

**Version 6.2**  
UNIX, Linux, and AIX



## Migration Guide



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UNIX, Linux, and AIX



## Migration Guide



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## Preface

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### About this book

This document outlines the steps to migrate IBM® Rational® Portfolio Manager Database (DB2® V8.1 and Oracle 9i or 10g) from version 6.0.x.x and 6.1.x.x to version 6.2.0.0.

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### Audience

This document is intended for database administrators, system administrators, and network administrators responsible for the installation and configuration of the Rational Portfolio Manager server environment.

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### Contacting IBM Customer Support for Rational software products

If you have questions about installing, using, or maintaining this product, contact IBM Customer Support as follows:

The IBM Software Support Internet site provides you with self-help resources and electronic problem submission. The IBM Software Support home page for Rational products can be found at <http://www.ibm.com/software/rational/support/>.

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- Your name, company name, ICN number, telephone number, and e-mail address
  - Your operating system, version number, and any service packs or patches you have applied
  - Your database, version number, and any service packs or patches you have applied
  - Your application server, version number, and any service packs or patches you have applied
  - Product name and release number
  - Your PMR number (if you are following up on a previously reported problem)
- 

### Before you begin

Before you proceed with the migration you need to backup the IBM Rational Portfolio Manager database. Make sure that total recovery of the database is possible from this backup. All database migration instructions listed below must be done by the instance owner and the user that connects to the database from the web server.

**Note:** If you were unsuccessful during migration, you need to restore your old database, check the log files to troubleshoot, and restart the migration steps.

**Note:** All the migration scripts when transferred to AIX host should preserve their Type/Mode (ASCII/BIN) and Right (file ownership).

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# Chapter 1. Migrating Rational Portfolio Manager on DB2

This chapter tells you how to migrate the Rational Portfolio Manager database from version 6.0.x.x or 6.1.x.x to version 6.2.0.0 on DB2.

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## Prerequisites for migration

- A successful Rational Portfolio Manager version 6.0.x.x or 6.1.x.x installation
- Rational Portfolio Manager version 6.2.0.0 migration package
- DB2 v 8.1 FP 7 & 9 (Rational Portfolio Manager 6.2 does not support DB2 v 7.2)
- DB2 migration is performed through a manual process, the migration steps are carried out using unix shell script. RPM migration procedure is using bourne shell interpreter
- Make sure that all .sh files located under  
\${MIGRATION\_HOME}/Database/DB2/migration ,  
\${MIGRATION\_HOME}/Database/DB2/migration/csp and  
\${MIGRATION\_HOME}/Database/DB2/csp have execute rights

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## Definition of terms used in this chapter

- **Instance Owner:** is the user owning the DB2 Instance which is defined as logical database server environment.
- **Connected User:** is the user who connects to database from web application and has been granted rights to make update, insert, delete, select on database tables. Connected User can be the instance owner too.
- **DBNAME:** is the name of RPM database being migrated to version 6.2.0.0.
- **USERNAME:** is the user name of the instance owner.
- **PASSWORD:** is the password for the instance owner user name.
- **CONUSERNAME:** is the user name of the connected user who connects to RPM database from the web application.
- **CONPASSWORD:** is the password for the CONUSERNAME.
- **SCHEMA:** is the schema name under which RPM tables, triggers, and stored procedures are created.
- **TABALIAS:** is the name of the alias for RPM database tables.

You can migrate the database using the schema of your choice:

- Scenario 1: All tables are created using the user name of the instance owner as schema. The instance owner is the user who connects to database from the web application.
- Scenario 2: All tables are created using the user name of the instance owner as schema. The connected user is the user who will be connecting to the database from the web application. The table aliases are created for the connected user. The alias names are created using the user name of the connected user as alias names.

**Note:** You should choose the scenario that you are using with your current RPM database.

**Note:** Even if the connected user and database instance owner are the same, you should provide the same values to **USERNAME**, **PASSWORD** and **CONUSERNAME**, **CONPASSWORD**, **SCHEMA** and **TABALIAS**.

The migration process is carried out through scripts by supplying all the corresponding values for parameters. A message is displayed for each step and a log file is created for each step that you might need to look at in case of unsuccessful migration.

The log files are located in `${MIGRATION_HOME}/Database/DB2/migration`, `${MIGRATION_HOME}/Database/DB2/csp`, and `${MIGRATION_HOME}/Database/DB2/migration/csp` folders. There is one main script file called `migration62.sh` which carries out all the steps for migration. At the end of migration you will be given a choice either to select Yes to import RUP® 2003 data or No to cancel it.

