

Information Management
software



DB2 FOR MAC OS X

INSTALLATION & SETUP GUIDE

DB2 9.5

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Version 2.0
December 24, 2008

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About DB2 for Mac OS X

What is DB2?

DB2 is one of IBM's database software products (others include Informix, Cloudscape, SolidDB, Redbrick, etc). DB2 provides a range of products that scale from handheld devices to huge data warehouses and mainframe servers.

Now for the first time ever, DB2 functionality which has previously been available on Linux, Unix, and Windows (LUW) is now available for Mac OS X. These DB2 products are available free of charge through the DB2 Express-C program. The DB2 Express-C program gives you access to a DB2 data server (DB2 Express-C) and DB2 Client for Mac OS X. The DB2 Client also includes drivers that let you access the data in DB2 databases using JDBC, ODBC, PHP, CLI (DB2's Command Line Interface), and more.

If you want to create DB2 databases on your own Mac, then you will need the DB2 Express-C data server. For example, if you are developing an application that works with DB2 on your Macbook, then you want the server. If you already have a DB2 data server running on a different computer and you just want to connect to that computer from your Mac, then you just need the DB2 Client. You can connect to a DB2 data server running on Windows, Linux, or Mac OS X using the DB2 Client for Mac OS X.

The official DB2 documentation is at <http://publib.boulder.ibm.com/infocenter/db2luw/v9r5/index.jsp>. The DB2 documentation does not have Mac-specific information yet, but DB2 for Mac OS X is quite similar to DB2 for Linux/Unix, because you can open a Terminal on your Mac and interact with DB2 from the command line much like you would interact with DB2 on Linux/Unix.

Why DB2 for Mac OS X?

Years ago, the notion of running IBM's DB2 on Mac was unthinkable ... but in the past 5 years or so, some significant changes in the IT world have made this a reality. Mac OS X is now built on a BSD-like base, and BSD is similar to Linux, and IBMers (especially the DB2 folks) know all about Linux. This made it possible for us to port DB2 to Mac OS X.

Macs continue to grow in popularity, not just in their specific niche markets (eg music/graphic design) but also amongst application developers and users in general. The DB2 documentation does not have Mac-specific information yet, but DB2 for Mac OS X is quite similar to DB2 for Linux/Unix, because you can open a Terminal on your Mac and interact with DB2 from the command line much like you would interact with DB2 on Linux/Unix.

Prerequisites

Introduction

DB2 is a powerful application and as a result makes extensive demands on any operating system. As a similarly powerful computing platform that ships on powerful hardware, Mac OS X is able to satisfy the bulk of those requirements. However, there are still some manual tasks that you will need to complete in order to prepare your computer to run DB2.

Mac OS X Leopard or higher

DB2 for Mac OS X can only be installed on Intel based Macs running Leopard (Mac OS X 10.5 or higher). DB2 data server and client can both run on Mac computers running Mac OS X Server or Mac OS X Workstation.

Enable the root user

Linux users will be quite familiar with the concept of a root user; for Mac users this may be new information. The "root" user is basically the super-admin account on Linux/Unix systems. The "root" user can do pretty much anything. This can be great in the right hands, horrible in the wrong hands, and probably because of this, the "root" user is not enabled by default in Mac OS X. Anyone with an "Administrator" account on a Mac can enable and make use of the "root" user. "Standard" user accounts are not allowed to enable or use the "root" user account on Mac. For this reason, you can basically think of an "Administrator" account and the "root" account on Mac OS X as being roughly equivalent.

If you are an "Administrator" user on your Mac, then whenever you get prompted for a password (in a dialog box or at the command line), just provide your own password. However, for DB2 to work properly, you need to enable the "root" user account on Mac OS X.

Here's a quick list of steps required to enable the "root" user on Mac OS X. This information is taken from an Apple support doc at http://support.apple.com/kb/HT1528?viewlocale=en_US. For more information about the "root" user on Mac OS X, please read this document.

1. From the Finder's Go menu, choose Utilities.
2. Open Directory Utility.
3. Click the lock in the Directory Utility window.
4. Enter an administrator account name and password, then click OK.
5. Choose Enable Root User from the Edit menu.
6. Enter the root password you wish to use in both the Password and Verify fields, then click OK.

For installation of DB2 and day-to-day use of DB2 on Mac OS X, it's not 100% necessary for you to have an Administrator / "root" account, but you do need Administrator / "root" access at least once in order to complete the "Increasing System Parameters" step, and without this, DB2 won't work. If you don't have Administrator / "root" access on

your Mac, then just send the info about increasing System Parameters to whoever does and they can do this one time update.

Once you have increased the system parameters as an Admin user, you can install DB2 on Mac OS X as an Administrator or as a Standard User. There are some restrictions when you install DB2 as a Standard user. For more information about the difference between root and non-root DB2 installations, see [this link in the DB2 documentation](#)

Increase system parameters (sysctl.conf)

Open `/etc/sysctl.conf` (or create it if it doesn't already exist) and insert the following settings. These settings increase some settings for shared memory and user limits that DB2 needs in order to work on Mac.

