Utilities Application Framework Version 4.3.0.1.0. You will have to first change the database user password. For more information on how to change the database user password, refer to Appendix H: Changing the DB User Password.

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

13. Enter the required parameter value. The following message appears in the command line:

    `Ready to process patches, Do you want to continue? (Y/N)`

14. Type **Y** and then press **Enter**. A message appears indicating that the patches are applied successfully.

2.4.3 Generating Security for Database Objects

Once you apply the framework rollup pack to the database, you need to execute a utility program named `OraGenSec`. This utility program helps you to generate security for all or specific objects in the database.

To generate security for all database objects:

1. Change to the `Install-Upgrade` folder using the following command:

   ```
   cd <DESTINATION_FOLDER_3>\FW\FW43010\Install-Upgrade
   ```

Note: The `<DESTINATION_FOLDER_3>` folder is the location where you have extracted the contents of the `RMB-V2.5.0.1.0-Oracle-Database-MultiPlatform.zip` file.

2. Execute the `OraGenSec` utility using the following command:

   ```
   OraGenSec -d <DB_USER>,<DB_USER_PASSWORD>,<DB_NAME> -u <DB_USER_READ_WRITE>,<DB_USER_READ> -q -a A -f oragensec.txt -l oragensec.log
   ```

Note: Ensure that you execute the `OraGenSec` utility from the Window 32-bit or 64-bit desktop that has Oracle Database Client 12.1.0.2 (32-bit) and Java Development Kit Version 7.0 installed. The database must be listed in the `tnsnames.ora` file on your local machine.

This utility prompts you to enter values for the following parameters:

Parameter	Value
Name of the owner of the database schema	`<DB_USER>` Example: `CISADM`
Password for the user (in silent mode)	`<DB_USER_PASSWORD>`
Name of the Oracle database	`<DB_NAME>`
Comma-separated list of Oracle users in which synonyms need to be created	`<DB_USER>` Example: `CISUSER,CISREAD`

3. Enter the required parameter values. The following message appears in the command line:

   ```
   Select the following options:
   (A/a): Generate security for all objects in the Database?
   (O/o): Generate security for specific Objects inputted in this terminal?
   (F/f): Generate security for specific objects generated from an input File?
   ```

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

4. Enter **A** to generate security for all objects in the database, and then press **Enter**. A message appears indicating that the database connection is established and security is defined for all objects in the database.

2.5 Installing Framework on the Application Environment

Once you install the framework and its service packs on the database and define security for all database objects, you must install the framework and its service packs on the application environment. You need to install the following on the application environment:

1. Oracle Utilities Application Framework (OUAF) Version 4.3.0.1.0
2. Rollup Pack for Oracle Utilities Application Framework (OUAF) Version 4.3.0.1.0

You cannot perform these steps on the existing environments. You need to create new development and production/UAT environments on the application server and then perform the steps listed in this section.

2.5.1 Installing OUAF Version 4.3.0.1.0

To install Oracle Utilities Application Framework (OUAF) Version 4.3.0.1.0 on the application environment:

1. Login to the application server using the administrator's credentials.
2. Create a temporary folder or directory (for example, `TEMPDIR`) on the application server using the following command:

   ```
   mkdir TEMPDIR
   ```

3. Copy the RMB V2.5.0.1.0 - <Domain> patch to the `TEMPDIR` folder using the following command:

   AIX, Linux:

   ```
   cp <PATH>/<filename>.zip <PATH>/TEMPDIR
   ```

   Windows:

   ```
   copy <PATH>\<filename>.zip <PATH>\TEMPDIR
   ```

Note: You can also use File Transfer Protocol (FTP) to transfer the downloaded file from one host to another. You must use the binary mode while copying files through FTP.

4. Change to the `TEMPDIR` folder using the following command:

   AIX, Linux:

   ```
   cd <PATH>/TEMPDIR
   ```

   Windows:

   ```
   cd <PATH>\TEMPDIR
   ```

 Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

5. Unzip the RMB V2.5.0.1.0 - <Domain> patch using the following command:

   AIX, Linux:

   ```
   unzip <filename>.zip –d <PATH>/<DESTINATION_FOLDER>
   ```

   Windows:

   ```
   unzip <filename>.zip –d <PATH>\<DESTINATION_FOLDER>
   ```

   The contents of the zip file are extracted in the `<DESTINATION_FOLDER>` folder. For more information about the contents of the RMB V2.5.0.1.0 - <Domain> patch, refer to Appendix A: ORMB 2.5.0.1.0 Patch Numbers.

6. Unzip the `FW-V4.3.0.1.0-MultiPlatform` file using the following command:

   AIX, Linux:

   ```
   unzip FW-V4.3.0.1.0-MultiPlatform.zip –d
   <PATH>/<DESTINATION_FOLDER_1>
   ```

   Windows:

   ```
   unzip FW-V4.3.0.1.0-MultiPlatform.zip –d
   <PATH>\<DESTINATION_FOLDER_1>
   ```

   The contents of the zip file are extracted in the `<DESTINATION_FOLDER_1>` folder. The contents include `FW-V4.3.0.1.0-MultiPlatform.jar` file.

7. Decompress the `FW-V4.3.0.1.0-MultiPlatform.jar` file using the following command:

   AIX, Linux:

   ```
   jar -xvf FW-V4.3.0.1.0-MultiPlatform.jar
   ```

   Windows:

   ```
   jar -xvf FW-V4.3.0.1.0-MultiPlatform.jar
   ```

   The contents of the JAR file include a folder named `FW-V4.3.0.1.0-SP1`.

8. Install and configure the required third-party software for the application server.

Note: You must install the prerequisite third party software depending on the platform on which you want to install Oracle Utilities Application Framework. For more details, refer to the Installing Application Server Prerequisite Software section in *Oracle Revenue Management and Billing Installation Guide*.

9. Set the Java Home path using the following command:

   ```
   export PATH=/<JAVA_HOME>/bin:/<JAVA_HOME>/lib:$PATH
   ```

Note:

The <`Java_Home`> is the location where you have installed Java 1.7.

The above command is applicable only for UNIX platform.

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

10. Change to the FW-V4.3.0.1.0-SP1 folder using the following command:

    AIX, Linux:

    ```
    cd <DESTINATION_FOLDER_2>/FW-V4.3.0.1.0-SP1
    ```

    Windows:

    ```
    cd <DESTINATION_FOLDER_2>\FW-V4.3.0.1.0-SP1
    ```

Note: The <DESTINATION_FOLDER_2> folder is the location where you have extracted the contents of the FW-V4.3.0.1.0-MultiPlatform.jar file.

11. Execute the install utility using the following command:

    AIX, Linux:

    ```
    ksh ./install.sh
    ```

    Windows:

    ```
    install.cmd
    ```

    The following message appears in the command line:

    ```
    Enter Oracle Client Home Directory (<Enter> quit):
    ```

12. Type <ORACLE_CLIENT_HOME>, and then press Enter. The following options appear in the command line:
    - 1. Environment ID, Roles, Third Party Software Configuration
    - 2. Keystore Options
    - 50. Environment Installation Options

Note:

The <ORACLE_CLIENT_HOME> is the location where Oracle Database Client is installed. This is required to execute the Perl installation utilities.

If the ORACLE_CLIENT_HOME environment variable is set, the installation utility will not request you to provide this information.

13. Type **1** to define values for the third party software configuration, and then press **Enter**. The utility prompts you to enter values for a list of menu options.
14. Specify the required value for menu options, and then press **Enter**.

Note: For more details about these menu options, refer to the Environment ID, Roles, Third Party Software Configuration section in *Oracle Revenue Management and Billing Installation Guide*.

15. Type **2** to define values for the keystore options, and then press **Enter**. The utility prompts you to enter values for a list of menu options.
16. Specify the required value for menu options, and then press **Enter**.

Note: For more details about these menu options, refer to the Keystore Options section in *Oracle Revenue Management and Billing Installation Guide*.

17. Type **50** to define values for the environment installation options, and then press **Enter**. The utility prompts you to enter values for a list of menu options.

 Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

18. Specify the required value for menu options, and then press **Enter**. The specified values are stored in the `$SPLEBASE/etc/ENVIRON.INI` file.

Note:

`$SPLEBASE` or `%SPLEBASE%` is the path where the application environment is installed.

Before you specify the environment installation options, ensure that you have created an output directory named Log File Mount Point. If this output directory does not exist, the installation will not be successfully executed.

For more details about these menu options, refer to the Environment Installation Options section in *Oracle Revenue Management and Billing Installation Guide*.

19. Type **P** to proceed with the installation. The following options appear in the command line:
    - `1. Environment Description`
    - `2. Business Application Server Configuration`
    - `3. Web Application Server Configuration`
    - `4. Database Configuration`
    - `5. General Configuration Options`
    - `6. SSL Certificate Keystore`

Note: The options appear depending on the type of application server that you have selected while configuring the environment installation options. The above options appear when you set the **Web Application Server Type** parameter to **WLS** (i.e. WebLogic). If you set the **Web Application Server Type** parameter to **WAS** (i.e. WebSphere), the following options appear in the command line:

→ 1. Environment Description

→ 2. Business Application Server Configuration

→ 3. Web Application Server Configuration

→ 4. Database Configuration

→ 5. General Configuration Options

However, if you set the **Web Application Server Type** parameter to **WASND** (i.e. WebSphere ND), the following options appear in the command line:

→ 1. Environment Description

→ 2. Business Application Server Configuration

→ 3. Web Application Server Configuration

→ 4. Database Configuration

→ 5. General Configuration Options

For more information about the menu options that you need to set for each option, refer to the respective worksheet in the Installation and Configuration Worksheets section in *Oracle Revenue Management and Billing Installation Guide*.

20. Type **1,** and then press **Enter**. The utility prompts you to enter the environment description.
21. Specify the environment description, and then press **Enter**.

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Note: For more details, refer to the Environment Description section in *Oracle Revenue Management and Billing Installation Guide*.

