

**Oracle® Communications
Billing and Revenue Management**
Maintenance Patch Set 1 Installation Guide
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Preface

This guide provides general information on how to install and uninstall Oracle Communications Billing and Revenue Management (BRM) 7.5 Maintenance Patch Set 1.

Audience

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

Accessing Oracle Communications Documentation

BRM documentation and additional Oracle documentation, such as Oracle Database documentation, is available from Oracle Help Center:

<http://docs.oracle.com>

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

<https://edelivery.oracle.com>

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Installing BRM 7.5 Maintenance Patch Set 1

This chapter describes how to install and uninstall Oracle Communications Billing and Revenue Management (BRM) 7.5 Maintenance Patch Set 1 on top of a base BRM 7.5 system.

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 7.5 Maintenance Patch Set 1 is a patch that must be applied to the following:

- BRM 7.5
- Pipeline Manager

Important: Before installing BRM 7.5 Maintenance Patch Set 1, you must have either BRM 7.5 or BRM 7.5 Patch Set 1 or later installed on your system. BRM 7.5 Maintenance Patch Set 1 is cumulative from BRM 7.5 Patch Set 1 and includes all the changes introduced since Patch Set 1.

Note: If you are upgrading to BRM 7.5 Maintenance Patch Set 1 from BRM 7.4, you must first upgrade to BRM 7.5. For more information, see ["Upgrading from BRM 7.4 to the BRM 7.5 Patch Set"](#).

Note: BRM 7.5 Maintenance Patch Set 1 is cumulative from BRM 7.5 Patch Set 1 and includes all the changes introduced since Patch Set 1.

Note: If you have an existing installation of BRM integrated with Oracle Communications Pricing Design Center (PDC) and Oracle Communications Billing and Revenue Management Elastic Charging Engine (ECE), see the discussion about the overview of upgrading ECE 11.2 Patch Set 5 to ECE 11.2 Patch Set 6 in *BRM Elastic Charging Engine Installation Guide* before upgrading from an earlier BRM patch set release to BRM 7.5 Patch Set 12 or a later release.

The patch is available for Oracle Linux, AIX, HP-UX IA64, 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:

- BRM
- BRM SDK
- Pipeline Manager

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 7.5 Maintenance Patch Set 1 to upgrade Pipeline Manager, the existing **sample.reg** file is renamed to **sample.reg.21513185.bak**.

Installing the Patch Set

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

Perform the following tasks on your BRM system to install BRM 7.5 Maintenance Patch Set 1:

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](#)
7. [Installing Solaris Patches](#)
8. [Installing the Required 32-Bit Libraries for Oracle Linux 6 Update 3](#)
9. [Granting Synonym Privileges](#)
10. [Installing the Patch](#)
11. [Creating Local Indexes on Table Partitions](#)
12. [Upgrading the BRM Database Schema](#)

- [13. Upgrading the Pipeline Manager Database Schema](#)
- [14. Adding Customizations](#)

Shutting Down the Current Instance

Important: In multischema systems, all BRM instances must be shut down.

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 instances should be running during the patch installation. For more information, see the discussion about starting and stopping the BRM system in *BRM System Administrator's Guide*.

Backing Up Files

Important: In multischema systems, perform this task first on the primary BRM installation machine and then on the secondary BRM installation machines.

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

Backing Up TAP 3.11 Files

If you want TAP Roaming Manager to process both TAP 3.11 (Transferred Account Procedure Number 3 version 11) TD57 specifications version 28 and TAP 3.12 GSM TD57 specifications version 32.1:

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 1–1 New Names for TAP 3.11 Files Requiring Backup

Old File Name	New File Name
RAP_0105_AckOutGrammar.dsc	RAP_0105_AckOutGrammar_0311.dsc
RAP_0105_FatalReturn.dsc	RAP_0105_FatalReturn_0311.dsc
RAP_0105_InGrammar.dsc	RAP_0105_InGrammar_0311.dsc
RAP_0105_MissingReturn.dsc	RAP_0105_MissingReturn_0311.dsc
RAP_0105_OutGrammar.dsc	RAP_0105_OutGrammar_0311.dsc
RAP_0105_StopReturn.dsc	RAP_0105_StopReturn_0311.dsc
containerDesc.dsc	containerDesc_0311.dsc

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 process TAP 3.11 files in *BRM Configuring Roaming in Pipeline Manager* for more information.

Backing Up Your BRM Database

Important: In multischema systems, perform this task first on the primary database schema and then on the secondary database schemas.

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: In multischema systems, perform this task first on the primary database schema and then on the secondary database schemas.

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

For the latest version of Java Runtime Environment (JRE) certified with BRM, see the discussion about BRM software compatibility in *BRM Installation Guide*.

To verify the JRE version:

1. On the system on which the BRM server and the BRM client application are installed, go to the command prompt.
2. Run the following command:

```
java -version
```

The Java version is displayed.

If the latest version of Java certified with BRM is not displayed, the latest JRE is not installed.

Install the latest version of JRE certified with BRM on the following systems:

- The computer on which the BRM server is installed
- Each Windows computer on which the BRM client application is installed

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

Installing Solaris Patches

If BRM is installed on a Solaris server, install the 148198-03 for SPARC patch on that server.

To install the 148198-03 for SPARC patch on Solaris:

1. On the Solaris server on which BRM is installed, run the following command:

```
showrev -p
```

All the patches that are installed on the server are listed.

2. If the 148198-03 for SPARC patch is not listed, download and install the 148198-03 for SPARC patch from the My Oracle Support Web site:

<https://support.oracle.com>

For more information about installing the Solaris patches, see the Oracle Solaris documentation.

Installing the Required 32-Bit Libraries for Oracle Linux 6 Update 3

If BRM is installed on an Oracle Linux 6 Update 3 server, install the required 32-bit libraries for Oracle Linux 6 Update 3 on that server.

To install the required 32-bit libraries for Oracle Linux 6 Update 3:

1. Go to the command prompt on the Oracle Linux 6 Update 3 server on which BRM is installed.
2. Run the following commands:

```
yum -y install glibc.i686
yum -y install glibc-devel.i686
yum -y upgrade libXext
yum -y install libXext.i686
yum -y upgrade libXtst
yum -y install libXtst.i686
```

```
yum -y upgrade libgcc
yum -y install libgcc.i686
yum -y upgrade libstdc++
yum -y install libstdc++.i686
yum -y install libaio.i686
```

Note: If you use a proxy server as an intermediary for Internet access, configure a proxy server to access the yum repository. See http://docs.oracle.com/cd/E37670_01/E37355/html/ol_yum_config.html#ol_proxy_config.

For more information about installing the 32-bit libraries for Oracle Linux 6 Update 3, see the Oracle Linux 6 documentation.

Disabling SSL/TLS

If your BRM components use Secure Sockets Layer (SSL) or Transport Layer Security (TLS) to provide secure communication between the components, you must disable SSL/TLS before you start the upgrade.

To disable SSL/TLS:

1. Open the **BRM_home/sys/cm/pin.conf** file in a text editor, where *BRM_home* is the directory in which BRM is installed.
2. Set the value of the following parameter:
- cm enable_ssl 0
3. Save and close the file.
4. Open the **BRM_home/sys/data_manager/pin.conf** file in a text editor, where *data_manager* is the directory for the DM you want to disable SSL/TLS for.
5. Set the value of the following parameter:
- dm enable_ssl 0
6. Save and close the file.
7. Open the **pin.conf** file of the PCM client application in a text editor.
8. Set the value of the following parameter:
- nap enable_ssl 0
9. Save and close the file.

Granting Synonym Privileges

Grant the synonym privileges to the BRM database user on the BRM database, if you have not already done so.

To grant synonym privileges:

1. Run the following command, which opens SQL*Plus:

```
sqlplus system/manager@database_alias
```

where *database_alias* is the BRM database alias.

2. Run the following command, which grants synonym privileges to the BRM database user on the BRM database:

```
SQL>grant CREATE SYNONYM, CREATE ANY SYNONYM to user;
```

where *user* is the name of a BRM database user.

3. Run the following command, which exits SQL*Plus:

```
SQL>exit
```

Installing Optional Components

Important: In multischema systems, perform this task first on the primary BRM installation machine and then on the secondary BRM installation machines.

If the optional components that you require are not installed, install the optional managers.

For instructions on installing optional components, see the documentation for those components.

Installing the Patch

Important: In multischema systems, perform this task first on the primary BRM installation machine and then on the secondary BRM installation machines.

