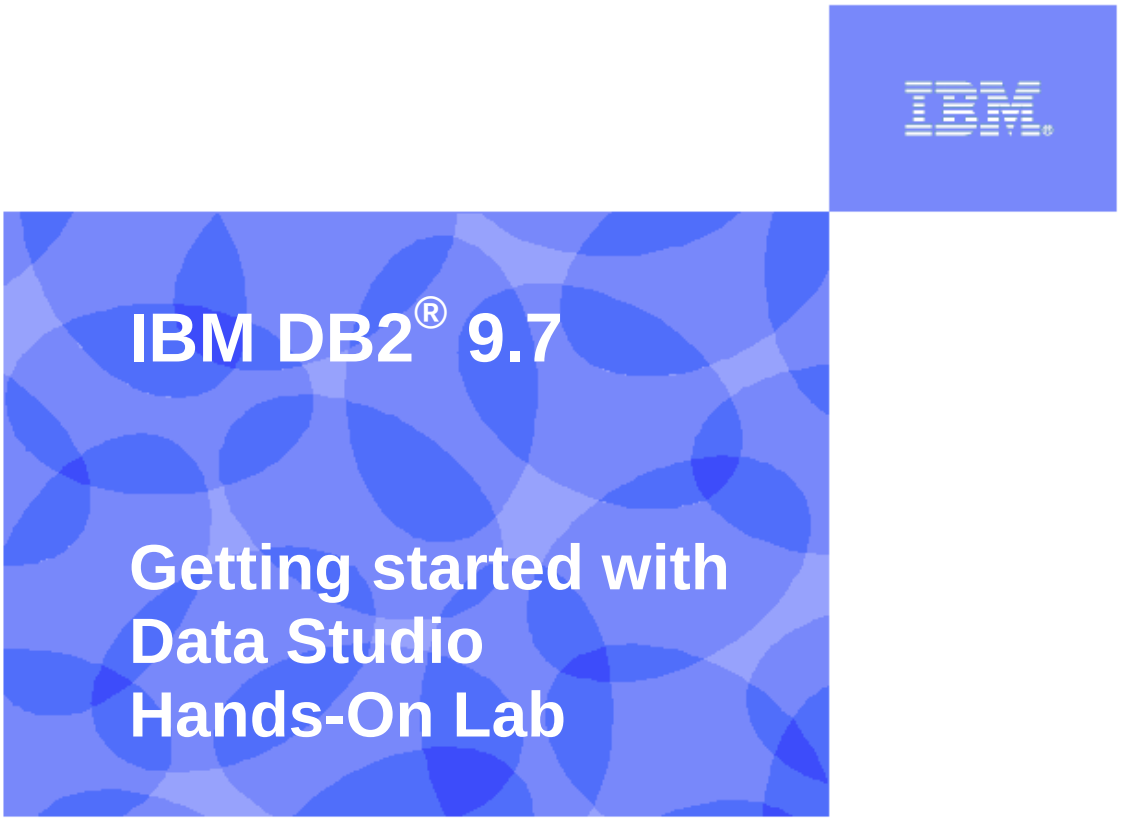


Information Management Cloud Computing Center of Competence

IBM Canada Lab

Contents

1. Introduction

Data Studio is a free Eclipse-based tool that can be used for database administration and development.

2. Objectives

By the end of this lab, you will be able to:

- Understand the basics of the Eclipse-based environment
- Establish a database connection
- Modify database parameters
- Start and stop a DB2 instance

3. Suggested reading

Getting started with IBM Data Studio for DB2 (Chapters 1-3)
https://www.ibm.com/developerworks/wikis/display/db2oncampus/FREE+ebook+-+Getting+started+with+IBM+Data+Studio+for+DB2

A free eBook that can quickly get you up to speed with IBM Data Studio

IBM Data Studio Information Center
http://publib.boulder.ibm.com/infocenter/idm/v2r2/index.jsp

A repository complete with tutorials on developing and administering with IBM Data Studio.

4. Getting Started: The Basics of IBM Data Studio

This section of the lab introduces you to the basics of IBM Data Studio and how you can quickly get up and running with it.

