

## Running MQSMFCSV - Day 2 Lab #2

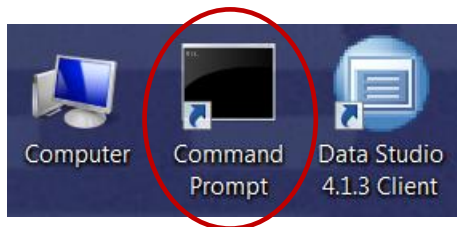


## Lab Objective

This lab goes thru the steps to run MQSMFCSV to generate the DDL, creates the database, then loads and defines the table. You will use both the Db2 command line processor or Data Studio.

## Lab Steps

- 1) Start a command prompt window from the desktop.



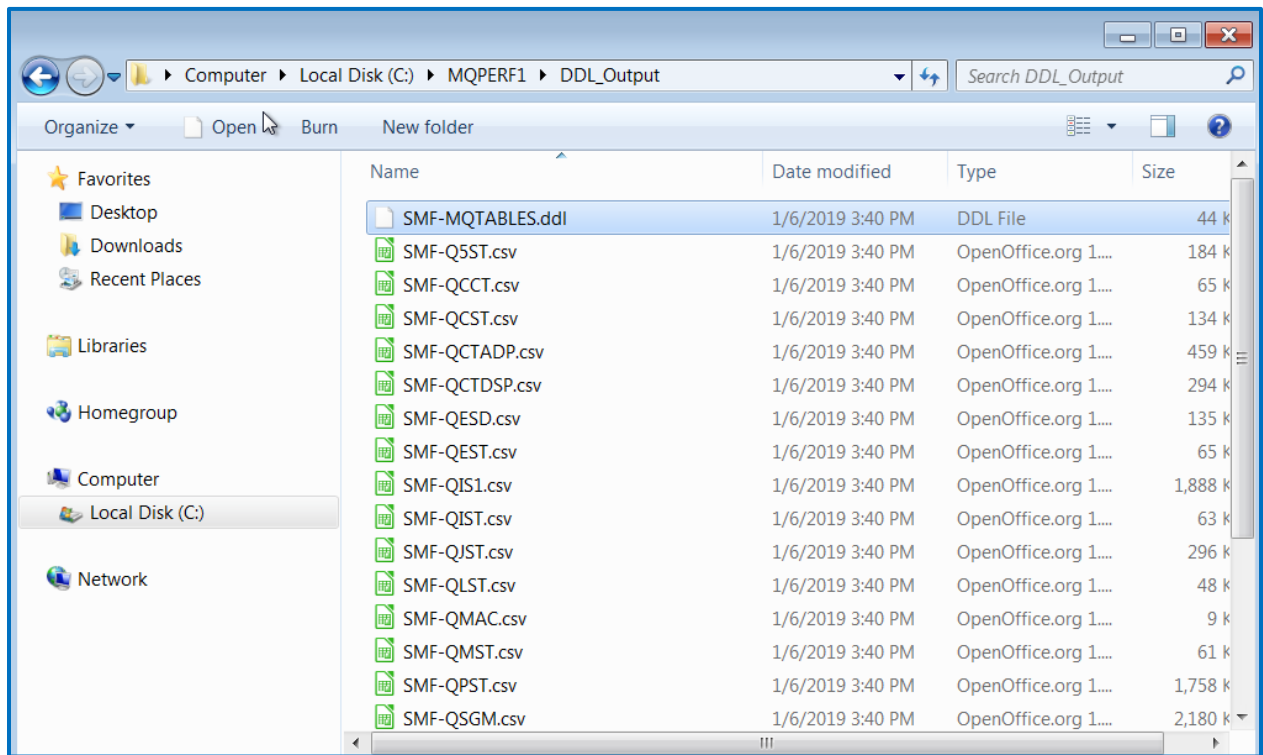
- 2) In the command prompt pane, enter the command to run MQSMFCSV to generate the DDL to define and load the tables for Db2. The command (shown below) may be copied from C:\MQPERF1\Lab\_Info\RunningMQSMFCSV\MQSMFCSV\_CreatedDDL.txt

```
mqsmfcsv -i C:\MQPERF1\Sample_SMF\TESTPUT1_MQSMF.bin -o C:\MQPERF1\DDL_Output -f RDW,SQL -bDb2
```

- 3) This output from this execution looks like the output from the previous lab.

```
C:\Users\workstation>mqsmfcsv -i C:\MQPERF1\Sample_SMF\TESTPUT1_MQSMF.bin -o C:\MQPERF1\DDL_Output -f RDW,SQL -bDb2
MQ SMF CSU - Build Sep 18 2018 09:58:14
Swapping bytes in input records
Input file: TESTPUT1_MQSMF.bin. Format: RDW.
Processed 8293 records total at 11 MB/sec
Ignored record count: 2
Formatted 115 subtype 1 record count: 516
Formatted 115 subtype 2 record count: 516
Formatted 115 subtype 5 record count: 516
Formatted 115 subtype 6 record count: 516
Formatted 115 subtype 7 record count: 516
Formatted 115 subtype 201 record count: 517
Formatted 115 subtype 215 record count: 517
Formatted 115 subtype 231 record count: 516
Formatted 116 subtype 0 record count: 40
Formatted 116 subtype 1 record count: 4104
Formatted 116 subtype 10 record count: 17
C:\Users\workstation>_
```

- 4) Navigate to the output directory, C:\MQPERF1\DDL\_Output  
The contents of the directory should look as is shown.



- 5) The ddl file is the data definition language to create the tables and the Db2 commands to load the data from the csv files. Open the file with notepad.