To install the patch:

1. Create a temporary directory (*temp_dir*).
2. Go to the My Oracle Support Web site:

<https://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 **21513185** 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 **p21513185_750_platform.zip** software pack to *temp_dir*, where *platform* is **linux**, **aix**, **hpxx_ia64**, or **solaris**.
10. Unzip the **p21513185_750_platform.zip** file.

11. Install the Third-Party software by doing the following:

a. Go to *temp_dir* and run the following command:

```
7.5MPS1_ThirdParty_platform_32_opt.bin -console
```

where *platform* is **linux**, **aix**, **hpxx_ia64**, or **solaris**.

b. When prompted, enter the path to the *Third-party_home* directory, where *Third-party_home* is the directory in which the Third-Party software is installed.

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 BRM is installed:

Bash shell:

```
source source.me.sh
```

C shell:

```
source source.me.csh
```

12. Go to *temp_dir* and run the following command, which installs the patch software:

```
PatchPackageName.bin -console
```

where *PatchPackageName* is:

- **7.5MPS1_21513185_Portal_Base_platform_opt** for upgrading BRM plus any BRM optional components installed on your system.
- **7.5MPS1_21513185_Portal_SDK_platform_opt** for upgrading the BRM SDK.
- **7.5MPS1_21513185_Pipeline_platform_opt** for upgrading Pipeline Manager.

where *platform* is **linux**, **aix**, **hpxx_ia64**, or **solaris**.

13. Follow the instructions displayed during installation.

14. Run the following command, which installs the database upgrade package:

```
PatchPackageName.bin -console
```

where *PatchPackageName* is:

- **7.5MPS1_PortalBase_Upgrade_75_75PS_platform_32_opt** for upgrading the BRM patch set database schema plus the database schema for any BRM optional components installed on your system.
- **7.5MPS1_Pipeline_Upgrade_75_75PS_platform_32_opt** for upgrading the Pipeline Manager patch set database schema.

where *platform* is **linux**, **aix**, **hpxx_ia64**, or **solaris**.

15. Follow the instructions displayed during installation.

Important: From BRM 7.5 Patch Set 10, the OpenSSL software is no longer part of the BRM patch set installation package. Installing BRM 7.5 Patch Set 10 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.

Creating Local Indexes on Table Partitions

Note: In multischema systems, perform this task first on the primary BRM installation machine and then on the secondary BRM installation machines.

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

1. Open the *BRM_home/setup/scripts/pin_tables.values* file in a text editor.
2. Search the file for the following line:

```
$PIN_CONF_PARTITION_IND = "local (partition partition_historic,
."partition partition_last)";
```

3. Change the value to **local**:

```
$PIN_CONF_PARTITION_IND = "local";
```

4. Search the file for the following line:

```
$PIN_CONF_NON_EVENT_PARTITION_IND = "local (partition partition_last)";
```

5. Change the value to **local**:

```
$PIN_CONF_NON_EVENT_PARTITION_IND = "local";
```

6. Save and close the file.

Upgrading the BRM Database Schema

The database objects associated with the optional components that are not already installed are not created or updated.

If Oracle In-Memory Database (IMDB) Cache is installed, upgrade the BRM Cache Groups Schema in IMDB Cache. See "[Upgrading the BRM Cache Groups Schema in IMDB Cache](#)".

To upgrade the BRM database schema, perform one of the following procedures:

- [Upgrading the Schema on Single-Schema Systems](#)
- [Upgrading the Schema on Multischema Systems](#)

Upgrading the Schema on Single-Schema Systems

To upgrade the schema on single-schema systems:

1. Open the *BRM_home/sys/dm_oracle/pin.conf* file in a text editor.
2. Uncomment the following entry:

```
- crypt md5| ${PIN_HOME}/lib/${LIBRARYPREFIX}pin_crypt4dm64${LIBRARYEXTENSION}
"Abracadabra dabracaaabrA"
```

3. Save and close the file.
4. Open the *BRM_home/setup/pin_setup.values* file in a text editor.
5. (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.
6. In the **Information about the CM** section, add the following text:

```
$MAIN_CM{'pcm_admin_passwd'} =
"&aes|08|0D5E11BFDD97D2769D9B0DBFB1BBF7E5D40C305EDF3D77DF111AAB8F781E92122";
```

The password that is used by the load utilities to connect to the Connection Manager (CM) is reset to the default password.
7. In the **Information about the databases** section, configure the database settings as required.
8. Set SETUP_INIT_DB to YES, if it is not set.
9. Save and close the file.
10. Go to *BRM_home* and source the **source.me** file:
 - Bash shell:

```
source source.me.sh
```
 - C shell:

```
source source.me.csh
```

11. Go to the *BRM_home/setup/scripts* directory and run the following script:

```
pin_75_75MPS1upgrade.pl
```

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

Upgrading the Schema on Multischema Systems

To upgrade the schema on multischema systems:

1. On the primary BRM installation machine, do the following:
 - a. Open the *BRM_home/sys/dm_oracle/pin.conf* file in a text editor.
 - b. Uncomment the following entry:

```
- crypt md5| ${PIN_HOME}/lib/${LIBRARYPREFIX}pin_
crypt4dm64${LIBRARYEXTENSION} "Abracadabra dabracaaabrA"
```
 - c. Save and close the file.
 - d. Open the *BRM_home/setup/pin_setup.values* file in a text editor.
 - e. (Optional) Set the values of the following parameters:

Set PIN_TEMP_DIR to the directory in which you want to create the temporary files.

Set PIN_LOG_DIR to the directory in which you want to create the BRM log files.

- f. In the **Information about the CM** section, add the following text:

```
$MAIN_CM{ 'pcm_admin_passwd' } =
"&aes|08|0D5E11BFDD97D2769D9B0DBFBD1BBF7E5D40C305EDF3D77DF111AAB8F781E92122
";
```

The password that is used by the load utilities to connect to the CM is reset to the default password.

- g. In the **Information about the databases** section, configure the database settings for your primary database schema.
- h. Set SETUP_INIT_DB to YES, if it is not set.
- i. Save and close the file.
- j. Go to *BRM_home* and source the **source.me** file:

Bash shell:

```
source source.me.sh
```

C shell:

```
source source.me.csh
```

- k. Go to the *BRM_home/apps/multi_db* directory and run the following script:

```
./install.sh
```

Follow the on-screen instructions, entering the following information for the primary schema and for each secondary schema when requested:

- Schema user name
- Schema password
- Schema SID (the BRM database alias of the schema)

Important: Repeat the "Do you have secondary schema to process" step for each secondary schema in your system.

The install script fixes any data errors caused by conflicting storable class IDs. The errors might have occurred during global (XA) transactions involving multiple schemas or when accounts were migrated from one schema to another.

Note: As the install script runs, it generates the *BRM_home/apps/multi_db/fix_multi_schema.log* file. To view the progress of the script, display the log file in a different console window.

- I. Go to the *BRM_home/setup/scripts* directory and run the following script:

```
pin_75_75MPS1_upgrade.p1
```

- m. Merge the contents of the backed up **pin_ctl.conf** file into the new **pin_ctl.conf** file.

2. On each secondary BRM installation machine, do the following:

- a. Open the *BRM_home/sys/dm_oracle/pin.conf* file in a text editor.
- b. Uncomment the following entry:

```
- crypt md5| ${PIN_HOME}/lib/${LIBRARYPREFIX}pin_
crypt4dm64${LIBRARYEXTENSION} "Abracadabra dabracabrabA"
```

- c. Save and close the file.
- d. Open the *BRM_home/setup/pin_setup.values* file in a text editor.
- e. In the **Information about the CM** section, add the following text:

```
$MAIN_CM{'pcm_admin_passwd'} =
"&aes|08|0D5E11BFDD97D2769D9B0DBFBD1BBF7E5D40C305EDF3D77DF111AAB8F781E92122
";
```

The password that is used by the load utilities to connect to the CM is reset to the default password.

- f. Change the **\$DM_ORACLE{'db_num'}** entry, where *db_num* is the number of the corresponding secondary database schema to upgrade.
- g. Configure the database settings as required.
- h. Set **SETUP_INIT_DB** to **YES**, if it is not set.
- i. Save and close the file.
- j. Go to *BRM_home* and source the **source.me** file:

Bash shell:

```
source source.me.sh
```

C shell:

```
source source.me.csh
```

- k. Go to the *BRM_home/setup/scripts* directory and run the following script:

```
pin_75_75MPS1_upgrade.pl
```

- l. Merge the contents of the backed up **pin_ctl.conf** file into the new **pin_ctl.conf** file.