---

## Migration steps

1. For 6.0.x.x migrations copy `ibmrpm61.a` from `${MIGRATION_HOME}/Database/DB2/migration/csp` and `ibmrpm.so` from `${MIGRATION_HOME}/Database/DB2/csp` to `${INSTHOME}/sql1lib/function/` directory prior to migration, where `${INSTHOME}` is the path to DB2 instance directory where DB2 is installed.

**Note:** Make sure you have a backup of your current library files before copying these files.

- If you are using scenario 2, open `migration60xx.sql`, `migration6000.sql`, and `migration6100.sql` from `${MIGRATION_HOME}/Database/DB2/migration` folder for editing
- Find/replace `GET_UNIQUE_ID()` with `CONUSERNAME.GET_UNIQUE_ID()` where `CONUSERNAME` is the user name of the connected user who connects to RPM database form the web application
- Save the files.

2. For 6.1.x.x migrations copy `ibmrpm.so` from `${MIGRATION_HOME}/Database/DB2/csp` to `${INSTHOME}/sql1lib/function/` directory prior to migration, where `${INSTHOME}` is the path to DB2 instance directory where DB2 is installed.

**Note:** Make sure you have a backup of your current library files before copying these files.

- If you are using scenario 2, open `migration6100.sql`, `migration6111.sql`, `migration6112.sql`, `migration6113.sql` and `migration6114_AND_6115.sql` from `${MIGRATION_HOME}/Database/DB2/migration` folder for editing
- Find/replace `GET_UNIQUE_ID()` with `CONUSERNAME.GET_UNIQUE_ID()` where `CONUSERNAME` is the user name of the connected user who connects to RPM database form the web application.
- Save the files.

3. Stop the web application and the Alert server associated with the RPM database.
4. Increase the size of `TS_INDEX` tablespace of RPM database before continuing with migration.

**Note:** During the migration, your `TS_INDEX` TBS might run out of space. It is highly recommended to tailor the size of `TS_INDEX` TBS prior to

migration. The following formula can be used to determine the right number for your tablespace definition:

$$\text{Tablespace size} = (\text{average row size} + 8) * \text{no of rows} * 2.50$$

5. Go to `${MIGRATION_HOME}/Database/DB2/migration` and run:

```
./migration62.sh DBNAME USERNAME PASSWORD CONUSERNAME CONPASSWORD SCHEMA TABALIAS
```

**Note:** Supply values to the above parameters as described in the section “Definition of terms used in this chapter”.

---

## Steps used when migrating from version 6.0.x.x

Here are the steps and the names of log files created for each step of migration process:

1. Checks for the version number in RPM database table to decide from which RPM version the migration has to be done
2. Stops and starts RPM database
3. Drops the triggers of RPM v6.0.x.x database > `drop_triggers60.out`
4. If using Scenario 2, it drops aliases > `drop_alias60.out`
5. It starts the migration process:
  - v6.0.0.0 > `migration6000.out`
  - v6.0.0.1, v6.0.0.2 and v6.0.1.3 > `migration60xx.out`
6. Drops temporary tables > `drop_tmptables.out`
7. Creates aliases if using Scenario 2 > `alias61.out`
8. Grants rights if using scenario 2 to user accessing RPM database > `grants61.out`
9. Creates triggers for RPM v 6.1.0.0 > `triggers61.out`
10. Creates stored procedures for migration > `createsp_mig.out`  
`${MIGRATION_HOME}/Database/DB2/migration/csp`
11. Binds migration code > `bindall.out`  
`${MIGRATION_HOME}/Database/DB2/migration/csp`
12. Runs migration stored procedures > `migrationsp.out`
13. Dropping triggers > `drop_triggers61.out`
14. Removing extra columns > `removecolumns.out`
15. Using Scenario 2, it drops aliases > `drop_alias61.out`
16. Finalizing migration > `migration6100.out`
17. Dropping temporary tables > `migration2.out`
18. Using Scenario 2, it creates aliases > `alias62.out`
19. Grants rights if using scenario 2 to user accessing RPM database > `grants62.out`
20. Creates triggers for RPM v 6.2.0.0 > `triggers62.out`
21. Creates stored procedures for v6.2.0.0 > `createsp.out`  
`${MIGRATION_HOME}/Database/DB2/csp`
22. Binds RPM v6.2.0.0 code > `bindall.out`  
`${MIGRATION_HOME}/Database/DB2/csp`
23. Runs some stored procedures to insert records into RPM database tables > `migration3.out`
24. If you choose to import RUP 2003 templates, then it executes all the steps through step 30, otherwise goes directly to step 31:

- drops triggers > drop\_triggers62.out
- 25. Imports RUP data part 1 > db2move1.out  
 \${MIGRATION\_HOME}/Database/DB2/migration/move1
- 26. Imports RUP data part 2 > db2move2.out  
 \${MIGRATION\_HOME}/Database/DB2/migration/move2
- 27. Runs RUP 2003 migration > rupmigration.out
- 28. Drops RUP 2003 temporary tables > dropruptables.out
- 29. Creates triggers > triggers62.out
- 30. Runs statistics on tables > Reorgstats62.out
- 31. Checks for successful migration > Output will be displayed on the screen

**Note:** If the output file contains 6.2.0.0, the migration is successful, if not, then verify all the log files. In any case it is recommended to check all the log files.

**Note:** During the migration steps you might see the following SQLSTATE numbers in your log files. These can be ignored since they are only warnings:

- SQLSTATE=02000 (...the result set of the query is an empty table)
- SQLSTATE=42704 (...is an undefined name)

---

## Steps used when migrating from version 6.1.x.x

Here are the steps and the names of log files created for each step of migration process:

1. Checks for the version number in RPM database table to decide from which RPM version the migration has to be done
2. Stops and starts RPM database
3. Drops the triggers of RPM v6.1.x.x database > drop\_triggers61.out
4. If using Scenario 2, it drops aliases > drop\_alias61.out
5. It starts the migration process:
  - v6.1.0.0 > migration6100.out
  - v6.1.1.1 > migration6111.out
  - v6.1.1.2 > migration6112.out
  - v6.1.1.3 > migration6113.out
  - v6.1.1.4 and v6.1.1.5 > migration6114\_AND\_6115.out
6. Based on the RPM version, there are two other batch processes that get processed:
  - Updating four tables for reference numbers > update.out
  - Dropping temporary tables > migration2.out
7. Creates aliases if using Scenario 2 > alias62.out
8. Grants rights if using scenario 2 to user accessing RPM database > grants62.out
9. Creates triggers for RPM v 6.2.0.0 > triggers62.out
10. Creates stored procedures for v6.2.0.0 > createsp.out  
 \${MIGRATION\_HOME}/Database/DB2/csp
11. Binds RPM v6.2.0.0 code > bindall.out  
 \${MIGRATION\_HOME}/Database/DB2/csp

12. Runs some stored procedures to insert records into RPM database tables > migration3.out
13. If you choose to import RUP 2003 templates, then it executes all the steps through step 19, otherwise goes directly to step 20:

**Note:** If you already have RUP 2003 in your database you SHOULD NOT import RUP 2003 in your database again.

- drops triggers > drop\_triggers62.out
14. Imports RUP data part 1 > db2move1.out  
\${MIGRATION\_HOME}/Database/DB2/migration/move1
  15. Imports RUP data part 2 > db2move2.out  
\${MIGRATION\_HOME}/Database/DB2/migration/move2
  16. Runs RUP 2003 migration > rupmigration.out
  17. Drops RUP 2003 temporary tables > dropruptables.out
  18. Creates triggers > triggers62.out
  19. Runs statistics on tables > Reorgstats62.out
  20. Checks for successful migration > Output will be displayed on the screen

**Note:** If the output file contains 6.2.0.0, the migration is successful, if not, then verify all the log files. In any case it is recommended to check all the log files.

**Note:** During the migration steps you might see the following SQLSTATE numbers in your log files. These can be ignored since they are only warnings:

- SQLSTATE=02000 (...the result set of the query is an empty table)
- SQLSTATE=42704 (...is an undefined name)

---

## Deploying Rational Portfolio Manager Application Server

**Note:** Before proceeding with middleware deployment, make sure you backup the IBMRPM.ear directory located under \${IBMRPM\_EAR\_HOME}.

Refer to your installation document for deploying IBMRPM.ear located under \${MIGRATION\_HOME}/WebServer directory.

After deploying you need to edit ConnectionManager.ini and ConnectionPool.ini located under \${IBMRPM\_EAR\_HOME}/IBMRPM.war/WEB-INF/classes directory.

