

APAR: IV61600

Steps to update the database schema:

- A. Extract the IV61600.zip file to a temporary directory on your hard drive.
- B. Stop the Tivoli Integrated Portal Server.

For DB2 database:

1. Take back-up of the existing database.
2. Go to the DB2 command prompt.
3. Connect to the RaPM database using following command.
db2 connect to <DATABASE_NAME> user <DATABASE_ADMIN_USER> using
<DATABASE_ADMIN_PASSWORD>
4. Execute the .sql files from the extracted folder in the following sequence to update the database schema. Please mention full path to the .sql files in the below commands.
db2 -tf "1_security_modeling_create_bufferpool_db2.sql"
db2 -tf "2_security_modeling_schema_db2_CreateNewTables"
db2 -tf "3_security_modeling_schema_db2_CopyDataFromOldToNewTables.sql"
db2 -tf "4_security_modeling_schema_db2_DropOldTablesAndViews.sql"
db2 -tf "5_security_modeling_schema_db2_RenameNewTablesToOldOne.sql"
db2 -tf "6_security_modeling_schema_db2_CreateIndexesAlterTables.sql"
db2 -tf "7_security_modeling_schema_modify_db2.sql"
5. Disconnect from the database
db2 disconnect current

For Oracle database:

Note:- Execute this steps if oracle database server is installed on a 64-bit operating system.

1. Take back-up of the existing database.
 2. Export data from the old database
 - a. Log on to the graphical console as the *Oracleaccount*. Where *Oracleaccount* is the account where the Oracle server is installed.
 - b. Execute following command to export the data in .dmp file
- Set the NLS_LANG environment variable for Oracle databases**
1. Determine the NLS_LANG value.
 - a. On the RaPM database, run the command
SELECT * FROM V\$NLS_PARAMETERS
 - b. Make a note of the NLS_LANG value, which is in the format
[NLS_LANGUAGE].[NLS_TERRITORY].[NLS_CHARACTERSET]
For example: American_America.AL32UTF8
 2. For Windows:
 - a. Navigate to Control Panel > System and click the Advanced tab. Click Environment Variables.
 - b. In System variables section, click New.
 - c. In the Variable Name field, enter NLS_LANG.
 - d. In the Variable Value field, enter the NLS_LANG value that was returned in Step 1.

The format for the NLS_LANG value should be
[NLS_LANGUAGE]_[NLS_TERRITORY].[NLS_CHARACTERSET]

For example: American_America.AL32UTF8

3. For UNIX, set the variable as shown below:
export NLS_LANG=[NLS_LANGUAGE]_[NLS_TERRITORY].[NLS_CHARACTERSET]
For example: export NLS_LANG=American_America.AL32UTF8
4. Run this command from the command prompt: sqlplus /nolog
5. Connect to the database. Run these commands:
SQL> connect oracleadminuser/Oracleadminpassword@databasename

Where databasename is the Role and Policy Modeler database name. For example rapmdb.

SQL> CREATE OR REPLACE DIRECTORY <Export_Dir_Name> AS
'<Export_Dir_Path>';

For example:

SQL> CREATE OR REPLACE DIRECTORY export_dir AS 'D:\DataDump';

SQL> GRANT READ, WRITE ON DIRECTORY <Export_Dir_Name> TO
Oracleuser;

For example:

SQL> GRANT READ, WRITE ON DIRECTORY export_dir TO oracle;

SQL> COMMIT;

SQL> DISCONNECT;

SQL> QUIT;

6. From the command prompt navigate to the <ORACLE_HOME>\bin directory and run the Oracle Data Pump Export tool as follows:

```
expdp Oracleuser/Oracleuserpassword@databasename DIRECTORY=
<Export_Dir_Name> DUMPFILE= <Export_Data_Filename>
LOGFILE=<Export_Log_Filename>
TABLES="ATTRIBUTE, ATTRSOURCE, ATTR_HIERARCHY, ATTR_IDENTITY,
ATTR_INT, ATTR_STRING, ATTR_TREE, ATTR_USAGE, IDENTITY,
IDENTITY_PERMISSION, IDENTITY_ROLE, IMPORT_ATTRIBUTE,
IMPORT_ATTRSOURCE, IMPORT_ATTR_HIERARCHY, IMPORT_ATTR_STRING,
IMPORT_ATTR_USAGE, IMPORT_ENTITY_ATTACHMENT,
IMPORT_ENTITY_SOURCE_LOOKUP, IMPORT_FILE, IM-
PORT_IDENT_SOURCE_LOOKUP, IMPORT_MESSAGES, IMPORT_ROLEPOLYTYPE,
IMPORT_SESSION, IMPORT_STATS, MODEL, MODEL_IDENTITY, MODEL_LOCK,
MODEL_MESSAGES, MODEL_PERMISSION, PERMISSION, PROJECT,
PSCOPE_ATTR_IDENTITY, PSCOPE_ATTR_INT, PSCOPE_ATTR_STRING,
PSCOPE_ATTR_TREE, PSCOPE_IDENTITY, PSCOPE_PERMISSION, ROLEPOLY,
ROLEPOLYTYPE, ROLEPOLY_OWNER, ROLE_EDGE, ROLE_FILTER,
ROLE_FILTER_FRAGMENT, ROLE_FILTER_RULE, ROLE_FILTER_RULE_VALUE,
ROLE_PERMISSION, ROLE_STATS, SODCONFLICT, SODCONFLICTROLE,
SODCONSTRAINT, SODCONSTRAINT_ROLE, LC_REQUEST_CONFIG,
LC_REQUEST_ROLE" EXCLUDE=INDEX, CONSTRAINT
```

