Contents

Preface .................................................................................................................................................................. v

Audience ............................................................................................................................................................ v
Downloading Oracle Communications Documentation ..................................................................................... v
Documentation Accessibility ........................................................................................................................... v

1 Installing BRM 7.4 Maintenance Patch Set 2

About the Patch Set ......................................................................................................................................... 1-1
Installing the Patch Set ................................................................................................................................... 1-2
  Shuting Down the Current Instance ........................................................................................................... 1-2
  Backing Up Files ........................................................................................................................................... 1-3
  Backing Up TAP 3.11 Files .......................................................................................................................... 1-3
  Backing Up Your BRM Database ................................................................................................................ 1-4
  Backing Up Your Pipeline Manager Database ............................................................................................. 1-4
  Installing Java Runtime Environment 1.7 .................................................................................................... 1-4
  Installing the Patch ........................................................................................................................................ 1-4
  Creating Local Indexes on Table Partitions ............................................................................................... 1-6
Upgrading the BRM Database Schema ............................................................................................................. 1-7
  Upgrading the Schema on Single-Database Systems ................................................................................. 1-7
  Upgrading the Schema on Multidatabase Systems ..................................................................................... 1-7
Upgrading the Pipeline Manager Database Schema ..................................................................................... 1-8
Adding Customizations ................................................................................................................................... 1-9

Post-Installation Tasks .................................................................................................................................. 1-9

Configuring TAP Roaming Manager ............................................................................................................. 1-9
Configuring the Infranet.properties File for the pin_virtual_gen Utility ..................................................... 1-10
Configuring the pinrev Utility to Correctly Report BRM SDK Versions ....................................................... 1-10
Creating an Oracle AQ Database Queue ........................................................................................................ 1-11
Configuring Account Migration Manager Using Oracle Application Infrastructure Architecture in a Multischema Environment .......................................................... 1-11
Enabling the Logging Mechanism for the pin_purge Utility ....................................................................... 1-12
Migrating the /purchased_bundle Class from Billing System Databases Other Than BRM to the BRM Database ......................................................................................................................... 1-12
Modifying the i_item_glseg_eff__id Index .................................................................................................... 1-12
Preventing the POID IDs Range Error in Oracle Data Manager .................................................................... 1-13
Upgrading BRM Database Schema With the Database Objects Associated With Optional Components ..... 1-13
Resetting the Value of OPENED_T of the Previously Billed Items For General Ledger Reports.. 1-14
Setting the JAVA_HOME Environment Variable ................................................................. 1-14
Setting the Java Path for BRM Client Applications ......................................................... 1-16
Setting Up RE Loader Processing Directories ................................................................. 1-16
Setting the Environment Variables Before Generating the Base64 Encoded Hash in a Solaris Environment 1-17
Updating BRM Jurisdiction Codes for Vertex Communications Tax Q (CTQ) ............... 1-17
Uninstalling the Patch Set from BRM ............................................................................. 1-18
Uninstalling the Patch Set from Pipeline Manager ......................................................... 1-18
Preface

This guide provides general information on how to install and uninstall Oracle Communications Billing and Revenue Management (BRM) 7.4 Maintenance Patch Set 2.

**Important:** Before installing BRM 7.4 Maintenance Patch Set 2, you must have either BRM 7.4 or BRM 7.4 Patch Set 1 or later installed on your system.

**Note:** BRM 7.4 Maintenance Patch Set 2 is cumulative from BRM 7.4 Patch Set 1 and includes all the changes introduced since Patch Set 1.

**Audience**

This guide is intended for system administrators and those involved in planning BRM systems.

**Downloading Oracle Communications Documentation**

Product documentation is located on Oracle Technology Network:

http://docs.oracle.com

Additional Oracle Communications documentation is available from the Oracle software delivery Web site:

https://edelivery.oracle.com

**Documentation Accessibility**

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Installing BRM 7.4 Maintenance Patch Set 2

This chapter describes how to install and uninstall Oracle Communications Billing and Revenue Management (BRM) 7.4 Maintenance Patch Set 2.

About the Patch Set

**Important:** Be sure to test the patch on a non-production system before you deploy it on a production system.

BRM 7.4 Maintenance Patch Set 2 is a patch, which must be applied to:

- BRM 7.4
- Pipeline Manager

**Important:** Before installing BRM 7.4 Maintenance Patch Set 2, you must have either BRM 7.4 or BRM 7.4 Patch Set 1 or later installed on your system.

**Note:** BRM 7.4 Maintenance Patch Set 2 is cumulative from BRM 7.4 Patch Set 1 and includes all the changes introduced since Patch Set 1.

The patch is available for AIX, HP-UX IA64, Oracle Linux, and Oracle Solaris operating systems.


