

IBM<sup>®</sup> DB2<sup>®</sup> Universal Database  
Personal Edition  
for Linux<sup>®</sup>



# Quick Beginnings

*Version 7*



IBM<sup>®</sup> DB2<sup>®</sup> Universal Database  
Personal Edition  
for Linux<sup>®</sup>



# Quick Beginnings

*Version 7*

Before using this information and the product it supports, be sure to read the general information under "Appendix G. Notices" on page 81.

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# Welcome to DB2 Universal Database!

The DB2 Universal Database Quick Beginnings books provide a focused introduction to the installation and configuration of DB2 products.

This *Quick Beginnings* book will guide you through the planning, installation, and set up of a DB2 Personal Edition workstation. Once you have set up your Personal Edition workstation, you will create a sample database and access data from it.

If you plan to use your DB2 Personal Edition workstation as a DB2 client, you will also be guided through the steps required to establish a connection to a remote DB2 server.



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## Conventions

This book uses the following highlighting conventions:

- **Boldface** indicates commands or graphical user interface (GUI) controls such as names of fields, folders, icons, or menu choices.
- *Italics* indicates variables that you should replace with your own value. It is also used to indicate book titles and to emphasize words.
- Monospace indicates file names, directory paths, and examples of text you enter exactly as shown.



This icon marks a fast path. A fast path guides you to information specific to your configuration where multiple options are available.



This icon marks a tip. It provides additional information that can help you complete a task.

For a complete description of the DB2 library, see “Appendix F. Using the DB2 Library” on page 63.



- If you do not follow the documented installation method with the recommended defaults, it may be necessary to refer to the *Administration Guide* and the *Command Reference* to complete the installation and configuration.
- The term *Windows 32-bit operating systems* refers to Windows 95, Windows 98, Windows NT, or Windows 2000.
- The term *Windows 9x* refers to Windows 95 or Windows 98.
- The term *DB2 client* refers to a DB2 Administration Client, DB2 Application Development Client, or a DB2 Run-Time Client.
- The term *DB2 Universal Database* refers to DB2 Universal Database on OS/2, UNIX, and Windows 32-bit operating systems, unless otherwise stated.



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# Part 1. Installing and Configuring DB2 Personal Edition



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## Chapter 1. Planning for Installation



If you know that your system meets all hardware and software requirements, and you want to begin installing your DB2 product right away, go to “Chapter 2. Installing and Configuring DB2 Personal Edition for Linux” on page 7.

For information on the DB2 family of products, see “Appendix E. About DB2 Universal Database for UNIX, Windows, and OS/2” on page 47.

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There are many components that you might want to use in your environment. Use the product and planning information in this section to ensure that your system meets the prerequisites and to decide which components you want to install. If you are migrating from a previous version of DB2, there are also pre-installation migration tasks you should perform.

Before you begin your DB2 product installation, you should determine the requirements for the system that you are planning to install and configure.

---

### Memory Requirements

The amount of memory that you require depends on the size of your databases. We suggest that you have a minimum of 128 MB of memory and a minimum 128 MB of swap space to accommodate average sized databases. For information about memory requirements during the day-to-day operations of your databases, refer to the *Administration Guide*.

---

### Disk Requirements

This section shows the *minimum* amount of disk space that is required to install your DB2 product and components. It does not include the disk requirements necessary for the operating system, application development tools, and communications products. Consult each product’s documentation for these values. Estimates for disk space requirements are listed here; the actual amounts required depend on the functions you are using.

For information about space requirements for data, refer to the *Administration Guide*.

### Estimating Fixed Disk Requirements

To estimate the disk requirements for a particular configuration, add the recommended minimum disk sizes for the products and components that you want to install. Include an allowance for your application data and indexes.

## Components

Use Table 1 to estimate the amount of disk space you need to install your DB2 product and its associated components on your operating system.

Table 1. Estimating Disk Requirements

	Recommended Minimum Disk (MB)
DB2 Universal Database Personal Edition for Linux	
DB2 Personal Edition for Linux (including the DB2 GUI Tools)	130 MB
Online documentation in HTML format (English)	100 MB
Total Disk Space Required	__ MB

## Software Requirements

This section outlines the software required to run DB2 products.

### Product Requirements

Table 2 lists the operating system and communications software required for DB2 Universal Database.

Table 2. Software Requirements

Product	Hardware/Software Requirements	Communications
		<b>Linux</b>
• DB2 Universal Database Personal Edition	<ul style="list-style-type: none"><li>• Linux kernel 2.2.12 or higher.</li><li>• <i>glibc</i> Version 2.1.2 or higher.</li><li>• <i>pdksht</i> package</li><li>• <i>libstdc++</i> Version 2.9.0</li></ul> <p>To install DB2, you will need the Red Hat Package Manager (<i>rpm</i>).</p>	<ul style="list-style-type: none"><li>TCP/IP</li><li>• For TCP/IP connectivity, no additional software is required.</li></ul>

## Possible Client-to-Server Connectivity Scenarios

The following table shows the communication protocols that can be used when connecting a specific DB2 client to a specific DB2 server. DB2 Workgroup, DB2 Enterprise, and DB2 Enterprise - Extended Editions can service requests from host or AS/400 clients (DRDA ARs).

Table 3. Possible Client-to-Server Connectivity Scenarios

Client	Server						
	AIX	HP-UX	Linux	OS/2	PTX/NUMA-Q	Solaris	Windows NT/ Windows 2000
AS/400 V4R1	APPC	N/A	N/A	APPC	N/A	APPC	APPC
AS/400 V4R2	APPC TCP/IP	TCP/IP	TCP/IP	APPC TCP/IP	TCP/IP	APPC TCP/IP	APPC TCP/IP
AIX	APPC TCP/IP	TCP/IP	TCP/IP	APPC TCP/IP	TCP/IP	APPC TCP/IP	APPC TCP/IP
HP-UX	APPC TCP/IP	TCP/IP	TCP/IP	APPC TCP/IP	TCP/IP	APPC TCP/IP	APPC TCP/IP
Linux	TCP/IP	TCP/IP	TCP/IP	TCP/IP	TCP/IP	TCP/IP	TCP/IP
MVS	APPC	N/A	N/A	APPC	N/A	APPC	APPC
OS/2	APPC IPX/SPX(1),(2) TCP/IP	TCP/IP	TCP/IP	APPC IPX/SPX(1),(2) NetBIOS TCP/IP	TCP/IP	APPC IPX/SPX(1) TCP/IP	APPC IPX/SPX(1) NetBIOS TCP/IP
OS/390	APPC TCP/IP	TCP/IP	TCP/IP	APPC TCP/IP	TCP/IP	APPC TCP/IP	APPC TCP/IP
PTX/NUMA-Q	TCP/IP	TCP/IP	TCP/IP	TCP/IP	TCP/IP	TCP/IP	TCP/IP
Silicon Graphics IRIX	TCP/IP	TCP/IP	TCP/IP	TCP/IP	TCP/IP	TCP/IP	TCP/IP
SQL/DS	APPC	N/A	N/A	APPC	N/A	APPC	APPC
Solaris	APPC TCP/IP	TCP/IP	TCP/IP	APPC TCP/IP	TCP/IP	APPC TCP/IP	APPC TCP/IP
VSE & VM V5	APPC	N/A	N/A	APPC	N/A	APPC	APPC
VSE V6	APPC	N/A	N/A	APPC	N/A	APPC	APPC
VM V6	APPC TCP/IP	TCP/IP	TCP/IP	APPC TCP/IP	TCP/IP	APPC TCP/IP	APPC TCP/IP
Windows 9x	TCP/IP	TCP/IP	TCP/IP	NetBIOS TCP/IP	TCP/IP	TCP/IP	IPX/SPX(1) NPIPE NetBIOS TCP/IP
Windows NT/ Windows 2000	APPC IPX/SPX(1) TCP/IP	TCP/IP	TCP/IP	APPC IPX/SPX(1) NetBIOS TCP/IP	TCP/IP	APPC IPX/SPX(1) TCP/IP	APPC IPX/SPX(1) NPIPE NetBIOS TCP/IP

1. Direct Addressing  
2. File Server Addressing

## Migrating from Previous Versions of DB2

If you are migrating a DB2 product installation on a workstation that is running on a supported Linux distribution, you should be aware that DB2 Version 7 can only run with *glibc* version 2.1.2 or higher, as mentioned in “Software Requirements” on page 4. If your Linux distribution has a previous version of this library, you will not be able to use your DB2 product.

To prepare your workstation for installation, you have to upgrade your existing Linux distribution to a more recent level that includes the required (or later) version of the *glibc* library; you also have the option to update only the *glibc* library. We recommend that you update your distribution’s

installation to a more recent version that includes the required level for the *glibc* library. Updating only the *glibc* library may cause errors that can impact your operating system

If there are several instances using previous versions of a DB2 product, you do not need to migrate all of these instances at this time. Instances that are not migrated will continue to use the previous version of the DB2 product.

To prepare your instances for migration, you should ensure that you have done the following:

- Stopped any instances that you want to migrate by entering the **db2stop** command.
- Stopped the license daemon by entering the **db2licd -xxx** command.
- Stopped all DB2 back-end processes for any command line processes by entering the **db2 terminate** command in each window.
- Ensured that the `db2profile` script, located in `INSTHOME/sql1lib/` (where `INSTHOME` is the home directory of the instance owner) is of the proper shell syntax. For example:

```
DB2INSTANCE=db2inst1 //bash, Bourne, or Korn shell
export DB2INSTANCE
```

or

```
set DB2INSTANCE=db2inst1 //C shell
```

---

## Chapter 2. Installing and Configuring DB2 Personal Edition for Linux

This section describes how to install DB2 Universal Database Personal Edition on a Linux-based workstation. If you want to install a DB2 Administration Client, DB2 Run-Time Client, or a DB2 Application Development Client, refer to the *Installation and Configuration Supplement*. For information on how to deploy this product using a distributed installation, refer to the *Installation and Configuration Supplement*.

If you are migrating a previous installation of a DB2 product, ensure that you have read "Migrating from Previous Versions of DB2" on page 5.

The instructions in this section cover the following Linux distributions:

1. Red Hat Linux\*\*
2. SuSE Linux\*\*
3. TurboLinux\*\*
4. Caldera Open Linux\*\* (or simply Caldera)

For more information on installing other distributions, point your browser to the following web page: [www.ibm.com/software/data/db2/linux](http://www.ibm.com/software/data/db2/linux)

---

### Before You Begin

Before you begin the installation, you should ensure that your system meets all of the memory, hardware, and software requirements to install your DB2 product. For more information, see "Chapter 1. Planning for Installation" on page 3.

You also need to ensure that your workstation is enabled for a DB2 product installation. Depending on your Linux distribution, you may need to perform certain tasks before installing a DB2 product on your system. The following sections describe what you need to do on your particular Linux distribution.

#### Installing DB2 on Red Hat Linux

The only preparation work that you need to do to install your DB2 product on a workstation that is running Red Hat Linux Version 6.1 or later is to add the required `pdksh` package that is not part of a Red Hat default installation. This package is available in the `/RedHat/RPMS` directory on the Red Hat CD-ROM. Refer to your Linux documentation for information on how to install this package using the `rpm` command.

## Installing DB2 on SuSE Linux

The SuSE Version 6.3 default installation is fairly simple to enable for a DB2 product installation. Any DB2 product on Linux requires `glibc 2.1.2` or higher to run. The SuSE installation comes with this package, however, this distribution refers to this package by a different name. SuSE calls this package `shlibs`. This causes problems because the DB2 Installer program fails to recognize the existence of the required `glibc` package, and ultimately fails. A 'dummy' `glibc rpm` is included on the DB2 CD-ROM. If you install this package, the installation will run smoothly. The package is called `glibc-2.2.1-2.rpm` and is located in the `/db2/install/dummyrpm` directory on the DB2 CD-ROM. Refer to your Linux documentation for information on how to install this package using the `rpm` command.

## Installing DB2 on Turbo Linux

To enable your Turbo Linux Version 6.0 or later workstation for a DB2 product installation, you need to add the `pdksh` package. This is the only prerequisite that is missing from a default installation. This package is available on the Turbo Linux CD-ROM and is located in the `/TurboLinux/RPMS` directory. Refer to your Linux documentation for information on how to install this package using the `rpm` command.

## Installing DB2 on Caldera Open Linux

Caldera Open Linux Version 2.3 is missing the required `pdksh` package from a default installation. This `pdksh` package is on the Caldera Version 2.3 CD-ROM, however, it currently is not compatible with any DB2 products. Instead, you can use a Red Hat `pdksh` package.

To enable your Caldera workstation for any DB2 product installation using a Red Hat `pdksh` package, download the `pdksh-5.2.13-3.i386` package (or a later version) from the Red Hat mirror web site at: [www.redhat.com/download/mirror.html](http://www.redhat.com/download/mirror.html). Because this is a Red Hat package, you will receive a dependency error on the `glibc` package if you try to install it. The `glibc` package is automatically installed with Caldera Version 2.3. You can therefore ignore this error, it is a result of different naming conventions between distribution vendors. To bypass this error, you will have to install this package using the no dependencies option (for example, the `rpm -i --nodeps` command). Refer to your Linux documentation for information on how to install this package using the `rpm` command.

---

## Installation Steps

This section tells you how to install your DB2 product using the DB2 Installer program or manually, using your operating system's native installation tools.

To install DB2 Universal Database on Linux systems, perform the following steps:



## Step 1. Identify and Record Parameter Values

Table 4 will help you determine the values required to install DB2 products, set up a DB2 instance, and configure the Administration Server. Before proceeding with the installation and configuration, complete the *Your Value* column in the table. If you want to choose the default value for a parameter, you do not need to provide any value in the *Your Value* column for that parameter. In Table 4, the only parameter for which a value is required is *DB2 Product Name*, which you select after you start the DB2 Installer program. All other parameters either have a default value or are optional.