7. After successful execution of the Export tool, the <Export_Data_Filename>.dmp and the =<Export_Log_Filename> files will be created in the <Export_Dir_Name> directory.

3. Create the database.

Microsoft Windows operating system:

- a. Run this command from the command prompt: **dbca**
- b. In the **Database Configuration Assistant : Welcome** panel, click **Next**.
- c. Select **Create a Database** and click **Next**.
- d. The template **General Purpose of Transaction Processing** is selected by default. Change it to **Custom Database**. Click **Next**.
- e. Provide values for these fields: **Global Database Name** and **SID**. For example, rapmdb.
- f. In the Management options panel, review if **Configure Enterprise Manager** and **Configure Database Control for local management** are selected. Click **Next**.
- g. If you see a warning message to add a listener:
 - 1) Run the **netca** command from the command prompt.
 - 2) Follow the instructions in the **Oracle Net Services Configuration** panel.
- h. In the Database Credentials panel, select **Use the Same Administrative Password for All Accounts** and enter the password. Click **Next**.
- i. In the Database File Locations panel, review that the **Use Database File Locations from Template** is selected by default and click **Next**.
- j. Accept the default selections in Recovery Configuration panel and click **Next**.
- k. Click **Next** on the Database Content panel.
- l. In the Initialization Parameters panel, select the amount of memory for the database under the **Memory** tab. Ensure that this value meets the minimum requirement for the Role and Policy Modeler database on Oracle.
- m. In the Initialization Parameters panel, change **block size** to **32768** under the **Sizing** tab.
- n. In the Initialization Parameters panel, select **Use Unicode** under the **Character Sets** tab.
- o. In the Initialization Parameters panel, click **All Initialization Parameters** and set the **open_cursors** parameter value to 300 or higher. Click **Close**.
- p. In the Database Storage panel, expand Redo Log Groups, and then change the file size for each redo log group to 200 MB. When finished, click **Next**.
- q. In the Creation Options panel, review if **Create Database** is selected. Click **Finish**.
- r. The Confirmation dialog box is displayed with **Create Database Summary**. Click **OK**.

UNIX, Linux, or AIX operating systems:

- a. Log on to the graphical console as the *Oracleaccount*. Where *Oracleaccount* is the account where the Oracle server is installed.
- b. Run this command from the command prompt: **dbca**
- c. In the **Database Configuration Assistant : Welcome** panel, click **Next**.
- d. Select **Create a Database** and click **Next**.
- e. The template **General Purpose of Transaction Processing** is selected by default. Change it to **Custom Database**. Click **Next**.

- f. Provide values for these fields: **Global Database Name** and **SID**. For example, rapmdb.
- g. In the Management options panel, review if **Configure Enterprise Manager** and **Configure Database Control for local management** are selected. Click **Next**.
- h. If you see a warning message to add a listener:
 - 1) Run the **netca** command from the command prompt.
 - 2) Follow the instructions in the **Oracle Net Services Configuration** panel.
- i. In the Database Credentials panel, select **Use the Same Administrative Password for All Accounts** and enter the password. Click **Next**.
- j. In the Database File Locations panel, review that the **Use Database File Locations from Template** is selected by default and click **Next**.
- k. Accept the default selections in Recovery Configuration panel and click **Next**.
- l. Click **Next** on the Database Content panel.
- m. In the Initialization Parameters panel, select the amount of memory for the database under the **Memory** tab. Ensure that this value meets the minimum requirement for the Role and Policy Modeler database on Oracle.
- n. In the Initialization Parameters panel, change **block size** to **32768** under the **Sizing** tab.
- o. In the Initialization Parameters panel, select **Use Unicode** under the **Character Sets** tab.
- p. In the Initialization Parameters panel, click **All Initialization Parameters** and set the **open_cursors** parameter value to 300 or higher. Click **Close**.
- q. In the Database Storage panel, expand Redo Log Groups, and then change the file size for each redo log group to 200 MB. When finished, click **Next**.
- r. In the Creation Options panel, review if **Create Database** is selected. Click **Finish**.
- s. The Confirmation dialog box is displayed with **Create Database Summary**. Click **OK**.