The patch contains multiple packages to upgrade different BRM and Pipeline Manager components. You can upgrade the following components by installing their corresponding packages:

- 32-bit BRM
- BRM SDK
- Pipeline Manager
- Pipeline PDK

Only files that have been changed are updated. The patch installer makes a backup of any file it updates. You use the backup files to merge your customizations and to
uninstall the patch. The prepatch version of each updated file (*FileName*) is renamed to *FileName.PatchNumber.bak* and is left in its original directory. For example, when you install BRM 7.4 Maintenance Patch Set 2 to upgrade Pipeline Manager, the existing *sample.reg* file is renamed to *sample.reg.19626042.bak*.

### Installing the Patch Set

**Caution:** When upgrading a *multidatabase system*, pay close attention to the system on which each task is performed.

Perform these tasks on your BRM system to install BRM 7.4 Maintenance Patch Set 2:

1. Shutting Down the Current Instance
2. Backing Up Files
3. Backing Up TAP 3.11 Files
4. Backing Up Your BRM Database
5. Backing Up Your Pipeline Manager Database
6. Installing Java Runtime Environment 1.7
7. Installing the Patch
8. Creating Local Indexes on Table Partitions
9. Upgrading the BRM Database Schema
10. Upgrading the Pipeline Manager Database Schema
11. Adding Customizations

### Shutting Down the Current Instance

**Important:** On multidatabase systems, first perform this task on the primary system and then on the secondary systems.

To shut down BRM:

1. Ensure that no users are logged in.
   
   Users include customers, client applications, customer service representatives (CSRs), and so on.

2. Stop all BRM processes.
   
   Only the database instance should be running during the patch installation. For more information, see "Starting and Stopping the BRM System" in *BRM System Administrator’s Guide*. 

---

1-2   BRM 7.4 Maintenance Patch Set 2 Installation Guide
Backing Up Files

**Important:** On multidatabase systems, first perform this task on the primary system and then on the secondary systems.

Back up your BRM files. In particular, make sure you back up all customized files, including source code, policy, `pin.conf`, `pin_ctl.conf`, `pin_setup.values`, and `Infranet.properties` files.

**Important:** Back up to a different location all the customized configuration files that the utilities load. After the patch installation is completed and services start running, restore the customized configuration files to their original location. Run the load utilities to restore the customized entries in the database.

Backing Up TAP 3.11 Files

If you want TAP Roaming Manager to process both Transferred Account Procedure (TAP) 3.11 and TAP 3.12 GSM TD57 specifications version 30.1:

1. Go to the TAP 3.11 installation directory.
2. Copy and rename each of the files listed in Table 1–1:

   **Note:** This installation uses the extension 
   
   \_0311
   
   in renaming the copies of the required files, to associate them with the TAP 3.11 version to which they belong. This naming convention will be used when updating the **roaming.reg** file with registry configuration appropriate for the processing of TAP 3.11 roaming usage events.

   If you choose a different naming structure, make sure that the **roaming.reg** file is updated to reflect that naming structure for proper processing of TAP 3.11 roaming usage events.

<table>
<thead>
<tr>
<th>Old File Name</th>
<th>New File Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAP_0105_AckOutGrammar.dsc</td>
<td>RAP_0105_AckOutGrammar_0311.dsc</td>
</tr>
<tr>
<td>RAP_0105_FatalReturn.dsc</td>
<td>RAP_0105_FatalReturn_0311.dsc</td>
</tr>
<tr>
<td>RAP_0105_InGrammar.dsc</td>
<td>RAP_0105_InGrammar_0311.dsc</td>
</tr>
<tr>
<td>RAP_0105_MissingReturn.dsc</td>
<td>RAP_0105_MissingReturn_0311.dsc</td>
</tr>
<tr>
<td>RAP_0105_OutGrammar.dsc</td>
<td>RAP_0105_OutGrammar_0311.dsc</td>
</tr>
<tr>
<td>RAP_0105_StopReturn.dsc</td>
<td>RAP_0105_StopReturn_0311.dsc</td>
</tr>
<tr>
<td>containerDesc.dsc</td>
<td>containerDesc_0311.dsc</td>
</tr>
</tbody>
</table>

After installing the patch, configure your registry file to use both TAP 3.11 and TAP 3.12. See the discussion about setting up TAP Roaming Manager to support TAP 3.11 in *BRM Configuring Roaming in Pipeline Manager* for more information.
Backing Up Your BRM Database

**Important:** On multidatabase systems, first perform this task on the primary system and then on the secondary systems.

Make a complete offline backup of your BRM database using the appropriate backup tools for your database version and ensure that the backup is completely valid and usable. The backup must contain both the database definition and all the database contents. See your database software documentation for more information on performing full database backups.