*Table 4. Parameter Values Required for Installation*

Information Required for DB2 install	Default Value	Your Value
Product/Component		
DB2 Product Name	None	
DB2 Product Messages	None	
Documentation	None	
DB2 Instance		
User Name	db2inst1	
UID	System-generated UID	
Group Name	db2iadm1	
GID	System-generated GID	
Password	ibmdb2	
TCP/IP Service Name	db2cdb2inst1	
TCP/IP Port Number	50000	
User Name (UDF)	db2fenc1	
UID (UDF)	System-generated UID	
Group Name (UDF)	db2fadm1	
GID (UDF)	System-generated GID	
Password (UDF)	ibmdb2	
Administration Server		
User Name (DAS)	db2as	
UID (DAS)	System-generated UID	
Group Name (DAS)	db2asgrp	
GID (DAS)	System-generated GID	
Password (DAS)	ibmdb2	

Table 4. Parameter Values Required for Installation (continued)

Information Required for DB2 install	Default Value	Your Value
TCP/IP Port Number (DAS)	523	523

## Step 2. Mount the CD-ROM

To install your DB2 product, you must first mount the CD-ROM. Once you have mounted the CD-ROM, you can start the installation.

To mount the CD-ROM on a Linux workstation, perform the following steps:

Step 1. Log on to the system as a user with root authority.

Step 2. Insert the CD-ROM in the drive and mount it with a command similar to the following:

```
mount -t iso9660 -o ro /dev/cdrom /cdrom
```

where */cdrom* represents the mount point of the CD-ROM.

Step 3. Log out.

## Step 3. Install a DB2 Product

This step tells you how to install your DB2 product using the DB2 Installer program, or your operating system's native installation tools.

### Installing a DB2 Product Using the DB2 Installer

Sometimes, display problems can occur when running the DB2 Installer program. To refresh the current screen at any time, press **Ctrl+L**. To avoid most potential display problems, install your DB2 product through a virtual console session (a terminal window outside of the graphical interface that most Linux distributions are installed with). To change to a virtual console session, press **Ctrl+Alt+F1**. To change back to the graphical interface, press **Ctrl+Alt+F7** (your particular Linux distribution may differ, refer to your Linux documentation for more information).



When you use the DB2 Installer program, you should be aware of the following:

- The DB2 Installer's **db2setup** command only works with bash, Bourne, and Korn shells. Other shells are not supported.
- You can generate a trace log, *db2setup.trc*, to record errors experienced during the installation. Run the **db2setup** command as follows:

```
db2setup -d
```

This creates a trace file, */tmp/db2setup.trc*.



To display the components for a DB2 product that you want to install, select **Customize**. To go back to a previous window at any times, select **Cancel**.

When you have finished selecting the DB2 product and its components, select **OK** to complete the installation.

For more information or assistance during the installation of any DB2 product or component, select **Help**.

When the installation is complete, Any DB2 software is installed in the `/usr/IBMDB2/V7.1` directory. If you are migrating your DB2 product, you may have to perform some tasks to complete the migration process. For more information, see “Chapter 3. DB2 Post-Installation Migration Tasks” on page 17.



You can use the DB2 install program to create an additional instance, create an Administration Server, or add additional products or components after your initial installation. To create or add a new instance, an Administration Server, or additional DB2 products and components, enter the following command:

```
/usr/IBMDB2/V7.1/install/db2setup
```

### Manually Installing a DB2 Product

We recommend that you use the DB2 Installer program to install a DB2 product on Linux. The DB2 Installer program is a text-based installation tool that automates the installation and configuration of any DB2 products. If you prefer not to use this utility, you can install a DB2 product manually using the **db2\_install** or **rpm** commands. Your DB2 product is made up of different functions and components that are referred to as packages in the Linux environment. When you install your DB2 product using the **rpm** command, you must select to install each package that you require and each associated package for the optional functions that you want to use. Some packages are required and some are optional. For a list of all the required and optional packages for a DB2 product installation, see “Appendix A. Contents of the DB2 Products for Linux” on page 33.

For example, if you want to install the Control Center on your Linux workstation, you would need to install the `db2wcc71-7.1.0-0.i386.rpm` package by entering the following command:

```
rpm -ivh db2wcc71-7.1.0-0.i386.rpm
```

Using the **rpm** command to install a DB2 product is prone to errors because you could easily skip over a required package. We recommend that you use the **db2\_install** script to install a DB2 product if you do not want to use the DB2 Installer program. The **db2\_install** script will install both the required and optional packages for a DB2 product using the **rpm** command.

To install a DB2 product using the **db2\_install** script:

1. Log in as a user with root authority.
2. Enter the **./db2\_install** command. The script will return a list of the products that are available for installation from your CD-ROM, for example:

```
Specify one or more of the following keywords,
separated by spaces, to install DB2 products.

DB2.PERS - DB2 Personal Edition
DB2.SDK  - DB2 Application Development Client
DB2.CAE  - DB2 Administration Client
Enter "help" to redisplay the product names, enter "quit" to exit.
*****
```
3. Enter the name of the DB2 product that you want to install and press **Enter**. For example, to install DB2 Personal Edition, respond to the **db2\_install** script's prompt by entering **DB2.PERS**. The **db2\_install** script will begin installing all the rpms associated with the product that you selected for installation.

When installation is complete your DB2 software will be installed in the `/usr/IBMdb2/V7.1` directory.

**DB2 for Linux Post-Installation Tasks:** After manually installing your product, you should create groups and user IDs for the instance owner, Administration Server, and fenced user defined functions (UDFs) and stored procedures. Once you set up these IDs you can create an instance, create the Administration Server, install the license key, and create links for your DB2 product files.

You do not have to perform these tasks if you used the DB2 Installer program to install your DB2 product.

*Creating Group and User IDs for the Instance Owner, Administration Server, and UDFs:* You should create group and user IDs for the instance owner, Administration Server, and UDFs and stored procedures. If you want to use existing user or group IDs, you can skip this section and proceed to creating an instance.

In addition to the rules imposed by the operating system for user names and groups, you must also adhere to the rules described in "Appendix D. Naming Rules" on page 43.

To create a group and user ID for the instance owner:

1. Log in as a user with root authority.
2. Enter the following command to make a new group:

```
groupadd -g 999 dbadmin1
```

where 999 represents the group ID and dbadmin1 represents the group name. This new group is the SYSADM group for the instance.

3. Enter the following command to make a new user:

```
useradd -u 1004 -g dbadmin1 -m -d /home/db2inst1 db2inst1 -p db2inst1
```

where 1004 represents the user ID, dbadmin1 represents the group you created in the previous step, /home/db2inst1 represents the user's home directory, and db2inst1 represents the username and instance name.

You should use a unique user ID for each instance you create. This allows for easier error recovery if a system error occurs.

To create group and user IDs for the Administration Server follow the same steps you used to create IDs for the instance owner. You must use different user IDs for the Administration Server and instance owner. For security reasons, we recommend you use a different group ID for the Administration Server and instance owner.

To create group and user IDs for UDFs and stored procedures, follow the same steps you used to create IDs for the instance owner. For security reasons, we recommend that you use different user IDs for UDFs and the instance owner. You will be asked to supply a UDF user ID when you create a DB2 instance.

*Creating an Instance:* A DB2 instance is an environment where you store data and run applications. Use the **db2icrt** command to create an instance. You must have root authority to enter this command. For more information about database instances, refer *Administration Guide*.

The **db2icrt** command is run with the following parameters:

```
/usr/IBMdb2/V7.1/instance/db2icrt -a AuthType -u FencedID InstName
```

where:

- -a AuthType represents the authentication type for the instance. AuthType can be one of SERVER, CLIENT, DCS, DCE, SERVER\_ENCRYPT, DCS\_ENCRYPT, or DCE\_SERVER\_ENCRYPT.
- -u FencedID represents the name of the user under which fenced user defined functions (UDFs) and fenced stored procedures will run. This flag is not required if you are creating an instance on a DB2 client.
- InstName represents the name of instance.

You must configure each instance to accept inbound communications. For more information, refer to the *Installation and Configuration Supplement*.

*Creating the Administration Server:* The Administration Server provides services to support tools that automate the configuration of connections to DB2 databases. The Administration Server also supports tools that administer DB2 from your server system or a remote client using the Command Center.

To create the Administration Server, use the **/usr/IBMdb2/V7.1/instance/dasircrt ASName** command, where *ASName* represents the name of the Administration Server you want to create. For more information on the Administration Server, refer to the *Administration Guide*.

After you have created the Administration Server, you must configure it to accept inbound connections. For more information, refer to the *Installation and Configuration Supplement*.

*Updating the License Key:* Your Proof of Entitlement and the *License Information* booklet identify the products for which you are licensed.

To update your DB2 product's license key:

1. Log in as a user with root authority.
2. Update your DB2 product's license with the following command:

```
/usr/IBMdb2/V7.1/adm/db2licm -a filename
```

where *filename* is the full pathname and filename for the license file that corresponds to the product you have purchased.

The name of the license file for this product is:

**db2udbpe.lic**

DB2 Universal Database Personal Edition

For example, if the CD-ROM is mounted on */cdrom* and the name of the license file is *db2udbpe.lic*, the command should be entered as follows:

```
/usr/IBMdb2/V7.1/adm/db2licm -a /cdrom/db2/license/db2udbpe.lic
```

**Creating Links for DB2 Files:** To create links in the */usr/lib* and the */usr/include* directories to DB2 files, log in as a user with root authority and run the **/usr/IBMdb2/V7.1/cfg/db2ln** command.

If there are existing links to the */usr/lib* and */usr/include* directories from previous versions of a DB2 product, they will automatically be removed by entering the **db2ln** command to create links for this version. If you want to re-establish the links to the libraries of previous versions of your DB2 product, then you must execute the **db2rmln** command from your previous version of

your DB2 product *before* you execute the **db2ln** command on previous version of your DB2 product. Links can be established for only one version of a DB2 product on a given system.

If you are migrating from a previous version of a DB2 product, you now need to migrate any instances that you want to use with this version of the DB2 product that you installed. For more information, see “Chapter 3. DB2 Post-Installation Migration Tasks” on page 17.

## Verifying the Installation

You can verify that DB2 is installed correctly by creating the SAMPLE database on your system, and accessing data from the database. To create the SAMPLE database, and access data from it, perform the following steps:

- Step 1. Log on to the system as a user with System Administrative (SYSADM) authority. For more information, see “Working with the System Administrative Group” on page 40. If you installed DB2 using the defaults provided by the DB2 Installer program, log on to your system as the `db2inst1` user.
- Step 2. Enter the **db2sampl** command to create the SAMPLE database. The SAMPLE database is automatically catalogued with the database alias SAMPLE when it is created.
- Step 3. Start the database manager by entering the **db2start** command.
- Step 4. Enter the following commands to connect to the SAMPLE database, retrieve a list of all the employees that work in department 20, and reset the database connection:

```
db2 connect to sample
db2 "select * from staff where dept = 20"
db2 connect reset
```

For information about entering DB2 commands, see “Entering Commands Using the Command Center” on page 37 or “Entering Commands Using the Command Line Processor” on page 39.



After you have verified the installation, you can remove the SAMPLE database to free up disk space. Enter the **db2 drop database sample** command to drop the SAMPLE database.



---

## Chapter 3. DB2 Post-Installation Migration Tasks

After the installation completes, you should migrate your instances by running the **db2imigr** command. The **db2imigr** command checks that your instances can be migrated and then performs the actual migration to the Version 7 format.

To migrate instances, including the Administration Server instance, to a format useable by DB2 Version 7, you must run the **db2imigr** command by performing the following steps:

1. Log in as user with root authority.
2. Enter the **db2imigr** command as follows:

```
/usr/IBMdb2/V7.1/instance/db2imigr [-d] [-a AuthType] [-u fencedID] InstName
```

where:

**-d** Sets the debug mode that you can use for problem determination. This parameter is optional.

**-a** *AuthType*

Specifies the authentication type for the instance. Valid authentication types are SERVER, CLIENT, and DCS. If the *-a* parameter is not specified, the authentication type defaults to SERVER. This parameter is optional. The authentication type of an instance applies to all databases owned by the instance.

**Note:** Although authentication type DCE is a valid authentication type for an instance, you cannot specify this type of authentication using this command. For more information, refer to the *Administration Guide*.

**-u** *fencedID*

Is the user under which the fenced user-defined functions (UDFs) and stored procedures will execute. This parameter is required.

*InstName*

Is the login name of the instance owner.

Once you have migrated all of your instances to the Version 7 format, you are finished the migration process.



---

## Part 2. Using DB2 Universal Database



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## Chapter 4. Configuring Client to LAN-Based Server Communications Using the Command Line Processor



To configure a client to communicate with a server, the remote server must be configured to accept in-bound requests for the communication protocol that you want to use. By default, the installation program automatically detects and configures any protocols running on a server.

If you have added a new protocol to your network, or wish to change any of the default settings on the server, refer to the *Installation and Configuration Supplement*.

---

This section describes how to configure a DB2 client to communicate with a DB2 server that does not reside on a host or AS/400 system using the command line processor.

For instructions on entering DB2 commands, see “Entering Commands Using the Command Center” on page 37 or “Entering Commands Using the Command Line Processor” on page 39.

---

### Configuring TCP/IP on the Client

This section assumes that TCP/IP is functional on the client and server workstations. See “Software Requirements” on page 4 for the communication protocol requirements for your platform. See “Possible Client-to-Server Connectivity Scenarios” on page 4 for the supported communication protocols for your particular client and server.

To set up TCP/IP communications on a DB2 client, perform the following steps:

- Step 1. Identify and record parameter values.
- Step 2. Configure the client:
  - a. Resolve the server’s host address.
  - b. Update the services file.
  - c. Catalog a TCP/IP node.
  - d. Catalog the database.
- Step 3. Test the connection between the client and server.



Due to the characteristics of the TCP/IP protocol, TCP/IP may not be immediately notified of the failure of a partner on another host. As a result, a client application accessing a remote DB2 server using TCP/IP, or the corresponding agent at the server, may sometimes appear to be hung. DB2 uses the TCP/IP SO\_KEEPALIVE socket option to detect when there has been a failure and the TCP/IP connection has been broken.

If you are experiencing problems with your TCP/IP connection, refer to the *Troubleshooting Guide* for information on how to adjust this parameter and other common TCP/IP problems.

## Step 1. Identify and Record Parameter Values

As you proceed through the configuration steps, complete the *Your Value* column in the following table. You can fill in some of the values before you start configuring this protocol.