3. On the primary BRM installation machine, do the following:

- a. Go to the *BRM_home/setup/scripts* directory and run the following command:

```
pin_multidb.pl -i
```

- b. At the following prompt, enter **y**, which begins the configuration:

```
Do you want to start the configuration now? (y/n): y
```

- c. At the following prompt, enter **2**, which initializes the primary database:

```
Please enter the starting step (0-8). If you don't know, enter 0: 2
```

- d. Follow the instructions displayed and exit the **pin_multidb.pl** script.

The refresh groups are recreated in the primary database.

- e. Run the following command:

```
pin_multidb.pl -R all
```

The views, based on the information in the refresh groups, are re-created in the secondary databases.

Upgrading the BRM Cache Groups Schema in IMDB Cache

Note: This procedure is required only if you installed Oracle IMDB Cache Manager.

Important: In multischema systems, perform these tasks first on the primary BRM installation machine and then on the secondary BRM installation machines.

When you upgrade the BRM Cache Groups schema in IMDB Cache, you delete the data stores in IMDB Cache and then re-create them.

To upgrade the BRM Cache Groups schema in IMDB Cache:

1. If you have created any customizations in the cache groups, save the *BRM_home/bin/pin_tt_schema_gen.values* file to a different location. Note down the name and location of this file.

Note: In a multischema system, save the *pin_tt_schema_gen.values* file for each schema.

2. Connect to IMDB Cache using **ttIsql**.
3. Run the following command for each cache group to unload:

```
UNLOAD CACHE GROUP CacheGroupName
```

where *CacheGroupName* is the name of the cache group to be unloaded.

All cache instances from all cache tables in *CacheGroupName* are unloaded.

Important: Unload all cache groups before you start the upgrade.

For information about unloading a cache group, see the discussion about cache group operations in *Oracle In-Memory Database Cache User's Guide*.

4. Detach all IMDB nodes from the cache grid.

- For high-availability (HA) systems:

Important: If the grid member is an active standby pair, detach the active master and standby master databases separately.

Run the following commands, in the order indicated, which detach the IMDB node on the active standby pair from the cache grid:

```
ttCWAAdmin -stop -dsn DataStoreName
ttCWAAdmin -drop -dsn DataStoreName
```

where *DataStoreName* is the name of the data store to detach.

For more information on detaching grid members in an HA environment, see *Oracle In-Memory Database Cache User's Guide*.

- For non-HA systems:

Run the following command, which detaches all the IMDB nodes:

```
ttGridDetach();
```

For information about the **ttGridDetach()** command, see the discussion about cleaning up the caching environment in *Oracle In-Memory Database Cache User's Guide*.

5. Run the following command, which stops the replication agent on each database:

```
CALL ttRepStop;
```

For more information on stopping the replication agent, see the discussion about managing the replication agent in *Oracle In-Memory Database Cache User's Guide*.

6. Drop the cache groups by doing the following:

- a. Run the following command, which drops all the default BRM cache groups:

```
BRM_home/bin/tt_drop.sql
```

- b. Run the following command for each custom cache group to drop the cache group:

```
DROP CACHE GROUP CacheGroupName
```

where *CacheGroupName* is the name of the cache group you want to drop.

For information about dropping cache groups, see *Oracle In-Memory Database Cache User's Guide*.

7. Run the following command, which stops the TimesTen cache agent:

```
call ttCacheStop;
```

For information about stopping the TimesTen cache agent, see *Oracle In-Memory Database Cache User's Guide*.

8. Destroy the data store by doing the following:

- a. Disconnect from all databases.

- b. Stop the TimesTen main daemon process, which manages all databases under the same TimesTen installation, by running the following command:

```
ttdaemonadmin -stop
```

- c. Restart the TimesTen main daemon process by running the following command:

```
ttdaemonadmin -start
```

- d. Destroy the data store by running the following command:

```
ttDestroy DataStoreName
```

where *DataStoreName* is the name of the data store to be destroyed.

For information about `ttDestroy`, see the discussion about cleaning up the caching environment in *Oracle In-Memory Database Cache User's Guide*.

9. Stop the CM processes.

For more information, see the discussion about starting and stopping the BRM system in *BRM System Administrator's Guide*.

10. Stop the IMDB Cache Data Manager (DM) processes.

For more information, see the discussion about starting and stopping Oracle IMDB Cache DM in *BRM System Administrator's Guide*.

11. Re-create the data store in IMDB Cache.

For more information, see the discussion about creating the data store in Oracle IMDB Cache in *BRM System Administrator's Guide*.

12. Generate the schema SQL and load SQL scripts to set up the cache group schema by doing the following:

Note: In a multischema system, complete these steps for each schema.

a. Configure the `pin_tt_schema_gen.values` file.

For more information, see the discussion about configuring the `pin_tt_schema_gen.values` file in *BRM System Administrator's Guide*.

Optionally, if you saved your `BRM_home/bin/pin_tt_schema_gen.values` file in step 1, use it.

b. Run the following command, which generates your schema and load scripts:

`pin_tt_schema_gen`

For more information, see the discussion about generating your schema and load SQL scripts in *BRM System Administrator's Guide*.

13. Initialize your data stores.

For more information, see the discussion about initializing your data stores in Oracle IMDB Cache in *BRM System Administrator's Guide*.

14. Connect your data stores to the BRM database.

For more information, see the discussion about connecting your data stores to the BRM database in *BRM System Administrator's Guide*.

15. Connect the IMDB Cache DM to your data stores.

For more information, see the discussion about connecting the IMDB Cache DM to your data stores in *BRM System Administrator's Guide*.

16. Configure the CM to connect to the Oracle DM.

For more information, see the discussion about using configuration files to connect and configure components in *BRM System Administrator's Guide*.

17. Go to the `BRM_home/setup/scripts` directory and run the following script:

`pin_75_75MPS1_upgrade.pl`

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. Go to the *Pipeline_home/upgrade/scripts* directory and run the following script:
pin_upgrade_pipeline_75_75MPS1.pl

7. Go to the *Pipeline_home/database/Oracle/Scripts* directory and run the following script:

```
sqlplus login/password@database_alias < create_pricing_discountmodel_
procedures.plb
```

where:

- *login* is the user name for the database schema you are updating.
- *password* is the password for *login*.
- *database_alias* is the BRM database alias of the schema you are updating.

Adding Customizations

Important: In multischema systems, incorporate customizations first on the secondary BRM installation machines and then on the primary BRM installation machine.

Incorporate any customizations you made, including source code, policy, **pin.conf**, **pin_ctl.conf**, **pin_setup.values**, and **Infranet.properties** files, if you have not already incorporated them.

If you have already loaded customized versions of the following files, incorporate any customizations you made and reload the files using the **load_localized_strings** utility:

- *BRM_home/sysmsgs/lifecycle_states/lifecycle_states.en_US*
- *BRM_home/sysmsgs/active_mediation/active_mediation.en_US*
- *BRM_home/sysmsgs/note/note.en_US*
- *BRM_home/sysmsgs/reasoncodes/reasons.en_US*

For more information about loading these files, see the discussion about localizing and customizing strings in *BRM Developer's Guide*.

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

Upgrading from BRM 7.4 to the BRM 7.5 Patch Set

Note: In multischema systems, perform this task first on the primary BRM installation machine and then on the secondary BRM installation machines.

To upgrade BRM 7.4 to the BRM 7.5 patch set:

1. Upgrade BRM 7.4 to base BRM 7.5. See the discussion about upgrading from BRM 7.4 to BRM 7.5 in *BRM Upgrade Guide*.

Note: Do not upgrade the BRM 7.4 database schema to the base BRM 7.5 database schema.

2. If BRM is installed on a Solaris server, install the 148198-03 for SPARC patch on that server. See "[Installing Solaris Patches](#)".
3. Open the *BRM_home/setup/pin_setup.values* file in a text editor.
4. Set the values of the following parameters:

```
$SETUP_CREATE_PARTITION = "NO";
$ENABLE_PARTITION = "NO";
$SETUP_DROP_ALL_TABLES = "NO";
$SETUP_INIT_DB = "NO";
$CREATE_DATABASE_TABLES = "NO";
```

5. Save and close the file.
6. Go to the *BRM_home/setup* directory and run the following command:
./pin_setup
7. Install the BRM 7.5 patch set software. See "[Installing the BRM 7.5 Patch Set](#)".
8. Upgrade the BRM patch set database schema. See "[Upgrading the BRM 7.5 Patch Set Database Schema](#)".

9. Upgrade the BRM patch set Pipeline Manager database schema. See "Upgrading the BRM 7.5 Patch Set Pipeline Manager Database Schema".
10. If you upgraded from BRM 7.4 Patch Set 21 or BRM 7.4 Maintenance Patch Set 2 to BRM 7.5 Maintenance Patch Set 1 or later, set up the appropriate `item_t_synonym` synonym. See "Generating General Ledger Reports Based on the Actual Billing Date (Patch Set 12)".