After completing this section, you will be able to:

- Launch Data Studio
- Create a new database connection
- Disconnect and reconnect to a database

4.1 Eclipse Fundamentals

IBM Data Studio is built upon the Eclipse platform and, as such, is said to be an Eclipse-based development environment. The Eclipse platform is a framework that allows integrated development environments (IDE) to be created; plug-ins exist to allow development in Java, C/C++, PHP, COBOL, Ruby, and more. Developers using Eclipse will appreciate the familiar look and feel that IBM Data Studio offers.

4.1.1 Data Organization – Workspaces and Projects

In an Eclipse-based environment, all development takes place within a *project*, which is a directory that contains all of the source code, graphics, and other collateral. This is a concept with which most are familiar from using other IDE's. In Data Studio, you will typically work with *Data Development* projects, but other project types exist for Java development, web development, and more.

Each project you create must be contained within a *workspace*, which is a directory in your file system. A workspace directory contains subdirectories for each of the projects

created within it. For example, Figure 4-1 demonstrates a scenario in which a workspace has been created on the path `/workspace`, and three projects – BankApp, BookStore, and WebSite – have been created within the workspace. Notice that the projects have all been created as subdirectories of `/workspace`.

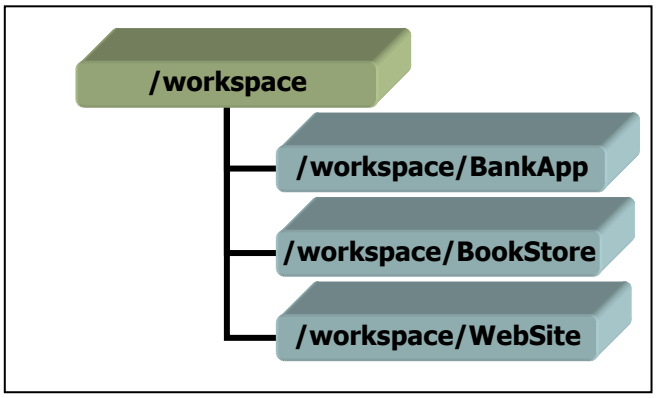


Figure 4-1 – Workspace-project hierarchy

In an Eclipse-based environment, workspaces and projects can easily be navigated via the *Project Explorer* view (we'll cover views in an upcoming section).
When an Eclipse-based environment is opened, the user chooses which workspace to use in the dialog displayed in Figure 4-2. It is possible to create a new workspace by entering a new, non-existent path, or to work with an existing workspace by specifying an existing path.

Additionally, users can choose to only work with one particular workspace (and to never be bothered again!) by checking the **Use this as the default and do not ask again** checkbox. Of course, this can always be undone by modifying a setting in the program preferences.

Figure 4-2 – Workspace selection

Figure 4-3 shows how the workspace hierarchy from Figure 4-1 looks in the Project Explorer.

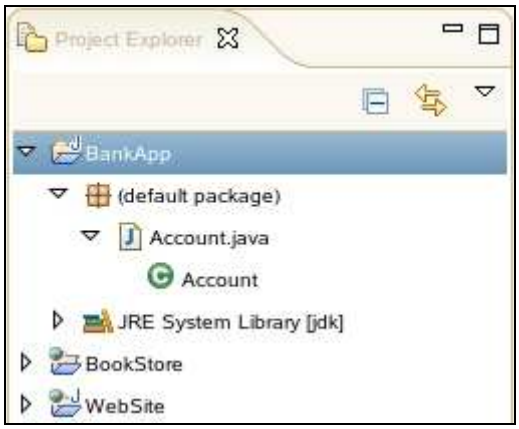


Figure 4-3 – The Project Explorer view

4.1.2 User Interface – Views and Perspectives

Eclipse-based environments offer easy-to-use, customizable graphical interfaces through the use of *views* and *perspectives*. Just as workspaces contain projects, Eclipse perspectives contain views. In fact, we've already seen an example of a view. In Figure 4-3, we saw that the *Project Explorer* view shows all projects in a workspace and files contained within them. A view is nothing more than a task pane – a docked window that allows objects to be viewed and possibly manipulated.

