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Preface

This guide provides general information on how to install and uninstall Oracle Communications Billing and Revenue Management (BRM) 12.0 patch sets.

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

Documentation Accessibility

For information about Oracle’s commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info or visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs if you are hearing impaired.
1

Installing BRM 12.0 Patch Sets

This chapter describes how to install and uninstall a Oracle Communications Billing and Revenue Management (BRM) 12.0 patch set on top of a base BRM 12.0 system.

Note:

To directly upgrade an existing BRM 7.5 installation (from BRM Maintenance Patch Set 1 through BRM 7.5 Patch Set 19) to a BRM 12.0 patch set, see BRM Upgrade Guide. For information on the supported upgrades, see “BRM Upgrade” in BRM Compatibility Matrix.

About the Patch Set

Note:

Test the patch on a non-production system before you deploy it on a production system.

BRM 12.0 patch set must be applied to the following:

- BRM 12.0
- Pipeline Manager

The patch is available for 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:

- 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 is stored with the extensions GA and TGA and is left in its original directory. For example, when you install BRM 12.0 Patch Set 2 to upgrade Pipeline Manager, the existing sample.reg file is renamed to sample.reg.TGA.
Performing Zero Downtime Upgrade

Note:
Before performing the zero downtime upgrade, note the following:

• The zero downtime upgrade method is supported only from the BRM 12.0 Patch Set 2 release.
• If you perform the zero downtime upgrade, billing might fail for some accounts. In that case, you must rerun billing for the failed bill units by running the billing utility with the -retry option.

You can use the zero downtime upgrade method to upgrade your existing BRM installation with very minimal disruption to your existing installation and the services that are provided to your customers.

Before you perform the zero downtime upgrade, ensure the following:

• You have two instances of the existing BRM 12.0 patch set on your system; for example, BRM 12.0 Patch Set 1.
• Both the instances of the BRM 12.0 patch set installed, the primary instance and the secondary instance, and all the applications in the components connected to your BRM system are currently running.
• Both primary and secondary instances are connected to the same BRM and Pipeline Manager (if you are using Pipeline Manager for rating) database schemas.

To perform the zero downtime upgrade:

Note:
Do not shut down the applications in the components connected to your BRM system while the upgrade is running.

1. Route all the traffic (for example, phone calls or data usage) from the primary instance to the secondary instance.
2. Upgrade the primary instance and the BRM database schema to the BRM 12.0 patch set you want to install; for example, BRM 12.0 Patch Set 2. For instructions, see "Installing the Patch Set".
3. Start the primary instance. For instructions, see the discussion about starting and stopping BRM in BRM System Administrator’s Guide.
4. Reroute all the traffic from the secondary instance to the primary instance.
5. Upgrade the secondary instance to the BRM 12.0 patch set you want to install. For instructions, see "Installing the Patch Set".

Note:
Because you have already upgraded the BRM database schema during the primary instance upgrade, you can skip "Upgrading the BRM Database Schema".

6. Perform the post-installation tasks on both primary and secondary instances. See "Post-Installation Tasks".

Note:
The batch operations might fail for few accounts during upgrade; for example, billing. You must restart the applications to complete your batch operations.

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 the BRM 12.0 patch set:

1. Shutting Down the Current Instance
2. Backing Up Files
3. Backing Up Your BRM Database
4. Backing Up Your Pipeline Manager Database
5. Installing Perl
6. Installing Optional Components
7. Setting BRM Wallet Location in sqlnet.ora
8. Setting the Environment Variables
9. Installing the Patch
10. Installing BRM Clients
11. Upgrading the BRM Database Schema

12. Adding Customizations

Shutting Down the Current Instance

**Note:**

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

**Note:**

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 Your BRM Database

**Note:**

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.
Backing Up Your Pipeline Manager Database

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

If you are using Pipeline Manager, 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.