Add the following to `/etc/sysctl.conf`

```
kern.sysv.shmmax=1073741824
kern.sysv.shmmin=1
kern.sysv.shmmni=4096
kern.sysv.shmseg=32
kern.sysv.shmall=1179648
kern.maxfilesperproc=65536
kern.maxfiles=65536
```

Save the file and reboot your computer. You don't need to reboot after you install DB2, only after you increase the System Parameters.

Java 1.6 for graphical installation

The graphical installation of DB2 for Mac OS X requires Java 1.6 and expects to find it in `/System/Library/Frameworks/JavaVM.framework/Versions/1.6.0/Home`. If you do not have Java 1.6 on your computer, you can install it by running the Software Update on your computer and installing the latest updates.

If you do not want to upgrade to the latest level of Java, DB2 can also be installed using the `db2_install / db2icrt` scripts.

Quickstart Guide

Introduction

This is the quickstart guide for installing DB2 on Mac OS X. We encourage you to familiarize yourself with the rest of this document. However, if you know what you are doing (or at least think you do), are somewhat familiar with databases and you know how to use the "root" user on your Mac, or just don't want to read a lot of docs and just want to dive in right away, here's what you need to do. Don't worry, it's really not that hard.

Quick installation & setup

1. Download the server (DB2 Express-C) or the client, depending on what you need. If you need to create databases on your local machine, get the server, if you already have some other DB2 server to connect to, get the client. All the client functionality is included in the server, so you probably don't need both. Download from <http://www.ibm.com/db2/express/download.html>. Make sure you don't download it to folder with a space in its name, otherwise the install won't work.
2. After downloading either the server (`db2exc_952beta_MAC_x86_64.tar.gz`) or the client (`db2exc_client_952beta_MAC_x86_64.tar.gz`) to a folder on your computer, go to that folder and unpack the file by double clicking it. If you prefer the command line, go to the folder with the download file and unpack it with `tar -xvzf <filename>`.
3. You can install DB2 on Mac OS X as a Standard User, or as an Admin User (aka root). There are some limitations when you install DB2 as a Standard User. You can switch from a "Standard User" installation to an "Admin User" installation after you install DB2 using the `db2rfe` script.
4. After unpacking the file, install it in one of the following ways:
 - Graphical install, standard user - double click on `db2setup` in the finder.
 - Script install, standard user - double click on `db2_install` in the finder.
 - Graphical install, root user - open a terminal, run `sudo ./db2setup`,
 - Script install, root user - open a terminal, run `sudo ./db2_install`, then run `sudo <db2 install dir>/instance/db2icrt -u <fenced username> <instance owning username>`. You can use the same user for the fenced user and the instance owning user.

After you install - DB2 First Steps

After you install, we recommend you run DB2 First Steps to get some more info on using DB2. DB2 First Steps requires Firefox and does not work with Safari. To run DB2 First Steps, log on as the DB2 user and run `db2fs`. You will see a dialog box prompting you for the location of your browser, if you have installed Firefox in the default location, enter `/Applications/Firefox.app/Contents/MacOS/firefox` in the First Steps dialog.

If you have trouble running first steps, make sure your `LANG` environment variable is set to either `en_US.UTF8` or just `en_US`.

Installation & Setup

Download DB2 for Mac OS X

DB2 for Mac OS X is available for free through the DB2 Express-C program. Visit the home page for more information, or go straight to the download page to download the DB2 Express-C data server for Mac OS X or the DB2 Client for Mac OS X.

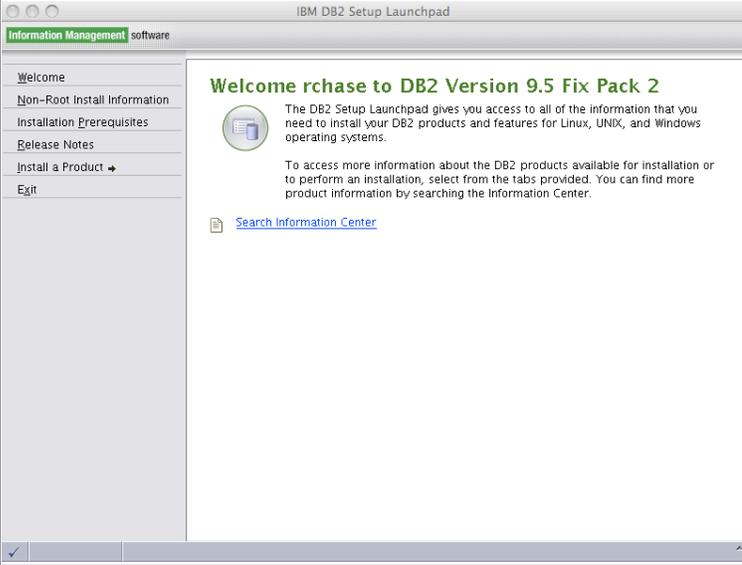
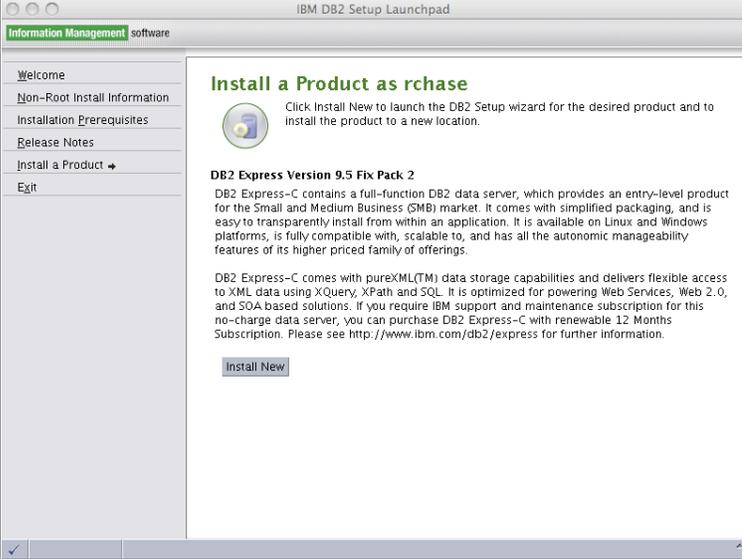
NOTE: When you download DB2, make sure you store it in a directory with no spaces in its name, otherwise installation will fail. For example, it's ok to download and unpack the install image to `"/Users/rchase/db2formac"`, but if you use `"/Users/rchase/db2 for mac"`, installation will not work.

