

IBM® DB2 Universal Database™



Quick Beginnings for DB2 Clients

Version 8.2

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Who should read this book

Anyone interested in the installation and configuration of a DB2 Administration Client, a DB2 Application Development Client, a DB2 Run-Time Client, or a DB2 Run-Time Client Lite should read this book.

In addition, anyone interested in setting up a thin client or DB2 Connect thin client environment can benefit from reading the sections that cover these topics.

Part 1. Installing DB2 clients

Chapter 1. DB2 clients overview

DB2 clients

There are four types of DB2[®] clients:

- Run-Time Client Lite. The DB2 Run-Time Client Lite is a smaller footprint version of the DB2 Run-Time Client and is available only on Windows[®]. Windows Installer Merge Modules are also available for this product that can be used to embed the functionality from this client into your own product
- Run-Time Client. Use this type of DB2 client to provide basic, non-GUI access to DB2 databases.
- Administration client. Use this type of DB2 client to remotely administer a DB2 server. The DB2 Administration client also contains all of the functionality available in the DB2 Run-Time client.
- Application Development client. Use this type of DB2 client to develop DB2 database applications, including stored procedures, user defined functions, and client applications. The DB2 Application Development client also contains all of the functionality available in the DB2 Run-Time client.

A database cannot be created on a DB2 client; you can only access databases that reside on DB2 servers.

Client backlevel support:

- DB2 UDB Version 8 clients support DB2 UDB Version 8 servers.
- DB2 UDB Version 8 clients can connect to DB2 UDB Version 7 servers only if the DB2 UDB version server is running DRDA[®]-AS.
- DB2 UDB Version 7 and Version 6 clients can connect to DB2 UDB Version 8 server with limited capacity.
- DB2 UDB Version 8 clients cannot connect to DB2 Connect[™] Version 7 servers.

Related concepts:

- “DB2 Run-Time Client” on page 4
- “DB2 Administration Client” on page 5
- “DB2 Application Development Client” on page 5
- “Response file installation basics” in the *Installation and Configuration Supplement*
- “DB2 Run-Time Client Lite” on page 4

Related tasks:

- “Installing DB2 clients (Windows)” on page 21
- “Installing DB2 clients (UNIX)” on page 22

Related reference:

- “Version 8 incompatibilities with previous releases” in the *Administration Guide: Planning*
- Appendix B, “DB2 client merge modules,” on page 93

DB2 Run-Time Client Lite

The DB2[®] Run-Time Client Lite provides basic functions that allow your applications to access DB2 Universal Database[™] servers. The DB2 Run-Time Client Lite also contains support necessary for JDBC, SQLJ, ODBC, CLI, OLE DB and .NET similar to the DB2 Run-Time client.

With its reduced installation image size, the DB2 Run-Time Client Lite is ideal for mass deployment or for bundling with your applications.

The installation program installs the language that the installation is running in, as well as the English language which is mandatory. The DB2 Run-Time Client Lite can only be installed with one language, as well as English. All DB2 supported languages are available for use. You can also use the language specific images. All images contain english support. You must use the appropriate image for the language(s) that you want to install.

Limitations:

- DB2 Run-Time Client Lite is available only on Windows[®] operating systems and supports only the TCP/IP and Named Pipes communication protocols.
- The Configuration Assistant is not packaged with the DB2 UDB Run-Time Client Lite. The only available GUI is the CLI/ODBC administration GUI.
- You must bind the CLI packages from a system with the proper bind files before you can use the DB2 client for CLI applications.

Related concepts:

- “DB2 Run-Time Client” on page 4
- “DB2 Administration Client” on page 5
- “DB2 Application Development Client” on page 5

Related tasks:

- “Installing DB2 clients (Windows)” on page 21

Related reference:

- Appendix B, “DB2 client merge modules,” on page 93

DB2 Run-Time Client

The DB2[®] Run-Time Client provides the functionality required for an application to access DB2 Universal Database[™] servers and DB2 Connect[™] servers. Functionality includes communication protocol support and support for application interfaces such as JDBC, SQLJ, ODBC, CLI, OLE DB, and .NET.

Limitations:

- The Configuration Assistant is not packaged with the DB2 UDB Run-Time Client. The only available GUI is the CLI/ODBC administration GUI.
- With the DB2 Run-Time Client, you must bind the CLI packages from a system with the proper bind files before you can use the DB2 client for CLI applications.

Supported platforms:

DB2 Run-Time Clients are available for AIX®, HP-UX, Linux, Solaris Operating Environment, and Windows® operating systems.

Related concepts:

- “DB2 clients” on page 3
- “DB2 Administration Client” on page 5
- “DB2 Application Development Client” on page 5
- “DB2 Run-Time Client Lite” on page 4

Related tasks:

- “Installing DB2 clients (Windows)” on page 21
- “Installing DB2 clients (UNIX)” on page 22

DB2 Administration Client

A DB2® Administration Client provides the ability for workstations from a variety of platforms to access and administer DB2 databases. The DB2 Administration Client has all the features of the DB2 Run-Time Client and includes all the DB2 administration tools and support for Thin Clients.

Supported platforms:

DB2 Administration Clients are available for the following platforms: AIX®, HP-UX, Linux, the Solaris Operating Environment, and Windows® operating systems.

Related concepts:

- “DB2 clients” on page 3
- “DB2 Run-Time Client” on page 4
- “DB2 Application Development Client” on page 5
- “DB2 Run-Time Client Lite” on page 4

Related tasks:

- “Installing DB2 clients (Windows)” on page 21
- “Installing DB2 clients (UNIX)” on page 22

DB2 Application Development Client

The DB2® Application Development Client is a collection of graphical and non-graphical tools and components for developing character-based, multimedia, and object-oriented applications. Special features include the Development Center and sample applications for all supported programming languages. The Application Development Client includes the tools and components provided as part of the DB2 Administration Client product.

Supported platforms:

DB2 Application Development Clients are available for the following platforms: AIX®, HP-UX, Linux, the Solaris Operating Environment, and Windows® operating systems.