### Modifying the ConnectionPool.ini file

Modify settings in the ConnectionPool.ini file as described in the next procedures. Remove the pound character (#) to uncomment any lines in the file needed for your site's configuration. Settings in this file control:

- Datasource configuration
- Connection pool options
- Driver and database options specific to DB2
- Mail alert server settings
- Log file settings

To modify the ConnectionPool.ini file:

1. Go to `${IBMRPM_WAR_HOME}/WEB-INF/classes` directory and open `ConnectionPool.ini` for editing.
2. In the **Data Source Configuration** section, set values for the following:
  - `DataSourceName=IBMRPM`
  - `User=RPM_OWNER` or `RPM_CONNECTED_USER`
  - `Password=RPM_OWNER_PASSWORD` or `RPM_CONNECTED_USER_PASSWORD`
  - `ENC=NO`
  - `Dbms=DB2`
3. In the **Pool Options** section, make these changes or you can use default values:
  - `ConnectionPoolSize=pool_size`
  - `ConnectionPoolMax=maximum_pool_size`
  - `ConnectionUseCount=Number of times a connection can be reused`

The connection pool size is for the pool managing the connections between the application server and the database server.
4. In the **Driver and Database** section, make the following changes:
  - a. Set values for `JDBCdriver` and `JDBCconnectionURL`. The `IP_DB_SERVER` should reflect the IP address of database server, the `DB_PORT` should reflect the port number of the RPM database, and `DBNAME` should reflect your instance name or database alias of the TCPIP node for `JDBCconnectionURL`:
    - `JDBCdriver=com.ibm.db2.jcc.DB2Driver`
    - `JDBCconnectionURL=jdbc:db2://IP_DB_SERVER:DB_PORT/DBNAME`
  - b. Check that these lines are not preceded by the comment character `#`. If they are, remove the `#` character. Also check that all lines in the Oracle section for Driver and Database are commented.
5. In this step you will configure settings for the **Mail Alert Server**. Note that the user name used to connect to the database is the same one used for the IBM Rational Portfolio Manager web application. The host machine (in this case the web server) must have the mail server installed and configured to send e-mail. Table 1 describes each setting.

Table 1. Mail Alert Server Setting

Setting	Notes
<code>EmailHost=EMAIL_HOST_IP_ADDR</code>	Set to the SMTP IP address or server name.
<code>SendInterval=60000</code>	Set <code>SendInterval</code> to the amount of time in milliseconds you want the IBM Rational Portfolio Manager alert e-mails to be sent.
<code>RollupInterval=86400000</code>	Set <code>RollupInterval</code> to the frequency interval you want the application to rollup time-phased projects.
<code>Sender=E-mail_Author</code>	Set <code>Sender</code> to the author of the e-mails.
<code>Subject=E-mail_Subject</code>	Set <code>Subject</code> to specify the subject line of the e-mails that will be sent.
<code>AlertsOn=true</code>	Specify whether the alert server is on or off.
<code>ServerName=Host:Port/RPM_Web_context/</code>	Set the <code>ServerName</code> to the IP address or host name:port number of the Web server/Rational Portfolio Manager Web context/.
<code>ConType=http</code>	Specify HTTP as the connection type.
<code>sendIterationTimes=10</code>	Alert send iteration time in seconds.

Table 1. Mail Alert Server Setting (continued)

Setting	Notes
WorkflowPollingInterval = 60000	Workflow polling interval in seconds.
WFSchedPollingInterval = 60000	Workflow scheduler polling interval in seconds.

6. Save and close the file. The new settings will take effect when the web application server is loaded.

## Modifying the log4j.properties file

If you want IBM Rational Portfolio Manager to use its own log files instead of the standard output, you have to configure application logs. You need to set `log4j.threshold=OFF` to `ON`, then you can set one of the following values by removing the comment mark `#`. If the value `log4j.rootLogger=ALL`, `stdout`, `R`, is uncommented, then by default all other values will be enabled:

```
#log4j.rootLogger=DEBUG, stdout, R
#log4j.rootLogger=INFO, stdout, R
#log4j.rootLogger=WARN, stdout, R
#log4j.rootLogger=ERROR, stdout, R
#log4j.rootLogger=FATAL, stdout, R
#log4j.rootLogger=ALL, stdout, R
#log4j.rootLogger=OFF, stdout, R
```

1. Set the path to log file of standard output:  
`log4j.appender.R.File=PATH_TO_LOG_FILE/stdout.log`  
`PATH_TO_LOG_FILE` is the path to where the log file for standard output is located. For example: `/home/debug/stdout.log`
2. Save and close the file. The new settings will take effect when the web application server is loaded

## Modifying the ConnectionManager.ini file

To modify the `ConnectionManager.ini` file:

1. Go to `${IBMRPM_WAR_HOME}/WEB-INF/classes` and open `ConnectionManager.ini` for editing
2. Edit the value for `DSNI` to `DSNI=IBMRPM`
3. Save and close the file

## JDBC driver settings

To configure the JDBC driver settings:

1. Copy the `db2jcc.jar`, `db2jcc_license_cisuz.jar`, `db2jcc_license_cu.jar` files from `${DB2TEMPDIR}/JAVA/` to the `${WAS_HOME}/lib` directory, where `${WAS_HOME}` is the path where the web application is installed  
For example, `home/IBM/WebSphere/AppServer/lib`
2. After applying these modifications, restart the application server

---

## Verifying the installation

This section describes the process of verifying that the installation is completed and correctly configured.