22. Type **2** to define values for the business application server configuration, and then press **Enter**. The utility prompts you to enter values for a list of menu options.
23. Specify the required value for menu options, and then press **Enter**.
24. Type **3** to define values for the web application server configuration, and then press **Enter**. The utility prompts you to enter values for a list of menu options.
25. Specify the required value for menu options, and then press **Enter**.
26. Type **4** to define values for the database configuration, and then press **Enter**. The utility prompts you to enter values for a list of menu options.
27. Specify the required value for menu options, and then press **Enter**.

Note: For more details about these menu options, refer to the Database Configuration section in *Oracle Revenue Management and Billing Installation Guide*.

28. Type **5** to define values for the general configuration options, and then press **Enter**. The utility prompts you to enter values for a list of menu options.
29. Specify the required value for menu options, and then press **Enter**.

Note: For more details about these menu options, refer to the General Configuration Options section in *Oracle Revenue Management and Billing Installation Guide*.

30. Type **6** to define values for the SSL certificate keystore options, and then press **Enter**. The utility prompts you to enter values for a list of menu options.
31. Specify the required value for menu options, and then press **Enter**.

Note: For more details about these menu options, refer to the SSL Certificate Keystore section in *Oracle Revenue Management and Billing Installation Guide*.

32. Type **P** to proceed with the installation. The Oracle Utilities Application Framework Version 4.3.0.1.0 is installed on the application server.

Note: The utility contains default values for some of the parameters. If required, you can change these parameter values. While executing the `install` utility, you must set the value for all parameters. Otherwise, the installation process will not be completed successfully.

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Note:

Once the installation process is completed, the following utilities are automatically executed in the specified order:

1. `initialSetup` - The `initialSetup` utility updates the configuration files including the WAR files on the system. On the UNIX machine, this utility is available in the `$SPLEBASE/bin` directory. And, on the Windows machine, this utility is available in the `%SPLEBASE%\bin` directory.
2. `splenviron` – The `splenviron` utility sets the environment variables using the `ENVIRON.INI` file. On the UNIX machine, this utility is available in the `$SPLEBASE/bin` directory. And, on the Windows machine, this utility is available in the `%SPLEBASE%\bin` directory. The following are some of the key environment variables that are set using the `splenviron` utility:
   - → $PATH
   - → $SPLEBASE (%SPLEBASE%) – Indicates the <SPLDIR>/<SPLENVIRON> directory
   - → $SPLOUTPUT (%SPLOUTPUT%) - Indicates the <SPLDIROUT>/<SPLENVIRON> directory
   - → $SPLENVIRON (%SPLENVIRON%) – Indicates the environment name

For future operations or any post installation steps, you need to first execute the following command to connect your session to the new environment:

UNIX:

```
$SPLEBASE/bin/splenviron.sh -e $SPLENVIRON
```

Windows:

```
$SPLEBASE\bin\splenviron.cmd -e %SPLENVIRON%
```

You need to execute this script each time you want to be connected to the specific environment before performing manual operations such as shutdown, startup or performing an additional application product installation.

When you have finished the install process, your current online session will be connected to the new environment.

2.5.2 Installing Rollup Pack for OUAF Version 4.3.0.1.0

To install the rollup pack for Oracle Utilities Application Framework Version 4.3.0.1.0 on the application environment:

1. Unzip the `RMB-V2.5.0.1.0-FW-PREREQ-MultiPlatform` file using the following command:

   AIX, Linux:

   ```
   unzip RMB-V2.5.0.1.0-FW-PREREQ-MultiPlatform.zip –d
   <PATH>/<DESTINATION_FOLDER_3>
   ```

   Windows:

   ```
   unzip RMB-V2.5.0.1.0-FW-PREREQ-MultiPlatform.zip –d
   <PATH>\<DESTINATION_FOLDER_3>
   ```

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

The contents of the zip file are extracted in the <DESTINATION_FOLDER_3> folder. The contents include the ORMB-V25010-FW-PREREQ-MultiPlatform.jar file.

Note: The RMB-V2.5.0.1.0-FW-PREREQ-MultiPlatform.zip file is available at the location where you have extracted the contents of the RMB V2.5.0.1.0 - <Domain> patch.

2. Decompress the JAR file using the following command:

   AIX, Linux:

   ```
   jar -xvf ORMB-V25010-FW-PREREQ-MultiPlatform.jar
   ```

   Windows:

   ```
   jar -xvf ORMB-V25010-FW-PREREQ-MultiPlatform.jar
   ```

   A sub-directory named FW-V4.3.0.1.0-Rollup is extracted. It contains the following two sub-folders:

   - Application
   - Database

3. Initialize the application environment where you want to install the rollup pack using the following command:

   AIX, Linux:

   ```
   $SPLEBASE/bin/splenviron.sh -e $SPLENVIRON
   ```

   Windows:

   ```
   $SPLEBASE\bin\splenviron.cmd -e %SPLENVIRON%
   ```

4. Change to the Application directory using the following command:

   AIX, Linux:

   ```
   cd <DESTINATION_FOLDER_4>\FW-V4.3.0.1.0-Rollup\Application
   ```

   Windows:

   ```
   cd <DESTINATION_FOLDER_4>/FW-V4.3.0.1.0-Rollup/Application
   ```

Note: The <DESTINATION_FOLDER_4> folder is the location where you have extracted the contents of the ORMB-V25010-FW-PREREQ-MultiPlatform.jar file.

5. Execute the installSFgroup utility using the following command:

   UNIX:

   ```
   chmod a+x installSFgroup.sh
   chmod a+x FW*/*.sh
   ./installSFgroup.sh
   ```

   Windows:

   ```
   installSFgroup.cmd
   ```

   The following message appears in the command line:

   ```
   Ready to process patches, Do you want to continue? (Y/N)
   ```

 Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

6. Type **Y** in the command line, and then press **Enter**. A message appears indicating that the process has been completed successfully.

2.6 Installing the ORMB Application

This section explains how to install the application. You need to install the following on the application environment:

1. Oracle Revenue Management and Billing (ORMB) Version 2.5.0.1.0
2. PAYMENT DELETE, CONCURRENCY ERROR IN INFINITE LOOP patch (Patch Number: 22076202)

When you install application on the WebLogic application server, the application is deployed automatically on the server. However, when you install application on the WebSphere application server, the application is not deployed automatically on the server. You have to manually deploy the application on the WebSphere application server. For more information, refer to the Additional Tasks Required for WebSphere Application Server section.

Note: If you have updated the template files in the `$SPLEBASE/etc` folder, you must also take a backup of these files. Once the application is installed on the new application environment, you need to copy the latest template files in the `$SPLEBASE/etc` folder.

2.6.1 Installing ORMB Version 2.5.0.1.0

To install Oracle Revenue Management and Billing (ORMB) Version 2.5.0.1.0 on the application environment:

1. Login to the application server using the administrator's credentials.
2. Initialize the application environment (on which you want to install the application) using the following command:

   AIX, Linux:

   ```
   $SPLEBASE/bin/splenviron.sh -e $SPLENVIRON
   ```

   Windows:

   ```
   %SPLEBASE%\bin\splenviron.cmd -e %SPLENVIRON%
   ```

   Where, `$SPLEBASE` or `%SPLEBASE%` is the path where the application environment is installed, and `$SPLENVIRON` or `%SPLENVIRON%` is the name of the application environment for which you want to set the environment variables.

3. Stop the application environment using the following command:

   AIX, Linux:

   ```
   $SPLEBASE/bin/spl.sh stop
   ```

   Windows:

   ```
   %SPLEBASE%\bin\spl.cmd stop
   ```

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Note: If you have the WebLogic application server, you need to stop the application environment before you proceed with the installation. However, if you have the WebSphere application server, you need to stop the application server before you proceed with the installation. To stop the application server, use the following command:

```
/opt/IBM/WebSphere/AppServer/bin/stopServer.sh <Server_Name>
```

4. Set the Java Home path using the following command:

   AIX, Linux:

   ```
   export PATH=<Java_Home>/bin:$PATH
   ```

Note:

The <Java_Home> is the location where you have installed Java 1.7.

The above command is applicable only for UNIX platform.

5. Unzip the RMB-V2.5.0.1.0-MultiPlatform file using the following command:

   AIX, Linux:

   ```
   unzip RMB-V2.5.0.1.0-MultiPlatform.zip -d
   <PATH>/<DESTINATION_FOLDER_5>
   ```

   Windows:

   ```
   unzip RMB-V2.5.0.1.0-MultiPlatform.zip -d
   <PATH>\<DESTINATION_FOLDER_5>
   ```

Note: The RMB-V2.5.0.1.0-MultiPlatform.zip file is available at the location where you have extracted the contents of the RMB V2.5.0.1.0 - <Domain> patch.

   The contents of the zip file are extracted in the <DESTINATION_FOLDER_5> folder. The contents include ORMB.V2.5.0.1.0 folder.

6. Change to the ORMB.V2.5.0.1.0 folder using the following command:

   AIX, Linux:

   ```
   cd <DESTINATION_FOLDER_5>/ORMB.V2.5.0.1.0
   ```

   Windows:

   ```
   cd <DESTINATION_FOLDER_5>\ORMB.V2.5.0.1.0
   ```

7. Execute the install utility using the following command:

   AIX, Linux:

   ```
   ./install.sh
   ```

   Windows:

   ```
   install.cmd
   ```

   The following message appears in the command line:

   ```
   Do you wish to proceed with the installation? Y/N:
   ```


Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

8. Type **Y** and then press **Enter**. A message appears informing you to type P if you want to proceed with the installation.
9. Type **P**, and then press **Enter**. The installation process might take some time to generate the WAR files. Once the build is deployed successfully, the following message appears in the command line:

   ```
   Do you wish to start the environment now? Y/N:
   ```

10. Type **N** and then press **Enter**.

Note:

If you are installing application on the WebSphere application server, the following message appears before you are prompted to start the environment:

```
Would you wish to deploy web application to WebSphere now? Y/N:
```

Type **N** and then press **Enter**.

If you want to set the advanced menu options, execute the `configureEnv` utility using the following command:

AIX, Linux:

```
$SPLEBASE/bin/configureEnv.sh –a
```

Windows:

```
%SPLEBASE%\bin\configureEnv.cmd –a
```

You cannot set the advanced menu options during the installation process. These options can be set only after the application is installed. For more information, refer to the Advanced Menu Options section in the *Oracle Revenue Management and Billing Installation Guide*.