Installing the BRM 7.5 Patch Set

Important: In multischema systems, perform this task first on the primary BRM installation machine and then on the secondary BRM installation machines.

If the optional components that you require are not installed, you must install the optional managers before installing the BRM 7.5 patch set.

To install the BRM 7.5 patch set:

1. Create a temporary directory (`temp_dir`).
2. Go to the My Oracle Support Web site:
<https://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 21513185 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 `p21513185_750_platform.zip` software pack to `temp_dir`, where `platform` is `linux`, `aix`, `hpxx_ia64`, or `solaris`.
10. Unzip the `p21513185_750_platform.zip` file.
11. Install the Third-Party software by doing the following:
 - a. Go to `temp_dir` and run the following command:
`7.5MPS1_ThirdParty_platform_32_opt.bin -console`
where `platform` is `linux`, `aix`, `hpxx_ia64`, or `solaris`.
 - b. When prompted, enter the path to the `Third-party_home` directory, where `Third-party_home` is the directory in which the Third-Party software is installed.
 - 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 BRM is installed:

Bash shell:

```
source source.me.sh
```

C shell:

```
source source.me.csh
```

12. Go to *temp_dir* and run the following command, which installs the patch software:

```
PatchPackageName.bin -console
```

where *PatchPackageName* is:

- **7.5MPS1_21513185_Portal_Base_platform_opt** for upgrading BRM plus any BRM optional components installed on your system.
- **7.5MPS1_21513185_Portal_SDK_platform_opt** for upgrading the BRM SDK.
- **7.5MPS1_21513185_Pipeline_platform_opt** for upgrading Pipeline Manager.

where *platform* is **linux**, **aix**, **hpxu_ia64**, or **solaris**.

13. Follow the instructions displayed during installation.

14. Run the following command, which installs the database upgrade package:

```
PatchPackageName.bin -console
```

where *PatchPackageName* is:

- **7.5MPS1_PortalBase_Upgrade_74_75_platform_32_opt** for upgrading the BRM patch set database schema plus the database schema for any BRM optional components installed on your system.
- **7.5MPS1_Pipeline_Upgrade_74_75_platform_32_opt** for upgrading the Pipeline Manager patch set database schema.

where *platform* is **linux**, **aix**, **hpxu_ia64**, or **solaris**.

15. Follow the instructions displayed during installation.

Important: From BRM 7.5 Patch Set 10, the OpenSSL software is no longer part of the BRM patch set installation package. Installing BRM 7.5 Patch Set 10 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.

Upgrading the BRM 7.5 Patch Set Database Schema

The database objects associated with the optional components that are not already installed are not created or updated.

If Oracle In-Memory Database (IMDB) Cache is installed, upgrade the BRM Cache Groups Schema in IMDB Cache. See "["Upgrading the BRM Cache Groups Schema in IMDB Cache"](#)".

To upgrade the BRM 7.5 patch set database schema, perform one of the following procedures:

- [Upgrading the Schema on Single-Schema Systems](#)
- [Upgrading the Schema on Multischema Systems](#)

Upgrading the BRM 7.5 Patch Set Schema on Single-Schema Systems

To upgrade the BRM 7.5 patch set schema on single-schema systems:

1. Open the *BRM_home/sys/dm_oracle/pin.conf* file in a text editor.
2. Uncomment the following entry:

```
- crypt md5| ${PIN_HOME}/lib/${LIBRARYPREFIX}pin_crypt4dm64${LIBRARYEXTENSION}
"Abracadabra dabracaaBrA"
```
3. Save and close the file.
4. Open the *BRM_home/setup/pin_setup.values* file in a text editor.
5. (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.
6. In the **Information about the CM** section, add the following text:

```
$MAIN_CM{ 'pcm_admin_passwd' } =
"&aes|08|0D5E11BFDD97D2769D9B0DBFBD1BBF7E5D40C305EDF3D77DF111AAB8F781E92122";
```

The password that is used by the load utilities to connect to the Connection Manager (CM) is reset to the default password.

7. In the **Information about the databases** section, configure the database settings as required.
8. Set SETUP_INIT_DB to YES, if it is not set.
9. Save and close the file.
10. Go to *BRM_home* and source the **source.me** file:
 - Bash shell:

```
source source.me.sh
```
 - C shell:

```
source source.me.csh
```
11. Go to the *BRM_home/setup/scripts* directory and run the following script:

```
pin_75MPS1_upgrade.pl
```
12. Merge the contents of the backed up **pin_ctl.conf** file into the new **pin_ctl.conf** file.

Upgrading the BRM 7.5 Patch Set Schema on Multischema Systems

To upgrade the BRM 7.5 patch set schema on multischema systems:

1. On the primary BRM installation machine, do the following:

- a. Open the *BRM_home/sys/dm_oracle/pin.conf* file in a text editor.
- b. Uncomment the following entry:


```
- crypt md5| ${PIN_HOME}/lib/${LIBRARYPREFIX}pin_
crypt4dm64${LIBRARYEXTENSION} "Abracadabra dabracabrabA"
```
- c. Save and close the file.
- d. Open the *BRM_home/setup/pin_setup.values* file in a text editor.
- e. (Optional) Set the values of the following parameters:

Set PIN_TEMP_DIR to the directory in which you want to create the temporary files.

Set PIN_LOG_DIR to the directory in which you want to create the BRM log files.
- f. In the **Information about the CM** section, add the following text:


```
$MAIN_CM{ 'pcm_admin_passwd' } =
"&aes|08|0D5E11BFDD97D2769D9B0DBFBDB1BBF7E5D40C305EDF3D77DF111AAB8F781E92122
";
```

The password that is used by the load utilities to connect to the CM is reset to the default password.
- g. In the **Information about the databases** section, configure the database settings for your primary database schema.
- h. Set SETUP_INIT_DB to YES, if it is not set.
- i. Save and close the file.
- j. Go to *BRM_home* and source the **source.me** file:

Bash shell:

```
source source.me.sh
```

C shell:

```
source source.me.csh
```
- k. Go to the *BRM_home/apps/multi_db* directory and run the following script:


```
./install.sh
```

Follow the on-screen instructions, entering the following information for the primary schema and for each secondary schema when requested:

 - Schema user name
 - Schema password
 - Schema SID (the BRM database alias of the schema)

Important: Repeat the "Do you have secondary schema to process" step for each secondary schema in your system.

The install script fixes any data errors caused by conflicting storable class IDs. The errors might have occurred during global (XA) transactions involving multiple schemas or when accounts were migrated from one schema to another.

Note: As the install script runs, it generates the *BRM_home/apps/multi_db/fix_multi_schema.log* file. To view the progress of the script, display the log file in a different console window.

- I. Go to the *BRM_home/setup/scripts* directory and run the following script:
`pin_75MPS1_upgrade.pl`
- M. Merge the contents of the backed up **pin_ctl.conf** file into the new **pin_ctl.conf** file.
2. On each secondary BRM installation machine, do the following:
 - a. Open the *BRM_home/sys/dm_oracle/pin.conf* file in a text editor.
 - b. Uncomment the following entry:


```
- crypt md5| ${PIN_HOME}/lib/${LIBRARYPREFIX}pin
crypt4dm64${LIBRARYEXTENSION} "Abracadabra dabracabrabA"
```
 - c. Save and close the file.
 - d. Open the *BRM_home/setup/pin_setup.values* file in a text editor.
 - e. In the **Information about the CM** section, add the following text:


```
$MAIN_CM{'pcm_admin_passwd'} =
"&aes|08|0D5E11BFDD97D2769D9B0DBFBBD1BBF7E5D40C305EDF3D77DF111AAB8F781E92122
";
```

The password that is used by the load utilities to connect to the CM is reset to the default password.
 - f. Change the **\$DM_ORACLE{'db_num'}** entry, where *db_num* is the number of the corresponding secondary database schema to upgrade.
 - g. Configure the database settings as required.
 - h. Set **SETUP_INIT_DB** to **YES**, if it is not set.
 - i. Save and close the file.
 - j. Go to *BRM_home* and source the **source.me** file:

Bash shell:

`source source.me.sh`

C shell:

`source source.me.csh`
 - k. Go to the *BRM_home/setup/scripts* directory and run the following script:
`pin_75MPS1_upgrade.pl`
 - I. Merge the contents of the backed up **pin_ctl.conf** file into the new **pin_ctl.conf** file.
 3. On the primary BRM installation machine, do the following:
 - a. Go to the *BRM_home/setup/scripts* directory and run the following command:
`pin_multidb.pl -i`

- b.** At the following prompt, enter **y**, which begins the configuration:
Do you want to start the configuration now? (y/n): **y**
- c.** At the following prompt, enter **2**, which initializes the primary database:
Please enter the starting step (0-8). If you don't know, enter 0: **2**
- d.** Follow the instructions displayed and exit the **pin_multidb.pl** script.
The refresh groups are recreated in the primary database.
- e.** Run the following command:
pin_multidb.pl -R all

The views, based on the information in the refresh groups, are re-created in the secondary databases. See the discussion about **pin_multidb** in *BRM System Administrator's Guide*.