General information

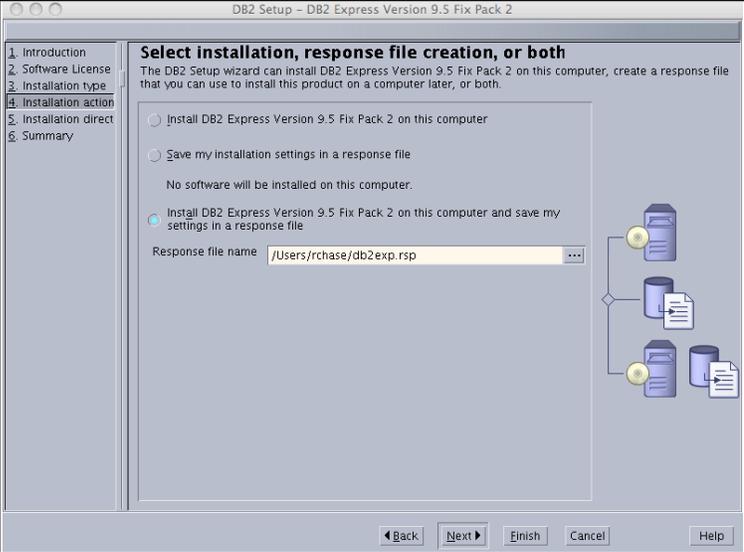
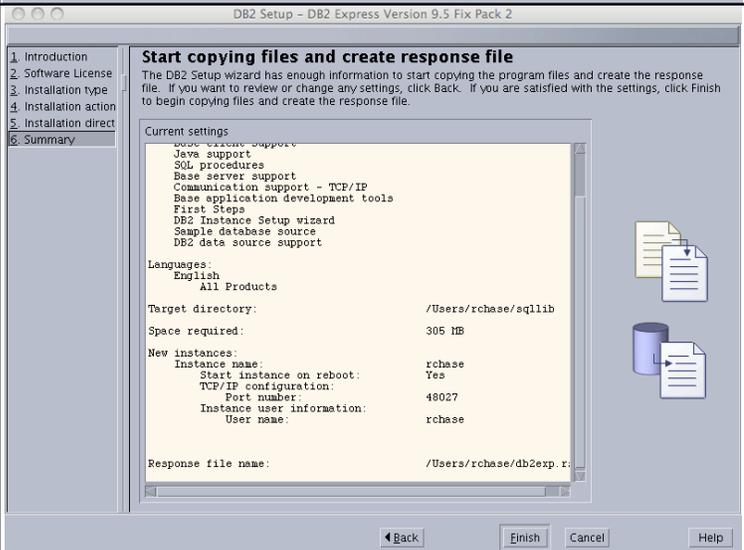
- For an easy graphical setup method, use `db2setup`. This is the recommended installation method, especially if you are new to DB2.
- For fast, simple command line setup, use the `db2_install` and `db2icrt` scripts.
- To install from the command line with more setup options or for scripted installs, use the `db2setup` script with a response file.
- Installation and setup of DB2 on Mac OS X is very similar to installation and setup of DB2 on Linux/AIX/Solaris. Future releases of DB2 on MAC OS X may provide additional setup improvements and Mac OS X integration.
- You can install DB2 on Mac OS X as a Standard User, or as an Admin User (aka root). There are some limitations when you install DB2 as a Standard User. You can [switch from a "Standard User" installation to an "Admin User" installation](#) after you install DB2 using the [db2rfe script](#).