2.6.2 Installing the 22076202 Patch

Once you install Oracle Revenue Management and Billing Version 2.5.0.1.0, you need to install the PAYMENT DELETE, CONCURRENCY ERROR IN INFINITE LOOP patch (Patch Number: 22076202). This patch is mandatory and must be applied to resolve the concurrency error that occurs while deleting a payment in the **Incomplete** status.

To install the PAYMENT DELETE, CONCURRENCY ERROR IN INFINITE LOOP patch:

1. Copy the PAYMENT DELETE, CONCURRENCY ERROR IN INFINITE LOOP patch to the `TEMPDIR` folder using the following command:

   AIX, Linux:

   ```
   cp <PATH>/<filename>.zip <PATH>/TEMPDIR
   ```

   Windows:

   ```
   copy <PATH>\<filename>.zip <PATH>\TEMPDIR
   ```

Note: You can also use File Transfer Protocol (FTP) to transfer the downloaded file from one host to another. You must use the binary mode while copying files through FTP.

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

2. Change to the TEMPDIR folder using the following command:

   AIX, Linux:

   ```
   cd <PATH>/TEMPDIR
   ```

   Windows:

   ```
   cd <PATH>\TEMPDIR
   ```

3. Unzip the PAYMENT DELETE, CONCURRENCY ERROR IN INFINITE LOOP patch using the following command:

   AIX, Linux:

   ```
   unzip <filename>.zip –d <PATH>/<DESTINATION_FOLDER_6>
   ```

   Windows:

   ```
   unzip <filename>.zip –d <PATH>\<DESTINATION_FOLDER_6>
   ```

   The contents of the zip file are extracted in the <DESTINATION_FOLDER_6> folder. The contents include three files - README.txt, MultiPlatform.zip, and Bug 22076202 Product Fix Design.pdf.

4. Unzip the MultiPlatform file using the following command:

   AIX, Linux:

   ```
   unzip MultiPlatform.zip –d <PATH>/<DESTINATION_FOLDER_7>
   ```

   Windows:

   ```
   unzip MultiPlatform.zip –d <PATH>\<DESTINATION_FOLDER_7>
   ```

   The contents of the zip file are extracted in the <DESTINATION_FOLDER_7> folder. The contents include the V4.3.0.1.0-22076202_MultiPlatform folder.

5. Change to the V4.3.0.1.0-22076202_MultiPlatform folder using the following command:

   AIX, Linux:

   ```
   cd <DESTINATION_FOLDER_7>/V4.3.0.1.0-22076202_MultiPlatform
   ```

   Windows:

   ```
   cd <DESTINATION_FOLDER_7>\V4.3.0.1.0-22076202_MultiPlatform
   ```

Note: The <DESTINATION_FOLDER_7> folder is the location where you have extracted the contents of the MultiPlatform.zip file.

   The contents include three files - IR_22076202.coreq, IR_22076202.prereq, and FW.V4.3.0.1.0-22076202.jar.

6. Decompress the FW.V4.3.0.1.0-22076202.jar file using the following command:

   AIX, Linux:

   ```
   jar -xvf FW.V4.3.0.1.0-22076202.jar
   ```

   Windows:

   ```
   jar -xvf FW.V4.3.0.1.0-22076202.jar
   ```

 Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

The contents include two folders - META-INF and FW.V4.3.0.1.0-22076202.

7. Initialize the application environment (on which you want to install the patch) using the following command:

   AIX, Linux:

   ```
   $SPLEBASE/bin/splenviron.sh -e $SPLENVIRON
   ```

   Windows:

   ```
   %SPLEBASE%\bin\splenviron.cmd -e %SPLENVIRON%
   ```

   Where,

   $SPLEBASE or %SPLEBASE% is the path where the application environment is installed and $SPLENVIRON or %SPLENVIRON% is the name of the application environment.

8. Change to the FW.V4.3.0.1.0-22076202 folder using the following command:

   AIX, Linux:

   ```
   cd <DESTINATION_FOLDER_8>/FW.V4.3.0.1.0-22076202
   ```

   Windows:

   ```
   cd <DESTINATION_FOLDER_8>/FW.V4.3.0.1.0-22076202
   ```

Note: The <DESTINATION_FOLDER_8> folder is the location where you have extracted the contents of the FW.V4.3.0.1.0-22076202.jar file.

9. Install the patch using the following command:

   AIX, Linux:

   ```
   ./installSF.sh
   ```

   Windows:

   ```
   installSF.cmd
   ```

10. Execute the initialSetup utility using the following command:

    AIX, Linux:

    ```
    $SPLEBASE/bin/initialSetup.sh
    ```

    Windows:

    ```
    %SPLEBASE%\bin\initialSetup.cmd
    ```

11. If you are using demo certificates, execute the following commands before starting the environment:

    AIX, Linux:

    ```
    cd $SPLEBASE/bin
    perl demo_gen_cert.plx
    ```

    Windows:

    ```
    cd %SPLEBASE%/bin
    perl demo_gen_cert.plx
    ```

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

12. Start the application environment using the following command:

    AIX, Linux:

    ```
    $SPLEBASE/bin/spl.sh start
    ```

    Windows:

    ```
    %SPLEBASE%\bin\spl.cmd start
    ```

    A log file is generated. It indicates whether the application environment has started successfully or not. If any error occurred during startup, the same is recorded in the log file. By default, the log file is stored in the `$SPLSYSTEMLOGS (%SPLSYSTEMLOGS%` on Windows) directory.

Note: If you have the WebLogic application server, you need to start the application environment. However, if you have the WebSphere application server, you need to start the application server. To start the application server, use the following command:

```
/opt/IBM/WebSphere/AppServer/bin/startServer.sh <Server_Name>
```

But, before you start the server, you need to manually deploy the application on the WebSphere application server. For more information, refer to the Additional Tasks Required for WebSphere Application Server section.

2.6.3 Additional Tasks Required for WebSphere Application Server

Once you upgrade the application, you need to manually deploy the application on WebSphere application server. To deploy the application on WebSphere application server, you need to do the following in the specified order:

1. Deploy the `SPLService.ear` file
2. Deploy the `SPLWeb.ear` file
3. Configure the `SPLService.ear` file
4. Configure the `SPLWeb.ear` file
5. Map Users or Groups to the `cisusers` Role

Note: If the `SPLService.ear` and `SPLWeb.ear` files are already deployed on WebSphere application server, you need to first uninstall them.

2.6.3.1 Deploying the SPLService.ear File

To deploy the `SPLService.ear` file on WebSphere application server:

1. Login to the Integrated Solutions Console using the administrator's credentials.
2. In the left pane, click the **Applications** option. A list appears.
3. Click the **Install New Application** link. The **Preparing for the application installation** page appears in the right pane.
4. Select the **Remote file system** option. The **Browse Remote Filesystems** page appears in the right pane.
5. Browse to the `$SPLEBASE\splapp\applications` location. The `applications` folder includes all `WAR` and `EAR` files.

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

6. Select the **SPLService.ear** option and click **OK**. The **Preparing for the application installation** page appears in the right pane.
7. Click **Next**. The **Install New Application** wizard appears in the right pane.
8. Click **Next**. The **Map modules to servers** wizard page appears.
9. Select the clusters or servers on which you want to install the modules that are contained in the application.
10. Select the check box corresponding to the module named **ServiceBean**. This indicates that you want to install the **ServiceBean** module on the selected server.
11. Click **Apply**. The module is mapped to the selected servers.
12. Click **Next**. The **Provide JNDI names for beans** wizard page appears.
13. Enter the Java Naming and Directory Interface (JNDI) name for the **ServiceBean** module. Use the following naming convention:

    `spl-<server name>/servicebean`
14. Click **Next**. The **Summary** wizard page appears.
15. Click **Finish**. The deployment process starts. It takes some time. A message appears indicating that the `SPLService.ear` file is deployed successfully on WebSphere application server.
16. Click the **Save** link to reflect the changes in the master configuration files.

2.6.3.2 Deploying the SPLWeb.ear File

To deploy the SPLWeb.ear file on WebSphere application server:

1. Login to the Integrated Solutions Console using the administrator's credentials.
2. In the left pane, click the **Applications** option. A list appears.
3. Click the **Install New Application** link. The **Preparing for the application installation** page appears in the right pane.
4. Select the **Remote file system** option. The **Browse Remote Filesystems** page appears in the right pane.
5. Browse to the `$SPLEBASE\splapp\applications` location. The `applications` folder includes all `WAR` and `EAR` files.
6. Select the **SPLWeb.ear** option and click **OK**. The **Preparing for the application installation** page appears in the right pane.
7. Select the **Show me all installation options and parameters** option and then click **Next**. Additional installation options and parameters appear in the right pane.
8. Click **Next**. The **Install New Application** wizard appears in the right pane.
9. Select the **Precompile JavaServer Pages files** check box and then click **Next**. The **Map modules to servers** wizard page appears.
10. Select the clusters or servers on which you want to install the modules that are contained in the application.
11. Select the check box corresponding to all modules, such as SPLApp.war, XAIApp.war, appViewer.war, and help.war. This indicates that you want to deploy all WAR files on the selected server.
12. Click **Apply**. The modules are mapped to the selected server.

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

13. Click **Next**. The **Provide options to compile JSPs** wizard page appears.
14. Enter `15` in the **JDK Source Level** field corresponding to all URIs.
15. Click **Next**. The **Provide JSP reloading options for Web modules** wizard page appears.
16. Click **Next**. The **Map shared libraries** wizard page appears.
17. Click **Next**. The **Initialize parameters for servlets** wizard page appear.
18. Click **Next**. The **Map virtual hosts for Web modules** wizard page appears.
19. Click **Next**. The **Map context roots for Web modules** wizard page appears.
20. Click **Next**. The **Map environment entries for Web modules** wizard page appears.
21. Click **Next**. The **Map security roles to users or groups** wizard page appears.
22. Click **Next**. The **Summary** wizard page appears.
23. Click **Finish**. The deployment process starts. It takes some time. A message appears indicating that the `SPLWeb.ear` file is deployed successfully on WebSphere application server.
24. Click the **Save** link to reflect the changes in the master configuration files.