Related concepts:

- “DB2 clients” on page 3
- “DB2 Run-Time Client” on page 4
- “DB2 Administration Client” on page 5
- “DB2 Run-Time Client Lite” on page 4

Related tasks:

- “Installing DB2 clients (Windows)” on page 21
- “Installing DB2 clients (UNIX)” on page 22

Supported and non-supported client configurations

This section describes both the supported and non-supported configuration scenarios for clients and servers.

DB2 Version 7 client local connections to a DB2 Version 8 server are not supported. You cannot use a DB2 Version 7 client to catalog a DB2 Version 8 instance on the same machine as a local node.

The following table describes the standard and gateway configuration support for DB2 clients. For example, if you have a DB2 Universal Database Version 8 32-bit client, you can connect to a DB2 Universal Database Version 8 64-bit server using a Version 8 32-bit gateway.

In the following table, references to Version 7 clients have an implied FixPak 7 or later level. DB2 clients without FixPak 7 installed are not supported.

Table 1. DB2 Version 7 and Version 8 client/server matrix

DB2 Clients	Version 7 32-bit Server UNIX [®] , Windows [®] , Linux	Version 7 64-bit Server UNIX	Version 8 32-bit Server UNIX, Windows, Linux	Version 8 64-bit Server UNIX, Windows, Linux
Version 7 (32-bit)	Yes	No	Yes (6)	Yes (2,5,8)
Version 7 (64-bit)	No	Yes	No	Yes (4,5)
Version 8 (32-bit)	Yes (1,7)	No	Yes	Yes
Version 8 (64-bit)	No	Yes (1,7)	Yes	Yes
AS/400 [™] , iSeries [™] , OS/390, zSeries [™] , VSE, VM clients	Yes	Yes	Yes (3)	Yes (3)

Notes:

1. A DB2 Universal Database Version 7 server must be configured as a DRDA application server (AS). This is necessary when you have a Version 8 32-bit client working with a Version 7 32-bit server; or, when you have a Version 8 64-bit client working with a Version 7 64-bit server.
2. Direct support (without an intervening DB2 Connect[™] gateway) exists from a DB2 Version 7 32-bit Windows client to a DB2 Version 8 64-bit Windows server. However, there is no direct support from DB2 Version 7 32-bit clients on other platforms.
3. Only TCP/IP is supported. There is no support for SNA. This support is available from AS/400, iSeries, OS/390, zSeries, VSE, and VM clients working with a Version 8 server.

4. A Version 7 64-bit client supports only DB2 Universal Database Version 8 64-bit servers on operating systems other than Windows.
5. Version 7 clients support only SQL requests on a Version 8 64-bit server. There is no support for utility or API requests.
6. When a Version 7 32-bit client works with a Version 8 32-bit server, there is no support for DB2 Universal Database utilities using the **AT NODE** facility, which is primarily used for administering a partitioned database environment.
7. When you have a Version 8 32-bit client working with a Version 7 32-bit server, or when you have a Version 8 64-bit client working with a Version 7 64-bit server, the DB2 Universal Database Version 7 server must be at a FixPak 8 or later level. The **db2updv7** utility must be run on the server in order for it to be accessible from a DB2 Universal Database Version 8 client. Once this utility is run on a database, this database cannot be used with an instance that is at an earlier FixPak level.
8. When you have a Version 7 32-bit client working with a Version 8 64-bit server, connectivity to a DB2 Universal Database Version 8 64-bit server on UNIX can only be accomplished using an intermediate DB2 Connect Version 8 32-bit gateway.

Related concepts:

- “DB2 clients” on page 3

Related reference:

- “Client-to-Server communication scenarios” on page 27
- “Version 8 incompatibilities with previous releases” in the *Administration Guide: Planning*

Accessing DB2 UDB Version 7 servers using DB2 Version 8 clients

You cannot access a DB2 Connect Version 7 server from a DB2 Universal Database Version 8 client.

To access a DB2 Universal Database Version 7 server on a Linux, UNIX, or Windows operating system from a DB2 Version 8 client, you must

- Have DB2 Version 7 FixPak 8 or later installed on your server; and
- Have run the **db2updv7** command.

For instructions on installing the DB2 Version 7 FixPaks, refer to the DB2 Version 7 FixPak Readme and Release Notes.

Related concepts:

- “DB2 clients” on page 3

Related reference:

- “Supported and non-supported client configurations” on page 6

SNA support limitations in DB2 Version 8

The following support has been withdrawn from DB2[®] Universal Database Version 8 Enterprise Server Edition (ESE) for Windows[®] and UNIX[®]-based operating systems, and from DB2 Connect[™] Version 8 Enterprise Edition (EE) for Windows and UNIX-based operating systems:

- Multisite update (two phase commit) capability using SNA cannot be used. Applications that require multisite update (two phase commit) *must* use TCP/IP connectivity. Multisite update (two phase commit) using TCP/IP to a host or iSeries™ database server has been available for several releases. Host or iSeries applications that require multisite update (two phase commit) support can use the new capability of TCP/IP multisite update (two phase commit) support within DB2 ESE Version 8.
- DB2 UDB ESE or DB2 Connect EE servers no longer accept client connections using SNA. DB2 Version 8 FixPak 1 will allow the 32-bit version of AIX®, Solaris Operating Environment, HP-UX, and Windows-based applications to access host or iSeries based database server using SNA. This support will allow applications to access host databases using SNA, but limited to one-phase commit.
- Sysplex support with DB2 for z/OS™ is only available using TCP/IP. Sysplex support will not be provided using SNA connectivity.
- Change password support is no longer available using SNA connectivity to host database servers.
- All SNA support will be withdrawn in the next version of DB2 and DB2 Connect.

Related concepts:

- “DB2 Connect” in the *DB2 Connect User’s Guide*

Related reference:

- “DB2 Connect product offerings” in the *DB2 Connect User’s Guide*
- “Host databases” in the *DB2 Connect User’s Guide*
- “Host and iSeries support for DB2 Connect” in the *Quick Beginnings for DB2 Connect Enterprise Edition*

Chapter 2. DB2 client requirements

Disk and memory requirements (Windows and UNIX)

Disk requirements:

The disk space required for your product depends on the type of installation you choose and the type of file system you have. The DB2 Setup wizard provides dynamic size estimates based on the components selected during a typical, compact, or custom installation.