Eclipse-based environments define perspectives as a collection of views appropriate for a particular task or line of work. When a perspective is opened, all views associated with it are opened in the environment, and any other views previously opened are hidden.

In IBM Data Studio, you will generally work with two perspectives: The *Database Administration* and the *Data* perspectives.

To switch between perspectives, click the desired name in the toolbar:

If the perspective you are looking for is not displayed, simply click the  toolbar icon to bring up a list of available perspectives.

Eclipse-based environments allow creation of custom perspectives by specifying which views to load.

The figure below shows the Database Administration perspective.

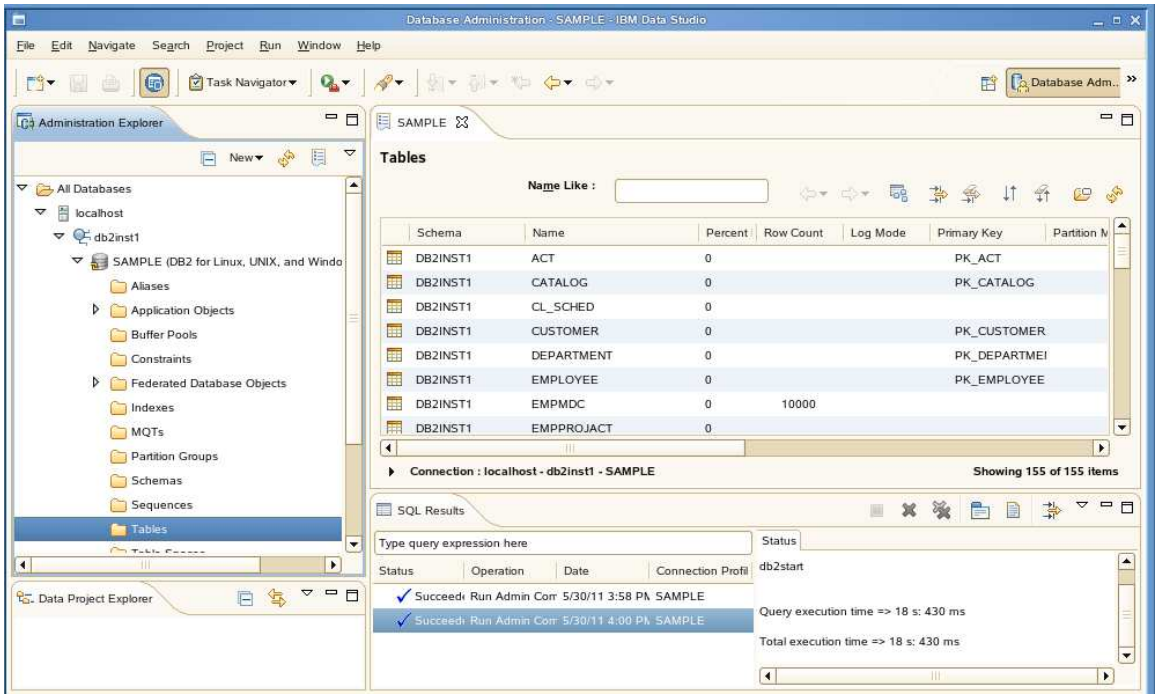


Figure 4-4 – The Database Administration Perspective

5. Environment Setup Requirements

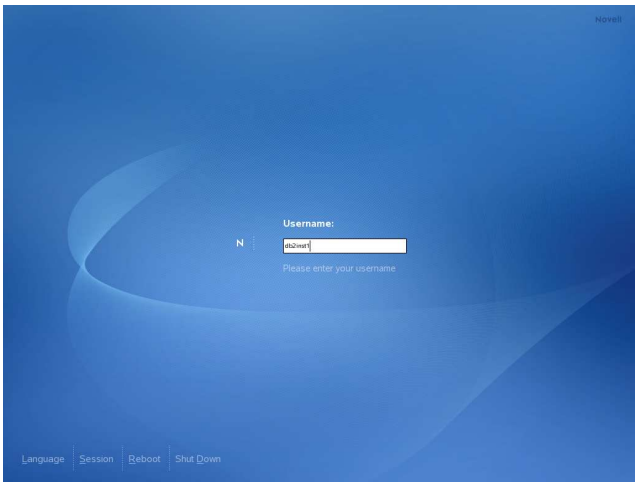
To complete this lab you will need the following:

- DB2 Academic Training VMware® image
- VMware Player 2.x or VMware Workstation 6.x or later

For help on how to obtain these software, and how to work with the VMWare image, please follow the instructions specified in the lab **VMware Basics and Introduction**.

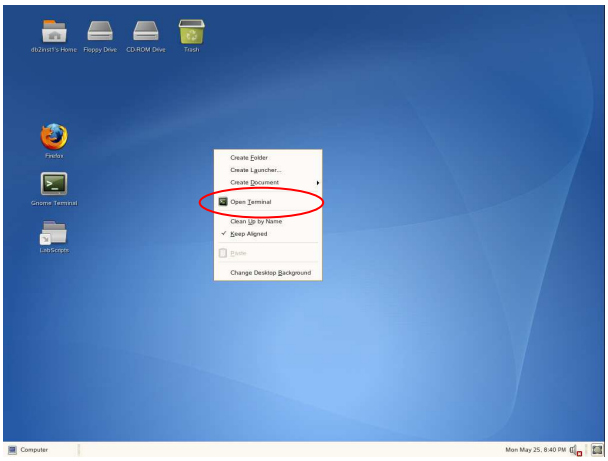
1. At the login prompt, login with the db2inst1 credentials:

   - Username: **`db2inst1`**
   - Password: **`password`**



Note: It is very important **not to login as root** user at this point.

2. Open a terminal window by right-clicking on the **Desktop** and choosing the **Open Terminal** item.



3. Ensure that the DB2 Database Manager has been started by issuing the following command at the prompt:

```
db2inst1@db2rules:~> db2start
```

Note: This command will only work if you logged in as the user `db2inst1`. If you accidentally logged in as another user, type `su – db2inst1` at the command prompt password: `password`.

4. This lab assumes you have the SAMPLE database created. You can check the list of existing databases using the command below:

```
db2inst1@db2rules:~> db2 list db directory
```

