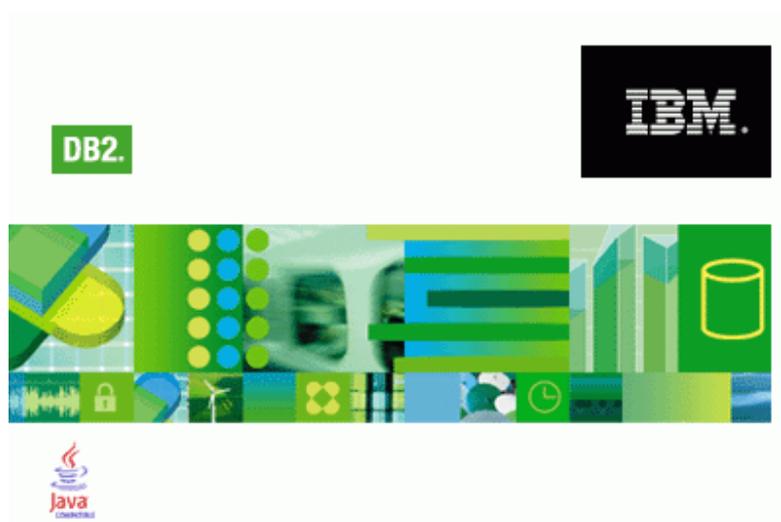


DB2® Database Demonstration Program Version 9.7 Installation and Quick Reference Guide



George Baklarz
DB2 Worldwide Technical Sales Support
IBM Toronto Laboratory

DB2 Demonstration Program Version 9.7 Usage Guide

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Introduction

Now that you've installed DB2, you probably want to know what it can do. The DB2DEMO program lets you explore the various features of DB2, including:

- SQL Features:
 - Referential Integrity
 - Domains and Constraints
 - Triggers
 - Recursive SQL
 - Outer Joins

- Advanced Object-Relational Features:
 - Large Object Support (BLOBs)
 - User-defined Types
 - User-defined Functions
 - Table functions
 - Row-types and Typed Tables
 - Reference Types
 - SQL PL Stored Procedure Language

- XML Support
 - SQL/XML Functions
 - XML Data type
 - XQuery Language Extensions

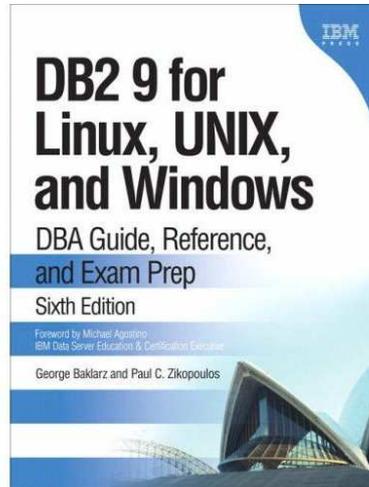
- Business Intelligence Features:
 - Star Schema support
 - Multi-dimensional Analysis
 - Dynamic Bitmap indexes
 - Automatic Summary Tables
 - Compression
 - Table Partitioning

- Manageability

- Performance

This demo lets you try out many of these features of DB2, including showing you some of the administrative and performance features. The only thing you need to do is check that you have requirements and then install the code!

DB2 Certification



For additional help on using DB2, or getting certified on DB2, you may want to look at *The DB2® 9 for Linux®, UNIX®, and Windows® DBA Guide, Reference, and Exam Prep, Sixth Edition*, ISBN 013185514, by George Baklarz and Paul Zikopoulos.

This book is a complete guide to the IBM's relational database servers, known as DB2. DB2 is available on many operating systems, and the book has been written to cover the version available on Linux, UNIX, and Windows. Any significant differences in the implementation of DB2 on various operating systems are highlighted.

If you are planning to become certified, or you would simply like to understand the powerful new DB2 database servers from IBM, then this book is a great resource.

The book is divided into four parts:

- Part 1 – Introduction to DB2 (Chapters 1-4).

Installing and configuring DB2 servers and clients are covered in Chapters 2-4.

- Part 2 – Using SQL (Chapters 5-10).