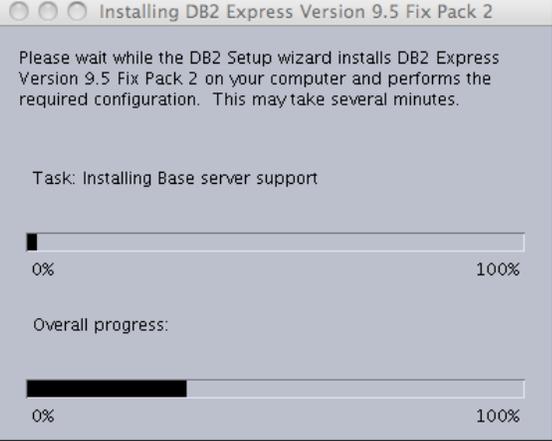
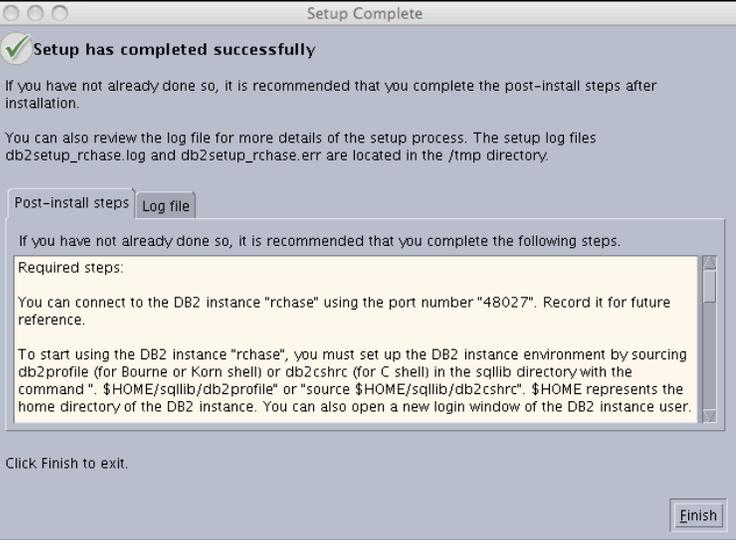
Graphical installation

Standard user installation

1.	Download DB2 Express-C from http://www.ibm.com/db2/express/download.html .
2.	Unpack the downloaded file by double clicking on the icon in the Finder, or by running the following command using the Terminal application: <code>tar -xvzf db2exc_952beta_MAC_x86_64.tar.gz</code> . The Terminal application is located in /Applications/Utilities.
3.	Run the <code>db2setup</code> command by double clicking on the file in the Finder, or run it from the Terminal application.
4.	<p>After a brief splash screen, the DB2 Setup Launchpad will launch. You can find more info about DB2 from the various tabs in the Launchpad.</p> <p>When you are ready to install a product, click on the “Install a Product” tab.</p> 
5.	<p>On the “Install a Product” page, make sure the correct product is listed, and click “Install New” to install a new copy of DB2.</p> 

6.	<p>The DB2 Setup wizard will launch to walk you through installing and setting up DB2. Click “Next”.</p>	
7.	<p>Click on the “Accept” radio button to accept the terms of the DB2 license agreement, then click “Next”.</p>	
8.	<p>Select the desired installation type (typical, compact or custom) and click “Next”.</p> <p>“Typical” install type is recommended and is sufficient for most users.</p>	

<p>9.</p>	<p>Select the desired installation action and click “Next”.</p> <p>For most users, simply installing DB2 is sufficient, but you can save a response file at the same time if desired.</p>	
<p>10.</p>	<p>In the Standard User installation, DB2 is installed to the sqllib directory in the users home directory, this cannot be changed.</p> <p>Take note of the installation directory and click “Next”</p>	
<p>11.</p>	<p>The summary page shows a summary of all your install settings.</p> <p>If you want to change any of the settings, click back, otherwise click "Finish" to start the process of copying files to your computer and performing the necessary configuration tasks.</p>	

12.	DB2 will show you progress of the installation and setup tasks as they are performed.	
13.	Once install finishes, you'll see a window that shows a summary of all the tasks performed and the status Setup complete. Make sure you read the contents of this dialog to ensure that all DB2 Setup tasks completed successfully, and to see what post-install steps you need to perform to use DB2..	

In particular, pay attention to the following message that will tell you how to set up your environment to use DB2 from the command line.

DBI1272I To start using the DB2 instance rchase, you must set up the DB2 instance environment by sourcing db2profile or db2cshrc in the sqllib directory, or you can open a new login window of the DB2 instance user.

Explanation:

The DB2 instance cannot be used before db2profile (for Bourne or Korn shell users) or db2cshrc (for C shell users) is sourced.

User response:

To set up the DB2 instance environment, you can open a new login window under the ID that owns the DB2 instance, or source the DB2 instance environment by running the appropriate following command under the ID that owns the DB2 instance:

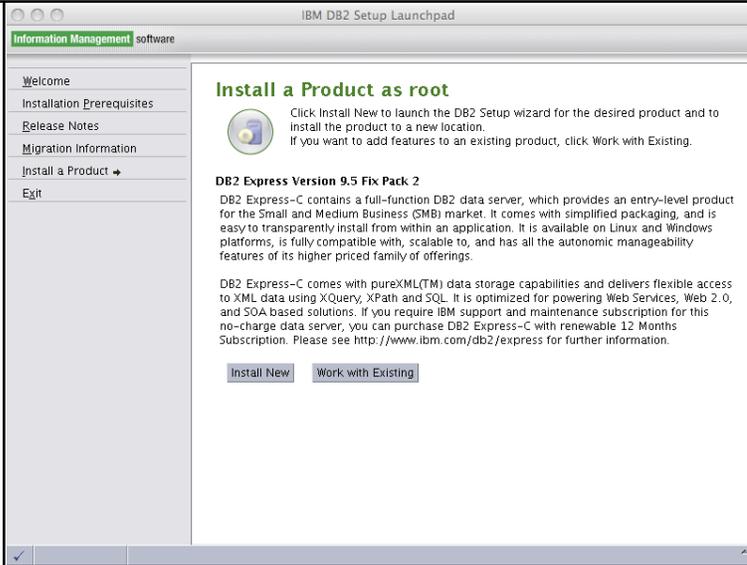
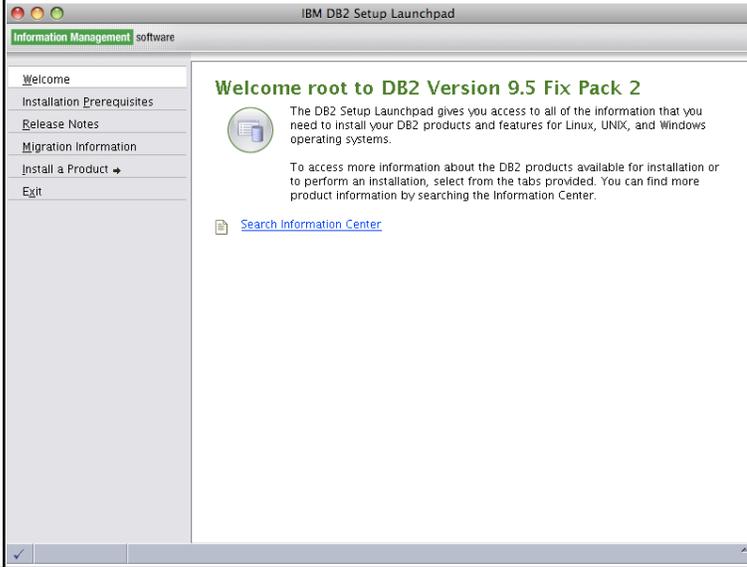
```
. $HOME/sqllib/db2profile
```

```
source $HOME/sqllib/db2cshrc
```

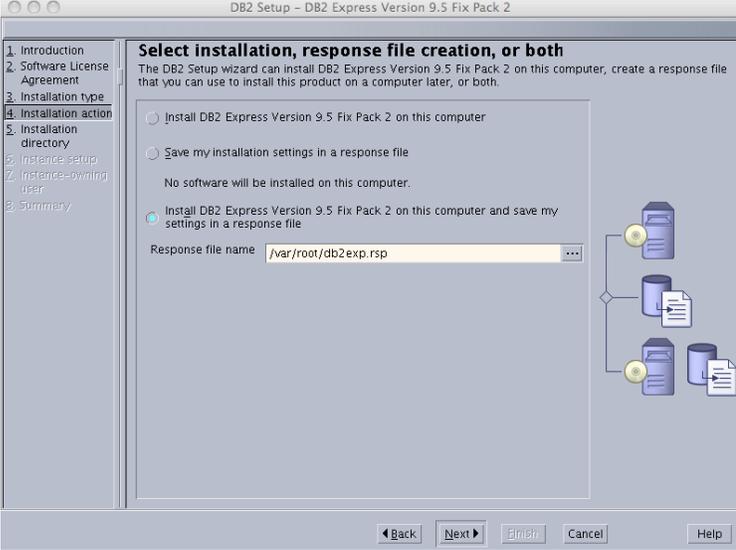
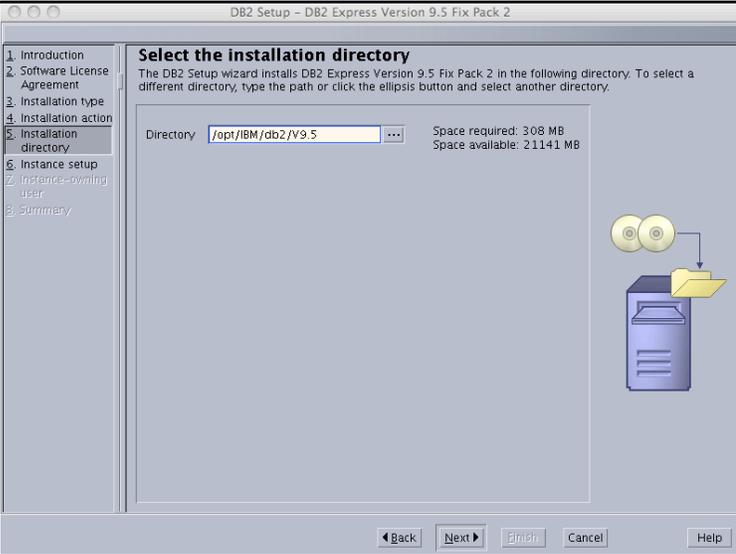
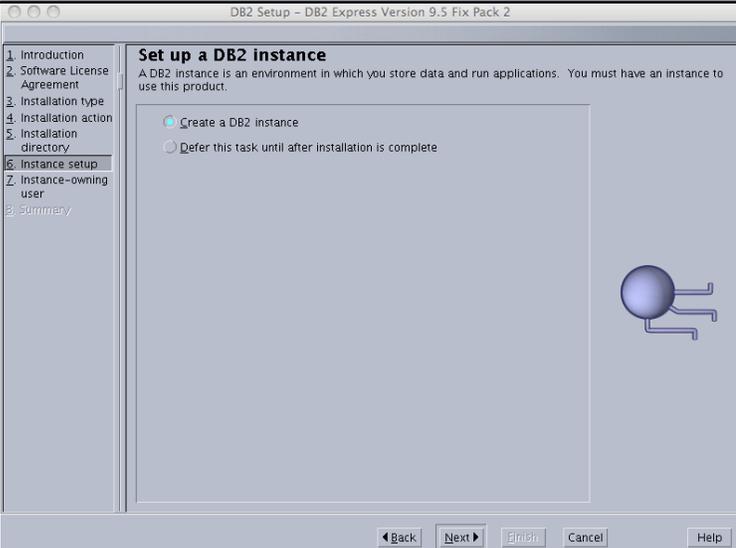
where \$HOME represents the home directory of the user ID that owns the DB2 instance.