Table 5. TCP/IP Values Required at the Client

Parameter	Description	Sample Value	Your Value
Host Name • Hostname ( <i>hostname</i> ) or • IP address ( <i>ip_address</i> )	Use the <i>hostname</i> or <i>ip_address</i> of the remote server workstation.  To resolve this parameter: <ul style="list-style-type: none"><li>• Enter the <b>hostname</b> command at the server to obtain the <i>hostname</i>.</li><li>• Contact your network administrator to obtain the <i>ip_address</i> or enter the <b>ping</b> <i>hostname</i> command.</li></ul>	serverhost  or  9.21.15.235	



## Step 2. Configure the Client

The following steps configure this protocol on the client. Replace the sample values with your worksheet values.

### A. Resolve the Server's Host Address



If your network has a name server, or you are planning to directly specify the IP address (*ip\_address*) of the server, skip this step and proceed to “B. Update the Services File”.

The client must know the address of the server with which it is attempting to establish communications. If a name server does not exist on your network, you may directly specify a hostname that maps to the IP address (*ip\_address*) of the server in the local hosts file. The hosts file for your platform is located in the /etc directory.



If you plan to support a Linux client that uses Network Information Services (NIS), and your network does not use a name server, you must update the hosts file located on your NIS master server.

Edit the client's hosts file and add an entry for the server's hostname. For example:

```
9.21.15.235    serverhost    # host address for serverhost
```

where:

*9.21.15.235* is the *ip\_address* of the remote DB2 server.

*serverhost* is the remote DB2 server's *hostname*.

*#* denotes the start of a comment that describes this entry



If the server is not in the same domain as the client, you must provide a fully qualified domain name such as *serverhost.vnet.ibm.com*, where *vnet.ibm.com* is the domain name.

### B. Update the Services File



If you plan to catalog a TCP/IP node using a port number (*port\_number*), skip this step and go to “C. Catalog a TCP/IP Node” on page 25.

Using a local text editor, add the Connection Service name and port number to the client's services file for TCP/IP support. The services file for your platform is located in the /etc directory. For example:



```
db2cdb2inst1 50000/tcp # DB2 connection service port for remote server
```

where:

*db2cdb2inst1*

is an arbitrary unique connection service name in the client's `/etc/services` file.

*50000* is the port number that the *svcename* maps to on the remote DB2 server. You must use the same port number on the DB2 client and the DB2 server.

*tcp* is the communication protocol that you are using

*#* denotes the start of a comment that describes this entry

The port number used on the client must match the port number used on the server.



If you are planning on supporting a Linux client that uses Network Information Services (NIS), you must update the `services` file located on your NIS master server.

The file called `services` is located in the `/etc` directory.

### C. Catalog a TCP/IP Node

You must add an entry to the client's node directory to describe the remote server node. This entry specifies the chosen alias (*node\_name*), the *hostname* or *ip\_address*, and the *svcename* or *port\_number* that the client will use to access the remote server.

To catalog a TCP/IP node, perform the following steps:

**Step 1.** Log on to the system with a valid DB2 user ID. For more information, see "Appendix D. Naming Rules" on page 43.



If you are adding a database to a system that has a DB2 or DB2 Connect server product installed, log on to this system as a user with System Administrative (SYSADM) or System Controller (SYSCtrl) authority on the instance. For more information, see "Working with the System Administrative Group" on page 40.

This restriction is controlled by the *catalog\_noauth* database manager configuration parameter. For more information, refer to the *Administration Guide*.

**Step 2.** Set up the instance environment and invoke the DB2 command line processor by entering one of the following commands:

```
. INSTHOME/sql1lib/db2profile    (for bash, Bourne or Korn shell)
source INSTHOME/sql1lib/db2cshrc (for C shell)
```

where *INSTHOME* represents the home directory of the instance.

Step 3. Catalog the node by entering the following commands:

```
db2 "catalog tcpip node node_name remote [hostname|ip_address]  
server [svcname|port_number]"  
db2 terminate
```

For example, to catalog the remote server *serverhost* on the node called *db2node*, using the service name *db2cdb2inst1*, enter the following commands:

```
db2 "catalog tcpip node db2node remote serverhost server db2cdb2inst1"  
db2 terminate
```

To catalog a remote server with the IP address *9.21.15.235* on the node called *db2node*, using the port number *50000*, enter the following:

```
db2 "catalog tcpip node db2node remote 9.21.15.235 server 50000"  
db2 terminate
```



If you need to change values that were set with the **catalog node** command, perform the following steps:

Step 1. Run the **uncatalog node** command in the command line processor as follows:

```
db2 "uncatalog node node_name"
```

Step 2. Recatalog the node with the values that you want to use.

## D. Catalog the Database

Before a client application can access a remote database, the database must be cataloged on the server node and on any client nodes that will connect to it. When you create a database, it is automatically cataloged on the server with the database alias (*database\_alias*) the same as the database name (*database\_name*). The information in the database directory, along with the information in the node directory, is used on the client to establish a connection to the remote database.

To catalog a database on the client, perform the following steps:

Step 1. Log on to the system with a valid DB2 user ID. For more information, see "Appendix D. Naming Rules" on page 43.



If you are adding a database to a system that has a DB2 or DB2 Connect server product installed, log on to this system as a user with System Administrative (SYSADM) or System Controller (SYSCtrl) authority on the instance. For more information, see “Working with the System Administrative Group” on page 40.

This restriction is controlled by the *catalog\_noauth* database manager configuration parameter. For more information, refer to the *Administration Guide*.

Step 2. Fill in the *Your Value* column in the following worksheet.

Table 6. Worksheet: Parameter Values for Cataloging Databases

Parameter	Description	Sample Value	Your Value
Database name ( <i>database_name</i> )	The database alias ( <i>database_alias</i> ) of the <i>remote</i> database. When you create a database, it is automatically cataloged on the server with the database alias ( <i>database_alias</i> ) the same as the database name ( <i>database_name</i> ).	sample	
Database alias ( <i>database_alias</i> )	An arbitrary local nickname for the remote database, on the client. If you do not provide one, the default is the same as the database name ( <i>database_name</i> ). This is the name that you use when connecting to a database from a client.	tor1	
Node name ( <i>node_name</i> )	The name of the node directory entry that describes where the database resides. Use the same value for node name ( <i>node_name</i> ) that you used to catalog the node in the previous step.	db2node	

Step 3. Set up the instance environment and invoke the DB2 command line processor by entering one of the following commands:

```
. INSTHOME/sql1lib/db2profile (for bash, Bourne or Korn shell)
source INSTHOME/sql1lib/db2cshrc (for C shell)
```

where *INSTHOME* represents the home directory of the instance.

Step 4. Catalog the database by entering the following commands:

```
db2 "catalog database database_name as database_alias at node node_name"
db2 terminate
```

For example, to catalog a remote database called SAMPLE so that it has the alias *tor1*, on the node *db2node*, enter the following commands:

```
db2 "catalog database sample as tor1 at node db2node"  
db2 terminate
```



If you need to change values that were set with the **catalog database** command, perform the following steps:

Step a. Enter the **uncatalog database** command as follows:

```
db2 "uncatalog database database_alias"
```

Step b. Recatalog the database with the value that you want to use.

### Step 3. Test the Client-to-Server Connection

When you have finished configuring the client for communications, perform the following steps to test the connection:



You will need to connect to a remote database to test the connection.

Step 1. Start the database manager by entering the **db2start** command on the server (if it was not automatically started at boot time).

Step 2. Enter the following command to connect the client to the remote database:

```
db2 "connect to database_alias user userid using password"
```

The values for *userid* and *password* must be valid for the system on which they are authenticated. By default, authentication takes place on the server for a DB2 server and on the host or AS/400 machine for a DB2 Connect server.

If the connection is successful, you will get a message showing the name of the database to which you have connected. You are now able to retrieve data from that database. For example, to retrieve a list of all the table names listed in the system catalog table, enter the following command:

```
"select tablename from syscat.tables"
```

When you are finished using the database connection, enter the **db2 connect reset** command to end the database connection.



You are now ready to start using DB2. For more advanced topics, refer to the *Administration Guide* and the *Installation and Configuration Supplement*.

## Troubleshooting the Client-to-Server Connection

If the connection fails, check the following items:

At the *server*:

1. The *db2comm* registry value includes the value *tcpip*.



Check the settings for the *db2comm* registry value by entering the **db2set DB2COMM** command. For more information, refer to the *Administration Guide*.

2. The *services* file was updated correctly.
3. The service name (*svcename*) parameter was updated correctly in the database manager configuration file.
4. The database was created and cataloged properly.
5. The database manager was stopped and started again (enter the **db2stop** and **db2start** commands on the server).



If there are problems starting a protocol's connection managers, a warning message appears and the error messages are logged in the *db2diag.log* file. This file is located in the *INSTHOME/sql/lib/db2dump* directory, where *INSTHOME* represents home directory of the instance owner.

For more information on the *db2diag.log* file, refer to the *Troubleshooting Guide*.

At the *client*:

1. If used, the *services* and *hosts* files were updated correctly.
2. The node was cataloged with the correct hostname (*hostname*) or IP address (*ip\_address*).
3. The port number matches, or the service name maps to, the port number used on the server.
4. The node name (*node\_name*) that was specified in the database directory points to the correct entry in the node directory.
5. The database was cataloged properly, using the *server's* database alias (*database\_alias*) that was cataloged when the database was created on the server, as the database name (*database\_name*) on the client.

If the connection still fails after you verify these items, refer to the *Troubleshooting Guide*.



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## Part 3. Appendixes





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## Appendix A. Contents of the DB2 Products for Linux

This section lists the contents of various DB2 products available for Linux platforms.

---

### Packaging

The following DB2 product packages are available for installation:

*Table 7. DB2 Components, Packages or Filesets*

	<b>Linux</b>
DB2 Client	db2cliv71-7.1.0-0.i386.rpm
Java Support (JDBC)	db2jdbc71-7.1.0-0.i386.rpm
DB2 Control Center	db2wcc71-7.1.0-0.i386.rpm
Administration Server	db2das71-7.1.0-0.i386.rpm
DB2 Run-time Environment	db2rte71-7.1.0-0.i386.rpm
DB2 Sample Database Source	db2smpl71-7.1.0-0.i386.rpm
DB2 Engine	db2engn71-7.1.0-0.i386.rpm
DB2 Replication	db2repl71-7.1.0-0.i386.rpm
DB2 Connect	db2conn71-7.1.0-0.i386.rpm
DB2 Communication Support - TCP/IP	db2crte71-7.1.0-0.i386.rpm
Common Jar Files	db2cj71-7.1.0-0.i386.rpm
License Support of DB2 Connect Personal Edition	db2cplic71-7.1.0-0.i386.rpm
License Support of DB2 Personal Edition	db2pelic71-7.1.0-0.i386.rpm
Application Development Tools	db2adt71-7.1.0-0.i386.rpm
DB2 ADT Sample Programs	db2adts71-7.1.0-0.i386.rpm
Code Page Conversion Tables - Uni Code Support	db2cucs71-7.1.0-0.i386.rpm
Code Page Conversion Tables - Japanese	db2cnvj71-7.1.0-0.i386.rpm
Code Page Conversion Tables - Korean	db2cnvk71-7.1.0-0.i386.rpm
Code Page Conversion Tables - Simplified Chinese	db2cnvc71-7.1.0-0.i386.rpm
Code Page Conversion Tables - Traditional Chinese	db2cnvt71-7.1.0-0.i386.rpm

Table 7. DB2 Components, Packages or Filesets (continued)

	<b>Linux</b>
DB2 Product Messages - %L <sup>1, 2</sup>	db2ms%L71-7.1.0-0.i386.rpm
DB2 Product Document (HTML) - %L <sup>1</sup>	db2ht%L71-7.1.0-0.i386.rpm
<b>Notes:</b>	
1. %L in the fileset name represents the locale name. There is a separate fileset for each locale. While DB2 Product Messages and Documentation are translated in several locales, not every message catalog or book is translated in every locale. For a complete list of DB2-supported locales, refer to the <i>Administration Guide</i> .	
2. English messages are always installed.	

## Products and Selectable Components

Table 8 lists the DB2 products and selectable components that you can install.

Table 8. Components for DB2 Products

Product / Component Description	DB2 client	DB2 UDB Personal Edition	DB2 Connect
DB2 client	✓✓	✓✓	✓✓
Java Support (JDBC)	✓	✓	✓
DB2 Control Center support	..	✓	✓
Administration Server	n/a	✓✓	✓✓
DB2 Run-time Environment	n/a	✓✓	✓✓
DB2 Sample Database Source	n/a	✓✓	n/a
DB2 Engine	n/a	✓✓	n/a
DB2 Connect	n/a	n/a	✓✓
Local Warehouse Control Database	n/a	✓	n/a
Distributed Join for DB2 Data Sources	n/a	✓	n/a
Information Catalog for the Web	o	o	o
Communication Support for TCP/IP	n/a	✓✓	✓✓
Code Page Conversion Tables - Japanese	n/a	✓	✓
Code Page Conversion Tables - Korean	n/a	✓	✓
Code Page Conversion Tables - Simplified Chinese	n/a	✓	✓
Code Page Conversion Tables - Traditional Chinese	n/a	✓	✓
DB2 Replication	n/a	✓	✓

Table 8. Components for DB2 Products (continued)

Product / Component Description	DB2 client	DB2 UDB Personal Edition	DB2 Connect
DB2 Product Messages (non-English) <sup>1</sup>	n/a	o	o
DB2 Product Library (HTML) <sup>1</sup>	n/a	o	o
<p>✓✓ This is a required component that must be installed.</p> <p>✓ This is a recommended component that is installed by default. You can choose not to install this component.</p> <p>o This is an optional component that is not installed by default. If you want to install it, you must select it.</p> <p>.. This component is available with the DB2 Administration Client only.</p> <p><b>Note:</b> There is a separate component of the DB2 Product Messages and the DB2 Product Library for each locale.</p>			



---

## Appendix B. Basic Task Knowledge

This section describes the basic tasks that you will need to know to use this product effectively.



---

Go to the section that describes the task that you want to perform:

- “Starting the License Registration Tool”.
  - “Starting the Control Center”.
  - “Entering Commands Using the Command Center”.
  - “Entering Commands Using the Command Line Processor” on page 39.
  - “Working with the System Administrative Group” on page 40.
- 

---

### Starting the License Registration Tool

DB2 license registration is handled automatically if you installed your DB2 product from CD-ROM using the DB2 Installer program. If you installed DB2 using your Linux operating system’s native installation tools, you must enter the **db2licm** command to register DB2. Refer to the *Command Reference* for more information.