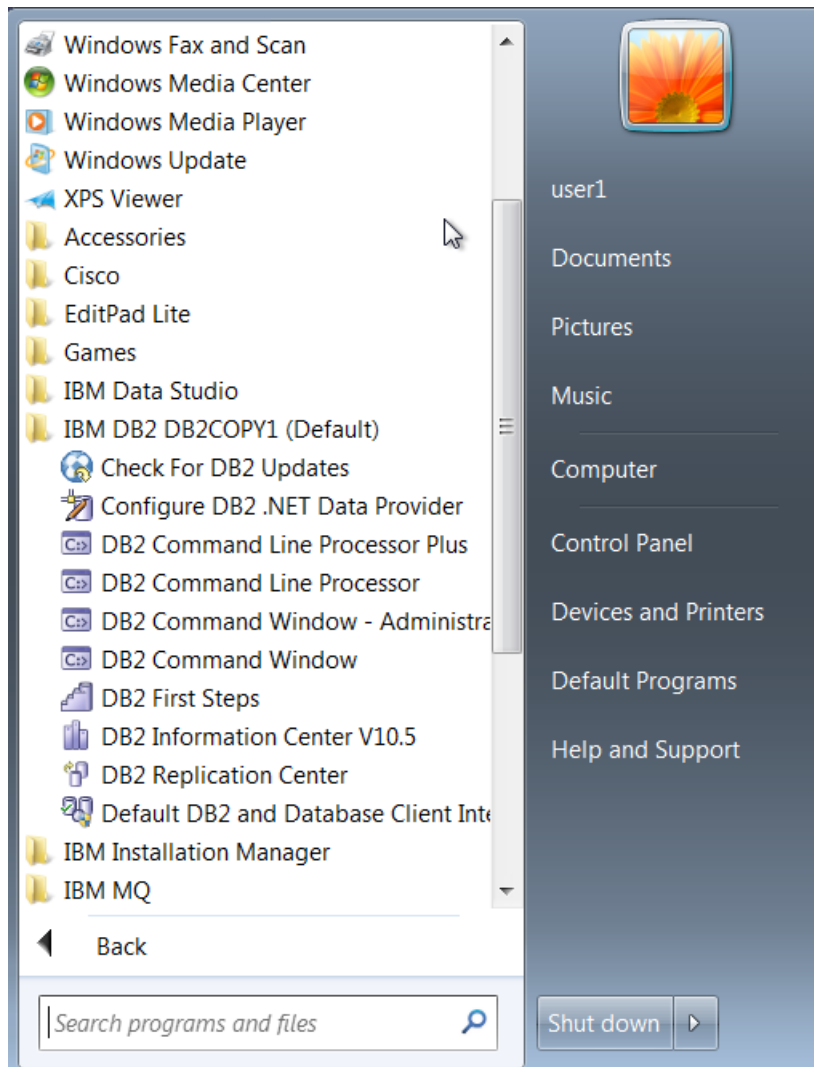
```

SMF-MQTABLES.ddl - Notepad
File Edit Format View Help
CREATE BUFFERPOOL MQP8K IMMEDIATE ALL DBPARTITIONNUMS SIZE 1000 AUTOMATIC PAGESIZE 8192;
CREATE TABLESPACE MQP8K PAGESIZE 8192 BUFFERPOOL MQP8K;

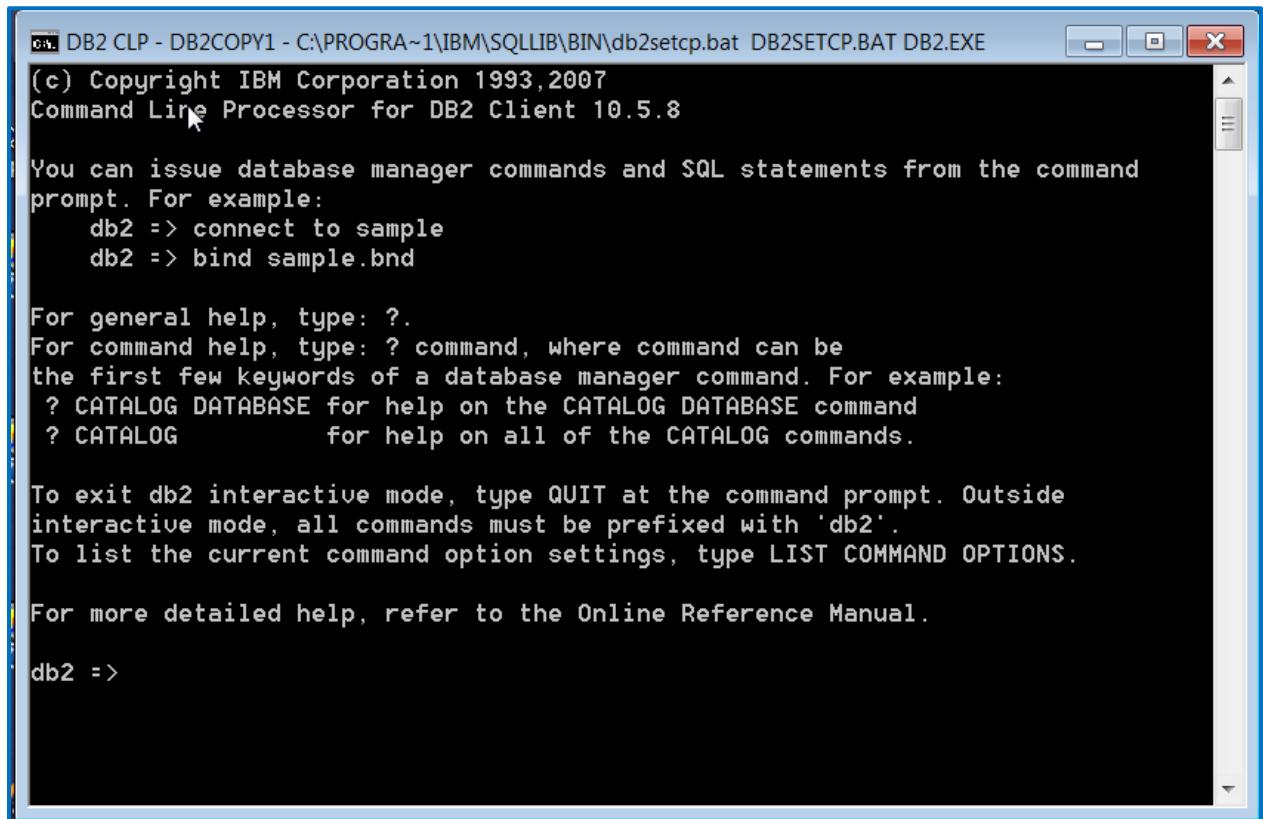
DROP TABLE MQSMF.QIS1;
CREATE TABLE MQSMF.QIS1 (
    Date DATE
    , Time CHAR(16)
    , LPAR CHAR(4)
    , QMgr CHAR(4)
    , MQ_Version CHAR(3)
    , Interval_Start_Date DATE
    , Interval_Start_Time CHAR(19)
    , Interval_Duration BIGINT
    , Pageset BIGINT
    , BufferPool BIGINT
    , Pageset_Status BIGINT
    , Total_Pages BIGINT
    , Unused_Pages BIGINT
    , Persistent_Pages BIGINT
    , Nonpersistent_Pages BIGINT
    , Full_Count BIGINT
    , Put_Cursor_High BIGINT
    , Page_Write_IO BIGINT
    , Pages_Written BIGINT

```

- 6) There are several commands that help with control of the database and tables, everything from the large pagesize to hold the large WQ records, to indexes on several of the tables to help make some queries more efficient. If you'd like, scroll thru the DDL looking for the various records.
- 7) The next step to is create the database. This can be done under data studio, but there are currently occasional issues with data studio when creating databases, there is an open problem ticket on this. So for this session, we will create the database via command line.
- 8) From the start menu, select the DB2 Command Line Processor:



- 9) The command prompt should look as follows:

A screenshot of a Windows command prompt window titled "DB2 CLP - DB2COPY1 - C:\PROGRA~1\IBM\SQLLIB\BIN\db2setcp.bat DB2SETCP.BAT DB2.EXE". The window has a black background with white text. It displays the following text: "(c) Copyright IBM Corporation 1993,2007", "Command Line Processor for DB2 Client 10.5.8", "You can issue database manager commands and SQL statements from the command prompt. For example:", "db2 => connect to sample", "db2 => bind sample.bnd", "For general help, type: ?.", "For command help, type: ? command, where command can be the first few keywords of a database manager command. For example:", "? CATALOG DATABASE for help on the CATALOG DATABASE command", "? CATALOG for help on all of the CATALOG commands.", "To exit db2 interactive mode, type QUIT at the command prompt. Outside interactive mode, all commands must be prefixed with 'db2'.", "To list the current command option settings, type LIST COMMAND OPTIONS.", "For more detailed help, refer to the Online Reference Manual.", and "db2 =>".

```
DB2 CLP - DB2COPY1 - C:\PROGRA~1\IBM\SQLLIB\BIN\db2setcp.bat DB2SETCP.BAT DB2.EXE
(c) Copyright IBM Corporation 1993,2007
Command Line Processor for DB2 Client 10.5.8

You can issue database manager commands and SQL statements from the command
prompt. For example:
  db2 => connect to sample
  db2 => bind sample.bnd

For general help, type: ?.
For command help, type: ? command, where command can be
the first few keywords of a database manager command. For example:
? CATALOG DATABASE for help on the CATALOG DATABASE command
? CATALOG          for help on all of the CATALOG commands.

To exit db2 interactive mode, type QUIT at the command prompt. Outside
interactive mode, all commands must be prefixed with 'db2'.
To list the current command option settings, type LIST COMMAND OPTIONS.

For more detailed help, refer to the Online Reference Manual.

db2 =>
```

- 10) The command to create the database can be found in  
C:\MQPERF1\Lab\_Info\RunningMQSMFCSV\Create\_Database.txt

```
CREATE DATABASE MQPERF1 AUTOMATIC STORAGE YES ;
```

- 11) The response from the create should be:

```
db2 => CREATE DATABASE MQPERF1 AUTOMATIC STORAGE YES ;
DB20000I  The CREATE DATABASE command completed successfully.
db2 =>
```

- 12) To define and load the tables, first connect to the database using the connect command as shown, 'connect to MQPERF1;':

```
db2 => connect to MQPERF1;

Database Connection Information

Database server      = DB2/NT64 10.5.8
SQL authorization ID = ELKINSC
Local database alias = MQPERF1

db2 => _
```

The semicolon terminates the command to Db2, if you leave it off you can enter it on the next line.