## Validating the database connection

Validate that the connection to the database was successful by opening the `${WAS_HOME}/AppServer/logs/server1/SystemOut.log` file. Look for `ConnectionPool Loaded (###ms)` value. This value validates that the application is connected to the database.

## Testing the Web browser connection

To test the Web browser connection:

1. Open a browser window.
2. Go to `http://hostname:portnumber/webapp/IBMRPM/PMOServlet.wss`

You should see the welcome screen for IBM Rational Portfolio Manager.

---

## Deploying RPM/PjC Metrics

To deploy **RPM/PjC Metrics**, refer to `RPM6.2.0.0_PjC_Integration_Guide.pdf` document. The RPM/PjC Metrics files are located under `${MIGRATION_HOME}/PJC_METRICS_KIT` directory. The editing of `ConnectionPool.ini` in `${RPMPJCWebService_WAR_HOME}/WEB-INF/classes` directory is similar to the editing of `ConnectionPool.ini` in `${IBMRPM_WAR_HOME}/WEB-INF/classes` directory, except for the following:

```
DataSourceName=RPMPJCWebService
```

---

## Deploying RPM Web Services API

To deploy **RPM Web Services API**, refer to `RPM6.2.0.0_API_Guide.pdf` document. The RPM Web Services API files are located under `${MIGRATION_HOME}/WebServicesAPI` directory.

---

## Post install activities

For post install steps refer to `Administration_Guide.pdf` document. The post install files are located under `${MIGRATION_HOME}/Post-Install` directory.



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## Chapter 2. Migrating Rational Portfolio Manager on Oracle

This chapter tells you how to migrate the Rational Portfolio Manager database from version 6.0.x.x or 6.1.x.x to version 6.2.0.0 on Oracle.

It is also possible to run the migration scripts from a remote machine. In this case, you need to make sure you can connect to the remote database using SQLplus.

**Note:** Rational Portfolio Manager 6.2.0.0 migration script uses SQLplus located under `${ORACLE_HOME}/bin` directory and in case of migrating RUP templates, jar located under `${ORACLE_HOME}/jdk/bin` directory and imp located under `${ORACLE_HOME}/bin` directory. Therefore you should run the migration scripts on a machine that has these utilities.

---

### Prerequisites for migration

- A successful Rational Portfolio Manager version 6.0.x.x or 6.1.x.x installation
- Rational Portfolio Manager version 6.2.0.0 migration package
- SQLplus, jar, and imp utilities for running Oracle migration scripts
- Oracle migration is carried out through shell script using korn or bash shell environments
- Make sure you have execute rights for `mig_owner.sh`, `mig_con_user.sh`, and `rup2003.sh` files

---

### Migration steps

Rational Portfolio Manager migration to version 6.2 has 3 steps:

1. Migrating RPM schema owner
2. Migrating RPM connected user (if a connected user is used)
3. Integrating RUP 2003 (optional)

---

### Steps to migrate RPM schema owner

1. Stop the application server associated with the RPM database
2. Shutdown the RPM database
3. Startup the RPM database
4. Tablespaces used in the migration scripts are:
  - `PMO_DATA_64K` for tables
  - `PMO_LOB_64K` for lobs
  - `PMO_IDX_64K` for indexes

**Note:** If the tablespaces in your RPM database are different from the above mentioned names, you need to change the name of the tablespaces in the migration scripts as follows:

- a. For RPM 6.0xx you need to change the name of tablespaces in the following files:

```
${MIGRATION_HOME}/Database/Oracle/scripts/6.0_to_6.1/option13.sql
```

```
${MIGRATION_HOME}/Database/Oracle/scripts/6.0_to_6.1/step2.sql
```

```
${MIGRATION_HOME}/Database/Oracle/scripts/6.1_to_6.2/step2-6.1xx.sql
```

```

${MIGRATION_HOME}/Database/Oracle/scripts/6.1_to_6.2/step3.sql
${MIGRATION_HOME}/Database/Oracle/scripts/6.1_to_6.2/plbddl/index.ddl