---

### Starting the Control Center

You must have the prerequisite Java Runtime Environment (JRE) version 1.1.8 or later to launch the Control Center using this command. For more information on setting up the Control Center to run on your system, refer to the *Installation and Configuration Supplement*.

To start the Control Center, enter the **db2cc** command at a command prompt.

---

### Entering Commands Using the Command Center

This section describes how to enter commands using the Command Center. The Command Center provides an interactive window to:

- Run SQL statements, DB2 commands, and operating system commands.
- See the execution result of SQL statements and DB2 commands in a results window. You can scroll through the results and save the output to a file.
- Save a sequence of SQL statements and DB2 commands to a script file. You can then schedule the script to run as a job. When a saved script is modified, all jobs dependent on the saved script inherit the new modified behavior.

- Recall and run a script file.
- See the execution plan and statistics associated with a SQL statement before execution. You do this by invoking Visual Explain in the interactive window.
- Get quick access to database administrative tools from the main tool bar.
- Display all the command scripts known to the system through the Script Center, with summary information listed for each.

Start the Command Center in one of the follows ways:

- Click on the **Command Center** icon in the Control Center.
- Enter the **db2cctr** command.



You must have the prerequisite Java Runtime Environment (JRE) level to launch the Command Center using this command.

The Command Center contains a large input area in which you enter your commands. To run the commands you have entered, click on the **Execution** icon (the gears icon), or press **CTRL+Enter**.



In the Command Center, you do not have to enter a command with the db2 prefix; instead, you just enter the DB2 command. For example:

```
list database directory
```

To enter operating system commands, precede the operating-system command with an exclamation mark (!). For example:

```
!ls
```

If you want to enter multiple commands, you must end each command with the termination character, then press then **Enter** key to start the next command on a new line. The default termination character is a semicolon (;). To specify a different termination character, click on the **Tools Settings** icon in the menu toolbar.

For example, you could connect to a database called SAMPLE and list all the system tables by entering the following command:

```
connect to sample;  
list tables for system
```

After you have clicked on the **Execution** icon (or pressed **CTRL+Enter**), the Command Center switches to the Results window which informs you how the commands are proceeding.

To recall commands that you have entered, select the **Script** Tab, click on the drop down box, and select a command.

To save commands as scripts, select **Script** → **Save as** from the menu bar. For more information, click on the **Help** push button or press the **F1** key.



If you want to store commonly used SQL statements or DB2 commands as scripts, click on the **Script Center** icon from the main tool bar. For more information, click on the **Help** push button or press the **F1** key.

---

## Entering Commands Using the Command Line Processor

You can use the command line processor to enter DB2 commands, SQL statements, and operating system commands. It operates in the following modes:

### Command Line Mode

Operates at any shell prompt. You can enter DB2 commands and SQL statements by prefixing the command or statement with the db2 prefix. Operating systems commands are entered directly as this is an ordinary shell prompt.

### Interactive Input Mode

The db2 prefix that you use for DB2 commands (in Command Line Mode) is pre-entered for you. You can enter operating systems commands, DB2 commands, or SQL statements and view their output.

### File Input Mode

Processes commands that are stored in a file. For information on the file input mode, refer to the *Command Reference*.

## Command Line Mode

You can use any command window to enter a DB2 command. If you are entering commands via the Command Line Mode, you must include the db2 prefix. For example:

```
db2 list database directory
```



If the DB2 command contains characters that have special meaning on the operating system you are using, you will need to enter the command in quotation marks to ensure that it is run properly.

For example, the following command would retrieve all the information from the *employee* table, even if the \* character has a special meaning on the operating system:

```
db2 "select * from employee"
```

If you need to enter a long command that does not fit on one line, use the line continuation character, `\`. When you have reached the end of the line, press the **Enter** key to continue entering the command on the next line. For example:

```
db2 select empno, function, firstname, lastname, birthdate, from \  
db2 (cont.) => employee where function='service' and \  
db2 (cont.) => firstname='Lily' order by empno desc
```

## Interactive Input Mode

To invoke the command line processor in interactive input mode, enter the **db2** command from the command line processor

In interactive input mode, the prompt looks like this:

```
db2 =>
```

In interactive input mode, you do not have to enter DB2 commands with a `db2` prefix; instead, you just enter the DB2 command. For example:

```
db2 => list database directory
```

To enter operating system commands in interactive mode, precede the operating-system command with an exclamation mark (!). For example:

```
db2 => !ls
```

If you need to enter a long command that does not fit on one line, use the line continuation character, `\`. When you have reached the end of the line, press the **Enter** key to continue entering the command on the next line. For example:

```
db2 => select empno, function, firstname, lastname, birthdate, from \  
db2 (cont.) => employee where function='service' and \  
db2 (cont.) => firstname='Lily' order by empno desc
```

To end interactive input mode, enter the **quit** or **terminate** command.

For more information on advanced topics using the CLP, refer to the *Command Reference*.

---

## Working with the System Administrative Group

By default, System Administrative (SYSADM) authority is granted to any valid DB2 username that belongs to the primary group of the instance owner's username.

For information on how to change the default SYSADM settings and how to assign this authority to a different user or set of users, refer to the *Administration Guide*.



---

## Appendix C. National Language Support (NLS)



This feature applies if you intend to use DB2 Personal Edition as a client to access remote servers.

This section contains information about the National Language Support (NLS) provided by DB2, including information about supported locales and code sets. For information on developing applications that use NLS, refer to the *Application Development Guide*.

---

### Language and Codeset Support for UNIX Operating Systems

DB2 supports many code sets and locales without translating the messages for the corresponding languages. Supporting a locale means that you can create and use a database in that locale, but you may have to view all panels and messages in a different language, if translated messages are not available in DB2. For a complete list of locales supported, refer to the *Administration Guide*.

If you want to operate in a different language environment, perform the following steps:

**Step 1.** Ensure that the appropriate message option for the desired language has been installed.

**Step 2.** Set the *LANG* environment variable to the desired locale.

For example, to use fr\_FR messages on DB2 for Linux, you must have the fr\_FR message option installed and must set *LANG* to fr\_FR.

The selected message catalog filesets are placed in the following directory on the target workstation:

```
/usr/IBMDB2/V7.1/msg/%L
```

where *%L* is equal to the locale name of the message catalog.



---

## Appendix D. Naming Rules



Go to the section that describes the naming rules that you require information on:

- “General Naming Rules”
  - “Database, Database Alias, and Catalog Node Name Rules”
  - “Object Name Rules” on page 44
  - “Username, User ID, Group Name, and Instance Name Rules” on page 45
  - “Password Rules” on page 46
  - “DB2SYSTEM Naming Rules” on page 46
  - “Workstation Name (nname) Rules” on page 46
- 

---

### General Naming Rules

Unless otherwise specified, all names can include the following characters:

- A through Z. When used in most names, characters A through Z are converted from lowercase to uppercase.
- 0 through 9
- @, #, \$, and \_ (underscore)

Unless otherwise specified, all names must begin with one of the following characters:

- A through Z
- @, #, and \$

Do not use SQL reserved words to name tables, views, columns, indexes, or authorization IDs. For a list of SQL reserved words, refer to *SQL Reference*.

---

### Database, Database Alias, and Catalog Node Name Rules

*Database names* are the identifying names assigned to databases in the database manager. *Database alias names* are synonyms given to remote databases. Database aliases must be unique within the System Database Directory in which all aliases are stored. *Catalog node names* are the identifying names that are assigned to entries in the node directory. Each entry in the node directory is an alias name for a computer on your network. To avoid confusions that could arise from multiple names for the same server, we recommend that you use the same catalog node name as the network name for the server.

When naming a database, database alias, or catalog node name, see “General Naming Rules” on page 43. In addition, the name you specify can *only* contain 1 to 8 characters.



To avoid potential problems, do not use the special characters @, #, and \$ in a database name if you intend to have a client remotely connect to a host database. Also, because these characters are not common to all keyboards, do not use them if you plan to use the database in another country.

---

## Object Name Rules

Database objects include:

- Tables
- Views
- Columns
- Indexes
- User-defined functions (UDFs)
- User-defined types (UDTs)
- Triggers
- Aliases
- Table spaces
- Schemas

When naming database objects, see “General Naming Rules” on page 43.

In addition, the name you specify:

- Can contain 1 to 18 characters *except* for the following:
  - Table names (including view names, summary table names, alias names, and correlation names), which can contain up to 128 characters
  - column names, which can contain up to 30 characters
  - schema names, which can contain up to 30 characters
- Cannot be any of the SQL reserved words that are listed in the *SQL Reference*.

Using delimited identifiers, it is possible to create an object that violates these naming rules; however, subsequent use of the object could result in errors.

For example, if you create a column with a + or – sign included in the name and you subsequently use that column in an index, you will experience

problems when you attempt to reorganize the table. To avoid potential problems with the use and operation of your database, *do not* violate these rules.

---

## **Username, User ID, Group Name, and Instance Name Rules**

*Usernames* or *User IDs* are the identifiers assigned to individual users. When naming users, groups, or instances, see “General Naming Rules” on page 43.

In addition to the general naming rules:

- User IDs on OS/2 can contain 1 to 8 characters. They cannot start with a numeric digit or end with \$.
- Usernames on UNIX can contain 1 to 8 characters.
- Usernames on Windows can contain 1 to 30 characters. The Windows NT and Windows 2000 operating systems currently have a limit of 20 characters.
- Group and instance names can contain 1 to 8 characters.
- Names cannot be any of the following:
  - USERS
  - ADMINS
  - GUESTS
  - PUBLIC
  - LOCAL
- Names cannot begin with:
  - IBM
  - SQL
  - SYS
- Names cannot include accented characters.
- In general, when naming users, groups, or instances:
  - OS/2** Use uppercase names.
  - UNIX** Use lowercase names.
  - Windows 32-bit operating systems**  
Use any case.

---

## Workstation Name (nname) Rules

A *workstation* name specifies the NetBIOS name for a database server or client or DB2 Personal Edition that resides on the local workstation. This name is stored in the database manager configuration file. The workstation name is known as the *workstation nname*. When naming workstations, see “General Naming Rules” on page 43.

In addition, the name you specify:

- Can contain 1 to 8 characters
- Cannot include &, #, and @
- Must be unique within the network

---

## DB2SYSTEM Naming Rules

DB2 uses the *DB2SYSTEM* name to identify a physical DB2 machine, system, or workstation within a network. On UNIX, the *DB2SYSTEM* name defaults to the TCP/IP hostname. On OS/2, you must specify the *DB2SYSTEM* name during install. On Windows 32-bit operating systems, you do not need to specify a *DB2SYSTEM* name; the DB2 setup program detects the Windows Computer name and assigns it to *DB2SYSTEM*.

When creating a *DB2SYSTEM* name, see “General Naming Rules” on page 43.

In addition, the name you specify:

- Must be unique within a network
- Can contain a maximum of 21 characters

---

## Password Rules

When determining passwords, consider the following rules:

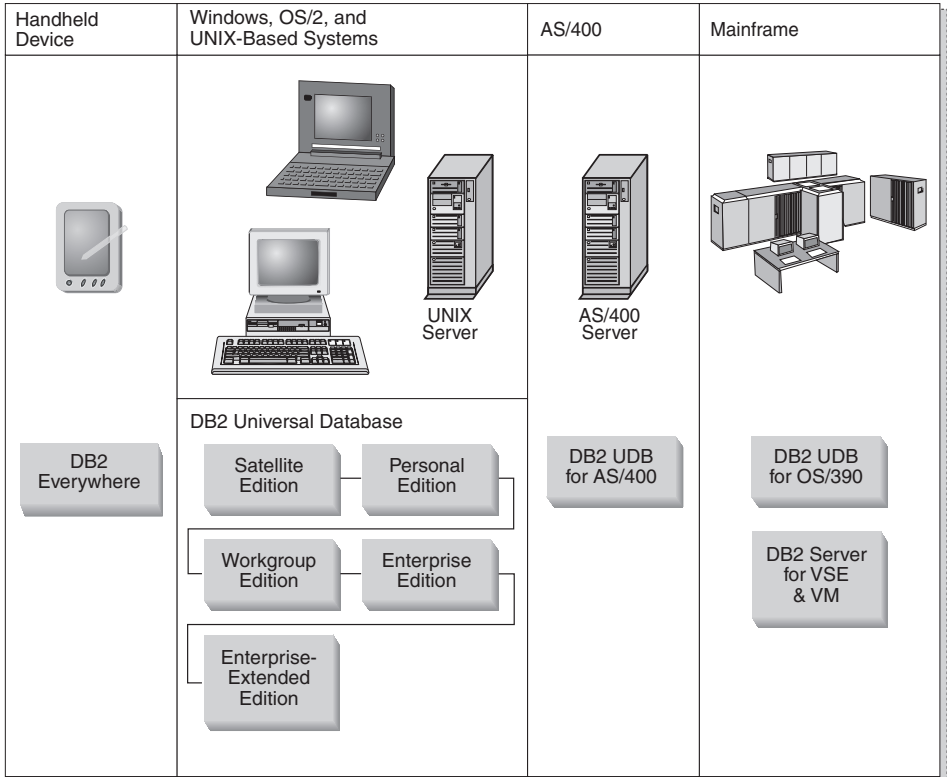
**OS/2**                    A maximum of 14 characters.

**UNIX**                    A maximum of 8 characters.

**Windows 32-bit operating systems**  
A maximum of 14 characters.

# Appendix E. About DB2 Universal Database for UNIX, Windows, and OS/2

The DB2 Product Family provides relational database solutions for a wide range of computing devices, from small handheld devices up to the largest IBM mainframe.



## DB2 Products

The name DB2 is used for relational database products that run on a variety of platforms.

### DB2 Everywhere

DB2 Everywhere is a very small footprint database that runs on mobile devices, such as personal digital assistants (PDAs), smart phones, and

handheld personal computers (HPCs). Each mobile device stores a subset of the data from an enterprise database, which it can use without the need for a continuous database connection.

DB2 Everywhere Sync Server, running on a mid-tier server, replicates the data in both directions between mobile devices and the enterprise database. For example, each worker in a loading dock might carry a PDA that is periodically synchronized with an inventory database on OS/390.