- 13) Quit the DB2 commands using the quit command (as shown), but DO NOT CLOSE THE WINDOW!

```
db2 => quit;
DB20000I The QUIT command completed successfully.
C:\Program Files\IBM\SQLLIB\BIN>
```

- 14) Change to the C:\MQPERF1\Lab\_Info\BATFiles directory.

```
cd C:\MQPERF1\Lab_Info\BATFiles
```

- 15) Execute the MQPERF1\_Load batch file.

```
C:\MQPERF1\Lab_Info\BATFiles>MQPERF1_Load_
```

- 16) The load process is likely to be very quick. The final load task looks as follows:

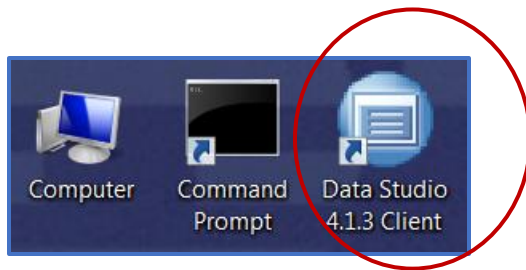
```
SQL3515W The utility has finished the "BUILD" phase at time "01/06/2019
16:57:41.985973".

Number of rows read      = 4104
Number of rows skipped   = 0
Number of rows loaded    = 4104
Number of rows rejected  = 0
Number of rows deleted   = 0
Number of rows committed = 4104

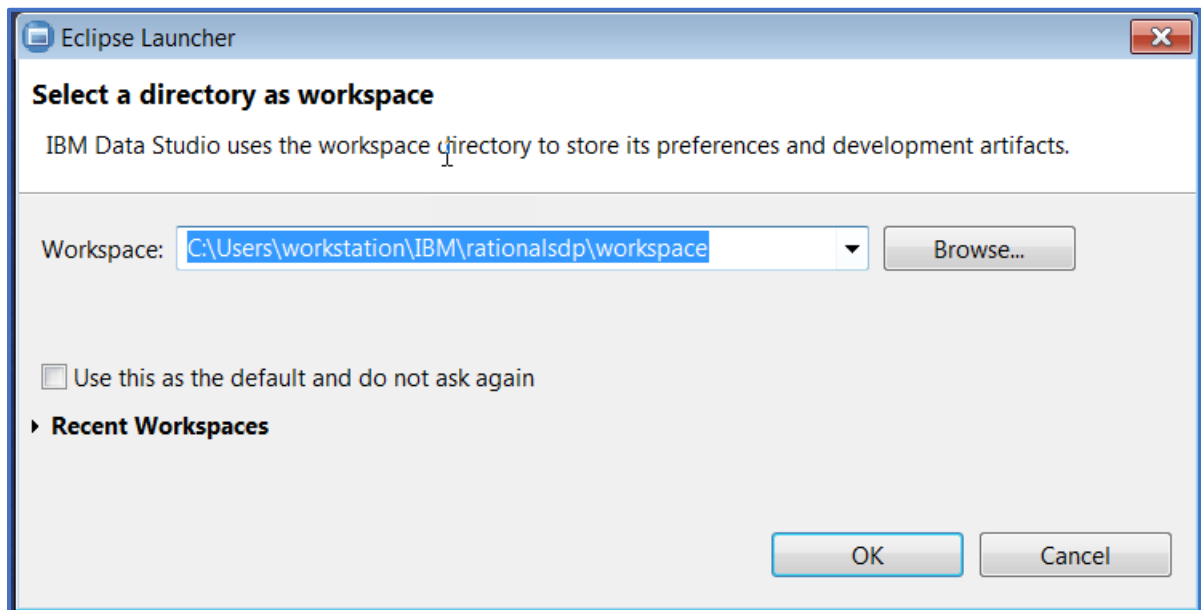
C:\MQPERF1\Lab_Info\BATFiles>
```

- 17) CONGRATS! You have successfully loaded the tables!

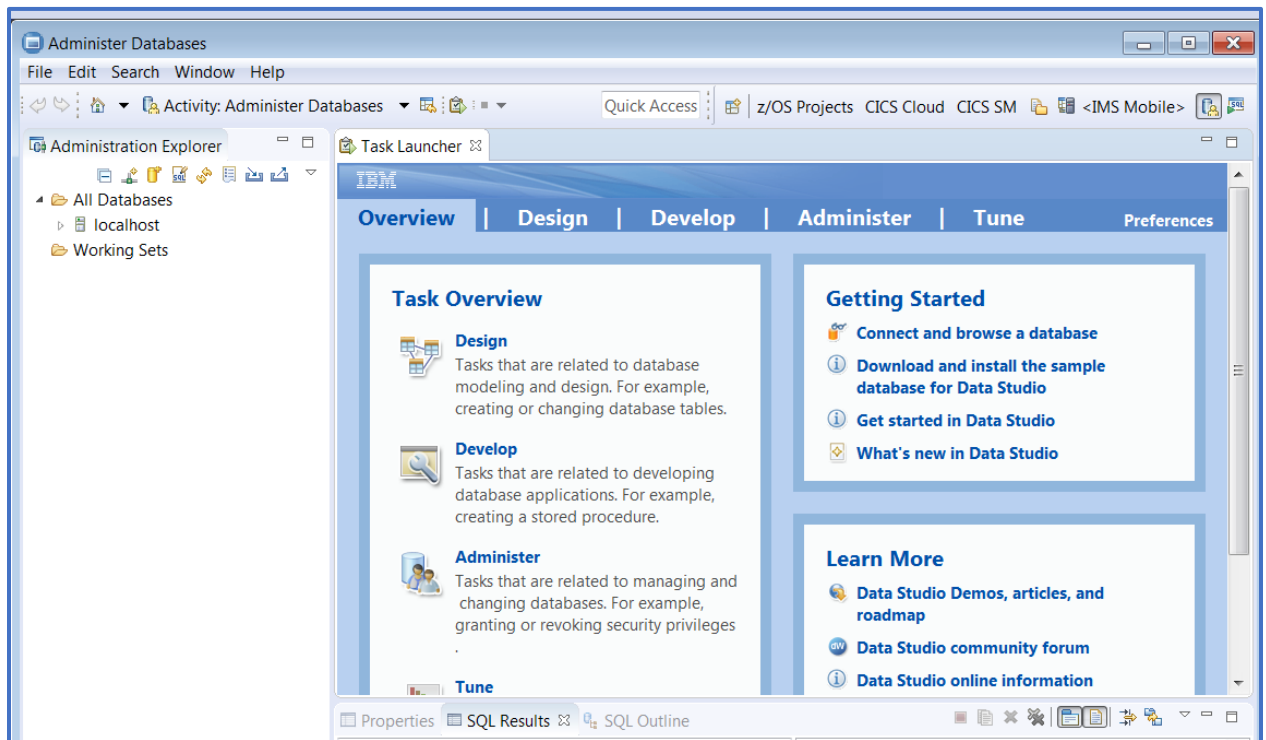
- 18) From the desktop double click on the Data Studio Client:



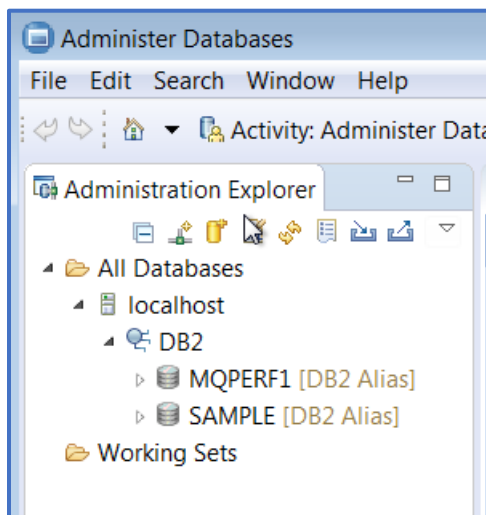
19) The Eclipse Launcher will ask for the workspace, just click on OK



- 20) The Administrator Explorer pane should come up, if not the correct perspective needs to be opened up.



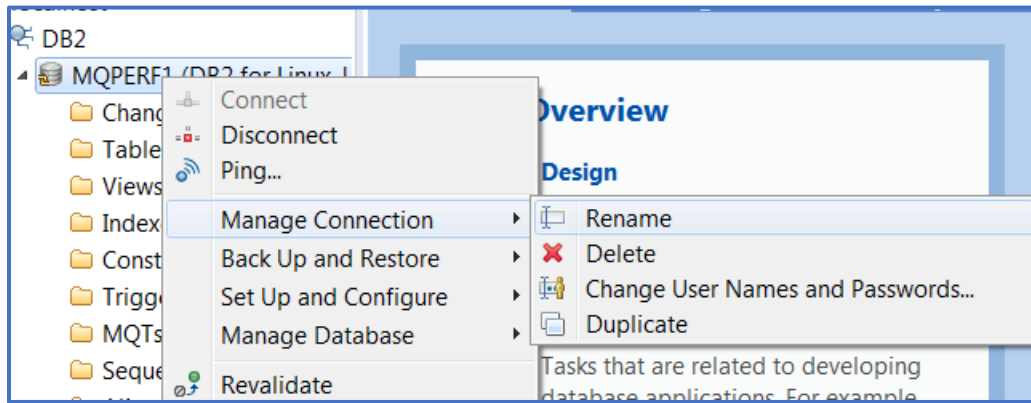
- 21) Expand the localhost tab, and the DB2 tab below it:



- 22) Right click on MQPERF1 and select 'connect.' If you have trouble connecting, the user ID and password associated with the connection may need to be changed. If you are able to connect successfully, skip to step 26.



- 23) If you have trouble connecting, right click on the MQPERF1 tab and select 'Manage Connection' then 'Change User Names and Passwords'



24) The Change User Names and Passwords pane is opened (as shown)

Change User Names and Passwords in Connection Profiles

Select a connection profile and type a user name, password, or both. You can select multiple connection profiles to apply the same changes to

Filter:

	Connection Profile	User Name
<input checked="" type="checkbox"/>	localhost - DB2 - ...	user1
<input type="checkbox"/>	BIRT Classic Model...	ClassicModels
<input type="checkbox"/>	localhost - DB2 - S...	user1

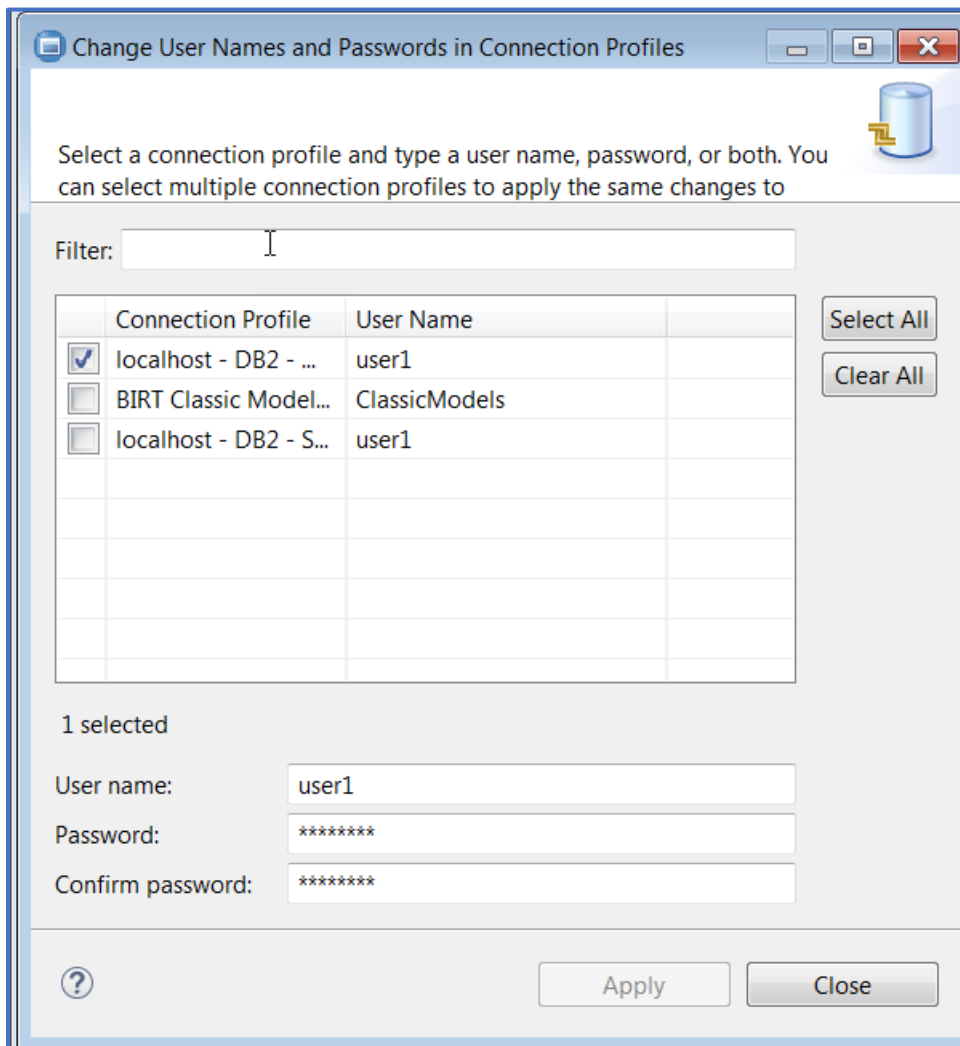
1 selected

User name:

Password:

Confirm password:

- 25) Overtyping the user1 at the bottom on the pane with user1, and replace the password and confirm password values with that most secure password 'passw0rd' (the o has been replaced with a zero). Then click on 'Apply'.