**Important:** Store this backup in a safe location. The data in these files will become necessary if you encounter any issues in the upgrade process.

Backing Up Your Pipeline Manager Database

**Important:** On multidatabase systems, first perform this task on the primary system and then on the secondary systems.

Make a complete offline backup of your Pipeline Manager database using the appropriate backup tools for your database version and ensure that the backup is completely valid and usable. The backup must contain both the database definition and all the database contents. See your database software documentation for more information on performing full database backups.

**Important:** Store this backup in a safe location. The data in these files will become necessary if you encounter any issues in the upgrade process.

Installing Java Runtime Environment 1.7

Install the latest version of Java Runtime Environment (JRE) 1.7 on the following systems:
- The system on which the BRM server is installed
- Each Windows system on which the BRM client application is installed

For information about installing JRE, see the Oracle Java documentation.

Installing the Patch

**Important:** On multidatabase systems, first perform this task on the primary system and then on the secondary systems.
Important: In multischema systems, install the patch software on each server that contains a database schema instance.

To install the patch:

1. Create a temporary directory (temp_dir).
2. Go to the My Oracle Support Web site:
   http://support.oracle.com
3. Sign in with your user name and password.
4. Click the Patches & Updates tab.
5. From the list, select Patch Name or Number.
6. In the text field, enter 19626042 and click Search.
   The Patch Search Results page appears.
7. Click the patch name.
   The patch details appear.
8. From the Platform list, select the platform and click Download.
   The File Download dialog box appears.
9. Download the appropriate p19626042_74_platform.zip software pack to temp_dir, where platform is aix, hpux_ia64, linux, or solaris.
10. Unzip the p19626042_74_platform.zip file.
11. Install the Third-Party software by doing the following:
    a. Go to temp_dir and enter the following command:
       7.4MPS2_ThirdParty_platform_32_opt.bin -console
       where platform is aix, hpux_ia64, linux, or solaris.
    b. When prompted, enter the path to the Third-party_Home directory, where Third-party_Home is the directory in which you installed the Third-Party software.
    c. Follow the instructions displayed during installation.
       The latest supported versions of Perl and Remote Diagnostic Agent (RDA) are installed and the corresponding files in the Third-party_Home/tools directory are replaced. For detailed information on supported versions, see the discussion about BRM software compatibility in BRM Installation Guide.
    d. Go to BRM_Home and source the source.me file, where BRM_Home is the directory in which you installed BRM:
       Bash shell:
       source source.me.sh
       C shell:
       source source.me.csh
12. Go to temp_dir and enter the following command:
    PatchPackageName.bin -console
where \textit{PatchPackageName} is:

- 7.4MPS2_19626042_Portal_Base\_platform\_32\_opt for upgrading BRM plus any
  BRM optional components installed on your system.
- 7.4MPS2_19626042_Portal_SDK\_platform\_32\_opt for upgrading the BRM
  SDK.
- 7.4MPS2_19626042_Pipeline\_platform\_64\_opt for upgrading Pipeline
  Manager.
- 7.4MPS2_19626042_Pipeline_PDK\_platform\_64\_opt for upgrading Pipeline
  PDK.

where \textit{platform} is \textit{aix}, \textit{hpux\_ia64}, \textit{linux}, or \textit{solaris}.

13. Follow the instructions displayed during installation.

14. If the server contains more than one database schema instance, copy all of the
    patch libraries and binaries from the primary schema instance to the secondary
    schema instance.

\textbf{Important:} With BRM 7.4 Maintenance Patch Set 2, the OpenSSL
software is no longer part of the BRM patch set installation package.
Installing this patch set removes the OpenSSL libraries that were
installed by the previous patch sets. For BRM, Oracle recommends
that you use the OpenSSL software bundled with the host operating
system. Ensure that the latest version of the OpenSSL software is
installed for your operating system.

\section*{Creating Local Indexes on Table Partitions}

\textbf{Important:} On multidatabase systems, first perform this task on the
primary system and then on the secondary systems.

To create local indexes on all the existing event and non-event table partitions:

1. Open the \textit{BRM\_Home/setup/scripts/pin\_tables.values} file in a text editor.

2. Search the file for the following line:
   \begin{verbatim}
   $PIN_CONF_PARTITION_IND = "local (partition partition_historic,"
   ."partition partition_last)";
   \end{verbatim}

3. Change the value to \textit{local}. For example:
   \begin{verbatim}
   $PIN_CONF_PARTITION_IND = "local";
   \end{verbatim}

4. Search the file for the following line:
   \begin{verbatim}
   $PIN_CONF_NONEvento_EVENT_PARTITION_IND = "local (partition partition_last)";
   \end{verbatim}

5. Change the value to \textit{local}. For example:
   \begin{verbatim}
   $PIN_CONF_NONEvento_EVENT_PARTITION_IND = "local";
   \end{verbatim}

6. Save and close the file.
Upgrading the BRM Database Schema

**Important:** On multidatabase systems, first perform this task on the primary system and then on the secondary systems.