## DB2 Universal Database

The following table shows which products are available on each platform:

Table 9. DB2 Universal Database Platforms

Edition	Windows 95/98	Windows NT/Windows 2000	OS/2	Linux	AIX	HP-UX	Solaris	PTX/NUMA-Q
Satellite	✓	✓						
Personal	✓	✓	✓	✓				
Workgroup		✓	✓	✓	✓	✓	✓	
Enterprise		✓	✓	✓	✓	✓	✓	✓
Enterprise - Extended		✓			✓	✓	✓	✓

### Satellite Edition

DB2 Universal Database Satellite Edition is a single-user, small footprint version of DB2 available for Windows 32-bit operating systems. It is designed for occasionally connected remote systems, such as laptop computers.

Typically, many instances of DB2 Universal Database Satellite Edition are managed centrally by the same server.

### Personal Edition

DB2 Universal Database Personal Edition is a single-user version of the full DB2 product. It contains:

- An object-relational database engine
- Business intelligence support, through the OLAP Starter Kit
- Data warehouse support, through the Data Warehouse Center
- Multimedia support, through DB2 Extenders
- Access to a variety of IBM data sources, through DB2 DataJoiner
- Replication support, through DataPropagator
- Extended GUI administration tools, through DB2 Control Center
- An application development client
- An administration client



### **Workgroup Edition**

DB2 Universal Database Workgroup Edition is a multi-user version of the DB2 product, designed for a small business or departmental environment. It contains all the functionality of the Personal Edition, plus:

- The ability for remote clients to access data and perform administration on a DB2 workgroup server
- Web access, through Net.Data
- IBM WebSphere Application Server

### **Enterprise Edition**

DB2 Universal Database Enterprise Edition is designed for large databases with many users. It contains all the functionality of the Workgroup Edition, plus:

- A license for an unlimited number of client connections
- A license for an unlimited number of web client connections
- DB2 Connect support, with DRDA access to host DB2 systems

### **Enterprise - Extended Edition**

DB2 Universal Database Enterprise - Extended Edition is designed for the largest databases. It is ideal for scaling to very large databases for warehousing, data mining, and large-scale OLTP applications. It contains all the functionality of the Enterprise Edition, plus:

- Support for clusters of servers

### **Developer Editions**

Two special editions of DB2 are available for people who develop DB2 applications:

- DB2 Personal Developer's Edition
- DB2 Universal Developer's Edition

DB2 Personal Developer's Edition provides tools to help a software developer create applications for a DB2 Personal Edition database. DB2 Personal Developer's Edition contains all the functionality of DB2 Universal Database Personal Edition, plus:

- The functionality of DB2 Connect Personal Edition
- VisualAge for Java, Entry Edition

DB2 Universal Developer's Edition provides the tools for developing client/server applications. DB2 Universal Developer's Edition contains all the functionality of DB2 Universal Database Enterprise Edition, plus:

- VisualAge for Java, Professional Edition

## Host Databases

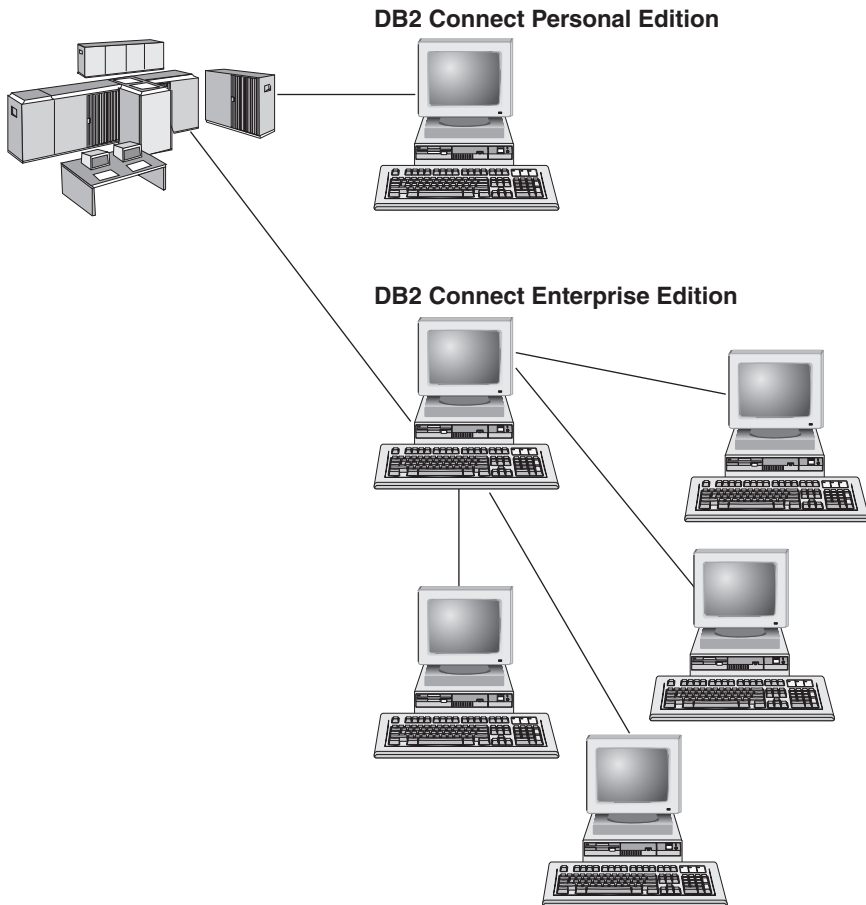
The following DB2 products are available for IBM midrange and mainframe systems:

- DB2 Universal Database for AS/400
- DB2 Server for VSE & VM
- DB2 Universal Database for OS/390

---

## DB2 Connect

DB2 Connect provides connectivity to mainframe and midrange databases from Windows, OS/2, and UNIX-based platforms. You can connect to DB2 databases on OS/400, VSE, VM, MVS, and OS/390. You can also connect to non-IBM databases that comply with the Distributed Relational Database Architecture (DRDA).



The following DB2 Connect products are available:

- Personal Edition
- Enterprise Edition
- Unlimited Edition

*DB2 Connect Personal Edition* provides a direct connection from one Windows, OS/2, or Linux operating system to mainframe and midrange databases. It is designed for a two-tier environment, where each client connects directly to the host. DB2 Connect Personal Edition does not accept inbound client requests for data.

*DB2 Connect Enterprise Edition*, installed on a gateway server, connects an entire LAN to mainframe and midrange databases. It is designed for a three-tier environment, where clients connect to a host through a gateway server.

*DB2 Connect Unlimited Edition* provides an unlimited number of DB2 Connect Personal Edition and DB2 Connect Enterprise Edition licenses. You get all of these licenses for one price, based on the size of the OS/390 system that is being accessed.

---

## Related Products

The following products work together with DB2 Universal Database.

### **DB2 Relational Connect**

DB2 Relational Connect gives you the ability to access federated data by joining DB2 data with Oracle data within a query. It works under DB2 Universal Database Enterprise Edition or Enterprise - Extended Edition on Windows NT, Windows 2000, and AIX.

### **DB2 Warehouse Manager**

DB2 Warehouse Manager provides a warehouse or data mart administrator with enhanced management capabilities. It provides the ability to manage the process of moving data as well as manage the ad hoc query workload going against the warehouse or mart. This product includes:

- Warehouse agents, which manage the flow of data between sources and warehouse targets.
- Warehouse transformers, which clean and transform data moving into the warehouse.
- An integrated business information catalog, which guides users to the data that they want.
- Metadata interchange with end-user repositories and CASE tools.
- A sophisticated query management and workload distribution tool, DB2 Query Patroller, which was previously a separate product. In order to use Query Patroller, you must have a Query Patroller server installed. Query

Patroller client support is only available with a DB2 Administration Client. For more information, refer to *DB2 Query Patroller Administration Guide*.

This product is available for DB2 Universal Database Enterprise Edition and Enterprise - Extended Edition systems.

## **DB2 OLAP Server**

DB2 OLAP Server provides fast, intuitive online analytic processing of data to afford users quick access to information. OLAP servers process multidimensional requests that calculate, consolidate, and retrieve information from multidimensional and relational databases.

With DB2 OLAP Server you can:

- Build analytical applications using built-in math, financial and statistical functions to define data in multidimensional cubes.
- View multidimensional data from various perspectives.
- Dynamically add new data dimensions, modify dimensional hierarchies, and change calculations.
- Use spreadsheets and web browsers as clients to analyze data without using separate SQL queries.
- Ensure data security by defining levels of access for individuals.

The OLAP Starter Kit, which supports only three concurrent users, is installed with DB2 Universal Database. You can later upgrade the OLAP Starter Kit to the full DB2 OLAP Server product.

## **Intelligent Miner**

The Intelligent Miner family consists of two products:

- DB2 Intelligent Miner for Data extracts valuable information from a large quantity of data in a relational database.
- Intelligent Miner for Text works with unstructured information, such as text files, email, and web pages.

## **DB2 Spatial Extender**

DB2 Spatial Extender lets you integrate geographical data with your existing business data. It includes:

- Data types such as points, lines, and polygons
- Functions such as area, endpoint, and intersect
- An indexing scheme for spatial data

This product is available for DB2 Universal Database Enterprise Edition and Enterprise - Extended Edition systems.

## **DB2 Net Search Extender**

DB2 Net Search Extender contains a DB2 stored procedure that adds the power of fast full-text retrieval to Net.Data, Java, or DB2 CLI applications. It offers application programmers a variety of search functions, such as fuzzy search, stemming, boolean operators, and section search. Searching using DB2 Net Search Extender can be particularly advantageous in the Internet, when search performance on large indexes and scalability according to concurrent queries are important factors.

## **DB2 Data Links Manager**

DB2 Data Links Manager provides referential integrity, access control, and recovery capabilities for files that physically reside on file systems external to a DB2 Universal Database. Data Links technology includes the DATALINK data type, implemented as an SQL data type in DB2 Universal Database, which references an object stored external to a database. Data Links Manager is available on Windows NT and AIX systems. On AIX, it can be used with native (or JFS) filesystems, or in Transarc DCE-DFS file server environments.

## **Tivoli Enterprise**

Tivoli Enterprise is a suite of management applications that let you manage an entire enterprise environment, including the data center, distributed systems, and mobile laptops as a single business unit. DB2 has been certified as Tivoli Ready.

---

## **Working with Data using DB2 Universal Database Personal Edition**

As well as providing a relational database to store your data, DB2 Universal Database Personal Edition lets you issue requests to query, update, insert, or delete data from local applications. Figure 1 shows DB2 Universal Database Personal Edition with local applications accessing the local database.

## DB2 Personal Edition

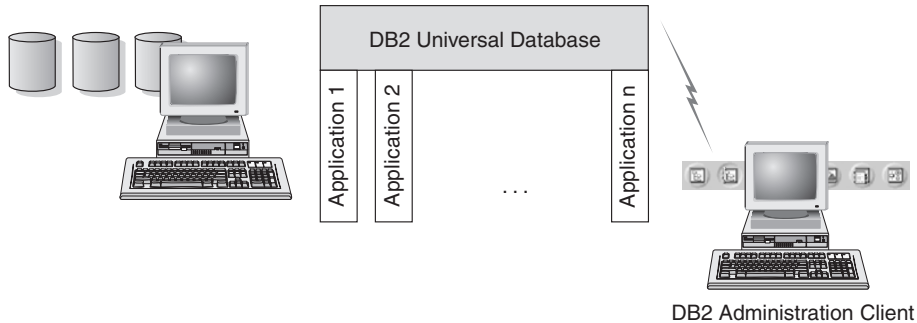


Figure 1. DB2 Personal Edition with Local Applications

DB2 Universal Database Personal Edition includes graphical tools that enable you to tune performance, access remote DB2 servers, manage all servers from a single site, and process SQL queries. For a description of these tools, see “Administering Instances and Databases with the DB2 Administration Tools”.

---

## Administering Instances and Databases with the DB2 Administration Tools

You can administer local or remote servers using the DB2 Administration Tools. Use the Control Center to perform administration tasks such as configuring DB2 instances and databases, backing up and recovering data, scheduling jobs, and managing media, all from a graphical interface.

### Managing Instances and Database Objects using the Control Center

The Control Center displays instances and database objects (such as table spaces, tables, and packages) and their relationships to each other. Using the Control Center, you can manage local and remote servers from a single point of control. See Figure 2 on page 55 for an example of the main Control Center window.

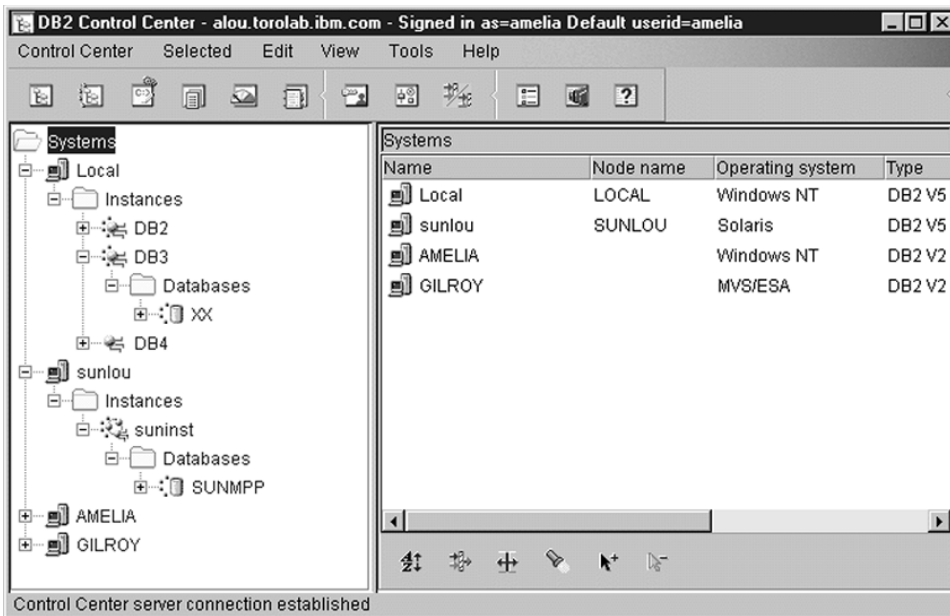


Figure 2. Control Center Main Window

The Control Center distinguishes between single-partition and multi-partition database systems via *Discovery*. Discovery uses the *DB2SYSTEM*, *DB2ADMINSEVER* and *DB2COMM* registry values. For more information on these registry values, refer to the *Administration Guide*.