The Structured Query Language (SQL) is discussed in Chapter 5, 6, and 7. Chapter 8 covers the new pureXML capabilities, while Chapter 9 discusses the SQL PL programming language. Database concurrency is discussed in Chapter 10.

- Part 3 – DB2 Database Administration (Chapters 11-14).

Creating a DB2 database and its related table spaces is covered in Chapter 11.

The common administration tasks are discussed in Chapters 12 and 13. Database monitoring and performance considerations are discussed in Chapter 14.

- Part 4 – Developing Applications with DB2 (Chapters 15-16).

An introduction to application development for DBAs is given in Chapter 15. Chapter 16 deals with some of the DBA activities that are related to application development. Not all of the material in these chapters is necessary for you to pass your certification test, but it will definitely help you when applications go into production.

This book can be used as a self-study guide to help you prepare for the DB2 certification exams, or as a guide to DB2 on the Linux, UNIX, and Windows platforms. The DB2DEMO program, along with the book, are great tools for helping you learn DB2 and obtaining your DB2 Certification!

For more details on the DB2 certification program, visit www.ibm.com/certify.

Installation Requirements

This program is meant to be used for demonstrating the functionality of the DB2 UDB V9.7 product. In order to use this program, you need the following configuration:

- Windows Operating System (Windows XP/2003/Vista)
- Browser (Internet Explorer, Firefox, or any suitable browser)
- Access to a DB2 system with the SAMPLE database

Your workstation or laptop should have a minimum of 384M of memory to run Windows and DB2, although more than 512M is ideal. The DB2DEMO program itself needs approximately 5MB of disk space for the program and help files, but this can grow to 20MB to hold the sample tables that are created during the demonstration.

The program will work with DB2 Version 7+, but not all features will work if you use a down-level server. In addition to having a DB2 server available, the SAMPLE database must be created beforehand, otherwise the program will not be able to run any of the examples. The SAMPLE database is normally created as part of the First Steps program after the DB2 installation is complete. If you need to create the sample database, use the `db2sampl` command.

While the SAMPLE database is the default database used by the DB2DEMO program, any database can be accessed by the program on all of the DB2 supported platforms, including:

- AIX
- HP
- SUN
- Linux (all platforms)
- Windows Vista, Windows XP, Windows 2003
- iSeries (DB2 Connect Required)
- z/OS (DB2 Connect Required)

Although the database can reside on one of these machines, the actual client (demo) must run on Windows XP/2003/Vista. For details on how to do this, please see the installation procedure section.

Note: The DB2DEMO program can also be used against other DB2 databases in your environment, but many of the examples are strictly for the DB2 on the Linux, UNIX, and Windows platforms.

Installing the DB2DEMO Program

Installation File

The DB2DEMO installation program consists of only one file that contains the executable along with all of the supporting files required to run the program. The file name is the same whether you downloaded this program from the internet or found it on a CD-ROM:

- DB2DEMOSETUP.EXE - Installation program for the DB2DEMO program

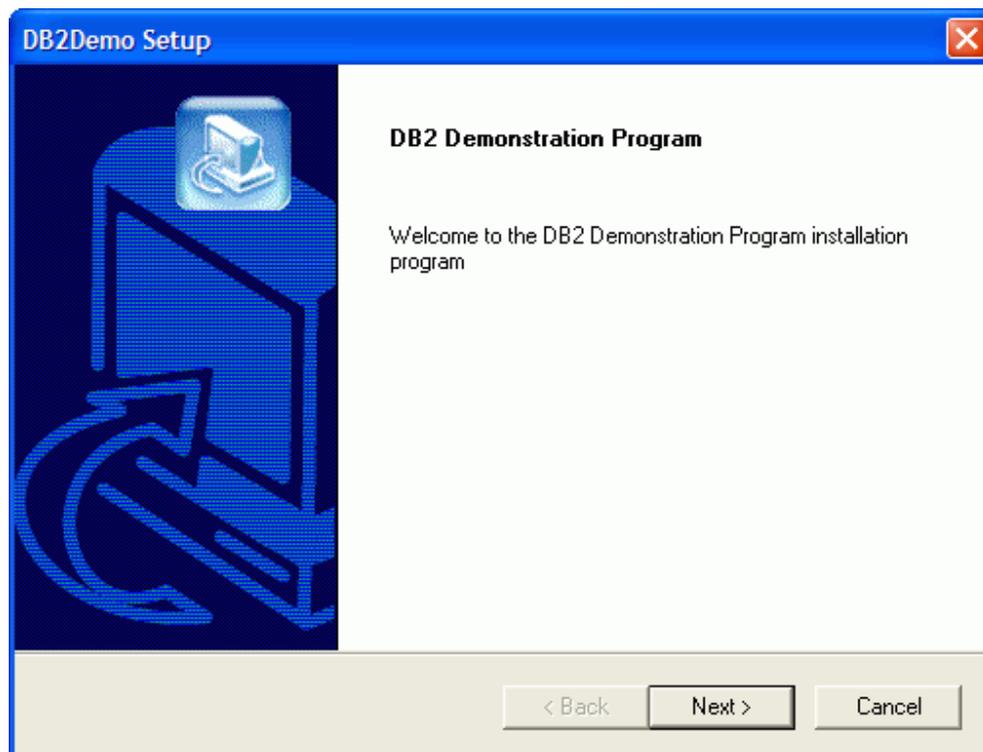
Before beginning the installation, make sure that you have about 10M of disk space available (half of this is temporary space that will be released when the installation is complete).

Setup and Installation of the Program

From within the directory that you found the DB2DEMOSETUP program (either the CD-ROM or on your hard drive), you double-click your left mouse button on this file name, or execute it from a command line:

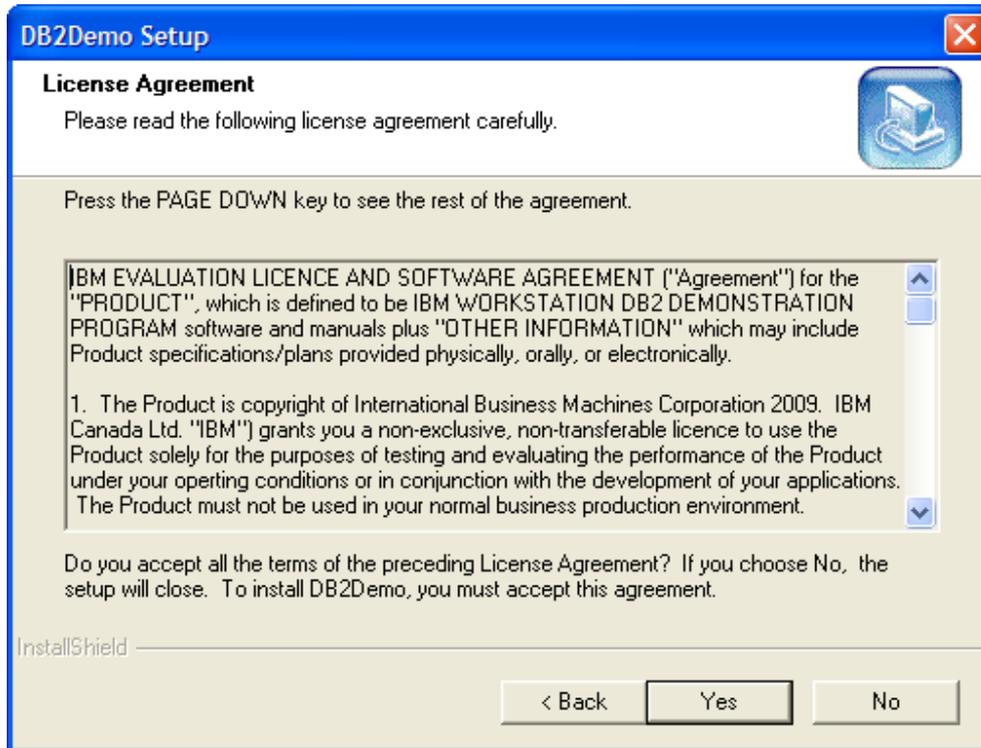
- C:\DOWNLOADS>DB2DEMOsetup.exe

After clicking on the DB2DEMOSETUP program, there will be some temporary messages displayed while the program unpacks some files, and then you will be presented with the first installation screen:

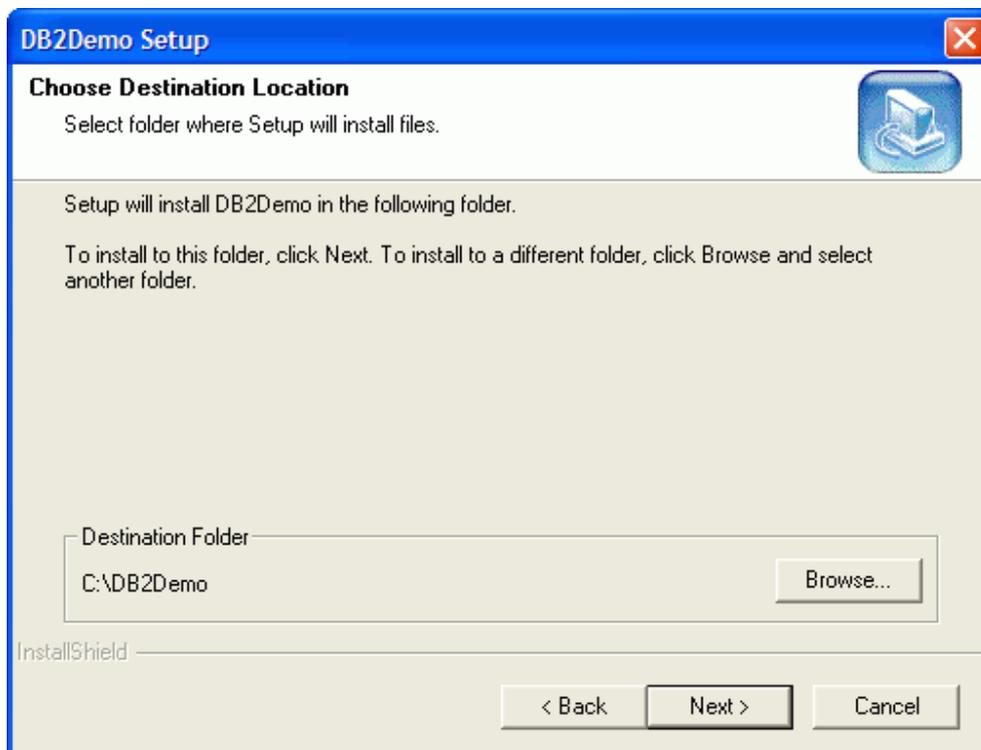


Make sure that you have exited any programs that may be currently running (just to be on the safe side) and then hit OK to continue on to the next step.

The next screen gives you the copyright and legal information for the program. Please read it and say "YES" to continue:

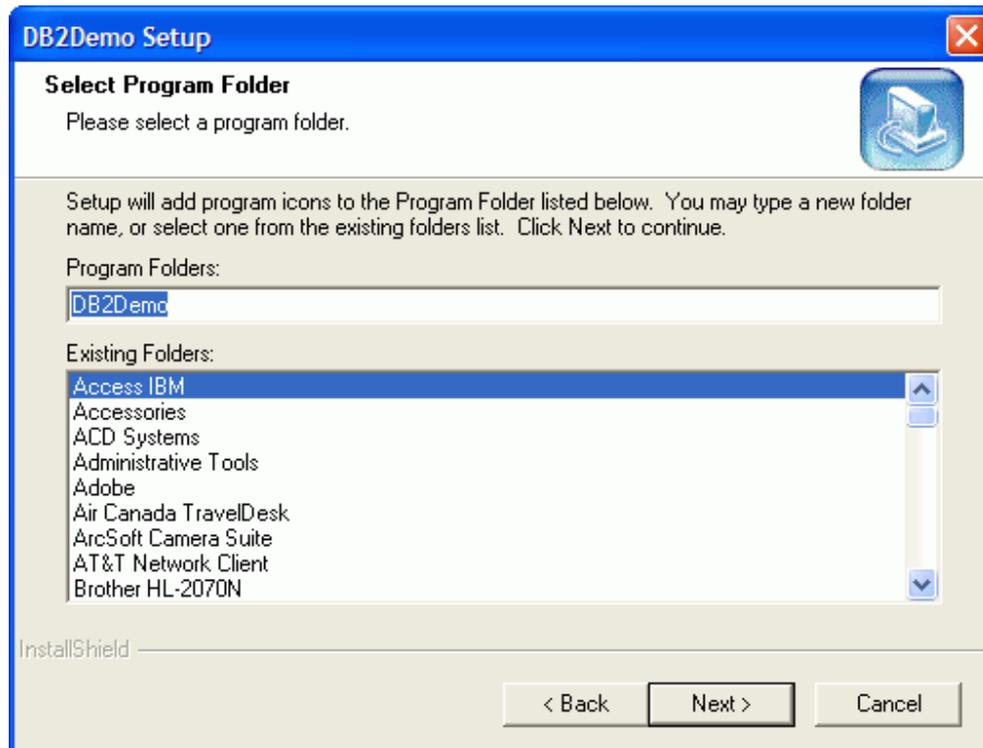


The next screen that appears is the directory screen:

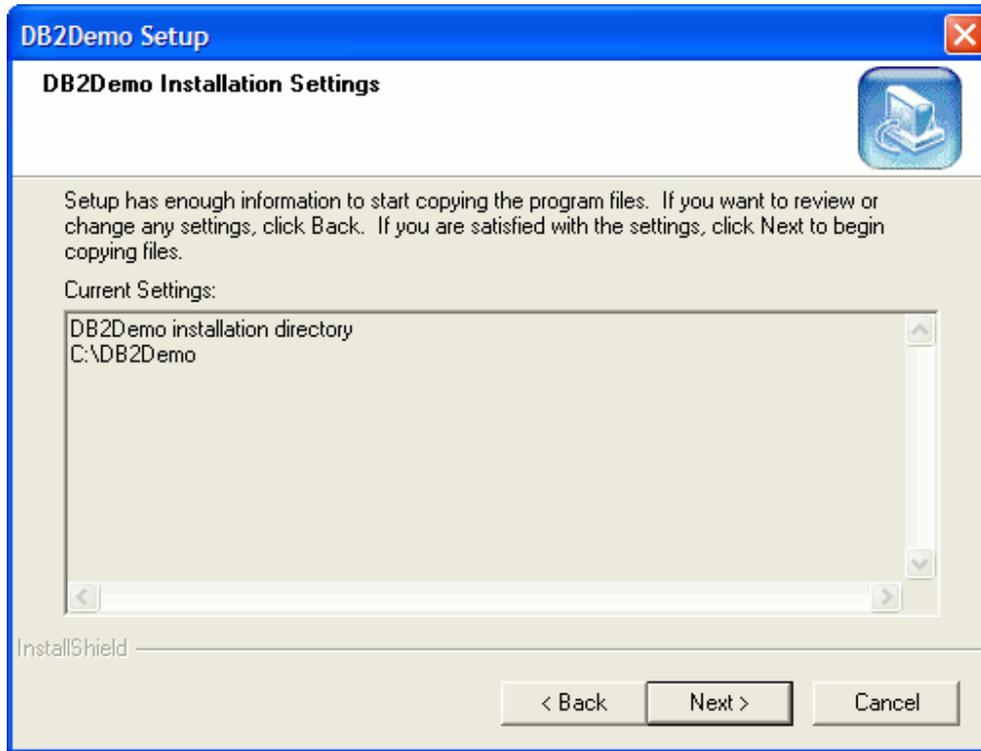


Select a drive and directory to place the DB2DEMO program into. By default, the name of the directory is called C:\Program Files\DB2DEMO and it is placed on the C: drive. The above example shows how the installation directory can be changed.