4. If you have not already done so, run this command from the command prompt: **netca**

5. Run this command from the command prompt: **sqlplus /nolog**

6. Connect to the database. Run these commands:

```
SQL> connect oracleadminuser/Oracleadminpassword@databasename
```

Where *databasename* is the Role and Policy Modeler database name. For example rapmdb.

```
SQL> create tablespace Oracleuser datafile 'Oracleuser_001.dbf' size 64M reuse
autoextend ON next 64M maxsize unlimited default storage (initial 10M next 1M
pctincrease 10);
```

```
SQL> create user Oracleuser identified by Oracleuserpassword default tablespace
Oracleuser quota unlimited on Oracleuser;
```

```
SQL> grant create session to Oracleuser;
```

```
SQL> grant create table to Oracleuser;
```

```
SQL> grant create any procedure to Oracleuser;
```

```
SQL> grant create view to Oracleuser;
```

```
SQL> create or replace trigger nls after logon on database
begin execute immediate 'alter session set NLS_COMP=ANSI';
```

```
execute immediate 'alter session set NLS_SORT=GENERIC_M';  
end;  
/
```

```
SQL> commit;
```

7. Import the exported data using the Oracle Data Pump Import tool as follows:

1. Run this commands:

```
SQL> CREATE OR REPLACE DIRECTORY <Import_Dir_Name> AS  
      '<Import_Dir_Path>';
```

For example:

```
SQL> CREATE OR REPLACE DIRECTORY import_dir AS 'D:\DataDump';
```

```
SQL> GRANT READ, WRITE ON DIRECTORY <Import_Dir_Name> TO  
      Oracleuser;
```

For example:

```
SQL> GRANT READ, WRITE ON DIRECTORY import_dir TO oracle;
```

```
SQL> COMMIT;
```

```
SQL> DISCONNECT;
```

```
SQL> QUIT;
```

2. Copy the .dmp file generated by Oracle Data Pump Export tool to the directory <Import_Dir_Name> .

3. Set the NLS_LANG environment variable for Oracle database. Set the same value that is used during exporting the data using the Oracle Data Pump Export tool.

For Windows:

- b. Navigate to Control Panel > System and click the Advanced tab. Click Environment Variables.
- c. In System variables section, click New.
- d. In the Variable Name field, enter NLS_LANG.
- e. In the Variable Value field, enter the NLS_LANG value that was returned in Step 1.

The format for the NLS_LANG value should be

[NLS_LANGUAGE]_[NLS_TERRITORY].[NLS_CHARACTERSET]

For example: American_America.AL32UTF8

For UNIX, set the variable as shown below:

```
export NLS_LANG=[NLS_LANGUAGE]_[NLS_TERRITORY].[NLS_CHARACTERSET]
```

For example: export NLS_LANG=American_America.AL32UTF8

4. From the command prompt navigate to the <ORACLE_HOME>\bin directory and run the Oracle Data Pump Import tool as follows:

```
impdp Oracleuser/Oracleuserpassword@databasename DIRECTORY=  
<Import_Dir_Name> DUMPFILE=<Export_Data_Filename> LOGFILE=  
<Import_Log_Filename> FULL=y
```

9. To create the schema, run these script files from Oracle SQL prompt with these commands:
Execute the .sql files from the extracted folder in the following sequence to update the database schema. Please mention full path to the .sql files in the below commands.

Run this command from the command prompt: sqlplus /nolog

Microsoft Windows operating system:

```
SQL> connect Oracleuser/Oracleuserpassword@databasename  
SQL> @"Script location\1_security_modeling_schema_modify_oracle.sql"  
SQL> @"Script location\2_security_modeling_constraints_oracle.sql"
```

UNIX, Linux, or AIX operating systems:

```
SQL> connect Oracleuser/Oracleuserpassword@databasename  
SQL> @"Script location\1_security_modeling_schema_modify_oracle.sql"  
SQL> @"Script location\2_security_modeling_constraints_oracle.sql"
```

10. Manually configure the RaPM to the newly created database.

C. Start the Tivoli Integrated Portal Server.