From the Control Center, you can perform operations on database objects. These operations include:

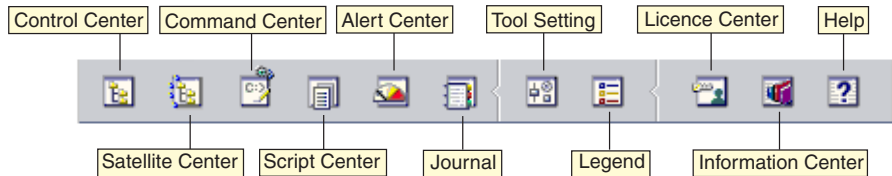
- Create and drop a database
- Create, alter, and drop a table space or table
- Create, alter, and drop an index
- Backup and recover a database or tablespace
- Define the replication sources and subscriptions to replicate data between systems
- Monitor resources and events on a server.

You can also control DB2 instances by:

- Maintaining communication protocols
- Setting database manager and database configuration values that affect performance.

Wizards are provided to help you perform complex tasks. For example, a wizard is available to tune the performance of your system. See “Using DB2 Wizards” on page 78 for descriptions of the various wizards and how to start them.

The Control Center provides additional functionality to assist you in managing your servers:



### **Control Center**

Use the Control Center to start another session of the Control Center to administer a server.

### **Satellite Center**

Use the Satellite Center to manage the Satellites that are served by a particular DB2 Control Server. It provides create, remove, modify, and manage functions for Satellites and Groups. You can also create and manage scripts to administer the Satellites.

### **Data Warehouse Center**

Use the Data Warehouse Center to manage warehouses; create and manage warehouse objects, such as sources and targets; define, extract, transform, manipulate, and load steps and processes; and schedule and automate steps.

### **Command Center**

Use the Command Center to enter DB2 commands and SQL statements in an interactive window and see the execution result in a result window. You can scroll through the results and save the output to a file.

### **Script Center**

Use the Script Center to create scripts, which you can store and invoke at a later time. These scripts can contain DB2 commands, SQL statements, as well as operating system commands. Scripts can be scheduled to run unattended. These jobs can be run once or set up to run on a repeating schedule; a repeating schedule is particularly useful for tasks like backup.



### **Alert Center**

Use the Alert Center to monitor your system for early warnings of potential problems or to automate actions to correct problems discovered.

### **Journal**

Use the Journal to view all available information about jobs that are pending execution, executing, or that have completed execution. You can also view the recovery history log, the alerts log, and the messages log; and review the results of jobs that are run unattended.

### **License Center**

Use the License Center to manage licenses and display license status and usage of any DB2 products installed on your system. You can also use the License Center to configure your system for proper license monitoring.

### **Stored Procedure Builder**

Use Stored Procedure Builder to create stored procedures on local and remote DB2 servers, modify and rebuild existing stored procedures, and run stored procedures for testing and debugging the execution of installed stored procedures.

### **Tools Setting**

Use the Tools Setting to change the settings for the DB2 Administration Tools.

### **Information Center**

The Information Center provides quick access to DB2 product information. This product information includes such items as: database tasks, reference material, DB2 documentation, warehouse administration information, troubleshooting aids, sample programs for application development, and DB2 web-related URLs.

You can also analyze performance using the DB2 Performance Monitor and Visual Explain. These tools are available from the Control Center.



Use the **DB2 Performance Monitor** to monitor the performance of your system. You can monitor activity by sampling data over a period of time or using data for a particular event. See “Monitoring Databases using DB2 Performance Monitor” on page 58 for more information.



Use **Visual Explain** to view the access plan for explained SQL statements as a graph. You can use the information available from the graph to tune your SQL queries for better performance. See “Viewing SQL Access Plans using Visual Explain” on page 59 for more information.

You can find additional information in the *Administration Guide* or in the online help.

## Managing Communications on the Server

The Control Center allows you to view, update, and reset server protocol settings. These functions are accessed by clicking with the right mouse button on an instance and selecting the **Setup communications** option from the pop-up menu. This tool helps database administrators to:

- Configure database manager parameters by clicking with the right mouse button on an instance and selecting the **Configure** option from the pop-up menu. By default, the setup program automatically detects and configures most communication protocols that it detects on your system.
- Export database information in a profile that can be used to configure clients by clicking with the right mouse button on a system and selecting the **Export Server Profile** option from the pop-up menu.



DB2 Personal Edition does not accept inbound client requests for data. You can only configure inbound communications on a DB2 Personal Edition workstation to allow administrative requests from a DB2 Administration Client.

For information on how to configure server communications, refer to the *Installation and Configuration Supplement*.

## Monitoring Databases using DB2 Performance Monitor

With the DB2 Performance Monitor, you can:

- Identify and analyze performance problems in database applications or the database manager.
- Use the early warning system to detect potential problems.
- Automate actions to correct problems that are discovered.
- Define your own statistics, in addition to the default set that is provided.

You can choose to monitor the current state of database activity or collect information when specific events occur. The Performance Monitor allows you to capture point-in-time information at specified intervals. The Event Analyzer allows you to view information about the occurrence of events such as deadlocks and transaction completions.

For additional information, refer to the *Administration Guide* or the online help. You are also able to use the Windows Performance Monitor (supported on Windows NT and Windows 2000) to monitor both database and system performance. For information on how to register DB2 resources and to use the Windows Performance Monitor, refer to the *Administration Guide*.

## Viewing SQL Access Plans using Visual Explain

Visual Explain helps database administrators and application developers to:

- View the access plan chosen by the database manager's optimizer for a given SQL statement.
- Tune SQL statements for better performance.
- Design application programs and databases.
- View all the details of an access plan, including the statistics in the system catalogs.
- Decide whether or not to add an index to a table.
- Identify the source of problems by analyzing the access plan or performance of SQL statements.
- Use the portable snapshot function to view snapshots from any remote DB2 server.
- Display access plans for queries on all supported DB2 configurations.

For additional information, refer to the *Administration Guide* or the online help.

---

## Managing Connections to Databases using the Client Configuration Assistant

The Client Configuration Assistant (CCA) helps you manage your database connections to remote servers. The CCA is available on OS/2 and Windows 32-bit operating systems and this is the preferred method to set up any OS/2, Windows 9x, Windows NT, or Windows 2000 client to communicate with a server.

You can use the command line processor to set up DB2 clients on any platform. For more information, refer to the *Installation and Configuration Supplement*.

With the CCA, you can:

- Catalog databases so that they can be used by applications. Three methods are available:
  - Use a profile provided by a database administrator to automatically define your connections. Client access is automatically set up for that database.
  - Search the network for available databases and select one. Client access is automatically set up for that database.
  - Manually configure a connection to a database by entering the required connection parameters.
- Remove cataloged databases, or change the properties of a cataloged database.

- Export and import client profiles that contain database and configuration information for a client.
- Test connections to local or remote databases identified on your system.
- Bind applications to a database by selecting utilities or bind files from a list.
- Tune the client configuration parameters on your system. Parameters are logically grouped and suggested settings are provided on the interface as parameters are selected.
- Export client configuration information to a profile.
- Import configuration information from a profile.
- Update the server password.

---

## Managing Warehouses using the Data Warehouse Center

DB2 Universal Database offers the Data Warehouse Center, a component that automates data warehouse processing. You can use the Data Warehouse Center to define the data to include in the warehouse. Then, you can use the Data Warehouse Center to schedule automatic refreshes of the data in the warehouse.

From the Data Warehouse Center, you can manage specific warehousing objects, including subject areas, warehouse sources, warehouse targets, agents, agent sites, steps, and processes.

You can also perform the following tasks from the Data Warehouse Center:

- Define a subject area. You use a subject area to logically group the processes that are related to a particular topic or function.
- Explore the source data and define warehouse sources.
- Create database tables and define warehouse targets.
- Define a process that specifies how to move and transform the source data into the appropriate format for the warehouse.
- Test and schedule steps.
- Define security and monitor database currency.
- Define a star schema model.

---

## Understanding the Administration Server

The Administration Server responds to requests from the DB2 Administration Tools and the Client Configuration Assistant (CCA). The DB2 Administration Tools allow you to start, stop, and set database manager configuration parameters for servers. The Administration Server is used by the CCA to catalog databases for a client.

The Administration Server (DAS) must reside on every server that you want to administer and detect. By default the DAS is DB2AS, which is the default user ID that is created using the db2setup utility.

---

## Developing Applications using the DB2 Application Development Client

The DB2 Application Development Client is a collection of tools that are designed to meet the needs of database application developers. It includes libraries, header files, documented APIs, and sample programs to build character-based, multimedia, or object-oriented applications.

A platform-specific version of the DB2 Application Development Client is available on each server CD-ROM. In addition the Developer Edition boxes contain the Application Development Clients for multiple supported operating systems. The Personal Developer's Edition box contains the Application Development CD-ROMs for OS/2, Windows and Linux. The Universal Developer's Edition box contains the Application Development CD-ROMs for all supported operating systems.

Through a DB2 client, these applications can access all servers and, by using the DB2 Connect product (or the DB2 Connect functionality supplied with DB2 Enterprise - Extended or DB2 Enterprise Edition), they can also access DB2 Universal Database for AS/400, DB2 Universal Database for OS/390, and DB2 for VSE & VM database servers.

The DB2 Application Development Client allows you to develop applications that use the following interfaces:

- Embedded SQL
- Call Level Interface (CLI) development environment (which is compatible with ODBC from Microsoft)
- Java Database Connectivity (JDBC)
- Embedded SQL for Java (SQLJ)
- DB2 Application Programming Interfaces (APIs) that use administrative functions to manage a DB2 database.

The DB2 Application Development Client includes:

- Precompilers for Java, C, C++, COBOL, and FORTRAN.
- Libraries, include files, and code samples to develop applications that use SQLJ and DB2 CLI.
- A single control point for metadata management through the use of templates and tokens.
- JDBC and SQLJ support to develop Java applications and applets.

- Interactive SQL, through the CLP, to prototype SQL statements and perform ad-hoc database queries.
- An API to enable other application development tools to implement precompiler support for DB2 directly with their products.
- An SQL92 and MVS Conformance Flagger to identify embedded SQL statements in applications not conforming to the ISO/ANSO SQL92 Entry Level standard, or which are not supported by DB2 for OS/390.

For complete information on the functionality of the DB2 Application Development Client, and instructions on how to use them, as well as a full list of supported compilers for your platform, refer to the *Application Building Guide*.

---

## Running Your Own Applications

Various types of applications can access DB2 databases:

- Applications developed using a DB2 Application Development Client that include embedded SQL (including Java SQLJ applications and applets), APIs, stored procedures, user-defined functions, calls to DB2 CLI, or calls to JDBC applications and applets.
- ODBC applications such as Lotus Approach.
- Net.Data macros containing HTML and SQL.

The DB2 CLI/ODBC driver is an optional component during a DB2 client install. It is required to run CLI, ODBC, JDBC, and some SQLJ applications.

For more information on running your own applications, refer to the *Installation and Configuration Supplement*.

---

## Appendix F. Using the DB2 Library

The DB2 Universal Database library consists of online help, books (PDF and HTML), and sample programs in HTML format. This section describes the information that is provided, and how you can access it.

To access product information online, you can use the Information Center. For more information, see “Accessing Information with the Information Center” on page 77. You can view task information, DB2 books, troubleshooting information, sample programs, and DB2 information on the Web.

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### DB2 PDF Files and Printed Books

#### DB2 Information

The following table divides the DB2 books into four categories:

##### **DB2 Guide and Reference Information**

These books contain the common DB2 information for all platforms.

##### **DB2 Installation and Configuration Information**

These books are for DB2 on a specific platform. For example, there are separate *Quick Beginnings* books for DB2 on OS/2, Windows, and UNIX-based platforms.

##### **Cross-platform sample programs in HTML**

These samples are the HTML version of the sample programs that are installed with the Application Development Client. The samples are for informational purposes and do not replace the actual programs.

##### **Release notes**

These files contain late-breaking information that could not be included in the DB2 books.

The installation manuals, release notes, and tutorials are viewable in HTML directly from the product CD-ROM. Most books are available in HTML on the product CD-ROM for viewing and in Adobe Acrobat (PDF) format on the DB2 publications CD-ROM for viewing and printing. You can also order a printed copy from IBM; see “Ordering the Printed Books” on page 73. The following table lists books that can be ordered.

On OS/2 and Windows platforms, you can install the HTML files under the `sql1lib\doc\html` directory. DB2 information is translated into different

languages; however, all the information is not translated into every language. Whenever information is not available in a specific language, the English information is provided

On UNIX platforms, you can install multiple language versions of the HTML files under the `doc/%L/html` directories, where `%L` represents the locale. For more information, refer to the appropriate *Quick Beginnings* book.