5. If the SAMPLE databse is not on the list, you can create it using the following command:

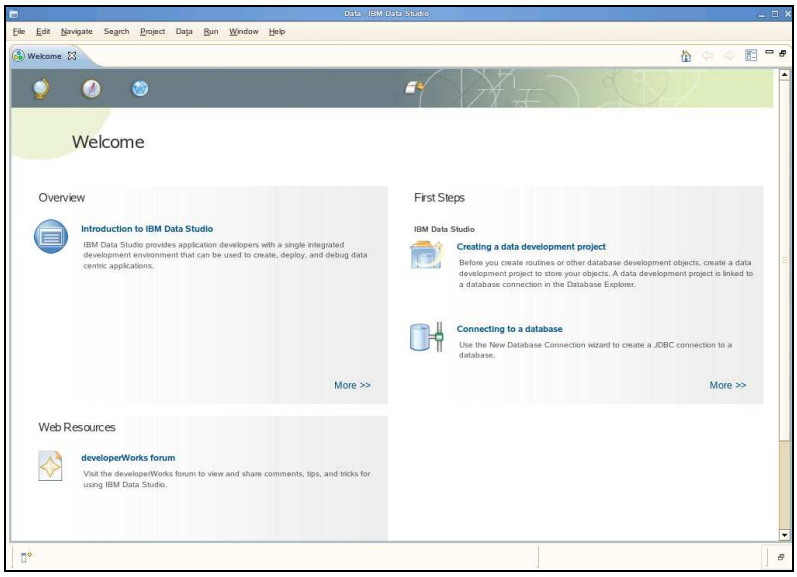
```
db2inst1@db2rules:~> db2samp
```

6. Launching Data Studio

1. Click on the **Computer** button in the bottom left corner of the screen, and select **Data Studio 2.2.1.0**

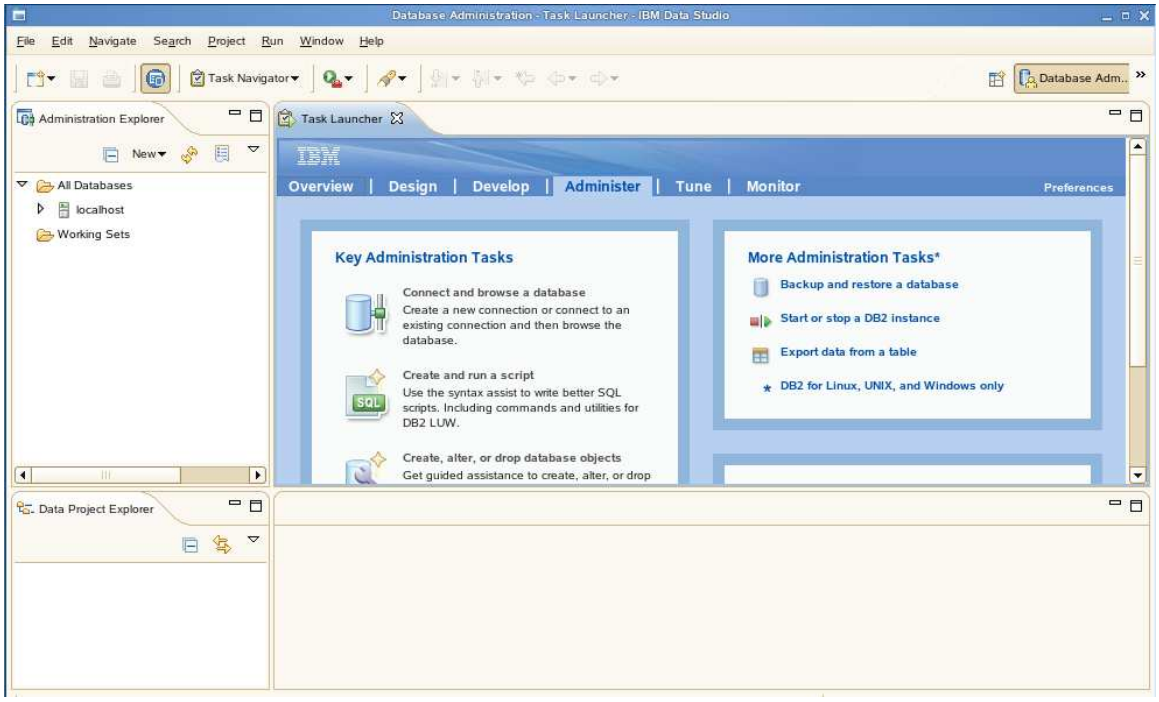
2. In the **Select a workspace** dialog, accept the default path. Click **OK**.

3. Data Studio will now start with the Welcome homepage.



4. Close this window by clicking the Close button (

) located at the top left to bring you into the **Database Administration** perspective as shown below. If your screen does not look like the one below, make sure you open the **Database Administration** perspective by clicking on *Window -> Open perspective -> Other -> Database Administration.*

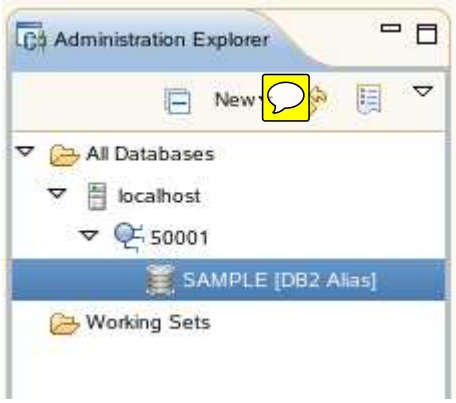


6.1 Database Connections

Before you can do anything productive with Data Studio, a connection must be established to a database. The Administration Explorer view in Data Studio allows you to do this. From this view it is possible to interact with and manipulate database artifacts. Since we will be working with the SAMPLE database, let's connect to this database.