On Windows, you might require significantly more space on FAT (File Allocation Table) drives with large cluster sizes than with NTFS (New Technology File System) drives.

Remember to include disk space for required software, communication products, and documentation.

Memory requirements:

At a minimum, DB2 UDB requires 256 MB of RAM. 512MB of RAM memory is recommended if you use the GUI tools. When determining memory requirements, be aware of the following:

- For DB2 client support, these memory requirements are for a base of 5 concurrent client connections. You will need an additional 16 MB of RAM per 5 client connections.
- Additional memory is required for other software that is running on your system.
- Additional memory might be required to improve the performance of the DB2 GUI tools.
- Specific performance requirements can determine the amount of memory needed.
- Memory requirements are affected by the size and complexity of your database system.
- Memory requirements are affected by the extent of database activity and the number of clients accessing your system.
- On Linux, a SWAP space of at least twice as large as your RAM is recommended, but not required.

DB2 client installation requirements (AIX)

The following list provides hardware, operating system, software, and communication requirements for your DB2 client on AIX.

Hardware requirements

RISC System/6000

Operating system requirements

For the most up-to-date operating system information, see <http://www.ibm.com/software/data/db2/udb/sysreqs.html>.

One of the following:

Version 4.3.3 (32-bit)

- With maintenance level 11

Version 5.1.0 (32-bit or 64-bit)

- With maintenance level 5 and Recommended Maintenance Package AIX 5100-04 and APAR IY46667

Version 5.2.0 (32-bit or 64-bit)

with Maintenance level 2, and:

For Concurrent I/O (CIO) and Direct I/O (DIO) mounted volume:

APARs IY49129 and IY49346

For JFS filesystems:

APAR IY48339

For JFS2 filesystems:

APAR IY49304

For Java:

Recommended Maintenance Package AIX 5200-01 and APAR IY46668

For running more than 1000 db2agents and using the 32-bit AIX kernel:

APAR IY49885, and specify "vmo -o pta_balance_threshold=0" before db2start or in AIX bootup

The following AIX file sets are required to install or run DB2 UDB in languages other than English:

- X11.fnt.ucs.ttf (AIX Windows Unicode TrueType Fonts)
- X11.fnt.ucs.com (AIX Windows Common Fonts)
- x1C.rte 5.0.2.x or 6.0.0.x
- For Asian languages, the following file sets are also required:
 - X11.fnt.ucs.ttf_CN (for zh_CN or Zh_CN)
 - X11.fnt.ucs.ttf_KR (for ko_KR)
 - X11.fnt.ucs.ttf_TW (for zh_TW or Zh_TW)
- On AIX Version 4.3.3 the following file set is required:
 - x1C.aix43.rte 5.0.2.x or 6.0.0.x
- On AIX Version 5.x the following file set is required:
 - x1C.aix50.rte 5.0.2.x or 6.0.0.x

AIX file sets can be downloaded from:

<http://techsupport.services.ibm.com/server/fixes>

Software requirements

- For Kerberos support, you require IBM Network Authentication Service client v1.3 or later, running on AIX V5.2 or higher.
- For LDAP (Lightweight Directory Access Protocol) support, you require an IBM SecureWay Directory Client V3.2.1 or later.
- You require the appropriate SDK to use Java-based tools like the DB2 Control Center, and to create and run Java applications, including stored procedures and user-defined functions.

Communication requirements

- TCP/IP is required. The AIX base operating system provides TCP/IP connectivity, if it is selected during installation.

Related reference:

- “Java SDK levels for DB2 UDB” on page 18

DB2 client installation requirements (HP-UX)

The following list provides hardware requirements, operating system requirements, software requirements, and communication requirements for your DB2 client on HP-UX.

Restrictions:

A system restart is required if you update the kernel configuration parameters. The kernel configuration parameters are set in `/etc/system`. These parameters must be set before you install a DB2 client.

Hardware requirements

- HP 9000 Series 700 or 800 system
- HP Intel Itanium 2 processors

Operating system requirements

For the most up-to-date operating system information, see <http://www.ibm.com/software/data/db2/udb/sysreqs.html>.

- HP-UX 11i (11.11) for systems with PA-RISC 2.x (PA-8x00) processors with:
 - June 2003 GOLDBASE11i bundle
 - June 2003 GOLDAPPS11i bundle
 - Patches PHSS_26560, PHKL_28489, PHCO_27434, and PHCO_29960
 - Patches for Java SDK 1.3.1 and 1.4. See <http://www.hp.com/products1/unix/java/patches/index.html> for required patches.

DB2 Clients can run on HP-UX Version 11i v2 (B.11.23) for Itanium-based systems with patch PHKL_30065.

Software requirements

- You require the appropriate SDK to use Java-based tools like the DB2 Control Center, and to create and run Java applications, including stored procedures and user-defined functions.
- If you are installing the Application Development Client, you must have a C compiler to build SQL Stored Procedures.

Communication requirements

- TCP/IP is provided with the HP-UX base operating system.

Related reference:

- “Java SDK levels for DB2 UDB” on page 18

Modifying kernel parameters (HP-UX)

Before installing your DB2 for HP-UX product, you may need to update your system's kernel configuration parameters. You must restart your computer after updating kernel configuration parameters.

Prerequisites:

You must have root authority to modify kernel parameters.

Procedure:

To modify kernel parameters:

1. Enter the **sam** command to start the System Administration Manager (SAM) program.
2. Double-click the **Kernel Configuration** icon.
3. Double-click the **Configurable Parameters** icon.
4. Double-click the parameter that you want to change and type the new value in the **Formula/Value** field.
5. Click **OK**.
6. Repeat these steps for all of the kernel configuration parameters that you want to change.
7. When you are finished setting all of the kernel configuration parameters, select **Action --> Process New Kernel** from the action menu bar.

The HP-UX operating system automatically restarts after you change the values for the kernel configuration parameters.