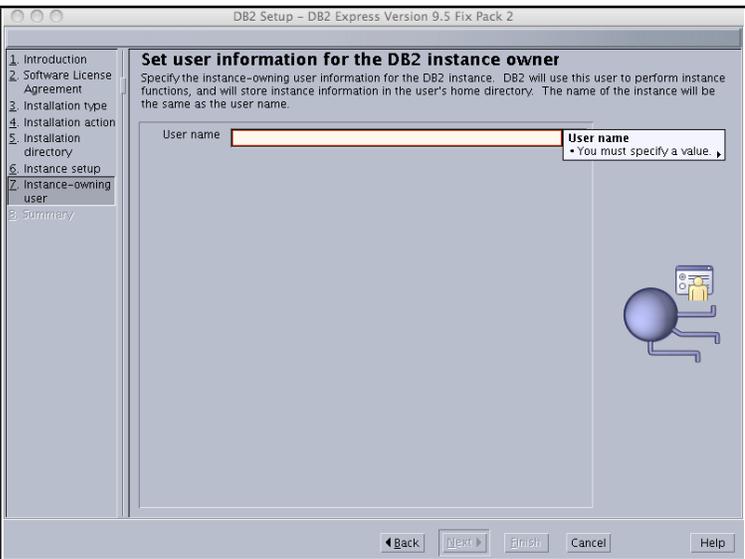
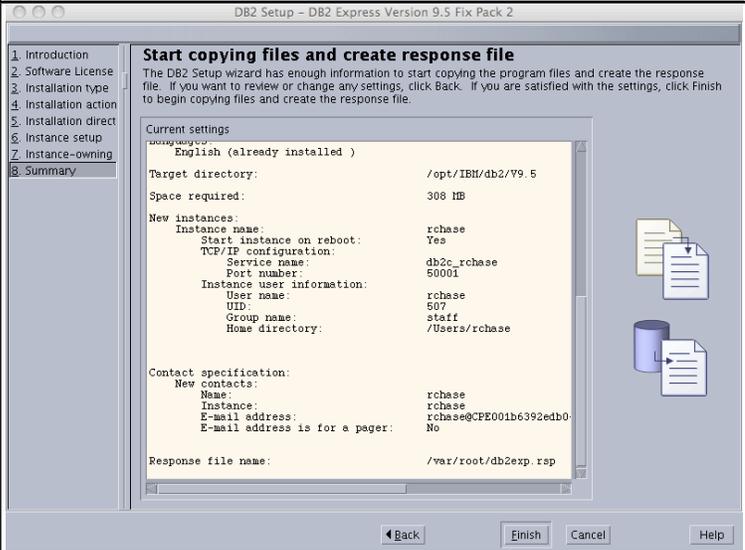
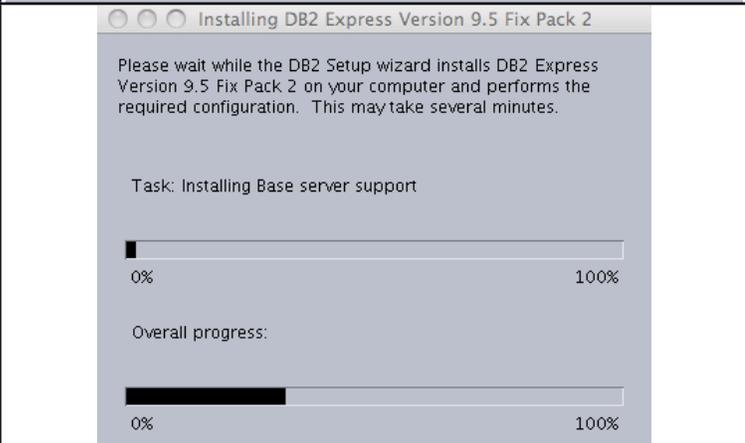
Admin (root) user installation