Installing Perl

Install the latest version of Perl certified with BRM on the system on which the BRM server is installed. For the latest version of Perl, see "BRM Software Compatibility" in BRM Compatibility Matrix.

To install Perl:

• On Linux, see "Installing Perl on Linux".
• On Solaris, see "Installing Perl on Solaris".

Installing Perl on Linux

Before installing Perl (32 bit) on Linux, do the following:

1. Install the required 32-bit libraries by doing the following:
   a. Go to the command prompt on the Linux server on which you want to install BRM.
   b. Run the following commands:
      
```bash
yum -y install gdbm-devel.i686
yum -y install libdb-devel.i686
```
2. Set the environment variable for installing Perl by running the following command:
   - For Bash shell:
     
     ```
     export -n PATH
     export -n LD_LIBRARY_PATH
     export PATH=/usr/bin:/usr/local/bin:/bin
     ```
   - For C shell:
     
     ```
     unsetenv PATH
     unsetenv LD_LIBRARY_PATH
     setenv PATH /usr/bin:/usr/local/bin:/bin
     ```

To install Perl on Linux:

1. Download the source code for the compatible version of Perl to a temporary directory (temp_dir).
   See BRM Compatibility Matrix for the compatible version of Perl.

2. Go to the temp_dir directory and unzip the source code by running the following command:

   ```
   gunzip perl-version.tar.gz
   tar xf perl-version.tar
   ```

   where version is the compatible version of Perl.

3. Run the following command:

   ```
   cd perl-version
   sh Configure -des -Dcc="gcc -m32" -Dusethreads -Duser relocatableinc -Dprefix=
   perl_path
   ```

   where perl_path is the path to the directory in which you want to install Perl.

4. Run make.

5. Run make test.

6. Run make install.

7. Verify the Perl version by running the following command:

   ```
   Perl -v
   ```

   The Perl version is displayed.

   If the latest version of Perl certified with BRM is not displayed, the latest Perl is not installed.
Installing Perl on Solaris

Before installing Perl (32 bit) on Solaris, do the following:

1. Install Oracle Developer Studio 12.5. See Oracle Developer Studio Installation Guide for instructions.

2. Comment the following entries in the `util.c` file:

```c
if(UNLIKELY(got != need)) {
    bad_handshake;/* recycle branch and string from above */
    /* if(got != (void *)HSf_NOCHK)
        noperl_die("%s: loadable library and perl binaries are mismatched"
          " (got handshake key %p, needed %p)\n",
          file, got, need); */
}
```

3. Set the environment variable for installing Perl by running the following command:
   • For Bash shell:
     ```bash
     export -n PATH
     export -n LD_LIBRARY_PATH
     export PATH=/usr/bin:/usr/local/bin:/bin
     ```
   • For C shell:
     ```bash
     unsetenv PATH
     unsetenv LD_LIBRARY_PATH
     unsetenv PERL5LIB
     unsetenv PERL_HOME
     setenv PATH /usr/bin:/usr/local/bin:/bin:/usr/ccs/bin:Oracle_dev_path
     ```

To install Perl on Solaris:

1. Download the source code for the compatible version of Perl to a temporary directory (`temp_dir`).

   See BRM Compatibility Matrix for the compatible version of Perl.

2. Go to the `temp_dir` directory and unzip the source code by running the following command:

   ```bash
   gunzip perl-version.tar.gz
   tar xf perl-version.tar
   ```

   where `version` is the compatible version of Perl.

3. Run the following command:

   ```bash
   cd perl-version
   sh Configure -des -Dcc="Oracle_dev_path" -Dusethreads -Dusemorebits -
   Dprefix=perl_path
   ```

   where:
   • `Oracle_dev_path` is the path to the directory in which the Oracle Developer Studio is installed.
   • `perl_path` is the path to the directory in which you want to install Perl.