Related reference:

- "db2osconf - Utility for Kernel Parameter Values Command" in the *Command Reference*

Recommended kernel configuration parameters (HP-UX)

For HP-UX systems running DB2 UDB 64-bit, run the **db2osconf** command to suggest appropriate kernel configuration parameter values for your system.

For HP-UX systems running DB2 UDB 32-bit, consult the following table for the appropriate kernel configuration parameter value recommendations.

Table 2. Recommended values for Kernel configuration parameters (HP-UX)

Kernel parameter	Physical Memory: 64MB - 128MB	Physical Memory: 128MB - 256MB	Physical Memory: 256MB - 512MB	Physical Memory: 512MB+
maxuprc	256	384	512	1500
maxfiles	256	256	256	256
nproc	512	768	1024	2048
nlocks	2048	4096	8192	8192
ninode	512	1024	2048	2048
nfile	(4 * ninode)	(4 * ninode)	(4 * ninode)	(4 * ninode)

Table 2. Recommended values for Kernel configuration parameters (HP-UX) (continued)

Kernel parameter	Physical Memory: 64MB - 128MB	Physical Memory: 128MB - 256MB	Physical Memory: 256MB - 512MB	Physical Memory: 512MB+
msgseg	8192	16384	32767 (1)	32767 (1)
msgmnb	65535	65535	65535	65535
msgmax	65535	65535	65535	65535
msgtql	256	512	1024	2048
msgmap	130	258	258	2050
msgmni	128	256	256	1024
msgssz	16	16	16	16
semnmi	128	256	512	2048
semmap	130	258	514	2050
semnms	256	512	1024	4096
semnmu	256	512	1024	1024
shmmax	67 108 864	134 217 728 (2)	268 435 456 (2)	268 435 456 (2)
shmmni	300	300	300	1 000

Notes:

1. The msgmax parameter must be set to 65 535.
2. The msgseg parameter must be set no higher than 32 767.
3. The shmmax parameter should be set to 134 217 728 or 90% of the physical memory (in bytes), whichever is higher. For example, if you have 196 MB of physical memory in your system, set shmmax to 184 968 806 (196*1024*1024*0.9).

Related tasks:

- “Modifying kernel parameters (HP-UX)” on page 12

DB2 client installation requirements (Linux)

The following list provides operating system, software, and communication requirements for your DB2 client on Linux.

You may be required to update your kernel configuration parameters. The kernel configuration parameters are set in /etc/sysctl.conf. Refer to your operating system manual for information on setting and activating these parameters using the sysctl command.

Operating system requirements

To check for the latest technical information on the supported levels of Linux, point your browser to <http://www.ibm.com/db2/linux/validate>

DB2 Connect Enterprise Edition is now supported on Linux zSeries 64-bit.

DB2 for Linux zSeries 31-bit is not supported on the Linux zSeries 64-bit operating system. You must use the "64-bit DB2 for Linux zSeries 64-bit

OS" image on Linux zSeries 64-bit OS, and the "31-bit DB2 for Linux zSeries 31-bit OS" image on the Linux zSeries 31-bit operating system.

Software requirements

You require the appropriate SDK to use Java-based tools like the DB2 Control Center, and to create and run Java applications, including stored procedures and user-defined functions.

If you plan to use Kerberos Authentication, you require Red Hat Enterprise Linux Advanced Server 2.1 (32-bit Intel only) with the following filesets:

- krb5-libs
- krb5-workstation

Communication requirements

- TCP/IP. The Linux base operating system provides TCP/IP connectivity, if it is selected during installation.

Related reference:

- "Java SDK levels for DB2 UDB" on page 18

Modifying kernel parameters (Linux)

Before installing DB2 UDB, you may want to update your Linux kernel parameters. DB2 UDB automatically raises the IPC limits where necessary. You might still want to raise these limits further depending on your particular needs.

Prerequisites:

You must have root authority to modify kernel parameters.

Procedure:

To update kernel parameters:

RedHat and SuSE

Systems using a 2.4.x series kernel have a default value for the message queue parameter (msgmni), which allows only a few simultaneous connections to DB2. Semaphore array parameters also have to be changed for DB2 to run successfully. To check shared memory segment, semaphore array, and message queue limits, issue the **ipcs -l** command.

The following is the output from the **ipcs -l** command.

```
# ipcs -l

----- Shared Memory Limits -----
max number of segments = 4096           // SHMMNI
max seg size (kbytes) = 32768
max total shared memory (kbytes) = 8388608
min seg size (bytes) = 1

----- Semaphore Limits -----
max number of arrays = 1024           // SEMMNI
max semaphores per array = 250
max semaphores system wide = 256000
max ops per semop call = 32
semaphore max value = 32767

----- Messages: Limits -----
```

```
max queues system wide = 1024           // MSGMNI
max size of message (bytes) = 65536
default max size of queue (bytes) = 16384 // MSGMAX
```

Modify the kernel parameters by adding the following entries to the default system control configuration file, `/etc/sysctl.conf`:

```
kernel.msgmni = 1024
kernel.sem = 250 256000 32 1024
```

where

```
max semaphores system wide =
max number of arrays x max semaphores/array
```

Run `sysctl` with `-p` parameter to load in `sysctl` settings from the default file `/etc/sysctl.conf`.

```
sysctl -p
```

The entries from the `sysctl.conf` file are read during startup by the network initialization script.

On some distributions you may be required to add `sysctl -p` in one of the system initialization files (for example, `rc.local`) so that kernel parameters are set after each reboot.

DB2 client installation requirements (Solaris Operating Environment)

The following list provides hardware requirements, operating system requirements, software requirements, and communication requirements for your DB2 client on the Solaris Operating Environment.

Restrictions:

A system restart is required if you update the kernel configuration parameters. The kernel configuration parameters are set in `/etc/system` and if these parameters require modification to accommodate the DB2 client, a reboot is necessary to make the changes to `/etc/system` effective. These parameters must be set before you install a DB2 client.

Hardware requirements

Solaris SPARC-based computer

Operating system requirements

For the most up-to-date operating system information, see <http://www.ibm.com/software/data/db2/udb/sysreqs.html>.