Change User Names and Passwords in Connection Profiles

Select a connection profile and type a user name, password, or both. You can select multiple connection profiles to apply the same changes to

Filter:

	Connection Profile	User Name
<input checked="" type="checkbox"/>	localhost - DB2 - ...	user1
<input type="checkbox"/>	BIRT Classic Model...	ClassicModels
<input type="checkbox"/>	localhost - DB2 - S...	user1

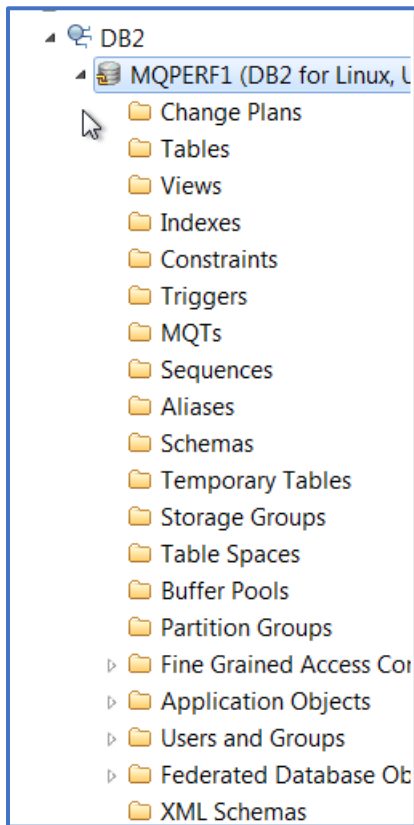
1 selected

User name:

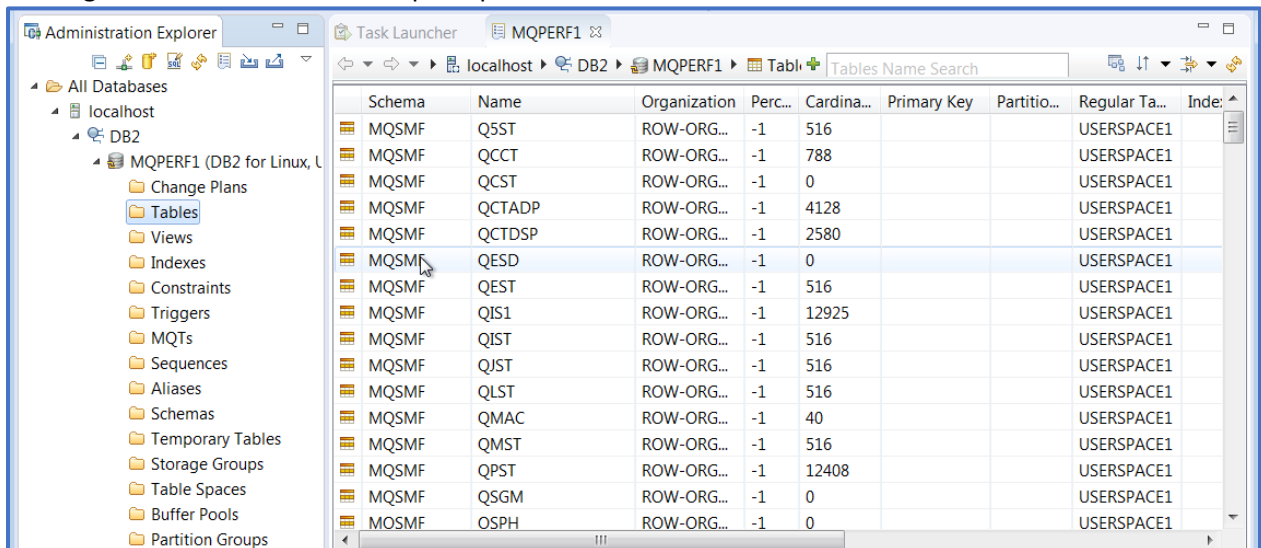
Password:

Confirm password:

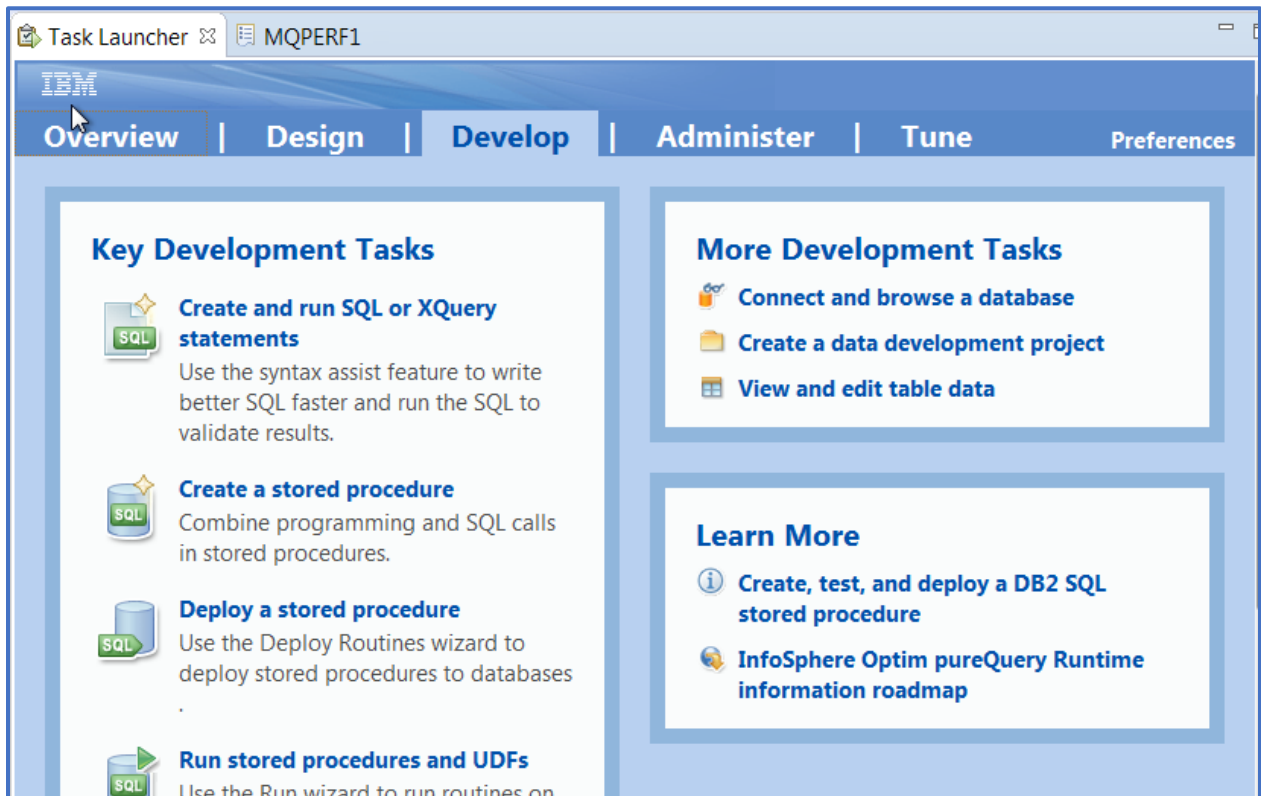
26) You should be able to see the resources list at this point.