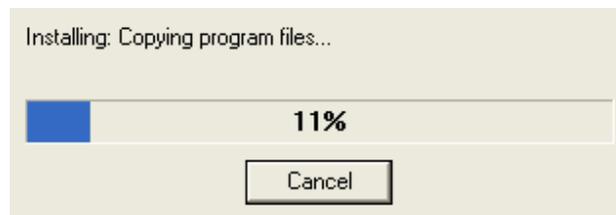
Use the Drives and Directories list boxes to change the value of the field to point to the installation directory you want. When you are ready to go, hit the **NEXT** button. At this point in time, the installation program will ask you for the Program Group that the DB2DEMO program will be placed into:



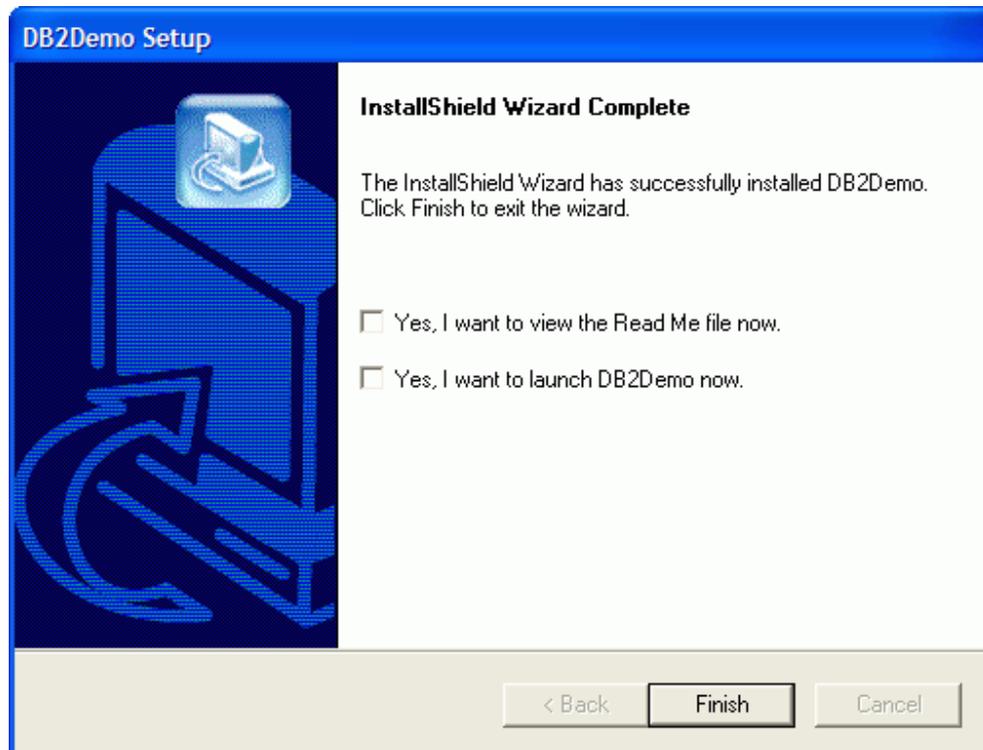
Once you have selected the group name, the program will confirm the installation information:



Once you hit the continue button, the program will begin copying files:



When copying is complete, the final completion box will be displayed:



Depending on which operating system you were installing on, you may be asked to reboot the machine, or be given an option to try out the demo program or look at the additional README information that is supplied with the program. You can also start up DB2DEMO by going into the DB2DEMO group and selecting the DB2DEMO icon from the DB2DEMO group (or whatever you called it) and clicking on it:



To see how the program works, check out the section on running the program. If you want to run the DB2DEMO program against another server, please read the instructions on customization.

You can also select the DB2Demo SQL option to open up a SQL window for running SQL commands instead of using the tutorial mode.

Advanced Installation

The SAMPLE database can be installed on any server supported by DB2. The program that creates that sample database is called `db2sampl` and can be found in the `sqllib\bin` directory on your server. When you install the database on a different

machine, you still need to use the DB2DEMO program on Windows 2003, Windows XP, or Windows Vista, but the data will be on the server instead of the local machine.