- Solaris Version 7 or later
- The following patches are required for the Solaris Operating Environment Version 7:
 - Solaris 7 (32-bit) "Recommended & Security Patches" + 107226-17 + 107153-01 + 106327-10
 - Solaris 7 (64-bit) "Recommended & Security Patches" + 107226-17 + 107153-01 + 106300-11 + 106327-10
 - Solaris 8 (32-bit) "Recommended & Security Patches" + 108921-12 + 108940-24 + 108434-03 and 108528-12
 - Solaris 8 (64-bit) "Recommended & Security Patches" + 108921-12 + 108940-24 + 108435-03 + 108434-03 and 108528-12

- Solaris 9 (32-bit)
- Solaris 9 (64-bit)

"Recommended & Security Patches" can be obtained from the <http://sunsolve.sun.com> Web site. From the SunSolve Online Web site, click on the "Patches" menu item in the left panel.

The J2SE Solaris Operating Environment Patch Clusters are also required.

The following software is required to install a DB2 client on Solaris Operating Environment:

- SUNWlibC

Software requirements

- For Kerberos support, you require Solaris Operating Environment 8 or higher with SEAM v1.0.1, which is included in the Solaris Operating Environment 8 Admin Pack.
- You require the appropriate SDK to use Java-based tools like the DB2 Control Center, and to create and run Java applications, including stored procedures and user-defined functions.
- If you are installing the Application Development Client, you must have a C compiler to build SQL Stored Procedures.

Communication requirements

- TCP/IP is required. The Solaris Operating Environment provides TCP/IP connectivity.

Related reference:

- "Java SDK levels for DB2 UDB" on page 18

Modifying kernel parameters (Solaris Operating Environment)

Before installing DB2 UDB, it is recommended that you update your system kernel configuration parameters.

Use the **db2osconf** command to suggest recommended kernel parameters.

You must restart your system after modifying kernel parameters.

Prerequisites:

You must have root authority to modify kernel parameters.

Procedure:

To set a kernel parameter, add a line at the end of the `/etc/system` file as follows:

```
set parameter_name = value
```

For example, to set the value of the `msgsys:msginfo_msgmax` parameter, add the following line to the end of the `/etc/system` file:

```
set msgsys:msginfo_msgmax = 65535
```

After updating the `/etc/system` file, restart the system.

Related reference:

- “db2osconf - Utility for Kernel Parameter Values Command” in the *Command Reference*

DB2 client installation requirements (Windows)

The following list provides operating system requirements, software requirements, and communication requirements for your DB2 client on Windows.

Operating system requirements

One of the following:

- Windows 98
- Windows ME
- Windows NT Version 4.0 with Service Pack 6a or later
- Windows NT Server 4.0, Terminal Server Edition (only supports the DB2 Run-Time Client) with Service Pack 6 or later for Terminal Server
- Windows 2000
- Windows XP (32-bit and 64-bit editions)
- Windows Server 2003 (32-bit and 64-bit editions)

Software requirements

For the most up-to-date operating system information, see <http://www.ibm.com/software/data/db2/udb/sysreqs.html>.

- You require the appropriate SDK to use Java-based tools like the DB2 Control Center, and to create and run Java applications, including stored procedures and user-defined functions.
- If you plan to use LDAP (Lightweight Directory Access Protocol), you require either a Microsoft LDAP client or an IBM SecureWay LDAP client V3.2.1 or later. Prior to installation, you will need to extend your directory schema using the db2schex utility, which can be found on the installation media.

The Microsoft LDAP client is included with the operating system for Windows ME, Windows 2000, Windows XP, and Windows Server 2003.

- If you plan to use the Tivoli Storage Manager facilities for the backup and restoration of your databases, you need the Tivoli Storage Manager Client Version 4.2.0 or later.
 - For 64-bit Windows NT operating systems, you require the TSM client API Version 5.1.
- If you have the IBM Antivirus program installed on your operating system, it must be disabled or uninstalled to complete a DB2 installation.
- If you are installing the Application Development Client, you must have a C compiler to build SQL Stored Procedures.

Communication requirements

- Named Pipes or TCP/IP.
- The Windows base operating system provides Named Pipes and TCP/IP connectivity.

Note: In Version 8, DB2 UDB supports only TCP/IP for remotely administering a database.

Related reference:

- “Java SDK levels for DB2 UDB” on page 18

Java SDK levels for DB2 UDB

You require the appropriate level of SDK listed below to use Java-based tools like the DB2 Control Center, and to create and run Java applications, including stored procedures and user-defined functions.

If the SDK is required by some component being installed and the SDK is not already installed, the SDK will be installed if you use either the DB2 Setup wizard or a response file to install the product.

The SDK is not installed with the DB2 Run-Time client.

For the most up-to-date SDK information, see the DB2 UDB system requirements web page at <http://www.ibm.com/software/data/db2/udb/sysreqs.html>

For the most up-to-date Linux SDK information, see the IBM developer kit for Linux web page at <http://www-106.ibm.com/developerworks/java/jdk/linux/tested.html>

The following table lists the SDK levels for DB2 according to operating system:

Operating System		SDK level
Windows	32-bit	SDK 1.4.1 Service Release 1
	64-bit	SDK 1.4.1 Service Release 1
AIX 4.3.3	32-bit	SDK 1.3.1
AIX 5	32-bit	SDK 1.4.1 Service Release 1
	64-bit	SDK 1.4.1 Service Release 1
Solaris Operating Environment (hybrid)	32-bit	SDK 1.4.2
	64-bit	SDK 1.4.2
HP-UX RISC (hybrid)	32-bit	SDK 1.4.2.01
	64-bit	SDK 1.4.2.01
HP-UX Itanium (hybrid)	32-bit	SDK 1.4.2.01
	64-bit	SDK 1.4.2.01
LinuxIA	32-bit	SDK 1.4.1 Service Release 2
	64-bit	See the DB2 UDB system requirements web page for more information.
Linux390	31-bit	SDK 1.4.1 Service Release 2
	64-bit	SDK 1.4.1 Service Release 2
LinuxAMD (hybrid)	32-bit	SDK 1.4.1 Service Release 2
	64-bit	SDK 1.4.1 Service Release 2 (32-bit version)
LinuxPPC (hybrid)	32-bit	SDK 1.4.1 Service Release 2
	64-bit	SDK 1.4.1 Service Release 2