6.1.1 Connecting to the SAMPLE database

1. Since the SAMPLE database was created prior to invoking Data Studio, Data Studio should be able to detect it. From the Administration Explorer, drill down the tree as shown below:

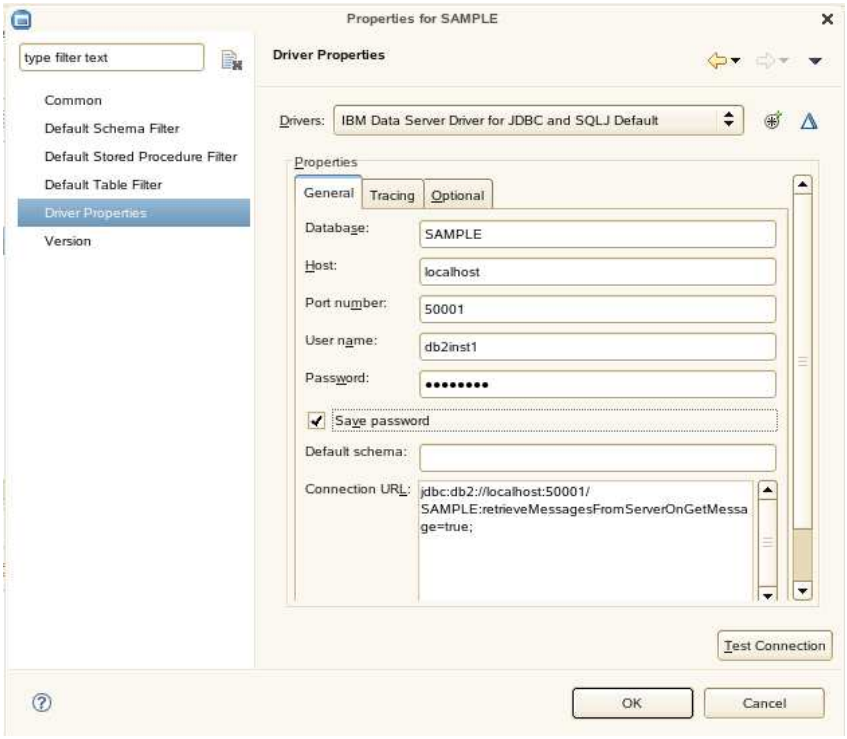


2. Right-click on **SAMPLE [DB2 Alias]** and choose **Properties.** Then click on the **Driver properties** tab.

3. In the **Properties** pane, ensure the following information is provided:

   - **Database**: `SAMPLE`
   - **Host**: `localhost`
   - **Port number**: `50001`
   - **User name**: `db2inst1`
   - **Password**: `password`

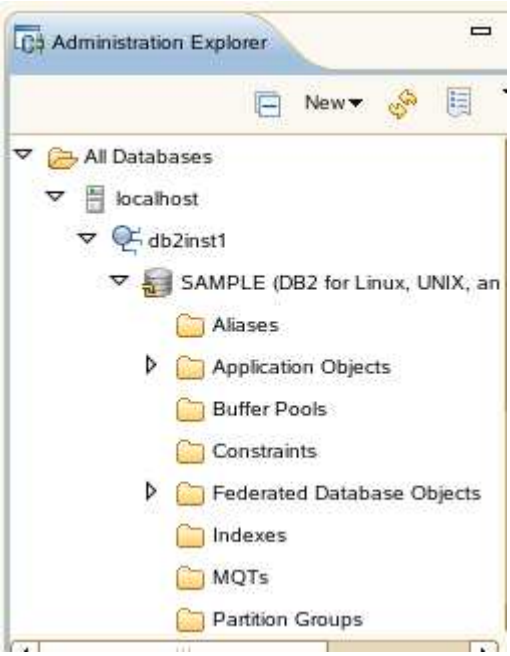
Make sure you click on the "**Save password**" checkbox so you don't have to type this all the time as shown in the figure below.



4. Click the **Test Connection** button located on the bottom right corner. You should receive the message “Ping succeeded”. If not, verify you entered the information correctly and try again. Click **OK** when the test is successful.