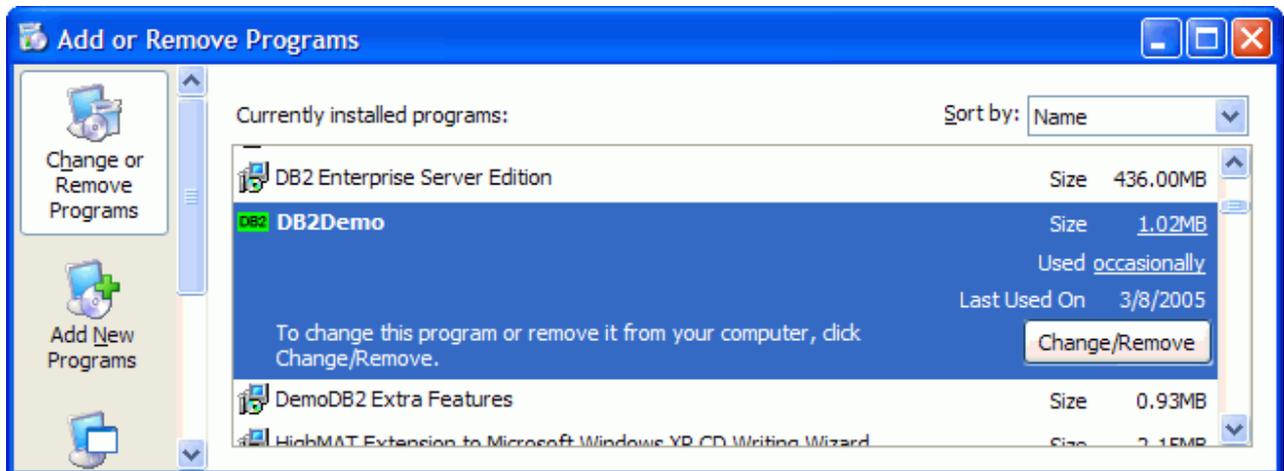
In order to install this on a different server, you need to be very familiar with DB2 commands and the security of the machine you are working on. The steps required to run this demo against a different server are:

1. Install DB2 on the server operating system
2. Create a privileged userid that can administer the DB2 system
3. Create the sample database on the system
4. Create a userid on this system that can be used to connect from the remote system
5. Set up the Windows client so that the SAMPLE database has been catalogued properly. This includes installing the DB2 Client Application Enabler code on the workstation. Without this code, the demonstration program cannot run.

Once the installation is complete, you should be able to run the DB2DEMO program from the client and connect to the remote SAMPLE database.

Uninstalling the Demonstration

To uninstall the DB2DEMO program, use the Add/Delete panel within the Services group to delete the application:



Select the DB2 Demonstration program and the various files will be deleted. The directory may not be deleted if you have personalized any of the files.

Support

We've tried to think of everything, but occasionally things go wrong. If you have a problem with the demonstration code, please send us a note with your email address, name and a description of the problem. We can be reached at baklarz@ca.ibm.com.

Using the DB2DEMO Program

Starting the Program

To start the demonstration program, go either to a command or use Windows explorer to start the DB2DEMO program in the DB2DEMO directory (or wherever you chose to place it).



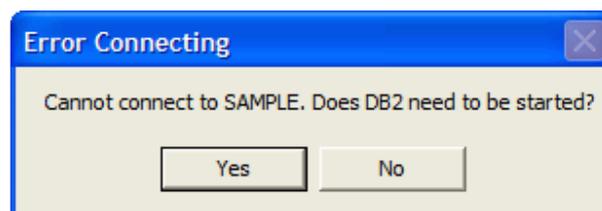
Or you can run it from a command line:

- DB2DEMO [-sql]

Once you have started the program, you will see the introduction screen:



The default database for the connection is SAMPLE. The DB2Demo scripts will be automatically loaded once you hit CONNECT. In the event that the program cannot connect to the database, it will issue an error message asking whether or not DB2 should be started:



Selecting yes will attempt to start the local DB2 instance (remote instances are not supported). If no is pressed, the program will return to the connection panel. You can choose a different database from the list, or adjust your userid and password and try connecting again. If you press CANCEL, the DB2DEMO.SQL script will be loaded and then the main DB2DEMO screen displayed. Note that no SQL will run until a subsequent connection to a database is established.

A number of brief messages will display, and finally the demonstration screen will be displayed.

If the DB2DEMO.SQL file cannot be found, the program will not display an error message. Instead, it will only show the SQL window.

Quick Introduction

On the left hand side you will see a list of examples similar to the following screen:



Any topic with a [+] beside it will expand into more examples. Once you click on one of the examples it will load a script that will take you through examples of that topic.