You can obtain DB2 books and access information in a variety of ways:

- “Viewing Information Online” on page 76
- “Searching Information Online” on page 80
- “Ordering the Printed Books” on page 73
- “Printing the PDF Books” on page 72

Table 10. DB2 Information

Name	Description	Form Number PDF File Name	HTML Directory
<b>DB2 Guide and Reference Information</b>			
<i>Administration Guide</i>	<i>Administration Guide: Planning</i> provides an overview of database concepts, information about design issues (such as logical and physical database design), and a discussion of high availability.	SC09-2946 db2d1x70	db2d0
	<i>Administration Guide: Implementation</i> provides information on implementation issues such as implementing your design, accessing databases, auditing, backup and recovery.	SC09-2944 db2d2x70	
	<i>Administration Guide: Performance</i> provides information on database environment and application performance evaluation and tuning.	SC09-2945 db2d3x70	
	You can order the three volumes of the <i>Administration Guide</i> in the English language in North America using the form number SBOF-8934.		
<i>Administrative API Reference</i>	Describes the DB2 application programming interfaces (APIs) and data structures that you can use to manage your databases. This book also explains how to call APIs from your applications.	SC09-2947 db2b0x70	db2b0



Table 10. DB2 Information (continued)

Name	Description	Form Number PDF File Name	HTML Directory
<i>Application Building Guide</i>	Provides environment setup information and step-by-step instructions about how to compile, link, and run DB2 applications on Windows, OS/2, and UNIX-based platforms.	SC09-2948 db2axx70	db2ax
<i>APPC, CPI-C, and SNA Sense Codes</i>	Provides general information about APPC, CPI-C, and SNA sense codes that you may encounter when using DB2 Universal Database products.	No form number db2apx70	db2ap
	Available in HTML format only.		
<i>Application Development Guide</i>	Explains how to develop applications that access DB2 databases using embedded SQL or Java (JDBC and SQLJ). Discussion topics include writing stored procedures, writing user-defined functions, creating user-defined types, using triggers, and developing applications in partitioned environments or with federated systems.	SC09-2949 db2a0x70	db2a0
<i>CLI Guide and Reference</i>	Explains how to develop applications that access DB2 databases using the DB2 Call Level Interface, a callable SQL interface that is compatible with the Microsoft ODBC specification.	SC09-2950 db2l0x70	db2l0
<i>Command Reference</i>	Explains how to use the Command Line Processor and describes the DB2 commands that you can use to manage your database.	SC09-2951 db2n0x70	db2n0
<i>Connectivity Supplement</i>	Provides setup and reference information on how to use DB2 for AS/400, DB2 for OS/390, DB2 for MVS, or DB2 for VM as DRDA application requesters with DB2 Universal Database servers. This book also details how to use DRDA application servers with DB2 Connect application requesters.	No form number db2h1x70	db2h1
	Available in HTML and PDF only.		

Table 10. DB2 Information (continued)

Name	Description	Form Number PDF File Name	HTML Directory
<i>Data Movement Utilities Guide and Reference</i>	Explains how to use DB2 utilities, such as import, export, load, AutoLoader, and DPROP, that facilitate the movement of data.	SC09-2955 db2dmx70	db2dm
<i>Data Warehouse Center Administration Guide</i>	Provides information on how to build and maintain a data warehouse using the Data Warehouse Center.	SC26-9993 db2ddx70	db2dd
<i>Data Warehouse Center Application Integration Guide</i>	Provides information to help programmers integrate applications with the Data Warehouse Center and with the Information Catalog Manager.	SC26-9994 db2adx70	db2ad
<i>DB2 Connect User's Guide</i>	Provides concepts, programming, and general usage information for the DB2 Connect products.	SC09-2954 db2c0x70	db2c0
<i>DB2 Query Patroller Administration Guide</i>	Provides an operational overview of the DB2 Query Patroller system, specific operational and administrative information, and task information for the administrative graphical user interface utilities.	SC09-2958 db2dwx70	db2dw
<i>DB2 Query Patroller User's Guide</i>	Describes how to use the tools and functions of the DB2 Query Patroller.	SC09-2960 db2wwx70	db2ww
<i>Glossary</i>	Provides definitions for terms used in DB2 and its components.  Available in HTML format and in the <i>SQL Reference</i> .	No form number db2t0x70	db2t0
<i>Image, Audio, and Video Extenders Administration and Programming</i>	Provides general information about DB2 extenders, and information on the administration and configuration of the image, audio, and video (IAV) extenders and on programming using the IAV extenders. It includes reference information, diagnostic information (with messages), and samples.	SC26-9929 dmbu7x70	dmbu7
<i>Information Catalog Manager Administration Guide</i>	Provides guidance on managing information catalogs.	SC26-9995 db2dix70	db2di

Table 10. DB2 Information (continued)

Name	Description	Form Number PDF File Name	HTML Directory
<i>Information Catalog Manager Programming Guide and Reference</i>	Provides definitions for the architected interfaces for the Information Catalog Manager.	SC26-9997 db2bix70	db2bi
<i>Information Catalog Manager User's Guide</i>	Provides information on using the Information Catalog Manager user interface.	SC26-9996 db2aix70	db2ai
<i>Installation and Configuration Supplement</i>	Guides you through the planning, installation, and setup of platform-specific DB2 clients. This supplement also contains information on binding, setting up client and server communications, DB2 GUI tools, DRDA AS, distributed installation, the configuration of distributed requests, and accessing heterogeneous data sources.	GC09-2957 db2iyx70	db2iy
<i>Message Reference</i>	Lists messages and codes issued by DB2, the Information Catalog Manager, and the Data Warehouse Center, and describes the actions you should take.  You can order both volumes of the Message Reference in the English language in North America with the form number SBOF-8932.	Volume 1 GC09-2978  db2m1x70 Volume 2 GC09-2979  db2m2x70	db2m0
<i>OLAP Integration Server Administration Guide</i>	Explains how to use the Administration Manager component of the OLAP Integration Server.	SC27-0787 db2dpx70	n/a
<i>OLAP Integration Server Metaoutline User's Guide</i>	Explains how to create and populate OLAP metaoutlines using the standard OLAP Metaoutline interface (not by using the Metaoutline Assistant).	SC27-0784 db2upx70	n/a
<i>OLAP Integration Server Model User's Guide</i>	Explains how to create OLAP models using the standard OLAP Model Interface (not by using the Model Assistant).	SC27-0783 db2lpx70	n/a
<i>OLAP Setup and User's Guide</i>	Provides configuration and setup information for the OLAP Starter Kit.	SC27-0702 db2ipx70	db2ip
<i>OLAP Spreadsheet Add-in User's Guide for Excel</i>	Describes how to use the Excel spreadsheet program to analyze OLAP data.	SC27-0786 db2epx70	db2ep

Table 10. DB2 Information (continued)

Name	Description	Form Number PDF File Name	HTML Directory
<i>OLAP Spreadsheet Add-in User's Guide for Lotus 1-2-3</i>	Describes how to use the Lotus 1-2-3 spreadsheet program to analyze OLAP data.	SC27-0785 db2tpx70	db2tp
<i>Replication Guide and Reference</i>	Provides planning, configuration, administration, and usage information for the IBM Replication tools supplied with DB2.	SC26-9920 db2e0x70	db2e0
<i>Spatial Extender User's Guide and Reference</i>	Provides information about installing, configuring, administering, programming, and troubleshooting the Spatial Extender. Also provides significant descriptions of spatial data concepts and provides reference information (messages and SQL) specific to the Spatial Extender.	SC27-0701 db2sbx70	db2sb
<i>SQL Getting Started</i>	Introduces SQL concepts and provides examples for many constructs and tasks.	SC09-2973 db2y0x70	db2y0
<i>SQL Reference, Volume 1 and Volume 2</i>	Describes SQL syntax, semantics, and the rules of the language. This book also includes information about release-to-release incompatibilities, product limits, and catalog views.  You can order both volumes of the <i>SQL Reference</i> in the English language in North America with the form number SBOF-8933.	Volume 1 SC09-2974 db2s1x70  Volume 2 SC09-2975 db2s2x70	db2s0
<i>System Monitor Guide and Reference</i>	Describes how to collect different kinds of information about databases and the database manager. This book explains how to use the information to understand database activity, improve performance, and determine the cause of problems.	SC09-2956 db2f0x70	db2f0
<i>Text Extender Administration and Programming</i>	Provides general information about DB2 extenders and information on the administration and configuring of the text extender and on programming using the text extenders. It includes reference information, diagnostic information (with messages) and samples.	SC26-9930 desu9x70	desu9

Table 10. DB2 Information (continued)

Name	Description	Form Number PDF File Name	HTML Directory
<i>Troubleshooting Guide</i>	Helps you determine the source of errors, recover from problems, and use diagnostic tools in consultation with DB2 Customer Service.	GC09-2850 db2p0x70	db2p0
<i>What's New</i>	Describes the new features, functions, and enhancements in DB2 Universal Database, Version 7.	SC09-2976 db2q0x70	db2q0
<b>DB2 Installation and Configuration Information</b>			
<i>DB2 Connect Enterprise Edition for OS/2 and Windows Quick Beginnings</i>	Provides planning, migration, installation, and configuration information for DB2 Connect Enterprise Edition on the OS/2 and Windows 32-bit operating systems. This book also contains installation and setup information for many supported clients.	GC09-2953 db2c6x70	db2c6
<i>DB2 Connect Enterprise Edition for UNIX Quick Beginnings</i>	Provides planning, migration, installation, configuration, and task information for DB2 Connect Enterprise Edition on UNIX-based platforms. This book also contains installation and setup information for many supported clients.	GC09-2952 db2cyx70	db2cy
<i>DB2 Connect Personal Edition Quick Beginnings</i>	Provides planning, migration, installation, configuration, and task information for DB2 Connect Personal Edition on the OS/2 and Windows 32-bit operating systems. This book also contains installation and setup information for all supported clients.	GC09-2967 db2c1x70	db2c1
<i>DB2 Connect Personal Edition Quick Beginnings for Linux</i>	Provides planning, installation, migration, and configuration information for DB2 Connect Personal Edition on all supported Linux distributions.	GC09-2962 db2c4x70	db2c4
<i>DB2 Data Links Manager Quick Beginnings</i>	Provides planning, installation, configuration, and task information for DB2 Data Links Manager for AIX and Windows 32-bit operating systems.	GC09-2966 db2z6x70	db2z6

Table 10. DB2 Information (continued)

Name	Description	Form Number PDF File Name	HTML Directory
<i>DB2 Enterprise - Extended Edition for UNIX Quick Beginnings</i>	Provides planning, installation, and configuration information for DB2 Enterprise - Extended Edition on UNIX-based platforms. This book also contains installation and setup information for many supported clients.	GC09-2964 db2v3x70	db2v3
<i>DB2 Enterprise - Extended Edition for Windows Quick Beginnings</i>	Provides planning, installation, and configuration information for DB2 Enterprise - Extended Edition for Windows 32-bit operating systems. This book also contains installation and setup information for many supported clients.	GC09-2963 db2v6x70	db2v6
<i>DB2 for OS/2 Quick Beginnings</i>	Provides planning, installation, migration, and configuration information for DB2 Universal Database on the OS/2 operating system. This book also contains installation and setup information for many supported clients.	GC09-2968 db2i2x70	db2i2
<i>DB2 for UNIX Quick Beginnings</i>	Provides planning, installation, migration, and configuration information for DB2 Universal Database on UNIX-based platforms. This book also contains installation and setup information for many supported clients.	GC09-2970 db2ixx70	db2ix
<i>DB2 for Windows Quick Beginnings</i>	Provides planning, installation, migration, and configuration information for DB2 Universal Database on Windows 32-bit operating systems. This book also contains installation and setup information for many supported clients.	GC09-2971 db2i6x70	db2i6
<i>DB2 Personal Edition Quick Beginnings</i>	Provides planning, installation, migration, and configuration information for DB2 Universal Database Personal Edition on the OS/2 and Windows 32-bit operating systems.	GC09-2969 db2i1x70	db2i1
<i>DB2 Personal Edition Quick Beginnings for Linux</i>	Provides planning, installation, migration, and configuration information for DB2 Universal Database Personal Edition on all supported Linux distributions.	GC09-2972 db2i4x70	db2i4

Table 10. DB2 Information (continued)

Name	Description	Form Number PDF File Name	HTML Directory
<i>DB2 Query Patroller Installation Guide</i>	Provides installation information about DB2 Query Patroller.	GC09-2959 db2iwx70	db2iw
<i>DB2 Warehouse Manager Installation Guide</i>	Provides installation information for warehouse agents, warehouse transformers, and the Information Catalog Manager.	GC26-9998 db2idx70	db2id
<b>Cross-Platform Sample Programs in HTML</b>			
Sample programs in HTML	Provides the sample programs in HTML format for the programming languages on all platforms supported by DB2. The sample programs are provided for informational purposes only. Not all samples are available in all programming languages. The HTML samples are only available when the DB2 Application Development Client is installed.  For more information on the programs, refer to the <i>Application Building Guide</i> .	No form number	db2hs
<b>Release Notes</b>			
<i>DB2 Connect Release Notes</i>	Provides late-breaking information that could not be included in the DB2 Connect books.	See note #2.	db2cr
<i>DB2 Installation Notes</i>	Provides late-breaking installation-specific information that could not be included in the DB2 books.	Available on product CD-ROM only.	
<i>DB2 Release Notes</i>	Provides late-breaking information about all DB2 products and features that could not be included in the DB2 books.	See note #2.	db2ir

**Notes:**

1. The character *x* in the sixth position of the file name indicates the language version of a book. For example, the file name db2d0e70 identifies the English version of the *Administration Guide* and the file name db2d0f70 identifies the French version of the same book. The following letters are used in the sixth position of the file name to indicate the language version:

Language	Identifier
Brazilian Portuguese	b

Bulgarian	u
Czech	x
Danish	d
Dutch	q
English	e
Finnish	y
French	f
German	g
Greek	a
Hungarian	h
Italian	i
Japanese	j
Korean	k
Norwegian	n
Polish	p
Portuguese	v
Russian	r
Simp. Chinese	c
Slovenian	l
Spanish	z
Swedish	s
Trad. Chinese	t
Turkish	m

2. Late breaking information that could not be included in the DB2 books is available in the Release Notes in HTML format and as an ASCII file. The HTML version is available from the Information Center and on the product CD-ROMs. To view the ASCII file:
  - On UNIX-based platforms, see the `Release.Notes` file. This file is located in the `DB2DIR/Readme/%L` directory, where `%L` represents the locale name and `DB2DIR` represents:
    - `/usr/lpp/db2_07_01` on AIX
    - `/opt/IBMDB2/V7.1` on HP-UX, PTX, Solaris, and Silicon Graphics IRIX
    - `/usr/IBMDB2/V7.1` on Linux.
  - On other platforms, see the `RELEASE.TXT` file. This file is located in the directory where the product is installed. On OS/2 platforms, you can also double-click the **IBM DB2** folder and then double-click the **Release Notes** icon.

## Printing the PDF Books

If you prefer to have printed copies of the books, you can print the PDF files found on the DB2 publications CD-ROM. Using the Adobe Acrobat Reader, you can print either the entire book or a specific range of pages. For the file name of each book in the library, see Table 10 on page 64.



You can obtain the latest version of the Adobe Acrobat Reader from the Adobe Web site at <http://www.adobe.com>.