5. Now that your connection properties have been verified, from the Administration Explorer, right click again on **SAMPLE [DB2 Alias]** and choose **Connect**

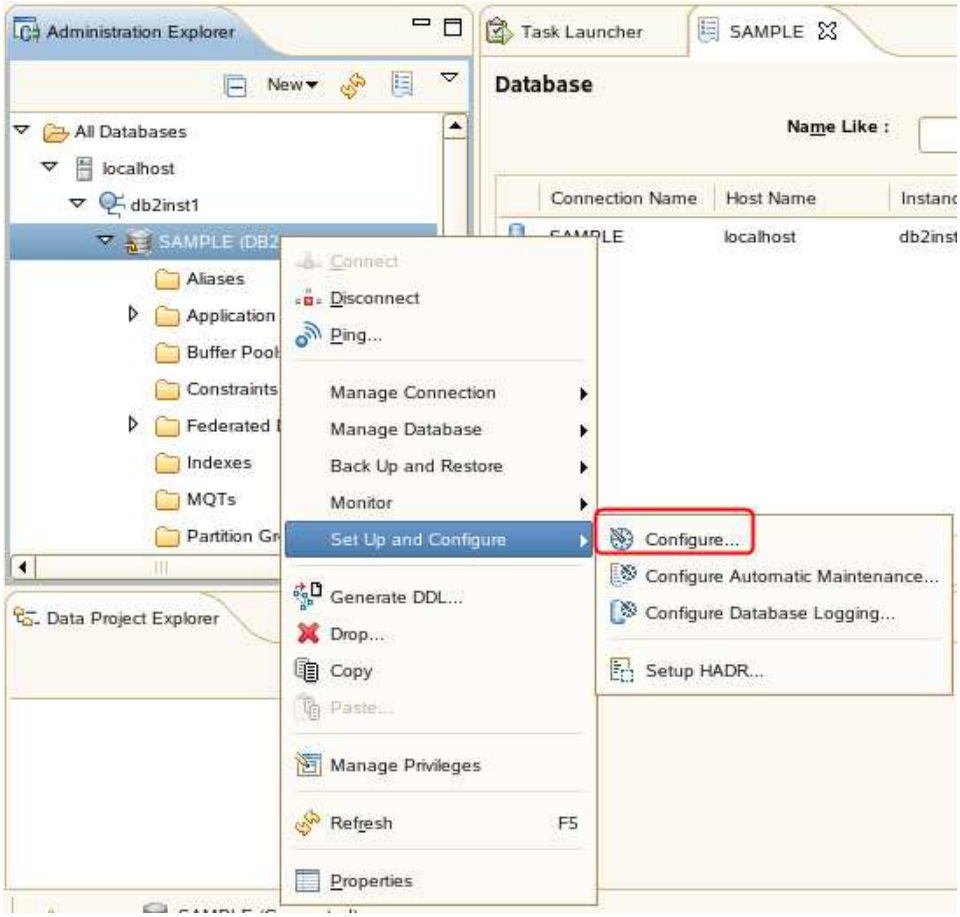
6. After a few seconds, the connection to the database SAMPLE should be established. Notice the connection icon besides **SAMPLE** now displays to hands interlocking. This signifies that you are connected to the database.