```

**Note:** **xx** is the version of RPM database you are currently at. For example, `step2-6114.sql`, where 6114 in this file refers to RPM version 6.1.1.4

- b. For RPM 6.1xx you need to change the name of tablespaces in the following files:

```

${MIGRATION_HOME}/Database/Oracle/scripts/6.1_to_6.2/step2-6.1xx.sql
${MIGRATION_HOME}/Database/Oracle/scripts/6.1_to_6.2/step3.sql
•
•
•
${MIGRATION_HOME}/Database/Oracle/scripts/6.1_to_6.2/plbddl/index.ddl

```

**Note:** **xx** is the version of RPM database you are currently at. For example, `step2-6114.sql`, where 6114 in this file refers to RPM version 6.1.1.4

5. Open a shell window and change the directory to `${MIGRATION_HOME}/Database/Oracle` and run `./mig_owner.sh`  
Migration script will run and ask you a series of questions:
6. Have you performed pre\_migration steps? Before migration you need to backup your database, if you have a backup, answer yes to continue. If you answer no, no migration will be performed
7. The script uses your `${ORACLE_HOME}` environment variable. Enter the required information when prompted
8. Is your RPM database installed on this machine? If you answer no, you will be prompted to enter:
  - TNS string
  - IBMRPM schema owner
  - IBMRPM schema owner passwordIf you answer yes, you will be prompted to enter:
  - ORACLE\_SID value
  - IBMRPM schema owner
  - IBMRPM schema owner password
9. After entering the above information, the script will check the version of RPM database you currently have and prompt you to validate that
10. If the RPM database version is correct answer yes, if you answer no, you will be prompted to enter the correct version of your RPM database

**Note:** It is important to enter the version number in this format: `6.x.x.x`

11. Are you sure you want to migrate your database now? Answer yes to start the migration

**Note:** If you are migrating from 6.0.x.x, depending on the amount of data in your database, this might take several hours.

12. At the end of migration you will be provided with migration report. Migration report includes the following information:
  - The current version of the database (which at this level must be 6.2.0.0)
  - The number of invalid objects in the database (which we expect to be 0)

- The number of objects (needed for 6.2) for each object type and their status in the migrated RPM database

**Note:** Comparing the number of objects for each object type in the **YOUR\_RPM\_DATABASE** and **NUMBER\_OF\_OBJECTS\_MUST\_BE** columns helps you to check if the migration has been successful. Obviously we expect these values to be equal.

13. Migration log files will be created under `${MIGRATION_HOME}/Database/Oracle/logs` folder. It is always recommended to look at the log files to see if migration was successful
14. Stop Oracle listener  
`${ORACLE_HOME}/bin/lsnrctl stop`
15. `LevelingLib.so` located under `${MIGRATION_HOME}/Database/Oracle/leveling/[your OS/your Oracle version]/` folder must be manually copied to the right location on the database server

**Note: Only for HP platforms,** since the name of leveling library is changed for the HP platform, you should drop the library and create it again with the correct name, then compile invalid objects in the database.

Example:

```
DROP LIBRARY LEVELING_LIB;
CREATE LIBRARY LEVELING_LIB AS 'data2/oracle/ora/bin/LevelingLib.so';
/
```

16. Start Oracle listener  
`${ORACLE_HOME}/bin/lsnrctl start`

---

## Steps to migrate RPM connected user

1. Open a command prompt window and change the directory to `${MIGRATION_HOME}/Database/Oracle` and run `./mig_con_user.sh`  
Migration script will run and ask you a series of questions.
2. The script uses your `${ORACLE_HOME}` environment variable. Enter the required information when prompted
3. Is your RPM database installed on this machine? If you answer no, you will be prompted to enter:
  - TNS string
  - IBMRPM schema owner
  - IBMRPM schema owner password
 If you answer yes, you will be prompted to enter:
  - Verify the `ORACLE_SID` value
  - Enter IBMRPM schema owner
  - Enter IBMRPM schema owner password
4. Enter RPM connected user name when prompted
5. Enter RPM connected user password when prompted
6. Enter the password for sys user when prompted
7. Are you sure you want to migrate your connected user now? Answer yes to start the migration

8. Migration log files will be created under `${MIGRATION_HOME}/Database/Oracle/logs` folder. It is always recommended to look at the log files to see if migration was successful

---

## Steps to integrate RUP 2003

You can optionally import RUP 2003 templates for your RPM database.