Related concepts:

- “Installing the IBM Developer Kit for Java (UNIX)” in the *Quick Beginnings for DB2 Servers*

Host connection requirements for DB2 clients

DB2 Version 8 client applications that connect to host databases (DB2 for z/VM and VM/VSE, DB2 for eServer, iSeries, and AS/400, and DB2 for z/OS and OS/390) require that a set of DB2 PTF/APARs be applied to the target servers:

- To use DB2 Version 8 clients that connect to DB2 for z/VM and VM/VSE, contact DB2 for VM/VSE support for the patches that need to be applied to the target database.
- To use DB2 Version 8 clients that connect to DB2 for z/OS and OS/390, you must install the patch for APAR PQ62695.
- To use DB2 Version 8 clients that call these functions and connect to DB2 for eServer iSeries and AS/400, you must install the following patches:

APAR	PTF
V5R1: 5722SS1	SI05363

The patches and more information about them are available from <http://techsupport.services.ibm.com/server/support>.

Related tasks:

- “Installing DB2 clients (Windows)” on page 21
- “Installing DB2 clients (UNIX)” on page 22

Chapter 3. Installing DB2 clients

Installing DB2 clients (Windows)

This task describes how to install a DB2 client on a Windows operating system.

Prerequisites:

Before you install your DB2 client, ensure that:

- Your system meets all of the memory, disk space, and installation requirements.
- You have a user account to perform the installation:

Windows 98, Windows ME

Any valid Windows 98 or Windows ME user account.

Windows Terminal Server, Windows NT, Windows 2000, Windows XP, and Windows Server 2003

A user account that belongs to a group with more authority than the Guests group, such as the Users group.

To perform an installation on Windows 2000 servers and Windows Server 2003 as part of the Users group, the registry permissions have to be modified to allow Users **write** access to the HKEY_LOCAL_MACHINE\Software registry branch. In the default Windows 2000 and Windows Server 2003 environment, members of the Users group only have **read** access to the HKEY_LOCAL_MACHINE\Software registry branch.

Restrictions:

In Version 8, DB2 UDB supports only TCP/IP for remotely administering a database.

Procedure:

To install a DB2 client:

1. Log on to the system with the user account that you want to use to perform the installation.
2. Shut down any other programs so that the DB2 Setup wizard can update files as required.
3. Insert the appropriate CD-ROM into the drive. The auto-run feature starts the DB2 Setup wizard. The DB2 Setup wizard determines the system language, and starts the setup program for that language.

You can run the DB2 Setup wizard in a language other than the default system language by manually invoking the DB2 Setup wizard and specifying a language code. For example, the **setup -i fr** runs the DB2 Setup wizard in French. This example does not apply to the DB2 UDB Run-Time Client Lite.

4. If you are installing an Administration or Application Development client, choose **Install Product** when the DB2 Launchpad opens.
5. Proceed by following the DB2 Setup wizard's prompts. Online help is available to guide you through the remaining steps.

After installing your DB2 client, you should configure it to access a remote DB2 server.

If you want your DB2 product to have access to DB2 documentation either on your local computer or on another computer on your network, then you must install the DB2 Information Center. The DB2 Information Center contains documentation for DB2 Universal Database and DB2 related products. See Installing the DB2 Information Center using the DB2 Setup wizard (Windows).

Related concepts:

- “Response file installation basics” in the *Installation and Configuration Supplement*
- “DB2 Information Center” on page 68
- “DB2 Information Center installation scenarios” on page 69

Related tasks:

- “Installing the DB2 Information Center using the DB2 Setup wizard (Windows)” on page 74
- “Configuring remote access to a server database” in the *Installation and Configuration Supplement*
- “Response file installation of DB2 overview (Windows)” in the *Installation and Configuration Supplement*
- “Installing DB2 servers in a single-partition database environment (Windows)” in the *Quick Beginnings for DB2 Servers*

Related reference:

- “Language identifiers for running the DB2 Setup wizard in another language” in the *Quick Beginnings for DB2 Servers*
- “setup - Install DB2 Command” in the *Command Reference*
- Appendix C, “DB2 Run-Time Client Lite command line options,” on page 95

Installing DB2 clients (UNIX)

This task provides steps for installing a DB2 client on UNIX.

Prerequisites:

Before you begin installing a DB2 client on UNIX:

- Ensure that your system meets all of the memory, hardware, and software requirements to install your DB2 product.
- Installing a DB2 client in the Solaris Operating Environment or on HP-UX requires that you update your kernel configuration parameters and restart your system.

Restrictions:

In Version 8, DB2 UDB supports only TCP/IP for remotely administering a database.

Procedure:

| After updating your kernel configuration parameters and starting your system
| (required for Solaris Operating Environment and HP-UX, and recommended for
| Linux), you can install your DB2 client.

To install a DB2 client on UNIX:

1. Log in as a user with root authority.
2. Insert and mount the appropriate CD-ROM.
3. Change to the directory where the CD-ROM is mounted by entering the `cd lcdrom` command where *lcdrom* is the CD-ROM mount point.
4. Enter the `./db2setup` command. The DB2 Setup Wizard starts.
5. Choose **Install Products** when the DB2 Launchpad opens.
6. Select the client you want to install.
7. Proceed by following the DB2 Setup wizard's prompts. Online help is available to guide you through the remaining steps.

When installation is complete, the DB2 client is installed in the *DB2DIR* directory, where *DB2DIR* is:

AIX /usr/opt/db2_08_01

Linux and other UNIX operating systems
 /opt/IBM/db2/V8.1

After installing your DB2 client, you should configure it to access a remote DB2 server.

| If you want your DB2 product to have access to DB2 documentation either on your
| local computer or on another computer on your network, then you must install the
| DB2 Information Center. The DB2 Information Center contains documentation for
| DB2 Universal Database and DB2 related products. See Installing the DB2
| Information Center using the DB2 Setup wizard (UNIX).