4. Run `make`.

5. Run `make test`. 
6. Run `make install`.

7. Verify the Perl version by running the following command:

   ```perl
   Perl -v
   ```

   The Perl version is displayed.

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

---

### Installing Optional Components

**Note:**

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 12.0 patch set; for example, BRM 12.0 Patch Set 1 or BRM 12.0 Patch Set 2.

For instructions on installing optional components, see the discussion about installing individual components in *BRM Installation Guide*.

---

### Setting BRM Wallet Location in sqlnet.ora

By default, the BRM client wallet is stored in the `BRM_home/wallet/client` directory. If the BRM client wallet is stored in a different location, set that location in the `sqlnet.ora` file.

To set the BRM wallet location in the `sqlnet.ora` file:

1. Open the `sqlnet.ora` file located in the directory specified by `$TNS_ADMIN`.

2. Add the following entries:

   ```
   SQLNET.WALLET_OVERRIDE = TRUE
   WALLET_LOCATION=
   (SOURCE=(METHOD=FILE)
   (METHOD_DATA=(DIRECTORY=brm_wallet_path))
   )
   ```

   where `brm_wallet_path` is the path to the directory in which the BRM client wallet is stored.

3. Save and close the file.

### Setting the Environment Variables

You must set the environment variable to the latest version of Perl certified with BRM before installing BRM. For the latest certified version of Perl certified with BRM, see "BRM Software Compatibility" in *BRM Compatibility Matrix*.

To set the environment variables, perform the following on the machine on which you installed the BRM server:
1. Set the PERL_HOME environment variable to the directory in which the latest compatible version of Perl certified with BRM is installed by running the following command:

   setenv PERL_HOME Perl_path

   where Perl_path is the path to the directory in which the latest version of Perl certified with BRM is installed; for example, /perl_5_28.1/linux.

2. If the BRM client wallet is stored in a different location, set the BRM_CONF_WALLET and BRM_WALLET environment variables to point to the directory in which the BRM client wallet is stored by running the following command:

   setenv BRM_CONF_WALLET brm_wallet_path
   setenv BRM_WALLET brm_wallet_path

   where brm_wallet_path is the path to the directory in which the BRM client wallet is stored.

## Installing the Patch

### Note:

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 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 PatchNumber and click Search.

   where PatchNumber is:

   - 28630668 for BRM 12.0 Patch Set 1
   - 30094488 for BRM 12.0 Patch Set 2

   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 pPatchNumber_12v_platform.zip software pack to temp_dir, where:
• platform is linux or solaris.

• v is the BRM patch set version. For example, 1 is the version for BRM 12.0 Patch Set 1 and 2 is the version for BRM 12.0 Patch Set 2.

10. Unzip the $PatchNumber_{12}$v_platform.zip file.

The zip file includes the brmserver_12.0.0.v_platform_generic.jar file.

where v is the BRM patch set version. For example, 1 is the version for BRM 12.0 Patch Set 1 and 2 is the version for BRM 12.0 Patch Set 2.

11. Go to temp_dir directory, and run one of the following commands:

• To start the GUI installer:

  Java_home/bin/java -jar brmsserver_12.0.0.v_platform_generic.jar

  where:
  – Java_home is the directory in which you installed the latest compatible Java version.
  – platform is linux or solaris.

• To start the GUI installer and install BRM using the oraInventory directory in a different location:

  Java_home/bin/java -jar brmsserver_12.0.0.v_platform_generic.jar -invPtrLoc FilePath/oraInst.loc

  where FilePath is the path to the directory in which the oraInst.loc file is located.

• To start the GUI installer and create a silent installer response file during the installation:

  Java_home/bin/java -jar brmsserver_12.0.0.v_platform_generic.jar -record -destinationFile path

  where path is the absolute path to the response file. See "Installing the BRM Patch Set in Silent Mode" for more information.

The Welcome screen appears.

12. Click Next.

The Installation Location screen appears.