**Note:** If you already have RUP 2003 in your database you SHOULD NOT import RUP 2003 in your database again.

Here are the steps to import:

1. Verify that you have a tablespace called `PMO_DATA_64K` in your database
2. Verify that `jar`, `sqlplus`, and `imp` exist on your machine. The `jar` should be located under `${ORACLE_HOME}/jdk/bin` and `sqlplus` and `imp` should be located under `${ORACLE_HOME}/bin` directories.
3. Open a shell window and change directory to `${MIGRATION_HOME}/Database/Oracle` and run:  

```
./rup2003.sh
```
4. When you are prompted, enter the required information like the RPM schema owner username, password, and `ORACLE_SID`

---

## Deploying Rational Portfolio Manager Application Server

**Note:** Before proceeding with middleware deployment, make sure you backup the `IBMRPM.ear` directory located under `${IBMRPM_EAR_HOME}`

Refer to your installation document for deploying `IBMRPM.ear` located under `${MIGRATION_HOME}/WebServer` directory.

After deploying you need to edit `ConnectionManager.ini` and `ConnectionPool.ini` located under `${IBMRPM_EAR_HOME}/IBMRPM.war/WEB-INF/classes` directory

### Modifying the ConnectionPool.ini file

Modify settings in the `ConnectionPool.ini` file as described in the next procedures. Remove the pound character (`#`) to uncomment any lines in the file needed for your site's configuration. Settings in this file control:

- Datasource configuration
- Connection pool options
- Driver and database options specific to Oracle
- Mail alert server settings
- Log file settings

To modify the `ConnectionPool.ini` file:

1. Go to `${IBMRPM_WAR_HOME}/WEB-INF/classes` directory and open `ConnectionPool.ini` for editing.
2. In the **Data Source Configuration** section, set values for the following:  

```
DataSourceName=IBMRPM  
User=RPM_OWNER or RPM_CONNECTED_USER  
Password=RPM_OWNER_PASSWORD or RPM_CONNECTED_USER_PASSWORD  
ENC=NO
```

Dbms=Oracle

3. In the **Pool Options** section, make these changes or you can use default values:

ConnectionPoolSize=pool\_size

ConnectionPoolMax=maximum\_pool\_size

ConnectionUseCount=Number of times a connection can be reused

The connection pool size is for the pool managing the connections between the application server and the database server.

4. In the Driver and Database section, make the following changes:
  - a. Set values for JDBCDriver and JDBCConnectionURL. The IP\_DB\_SERVER should reflect the IP address of database server, the DB\_PORT should reflect the port number of the RPM database, and DBNAME should reflect your instance name or database alias of the TCPIP node for JDBCConnectionURL:  
JBCDriver=oracle.jdbc.driver.OracleDriver  
JDBCConnectionURL=jdbc:oracle:thin:@//IP\_DB\_SERVER:DB\_PORT/DBNAME
  - b. Check that all lines under ORACLE section are not preceded by the comment character #. If they are, remove the # character. Also check that all lines in the DB2 section for Driver and Database are commented
5. In this step you will configure settings for the **Mail Alert Server**. Note that the user name used to connect to the database is the same one used for the IBM Rational Portfolio Manager web application. The host machine (in this case the web server) must have the mail server installed and configured to send e-mail. Table 1 describes each setting

Table 2. Mail Alert Server Setting

Setting	Notes
EmailHost=EMAIL_HOST_IP_ADDR	Set to the SMTP IP address or server name.
SendInterval=60000	Set SendInterval to the amount of time in milliseconds you want the IBM Rational Portfolio Manager alert e-mails to be sent.
RollupInterval=86400000	Set RollupInterval to the frequency interval you want the application to rollup time-phased projects.
Sender=E-mail_Author	Set Sender to the author of the e-mails.
Subject=E-mail_Subject	Set Subject to specify the subject line of the e-mails that will be sent.
AlertsOn=true	Specify whether the alert server is on or off.
ServerName=Host:Port/RPM_Web_context/	Set the ServerName to the IP address or host name;port number of the Web server/Rational Portfolio Manager Web context/.
ConType=http	Specify HTTP as the connection type.
sendIterationTimes=10	Alert send iteration time in seconds.
WorkflowPollingInterval =60000	Workflow polling interval in seconds.
WFSchedPollingInterval =60000	Workflow scheduler polling interval in seconds.