2.6.3.3 Configuring the SPLService.ear File

To configure the `SPLService.ear` file:

1. Login to the Integrated Solutions Console using the administrator's credentials.
2. In the left pane, click the **Applications** option. A list appears.
3. Click the **Enterprise Applications** link. The **Enterprise Applications** page appears in the right pane.
4. Click the application (**SPLService-<Server Name>**) link. The **Configuration** tab appears where you can define settings of the application or its modules.
5. Under the **Modules** section, click the **Manage Modules** link. The **Manage Modules** page appears.
6. Click the **ServiceBean** link in the **Module** column. The **Configuration** tab appears where you can define settings of the module.
7. Enter `1` in the **Starting weight** field. This helps to indicate the startup priority for the **spl-servicebean-<Version Number>.jar** URI.
8. Click **OK**. The **Manage Modules** page appears.
9. Click **OK**. The **Configuration** tab appears where you can define settings of the application or its modules.
10. Click **OK**.
11. Click the **Save** link to reflect the changes in the master configuration files.

2.6.3.4 Configuring the SPLWeb.ear File

To configure the `SPLWeb.ear` file:

1. Login to the Integrated Solutions Console using the administrator's credentials.
2. In the left pane, click the **Applications** option. A list appears.
3. Click the **Enterprise Applications** link. The **Enterprise Applications** page appears in the right pane.

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

4. Click the application (**SPLWeb-<Server Name>**) link. The **Configuration** tab appears where you can define settings of the application or its modules.
5. Under the **Detail Properties** section, click the **Startup behavior** link.
6. Enter `2` in the **Startup order** field. This helps to indicate the order in which the application should be started.
7. Click **OK**. The **Configuration** tab appears.
8. Under the **Detail Properties** section, click the **Class loading and update detection** link.
9. Enter `0` in the **Polling interval for updated files** field. This helps to indicate the seconds within which the application file system should be scanned for updated files.
10. Click the **Classes loaded with application class loader first** option to indicate that you want class loader to first search application class loader to load a class.
11. Click **OK**. The **Configuration** tab appears.
12. Under the **Modules** section, click the **Manage Modules** link. The **Manage Modules** page appears.
13. Click the **SPLApp.war** link. The **Configuration** tab appears where you can define settings of the module.
14. Enter `10000` in the **Starting weight** field. This helps to indicate the startup priority for the module compared to other modules while starting a server.
15. Select the **Classes loaded with application class loader first** option from the **Class loader order** list. This helps to indicate that you want class loader to first search application class loader to load a class.
16. Click **OK**. The **Manage Modules** page appears.
17. Click the **XAIApp.war** link. The **Configuration** tab appears where you can define settings of the module.
18. Enter `10000` in the **Starting weight** field.
19. Select the **Classes loaded with application class loader first** option from the **Class loader order** list.
20. Click **OK**. The **Manage Modules** page appears.
21. Click the **appViewer.war** link. The **Configuration** tab appears where you can define settings of the module.
22. Enter `10000` in the **Starting weight** field.
23. Select the **Classes loaded with application class loader first** option from the **Class loader order** list.
24. Click **OK**. The **Manage Modules** page appears.
25. Click the **help.war** link. The **Configuration** tab appears where you can define settings of the module.
26. Enter `10000` in the **Starting weight** field.
27. Select the **Classes loaded with application class loader first** option from the **Class loader order** list.
28. Click **OK**. The **Manage Modules** page appears.
29. Click **OK**. The **Configuration** tab appears where you can define settings of the application or its modules.

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

30. Click **OK**.
31. Click the **Save** link to reflect the changes in the master configuration files.

2.6.3.5 Mapping Users or Groups to a Security Role

Once you deploy the application on WebSphere application server, you need to map users or groups to the `cisusers` role. To map users or groups to the `cisusers` role:

1. Login to the Integrated Solutions Console using the administrator's credentials.
2. In the left pane, click the **Applications** option. A list appears.
3. Click the **Enterprise Applications** link. The **Enterprise Applications** page appears in the right pane.
4. Click the application (**SPLService-<Server Name>**) link. The **Configuration** tab appears where you can define settings of the application or its modules.
5. Under the **Detail Properties** section, click the **Security role to user/group mapping** link.
6. Select the **All authenticated** check box corresponding to the `cisusers` role. This indicates that only authenticated users should be granted access to the `cisusers` role.
7. Select the **Select** check box corresponding to the `cisusers` role and then click **Look up users**. The **Look up users or groups** page appears.
8. Enter `SYSUSER` in the **Search String** field and then click **Search**. The user name appears in the **Available** list.
9. Select **SYSUSER** in the **Available** list and then click the **Move** ( ) button. The selected user is moved to the **Selected** list.
10. Click **OK**. The user is mapped to the `cisusers` role.
11. Click **OK**. The **Configuration** tab appears where you can define settings of the application or its modules.
12. Click **OK**.
13. Click the **Save** link to reflect the changes in the master configuration files.
14. Similarly, repeat the steps from 5 to 13 for **SPLWeb-<Server Name>**.

2.6.4 Accessing the ORMB Application

The following table lists the URLs that you can use to access the application on various application servers:

Application Server	URL
WebLogic	https://<hostname>:<WebLogic_Port_Number>/ouaf/loginPage.jsp
WebSphere	https://<hostname>:<WC_defaulthost_secure>/<context_root>/loginPage.jsp For example, https://oracle:9081/ouaf/loginPage.jsp

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

2.7 Upgrading the ORMB Database

This section explains how to upgrade the database. When you upgrade the database, the system overwrites the database schema and the metadata present in the database. However, the transactional data is not affected.

While upgrading from Oracle Revenue Management and Billing Version 2.4.0.1.0 to 2.5.0.1.0, you need to install the following on the database:

1. Oracle Revenue Management and Billing (ORMB) Version 2.5.0.1.0

Note:

Before you upgrade the database, you must take a backup of the existing database.

When you upgrade the database, any metadata with the `Owner` flag set to `CM` is not overridden during the upgrade process.

2.7.1 Installing ORMB Version 2.5.0.1.0

To install Oracle Revenue Management and Billing (ORMB) Version 2.5.0.1.0 on the database:

1. Login to the database server using the administrator's credentials.
2. Change to the `Install-Upgrade` folder using the following command:

   ```
   cd <DESTINATION_FOLDER_3>\RMB\Upgrade\Oracle\Install-Upgrade
   ```

Note: The `<DESTINATION_FOLDER_3>` folder is the location where you have extracted the contents of the `RMB-V2.5.0.1.0-Oracle-Database-MultiPlatform.zip` file.

3. Execute the `CdxDBI` utility using the following command:

   ```
   CdxDBI.exe
   ```

Note:

`The CdxDBI` utility helps to apply the blueprint to the database. In other words, it helps to reflect the metadata changes to the database.

Ensure that you execute the `CdxDBI` utility from the Window 32-bit or 64-bit desktop that has Oracle Database Client 12.1.0.2 (32-bit) and Java Development Kit Version 7.0 installed. The database must be listed in the `tnsnames.ora` file on your local machine.

This utility prompts you to enter values for the following parameters:

Parameter	Value
Enter the name of the target database	`<DB_NAME>`
Enter the name of the owner of Database Schema	`<DB_USER>` Example: `CISADM`
Enter the location for Java Home (e.g. C:\Java\jdk1.6.0_18)	`..\jdk1.7.0_21`
Enter the TUGBU jarfiles location (e.g. C:\Database-Install\Jarfiles)	`..\RMB\jarfiles`
Enter the password for <DB_USER> schema (or hit ENTER to quit)	`<DB_USER_PASSWORD>`

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Parameter	Value
Re-enter the password	<DB_USER_PASSWORD>
Enter the Oracle user with read-write privileges to Database Schema	<DB_USER> Example: CISUSER
Enter the Oracle user with read-only privileges to Database Schema	<DB_USER> Example: CISREAD
Enter the database role with read-write privileges to Database Schema	<DB_USER_ROLE> Example: CIS_USER
Enter the database role with read-only privileges to Database Schema	<DB_USER_ROLE> Example: CIS_READ

4. Enter the required parameter values. The following message appears in the command line:

   ```
   Ready to upgrade the target database from V2.4.0.1.0 to V2.5.0.1.0 do you want to continue (Y/N)?
   ```

5. Type **Y** and then press **Enter**. The following message appears in the command line:

   ```
   Ready to upgrade the target database, Do you want to continue? (Y/N)
   ```

6. Type **Y** and then press **Enter**. A message appears indicating that the process has completed successfully.

2.7.2 Generating Security for Database Objects

Once you upgrade the database, you need to execute a utility program named OraGenSec. This utility program helps you to generate security for all or specific objects in the database.

To generate security for all database objects:

1. Change to the Install-Upgrade folder using the following command:

   ```
   cd <DESTINATION_FOLDER_3>\RMB\Upgrade\Oracle\Install-Upgrade
   ```

Note: The <DESTINATION_FOLDER_3> folder is the location where you have extracted the contents of the RMB-V2.5.0.1.0-Oracle-Database-MultiPlatform.zip file.

2. Execute the OraGenSec utility using the following command:

   ```
   OraGenSec -d <DB_USER>,<DB_USER_PASSWORD>,<DB_NAME> -u <DB_USER_READ_WRITE>,<DB_USER_READ> -q -a A -f oragensec.txt -l oragensec.log
   ```

Note: Ensure that you execute the OraGenSec utility from the Window 32-bit or 64-bit desktop that has Oracle Database Client 12.1.0.2 (32-bit) and Java Development Kit Version 7.0 installed. The database must be listed in the tnsnames.ora file on your local machine.

