

IBM[®] DB2[®] Universal Database



Using DB2 Universal Database on 64-bit Platforms

Version 7

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Version 7

Before using this information and the product it supports, be sure to read the general information under "Appendix B. Notices" on page 37.

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About This Book

This book provides information about the 64-bit version of the DB2 Universal Database (UDB) and DB2 Connect servers for 64-bit platforms.

Who Should Use this Book

This manual is for database administrators, application programmers, and other users who want to work with DB2 Universal Database on 64-bit platforms. The book covers installation, instance migration, configuration, and application development issues.

It is assumed that you are familiar with DB2 Universal Database and with the operating system environment in which DB2 UDB is running.

- For general information about DB2 UDB, refer to the *Administration Guide*.
- For planning, installation, migration, and configuration information for DB2 UDB on UNIX-based platforms, refer to the *DB2 for UNIX Quick Beginnings* book. This book also contains installation and setup information for many supported clients.
- For information about how to develop applications that access DB2 databases, refer to the *Application Development Guide*. 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.
- For information about the DB2 application programming interfaces (APIs) and data structures that you can use to manage your databases, refer to the *Administrative API Reference*. This book also explains how to call APIs from your applications.
- For environment setup information and step-by-step instructions about how to compile, link, and run DB2 applications refer to the *Application Building Guide*.

How this Book is Structured

The following topics are covered:

Chapter 1. Why 64-bit Support?

Provides a brief introduction to some of the principal advantages of 64-bit operating systems.

Chapter 2. Installation

Shows you how to install DB2 Universal Database Version 7.1 on 64-bit platforms.

Chapter 3. Instance Creation, Migration, and Update Scenarios

Shows you how to create 64-bit instances, or how to migrate your 32-bit instances to 64-bit instances.

Chapter 4. Application Development Considerations

Describes the process of migrating a 32-bit application to a 64-bit application, platform-specific compiler flag values, and how to make your UDF code portable between 32-bit and 64-bit platforms.

Chapter 5. Configuration

Describes new upper limits for database and database manager configuration parameters related to memory.

Chapter 6. Restrictions

Describes the restrictions that apply to DB2 Universal Database Version 7.1 on 64-bit platforms.

Chapter 7. Messages

Lists some of the messages that may be returned when you work with DB2 Universal Database Version 7.1 on 64-bit platforms.

Chapter 8. Incompatibilities

Identifies incompatibilities introduced by 64-bit engine support in DB2 Universal Database Version 7.1.

Chapter 1. Why 64-bit Support?

The advent of 64-bit computing platforms presents new possibilities for increased performance of database servers as well as database applications. 32-bit platforms have an inherent address space limitation of 4 gigabytes (GB) for the kernel plus user text and data. Removal of this 4 GB limit on the address space of database servers allows for the creation of larger buffer pools, sort heap, package caches, and other resources that can consume large amounts of memory. This, in turn, leads to much improved performance, especially for sort and input/output (I/O) operations.

Other 32-bit limitations and problems can be removed by using a 64-bit implementation. For example, on AIX, there are approximately ten memory segments available for use in **mmap** or **shmat** calls. This directly limits the number of local database connections that a DB2 application can have, because one shared memory segment is required for each local connection. As well as eliminating restrictions on the amount of memory available both on the stack and the heap of an AIX executable, a 64-bit implementation is not subject to potential stack heap collisions.

The availability of both hardware and operating systems capable of using greater than 4 GB of memory means that a 4 GB barrier is a significant limitation to memory-intensive applications and the larger middleware vendors who require large database installations.

Some application developers are also migrating their applications to 64-bit platforms. 64-bit applications are able to access files that are greater than 2 GB in size. To achieve this level of access with 32-bit applications requires special code or build modifications. For 64-bit applications to work with DB2 family databases, they must have access to 64-bit versions of the DB2 application libraries. Although 64-bit platforms allow both 32-bit and 64-bit processes to coexist, they do not allow intermixing of 32-bit and 64-bit executables and libraries within the same process.