If the optional components that you require are not already installed, install the optional managers before installing the BRM 7.4 patch. If the optional components are not already installed, the database objects associated with these optional components are not created or updated.

**Upgrading the Schema on Single-Database Systems**

To upgrade the schema on single-database systems:

1. Open the `BRM_Home/setup/pin_setup.values` file in a text editor.
2. (Optional) Set the values of the following parameters:
   - Set PIN_TEMP_DIR to the directory in which you want to create the temporary files. Ensure that the directory has full write permissions.
   - Set PIN_LOG_DIR to the directory in which you want to create the BRM log files.
3. In the **Information about the databases** section, configure the database settings as required.
4. Save and close the file.
5. Run the `pin_upgrade_74MPS2.pl` script from the UNIX prompt:
   ```bash
   cd BRM_Home/setup/scripts
   pin_upgrade_74MPS2.pl
   ```
6. Merge the contents of the backed up `pin_ctl.conf` file into the new `pin_ctl.conf` file.

**Upgrading the Schema on Multidatabase Systems**

**Important:** On multidatabase systems, first run the upgrade script on the primary database, synchronize the configuration and rate-related tables for each secondary database in your BRM system, and then run the upgrade script on the secondary databases.

To upgrade the schema on multidatabase systems:

1. On your primary database system, do the following:
   a. Open the `BRM_Home/setup/pin_setup.values` file in a text editor.
   b. (Optional) Set the values of the following parameters:
      - Set PIN_TEMP_DIR to the directory in which you want to create the temporary files. Ensure that the directory has full write permissions.
      - Set PIN_LOG_DIR to the directory in which you want to create the BRM log files.
c. In the Information about the databases section, configure the database settings for your primary database.

d. Save and close the file.

e. Run the pin_upgrade_74MPS2.pl script from the UNIX prompt:

   cd BRM_Home/setup/scripts
   pin_upgrade_74MPS2.pl

f. Merge the contents of the backed up pin_ctl.conf file into the new pin_ctl.conf file.

2. Run the following commands:

   Note: This step is not required for multischema systems running on Oracle 11g databases.

   sqlplus login/password@ORACLE_SID
   SQL> execute DBMS_SNAPSHOT.refresh('CONFIG_BUSINESS_PARAMS_T', 'F')
   SQL> exit

   where ORACLE_SID is the BRM database alias.

3. On each secondary database in your BRM system, do the following:

   a. Open the BRM_Home/setup/pin_setup.values file in a text editor.
   
   b. Change the $DM_ORACLE('{db_num}') entry, where db_num is the number of the secondary database to upgrade.
   
   c. Configure the database settings as required.
   
   d. Save and close the file.
   
   e. Run the pin_upgrade_74MPS2.pl script from the UNIX prompt:

      cd BRM_Home/setup/scripts
      pin_upgrade_74MPS2.pl

   f. Merge the contents of the backed up pin_ctl.conf file into the new pin_ctl.conf file.

Upgrading the Pipeline Manager Database Schema

   Important: In multischema systems, first run the database upgrade script on the primary database schema, synchronize the configuration and rate-related tables for each secondary database schema in your BRM system, and then run the upgrade script on the secondary database schemas.

   To upgrade your Pipeline Manager database schema:

   1. Open the Pipeline_Home/upgrade/pipeline_upgrade.cfg file in a text editor, where Pipeline_Home is the directory in which Pipeline Manager is installed.
   
   2. Set the values of the following parameters:
Set PIN_TEMP_DIR to the directory in which you want to create the temporary files.

Set the $PIPELINE_TBLSPACE environment variable to the tablespace where you want to create pipeline database objects.

3. In the Information about the databases section, configure the database settings as required.

4. Save and close the file.

5. Grant the required access to user pin on the Pipeline Manager tables and sequences, if you have not already done so. See the discussion about loading the discount stored procedure in BRM Installation Guide for more information about the Pipeline Manager tables and sequences that you should grant user pin access to.

6. Run the pin_74MPS2_pipeline_upgrade.pl and create_pricing_discountmodel_procedures.plb scripts from the UNIX prompt:

   cd Pipeline_Home/upgrade/74_74ps1
   pin_74MPS2_pipeline_upgrade.pl
   cd Pipeline_Home/database/Oracle/Scripts
   sqlplus login/password@ORACLE_SID < create_pricing_discountmodel_procedures.plb

   where:
   - login is the user pin.
   - password is the user pin password.