13. Enter the full path to the directory in which you installed BRM 12.0.

14. Click Next.

Specify Prerequisite Libraries Location screen appears.

15. Do the following:

• In the Prerequisite Libraries field, enter the full path or browse to the directory in which the prerequisite libraries are stored.

• Do one of the following:
  – If you do not want to enable secure communication between BRM server components, deselect the Enable SSL for BRM server check box.
  – To enable secure communication between BRM server components, leave the Enable SSL for BRM server check box selected.
16. Click Next.

Specify Wallet Details screen appears.

17. Enter the following information required for accessing the Oracle wallets in BRM:
   a. In the Wallet Password field, enter a password for the client Oracle wallet.
   b. In the Wallet Location field, enter the path or browse to the directory in which the client Oracle wallet is located.

18. Click Next.

The Installation Summary screen appears.

19. Review the selections you have made in the preceding screens, and click Install.

The Installation Progress screen appears.

---

**Note:**

After the installation begins, clicking Cancel stops the installation process, but the files that are already copied are not removed. You must manually remove the files. For instructions, see the steps to remove the files in "Rolling Back the BRM Patch Set".

20. When the installation is done, click Next, the Installation Complete screen appears.

Note down the provided URL. You use this URL to access BRM.

21. Click Finish to complete and exit.

---

### Installing BRM Clients

**Note:**

Some BRM clients (such as Customer Center and Pricing Center) are supported only from the BRM 12.0 Patch Set 2 release. If you want to use these clients, install the BRM 12.0 Patch Set 2 clients software. For information on the clients supported from BRM 12.0 Patch Set 2, see the discussion about new features in BRM in [BRM 12.0 Patch Set Release Notes](#).

If the BRM client applications that you require are not installed, install the client applications.

For instructions on installing the client applications, see the discussion about installing BRM clients in [BRM Installation Guide](#).

---

### Upgrading the BRM Database Schema

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

To upgrade the BRM database schema, perform one of the following procedures:
Upgrading the Schema on Single-Schema Systems

To upgrade the schema on single-schema systems:

1. If you are using SSL-enabled database, go to the BRM_home/bin directory and run the following command:
   
   ```
   pin_config_editor -setconf -wallet DBWalletLocation -parameter oracle.security.client.connect_string1 -value DBConnectionstring
   pin_config_editor -setconf -wallet DBWalletLocation -parameter oracle.security.client.username1 -value DBusername
   pin_config_editor -setconf -wallet DBWalletLocation -parameter oracle.security.client.password1 -value DBpassword
   ```

   where:
   - DBWalletLocation is the path to the directory in which the BRM database wallet is stored.
   - DBConnectionstring is the connection string to the BRM database schema.
   - DBusername is the BRM database user name.
   - DBpassword is the BRM database password.

2. Open the BRM_home/setup/pin_setup.values file in a text editor.

3. Set the following parameters:
   
   ```
   $SETUP_DROP_ALL_TABLES = "NO";
   $SETUP_INIT_DB = "YES";
   $SETUP_CONFIGURE = "YES";
   $SETUP_DATABASE_TABLES = "NO";
   ```

4. Save and close the file.

5. Open the BRM_home/setup/scripts/pin_tables.values file in a text editor.

6. Set the following parameters to local:
   
   ```
   # For indexes on event tables
   $PIN_CONF_PARTITION_IND = "local";
   # For indexes on non event tables
   $PIN_CONF_NON_EVENT_PARTITION_IND = "local";
   ```

7. Save and close the file.

8. Go to BRM_home and source the source.me file:
   
   - Bash shell:
     ```
     source source.me.sh
     ```
   - C shell:
     ```
     source source.me.csh
     ```