To exploit this increased memory address space, IBM has developed a 64-bit version of the DB2 Universal Database (UDB) and DB2 Connect servers for 64-bit platforms. Application libraries that enable access to DB2 family databases from 64-bit applications are now available.

Client/server configurations supported in this release are:

- 64-bit client to 64-bit DB2 UDB engine
- 64-bit client to 64-bit DB2 Connect gateway to DRDA host

Why 64-bit Support?

- 64-bit DB2 Connect Personal Edition to DRDA host

Chapter 2. Installation

64-bit support requires these minimum operating system levels:

- AIX 4.3.3
- Solaris 7 plus patches 106541-07, 106327-06, and 106300-07
- HP-UX 11.00

This FixPak requires a DB2 Universal Database Version 7.1 product to be installed on your system.

Prior to Installation

Two steps are required to prepare your system for installation.

1. First, log on as root (superuser), and issue the following commands for each instance:

```
su - ioname
. $HOME/sqllib/db2profile
db2 force applications all
db2 terminate
db2stop
db2licd -end
exit
```

where *ioname* is the instance owner name, and \$HOME is the home directory of the instance owner.

2. While still logged on as root, issue the following commands for the Administration Server:

```
su - dasname
. $HOME/sqllib/db2profile
db2admin stop
exit
/usr/sbin/slibclean #on AIX systems only
```

where *dasname* represents the Administration Server name, and \$HOME is the Administration Server's home directory.

Installation Instructions for AIX

Install the selected updates using either SMIT or **installp**. To list the installable options in this FixPak, use:

```
installp -ld <device>
```

Installation

where <device> is the name of the device on which the updated image resides.

To install this FixPak using SMIT, issue the following command:

```
smit update_all
```

and specify the input device on which the updated image resides.

You can now create and use 64-bit instances.

Installation Instructions for Solaris

To apply this FixPak on your Solaris system, log on as root and issue the following commands:

```
cd /cdrom/db2_for_solaris_v710_fixpak1
./installallpatch
```

You can now create and use 64-bit instances.

Installation Instructions for HP-UX

To apply this FixPak on your HP-UX system, log on as root and issue the following commands:

```
cd /cdrom/db2_for_hpux_v710_fixpak1
./installpatch
```

You can now create and use 64-bit instances.

Chapter 3. Instance Creation, Migration, and Update Scenarios

Creating a New 64-bit Instance

You can create a 64-bit instance by invoking the **db2icrt** command, specifying the parameter **-w** with a value of 64. For example:

```
db2icrt -w 64 -u db2fenc1 db2inst1
```

For more information about the **db2icrt** command, refer to the *DB2 for UNIX Quick Beginnings* book, or the *Command Reference*.

Updating an Existing 32-bit Instance (Version 7.1) to a 64-bit Instance (Version 7.1)

Because there is no way to undo the word size migration of an instance, back up all local databases before attempting a word size instance update. In addition, back up all local databases *after* updating the word size of the instance to 64-bit. Forward recoverable databases (those whose LOGRETAIN database configuration parameter is set to ON) are put in *backup pending* state, and you must back them up once the instance has been updated.

You can change a Version 7.1 32-bit instance to a Version 7.1 64-bit instance by invoking the **db2iupdt** command, specifying the parameter **-w** with a value of 64. For example:

```
DB2DIR/instance/db2iupdt -w 64 db2inst1
```

where DB2DIR represents `/usr/lpp/db2_07_01` on AIX and `/opt/IBMDB2/V7.1` on Solaris and HP-UX. For more information about the **db2iupdt** command, refer to the *DB2 for UNIX Quick Beginnings* book, or the *Command Reference*.

For a list of restrictions that apply when you upgrade a 32-bit instance to a 64-bit instance, see “Chapter 6. Restrictions” on page 13.