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

This utility prompts you to enter values for the following parameters:

Parameter	Value
Enter the application read-only user or Schema Owner in the database	<DB_USER> Example: CISADM
Enter the password for the <DB_USER> user	<DB_USER_PASSWORD>
Enter the name of the Oracle database	<DB_NAME>
Enter a comma-separated list of Oracle users in which synonyms need to be created (e.g. cisuser, cisread)	<DB_USER> Example: CISUSER,CISREAD

3. Enter the required parameter values. The following message appears in the command line:

   ```
   Select the following options:
   (A/a): Generate security for all objects in the Database?
   (O/o): Generate security for specific Objects inputted in this terminal?
   (F/f): Generate security for specific objects generated from an input File?
   ```

4. Type **A** to generate security for all objects in the database, and then press **Enter**. A message appears indicating that the database connection is established and security is defined for all objects in the database.

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

3. Additional Tasks

This section describes the following tasks that you need to perform after upgrading the application:

- Generating the Application Viewer
- Starting the Thread Pool Worker
- Building Javadoc Index

3.1 Generating the Application Viewer

Once you upgrade the application, you need to regenerate the application viewer. To regenerate the application viewer:

1. Login to the application server using the administrator's credentials.
2. Initialize the application environment (on which you want to regenerate the application viewer) using the following command:

   AIX, Linux:

   ```
   $SPLEBASE/bin/splenviron.sh -e $SPLENVIRON
   ```

   Windows:

   ```
   %SPLEBASE%\bin\splenviron.cmd -e %SPLENVIRON%
   ```

   Where, `$SPLEBASE` or `%SPLEBASE%` is the path where the application environment is installed, and `$SPLENVIRON` or `%SPLEBASE%` is the name of the application environment for which you want to set the environment variables.

3. Set the `ANT_OPTS` environment variable using the following command:

   Windows: `Set ANT_OPTS= -Xms512m -Xmx1024m -XX:PermSize=256M`

Note: This command helps to process some tasks which require more memory. This command is only applicable for Windows and not for AIX or Linux machine.

4. Execute the `genappvieweritems` utility using the following command:

   AIX, Linux:

   ```
   $SPLEBASE/bin/genappvieweritems.sh
   ```

   Windows:

   ```
   %SPLEBASE%\bin\genappvieweritems.cmd
   ```

   If the application viewer is generated successfully, the response code is set to 0. However, if you get any other response code other than 0, it means an error has occurred while generating the application viewer. A log file is created in the `$SPLEBASE/logs` folder.

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

5. Execute the `initialSetup` utility using the following command:

   AIX, Linux:

   `$SPLEBASE/bin/initialSetup.sh`

   Windows:

   `%SPLEBASE%\bin\initialSetup.cmd`

   Where, `$SPLEBASE` or `%SPLEBASE%` is the path where the application environment is installed.

   The `initialSetup` utility updates the configuration files including the WAR files on the system.

3.2 Starting the Thread Pool Worker

Once you upgrade the application, you need to start the thread pool worker. The thread pool worker is required when you execute batches either online or through batch scheduler.

You can use the **Distributed Thread Pool** property of the thread pool worker to set the number of threads that can run concurrently. By default, 5 threads run concurrently. You can change the default value by editing the following line in the `threadpoolworker.properties` file:

`com.splwg.grid.distThreadPool.threads.DEFAULT=5`

To start the thread pool worker, use the following command once you initialize the application environment:

AIX, Linux:

`$SPLEBASE/bin/threadpoolworker.sh`

Windows:

`%SPLEBASE%\bin\threadpoolworker.cmd`

Where, `$SPLEBASE` or `%SPLEBASE%` is the path where the application environment is installed.

3.3 Building Javadoc Index

Once you upgrade the application, you may want to regenerate the index file of Javadoc documentation. You must regenerate the Javadoc index file only when some modifications are made to the Java code.

To regenerate the Javadoc index file, use the following command:

AIX, Linux:

`$SPLEBASE/bin/buildJavadocsIndex.sh`

Windows:

`%SPLEBASE%\bin\buildJavadocsIndex.cmd`

Where, `$SPLEBASE` or `%SPLEBASE%` is the path where the application environment is installed.

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Appendix A : ORMB 2.5.0.1.0 Patch Numbers

Oracle Revenue Management and Billing Version 2.5.0.1.0 application service pack (patch) is common for all platforms. The following table lists the contents of each domain-specific patch:

Domain	Patch Number	Contents Include
Banking	22480614	• FW-V4.3.0.1.0-MultiPlatform • RMB-V2.5.0.1.0-MultiPlatform • RMB-V2.5.0.1.0-FW-PREREQ-MultiPlatform • RMB-V2.5.0.1.0-Oracle-Database-MultiPlatform
Insurance	22480621	• FW-V4.3.0.1.0-MultiPlatform • RMB-V2.5.0.1.0-MultiPlatform • RMB-V2.5.0.1.0-FW-PREREQ-MultiPlatform • RMB-V2.5.0.1.0-Oracle-Database-MultiPlatform

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Appendix B : Known Issues

To view a list of known issues in the current release, refer to the *Oracle Revenue Management and Billing Version 2.5.0.1.0 Release Notes*.

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Appendix C : Third Party Software Upgrade

To view a list of third party software that you need to upgrade to before upgrading the application, refer to the Upgrade Prerequisites section in the *Oracle Revenue Management and Billing Upgrade Path Guide.*

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Appendix D : New Tables Added in 2.5.0.1.0

This section lists and describes the tables that are newly added in the Oracle Revenue Management and Billing Version 2.5.0.1.0 database.

D.1 C1_REF_WO_REQ

Purpose:	Used to store the details of refund and write off requests.
Total Number of Columns:	24

Column Details:

Column Name	Data Type	Nullable (Yes or No)	Default Value
ACCT_ID	CHAR(10)	Yes	' '
ADDR_OVERRIDE	CHAR(1)	Yes	'N'
ADDRESS1	VARCHAR2(254)	No	' '
ADDRESS2	VARCHAR2(254)	No	' '
ADDRESS3	VARCHAR2(254)	No	' '
ADDRESS4	VARCHAR2(254)	No	' '
BO_DATA_AREA	CLOB	Yes	
BO_STATUS_CD	CHAR(12)	Yes	
BO_STATUS_REASON_CD	VARCHAR2(30)	Yes	
BUS_OBJ_CD	CHAR(30)	Yes	
C1_REF_WO_REQ_TYPE_CD	CHAR(30)	No	
CITY	VARCHAR2(90)	No	' '
COMMENTS	VARCHAR2(254)	Yes	' '
COUNTRY	CHAR(3)	No	' '
CRE_DTTM	DATE	No	SYSDATE
CUSTOMER_NAME	VARCHAR2(64)	Yes	
ILM_ARCH_SW	CHAR(1)	Yes	
ILM_DT	DATE	Yes	
POSTAL	CHAR(12)	No	' '
REF_WO_REQ_ID	CHAR(12)	No	
STATE	CHAR(6)	No	' '
STATUS_UPD_DTTM	DATE	Yes	

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Column Name	Data Type	Nullable (Yes or No)	Default Value
TOTAL_REF_WO_AMT	NUMBER(15,2)	No	0
VERSION	NUMBER(5)	No	1

Primary Key:

Key Type	Column Name
SINGLE	REF_WO_REQ_ID

Constraints:

Sr. No.	Constraint Name	Constraint Type	Column Name
1.	XF530P0	Primary	REF_WO_REQ_ID

Indexes:

Sr. No.	Index Name	Index Type	Column Name
1.	XF530P0	UNIQUE	REF_WO_REQ_IN

D.2 C1_REF_WO_REQ_CHAR

Purpose:	Used to store characteristics defined for refund and write off requests.
Total Number of Columns:	12

Column Details:

Column Name	Data Type	Nullable (Yes or No)	Default Value
REF_WO_REQ_ID	CHAR(12)	No	
CHAR_TYPE_CD	CHAR(8)	No	
EFFDT	DATE	No	
CHAR_VAL	CHAR(16)	No	' '
ADHOC_CHAR_VAL	VARCHAR2(254)	No	' '
CHAR_VAL_FK1	VARCHAR2(50)	No	' '
CHAR_VAL_FK2	VARCHAR2(50)	No	' '
CHAR_VAL_FK3	VARCHAR2(50)	No	' '
CHAR_VAL_FK4	VARCHAR2(50)	No	' '
CHAR_VAL_FK5	VARCHAR2(50)	No	' '
SRCH_CHAR_VAL	VARCHAR2(254)	No	' '

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Column Name	Data Type	Nullable (Yes or No)	Default Value
VERSION	NUMBER(5)	No	1

Primary Key:

Key Type	Column Name
COMPOSITE	REF_WO_REQ_ID
	CHAR_TYPE_CD
	EFFDT

Constraints:

Sr. No.	Constraint Name	Constraint Type	Column Name
1.	XF531P0	Primary	REF_WO_REQ_ID
			CHAR_TYPE_CD
			EFFDT

Indexes:

Sr. No.	Index Name	Index Type	Column Name
1.	XF531P0	UNIQUE	REF_WO_REQ_ID
			CHAR_TYPE_CD
			EFFDT

D.3 C1_REF_WO_REQ_DTLS

Purpose:	Used to store the details of entities for which refund or write off request is created.
Total Number of Columns:	11

Column Details:

Column Name	Data Type	Nullable (Yes or No)	Default Value
REF_WO_REQ_ID	CHAR(12)	No	
REF_WO_DTL_ID	CHAR(12)	No	
REF_WO_AMT	NUMBER(15,2)	Yes	0
CURRENCY_CD	CHAR(3)	Yes	' '
ENTITY_TYPE	CHAR(4)	Yes	' '
ENTITY_ID	CHAR(14)	Yes	' '

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Column Name	Data Type	Nullable (Yes or No)	Default Value
VERSION	NUMBER(5)	No	1
ADJ_ID	CHAR(12)	Yes	' '
ENTITY_AMOUNT	NUMBER(15,2)	No	0
SA_ID	CHAR(10)	Yes	
ADJ_TYPE_CD	CHAR(8)	Yes	

Primary Key:

Key Type	Column Name
SINGLE	REF_WO_DTL_ID

Constraints:

Sr. No.	Constraint Name	Constraint Type	Column Name
1.	XF527P0	Primary	REF_WO_DTL_ID

Indexes:

Sr. No.	Index Name	Index Type	Column Name
1.	XF527P0	UNIQUE	REF_WO_DTL_ID

D.4 C1_REF_WO_REQ_K

Purpose:	Used to generate the refund or write off request ID.
Total Number of Columns:	2

Column Details:

Column Name	Data Type	Nullable (Yes or No)	Default Value
REF_WO_REQ_ID	CHAR(12)	No	
ENV_ID	NUMBER(6)	No	

Primary Key:

Key Type	Column Name
COMPOSITE	REF_WO_REQ_ID
	ENV_ID

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Constraints:

Sr. No.	Constraint Name	Constraint Type	Column Name
1.	XF524P0	Primary	REF_WO_REQ_ID
			ENV_ID

Indexes:

Sr. No.	Index Name	Index Type	Column Name
1.	XF524P0	UNIQUE	REF_WO_REQ_ID
			ENV_ID

D.5 C1_REF_WO_REQ_LOG

Purpose:	Used to store logs of refund and write off requests.
Total Number of Columns:	20

Column Details:

Column Name	Data Type	Nullable (Yes or No)	Default Value
REF_WO_REQ_ID	CHAR(12)	No	
SEQNO	NUMBER(5)	No	
LOG_ENTRY_TYPE_FLG	CHAR(4)	Yes	' '
BO_STATUS_CD	CHAR(12)	Yes	' '
DESCRLONG	VARCHAR2(4000)	Yes	' '
MESSAGE_CAT_NBR	NUMBER(5)	Yes	
MESSAGE_NBR	NUMBER(5)	Yes	
CHAR_TYPE_CD	CHAR(8)	Yes	' '
CHAR_VAL	CHAR(16)	Yes	' '
ADHOC_CHAR_VAL	VARCHAR2(254)	Yes	
CHAR_VAL_FK1	VARCHAR2(50)	Yes	
CHAR_VAL_FK2	VARCHAR2(50)	Yes	
CHAR_VAL_FK3	VARCHAR2(50)	Yes	
CHAR_VAL_FK4	VARCHAR2(50)	Yes	
CHAR_VAL_FK5	VARCHAR2(50)	Yes	
SRCH_CHAR_VAL	VARCHAR2(254)	Yes	

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Column Name	Data Type	Nullable (Yes or No)	Default Value
USER_ID	CHAR(8)	Yes	
BO_STATUS_REASON_CD	VARCHAR2(30)	Yes	
VERSION	NUMBER(5)	No	1
LOG_DTTM	DATE	No	

Primary Key:

Key Type	Column Name
COMPOSITE	REF_WO_REQ_ID
	SEQNO

Constraints:

Sr. No.	Constraint Name	Constraint Type	Column Name
1.	XF525P0	Primary	REF_WO_REQ_ID
			SEQNO

Indexes:

Sr. No.	Index Name	Index Type	Column Name
1.	XF525P0	UNIQUE	REF_WO_REQ_ID
			SEQNO

D.6 C1_REF_WO_REQ_LOG_PARM

Purpose:	Used to store refund and write off requests' log parameters.
Total Number of Columns:	6

Column Details:

Column Name	Data Type	Nullable (Yes or No)	Default Value
REF_WO_REQ_ID	CHAR(12)	No	
SEQNO	NUMBER(5)	No	
PARM_SEQ	NUMBER(3)	No	
MSG_PARM_TYP_FLG	CHAR(4)	Yes	' '
MESSAGE_PARM	VARCHAR2(30)	Yes	
VERSION	NUMBER(5)	No	1

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Primary Key:

Key Type	Column Name
COMPOSITE	REF_WO_REQ_ID
	SEQNO
	PARM_SEQ

Constraints:

Sr. No.	Constraint Name	Constraint Type	Column Name
1.	XF526P0	Primary	REF_WO_REQ_ID
			SEQNO
			PARM_SEQ

Indexes:

Sr. No.	Index Name	Index Type	Column Name
1.	XF526P0	UNIQUE	REF_WO_REQ_ID
			SEQNO
			PARM_SEQ

D.7 C1_REF_WO_REQ_TYPE

Purpose:	Used to store the details of refund and write off request types.
Total Number of Columns:	7

Column Details:

Column Name	Data Type	Nullable (Yes or No)	Default Value
C1_REF_WO_REQ_TYPE_CD	CHAR(30)	No	
REF_WO_ACTION_FLG	CHAR(4)	No	
BUS_OBJ_CD	CHAR(30)	No	' '
TRANS_BUS_OBJ_CD	CHAR(30)	No	' '
BO_DATA_AREA	CLOB	Yes	
C1_ACTIVE_INACTIVE_FLG	CHAR(4)	No	' '
VERSION	NUMBER(5)	No	1

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Primary Key:

Key Type	Column Name
SINGLE	C1_REF_WO_REQ_TYPE_CD

Constraints:

Sr. No.	Constraint Name	Constraint Type	Column Name
1.	XF501P0	Primary	C1_REF_WO_REQ_TYPE_CD

Indexes:

Sr. No.	Index Name	Index Type	Column Name
1.	XF501P0	UNIQUE	C1_REF_WO_REQ_TYPE_CD

D.8 C1_REF_WO_REQ_TYPE_CHAR

Purpose:	Used to store characteristics defined for refund and write off request types.
Total Number of Columns:	12

Column Details:

Column Name	Data Type	Nullable (Yes or No)	Default Value
C1_REF_WO_REQ_TYPE_CD	CHAR(30)	No	
CHAR_TYPE_CD	CHAR(8)	No	
SEQ_NUM	NUMBER(5)	No	
CHAR_VAL	CHAR(16)	No	' '
ADHOC_CHAR_VAL	VARCHAR2(254)	No	' '
CHAR_VAL_FK1	VARCHAR2(50)	No	' '
CHAR_VAL_FK2	VARCHAR2(50)	No	' '
CHAR_VAL_FK3	VARCHAR2(50)	No	' '
CHAR_VAL_FK4	VARCHAR2(50)	No	' '
CHAR_VAL_FK5	VARCHAR2(50)	No	' '
SRCH_CHAR_VAL	VARCHAR2(50)	No	' '
VERSION	NUMBER(5)	No	1

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Primary Key:

Key Type	Column Name
COMPOSITE	C1_REF_WO_REQ_TYPE_CD
	CHAR_TYPE_CD
	SEQ_NUM

Constraints:

Sr. No.	Constraint Name	Constraint Type	Column Name
1.	XF528P0	Primary	C1_REF_WO_REQ_TYPE_CD
			CHAR_TYPE_CD
			SEQ_NUM

Indexes:

Sr. No.	Index Name	Index Type	Column Name
1.	XF528P0	UNIQUE	C1_REF_WO_REQ_TYPE_CD
			CHAR_TYPE_CD
			SEQ_NUM

D.9 C1_REF_WO_REQ_TYPE_L

Purpose:	Used to store description for refund and write off request types.
Total Number of Columns:	5

Column Details:

Column Name	Data Type	Nullable (Yes or No)	Default Value
C1_REF_WO_REQ_TYPE_CD	CHAR(30)	No	
LANGUAGE_CD	CHAR(3)	No	
DESCR	VARCHAR2(60)	No	' '
DESCRLONG	VARCHAR2(4000)	No	' '
VERSION	NUMBER(5)	No	1

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Primary Key:

Key Type	Column Name
COMPOSITE	C1_REF_WO_REQ_TYPE_CD
	LANGUAGE_CD

Constraints:

Sr. No.	Constraint Name	Constraint Type	Column Name
1.	XF529P0	Primary	C1_REF_WO_REQ_TYPE_CD
			LANGUAGE_CD

Indexes:

Sr. No.	Index Name	Index Type	Column Name
1.	XF529P0	UNIQUE	C1_REF_WO_REQ_TYPE_CD
			LANGUAGE_CD

D.10 CI_BATCH_MAPPING

Purpose:	Used to store batch control mapping details.
Total Number of Columns:	3

Column Details:

Column Name	Data Type	Nullable (Yes or No)	Default Value
BATCH_CD	CHAR(8)	No	
BATCH_CLASS	VARCHAR2(254)	No	
BATCH_DESC_CD	CHAR(4)	No	

Indexes:

Sr. No.	Index Name	Index Type	Column Name
1.	XT955P0	UNIQUE	BATCH_CD
2.	XT955P0	UNIQUE	BATCH_CLASS

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

D.11 CI_PRICEITEM_REL_CHAR

Purpose:	Used to store bundle-specific characteristics defined for a product.
Total Number of Columns:	16

Column Details:

Column Name	Data Type	Nullable (Yes or No)	Default Value
PRICEITEM_PAR_CD	CHAR(30)	No	
PRICEITEM_CHLD_CD	CHAR(30)	No	
PRICEITEM_REL_TYPE_FLG	CHAR(4)	No	
PRICEITEM_PARM_GRP_ID	NUMBER(22)	No	1
START_DT	DATE	No	
CHAR_TYPE_CD	CHAR(8)	No	
EFFDT	DATE	No	
ADHOC_CHAR_VAL	VARCHAR2(254)	Yes	
CHAR_VAL	CHAR(16)	Yes	
CHAR_VAL_FK1	VARCHAR2(50)	Yes	
CHAR_VAL_FK2	VARCHAR2(50)	Yes	
CHAR_VAL_FK3	VARCHAR2(50)	Yes	
CHAR_VAL_FK4	VARCHAR2(50)	Yes	
CHAR_VAL_FK5	VARCHAR2(50)	Yes	
SRCH_CHAR_VAL	VARCHAR2(254)	Yes	
VERSION	NUMBER(5)	No	1

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Primary Key:

Key Type	Column Name
COMPOSITE	PRICEITEM_PAR_CD
	PRICEITEM_CHLD_CD
	PRICEITEM_REL_TYPE_FLG
	PRICEITEM_PARM_GRP_ID
	START_DT
	CHAR_TYPE_CD
	EFFDT

Constraints:

Sr. No.	Constraint Name	Constraint Type	Column Name
1.	XT999P0	Primary	PRICEITEM_PAR_CD
			PRICEITEM_CHLD_CD
			PRICEITEM_REL_TYPE_FLG
			PRICEITEM_PARM_GRP_ID
			START_DT
			CHAR_TYPE_CD
			EFFDT