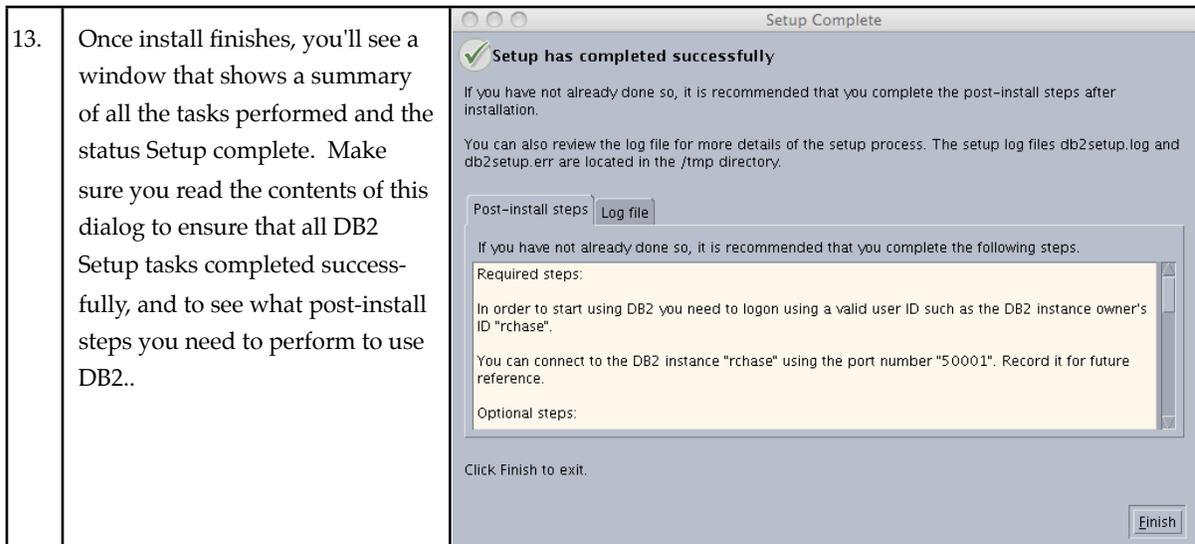
1.	Download DB2 Express-C from http://www.ibm.com/db2/express/download.html .
2.	Unpack the downloaded file by double clicking on the icon in the Finder, or by running the following command using the Terminal application: <code>tar -xvzf db2exc_952beta_MAC_x86_64.tar.gz</code> . The Terminal application is located in /Applications/Utilities.
3.	Run the <code>db2setup</code> command as the Admin user by running <code>sudo ./db2setup</code> , and provide the password for your Admin user account.
4.	<p>After a brief splash screen, the DB2 Setup Launchpad will launch. You can find more info about DB2 from the various tabs in the Launchpad.</p> <p>When you are ready to install a product, click on the “Install a Product” tab.</p>
5.	<p>On the “Install a Product” page, make sure the correct product is listed, and click “Install New” to install a new copy of DB2.</p>



6.	<p>The DB2 Setup wizard will launch to walk you through installing and setting up DB2. Click “Next”.</p>	
7.	<p>Click on the “Accept” radio button to accept the terms of the DB2 license agreement, then click “Next”.</p>	
8.	<p>Select the desired installation type (typical, compact or custom) and click “Next”.</p> <p>“Typical” install type is recommended and is sufficient for most users.</p>	

<p>9.</p>	<p>Select the desired installation action and click “Next”.</p> <p>For most users, simply installing DB2 is sufficient, but you can save a response file at the same time if desired.</p>	
<p>10.</p>	<p>In the Admin User installation, you can install DB2 to any location on your computer, and you can install DB2 multiple times.</p> <p>Select the desired installation directory and click “Next”</p>	
	<p>In order to use DB2, you must create a DB2 instance. We recommend you create a DB2 instance during installation by selecting the “Create a DB2 Instance” radio button.</p>	

	<p>You must specify an existing user to use as the DB2 instance owning user. If you need to create a new user to run DB2, use the "Accounts" panel in the Mac OS X System Preferences application.</p> 
<p>11. The summary page shows a summary of all your install settings.</p> <p>If you want to change any of the settings, click back, otherwise click "Finish" to start the process of copying files to your computer and performing the necessary configuration tasks.</p>	
<p>12. DB2 will show you progress of the installation and setup tasks as they are performed.</p>	



In particular, pay attention to the following message that will tell you how to set up your environment to use DB2 from the command line.

```
DBI1272I To start using the DB2 instance rchase, you must set up the
DB2 instance environment by sourcing db2profile or db2cshrc in the
sqllib directory, or you can open a new login window of the DB2 instance
user.

Explanation:

The DB2 instance cannot be used before db2profile (for Bourne or Korn
shell users) or db2cshrc (for C shell users) is sourced.

User response:

To set up the DB2 instance environment, you can open a new login window
under the ID that owns the DB2 instance, or source the DB2 instance en-
vironment by running the appropriate following command under the ID that
owns the DB2 instance:

. $HOME/sqllib/db2profile

source $HOME/sqllib/db2cshrc

where $HOME represents the home directory of the user ID that owns the
DB2 instance.
```

Script installation

Standard User installation

If you do not want to use the GUI installation method to install DB2, you can easily install DB2 using the provided scripts. This can be useful if you do not have Java 1.6 installed on your Mac, or if you are installing on your Mac remotely and cannot successfully launch the graphical DB2 Setup wizard.