You cannot revert to a 32-bit instance once you have migrated to a 64-bit instance. To once again work with 32-bit instances, you must drop your 64-bit instances and databases, recreate 32-bit instances, and restore your most recent 32-bit backup images.

Migrating a Down-level 32-bit Instance to a 64-bit Instance

There is no direct migration path from an existing 32-bit (pre-Version 7.1) instance to a 64-bit instance. You must first migrate your pre-Version 7.1 32-bit instance to Version 7.1, and then update it to a 64-bit instance. For information on migrating your 32-bit instance to Version 7.1, see the *Quick Beginnings* manual for your operating system.

After installing the FixPak, you will find new directories and files in existing components. For example, there will be a DB2DIR/bin64 directory that contains all of the 64-bit binaries. (DB2DIR represents /usr/lpp/db2_07_01 on AIX and /opt/IBMDB2/V7.1 on Solaris and HP-UX.) You can create a 64-bit instance by invoking the **db2icrt** command, specifying the parameter **-w** with a value of 64, or change a 32-bit instance to a 64-bit instance by invoking the **db2iupdt** command, also specifying the parameter **-w** with a value of 64. For more information about the **db2icrt** command or the **db2iupdt** command, refer to the *DB2 for UNIX Quick Beginnings* book or the *Command Reference*.

Chapter 4. Application Development Considerations

A number of API functions that previously used the long data type now specify `sqlint32`. Additionally, instead of pointers to long or unsigned long variables, some of these functions now take pointers to `sqlint32` or `sqluint32` variables. The application code for these API functions must be changed, because an `sqlint32` pointer and a long pointer are not compatible on 64-bit UNIX based platforms.

For more information about these host variables, see the *Application Development Guide*.

Use the `LONGERROR` precompile option to prepare your application for migration to a 64-bit operating environment, while still running on a 32-bit machine. Set `LONGERROR` to `YES` on a 32-bit machine so that the precompiler returns an error whenever it encounters a host variable of the long type.

In order to migrate a 32-bit application to the 64-bit operating environment follow these steps:

1. Prune the use of long types for host variables, unless long types are necessary. Instead, use the new portable host variables, `sqlint32` or `sqluint32`. For example:

```
EXEC SQL BEGIN DECLARE SECTION;
    long y;          /* this declaration generates an error on 64 bit */
    sqlint32 x;     /* this declaration is acceptable for 64 bit */
EXEC SQL END DECLARE SECTION;
```

2. Precompile the application against a database on a 64-bit server. This creates a new package for the application that is being ported. Applications generated by compiling the output of a 32-bit precompiler are not supported on 64-bit installations. Similarly, applications generated by compiling the output of a 64-bit precompiler are not supported on 32-bit installations.
3. Compile the application in 64-bit mode.
4. Link the application against the new 64-bit DB2 libraries.
5. Bind the application against a database on a 64-bit server.

Restrictions and Additional Notes on Application Development

The following restrictions and notes must be considered when developing 64-bit applications:

- In applications that manually construct the `SQLDA`, long variables cannot be used when `sqlvar::sqltype==SQL_TYP_INTEGER`. Instead, `sqlint32` types

Application Development Considerations

must be used. This problem is identical to using long variables in host variable declarations, except that with a manually constructed SQLDA, the precompiler will not uncover this error and run time errors will occur.

- Any long and unsigned long casts that are used to access `sqlvar::sqldata` information must be changed to `sqlint32` and `sqluint32`. Val members for the `sqloptions` and `sqla_option` structures are declared as `sqluintptr`. Therefore, assignment of pointer members into `sqla_option::val` or `sqloptions::val` members should use `sqluintptr` casts rather than unsigned long casts. This change will not cause run-time problems in 64-bit UNIX platforms, but should be made in preparation for 64-bit NT applications, where the long type is only 32-bit.
- When building 64-bit IBM C, IBM CSet++, VisualAge C++, or IBM XL FORTRAN applications on AIX, compile and link the applications in 64-bit mode. Use the `-q64` compiler flag, or set the environment variable `OBJECT_MODE=64`.
- When building 64-bit SPARCompiler C or SPARCompiler C++ applications on Solaris, compile and link the applications in 64-bit mode. Use the `-xarch=v9` compiler flag.
- When building 64-bit applications on HP-UX, compile and link the applications in 64-bit mode. Use the `+DA2.0W` compiler flag. For 64-bit C++ compilation, you can only use the aCC compiler (not the CC compiler).