A typical script is found on the next page.

Outer Join

The OUTER JOIN function now allows you to do joins that include null values on one of the joined columns. In DB2 UDB, you can do either a left, right, or full OUTER JOIN.

Show Department Table

This query will show the contents of the department table. Note that one of the departments has no manager.

```
▶ select * from department
```

Show Departments and their employees

This query will show departments and the employees that work for them. This is a standard join.

Notice that this list will not contain the one department that has no manager.

```
▶ select deptname, lastname from employee, department
   where deptno = workdept;
```

Show missing department

This SQL will check for the department that does not have a manager assigned.

```
▶ select deptname from department
   where mgrno is null;
```

You will see a number of icons in the margins of the scripts that you will be reading. One of icons is the green arrow for executing SQL:

```
▶ SELECT * FROM DEPARTMENT;
```

Clicking on the SQL command will produce results below the select statement.

DEPTNO	DEPTNAME	MGRNO	ADMRDEPT	LOCATION
A00	SPIFFY COMPUTER SERV	000010	A00	-
B01	PLANNING	000020	A00	-
C01	INFORMATION CENTER	000030	A00	-
D01	DEVELOPMENT CENTER	-	A00	-
D11	MANUFACTURING SYSTEM	000060	D01	-
D21	ADMINISTRATION SYSTEM	000070	D01	-
E01	SUPPORT SERVICES	000050	A00	-
E11	OPERATIONS	000090	E01	-
E21	SOFTWARE SUPPORT	000100	E01	-
F22	BRANCH OFFICE F2	-	E01	-

only 10 record(s) shown. (0.000s)

Output from an SQL command will create a separate line of output in the script. You will see that there is a listing icon beside the output.

Any output produced by a SQL statement is limited to about 80 characters on the screen. In addition, only 10 rows are shown in the output to limit the amount of material displayed. However, if you press the listing icon, you will be able to see the full results in a scrollable output window.

#	DEPTNO	DEPTNAME	MGRNO	ADMRDEPT	LOCATION
1	A00	SPIFFY COMPUTER	000010	A00	-
2	B01	PLANNING	000020	A00	-
3	C01	INFORMATION CENTER	000030	A00	-
4	D01	DEVELOPMENT CENTER	-	A00	-
5	D11	MANUFACTURING	000060	D01	-
6	D21	ADMINISTRATION	000070	D01	-
7	E01	SUPPORT SERVICES	000050	A00	-
8	E11	OPERATIONS	000090	E01	-
9	E21	SOFTWARE SUPPORT	000100	E01	-
10	F22	BRANCH OFFICE F2	-	E01	-
11	G22	BRANCH OFFICE G2	-	F01	-

Pressing the ESCAPE key, scrolling the window, or clicking on another icon will remove the output window and revert back to the listing.

Some examples are shown in light blue as in the following example.

```
SELECT <column list> FROM <table>
WHERE ...
```

Examples in blue are meant to illustrate some SQL syntax that cannot run on the current system.

In the event you have an error in the SQL statement you've executed, an error message will be displayed with an information icon beside it.

```
SELECT * FROM X
```

SQL0204N "BAKLARZ.X" is an undefined name. SQLSTATE=42704

If the error message has more details, clicking on the information icon will give you the full error message text from the database.

There are other interesting things that you can do within this SCRIPT view. If you want to play with the SQL, all you need to do is double-click on the SQL box. Once you've made the change to the SQL, all you have to do is click on the run icon to make it run.

Hitting escape, clicking on another SQL command, or scrolling on the screen will take you out of edit mode. There is no harm in editing the SQL to try things out.

There are many more features that DB2Demo has that we encourage you try out! The help section within the program has many more details of the capabilities of the demo and how you can create your own scripts. Enjoy the product!

DB2DEMO Program Credits

This program and documentation was compiled and created by:

George Baklarz
DB2 Worldwide Presales Support
IBM Toronto Laboratory
Markham, ON, CANADA

I hope you enjoy using this demonstration package, and if you have any questions or comments, please send them to me at:

baklarz@ca.ibm.com

Thank-you for your time in trying out the DB2 Database Product!