Adding Customizations

**Important:** On multidatabase systems, first incorporate customizations on the secondary databases and then on the primary database.

Incorporate any customizations you made, including source code, policy, pin.conf, pin_ctl.conf, pin_setup.values, and Infranet.properties files, unless you have already incorporated them. For more information, see the discussion about transferring customizations to the new release in BRM Upgrade Guide.

(Production system only) Remove all entries for the pin_virtual_time utility from the configuration files.

Post-Installation Tasks

This section provides instructions for the post-installation tasks.

Configuring TAP Roaming Manager

If you have TAP Roaming Manager installed on your system, do the following:

1. Create the input and output directories for the Stop RAP Generator pipeline by running the following commands at the UNIX prompt:

   mkdir -p Pipeline_Home/data/stoprap/in
   mkdir -p Pipeline_Home/data/stoprap/out
See BRM 7.4 Maintenance Patch Set 2 Release Notes for more information about the StopRapGen utility and the Stop RAP Generator pipeline.

2. Include the other iScript source files in your iScript by running the following command.

Bash shell:

```bash
export ISCRIPT_INCLUDE="Pipeline_Home/iScriptLib/iScriptLib_Roaming;Pipeline_Home/formatDesc/Formats/TAP3-NG;".
```

C shell:

```csh
setenv ISCRIPT_INCLUDE="Pipeline_Home/iScriptLib/iScriptLib_Roaming;Pipeline_Home/formatDesc/Formats/TAP3-NG;".
```

The preprocessor uses the semicolon-separated list of directories specified in the ISCRIPT_INCLUDE environment variable as the input directories for the other iScript source files to include in your iScript.

---

**Important:** If an iScript `include` statement contains the relative path of an included iScript and the iScript file name, after setting the ISCRIPT_INCLUDE environment variable, remove the relative path and include only the iScript file name.

---

**Configuring the Infranet.properties File for the pin_virtual_gen Utility**

Configure the `Infranet.properties` file before using the `pin_virtual_gen` utility to convert a standard BRM database into one with virtual columns.

To configure the `Infranet.properties` file:

1. Open the `BRM_Home/apps/pin_virtual_columns/Infranet.properties` file in a text editor. If this file does not exist, you must create it.

2. Add the following entries:

```
# Logging configuration
infranet.log.file = vcol.pinlog
infranet.log.level = 1
infranet.log.name = VCOL

# Infranet JDBC connection configuration
infranet.vcol.userid = Username
infranet.vcol.password = Password
infranet.vcol.dbname = ORACLE_SID
infranet.vcol.worker_threads = 10
```

   where:
   - **Username** is the login name to use for connecting to the BRM database.
   - **Password** is the encrypted password for **Username**.

3. Save and close the file.

**Configuring the pinrev Utility to Correctly Report BRM SDK Versions**

If you install the BRM SDK package on your system, update the `pinrev` utility so that it correctly reports which versions of BRM SDK are installed on your system.
To configure `pinrev` to correctly report the versions of BRM SDK installed on your system:

1. Open the `BRM_Home/PortalDev_Kit/bin/pinrev` file in a text editor.
2. Replace `__PINREV__` with the following line:
   ```
   cat BRM_Home/PortalDev_Kit/bin/pinrev.dat
   ```
3. Save and close the file.

**Creating an Oracle AQ Database Queue**

If your system includes Synchronization Queue Data Manager (DM), recreate your Oracle AQ database queue before you can begin synchronizing pricing data. For more information on how to create a database queue, see the discussions about the following:

- Manually creating a database queue on an Oracle database in *BRM Synchronization Queue Manager*.
- Creating additional account synchronization queues in *BRM Installation Guide*.

After you recreate the Oracle AQ database queue, do the following:

1. Open the `BRM_Home/sys/dm_aq/aq_queue_names` file in a text editor.
2. Add the re-created Oracle AQ database queue name along with the relevant details in the queue block.
3. Save and close the file.
4. Stop and restart the DM_AQ services. See the discussion about starting and stopping the Synchronization Queue DM in *BRM Synchronization Queue Manager*.

**Configuring Account Migration Manager Using Oracle Application Infrastructure Architecture in a Multischema Environment**

Load the `create_amt_mv_pkg.sql` and `create_amt_mv_pkb.sql` stored procedures to configure Account Migration Manager (AMM) with your external application using Oracle Application Infrastructure Architecture (Oracle AIA) in a multischema environment.