Writing Scratchpads on 32-bit and 64-bit Platforms

To make your UDF code portable between 32-bit and 64-bit platforms, you must change the way in which you create and use scratchpads that contain 64-bit values. Do not declare an explicit length variable for a scratchpad structure that contains one or more 64-bit values, such as pointers, long variables, or `sqlint64` variables. For example, the following code sample might result in a data alignment exception on a 64-bit platform, because the structure declaration includes an explicit length variable:

```
struct scratchpad_data
{
    sqlint32 length;
    char chars[4];
    sqlint64 bigint_var;
};
```

To obtain a consistent definition for scratchpad structure across all platforms in the DB2 family, it was determined that the UDF's `sqludf_scratchpad::data` is aligned to platform-specific alignment criteria. If alignment is an issue for that scratchpad data structure, the scratchpad declaration with no explicit length member can be used. This change was made to ensure consistency with some mainframe versions of DB2, where pointers are 16-byte aligned instead of 4- or 8-byte aligned for 32-bit and 64-bit installations, respectively.

To declare the scratchpad structure from the previous example so that it is portable between 32-bit and 64-bit platforms, remove the declaration of the explicit length variable for the structure. The following code example declares the scratchpad structure without declaring an explicit length variable:

```
struct scratchpad_data
{
    sqlint64 bigint_var;
    char chars[4];
};
```

To access a scratchpad structure that does not declare an explicit length variable in your UDF, you can refer to the scratchpad using the following format:

```
struct scratchpad_data * data =
    (struct scratchpad_data*)scratch_pointer->data;
```

where *scratch_pointer* represents the *sqludf_scratchpad* pointer of the UDF and *data* represents the contents of the scratchpad.

External References

Additional information on platform specific 64-bit application considerations can be found on the following Web sites. These Web sites include tips and recommendations that can be specific to hardware and operating systems and are therefore not necessarily suitable for all 32-bit and 64-bit platforms currently supported by DB2 or in future releases of DB2. Note that IBM cannot be held responsible for information resources at non-IBM Web sites.

- AIX — www.developer.ibm.com/library/aix4.3/index.html
- Solaris 7 — www.sun.com/solaris/64bit.html
- HP-UX 11.0 — www.software.hp.com/STK/toc.html
- Microsoft — www.microsoft.com/Windows/shared/overview/64bit.asp
- Intel IA-64 — developer.intel.com/design/ia-64/

Application Development Considerations

Chapter 5. Configuration

Some database manager and database configuration parameters now have higher upper limits, but *only* for 64-bit releases. To take full advantage of the larger address space available to 64-bit executables, you may need to tune memory-related configuration parameters. The following tables denote previous and current upper limits for affected database and database manager configuration parameters.

Table 1. Memory-related Database Manager Configuration Parameters

Parameter	Previous Upper Limit	Current Upper Limit
AGENT_STACK_SZ	1000	same
APPLHEAPSZ	128	256
ASLHEAPSZ	524288	same
AUDIT_BUF_SZ	65000	same
BACKBUFSZ	524288	same
DOS_RQRIOBLK	65535	same
DRDA_HEAP_SZ	60000	same
FCM_NUM_ANCHORS	120000	524288
FCM_NUM_BUFFERS	65300	524288
FCM_NUM_CONNECT	120000	524288
FCM_NUM_RQB	120000	524288
JAVA_HEAP_SZ	4096	same
MIN_PRIV_MEM	112000	same
MON_HEAP_SZ	60000	same
PRIV_MEM_THRESH	112000	same
QUERY_HEAP_SZ	524288	same
RESTBUFSZ	524288	same
RQIOBLK	65535	same
SHEAPTHRES	2097152	2147483647
STMTHEAP	2048	4096
UDF_MEM_SZ	60000	same