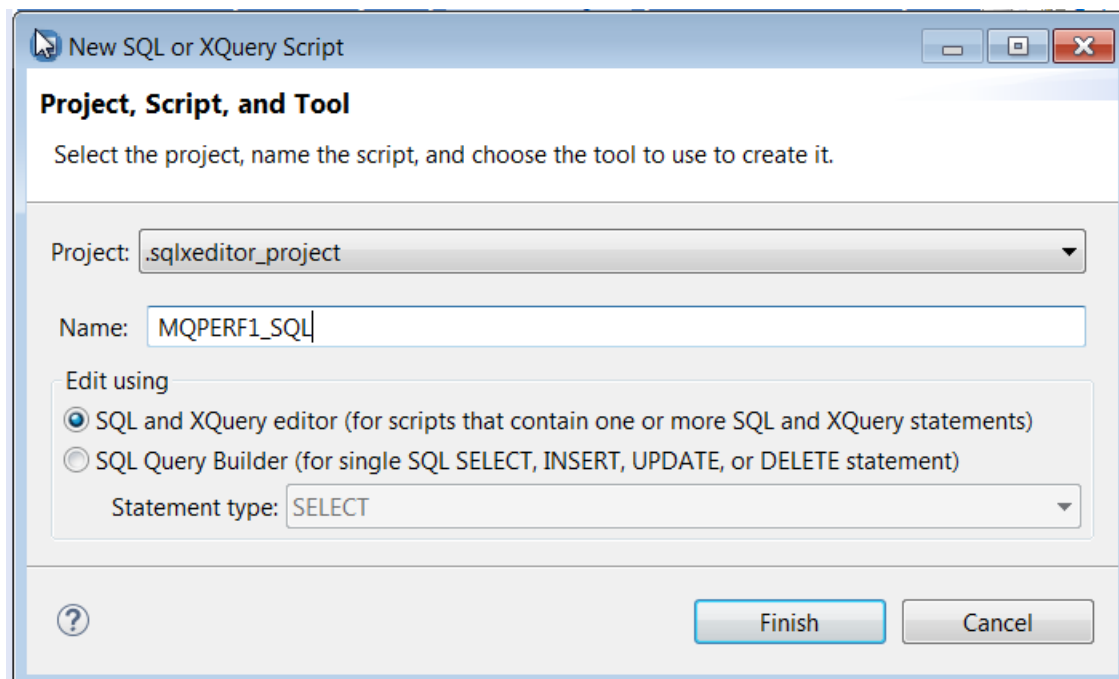
27) Clicking on the Tables folder will open up the tables list and show the number of rows in that table.



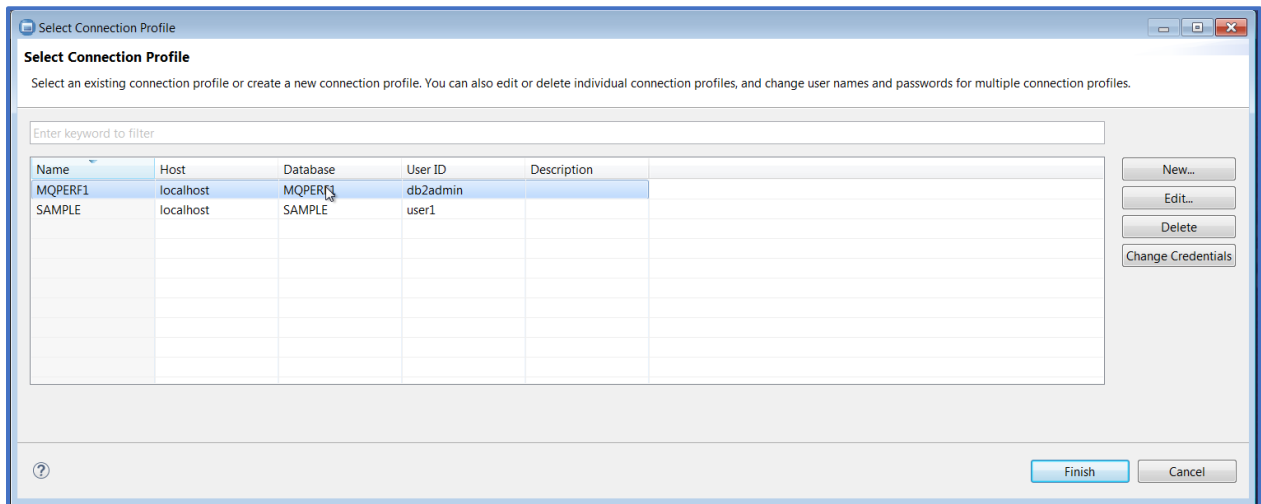
28) Click on the 'Task Launcher' tab, then click on the 'Develop' tab.



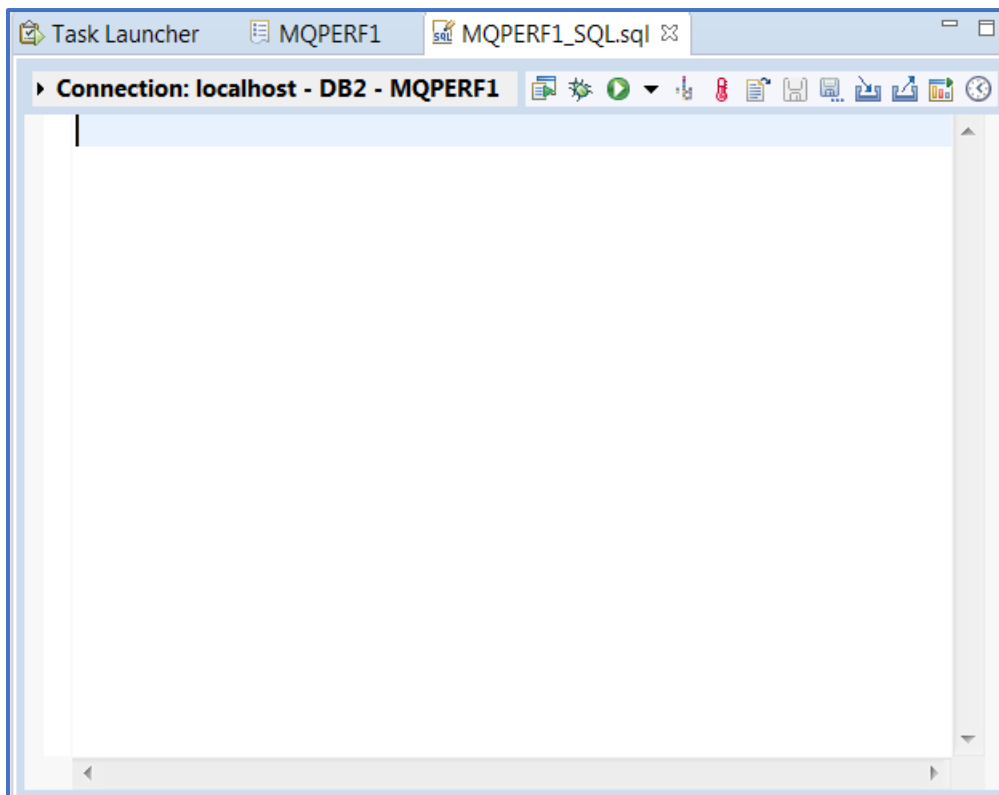
29) Under Key Development Tasks, click on 'Create and run SQL or XQuery statements.' This will bring up the New SQL pane. Enter the name MQPERF1\_SQL and hit Finish.



30) Select the MQPERF1 connection from the list and click the Finish button.

