LAB 12 – DATA MOVEMENT UTILITIES

A. DATA MOVEMENT UTILITIES

DB2 supports various methods for data movement across the same and multi-platforms. In this exercise, we will go through the following data movement utilities.

1. DB2RELOCATEDB - transportable databases example

2. DB2LOOK   - DDL generation example

3. DB2MOVE   - table data movement across platforms example

4. EXPORT   - generate worksheet format data example

B. TRANSPORTABLE DATABASES

The db2reloactedb tool is for a copy or move of an entire DB2 database. This tool is very useful for fast and easy copying large database from one machine to another without having to rely on backup and restore operations. It is restricted to movement within the same platform however.

To demonstrate the transportable database feature, we will follow following steps:

1. Get in DB2 Command window.

2. Go to the directory `C:\POT\12 Data`

3. Run command `Data12001` to setup the database

   • `C:\POT\12 DATA>Data12001`

Note: The above command creates DATA database in DB2 instance. It creates two DMS table spaces in DATA database. It also creates a STRAWMAN table with 1000 rows. This script creates a DB2PROD instance if it does not exist.

After execution of above command, please go to the control center and check DATA database with DMS table spaces and STRAWMAN table to verify. We will copy this database from DB2 instance to DB2PROD instance.

---

4. Run command `Data12003` to copy database and DMS table spaces files using OS copy command.
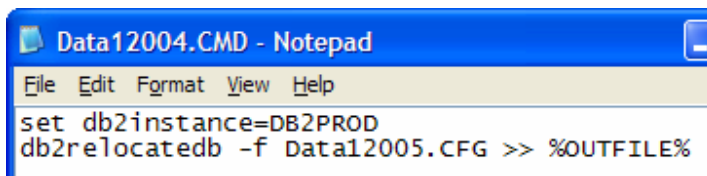
   - `C:\POT\12 DATA>Data12003`

   Note: The above command quiesces the DATA database to allow an OS copy. It copies the DATA database from C:\DB2 directory to C:\DB2PROD directory. It also copies DMS table spaces from C:\DB2 to C:\DB2PROD.

   After execution of the above command, please open the windows explorer. Check the C:\DB2PROD folder for files that this script copied from C:\DB2 folder.

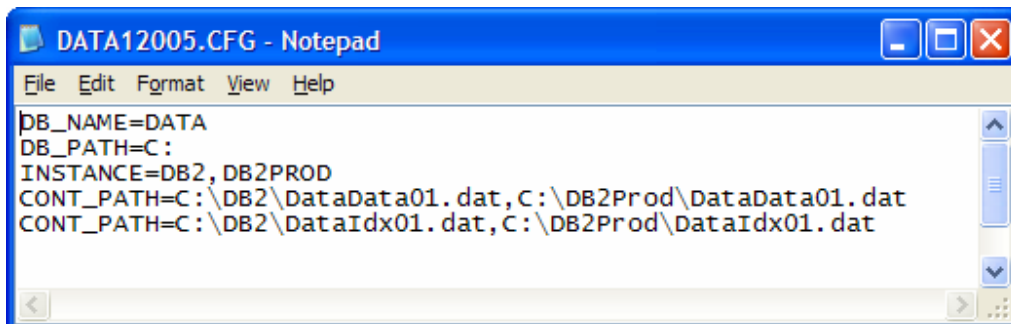5. Run command `Data12004` to execute db2relocatedb command.

   - `C:\POT\12 DATA>Data12004`

   Data12004.CMD - Notepad
   File Edit Format View Help
   ```
   set db2instance=DB2PROD
   db2relocatedb -f Data12005.CFG >> %OUTFILE%
   ```

   Note: The db2relocatedb command uses a configuration file Data12005.CFG to read the parameters to catalog DATA database in DB2PROD instances.

6. Review the configuration file `Data12005.CFG` used by db2relocatedb tool.

   DATA12005.CFG - Notepad
   File Edit Format View Help
   ```
   DB_NAME=DATA
   DB_PATH=C:
   INSTANCE=DB2,DB2PROD
   CONT_PATH=C:\DB2\DataData01.dat,C:\DB2Prod\DataData01.dat
   CONT_PATH=C:\DB2\DataIdx01.dat,C:\DB2Prod\DataIdx01.dat
   ```

   Oracle has a concept of transportable table spaces and this is very similar in concept, except that in DB2 it works at an entire database level.
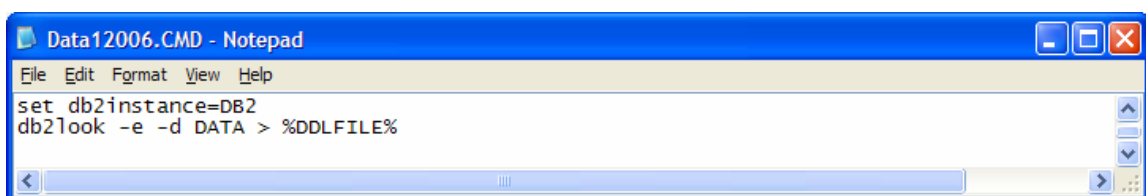
C. DB2LOOK

We can use db2look tool to capture DDL from an existing database. This is useful to recreate the same objects on the same or other DB2 platforms.

The db2look tool allows to generate DDL on all or selected objects. Please see the different options of this tool as given in file "`Data DB2LOOK Command.TXT`".