Configuration

Table 2. Memory-related Database Configuration Parameters

Parameter	Previous Upper Limit	Current Upper Limit
APP_CTL_HEAP_SZ	64000	same
APPLHEAPSZ	60000	same
BUFFPAGE	524288	2147483647
CATALOGCACHE_SZ	60000	same
DBHEAP	60000	524288 (for both 32-bit and 64-bit)
ESTORE_SEG_SZ ^a	1048575	same
LOGBUFSZ	4096	65535
PCKCACHESZ	64000	524288
SORTHEAP	524288	same
STAT_HEAP_SZ	524288	same
STMTHEAP	60000	same
UTIL_HEAP_SZ	524288	same
Note: ^a This parameter has been disabled for all 64-bit platforms.		

The internal representation of the DBHEAP database configuration parameter has changed from 16 bits to 64 bits for 64-bit releases, and to 32 bits for 32-bit releases.

The old DBHEAP token (SQLF_DBTN_DBHEAP) has been replaced with a new one (SQLF_DBTN_DB_HEAP). If the old token is used with **sqlfudb** (Update Database Configuration API), or **sqlfxdb** (Get Database Configuration API), DB2 will cast 16 bits to 64 or 32 bits, as appropriate, to maintain source code compatibility. If the DBHEAP value is greater than 65535, the cast results in a wrapped value, and DB2 returns a new warning message (SQL5066W; see “Chapter 7. Messages” on page 15).

Chapter 6. Restrictions

The following restrictions pertain to updating a 32-bit instance to a 64-bit instance:

- Remote databases (TYPE != SQL_INDIRECT) that are cataloged at the 32-bit instance are skipped. The local database directories for these databases will not be migrated. Since communication between 32-bit and 64-bit clients and servers is not supported in this release, the 32-bit databases, although cataloged, will not be connectable from the instance after the instance has been updated. The **db2iupdt** utility returns a warning message (SQL1706W) if any such databases exist.
- Upgrading a 32-bit instance that has local databases (with TYPE == SQL_INDIRECT) with one or more spatial indexes defined is not supported (SQL1706N, word size migration failed). You must drop spatial indexes from 32-bit instances, and then recreate them in 64-bit instances.
- All databases local to the instance that you intend to update *must* be cataloged before the instance is updated.
- Existing user-defined functions (UDFs) and stored procedures must be rebuilt in 64-bit instances.
- Existing SQL procedures must be dropped and recreated in 64-bit instances.

Additional 64-bit restrictions:

- A 32-bit database image cannot be restored into a 64-bit instance.
- A 64-bit database image cannot be restored into a 32-bit instance.
- The **db2setup** command cannot be used to create 64-bit instances. This command can, however, be used to create 32-bit instances, which can be manually migrated to 64-bit instances. For information about creating 64-bit instances, or migrating 32-bit instances, see “Chapter 3. Instance Creation, Migration, and Update Scenarios” on page 5.
- In a DB2 UDB Enterprise - Extended Edition (EEE) environment, all nodes must be 64-bit nodes (not a mix of 32-bit and 64-bit nodes).
- The **snmp_agent** is currently not supported on 64-bit installations.

The following elements are not supported in this release:

- JDBC
- Control Center
- Query Patroller
- DCE
- Replication

Restrictions

- DB2 Extenders
- Data Links Manager
- Java stored procedures
- Java user-defined functions
- SQLJ
- Federated databases

Unsupported programming languages are:

- Perl
- COBOL
- REXX
- FORTRAN (Solaris)

Unsupported communication protocols are:

- SNA
- Syncpoint Manager
- IPX

Unsupported connections are:

- A 64-bit client to a 32-bit server
- A 32-bit client to a 64-bit server

Chapter 7. Messages

A new sqlcode error message (SQL1434N) is returned when incompatible client/server attachment or connection attempts are made.