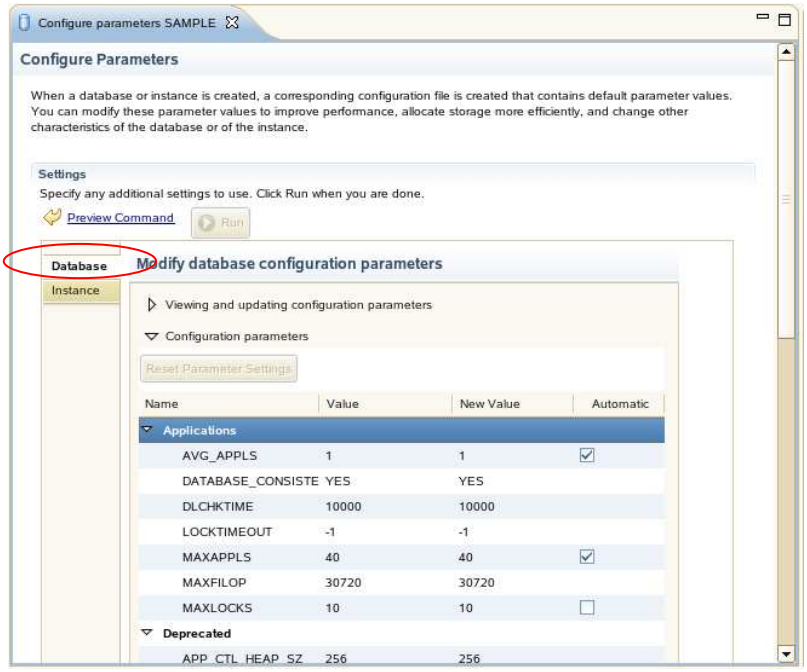
6.1.2 Modifying Database Parameters

Data Studio can perform several administrative functions within DB2. One of these functions is the ability to manipulate database parameters.

1. In the Administration Explorer, right-click on the **SAMPLE** database, and choose **Set up and Configure -> Configure**.



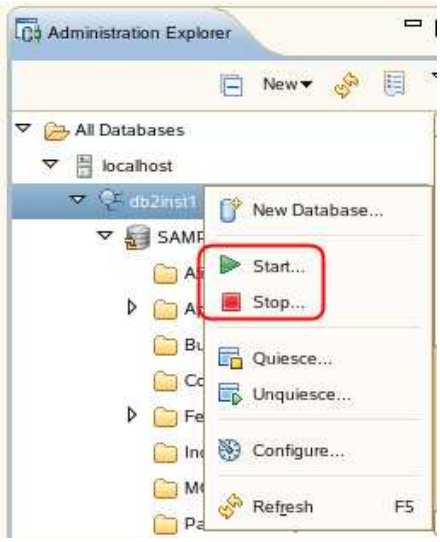
2. This action will open a new view to configure parameters for the SAMPLE database. From this view it is possible to modify several parameters related to the database configuration as well as parameters related to the instance to which this database belongs. We will not modify any parameters at this time, so simply close the view after you are done exploring.



6.1.3 Stopping and Starting your DB2 instance

In the previous section you notice that it is possible to modify instance level parameters. Some modifications actually require an instance re-start to come into effect. That is why from Data Studio you have the ability to stop and start the instance.

1. To stop the instance, from the Administration Explorer, right-click on the instance name (db2inst1 in this example) and choose **Stop**.



2. A window will appear asking you to select a connection profile. The Administration Explorer actually display connection profiles which include database, user ID, password, and other information as you input earlier. You could create different connection profiles. For example, for the same SAMPLE database, you could create a connection profile called 'SAMPLE1' which connects to the database using a different user ID and password. When you stop the instance, Data Studio asks you which connection profile to use, which basically means which user ID will be performing this operation. In our example we only have one connection profile, 'SAMPLE'. So choose that connection profile, and click OK.

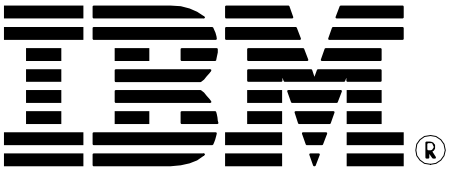
3. Then you need to click the Run button to stop the instance.

4. In the SQL Results view you will be able to notice the status of your command that will go from "Running" while in process to "Succeeded" once it is completed. In the Status panel you can also appreciate the command executed as well as the output from the console.

5. Now start the instance, following the same steps as above, but this time choosing **Start** 
6. Exit Data Studio.

7. Summary

You can hopefully see by now that IBM Data Studio is a highly productive environment for DB2 development and administration. Over the course of the following labs, we'll see how fast and easy it is to create and execute SQL and XQuery scripts; develop and test stored procedures in SQL and Java; create and alter database objects; analyze query execution; etc.



IBM Canada
8200 Warden Avenue
Markham, ON
L6G 1C7
Canada