To configure AMM:

1. Go to the `BRM_Home/sys/amt/data` directory.
2. Run the following command, which opens SQL*Plus:
   ```
   sqlplus login/password@ORACLE_SID
   ```
3. Run the following commands in the given order:
   ```
   SQL> @ create_amt_mv_pkg.sql
   SQL> @ create_amt_mv_pkb.sql
   ```
   The stored procedures are loaded.
4. Run the following command, which exits SQL*Plus:
   ```
   SQL> exit
   ```
Enabling the Logging Mechanism for the pin_purge Utility

To enable the logging mechanism for the pin_purge utility:

1. Open the BRM_Home/apps/pin_subscription/pin.conf file in a text editor.
2. Add the following entries to the file:
   - pin_purge logfile BRM_Log_Dir/pin_subscription/pin_purge.pinlog
   - pin_purge loglevel 2
   where BRM_Log_Dir specifies the directory for the generated log file.
3. Save and close the file.

Migrating the /purchased_bundle Class from Billing System Databases Other Than BRM to the BRM Database

If your system includes Conversion Manager, load the create_cmt_procedure_oracle.sql stored procedure to migrate the /purchased_bundle class from billing system databases other than BRM to the BRM database.

To migrate the /purchased_bundle class from billing system databases other than BRM to the BRM database:

1. Go to the BRM_Home/sys/dd/data directory.
2. Run the following command, which opens SQL*Plus:
   sqlplus login/password@ORACLE_SID
3. Run the following command:
   SQL>@ create_cmt_procedure_oracle.sql
   The stored procedure is loaded.
4. Run the following command, which closes SQL*Plus:
   SQL>exit

Modifying the i_item_glseg_eff__id Index

Modify the i_item_glseg_eff__id index on the ITEM_T table in the BRM database before generating a general ledger report.

To modify the i_item_glseg_eff__id index:

1. Go to the BRM_Home/sys/dd/data directory.
2. Open the replace_item_index_glseg_eff.source file in a text editor.
3. Set the values of the following parameters:
   - Set the $PIN_CONF_TBLSPACEX1 parameter to the tablespace defined in the BRM_Home/setup/scripts/pin_tables.values file.
   - Set the SPIN_CONF_STORAGE_MED_INS parameter to the storage parameters defined in the BRM_Home/setup/scripts/pin_tables.values file.
4. Save and close the file.
5. Run the following command, which opens SQL*Plus:
   sqlplus login/password@ORACLE_SID
6. Run the following command, which modifies the i_item_glseg_eff__id index:
   
   SQL> @ replace_item_index_glseg_eff.source

   **Note:** For information about the database performance, see the comments in the replace_item_index_glseg_eff.source file.

7. Run the following command, which rebuilds the i_item_glseg_eff__id index:
   
   SQL> ALTER INDEX i_item_glseg_eff__id REBUILD

8. Run the following command, which exits SQL*Plus:
   
   SQL> exit

---

** Preventing the POID IDs Range Error in Oracle Data Manager

When there is a database connection error, sometimes the POID ID sequence in the database is corrupted, which results in the Oracle DM throwing the ‘Could not allocate a new poid id range’ error.

To prevent these Oracle DM errors:

1. Go to the BRM_Home/sys/dm_oracle/data directory.
2. Run the following command:
   
   sqlplus login/password@ORACLE_SID < create_pkg_pin_sequence_oracle.plb

   The POID ID sequence is reset in the database.

---

** Upgrading BRM Database Schema With the Database Objects Associated With Optional Components

While upgrading the BRM database schema, if the optional components are not already installed, the database objects associated with the optional components are not created and updated.

If the optional components are installed after upgrading the BRM database schema, to upgrade the BRM database schema with the database objects associated with the optional components:

1. Open the BRM_Home/setup/pin_setup.values file in a text editor.
2. Set the values of the following parameters:
   
   $DM_ORACLE{'enable_write_objects'} = 1;
   $DM_ORACLE{'enable_write_fields'} = 1;
   $DM_ORACLE{'enable_write_portal_objects'} = 1;

3. Save and close the file.
4. Open the BRM_Home/sys/dm_oracle/pin.conf file in a text editor.
5. Set the values of the following parameters:
   
   $DM_ORACLE{'enable_write_objects'} = 1;
   $DM_ORACLE{'enable_write_fields'} = 1;
   $DM_ORACLE{'enable_write_portal_objects'} = 1;

6. Save and close the file.
7. Go to the BRM_Home/setup directory and enter the following command:
   `% ./pin_setup`

8. Reinstall the overlay patch software. See "Installing the Patch".

9. Upgrade the BRM database schema. See "Upgrading the BRM Database Schema".

10. Merge the contents of the backed up pin_ctl.conf file into the new pin_ctl.conf file.

### Resetting the Value of OPENED_T of the Previously Billed Items For General Ledger Reports

To generate billed revenue general ledger reports based on the actual billing date, reset the value of the OPENED_T field in the /item object for the previously billed items that are incorrectly set to 0 in the BRM database.