A new sqlcode error message (SQL4020N) is returned by **sqlprep** when the precompiler encounters a host variable of long type.

A new warning (SQL5066W) is returned if **sqlfxdb** is called with the old DBHEAP token (SQLF_DBTN_DBHEAP) instead of the new one (SQLF_DBTN_DB_HEAP), and the value of the DBHEAP database configuration parameter is larger than that which the old type can handle.

SQL0450N Routine “<routine-name>” (specific name “<specific-name>”) has generated a result value, SQLSTATE value, message text, or scratchpad which is too long.

Explanation: Upon return from routine “<routine-name>” (specific name “<specific-name>”), DB2 has detected that more bytes were returned than were allocated for one of the following:

- the result value (based upon the routine definition). There are several possible causes:
 - Too many bytes were moved to the result buffer.
 - The data type is one where the data value must be delimited by a null, such as VARCHAR(n), and the delimiting null was not within the range of the defined size.
 - DB2 is expecting a two- or four- byte length value preceding the value, and this length exceeds the defined size of the result.
 - A LOB locator is returned by the routine, and the length of the LOB value associated with this locator exceeds the defined size of the result.

The definition of the result argument in the Routine must conform to the requirement for the data type. Refer to the *Application Development Guide* for more information.

- the SQLSTATE value (6 bytes including the null terminator)
- the message text (71 bytes including the null terminator).
- the scratchpad content (length declared on CREATE FUNCTION).

This is not permitted.

This error will also be returned if the length field of the scratchpad is altered by the routine.

User Response: See your Database Administrator, or the author of the routine.

sqlcode: -450

sqlstate: 39501

SQL1434N A CONNECT or ATTACH statement failed because of a client/server incompatibility between 32-bit and 64-bit platforms.

Explanation: This release does not support client/server connections between 32-bit and 64-bit platforms.

User Response: You can issue a CONNECT or ATTACH statement in the following scenarios:

- from a 32-bit client to a 32-bit server
- from a 64-bit client to a 64-bit server

Messages

sqlcode: -1434

sqlstate: 08004

SQL1706W At least one non local database was detected in the node directory for this instance during word size instance migration.

Explanation: While performing word size instance migration, at least one database not created under this instance was encountered. Such databases must have the same word size as this instance for migration to complete successfully.

User Response: Ensure that all databases cataloged at the instance have the same word size.

SQL1707N Unable to migrate the instance word size.

Explanation: There was an error while attempting to migrate the word size of the instance. Please contact your IBM service representative.

User Response: Contact your IBM service representative.

SQL4020N The 'long' host variable "<token 1>" is not valid. Use 'sqlint32' instead.

Explanation: If the LONGERROR YES precompile option is in effect or the precompile option LONGERROR has not been specified and the platform has 8-byte 'long's, then the INTEGER host variable must be declared with the data type 'sqlint32', not 'long'.

On 64-bit platforms with 8-byte 'long' types the precompile option LONGERROR NO can be used to specify that 'long' host variables are to be used for BIGINT data types. For maximum portability the use of 'sqlint32' and 'sqlint64' are recommended for INTEGER and BIGINT data types respectively.

User Response: Replace the current data type of

the host variable with the data type specified in the message.

SQL5066W The database configuration parameter value for token "<token-name>" has been truncated.

Explanation: The database configuration parameter value is larger than the specified token can contain.

A new token now represents this database configuration parameter value and should be used if the value is larger than can be contained by the old token.

User Response: Use the new token for this database configuration parameter.

Chapter 8. Incompatibilities

This section identifies incompatibilities introduced by 64-bit engine support in DB2 Universal Database (UDB) Version 7.1.

32-bit Application Incompatibility

	UNIX	
--	------	--

Change

32-bit object code will not link against 64-bit libraries.