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

   - For upgrading to BRM 12.0 Patch Set 1:
     ```
     pin_upgrade_12ps1.pl
     ```
For upgrading to BRM 12.0 Patch Set 2:

pin_upgrade_12ps2.pl

10. 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. Ensure that the DMs in your secondary BRM installation machines are up and running.
   b. Ensure that the PERL_VERSION environment variable is set to the latest version of Perl certified with BRM.
   c. Open the BRM_home/setup/pin_setup.values file in a text editor.
   d. Set the following parameters:
      ```
      $SETUP_DROP_ALL_TABLES = "NO";
      $SETUP_INIT_DB = "YES";
      $SETUP_CONFIGURE = "YES";
      $SETUP_DATABASE_TABLES = "NO";
      ```
   e. Save and close the file.
   f. Open the BRM_home/setup/scripts/pin_tables.values file in a text editor.
   g. Set the following parameters to local:
      ```
      # For indexes on event tables
      $PIN_CONF_PARTITION_IND             = "local";
      # For indexes on non event tables
      $PIN_CONF_NON_EVENT_PARTITION_IND   = "local";
      ```
   h. Save and close the file.
   i. Go to BRM_home and source the source.me file:
      Bash shell:
      ```
      source source.me.sh
      ```
      C shell:
      ```
      source source.me.csh
      ```
   j. 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)
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 extended architecture (XA) transactions involving multiple schemas or when accounts were migrated from one schema to another.

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.

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

For upgrading to BRM 12.0 Patch Set 1:
```
pin_upgrade_12ps1.pl
```

For upgrading to BRM 12.0 Patch Set 2:
```
pin_upgrade_12ps2.pl
```

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

Ensure that the BRM processes are not running.

On each secondary BRM installation machine, do the following:

Ensure that the BRM processes are not running.

Open the `BRM_home/setup/pin_setup.values` file in a text editor.

Set the following parameters:
```
$SETUP_DROP_ALL_TABLES = "NO";
$SETUP_INIT_DB = "YES";
$SETUP_CONFIGURE = "YES";
$SETUP_DATABASE_TABLES = "NO";
```

Save and close the file.

Open the `BRM_home/setup/scripts/pin_tables.values` file in a text editor.

Set the following parameters to `local`:
```
# For indexes on event tables
$PIN_CONF_PARTITION_IND = "local";
# For indexes on non event tables
$PIN_CONF_NON_EVENT_PARTITION_IND = "local";
```

Save and close the file.

Go to `BRM_home` and source the `source.me` file:

Bash shell:
source source.me.sh

C shell:

source source.me.csh

i. Go to the `BRM_home/setup/scripts` directory and run the following script:
   For upgrading to BRM 12.0 Patch Set 1:
   `pin_upgrade_12ps1.pl`
   
   For upgrading to BRM 12.0 Patch Set 2:
   `pin_upgrade_12ps2.pl`

j. 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

   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 Connection Managers (CMs) in your secondary BRM installation machines are now started. The views, based on the information in the refresh groups, are re-created in the secondary databases.

Adding Customizations

**Note:**

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.

(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 SSL for the BRM Database

Note:
SSL-enabled database is not supported on multischema systems.

On single-schema systems, you can configure secure sockets layer (SSL) for the BRM database by creating wallets for storing certificates and then modifying the following configuration files in the Oracle_home/network/admin directory, where Oracle_home is the directory in which the Oracle database is installed, to point to the appropriate wallet:

- sqlnet.ora
- tnsnames.ora
- listener.ora

You can use the Orapki utility to create the wallets.

For information about configuring SSL for the Oracle database, see the Oracle Database documentation.

Running create_procedures Script

After installing the BRM patch set, you must run the create_procedures script to remove any invalid objects in the BRM database.

In a multischema system, perform this task on the primary Oracle DM machine.