**Note:** Reset the value of the OPENED_T field in the /item object for the previously billed items only if the UseActualBilledTimeForGLReport business parameter is enabled. For more information about enabling the UseActualBilledTimeForGLReport business parameter, see the discussion about generating general ledger reports for billed revenue to be based on the actual time of billing in BRM Collecting General Ledger Data.

To reset the value of OPENED_T of the previously billed items for billed revenue general ledger reports:

1. Go to the BRM_Home/sys/dd/data directory.

2. Run the following command, which opens SQL*Plus:
   ```
   sqlplus login/password@ORACLE_SID
   ```

3. Run the following command, which resets the value of OPENED_T for the previously billed items that is incorrectly set to 0:
   ```
   SQL> @ fix_items_with_zero_opened_t.source
   ```

   **Note:** For information about the database performance, see the comments in the fix_items_with_zero_opened_t.source file.

4. Run the following command, which exits SQL*Plus:
   ```
   SQL> exit
   ```

### Setting the JAVA_HOME Environment Variable

Set the JAVA_HOME environment variable to the latest version of JRE 1.7 before running any BRM processes.

To set the JAVA_HOME environment variable on the system on which the BRM server is installed:

1. Stop all BRM daemons, processes, and managers and all Java processes.
For more information, see the discussion about starting and stopping the BRM system in BRM System Administrator’s Guide.

2. Set the JAVA_HOME environment variable to the directory in which the latest version of JRE 1.7 is installed.

3. Create a symbolic link, for all BRM-related Java processes, to latest version of JRE 1.7 by running the following command:

   To upgrade from JRE 1.5:
   \[
   \text{ln -s } \$\text{JAVA_HOME/bin/java } \text{BRM_Home/ThirdPartyApps/jre/1.5.0/bin/java}
   \]

   To upgrade from JRE 1.6:
   \[
   \text{ln -s } \$\text{JAVA_HOME/bin/java } \text{BRM_Home/ThirdPartyApps/jre/1.6.0/bin/java}
   \]

4. Start all the BRM processes.

5. Verify the Java version by running the following command:

   \[
   \text{java -version}
   \]

   The Java version is displayed. For example:

   \[
   \text{java version "1.7.0_13"}
   \]

   If the version displayed does not start with 1.7.0_, the update was not successful.

To set the JAVA_HOME environment variable on each Windows system on which the BRM client application is installed:

1. Stop all the BRM client applications.

2. On the desktop, right-click My Computer and select Properties.

   The System Properties dialog box appears.

3. Click the Advanced tab.

4. Click Environment Variables.

   The Environment Variables dialog box appears.

5. In the System variables pane, click New.

   The New System Variable dialog box appears.

6. In the Variable name field, enter JAVA_HOME.

7. In the Variable value field, enter the path to the directory in which the latest version of JRE 1.7 software is installed.

8. Click OK.

9. In the System variables list box, select Path and then click Edit.

   The Edit System Variable dialog box appears.

10. In the Variable value field, add ;%JAVA_HOME%\bin at the end of the existing path.

11. Click OK.

12. In Environment Variables dialog box, click OK.

13. In the System Properties dialog box, click OK.
Setting the Java Path for BRM Client Applications

Set the Java path to the latest version of JRE 1.7 before running any BRM client application.

To set the Java path for the BRM client application installed on a Windows system:

1. Close the BRM client application.

2. Open the `BRM_Client_Home\lib\BRM_client_batch` file in a text editor.
   
   where:
   - `BRM_Client_Home` is the directory in which the BRM client application is installed.
   - `BRM_client_batch` is the batch file you use to run the BRM client application. For example, to run Customer Center, you use `runCC.bat`.

3. Search for the following entry:

   ```
   C:\PROGRA~1\COMMON~1\PORTAL~1\JRE\bin\javaw.exe
   ```

4. Change this entry to:

   ```
   java_path\bin\java.exe
   ```

   where `java_path` is the directory in which the latest version of Java 1.7 is installed.

   For example:

   ```
   C:"Program Files"\Java\jdk1.7.0_13\bin\java.exe
   ```

   **Note:** If `@start` is not present, add it to the entry. For example:

   ```
   @start C:"Program Files"\Java\jdk1.7.0_13\bin\java.exe
   ```

5. Save and close the file.

6. Start the BRM client application.

Setting Up RE Loader Processing Directories

To set up RE Loader processing directories, do the following in each instance of RE Loader:

1. In your `BRM_Home/apps/pin_rel` directory, create processing directories, if they are not already created.

   For example, create a `BRM_Home/apps/pin_rel/GPRS` directory and a `BRM_Home/apps/pin_rel/GSM` directory.