Upgrading the BRM 7.5 Patch Set Cache Groups Schema in IMDB Cache

Note: This procedure is required only if you installed Oracle IMDB Cache Manager.

Important: In multischema systems, perform these tasks first on the primary BRM installation machine and then on the secondary BRM installation machines.

When you upgrade the BRM 7.5 patch set Cache Groups schema in IMDB Cache, you delete the data stores in IMDB Cache and then re-create them.

To upgrade the BRM 7.5 patch set Cache Groups schema in IMDB Cache:

1. If you have created any customizations in the cache groups, save the **BRM_home/bin/pin_tt_schema_gen.values** file to a different location. Note down the name and location of this file.

Note: In a multischema system, save the **pin_tt_schema_gen.values** file for each schema.

2. Connect to IMDB Cache using **ttIsql**.
3. Run the following command for each cache group to upload:

UNLOAD CACHE GROUP CacheGroupName

where *CacheGroupName* is the name of the cache group to be unloaded.

All cache instances from all cache tables in *CacheGroupName* are unloaded.

Important: Unload all cache groups before you start the upgrade.

For information about unloading a cache group, see the discussion about cache group operations in *Oracle In-Memory Database Cache User's Guide*.

4. Detach all IMDB nodes from the cache grid.

- For high-availability (HA) systems:

Important: If the grid member is an active standby pair, detach the active master and standby master databases separately.

Run the following commands, in the order indicated, which detach the IMDB node on the active standby pair from the cache grid:

```
ttCWAAdmin -stop -dsn DataStoreName
ttCWAAdmin -drop -dsn DataStoreName
```

where *DataStoreName* is the name of the data store to detach.

For more information on detaching grid members in an HA environment, see *Oracle In-Memory Database Cache User's Guide*.

- For non-HA systems:

Run the following command, which detaches all the IMDB nodes:

```
ttGridDetach();
```

For information about the `ttGridDetach()` command, see the discussion about cleaning up the caching environment in *Oracle In-Memory Database Cache User's Guide*.

5. Run the following command, which stops the replication agent on each database:

```
CALL ttRepStop;
```

For more information on stopping the replication agent, see the discussion about managing the replication agent in *Oracle In-Memory Database Cache User's Guide*.

6. Drop the cache groups by doing the following:

- a. Run the following command, which drops all the default BRM cache groups:

```
BRM_home/bin/tt_drop.sql
```

- b. Run the following command for each custom cache group to drop the cache group:

```
DROP CACHE GROUP CacheGroupName
```

where *CacheGroupName* is the name of the cache group you want to drop.

For information about dropping cache groups, see *Oracle In-Memory Database Cache User's Guide*.

7. Run the following command, which stops the TimesTen cache agent:

```
call ttCacheStop;
```

For information about stopping the TimesTen cache agent, see *Oracle In-Memory Database Cache User's Guide*.

8. Destroy the data store by doing the following:

- a. Disconnect from all databases.

- b. Stop the TimesTen main daemon process, which manages all databases under the same TimesTen installation, by running the following command:

```
ttdaemonadmin -stop
```

- c. Restart the TimesTen main daemon process by running the following command:

```
ttdaemonadmin -start
```

- d. Destroy the data store by running the following command:

```
ttDestroy DataStoreName
```

where *DataStoreName* is the name of the data store to be destroyed.

For information about **ttDestroy**, see the discussion about cleaning up the caching environment in *Oracle In-Memory Database Cache User's Guide*.

9. Stop the CM processes.

For more information, see the discussion about starting and stopping the BRM system in *BRM System Administrator's Guide*.

10. Stop the IMDB Cache Data Manager (DM) processes.

For more information, see the discussion about starting and stopping Oracle IMDB Cache DM in *BRM System Administrator's Guide*.

11. Re-create the data store in IMDB Cache.

For more information, see the discussion about creating the data store in Oracle IMDB Cache in *BRM System Administrator's Guide*.

12. Generate the schema SQL and load SQL scripts to set up the cache group schema by doing the following:

Note: In a multischema system, complete these steps for each schema.

- a. Configure the **pin_tt_schema_gen.values** file.

For more information, see the discussion about configuring the **pin_tt_schema_gen.values** file in *BRM System Administrator's Guide*.

Optionally, if you saved your *BRM_home/bin/pin_tt_schema_gen.values* file in step 1, use it.

- b. Run the following command, which generates your schema and load scripts:

```
pin_tt_schema_gen
```

For more information, see the discussion about generating your schema and load SQL scripts in *BRM System Administrator's Guide*.

13. Initialize your data stores.

For more information, see the discussion about initializing your data stores in Oracle IMDB Cache in *BRM System Administrator's Guide*.

14. Connect your data stores to the BRM database.

For more information, see the discussion about connecting your data stores to the BRM database in *BRM System Administrator's Guide*.

15. Connect the IMDB Cache DM to your data stores.

For more information, see the discussion about connecting the IMDB Cache DM to your data stores in *BRM System Administrator's Guide*.

16. Configure the CM to connect to the Oracle DM.

For more information, see the discussion about using configuration files to connect and configure components in *BRM System Administrator's Guide*.

17. Go to the *BRM_home/setup/scripts* directory and run the following script:

pin_75MPS1_upgrade.pl

Upgrading the BRM 7.5 Patch Set 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 BRM 7.5 patch set 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. Go to the *Pipeline_home/upgrade/scripts* directory and run the following script:
pin_upgrade_pipeline_75MPS1.pl

7. Go to the *Pipeline_home/database/Oracle/Scripts* directory and run the following script:

```
sqlplus login/password@database_alias < create_pricing_discountmodel_
procedures.plb
```

where:

- *login* is the user name for the database schema you are updating.
- *password* is the password for *login*.

- *database_alias* is the BRM database alias of the schema you are updating.

Post-Installation Tasks

This section provides instructions for the post-installation tasks.

Important: You need to perform only the post-installation tasks relevant to the patch set you are installing. For example, if you are upgrading from Patch Set 2 to Patch Set 8, run all the tasks from Patch Set 3 to Patch Set 8, but not for Patch Set 9 or later. If you are upgrading from Patch Set 12 to Maintenance Patch Set 1, run only the tasks for Maintenance Patch Set 1.

Enabling the Logging Mechanism for the `pin_purge` Utility (Patch Set 1)

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.

Configuring the `pin.conf` File for Rule-Based Collections Scenario (Patch Set 2)

You must configure the `pin.conf` file before using the `load_config` utility to load additional parameters for rule-based collections scenario assignment.

To configure the `pin.conf` file:

1. Open the *BRM_home/apps/load_config/pin.conf* file in a text editor.
2. Uncomment the following entry:


```
- load_config validation_module libLoadValidCollections LoadValidCollections_
init
```
3. Save and close the file.

Creating an Oracle AQ Database Queue (Patch Set 2)

If your system includes Synchronization Queue DM, you must re-create 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 re-create the Oracle AQ database queue, do the following:

1. Open the *BRM_home/sys/dm_aq/aq_queuenames* 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 (Patch Set 2)

You must 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 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@database_alias
```

where:

- `login` is the login name to use for connecting to the BRM database.
- `password` is the encrypted password for `login`.
- `database_alias` is the BRM database alias.

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
```

Configuring TAP Roaming Manager (Patch Set 2)

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 7.5 Maintenance Patch Set 1 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:

```
export ISRIPT_INCLUDE="Pipeline_home/iScriptLib/iScriptLib_Roaming;Pipeline_
home/formatDesc/Formats/TAP3-NG; ."
```

C shell:

```
setenv ISRIPT_INCLUDE="Pipeline_home/iScriptLib/iScriptLib_Roaming;Pipeline_
```

```
home/formatDesc/Formats/TAP3-NG; ."
```

The preprocessor uses the semicolon-separated list of directories specified in the ISRIPT_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 ISRIPT_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 (Patch Set 3)

To enable virtual columns in the BRM database, you must configure the **Infranet.properties** file before using the **pin_virtual_gen** utility to convert a standard BRM database into one with virtual columns.