The PDF files are included on the DB2 publications CD-ROM with a file extension of PDF. To access the PDF files:

1. Insert the DB2 publications CD-ROM. On UNIX-based platforms, mount the DB2 publications CD-ROM. Refer to your *Quick Beginnings* book for the mounting procedures.
2. Start the Acrobat Reader.
3. Open the desired PDF file from one of the following locations:
  - On OS/2 and Windows platforms:  
*x:\doc\language* directory, where *x* represents the CD-ROM drive and *language* represent the two-character country code that represents your language (for example, EN for English).
  - On UNIX-based platforms:  
*/cdrom/doc/%L* directory on the CD-ROM, where */cdrom* represents the mount point of the CD-ROM and *%L* represents the name of the desired locale.

You can also copy the PDF files from the CD-ROM to a local or network drive and read them from there.

## Ordering the Printed Books

You can order the printed DB2 books either individually or as a set (in North America only) by using a sold bill of forms (SBOF) number. To order books, contact your IBM authorized dealer or marketing representative, or phone 1-800-879-2755 in the United States or 1-800-IBM-4Y0U in Canada. You can also order the books from the Publications Web page at <http://www.elink.ibm.com/pbl/pbl>.

Two sets of books are available. SBOF-8935 provides reference and usage information for the DB2 Warehouse Manager. SBOF-8931 provides reference and usage information for all other DB2 Universal Database products and features. The contents of each SBOF are listed in the following table:

Table 11. Ordering the printed books

SBOF Number	Books Included	
SBOF-8931	<ul style="list-style-type: none"> <li>• Administration Guide: Planning</li> <li>• Administration Guide: Implementation</li> <li>• Administration Guide: Performance</li> <li>• Administrative API Reference</li> <li>• Application Building Guide</li> <li>• Application Development Guide</li> <li>• CLI Guide and Reference</li> <li>• Command Reference</li> <li>• Data Movement Utilities Guide and Reference</li> <li>• Data Warehouse Center Administration Guide</li> <li>• Data Warehouse Center Application Integration Guide</li> <li>• DB2 Connect User's Guide</li> <li>• Installation and Configuration Supplement</li> <li>• Image, Audio, and Video Extenders Administration and Programming</li> <li>• Message Reference, Volumes 1 and 2</li> </ul>	<ul style="list-style-type: none"> <li>• OLAP Integration Server Administration Guide</li> <li>• OLAP Integration Server Metaoutline User's Guide</li> <li>• OLAP Integration Server Model User's Guide</li> <li>• OLAP Integration Server User's Guide</li> <li>• OLAP Setup and User's Guide</li> <li>• OLAP Spreadsheet Add-in User's Guide for Excel</li> <li>• OLAP Spreadsheet Add-in User's Guide for Lotus 1-2-3</li> <li>• Replication Guide and Reference</li> <li>• Spatial Extender Administration and Programming Guide</li> <li>• SQL Getting Started</li> <li>• SQL Reference, Volumes 1 and 2</li> <li>• System Monitor Guide and Reference</li> <li>• Text Extender Administration and Programming</li> <li>• Troubleshooting Guide</li> <li>• What's New</li> </ul>
SBOF-8935	<ul style="list-style-type: none"> <li>• Information Catalog Manager Administration Guide</li> <li>• Information Catalog Manager User's Guide</li> <li>• Information Catalog Manager Programming Guide and Reference</li> </ul>	<ul style="list-style-type: none"> <li>• Query Patroller Administration Guide</li> <li>• Query Patroller User's Guide</li> </ul>

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## DB2 Online Documentation

### Accessing Online Help

Online help is available with all DB2 components. The following table describes the various types of help.

Type of Help	Contents	How to Access...
<i>Command Help</i>	Explains the syntax of commands in the command line processor.	<p>From the command line processor in interactive mode, enter:</p> <p style="padding-left: 40px;"><i>? command</i></p> <p>where <i>command</i> represents a keyword or the entire command.</p> <p>For example, <i>? catalog</i> displays help for all the CATALOG commands, while <i>? catalog database</i> displays help for the CATALOG DATABASE command.</p>
<i>Client Configuration Assistant Help</i>	Explains the tasks you can perform in a window or notebook. The help includes overview and prerequisite information you need to know, and it describes how to use the window or notebook controls.	From a window or notebook, click the <b>Help</b> push button or press the <b>F1</b> key.
<i>Command Center Help</i>		
<i>Control Center Help</i>		
<i>Data Warehouse Center Help</i>		
<i>Event Analyzer Help</i>		
<i>Information Catalog Manager Help</i>		
<i>Satellite Administration Center Help</i>		
<i>Script Center Help</i>		
<i>Message Help</i>	Describes the cause of a message and any action you should take.	<p>From the command line processor in interactive mode, enter:</p> <p style="padding-left: 40px;"><i>? XXXnnnnn</i></p> <p>where <i>XXXnnnnn</i> represents a valid message identifier.</p> <p>For example, <i>? SQL30081</i> displays help about the SQL30081 message.</p> <p>To view message help one screen at a time, enter:</p> <p style="padding-left: 40px;"><i>? XXXnnnnn   more</i></p> <p>To save message help in a file, enter:</p> <p style="padding-left: 40px;"><i>? XXXnnnnn &gt; filename.ext</i></p> <p>where <i>filename.ext</i> represents the file where you want to save the message help.</p>

Type of Help	Contents	How to Access...
<i>SQL Help</i>	Explains the syntax of SQL statements.	<p>From the command line processor in interactive mode, enter:</p> <pre>help <i>statement</i></pre> <p>where <i>statement</i> represents an SQL statement.</p> <p>For example, help SELECT displays help about the SELECT statement.</p> <p><b>Note:</b> SQL help is not available on UNIX-based platforms.</p>
<i>SQLSTATE Help</i>	Explains SQL states and class codes.	<p>From the command line processor in interactive mode, enter:</p> <pre>? <i>sqlstate</i> or ? <i>class code</i></pre> <p>where <i>sqlstate</i> represents a valid five-digit SQL state and <i>class code</i> represents the first two digits of the SQL state.</p> <p>For example, ? 08003 displays help for the 08003 SQL state, while ? 08 displays help for the 08 class code.</p>

## Viewing Information Online

The books included with this product are in Hypertext Markup Language (HTML) softcopy format. Softcopy format enables you to search or browse the information and provides hypertext links to related information. It also makes it easier to share the library across your site.

You can view the online books or sample programs with any browser that conforms to HTML Version 3.2 specifications.

To view online books or sample programs:

- If you are running DB2 administration tools, use the Information Center.
- From a browser, click **File** —> **Open Page**. The page you open contains descriptions of and links to DB2 information:
  - On UNIX-based platforms, open the following page:

```
INSTHOME/sql1lib/doc/%L/html/index.htm
```

where %L represents the locale name.

- On other platforms, open the following page:

```
sql1lib\doc\html\index.htm
```

The path is located on the drive where DB2 is installed.

If you have not installed the Information Center, you can open the page by double-clicking the **DB2 Information** icon. Depending on the system you are using, the icon is in the main product folder or the Windows Start menu.

### **Installing the Netscape Browser**

If you do not already have a Web browser installed, you can install Netscape from the Netscape CD-ROM found in the product boxes. For detailed instructions on how to install it, perform the following:

1. Insert the Netscape CD-ROM.
2. On UNIX-based platforms only, mount the CD-ROM. Refer to your *Quick Beginnings* book for the mounting procedures.
3. For installation instructions, refer to the `CDNAVnn.txt` file, where *nn* represents your two character language identifier. The file is located at the root directory of the CD-ROM.

### **Accessing Information with the Information Center**

The Information Center provides quick access to DB2 product information. The Information Center is available on all platforms on which the DB2 administration tools are available.

You can open the Information Center by double-clicking the Information Center icon. Depending on the system you are using, the icon is in the Information folder in the main product folder or the Windows **Start** menu.

You can also access the Information Center by using the toolbar and the **Help** menu on the DB2 Windows platform.

The Information Center provides six types of information. Click the appropriate tab to look at the topics provided for that type.

<b>Tasks</b>	Key tasks you can perform using DB2.
<b>Reference</b>	DB2 reference information, such as keywords, commands, and APIs.
<b>Books</b>	DB2 books.
<b>Troubleshooting</b>	Categories of error messages and their recovery actions.
<b>Sample Programs</b>	Sample programs that come with the DB2 Application Development Client. If you did not install the DB2 Application Development Client, this tab is not displayed.
<b>Web</b>	DB2 information on the World Wide Web. To access this information, you must have a connection to the Web from your system.

When you select an item in one of the lists, the Information Center launches a viewer to display the information. The viewer might be the system help viewer, an editor, or a Web browser, depending on the kind of information you select.

The Information Center provides a find feature, so you can look for a specific topic without browsing the lists.

For a full text search, follow the hypertext link in the Information Center to the **Search DB2 Online Information** search form.

The HTML search server is usually started automatically. If a search in the HTML information does not work, you may have to start the search server using one of the following methods:

#### **On Windows**

Click **Start** and select **Programs** → **IBM DB2** → **Information** → **Start HTML Search Server**.

#### **On OS/2**

Double-click the **DB2 for OS/2** folder, and then double-click the **Start HTML Search Server** icon.

Refer to the release notes if you experience any other problems when searching the HTML information.

**Note:** The Search function is not available in the Linux, PTX, and Silicon Graphics IRIX environments.

## **Using DB2 Wizards**

Wizards help you complete specific administration tasks by taking you through each task one step at a time. Wizards are available through the Control Center and the Client Configuration Assistant. The following table lists the wizards and describes their purpose.

**Note:** The Create Database, Create Index, Configure Multisite Update, and Performance Configuration wizards are available for the partitioned database environment.

<b>Wizard</b>	<b>Helps You to...</b>	<b>How to Access...</b>
<i>Add Database</i>	Catalog a database on a client workstation.	From the Client Configuration Assistant, click <b>Add</b> .
<i>Backup Database</i>	Determine, create, and schedule a backup plan.	From the Control Center, right-click the database you want to back up and select <b>Backup</b> → <b>Database Using Wizard</b> .

<b>Wizard</b>	<b>Helps You to...</b>	<b>How to Access...</b>
<i>Configure Multisite Update</i>	Configure a multisite update, a distributed transaction, or a two-phase commit.	From the Control Center, right-click the <b>Databases</b> folder and select <b>Multisite Update</b> .
<i>Create Database</i>	Create a database, and perform some basic configuration tasks.	From the Control Center, right-click the <b>Databases</b> folder and select <b>Create</b> → <b>Database Using Wizard</b> .
<i>Create Table</i>	Select basic data types, and create a primary key for the table.	From the Control Center, right-click the <b>Tables</b> icon and select <b>Create</b> → <b>Table Using Wizard</b> .
<i>Create Table Space</i>	Create a new table space.	From the Control Center, right-click the <b>Table Spaces</b> icon and select <b>Create</b> → <b>Table Space Using Wizard</b> .
<i>Create Index</i>	Advise which indexes to create and drop for all your queries.	From the Control Center, right-click the <b>Index</b> icon and select <b>Create</b> → <b>Index Using Wizard</b> .
<i>Performance Configuration</i>	Tune the performance of a database by updating configuration parameters to match your business requirements.	From the Control Center, right-click the database you want to tune and select <b>Configure Performance Using Wizard</b> .  For the partitioned database environment, from the Database Partitions view, right-click the first database partition you want to tune and select <b>Configure Performance Using Wizard</b> .
<i>Restore Database</i>	Recover a database after a failure. It helps you understand which backup to use, and which logs to replay.	From the Control Center, right-click the database you want to restore and select <b>Restore</b> → <b>Database Using Wizard</b> .

## Setting Up a Document Server

By default, the DB2 information is installed on your local system. This means that each person who needs access to the DB2 information must install the same files. To have the DB2 information stored in a single location, perform the following steps:

1. Copy all files and subdirectories from `\sql11ib\doc\html` on your local system to a Web server. Each book has its own subdirectory that contains all the necessary HTML and GIF files that make up the book. Ensure that the directory structure remains the same.

2. Configure the Web server to look for the files in the new location. For information, refer to the NetQuestion Appendix in the *Installation and Configuration Supplement*.
3. If you are using the Java version of the Information Center, you can specify a base URL for all HTML files. You should use the URL for the list of books.
4. When you are able to view the book files, you can bookmark commonly viewed topics. You will probably want to bookmark the following pages:
  - List of books
  - Tables of contents of frequently used books
  - Frequently referenced articles, such as the ALTER TABLE topic
  - The Search form

For information about how you can serve the DB2 Universal Database online documentation files from a central machine, refer to the NetQuestion Appendix in the *Installation and Configuration Supplement*.

### **Searching Information Online**

To find information in the HTML files, use one of the following methods:

- Click **Search** in the top frame. Use the search form to find a specific topic. This function is not available in the Linux, PTX, or Silicon Graphics IRIX environments.
- Click **Index** in the top frame. Use the index to find a specific topic in the book.
- Display the table of contents or index of the help or the HTML book, and then use the find function of the Web browser to find a specific topic in the book.
- Use the bookmark function of the Web browser to quickly return to a specific topic.
- Use the search function of the Information Center to find specific topics. See “Accessing Information with the Information Center” on page 77 for details.



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## Contacting IBM

If you have a technical problem, please review and carry out the actions suggested by the *Troubleshooting Guide* before contacting DB2 Customer Support. This guide suggests information that you can gather to help DB2 Customer Support to serve you better.

For information or to order any of the DB2 Universal Database products contact an IBM representative at a local branch office or contact any authorized IBM software remarketer.

If you live in the U.S.A., then you can call one of the following numbers:

- 1-800-237-5511 for customer support
- 1-888-426-4343 to learn about available service options

---

## Product Information

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**<http://www.ibm.com/software/data/>**

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The International Publications ordering Web site provides information on how to order books.

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The Professional Certification Program from the IBM Web site provides certification test information for a variety of IBM products, including DB2.

**ftp.software.ibm.com**

Log on as anonymous. In the directory /ps/products/db2, you can find demos, fixes, information, and tools relating to DB2 and many other products.

**comp.databases.ibm-db2, bit.listserv.db2-l**

These Internet newsgroups are available for users to discuss their experiences with DB2 products.

**On CompuServe: GO IBMDB2**

Enter this command to access the IBM DB2 Family forums. All DB2 products are supported through these forums.

For information on how to contact IBM outside of the United States, refer to Appendix A of the *IBM Software Support Handbook*. To access this document, go to the following Web page: <http://www.ibm.com/support/>, and then select the IBM Software Support Handbook link near the bottom of the page.

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