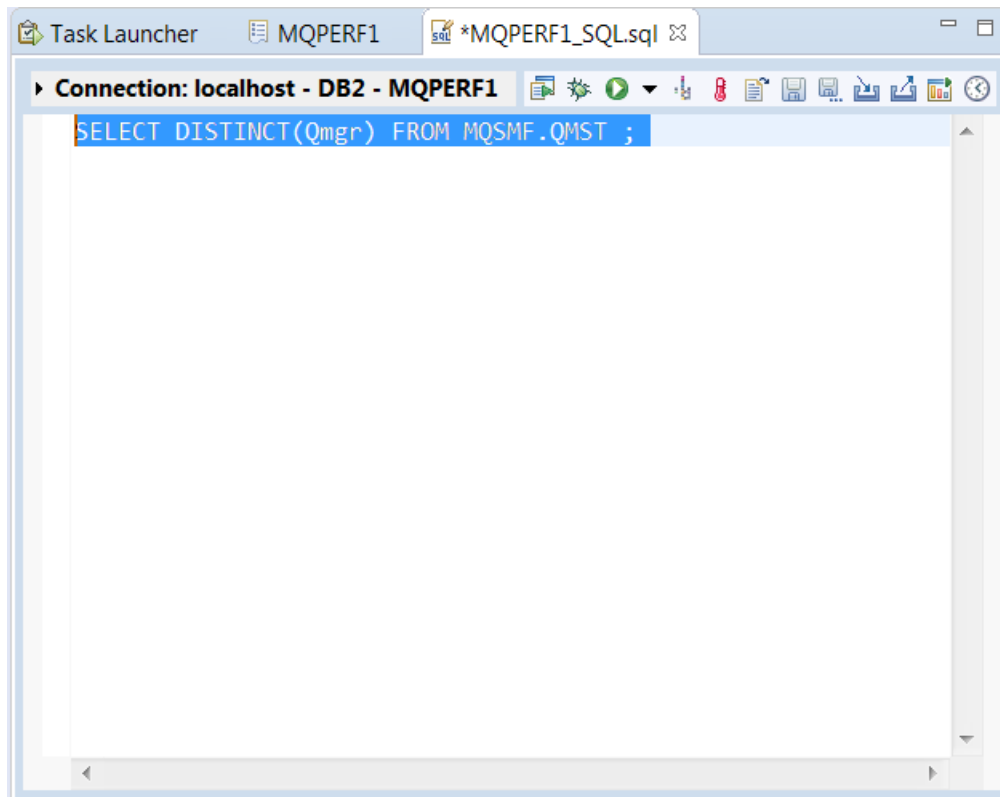


31) A blank canvas should open up for the SQL development.



32) A first simple query, we will find out which queue managers are represented in the data. Enter the SQL

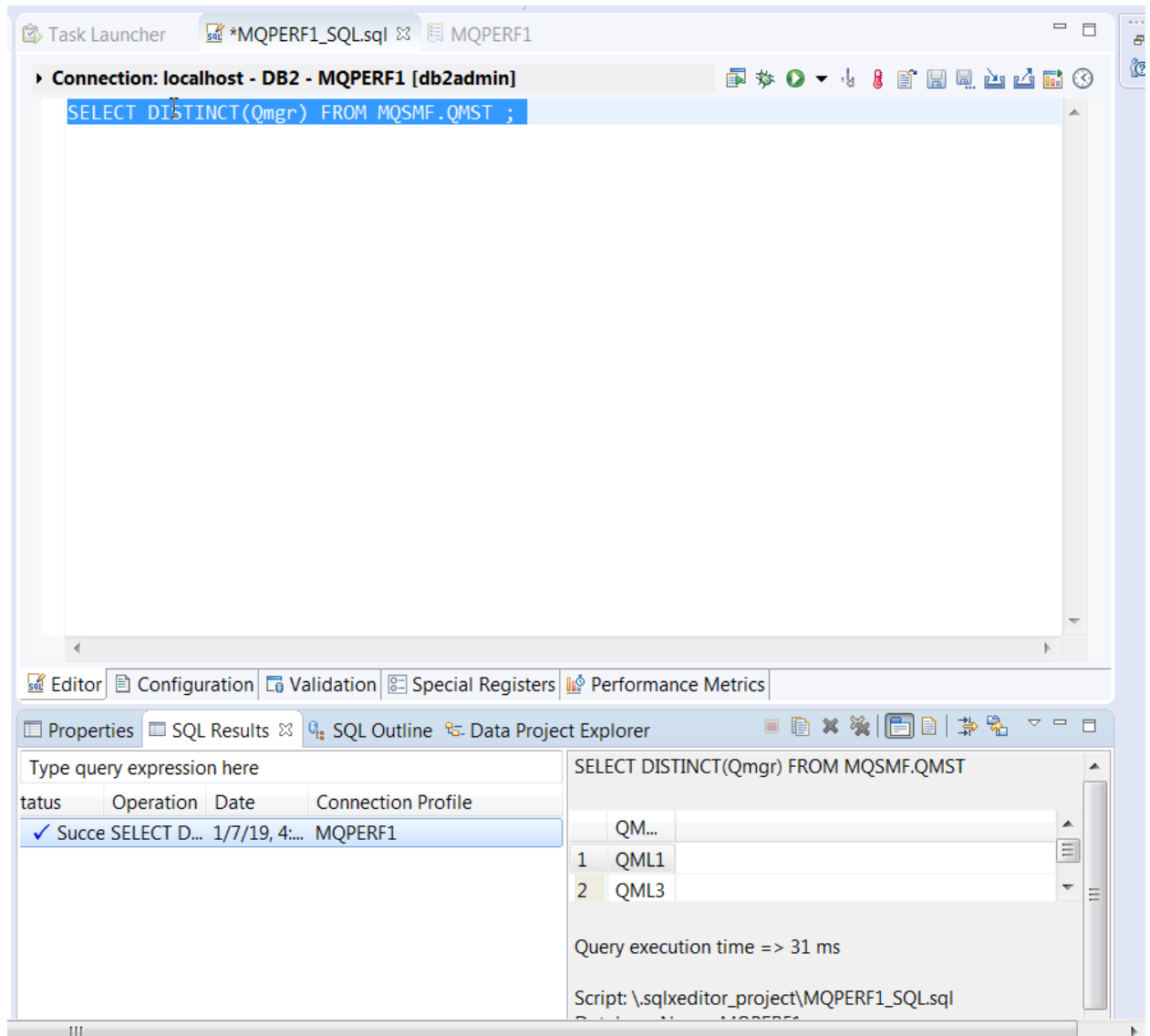
```
SELECT DISTINCT(Qmgr) FROM MQSMF.QMST ;
```



33) Hit the green right pointing arrow to execute the SQL.