Important: In multischema systems, perform this task first on the primary BRM installation machine and then on the secondary BRM installation machines.

To configure the **Infranet.properties** file:

1. Open the *BRM_home/apps/pin_virtual_columns/Infranet.properties* file in a text editor.

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 = user_name
infranet.vcol.password = password
infranet.vcol.dbname = database_alias

infranet.vcol.worker_threads = 10
```

where:

- *user_name* is the login name to use for connecting to the BRM database.
- *password* is the encrypted password for *user_name*.
- *database_alias* is the BRM database alias.

3. Save and close the file.

Configuring Views for Oracle Application Infrastructure Architecture (Patch Set 3)

In single-schema or multischema environments, you must create or configure a unified collections action view and a unified collections scenario view to be queried by Oracle Application Infrastructure Architecture (Oracle AIA).

To configure the views for Oracle AIA:

1. On the primary database schema, run the following commands, which grant permissions for each of the secondary schemas:

Important: This step is not required for single-schema systems.

```
sqlplus login/password@database_alias
SQL>GRANT SELECT ON CONFIG_COLLECTIONS_ACTION_T TO schema_name WITH GRANT
OPTION;
SQL>GRANT SELECT ON CONFIG_COLLECTIONS_SCENARIO_T TO schema_name WITH GRANT
OPTION;
```

where:

- *login* is the user name for the primary database schema.
- *password* is the password for *login*.
- *database_alias* is the BRM database alias of the primary schema.
- *schema_name* is the name of the secondary schema.

2. On each secondary database schema, run the following commands, which grant permissions on tables required for collections action and scenario view:

Important: This step is not required for single-schema systems.

```
sqlplus login/password@database_alias
SQL>GRANT SELECT ON AU_COLLECTIONS_ACTION_T TO schema_name;
SQL>GRANT SELECT ON COLLECTIONS_SCENARIO_T TO schema_name;
SQL>GRANT SELECT ON BILLINFO_T TO schema_name;
SQL>GRANT SELECT ON COLL_ACTION_IF_VIEW TO schema_name;
SQL>GRANT SELECT ON COLL_SCENARIO_IF_VIEW TO schema_name;
SQL>exit
```

where:

- *login* is the user name for the secondary database schema.
- *password* is the password for *login*.
- *database_alias* is the BRM database alias of the secondary schema.
- *schema_name* is the name of the primary schema.

3. On the primary database schema, run the following command:

```
sqlplus login/password@database_alias
```

where:

- *login* is the user name for the primary database schema.
- *password* is the password for *login*.
- *database_alias* is the BRM database alias of the primary schema.

4. Do the following:

- To create a unified collections action view, run the following command:

```
SQL>CREATE OR REPLACE VIEW "UNIFIED_COLL_ACTION_IF_VIEW" AS SELECT * FROM
schema1.COLL_ACTION_IF_VIEW UNION SELECT * FROM schema2.COLL_ACTION_IF_
VIEW;
```

- To create a unified collections scenario view, run the following command:

```
SQL>CREATE OR REPLACE VIEW "UNIFIED_COLL_SCENARIO_IF_VIEW" AS SELECT * FROM
schema1.COLL_SCENARIO_IF_VIEW UNION SELECT * FROM schema2.COLL_SCENARIO_IF_
VIEW;
```

where:

- *schema1* is the name of the primary schema.
- *schema2* is the name of each of the secondary schemas.

5. Run the following command, which exits SQL*Plus:

```
SQL>exit
```

Enabling Global Search in a Multischema Environment (Patch Set 3)

In a multischema environment, do the following on each BRM installation machine in which a CM is running:

1. Go to the *BRM_home/lib* directory.
2. Run the following command, which copies the *fm_global_search.so.PatchNumber.bak* file to *fm_global_search.so*:

```
cp fm_global_search.so.PatchNumber.bak fm_global_search.so
```

where *PatchNumber* is the patch number of the current BRM 7.5 patch set.

3. Stop and restart the CM. See the discussion about starting and stopping the BRM system in *BRM System Administrator's Guide*.

Running the RE Loader Daemon (Patch Set 3)

To run the Rated Event (RE) Loader daemon to load the pipeline-rated events into the BRM database:

1. Open the *BRM_home/apps/pin_rel/Infranet.properties* file in a text editor.
2. Add the following entry:

```
infranet.rel.use_end_time = value
```

where *value* is:

- 1 to specify that RE Loader use the end time of the rated event for deciding the billing cycle. This is the default.
- 0 to specify that RE Loader use the start time of the rated event for deciding the billing cycle.

3. Add the following entries:

```
batch.check.interval = value
batch.file.rename.extension = value
batch.start.highload.time = value
batch.end.highload.time = value
batch.lock.socket.addr = value
batch.rel.archiveDir = value
batch.rel.rejectDir = value
batch.random.events = value
event.max.at.highload.time = value
event.max.at.lowload.time = value
```

```
event.file.location = value
event.file.pattern = value
event.tt_node = value
event.archiveDir = value
event.rejectDir = value
```

where:

- *value* is the appropriate value for the respective entry. For more information about the appropriate values, see the discussion of configuring the RE Loader **Infranet.properties** file in *BRM Configuring Pipeline Rating and Discounting*.
- *event* is the appropriate event type.

4. Create a set of these entries for each event type you want to load.
5. Save and close the file.
6. (Oracle IMDB Cache systems only) Do the following:
 - a. Open the *BRM_home/bin/pin_ctl.conf* file in a text editor.
 - b. Search the file for the following line:

```
common env_platform:common env_variable:TT_LIB_PATH:__TIMESTEN_CLIENT_HOME__/lib
```
 - c. Replace **__TIMESTEN_CLIENT_HOME__** with the full path of the 32-bit Oracle IMDB Cache client software library directory.
 - d. (Linux only) Verify that the first directory path in the LD_LIBRARY_PATH environment variable is *Oracle_home/lib32*, where *Oracle_home* is the directory in which Oracle Database is installed.
 - e. Save and close the file.
 - f. Open the *BRM_home/bin/start_rel_daemon* file in a text editor.
 - g. Search the file for the following line:

```
TT_LIB_PATH= __TIMESTEN_CLIENT_HOME__/lib
```
 - h. Replace **__TIMESTEN_CLIENT_HOME__/lib** with the full path of the 32-bit Oracle IMDB Cache client software library directory.
 - i. Save and close the file.

Setting Up RE Loader Processing Directories (Patch Set 3)

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.

See the discussion about setting up RE Loader processing directories in *BRM Configuring Pipeline Rating and Discounting*.

Compiling and Linking Your Programs on Solaris (Patch Set 4)

If BRM is installed on a Solaris server, recompile the C++ code that links with BRM libraries.

To recompile and link your programs on Oracle Solaris:

1. If you have C++ code that links with BRM libraries and it uses standard C++ template libraries, rebuild the C++ code using the **-library=stdcxx4** option.

For more information, see the discussion about creating client applications by using PCM C++ in *BRM Developer's Guide*.

Updating BRM Jurisdiction Codes for Vertex Communications Tax Q (CTQ) (Patch Set 6)

If you have Vertex CTQ Series 2.00.05 or later installed on your system, you must 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:

```
sqlplus login/password@database_alias
```

where:

- *login* is the login name to use for connecting to the BRM database.
- *password* is the encrypted password for *login*.
- *database_alias* is the BRM database alias.

3. Run the following command:

```
SQL>@ update_new_ctq2_jurisdiction_codes.source
```

The BRM jurisdiction codes are updated.

Note: For more information about 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>exit
```

Configuring Conversion Manager to Migrate the */purchased_bundle_t* Class from a Legacy Database to the BRM Database (Patch Set 7)

If you use Conversion Manager, you must load the *create_cmt_procedure_oracle.sql* stored procedure, which configures Conversion Manager to migrate the */purchased_bundle_t* class from a legacy database to the BRM database.

To configure Conversion Manager:

1. Go to the *BRM_home/sys/dd/data* directory.
2. Run the following command, which opens SQL*Plus:

```
sqlplus login/password@database_alias
```

where:

- *login* is the login name to use for connecting to the BRM database.
- *password* is the encrypted password for *login*.
- *database_alias* is the BRM database alias.

3. Run the following command:

```
SQL>@ create_cmt_procedure_oracle.sql
```

The stored procedure is loaded.

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

```
SQL>exit
```

Granting Read Privileges to the Pending XA Transaction Database Views (Patch Set 8)

If you use JCA Resource Adapter to support extended architecture (XA) transactions, grant read privileges to the pending XA transaction database views for *each* BRM database user.