Symptom

Application fails to link. When you attempt to link 32-bit objects against the 64-bit DB2 application library, an operating system linker error message is returned.

Note that operating systems may behave differently. For example, AIX will ignore 32-bit archive libraries, and the symptom for mismatched 32-bit and 64-bit objects could be unresolved symbols.

Resolution

The application must be recompiled as a 64-bit executable, and relinked against the new 64-bit DB2 libraries.

32-bit Client Incompatibility

WIN	UNIX	OS/2
-----	------	------

Change

No 32-bit clients can connect to databases on 64-bit servers.

Symptom

If a 32-bit client tries to connect or attach to a 64-bit server, or a 64-bit client tries to connect or attach to a 32-bit server, when both the server and the client are running DB2 UDB Version 7, then error message SQL1434N is returned. All other connection or attachment attempts fail with SQLCODE -30081.

Resolution

Use 64-bit clients.

Incompatibilities

Comments

32-bit client connections or attachments to a 64-bit server, and 64-bit client connections or attachments to a 32-bit server will be supported in a future release.

User-defined Function (UDF) Incompatibility

WIN	UNIX	OS/2
-----	------	------

Change

A UDF that changes the length field of the scratchpad passed to it triggers SQLCODE -450.

Symptom

Any UDF that changes the length field of the scratchpad fails. The invoking statement receives error message SQL0450N, including the schema and specific name of the function.

Resolution

Rewrite the UDF body to not change the length field of the scratchpad.

Comments

This restriction was previously documented, but is only now being enforced.

Appendix A. 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 33. You can view task information, DB2 books, troubleshooting information, sample programs, and DB2 information on the Web.

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 29. The following table lists books that can be ordered.

On OS/2 and Windows platforms, you can install the HTML files under the `sql1ib\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 32
- “Searching Information Online” on page 36
- “Ordering the Printed Books” on page 29
- “Printing the PDF Books” on page 28

Table 3. DB2 Information

Name	Description	Form Number PDF File Name	HTML Directory
DB2 Guide and Reference Information			
<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 3. 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 3. 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 3. 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 3. 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 3. 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
DB2 Installation and Configuration Information			
<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 3. 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 3. 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
Cross-Platform Sample Programs in HTML			
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
Release Notes			
<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 3 on page 20.

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 4. Ordering the printed books

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

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 Help push button or press the F1 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>	<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 > 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>Note: 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.

Tasks	Key tasks you can perform using DB2.
Reference	DB2 reference information, such as keywords, commands, and APIs.
Books	DB2 books.
Troubleshooting	Categories of error messages and their recovery actions.
Sample Programs	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.
Web	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.

Wizard	Helps You to...	How to Access...
<i>Add Database</i>	Catalog a database on a client workstation.	From the Client Configuration Assistant, click Add .
<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 Backup → Database Using Wizard .

Wizard	Helps You to...	How to Access...
<i>Configure Multisite Update</i>	Configure a multisite update, a distributed transaction, or a two-phase commit.	From the Control Center, right-click the Databases folder and select Multisite Update .
<i>Create Database</i>	Create a database, and perform some basic configuration tasks.	From the Control Center, right-click the Databases folder and select Create → Database Using Wizard .
<i>Create Table</i>	Select basic data types, and create a primary key for the table.	From the Control Center, right-click the Tables icon and select Create → Table Using Wizard .
<i>Create Table Space</i>	Create a new table space.	From the Control Center, right-click the Table Spaces icon and select Create → Table Space Using Wizard .
<i>Create Index</i>	Advise which indexes to create and drop for all your queries.	From the Control Center, right-click the Index icon and select Create → Index Using Wizard .
<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 Configure Performance Using Wizard . For the partitioned database environment, from the Database Partitions view, right-click the first database partition you want to tune and select Configure Performance Using Wizard .
<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 Restore → Database Using Wizard .

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 33 for details.

Appendix B. Notices

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