Indexes:

Sr. No.	Index Name	Index Type	Column Name
1.	XT999P0	UNIQUE	PRICEITEM_PAR_CD
			PRICEITEM_CHLD_CD
			PRICEITEM_REL_TYPE_FLG
			PRICEITEM_PARM_GRP_ID
			START_DT
			CHAR_TYPE_CD
			EFFDT

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

D.12 CI_PROFILE_CHAR

Purpose:	Used to store characteristics defined for a profile.
Total Number of Columns:	12

Column Details:

Column Name	Data Type	Nullable (Yes or No)	Default Value
DPROFILE_CD	CHAR(14)	No	
CHAR_TYPE_CD	CHAR(8)	No	
EFFDT	DATE	No	
PROFILE_ENTITY	CHAR(4)	Yes	
ADHOC_CHAR_VAL	VARCHAR2(254)	Yes	''
CHAR_VAL	CHAR(16)	Yes	''
CHAR_VAL_FK1	VARCHAR2(50)	Yes	''
CHAR_VAL_FK2	VARCHAR2(50)	Yes	''
CHAR_VAL_FK3	VARCHAR2(50)	Yes	''
CHAR_VAL_FK4	VARCHAR2(50)	Yes	''
CHAR_VAL_FK5	VARCHAR2(50)	Yes	''
VERSION	NUMBER(5)	No	1

Primary Key:

Key Type	Column Name
COMPOSITE	PROFILE_CD
	CHAR_TYPE_CD
	, EFFDT

Constraints:

Sr. No.	Constraint Name	Constraint Type	Column Name
1.	CXF212P0	Primary	PROFILE_CD
			CHAR_TYPE_CD
			EFFDT

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Indexes:

Sr. No.	Index Name	Index Type	Column Name
1.	CXF212P0	UNIQUE	PROFILE_CD
			CHAR_TYPE_CD
			EFFDT

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Appendix E : Existing Tables Modified in 2.5.0.1.0

This section lists the existing tables which are modified in Oracle Revenue Management and Billing Version 2.5.0.1.0. It also indicates the columns that are newly added, dropped or modified in these tables.

E.1 C1_PAY_DISTRIBUTION

The following table lists the columns that are either newly added or modified in the C1_PAY_DISTRIBUTION table:

Sr. No.	Column Name	Modification Type	Data Type in V2.4.0.1.0	Data Type in V2.5.0.1.0	Data Migration Required (Yes or No)	Column Value After Data Migration
1.	VERSION	Newly Added	-	NUMBER(5)	No	-

E.2 CI_TXN_REC_TYPE_L

The following table lists the columns that are either newly added or modified in the CI_TXN_REC_TYPE_L table:

Sr. No.	Column Name	Modification Type	Data Type in V2.4.0.1.0	Data Type in V2.5.0.1.0	Data Migration Required (Yes or No)	Column Value After Data Migration
1.	UDF_AMT_6_DESC	Newly Added	-	VARCHAR2(60)	No	-
2.	UDF_AMT_7_DESC	Newly Added	-	VARCHAR2(60)	No	-
3.	UDF_AMT_8_DESC	Newly Added	-	VARCHAR2(60)	No	-
4.	UDF_AMT_9_DESC	Newly Added	-	VARCHAR2(60)	No	-
5.	UDF_AMT_10_DESC	Newly Added	-	VARCHAR2(60)	No	-
6.	UDF_CUR_6_DESC	Newly Added	-	VARCHAR2(60)	No	-
7.	UDF_CUR_7_DESC	Newly Added	-	VARCHAR2(60)	No	-

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Sr. No.	Column Name	Modification Type	Data Type in V2.4.0.1.0	Data Type in V2.5.0.1.0	Data Migration Required (Yes or No)	Column Value After Data Migration
8.	UDF_CUR_8_DESC	Newly Added	-	VARCHAR2(60)	No	-
9.	UDF_CUR_9_DESC	Newly Added	-	VARCHAR2(60)	No	-
10.	UDF_CUR_10_DESC	Newly Added	-	VARCHAR2(60)	No	-
11.	UDF_NBR_11_DESC	Newly Added	-	VARCHAR2(60)	No	-
12.	UDF_NBR_12_DESC	Newly Added	-	VARCHAR2(60)	No	-
13.	UDF_NBR_13_DESC	Newly Added	-	VARCHAR2(60)	No	-
14.	UDF_NBR_14_DESC	Newly Added	-	VARCHAR2(60)	No	-
15.	UDF_NBR_15_DESC	Newly Added	-	VARCHAR2(60)	No	-
16.	UDF_NBR_16_DESC	Newly Added	-	VARCHAR2(60)	No	-
17.	UDF_NBR_17_DESC	Newly Added	-	VARCHAR2(60)	No	-
18.	UDF_NBR_18_DESC	Newly Added	-	VARCHAR2(60)	No	-
19.	UDF_NBR_19_DESC	Newly Added	-	VARCHAR2(60)	No	-
20.	UDF_NBR_20_DESC	Newly Added	-	VARCHAR2(60)	No	-

E.3 CI_BATCH_RUN_CNTRL

The following table lists the columns that are either newly added or modified in the CI_BATCH_RUN_CNTRL table:

Sr. No.	Column Name	Modification Type	Data Type in V2.4.0.1.0	Data Type in V2.5.0.1.0	Data Migration Required (Yes or No)	Column Value After Data Migration
1.	CM_BATCH_CD	Newly Added	-	CHAR(8)	No	-
2.	PREV_RUN_GRP_ID	Newly Added	-	NUMBER(22)	No	-

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

E.4 CI_TXN_DETAIL_STG

The following table lists the columns that are either newly added or modified in the CI_TXN_DETAIL_STG table:

Sr. No.	Column Name	Modification Type	Data Type in V2.4.0.1.0	Data Type in V2.5.0.1.0	Data Migration Required (Yes or No)	Column Value After Data Migration
1.	UDF_AMT_6	Newly Added	-	NUMBER(36,18)	No	-
2.	UDF_AMT_7	Newly Added	-	NUMBER(36,18)	No	-
3.	UDF_AMT_8	Newly Added	-	NUMBER(36,18)	No	-
4.	UDF_AMT_9	Newly Added	-	NUMBER(36,18)	No	-
5.	UDF_AMT_10	Newly Added	-	NUMBER(36,18)	No	-
6.	UDF_CURRENCY_CD_6	Newly Added	-	CHAR(3)	No	-
7.	UDF_CURRENCY_CD_7	Newly Added	-	CHAR(3)	No	-
8.	UDF_CURRENCY_CD_8	Newly Added	-	CHAR(3)	No	-
9.	UDF_CURRENCY_CD_9	Newly Added	-	CHAR(3)	No	-
10.	UDF_CURRENCY_CD_10	Newly Added	-	CHAR(3)	No	-
11.	UDF_NBR_11	Newly Added	-	NUMBER(36,18)	No	-
12.	UDF_NBR_12	Newly Added	-	NUMBER(36,18)	No	-
13.	UDF_NBR_13	Newly Added	-	NUMBER(36,18)	No	-
14.	UDF_NBR_14	Newly Added	-	NUMBER(36,18)	No	-
15.	UDF_NBR_15	Newly Added	-	NUMBER(36,18)	No	-
16.	UDF_NBR_16	Newly Added	-	NUMBER(36,18)	No	-
17.	UDF_NBR_17	Newly Added	-	NUMBER(36,18)	No	-

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Sr. No.	Column Name	Modification Type	Data Type in V2.4.0.1.0	Data Type in V2.5.0.1.0	Data Migration Required (Yes or No)	Column Value After Data Migration
18.	UDF_NBR_18	Newly Added	-	NUMBER(36,18)	No	-
19.	UDF_NBR_19	Newly Added	-	NUMBER(36,18)	No	-
20.	UDF_NBR_20	Newly Added	-	NUMBER(36,18)	No	-

E.5 CI_NAV_OPT

The following table lists the columns that are either newly added or modified in the CI_NAV_OPT table:

Sr. No.	Column Name	Modification Type	Data Type in V2.4.0.1.0	Data Type in V2.5.0.1.0	Data Migration Required (Yes or No)	Column Value After Data Migration
1.	MULTI_QUERY_ZONE_CD	Newly Added	-	CHAR(12)	No	-
2.	SUB_QUERY_ZONE_CD	Newly Added	-	CHAR(12)	No	-

E.6 CI_TXN_DETAIL

The following table lists the columns that are either newly added or modified in the CI_TXN_DETAIL table:

Sr. No.	Column Name	Modification Type	Data Type in V2.4.0.1.0	Data Type in V2.5.0.1.0	Data Migration Required (Yes or No)	Column Value After Data Migration
1.	UDF_AMT_6	Newly Added	-	NUMBER(36,18)	No	-
2.	UDF_AMT_7	Newly Added	-	NUMBER(36,18)	No	-
3.	UDF_AMT_8	Newly Added	-	NUMBER(36,18)	No	-
4.	UDF_AMT_9	Newly Added	-	NUMBER(36,18)	No	-

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Sr. No.	Column Name	Modification Type	Data Type in V2.4.0.1.0	Data Type in V2.5.0.1.0	Data Migration Required (Yes or No)	Column Value After Data Migration
5.	UDF_AMT_10	Newly Added	-	NUMBER(36,18)	No	-
6.	UDF_CURRENCY_CD_6	Newly Added	-	CHAR(3)	No	-
7.	UDF_CURRENCY_CD_7	Newly Added	-	CHAR(3)	No	-
8.	UDF_CURRENCY_CD_8	Newly Added	-	CHAR(3)	No	-
9.	UDF_CURRENCY_CD_9	Newly Added	-	CHAR(3)	No	-
10.	UDF_CURRENCY_CD_10	Newly Added	-	CHAR(3)	No	-
11.	UDF_NBR_11	Newly Added	-	NUMBER(36,18)	No	-
12.	UDF_NBR_12	Newly Added	-	NUMBER(36,18)	No	-
13.	UDF_NBR_13	Newly Added	-	NUMBER(36,18)	No	-
14.	UDF_NBR_14	Newly Added	-	NUMBER(36,18)	No	-
15.	UDF_NBR_15	Newly Added	-	NUMBER(36,18)	No	-
16.	UDF_NBR_16	Newly Added	-	NUMBER(36,18)	No	-
17.	UDF_NBR_17	Newly Added	-	NUMBER(36,18)	No	-
18.	UDF_NBR_18	Newly Added	-	NUMBER(36,18)	No	-
19.	UDF_NBR_19	Newly Added	-	NUMBER(36,18)	No	-
20.	UDF_NBR_20	Newly Added	-	NUMBER(36,18)	No	-