To run the create_procedures script:

1. Go to the BRM_home/sys/dm_oracle/data directory.
2. Run the following command, which opens SQL*Plus:
   ```
   sqlplus login/password@ORACLE_SID
   ```
   where:
   - `login` is the user name for the BRM database schema.
   - `password` is the password for the specified user name.
   - `ORACLE_SID` is the database alias of the BRM database schema.
3. Run the following command:
   ```
   @create_procedures_character_set.plb
   ```
   where `character_set` specifies the database character set of either UTF8 or AL32UTF8.
Merging the Price Lists

You must perform this task only if you were using branding in BRM 7.5.

Branding is not supported in BRM 12.0. Therefore, if you have upgraded BRM 7.5 to BRM 12.0 or if you are upgrading BRM 7.5 to the BRM 12.0 patch set, you must merge the brand price lists.

To merge the price lists:

1. Go to the `BRM_home/sys/dd/data` directory.
2. Run the following command, which opens SQL*Plus:
   
   ```
   sqlplus login/password@ORACLE_SID
   ``

   where:
   
   - `login` is the user name for the BRM database schema.
   - `password` is the password for the specified user name.
   - `ORACLE_SID` is the database alias of the BRM database schema.
3. Run the following command:
   
   ```
   @merge_price_list.sql
   ```

Setting the DM_IFW_SYNC Queue Database and CM Configuration Entries

You must add the required DM_IFW_SYNC Queue Database and CM configuration entries to the corresponding `pin.conf` files.

To set the DM_IFW_SYNC queue database and CM configuration entries:

1. Open the `BRM_home/sys/dm_ifw_sync/pin.conf` file.
2. Add the following required configuration entries:
   
   ```
   - dm pcm_connect_max_retries 1
   - dm pcm_reconnect_max_retries 3
   - dm pcm_op_max_retries 0
   - dm pcm_timeout_max_retries 0
   - dm pcm_timeout_in_msecs -1
   - dm pcm_auto_reconnect 1
   - dm pcm_suspend_timeout_in_msecs -1
   - dm pcm_bad_connection_retry_delay_time_in_secs 0
   - dm pcm_reconnect first
     - custom_field_caching 0
     -- ops_fields_extension_file dummy
   ```
3. Save and close the file.
4. Open the `BRM_home/sys/cm/pin.conf` file.
5. Add the following required configuration entries:
   
   ```
   - cm pcm_connect_max_retries 1
   - cm pcm_reconnect_max_retries 3
   - cm pcm_op_max_retries 0
   - cm pcm_op_timeout_max_retries 0
   ```
- cm pcm_reconnect first
- cm pcm_timeout_in_msecs -1
- cm pcm_suspect_timeout_in_msecs -1
- cm pcm_auto_reconnect 1
- cm pcm_bad_connection_retry_delay_time_in_secs 0
- cm pcm_connect_rcvbuf_size 87380
- cm keepalive 1
- cm log_session 0

6. Save and close the file.

## Installing the BRM Patch Set in Silent Mode

Use silent install mode when you are installing the BRM patch set using the same configuration repeatedly. Silent install mode does not use the GUI and it runs in the background.

In this mode, you use a response file template that contains a predefined set of values to install the BRM patch set. You can generate a response file that contains the parameters and values during the GUI installation.

### Creating a Response File

To create a response file:

1. Create the response file by doing one of the following:
   - Create a copy of the response file that was generated during the GUI upgrade. See "Installing the Patch" for more information.
   - Create a response file using the template by running the following command:
     ```
     Java_home/bin/java -jar brmserver_12.0.0.v.0_platform_generic.jar -得到ResponsFileTemplates
     ```
     **Note:**
     The GUI Installer does not store passwords provided during installation in the response file. You must manually add the passwords after creating a copy of the response file.
   - Create a response file using the template by running the following command:
     ```
     Java_home/bin/java -jar brmserver_12.0.0.v.0_platform_generic.jar -得到ResponsFileTemplates
     ```
     **Note:**
     The GUI Installer does not store passwords provided during installation in the response file. You must manually add the passwords after creating a copy of the response file.

2. Open the file in a text editor.
3. Modify the response file you copied by specifying the key-value information for the parameters you want in your installation.