1. Run command `Data12006` to create DDL from DATA database in DB2 instance.
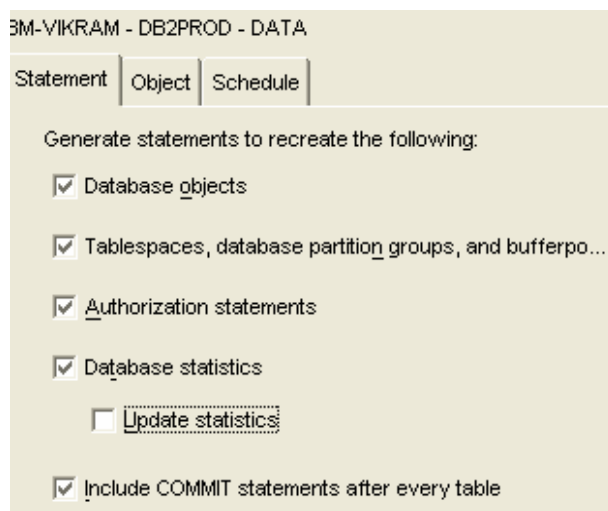
   - `C:\POT\12 DATA>Data12006`

2. Run command `Data12007` to re-create tables from DDL in DATA database in DB2PROD instance.

   - `C:\POT\12 DATA>Data12007`

3. We can also use Control center to generate DDL for objects in a database. Run Control Center and right click on the database. Choose the "Generate DDL" option. It will launch a GUI to allow you to select scheme and objects for generating the DDL.
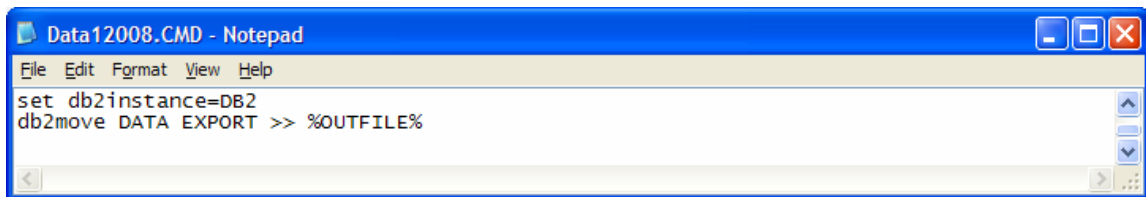
D. DB2MOVE

We can use db2move tool to move data between the same or different platforms. The db2move tool uses DB2 utilities IMPORT, EXPORT and LOAD in the background to perform unload and load operations.

The db2move tool allows to perform unload and load operations on all or selected objects. Please see the syntax diagram of this tool as given in file "`Data DB2MOVE Command.TXT`."

In our previous exercise of "Transportable Databases," we had created DB2PROD instance and copied DATA database from DB2 instance. We will unload tables from DATA database and load them in same database under DB2PROD instance using the db2move tool.

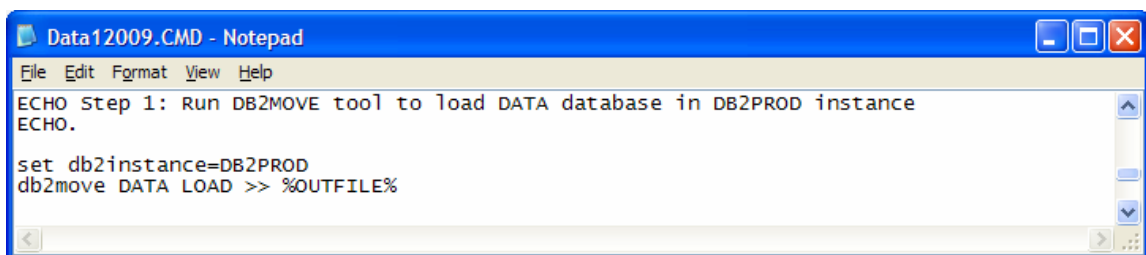1. Run command `Data12008` to unload tables from DATA database of DB2 instance.

   - `C:\POT\12 DATA>Data12008`

```
Data12008.CMD - Notepad
File  Edit  Format  View  Help
set db2instance=DB2
db2move DATA EXPORT >> %OUTFILE%
```

2. Run command `Data12009` to load data from tables unloaded in the previous step.

   - `C:\POT\12 DATA>Data12009`

```
Data12009.CMD - Notepad
File  Edit  Format  View  Help
ECHO Step 1: Run DB2MOVE tool to load DATA database in DB2PROD instance
ECHO.

set db2instance=DB2PROD
db2move DATA LOAD >> %OUTFILE%
```

Note: db2move accepts two loading options, IMPORT and LOAD. If we use the IMPORT option, the table definition can be recreated from the IXF file. But in case of the LOAD option, the table must be present in target database. The db2look utility should be used to generate other objects like indexes, referential integrity, triggers, etc. in the target database.

E. EXPORT (WSF FORMAT)

We can use DB2 export to unload data from a table in a worksheet format. (Delimited format and IXF are also supported by export, but we are not showing that here.) The WSF format can be viewed in a spreadsheet application.

1. Run command `Data12010` to unload data from STRAWMAN table in a WSF format.

   • `C:\POT\12 DATA>Data12010`

   Note: You may receive a SQL3035N error if the number of rows to be unloaded through EXPORT exceeds 8191. This is in view of the limitation of the worksheet applications unable to handle more than 8191 rows. However, the export will continue but the number of rows will be limited to 8191 rows.

F. CLEANUP

Run the following command to clean up DATA database from DB2 instance and drop DB2PROD instance.

   • `C:\POT\10 Data>Data12100`