Perform the following steps to install DB2 on your Mac OS X computer as a Standard User.

1. Download DB2 Express-C from <http://www.ibm.com/db2/express> .
2. Unpack the downloaded file by double clicking on icon in the Finder, or by running the following command using the Terminal application: `tar -xvzf db2exc_952beta_MAC_x86_64.tar.gz`. The Terminal application is located in /Applications/Utilities.
3. Run the `db2_install` command by double clicking on the file in the Finder, or run it from the Terminal application. This will install DB2 in the `sqllib` dir under the current user's home directory. This install dir is also treated as your DB2 instance directory.
4. Complete the setup of your DB2 instance by sourcing the `sqllib/db2profile` file. You can also do this every time you log in by adding the following line to your `.bash_profile`: `. $HOME/sqllib/db2profile`

Admin User (root) installation

1. Download DB2 Express-C from <http://www.ibm.com/db2/express>.
2. Unpack the downloaded file by double clicking on the icon in the Finder, or by running the following command using the Terminal application: `tar -xvzf db2exc_952beta_MAC_x86_64.tar.gz`. The Terminal application is located in /Applications/Utilities.
3. Launch the `db2_install` command as the Admin user by running "`sudo ./db2setup`" from the Terminal, and provide the password for your Admin user account. You will be prompted to enter the name of the product you are installing, for Client installs, type "CLIENT", for Express-C installs, type "EXP". You will also be prompted to enter the desired installation directory.
4. After successfully installing DB2 using the `db2_install` command, you must create a DB2 instance using the `db2icrt` command, located in `<DB2 install dir>/instance`. You can run `db2icrt` with no arguments for full syntax, but all you really need is a user name that you will use as the instance-owning user, and optionally you can use a different user as the fenced user.
5. To use the same user for instance owning user and fenced user, run "`db2icrt -u <username> <username>`".
6. To use different users for the instance owning user and fenced user, run "`db2icrt -u <fenced user> <instance owning user>`".
7. Complete the setup of your DB2 instance by sourcing the `sqllib/db2profile` file. You can also do this every time you log in by adding the following line to your `.bash_profile`: `. $HOME/sqllib/db2profile`

Response file installation

DB2 for Mac OS X supports installing using a response file. The instructions for installing with a response file on Mac OS X are the same as other Linux/Unix platforms. For more information, see [this topic](#) in the DB2 documentation.

After you install - DB2 First Steps

After you install, we recommend you run DB2 First Steps to get some more info on using DB2. DB2 First Steps requires Firefox and does not work with Safari. To run DB2 First Steps, log on as the DB2 instance-owning user and run `db2fs`. You will see a dialog prompting you for the location of your browser, if you have installed Firefox in the default location, enter `/Applications/Firefox.app/Contents/MacOS/firefox` in the First Steps dialog. First Steps does not currently support Safari.

If you have trouble running first steps, make sure your `LANG` environment variable is set to either `en_US.UTF8` or just `en_US`.

Don't forget to set up the DB2 environment by sourcing the `sqllib/db2profile` file. You can do this by typing "`~<DB2 instance owning user>/sqllib/cfg/db2profile`" or "`source ~<DB2 instance owning user>/sqllib/cfg/db2profile`". You can also do this automatically by adding this to your `.profile` or `.bash_profile` file. We don't recommend using a `.bashrc` file as the shell on Mac OS X does not read this file by default.

Current restrictions

Introduction

This section provides information about the known issues and limitations that exist in the initial release of DB2 for Mac OS X.

Since this product is still a Beta release, we strongly recommend that it not be used in production environments or for critical business purposes. IBM will continue to enhance and improve the functionality of this product and will be actively monitoring the DB2 Express-C forums for reporting of specific problems.

Java Stored Procedures

Java stored procedure functionality is not available in this release.

LBAC

There are some problems with usage of certain DB2 utilities in scenarios where LBAC is being used. You may see problems using db2look, export/import, db2cat, db2audit, or load in a scenario including LBAC.

Reorg

Basic DB2 reorg functionality has been tested successfully in a limited number of test scenarios. In certain scenarios, trace information about DB2 reorg may be inaccurate. DB2 may also report errors related to reorg and tracing in certain scenarios. These errors only effect the tracing of reorg functionality, the actual reorg functionality is unaffected.

Uninstalling DB2

The db2_deinstall script is usually the recommended method for uninstalling DB2, however there are some outstanding issues with the db2_deinstall script on Mac OS X. Until these issues are fixed, you can uninstall DB2 manually by deleting the directories where DB2 is installed. If you performed an Admin user install, you need to remove the DB2 install dir as an Admin user by running `sudo rm -rf <DB2 installdir>` from the Terminal command line.

Delete the following directories.

DB2 install dir (eg `/opt/IBM/db2/V9.5` for Admin user installs, `~/sqllib` for Standard User installs).

DB2 instance dir (for Admin installs only, eg `~<instance owning user>/sqllib`)

DB2 database directory (`~<instance owning user>/<instance owning user>`, eg `~rchase/rchase`)

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