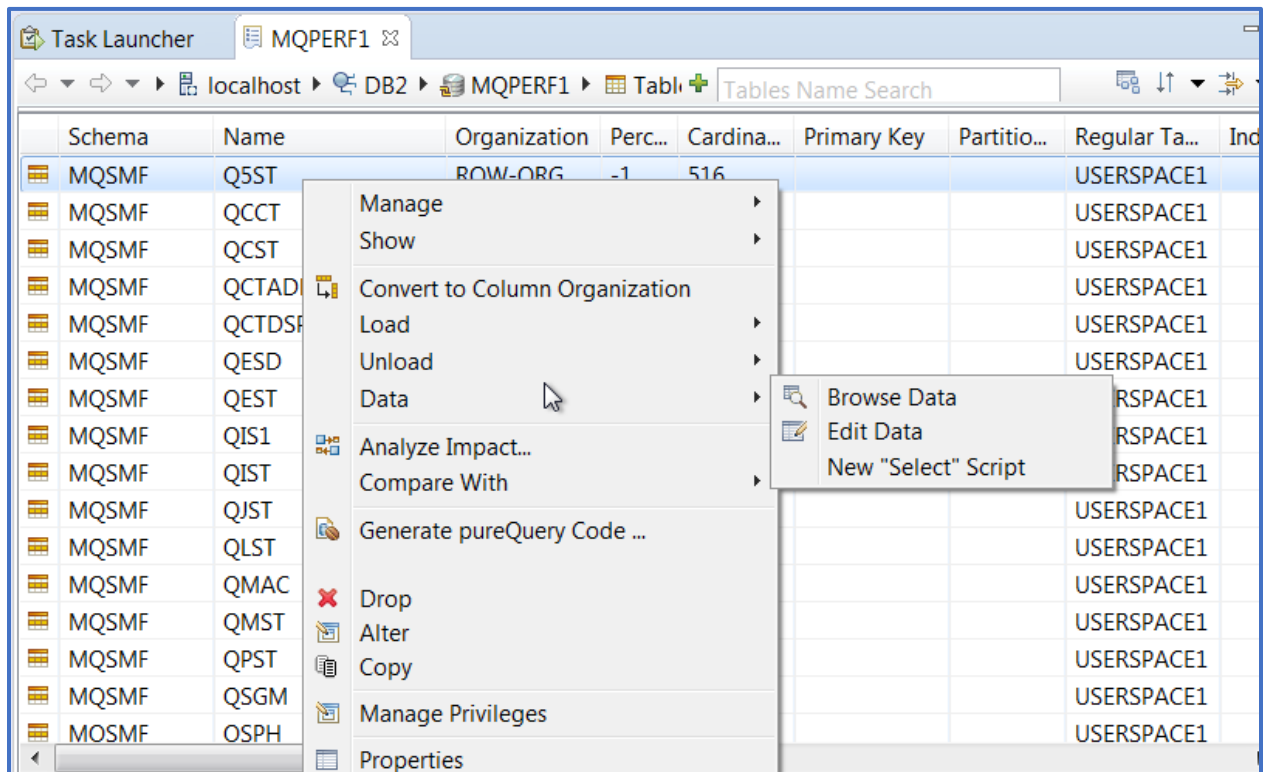
- 34) The query should run and the results should show up in the 'results' tab and show that the data contains information from 2 queue managers, QML1 and QML3



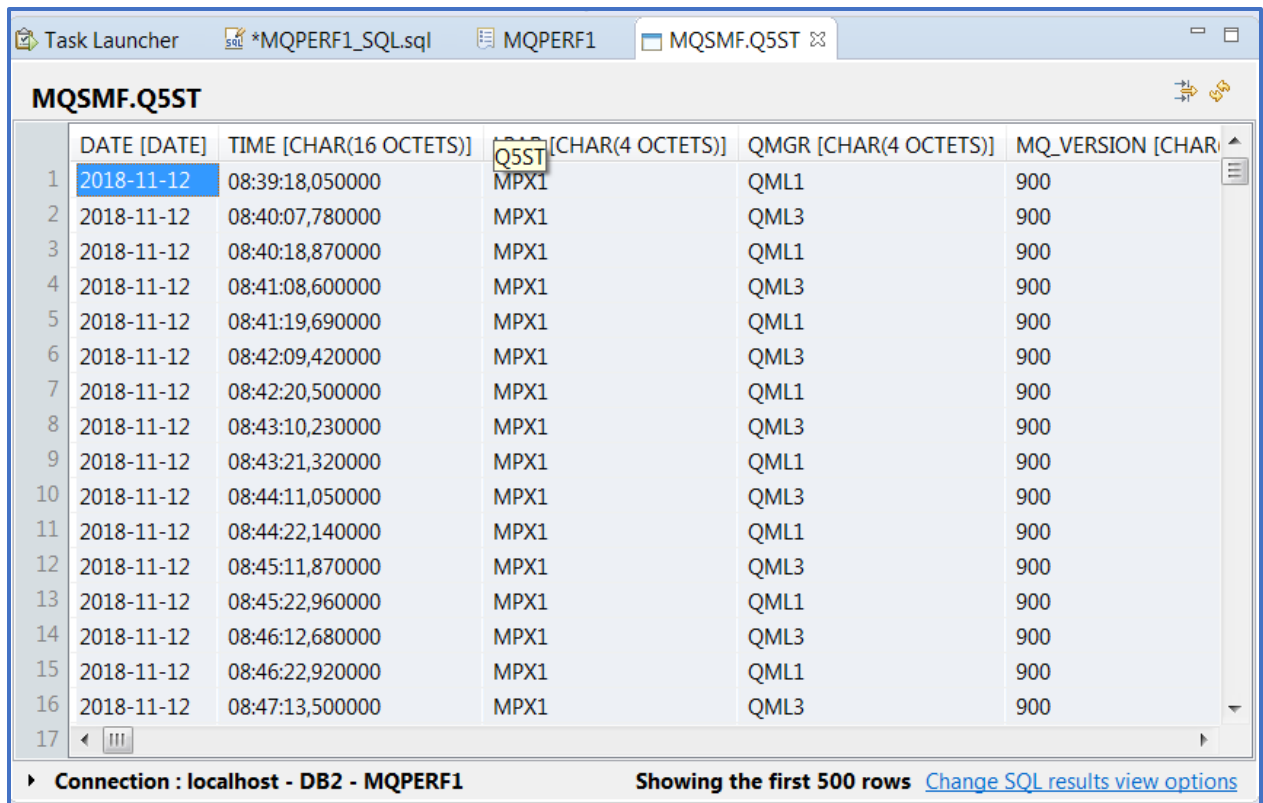


35) Click on the MQPRF1 table above the SQL pane.

36) Right click on the Q5ST table, and select Data, then Browse Data



37) The data, or by default the first 500 rows will be displayed:



**MQSMF.Q5ST**

	DATE [DATE]	TIME [CHAR(16 OCTETS)]	Q5ST [CHAR(4 OCTETS)]	QMGR [CHAR(4 OCTETS)]	MQ_VERSION [CHAR(4 OCTETS)]
1	2018-11-12	08:39:18,050000	MPX1	QML1	900
2	2018-11-12	08:40:07,780000	MPX1	QML3	900
3	2018-11-12	08:40:18,870000	MPX1	QML1	900
4	2018-11-12	08:41:08,600000	MPX1	QML3	900
5	2018-11-12	08:41:19,690000	MPX1	QML1	900
6	2018-11-12	08:42:09,420000	MPX1	QML3	900
7	2018-11-12	08:42:20,500000	MPX1	QML1	900
8	2018-11-12	08:43:10,230000	MPX1	QML3	900
9	2018-11-12	08:43:21,320000	MPX1	QML1	900
10	2018-11-12	08:44:11,050000	MPX1	QML3	900
11	2018-11-12	08:44:22,140000	MPX1	QML1	900
12	2018-11-12	08:45:11,870000	MPX1	QML3	900
13	2018-11-12	08:45:22,960000	MPX1	QML1	900
14	2018-11-12	08:46:12,680000	MPX1	QML3	900
15	2018-11-12	08:46:22,920000	MPX1	QML1	900
16	2018-11-12	08:47:13,500000	MPX1	QML3	900
17					

Connection : localhost - DB2 - MQPERF1      Showing the first 500 rows [Change SQL results view options](#)

- 38) Scroll to the right to see the rest of the columns.
- 39) Note that the larger record types, like WQ will not display as delivered as there are too many columns.
- 40) Using Data Studio can help with crafting queries when you are new to SQL and the MQ SMF data. It will offer hints about structure of requests that can shave a great deal of time off development. It can also help, when looking for that one bit of specific information, like what is the oldest message retrieved from a particular queue – the response to that can indicate that messages are not being processed quickly enough, or that messages that have expired or cannot be processed for one reason or another are languishing on a queue. This information can help focus efforts when looking for a performance or responsiveness problem.