4. Save and close the response file.

Installing the Patch in Silent Mode

To install the BRM patch set in silent mode:

1. Create the response file. See "Creating a Response File".
2. Copy the response file you created to the machine on which you run the silent installation.
3. On the machine on which you run the silent installation, go to the temp_dir directory to which you have downloaded the BRM server software pack, and run the following command:

   ```
   Java_home/bin/java -jar brmsserver_12.0.0_v.0_platform_generic.jar -debug -invPtrLoc Inventory_home/oraInventory/oraInst.loc [parameter=value] -responseFile path -silent
   ```

   where:
   - **path** is the absolute path to the response file.
   - **parameter** is the name of an installation parameter.
   - **value** is the value of the installation parameter.

   For example:

   ```
   Java_home/bin/java -jar brmsserver_12.0.0.2.0_platform_generic.jar -debug -invPtrLoc Inventory_home/oraInventory/oraInst.loc INSTALL_TYPE=Complete -responseFile /tmp/brm_patch.rsp -silent
   ```

   The installation runs silently in the background.

Installing Optional Components on the BRM Patch Set

Typically, you install the optional components before installing the patch set. In case if you have already installed the BRM patch set and you want to install any optional component, do the following:

1. Set the PERL_HOME environment variable to the directory in which Perl is installed by running the following command:

   ```
   setenv PERL_HOME Perl_path
   ```

   where **Perl_path** is the path to the directory in which is installed; for example, /perl_5_28.1/linux.

   For the compatible Perl version, see "BRM Software Compatibility" in *BRM Compatibility Matrix*. 

   ```
   Java_home/bin/perl -e 'print scalar @INC
```
2. Install the required optional components. See “Installing Optional Components”.

3. Set the PERL_HOME environment variable to the directory in which Perl is installed by running the following command:

   ```
   setenv PERL_HOME Perl_path
   ```

   where `Perl_path` is the path to the directory in which Perl is installed; for example, `/perl_5_28.1/linux`.

4. Unset the PERL5LIB environment variable.

5. Go to the `BRM_home/setup` directory and run the following command:

   ```
   ./pin_setup -GA
   ```

6. Upgrade the optional component to the BRM 12.0 patch set you want to install. See “Installing the Patch”.

7. Set the PERL5LIB environment variable to the directory in which Perl is installed.

---

### Rolling Back the BRM Patch Set

To roll back the BRM patch set:

1. Ensure that you take an offline backup of the data and customizations added after the patch set installation.

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

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

3. Log in as user `pin`.

4. Run the following command:

   ```
   ./deinstall.sh
   ```

   The Distribution to Uninstall screen appears.

5. Select the patch set and the components that you want to uninstall.

   **Note:**

   Do not use the **Select All** option to select the patch set or components. If you use this option, the initial release and the patch sets are selected for uninstallation.

   Ensure that you have selected only the components for the patch set that you want to uninstall.

6. Click **Uninstall**.

   The Welcome screen appears.
7. Click **Next**.
   The Uninstallation Summary screen appears.

8. Click **Uninstall**.
   The Uninstallation Progress screen appears.

9. Click **Next**.
   The Uninstallation Complete screen appears.

10. Click **Finish**.
    The patch set is uninstalled and the backup files are stored in the system with the `.GA` extension.

11. To remove the backup files, run the following command:
    ```bash
    BRM_home/setup/scripts/RevertMe.pl 0 0 Oracle_home
    ```
    where `Oracle_home` is the directory in which the Oracle database is installed.

12. If BRM and Pipeline Manager are installed on separate locations, run the following command from the location in which Pipeline Manager is installed:
    ```bash
    IFW_home/setup/scripts/RevertMe.pl 0 0 Oracle_home
    ```
    where `IFW_home` is the directory in which Pipeline Manager is installed.

The backup files are removed and the BRM patch set is rolled back.