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

E.7 CI_SCR_L

The following table lists the columns that are either newly added or modified in the CI_SCR_L table:

Sr. No.	Column Name	Modification Type	Data Type in V2.4.0.1.0	Data Type in V2.5.0.1.0	Data Migration Required (Yes or No)	Column Value After Data Migration
1.	DESCR4000	Newly Added	-	VARCHAR2(4000)	No	-

E.8 C1_PAY_MATCH_TYPE

The following table lists the columns that are either newly added or modified in the C1_PAY_MATCH_TYPE table:

Sr. No.	Column Name	Modification Type	Data Type in V2.4.0.1.0	Data Type in V2.5.0.1.0	Data Migration Required (Yes or No)	Column Value After Data Migration
1.	VERSION	Newly Added	-	NUMBER(5)	No	-

E.9 CI_TXN_CALC_LN_CHAR

The following table lists the columns that are either newly added or modified in the CI_TXN_CALC_LN_CHAR table:

Sr. No.	Column Name	Modification Type	Data Type in V2.4.0.1.0	Data Type in V2.5.0.1.0	Data Migration Required (Yes or No)	Column Value After Data Migration
1.	CHAR_ENTITY_FLG	Newly Added	-	CHAR(4)	No	-

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

E.10 C1_PAY_DETAILS

The following table lists the columns that are either newly added or modified in the C1_PAY_DETAILS table:

Sr. No.	Column Name	Modification Type	Data Type in V2.4.0.1.0	Data Type in V2.5.0.1.0	Data Migration Required (Yes or No)	Column Value After Data Migration
1.	VERSION	Newly Added	-	NUMBER(5)	No	-

E.11 CI_BATCH_CTRL_P

The following table lists the columns that are either newly added or modified in the CI_BATCH_CTRL_P table:

Sr. No.	Column Name	Modification Type	Data Type in V2.4.0.1.0	Data Type in V2.5.0.1.0	Data Migration Required (Yes or No)	Column Value After Data Migration
1.	TEXT_SECURITY_FLG	Newly Added	-	CHAR(4)	No	-

E.12 CI_PAY_CAN_RSN

The following table lists the columns that are either newly added or modified in the CI_PAY_CAN_RSN table:

Sr. No.	Column Name	Modification Type	Data Type in V2.4.0.1.0	Data Type in V2.5.0.1.0	Data Migration Required (Yes or No)	Column Value After Data Migration
1.	TRANSFER_SW	Newly Added	-	CHAR(1)	No	-

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

E.13 CI_TXN_DTL_PRITM_STG

The following table lists the columns that are either newly added or modified in the CI_TXN_DTL_PRITM_STG table:

Sr. No.	Column Name	Modification Type	Data Type in V2.4.0.1.0	Data Type in V2.5.0.1.0	Data Migration Required (Yes or No)	Column Value After Data Migration
1.	UDF_AMT_6	Newly Added	-	NUMBER(36,18)	No	-
2.	UDF_AMT_7	Newly Added	-	NUMBER(36,18)	No	-
3.	UDF_AMT_8	Newly Added	-	NUMBER(36,18)	No	-
4.	UDF_AMT_9	Newly Added	-	NUMBER(36,18)	No	-
5.	UDF_AMT_10	Newly Added	-	NUMBER(36,18)	No	-
6.	UDF_CURRENCY_CD_6	Newly Added	-	CHAR(3)	No	-
7.	UDF_CURRENCY_CD_7	Newly Added	-	CHAR(3)	No	-
8.	UDF_CURRENCY_CD_8	Newly Added	-	CHAR(3)	No	-
9.	UDF_CURRENCY_CD_9	Newly Added	-	CHAR(3)	No	-
10.	UDF_CURRENCY_CD_10	Newly Added	-	CHAR(3)	No	-
11.	UDF_NBR_11	Newly Added	-	NUMBER(36,18)	No	-
12.	UDF_NBR_12	Newly Added	-	NUMBER(36,18)	No	-
13.	UDF_NBR_13	Newly Added	-	NUMBER(36,18)	No	-
14.	UDF_NBR_14	Newly Added	-	NUMBER(36,18)	No	-
15.	UDF_NBR_15	Newly Added	-	NUMBER(36,18)	No	-
16.	UDF_NBR_16	Newly Added	-	NUMBER(36,18)	No	-
17.	UDF_NBR_17	Newly Added	-	NUMBER(36,18)	No	-
18.	UDF_NBR_18	Newly Added	-	NUMBER(36,18)	No	-

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Sr. No.	Column Name	Modification Type	Data Type in V2.4.0.1.0	Data Type in V2.5.0.1.0	Data Migration Required (Yes or No)	Column Value After Data Migration
19.	UDF_NBR_19	Newly Added	-	NUMBER(36,18)	No	-
20.	UDF_NBR_20	Newly Added	-	NUMBER(36,18)	No	-

E.14 CI_TXN_DTL_PRITM

The following table lists the columns that are either newly added or modified in the CI_TXN_DTL_PRITM table:

Sr. No.	Column Name	Modification Type	Data Type in V2.4.0.1.0	Data Type in V2.5.0.1.0	Data Migration Required (Yes or No)	Column Value After Data Migration
1.	UDF_AMT_6	Newly Added	-	NUMBER(36,18)	No	-
2.	UDF_AMT_7	Newly Added	-	NUMBER(36,18)	No	-
3.	UDF_AMT_8	Newly Added	-	NUMBER(36,18)	No	-
4.	UDF_AMT_9	Newly Added	-	NUMBER(36,18)	No	-
5.	UDF_AMT_10	Newly Added	-	NUMBER(36,18)	No	-
6.	UDF_CURRENCY_CD_6	Newly Added	-	CHAR(3)	No	-
7.	UDF_CURRENCY_CD_7	Newly Added	-	CHAR(3)	No	-
8.	UDF_CURRENCY_CD_8	Newly Added	-	CHAR(3)	No	-
9.	UDF_CURRENCY_CD_9	Newly Added	-	CHAR(3)	No	-
10.	UDF_CURRENCY_CD_10	Newly Added	-	CHAR(3)	No	-
11.	UDF_NBR_11	Newly Added	-	NUMBER(36,18)	No	-
12.	UDF_NBR_12	Newly Added	-	NUMBER(36,18)	No	-
13.	UDF_NBR_13	Newly Added	-	NUMBER(36,18)	No	-

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Sr. No.	Column Name	Modification Type	Data Type in V2.4.0.1.0	Data Type in V2.5.0.1.0	Data Migration Required (Yes or No)	Column Value After Data Migration
14.	UDF_NBR_14	Newly Added	-	NUMBER(36,18)	No	-
15.	UDF_NBR_15	Newly Added	-	NUMBER(36,18)	No	-
16.	UDF_NBR_16	Newly Added	-	NUMBER(36,18)	No	-
17.	UDF_NBR_17	Newly Added	-	NUMBER(36,18)	No	-
18.	UDF_NBR_18	Newly Added	-	NUMBER(36,18)	No	-
19.	UDF_NBR_19	Newly Added	-	NUMBER(36,18)	No	-
20.	UDF_NBR_20	Newly Added	-	NUMBER(36,18)	No	-

E.15 CI_ZONE_L

The following table lists the columns that are either newly added or modified in the CI_ZONE_L table:

Sr. No.	Column Name	Modification Type	Data Type in V2.4.0.1.0	Data Type in V2.5.0.1.0	Data Migration Required (Yes or No)	Column Value After Data Migration
1.	DESCR_OVRD	Newly Added	-	VARCHAR2(60)	No	-

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Appendix F : Algorithms and Algorithm Types Dropped in 2.5.0.1.0

This section lists the algorithms and algorithm types which are dropped in Oracle Revenue Management and Billing Version 2.5.0.1.0.

F.1 Algorithm Type

No algorithm types are dropped in Oracle Revenue Management and Billing Version 2.5.0.1.0.

F.2 Algorithm

No algorithms are dropped in Oracle Revenue Management and Billing Version 2.5.0.1.0.

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Appendix G : Parameters Added or Removed from Algorithm Types in 2.5.0.1.0

The following table lists the parameters which are added or removed from the algorithm types in Oracle Revenue Management and Billing Version 2.5.0.1.0:

Algorithm Type	Parameters (Removed from 2.5.0.1.0)	Parameters (Added in 2.5.0.1.0)
C1-PDOV-WTBS	-	How to handle overpayments (D/O)
FTFREZGLEXTN	-	Exchange Rate Algorithm

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

Appendix H : Changing the DB User Password

If you have changed the database user password, you need to execute the following steps before installing the rollup pack for Oracle Utilities Application Framework Version 4.3.0.1.0:

1. Download and apply the single fix available for Bug 22505470 - PATCHES APPEND EXTRA SPACE TO STRINGS AND ADD DB SERVICE CONNECTION SUPPORT on the application and database environments.
2. Perform the following steps on the application environment:
    a. Change the DB Name using the `configureEnv` command.
    b. Execute the `initialSetup` utility using the following command:

    AIX, Linux:

    ```
    $SPLEBASE/bin/initialSetup.sh
    ```

    Windows:

    ```
    %SPLEBASE%\bin\initialSetup.cmd
    ```

    c. Execute the `invokeDBUpdatePatch` utility to change the database user name and password using the following command:

    AIX, Linux:

    ```
    $SPLEBASE/bin/invokeDBUpdatePatch.sh -b
    ```

    Windows:

    ```
    %SPLEBASE%\bin\invokeDBUpdatePatch.cmd -b
    ```

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.