To grant read privileges to the pending XA transaction database views:

1. Using SQL*Plus, log in to your database as the SYSDBA user:

```
sqlplus sys@database_alias as sysdba
```

where *database_alias* is the database alias of your BRM database.

2. Grant read privileges to the pending XA transaction views:

```
SQL>GRANT SELECT ON DBA_2PC_PENDING TO user;
SQL>GRANT SELECT ON DBA_PENDING_TRANSACTIONS TO user;
```

where *user* is the name of a BRM database user.

3. Run the following command, which exits SQL*Plus:

```
SQL>exit
```

Resetting the JCA Resource Adapter Transaction Mode (Patch Set 8)

Installing BRM 7.5 Patch Set 8 automatically deploys JCA Resource Adapter in XA Transaction mode. To run JCA Resource Adapter in the Local Transaction mode or No Transaction mode, manually reset the transaction mode.

For a description of the transaction modes, see the discussion about JCA Resource Adapter transaction management in *BRM JCA Resource Adapter*.

To reset the transaction mode, see "["Resetting the JCA Resource Adapter Transaction Mode on Oracle WebLogic Server"](#)".

Resetting the JCA Resource Adapter Transaction Mode on Oracle WebLogic Server

After JCA Resource Adapter is deployed, you can reset the transaction mode.

To reset the JCA Resource Adapter transaction mode on the WebLogic server:

1. Start the WebLogic Server domain if it is not already started.
2. Log in to WebLogic Server Administration Console. The default is the following:

```
http://localhost:8001/console
```

3. In the **Domain Structure** tree, click **Deployments**.
The Summary of Deployments pane appears.
4. In the Deployments table, click the JCA Resource Adapter name.
By default, the name is **OracleBRMJCA15Adapter**.
The Settings for *Adapter_Name* pane appears.
5. Click the **Configuration** tab.
6. Click the **Outbound Connection Pool** tab.
7. In the Outbound Connection Pool Configuration table, expand the **OracleConnectionFactory** node.
8. Click **eis/BRM**, which is the name of the JNDI for JCA Resource Adapter.
9. In the **Properties** tab, click the **TransactionMode** property value.
10. Enter one of the following values:
 - **NO_TRANSACTION**
 - **LOCAL_TRANSACTION**
11. Click **Save**.
12. Click the **Transaction** tab.
13. From the **Transaction Support** list, select the value that matches the transaction mode selected in step 10:
 - **No Transaction**
 - **Local Transaction**
14. Click **Save**.
15. Log out of WebLogic Server Administration Console.

Increasing the Size of the CM Cache for the Facilities Modules on AIX 6.1 TL9 (Patch Set 10)

If BRM and the optional managers are installed on AIX 6.1 TL9, you must increase the size of the CM cache for the Facilities Modules (FMs) to prevent errors when the CM starts.

To increase the size of the CM cache for the FMs on AIX 6.1 TL9:

1. Open the **BRM_home/sys/cm/pin.conf** file in a text editor.
2. Add the following line:
- cm cm_cache_space 7340032
3. Save and close the file.
4. Stop and restart the CM. See the discussion about starting and stopping the BRM system in *BRM System Administrator's Guide*.

Resetting the Value of OPENED_T of the Previously Billed Items for General Ledger Reports (Patch Set 10)

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 you plan to use the actual billed time for general ledger reporting. For more information, see the discussion about generating general ledger reports 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@database_alias`
3. Run the following command, which resets the value of OPENED_T for the previously billed items that are incorrectly set to **0**:
`SQL>@ fix_items_with_zero_opened_t.source`

Note: The `fix_items_with_zero_opened_t.source` script can update a potentially large table. To improve database performance, modify the PARALLEL hint to specify an appropriate degree of parallelism. See Oracle Database documentation for more information on PARALLEL hint.

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

```
SQL>exit
```

Setting the Environment Variables Before Generating the Base64 Encoded Hash in a Solaris Environment (Patch Set 10)

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:

1. Run the following command, which sets the `LD_PRELOAD` environment variable to the OpenSSL `libcrypto.so` library:

Bash shell:

```
export LD_PRELOAD=OpenSSL_home/lib/libcrypto.so
```

C shell:

```
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:

```
export LD_LIBRARY_PATH=OpenSSL_home/lib:$LD_LIBRARY_PATH
```

C shell:

```
setenv LD_LIBRARY_PATH OpenSSL_home/lib:$LD_LIBRARY_PATH
```

Upgrading the BRM Database Schema with the Database Objects Associated with Optional Components (Patch Set 10)

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 or updated.

If you install the optional components after upgrading the BRM database schema, upgrade the BRM database schema with the database objects associated with the optional components by doing the following:

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 patch. 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.

Configuring Conversion Manager to Prevent Errors When Importing Accounts (Patch Set 12)

If you use Conversion Manager, you must load the **update_realtime_batch_cntr_oracle.sql** stored procedure to prevent errors when importing accounts.

To configure Conversion Manager:

1. Go to the *BRM_home/sys/dd/data* directory.
2. Run the following command, which opens SQL*Plus:

```
sqlplus login/password@database_alias
```

where:

- *login* is the login name to use for connecting to the BRM database.
- *password* is the encrypted password for *login*.
- *database_alias* is the BRM database alias.

3. Run the following command:

```
SQL>@ update_realtime_batch_cntr_oracle.sql
```

The stored procedure is loaded.

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

```
SQL>exit
```

Generating General Ledger Reports Based on the Actual Billing Date (Patch Set 12)

Important: This procedure is required only if you are upgrading from either BRM 7.4 Patch Set 21 or BRM 7.4 Maintenance Patch Set 2, or from BRM 7.5 Patch Set 10 or BRM 7.5 Patch Set 11.

To generate general ledger reports based on the actual billing date, create a view on the ITEM_T table and create the **item_t_synonym** synonym on the view on the ITEM_T table to enable the use of the actual billing date. The general ledger reporting accesses the ITEM_T table data through the **item_t_synonym** synonym.

Note: If a custom synonym already exists with the same name, rename the custom synonym name before running this procedure.

To generate general ledger reports based on the actual billing date:

1. Run the following command, which opens SQL*Plus:

```
sqlplus login/password@database_alias
```

where:

- *login* is the login name to use for connecting to the BRM database.
- *password* is the encrypted password for *login*.
- *database_alias* is the BRM database alias.

2. Run the following command, which drops the **i_item_glseg_eff_id** index on the ITEM_T table:

```
SQL>DROP INDEX i_item_glseg_eff_id
```

3. Run the following command, which verifies if the **UseActualBilledTimeForGLReport** business parameter is enabled:

```
SQL>SELECT param_value FROM config_business_params_t WHERE param_name = 'use_
actual_billed_time_for_gl_report';
```

If the query returns **0 or no rows selected**, the **UseActualBilledTimeForGLReport** business parameter is not enabled.

Note: The **UseActualBilledTimeForGLReport** business parameter is obsolete and no longer supported.

4. If the **UseActualBilledTimeForGLReport** business parameter is not enabled, or the business parameter is not present in your environment, do the following:
 - a. If the **i_item_glseg_eff_id** index does not exist on the **gl_segment** and **effective_t** columns of the **ITEM_T** table, run the following command, which creates the **i_item_glseg_eff_id** index:


```
SQL>CREATE INDEX i_item_glseg_eff_id ON item_t (gl_segment, effective_t )
  tablespace tablespaceName storage_clause NOLOGGING PARALLEL;
```

 where:

tablespaceName is the tablespace name where you want to create the index.

storage_clause specifies the storage parameters to use when you create the index; for example, storage (initial 30k next 30k maxextents unlimited pctincrease 0 freelists 2).
 - b. Go to step 6.

5. If the **UseActualBilledTimeForGLReport** business parameter is enabled, do the following:

- a. Run the following command, which creates the **i_item_glseg_eff_id** index on the **gl_segment** and **opened_t** columns of the **ITEM_T** table:


```
SQL>CREATE INDEX i_item_glseg_eff_id ON item_t (gl_segment, opened_t )
  tablespace tablespaceName storage_clause NOLOGGING PARALLEL;
```

- b. Create the **item_t_gl_view** view on **ITEM_T** table with all the columns in the **ITEM_T** table with the exception of the **effective_t** column of the view pointing to the **opened_t** column of the **ITEM_T** table.

For example:

```
SQL>CREATE OR REPLACE VIEW item_t_gl_view
AS SELECT POID_ID0, ACCOUNT_OBJ_DB, ACCOUNT_OBJ_ID0, ACCOUNT_OBJ_REV,
ACCOUNT_OBJ_TYPE, ADJUSTED, ARCHIVE_STATUS, AR_BILLINFO_OBJ_DB,
AR_BILLINFO_OBJ_ID0, AR_BILLINFO_OBJ_REV, AR_BILLINFO_OBJ_TYPE,
AR_BILL_OBJ_DB, AR_BILL_OBJ_ID0, AR_BILL_OBJ_REV, AR_BILL_OBJ_TYPE,
BAL_GRP_OBJ_DB, BAL_GRP_OBJ_ID0, BAL_GRP_OBJ_REV, BAL_GRP_OBJ_TYPE,
BILLINFO_OBJ_DB, BILLINFO_OBJ_ID0, BILLINFO_OBJ_REV, BILLINFO_OBJ_TYPE,
BILL_OBJ_DB, BILL_OBJ_ID0, BILL_OBJ_REV, BILL_OBJ_TYPE, CLOSED_T, CREATED_T,
CURRENCY, CURRENCY_OPERATOR, CURRENCY_RATE, CURRENCY_SECONDARY,
DELTA_DUE, DISPUTED, DUE, DUE_T, OPENED_T "EFFECTIVE_T", EVENT_POID_LIST,
FLAGS, GL_SEGMENT, ITEM_NO, ITEM_TOTAL, MOD_T, NAME, OPENED_T, POID_DB,
POID_REV, POID_TYPE, READ_ACCESS, RECV, SERVICE_OBJ_DB, SERVICE_OBJ_ID0,
SERVICE_OBJ_REV, SERVICE_OBJ_TYPE, STATUS, TRANSFERED, WRITEOFF,
WRITE_ACCESS FROM item_t;
```

- c. Run the following command, which creates the **item_t_synonym** synonym on the **item_t_gl_view** view on the **ITEM_T** table:

```
SQL>CREATE OR REPLACE SYNONYM item_t_synonym FOR item_t_gl_view;
```

6. Run the `create_procedures_UTF8.plb` script:

```
SQL>@ BRM_home/sys/dm_oracle/data/create_procedures_UTF8.plb
```

7. Run the following command, which removes the `UseActualBilledTimeForGLReport` business parameter:

```
SQL>@ BRM_home/sys/dd/data/remove_bus_param_use_billed_time_for_gl.source
```

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

```
SQL>exit
```

Configuring the Java Security Key Manager Factory Algorithm to Support TLS on AIX (Patch Set 12)

If BRM is installed on AIX, you must configure the Java security key manager factory algorithm to support Transport Layer Security (TLS).

To configure the Java security key manager factory algorithm to support TLS on AIX:

1. Open the `Java_home/jre/lib/security/java.security` file in a text editor, where `Java_home` is the directory in which Java is installed.

2. Search for the following entry:

```
ssl.KeyManagerFactory.algorithm=IbmX509
```

3. Replace `IbmX509` with `PKIX`.

4. Save and close the file.

5. Go to `BRM_home/bin` directory and run the following command, which stops and restarts the Payload Generator EM:

```
pin_ctl bounce eai_js
```

Setting the JAVA_HOME Environment Variable (Maintenance Patch Set 1)

You must set the `JAVA_HOME` environment variable to the latest version of JRE certified with BRM 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 certified with BRM is installed.

See the discussion about BRM software compatibility in *BRM Installation Guide* for the latest version of JRE certified with BRM.

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

```
ln -s $JAVA_HOME/bin/java 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:

```
java -version
```

The Java version is displayed.

If the latest version of Java certified with BRM is not displayed, the latest JRE is not installed.

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 certified with BRM is installed.
8. Click **OK**.

9. From the **System variables** list, 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 (Maintenance Patch Set 1)

You must set the Java path to the latest version of JRE certified with BRM before running any BRM client application.

See the discussion about BRM software compatibility in *BRM Installation Guide* for the latest version of JRE certified with BRM.

Important: Ensure that your Web browser is using the latest version of JRE 1.6 before starting Pricing Center from Java Web Start. You cannot start Pricing Center from Java Web Start in a Web browser using a version of JRE later than JRE 1.6.

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 JRE certified with BRM is installed.

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

```
@start java_path\bin\java.exe
```

5. Save and close the file.

6. Start the BRM client application.

Setting the BRM_JRE Environment Variable (Maintenance Patch Set 1)

On the system on which the BRM server is installed, if you want to use latest version of JRE, set the BRM_JRE environment variable to the location of the latest version of JRE before running any BRM processes. If you do not set the BRM_JRE environment variable, BRM uses the JRE configured in the JAVA_HOME environment variable.

To set the BRM_JRE environment variable:

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 BRM_JRE environment variable to the directory in which the latest version of JRE certified with BRM is installed.
See the discussion about BRM software compatibility in *BRM Installation Guide* for the latest version of JRE certified with BRM.
3. Start all the BRM processes.

Configuring the BRM Java Applications to Work with the 64-Bit Version of JRE (Maintenance Patch Set 1)

If you have the 64-bit version of JRE installed and the JAVA_HOME environment variable is set to the directory in which you installed the 64-bit version of JRE, you must configure the BRM Java applications to work with the 64-bit version of JRE.

To configure the BRM Java applications to work with the 64-bit version of JRE:

1. Create a symbolic link, for all BRM-related Java processes, to the 64-bit version of the common core library by running the following command:

```
ln -s BRM_home/lib/libportal164.Library_Extension BRM_
```

home/lib64/libportal.Library_Extension

where *Library_Extension* is **.so** for Solaris, HP-UX, and Linux; **.a** for AIX.

2. If you are running Account Migration Manager (AMM), set the common core library directory path by doing the following:

- a. Stop the AMM Controller.

For more information, see the discussion about starting and stopping the AMM Controller in *BRM System Administrator's Guide*.

- b. Open the *BRM_home/bin/pin_amt* file in a text editor.
- c. Set the environment variable specific to your operating system to the *BRM_home/lib64* directory before the command that executes Java:

LD_LIBRARY_PATH for Linux

SHLIB_PATH for HP-UX IA64

LD_LIBRARY_PATH_64 for Solaris

LIBPATH for AIX

For example, in a Linux environment, include or set the LD_LIBRARY_PATH variable:

```
setenv LD_LIBRARY_PATH ${PIN_HOME}/lib64:$LD_LIBRARY_PATH
```

- d. Save and close the file.
- e. Start the AMM Controller.
3. If you are running Conversion Manager, set the common core library directory path by doing the following:

- a. Open the *BRM_home/apps/cmt/pin_cmt* file in a text editor.
- b. Set the environment variable specific to your operating system to the *BRM_home/lib64* directory before the command that executes Java:

LD_LIBRARY_PATH for Linux

SHLIB_PATH for HP-UX IA64

LD_LIBRARY_PATH_64 for Solaris

LIBPATH for AIX

For example, in a Linux environment, include or set the LD_LIBRARY_PATH variable:

```
setenv LD_LIBRARY_PATH ${PIN_HOME}/lib64:$LD_LIBRARY_PATH
```

- c. Save and close the file.
4. If you are running Rated Event (RE) Loader, set the common core library directory path by doing the following:

- a. Open the *BRM_home/apps/pin_rel/pin_rel* file in a text editor.
- b. Set the environment variable specific to your operating system to the *BRM_home/lib64* directory before the command that executes Java:

LD_LIBRARY_PATH for Linux

SHLIB_PATH for HP-UX IA64

LD_LIBRARY_PATH_64 for Solaris

LIBPATH for AIX

For example, in a Linux environment, include or set the LD_LIBRARY_PATH variable:

```
setenv ORACLE_HOME Oracle_home
setenv LD_LIBRARY_PATH ${ORACLE_HOME}/lib:${PIN_HOME}/lib64:$LD_LIBRARY_PATH
```

where *Oracle_home* is the location where the 64-bit Oracle database client software is installed.

- c. Save and close the file.

Enabling SSL/TLS

SSL/TSL was disabled in "["Disabling SSL/TLS"](#)".

To enable SSL/TLS:

1. Open the *BRM_home/sys/cm/pin.conf* file in a text editor.
2. Set the value of the following parameter:
- **cm enable_ssl 1**
3. Save and close the file.
4. Open the *BRM_home/sys/data_manager/pin.conf* file in a text editor.
5. Set the value of the following parameter:
- **dm enable_ssl 1**
6. Save and close the file.
7. Open the **pin.conf** file of the PCM client application in a text editor.
8. Set the value of the following parameter:
- **nap enable_ssl 1**
9. Save and close the file.

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:
source source.me.sh

- C shell:

```
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.

6. Follow the instructions displayed during uninstallation.
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:


```
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.

6. Follow the instructions displayed during uninstallation.
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.