6. Save and close the file. The new settings will take effect when the web application server is loaded

## Modifying the log4j.properties file

If you want IBM Rational Portfolio Manager to use its own log files instead of the standard output, you have to configure application logs. You need to set `log4j.threshold=OFF` to `ON`, then you can set one of the following values by removing the comment mark `#`. If the value `log4j.rootLogger=ALL, stdout, R`, is uncommented, then by default all other values will be enabled:

```
#log4j.rootLogger=DEBUG, stdout, R
#log4j.rootLogger=INFO, stdout, R
#log4j.rootLogger=WARN, stdout, R
#log4j.rootLogger=ERROR, stdout, R
#log4j.rootLogger=FATAL, stdout, R
#log4j.rootLogger=ALL, stdout, R
#log4j.rootLogger=OFF, stdout, R
```

1. Set the path to log file of standard output:

```
log4j.appender.R.File=PATH_TO_LOG_FILE/stdout.log
```

`PATH_TO_LOG_FILE` is the path to where the log file for standard output is located. For example: `/home/debug/stdout.log`

2. Save and close the file. The new settings will take effect when the web application server is loaded.

## Modifying the ConnectionManager.ini file

To modify the `ConnectionManager.ini` file:

1. Go to `${IBMRPM_WAR_HOME}/WEB-INF/classes` and open `ConnectionManager.ini` for editing
2. Edit the value for `DSNI` to `DSNI=IBMRPM`
3. Save and close the file

## JDBC driver settings

To configure the JDBC driver settings:

1. Copy the `classes12.jar` file from `${ORACLE_HOME}jdbc/lib` to the `${WAS_HOME}/lib` directory, where `${WAS_HOME}` is the path where the web application is installed  
For example, `home/IBM/WebSphere/AppServer/lib`
2. After applying these modifications, restart the application server

---

## Verifying the installation

This section describes the process of verifying that the installation is completed and correctly configured.

### Validating the database connection

Validate that the connection to the database was successful by opening the `${WAS_HOME}/AppServer/logs/server1/SystemOut.log` file. Look for `ConnectionPool Loaded (###ms)` value. This value validates that the application is connected to the database.

### Testing the Web browser connection

To test the Web browser connection:

1. Open a browser window

2. Go to `http://hostname:portnumber/webapp/IBMRPM/PMOServlet.wss`

You should see the welcome screen for IBM Rational Portfolio Manager.

---

## Deploying RPM/PjC Metrics

To deploy **RPM/PjC Metrics**, refer to `RPM6.2.0.0_PjC_Integration_Guide.pdf` document. The RPM/PjC Metrics files are located under `${MIGRATION_HOME}/PJC_METRICS_KIT` directory. The editing of `ConnectionPool.ini` in `${RPMPJCWebService_WAR_HOME}/WEB-INF/classes` directory is similar to the editing of `ConnectionPool.ini` in `${IBMRPM_WAR_HOME}/WEB-INF/classes` directory, except for the following:

```
DataSourceName=RPMPJCWebService
```

---

## Deploying RPM Web Services API

To deploy **RPM Web Services API**, refer to `RPM6.2.0.0_API_Guide.pdf` document. The RPM Web Services API files are located under `${MIGRATION_HOME}/WebServicesAPI` directory.

---

## Post install activities

For post install steps refer to `Administration_Guide.pdf` document. The post install files are located under `${MIGRATION_HOME}/Post-Install` directory.





## Appendix. Terms and Glossary

Table 3. Terms and glossary used in this document

Variable	Description	Example
<code>\${DB2TEMPDIR}</code>	Your DB2 home directory	home/IBM/SQLLIB
<code>\${ORACLE_HOME}</code>	Your Oracle home directory	home/Oracle/ora92
RPM	Rational Portfolio Manager	
<code>\${MIGRATION_HOME}</code>	Path to RPM 6.2 migration package	home/software/RPM6200MigPack
<code>\$WAS_HOME]</code>	Path to WebSphere® home directory	home/IBM/WebSphere/AppServer
<code>\${IBMRPM_EAR_HOME}</code>	Path to IBMRPM Enterprise Application	<code>\${WAS_HOME}/Installed Apps/[user]/IBMRPM.ear</code>
<code>\$IBMRPM_WAR_HOME}</code>	Path to IBMRPM WEB Application	<code>\${IBMRPM_EAR_HOME}/IBMRPM.war</code>
<code>\${RPMPJCWebservice_WAR_HOME}</code>	Path to RPM/PJC Web Service WEB Application	<code>\${WAS_HOME}/Installed Apps/[user]/RPMPJCWebserviceEAR.ear/RPMPJCWebservice.war</code>







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