Related concepts:

- “Response file installation basics” in the *Installation and Configuration Supplement*
- “DB2 Information Center” on page 68
- “DB2 Information Center installation scenarios” on page 69

Related tasks:

- “Installing the DB2 Information Center using the DB2 Setup wizard (UNIX)” on page 72
- “Modifying kernel parameters (Solaris Operating Environment)” on page 16
- “Modifying kernel parameters (HP-UX)” on page 12
- “Configuring client-to-server connections using the Configuration Assistant (CA)” on page 29
- “Configuring remote access to a server database” in the *Installation and Configuration Supplement*
- “Response file installation of DB2 overview (UNIX)” in the *Installation and Configuration Supplement*
- “Modifying kernel parameters (Linux)” on page 14

Related reference:

- “db2setup - Install DB2 Command” in the *Command Reference*

Part 2. Configuring client-to-server communications

Chapter 4. Client-to-server support

Client-to-Server communication scenarios

The following table shows the communication protocols that can be used when connecting a DB2 client to a DB2 server. DB2 Workgroup Server Edition and DB2 Enterprise Server Edition can service requests from host or OS/400 clients.

Table 3. Client-to-Server communication scenarios

	AIX, HP-UX, Linux, and Solaris Operating Environment servers	Windows NT/Windows 2000/Windows XP/Windows Server 2003 servers
OS/400 V5R1 client	TCP/IP	TCP/IP
AIX, HP-UX, Linux, and Solaris Operating Environment clients	TCP/IP	TCP/IP
OS/390 or z/OS client	TCP/IP	TCP/IP
VM V6 client	TCP/IP	TCP/IP
VSE V7 online client	TCP/IP	TCP/IP
VM V7 client	TCP/IP	TCP/IP
Windows 98 and Windows ME clients	TCP/IP	NPIPE NetBIOS TCP/IP
Windows NT/Windows 2000 client	TCP/IP	NPIPE NetBIOS TCP/IP
Windows XP/Windows Server 2003 client	TCP/IP	NPIPE NetBIOS TCP/IP

Related concepts:

- “DB2 clients” on page 3

Related tasks:

- “Setting up DB2 servers after manual installation” in the *Installation and Configuration Supplement*

Related reference:

- “Supported and non-supported client configurations” on page 6

Chapter 5. Configuring client-to-server communications using the Configuration Assistant

Configuring client-to-server connections using the Configuration Assistant (CA)

This topic describes how to connect your DB2 client to a remote database using the Configuration Assistant (CA). The Configuration Assistant is a DB2 GUI tool that can be used to configure database connections and other database settings. The Configuration Assistant (CA) was referred to as the Client Configuration Assistant (CCA) in previous releases of DB2.

You can also configure a client-to-server connection using the command line processor (CLP).

The CA must be installed on your DB2 client. The CA is available as part of the DB2 Administration Client and DB2 Application Development Client.

The remote server must be configured to accept inbound client requests. By default, the server installation program detects and configures most protocols on the server for inbound client connections.

You can configure a connection to a database using one of the following methods:

- Connecting to a database using discovery
- Connecting to a database using a profile
- Connecting to a database manually using the CA

Which method should you use?:

Connecting to a database using discovery

Use this method if you don't have any information on the database you want to connect to. This method will search your network and list all the databases available to you. A DB2 Administration Server (DAS) must be running and enabled on the servers for the discovery feature of the CA to return information about DB2 systems.

Connecting to a database using a profile

Use this method if you have been given a file that contains all the necessary information to access the target database. This method can also be used to catalog and connect to multiple databases specified in the access profile file.

Connecting to a database manually

Use this method if you know all the information necessary to connect to the target database. You'll need to know:

- The communication protocols supported by the server on which the target database resides
- The appropriate communication parameters for the server's protocols
- The name of the database

Related tasks:

- “Configuring a database connection using discovery” on page 32
- “Configuring a database connection using a profile” on page 31
- “Configuring a database connection manually using the Configuration Assistant (CA)” on page 30
- “Configuring communication protocols for a remote DB2 instance” in the *Installation and Configuration Supplement*
- “Configuring communication protocols for a local DB2 instance” in the *Installation and Configuration Supplement*
- “Configuring client-to-server connections using the command line processor (CLP)” on page 37

Configuring a database connection

Configuring a database connection manually using the Configuration Assistant (CA)

If you have the information for the database you want to connect to and the server upon which it resides, you can manually enter all of the configuration information. This method is analogous to entering commands using the command line processor, however, the parameters are presented graphically.

Prerequisites:

- Ensure that you have a valid DB2 user ID.
- If you are adding a database to a system that has a DB2 Server or DB2 Connect server product installed, ensure that you have a user ID with SYSADM or SYSCtrl authority for the instance.

Procedure:

To add a database to your system manually using the CA:

1. Log on to the system with a valid DB2 user ID.
2. Start the CA. The CA can be started from the Start menu on Windows or using the **db2ca** command on both Windows and UNIX systems.
3. On the CA menu bar, under **Selected**, choose **Add Database Using Wizard**.
4. Select the **Manually configure a connection to a database** radio button and click **Next**.
5. If you are using Lightweight Directory Access Protocol (LDAP), select the radio button that corresponds to the location where you want DB2 directories to be maintained. Click **Next**.
6. Select the radio button that corresponds to the protocol that you want to use from the **Protocol** list.

If DB2 Connect is installed on your system and you select TCP/IP or APPC, you have the option to select **The database physically resides on a host or OS/400 system**. If you select this check box, you have the option of selecting the type of connection that you want to make to the host or OS/400 database:

- To make a connection through a DB2 Connect gateway, select the **Connect to the server via the gateway** radio button.
- To make a direct connection, select the **Connect directly to the server** radio button.

Click **Next**.