2. Configure the `Infranet.properties` file. See the discussion about configuring the RE Loader `Infranet.properties` file in BRM Configuring Pipeline Rating and Discounting.

3. Copy all files from the `BRM_Home/apps/pin_rel` directory to each processing directory. If you have customized the text files in the processing directory, make sure that you merge your customizations.

See the discussion about setting up RE Loader processing directories in BRM Configuring Pipeline Rating and Discounting.
Setting the Environment Variables Before Generating the Base64 Encoded Hash in a Solaris Environment

If you are using the libcm_hash.so library's generate_hash API to generate the base64 encoded hash in a Solaris environment, you must set the environment variables to point to the OpenSSL libraries.

To set the environment variables before generating the base64 encoded hash in a Solaris environment:

1. Run the following command, which sets the LD_PRELOAD environment variable to the OpenSSL libcrypto.so library:
   
   Bash shell:
   ```bash
   export LD_PRELOAD=OpenSSL_Home/lib/libcrypto.so
   ```
   
   C shell:
   ```bash
   setenv LD_PRELOAD OpenSSL_Home/lib/libcrypto.so
   ```
   
   where OpenSSL_Home is the directory in which the OpenSSL software is installed on the host operating system.

2. Run the following command, which adds the directory path to the OpenSSL libcrypto.so file in the LD_LIBRARY_PATH environment variable:
   
   Bash shell:
   ```bash
   export LD_LIBRARY_PATH=OpenSSL_Home/lib:$LD_LIBRARY_PATH
   ```
   
   C shell:
   ```bash
   setenv LD_LIBRARY_PATH OpenSSL_Home/lib:$LD_LIBRARY_PATH
   ```

Updating BRM Jurisdiction Codes for Vertex Communications Tax Q (CTQ)

If you have Vertex CTQ Series 2.00.05 or later installed on your system, update the BRM jurisdiction codes in the BRM database.

To update the BRM jurisdiction codes:

1. Go to the BRM_Home/sys/dd/data/ directory.
2. Run the following command, which opens SQL*Plus:
   ```sql
   sqlplus login/password@ORACLE_SID
   ```
3. Run the following command:
   ```sql
   SQL>@ update_new_ctq2_jurisdiction_codes.source
   ```
   
   The BRM jurisdiction codes are updated.

   **Note:** For more information about the database performance during this update, see the comments in the `update_new_ctq2_jurisdiction_codes.source` file.

4. Run the following command, which exits SQL*Plus:
   ```sql
   SQL>exit
   ```
Uninstalling the Patch Set from BRM

To uninstall the patch set from BRM:

1. (Optional) Back up the upgraded environment by doing the following:
   - Back up the BRM database. See "Backing Up Your BRM Database".
   - Back up all of the BRM files. See "Backing Up Files".

2. Stop all BRM daemons, processes, and managers.

3. Log in as user pin.

4. Go to the directory in which you installed the Third-Party package and source the source.me file:
   - Bash shell:
     ```bash
     source source.me.sh
     ```
   - C shell:
     ```csh
     source source.me.csh
     ```

5. Run the `BRM_Home/uninstaller/PatchPackageName/uninstaller.bin` program, where `PatchPackageName` is the name of the upgrade package you want to uninstall.

     **Note:** You can use the `-console` parameter to run the program from a command line.

     This starts a series of interactive prompts.

6. Follow the instructions on the screen.

7. Restore the database from the offline backup of your BRM database that you created in "Backing Up Your BRM Database". See your database software documentation for more information on restoring full database backups.

Uninstalling the Patch Set from Pipeline Manager

To uninstall the patch set from Pipeline Manager:

1. (Optional) Back up the upgraded environment by doing the following:
   - Back up the Pipeline Manager database. See "Backing Up Your Pipeline Manager Database".
   - Back up all of the Pipeline Manager files. See "Backing Up Files".

2. Stop all Pipeline Manager daemons, processes, and managers.

3. Log in as user pin.

4. Go to the directory in which you installed the Third-Party package and source the source.me file:
   - Bash shell:
     ```bash
     source source.me.sh
     ```
   - C shell:
source source.me.csh

5. Run the `Pipeline_Home/uninstaller/PatchPackageName/uninstaller.bin` program, where `PatchPackageName` is the name of the upgrade package you want to uninstall.

    **Note:** You can use the `-console` parameter to run the program from a command line.

This starts a series of interactive prompts.

6. Follow the instructions on the screen.

7. Restore the database from the offline backup of your Pipeline Manager database that you created in "Backing Up Your Pipeline Manager Database". See your database software documentation for more information on restoring full database backups.