7. Type the required communication protocol parameters and click **Next**.
8. Type the database alias name of the remote database that you want to add in the **Database name** field and a local database alias name in the **Database alias** field.
If you are adding a host or OS/400 database, type the location name for an OS/390 or z/OS database, the RDB name for an OS/400 database, or the DBNAME for a VSE or VM database in the **Database name** field. Optionally, you can add a comment that describes this database in the **Comment** field. Click **Next**.
9. If you are planning to use ODBC, register this database as an ODBC data source. ODBC must be installed to perform this operation.
10. In the **Specify the node options** window, select the operating system, and type the remote instance name for the database system you want to connect to.
11. In the **Specify the system options** window, ensure that system name, host name, and operating system are correct. You can optionally enter a comment. Click **Next**.
12. In the **Specify the security options** window, specify the security option that will be used for authentication.
13. Click **Finish**. You can now use this database. Select the **Exit** menu action to close the CA.

Related tasks:

- “Configuring a database connection using discovery” on page 32
- “Configuring a database connection using a profile” on page 31
- “Testing a database connection using the Configuration Assistant” on page 36

Configuring a database connection using a profile

A server profile contains information about server instances on a system and databases within each server instance. A client profile contains database information that was cataloged on another client system.

Use the steps in the following task to configure one database using a server profile. If you want to configure connections to multiple databases at the same time, you should use the Configuration Assistant (CA)’s import function.

Prerequisites:

- Ensure that you have a valid DB2 user ID.
- If you are adding a database to a system that has a DB2 Server or DB2 Connect server product installed, ensure that you have a user ID with SYSADM or SYSCTRL authority for the instance.

Procedure:

To configure a database connection using a profile:

1. Log on to the system with a valid DB2 user ID.
2. Start the CA. The CA can be started from the Start menu on Windows or using the **db2ca** command on both Windows and UNIX systems.
3. On the CA menu bar, under **Selected**, choose **Add Database Using Wizard**.
4. Select the **Use a profile** radio button and click **Next**.

5. Click ... and select a profile.
6. Click **Load** and select a database in the profile.
7. Click **Next**.
8. Type a local database alias name in the **Database alias** field and optionally type a comment that describes this database in the **Comment** field. Click **Next**.
9. If you are planning to use ODBC, you need to register this database as an ODBC data source. Ensure that the **Register this database for ODBC** check box is selected. ODBC must be installed to perform this operation.
10. Click **Finish**. You can now use this database.

Related tasks:

- “Creating and exporting client profiles using the Configuration Assistant” on page 34
- “Importing and configuring client profiles using the Configuration Assistant” on page 35

Configuring a database connection using discovery

You can use the discovery feature of the Configuration Assistant to search a network for databases.

Prerequisites:

- Ensure that you have a valid DB2 user ID.
- If you are adding a database to a system that has a DB2 Server or DB2 Connect server product installed, ensure that you have a user ID with SYSADM or SYSCtrl authority for the instance.

Restrictions:

The discovery feature may be unable to detect a remote system if:

- The Administration Server is not running on the remote system.
- The discovery function times out. By default, the discovery function will search the network for 10 seconds; this may not be long enough to detect the remote system. You can set the DB2DISCOVERYTIME registry variable to specify a longer period of time.
- The network that the discovery request is running on is configured so that the discovery request does not reach the remote system desired.

Restrictions:

A DB2 Administration Server (DAS) must be running and enabled for the discovery feature of the CA to return information about DB2 systems.

Procedure:

To add a database to your system using Discovery:

1. Log on to the system with a valid DB2 user ID.
2. Start the CA. The CA can be started from the Start menu on Windows or using the **db2ca** command on both Windows and UNIX systems.
3. On the CA menu bar, under **Selected**, choose **Add Database Using Wizard**. The **Add Database** wizard opens.

4. Select the **Search the network** radio button and click **Next**.
5. Double-click on the folder beside **Known Systems** to list all the systems known to your client. Double-click on the folder beside **Other Systems** to list all the systems on the network.
6. Expand the list of instances and databases and select the database that you want to add. Click **Next**.
7. Type a local database alias name in the **Database alias** field and optionally type a comment that describes this database in the **Comment** field.
8. If you are planning to use ODBC, register this database as an ODBC data source. ODBC must be installed to perform this operation.
9. Click **Finish**. You can now use the database you added. Click **Close** to exit the CA.

Related tasks:

- “Configuring a database connection manually using the Configuration Assistant (CA)” on page 30
- “Configuring a database connection using a profile” on page 31
- “Testing a database connection using the Configuration Assistant” on page 36

Client profiles

About client profiles

Client profiles are used to configure database connections between DB2® clients and servers. A client profile is generated from a client using the export function of the Configuration Assistant (CA) or by using the **db2cfexp** command. The information contained in a client profile is determined during the export process.

Depending on the settings chosen, it can contain information such as the following:

- Database connection information (including CLI or ODBC settings).
- Client settings (including database manager configuration parameters and DB2 registry variables).
- CLI or ODBC common parameters.
- Configuration data for the local NetBIOS communications subsystem.

Once the information in a client profile has been determined, it can be used to configure other clients by using either the import function of the CA, or by importing profiles using the **db2cfimp** command. Clients can import all or a subset of the configuration information in an existing profile.

Related tasks:

- “Exporting and importing a profile” in the *Installation and Configuration Supplement*
- “Creating and exporting client profiles using the Configuration Assistant” on page 34
- “Importing and configuring client profiles using the Configuration Assistant” on page 35

Related reference:

- “db2cfimp - Connectivity Configuration Import Tool Command” in the *Command Reference*

- “db2cfexp - Connectivity Configuration Export Tool Command” in the *Command Reference*

Creating and exporting client profiles using the Configuration Assistant

Client profiles are used to create connections between DB2 clients and servers. The information contained in a client profile is determined during the export process. Once the information in a client profile has been determined, it can be used to configure other clients using the import process.

Procedure:

To create client profiles using the export function of the Configuration Assistant (CA):

1. Log on to the system with a valid DB2 user ID.
2. Start the CA. The CA can be started from the Start menu on Windows or using the **db2ca** command on both Windows and UNIX systems.
3. From the **Configure** menu, select **Export Profile**.
4. Select one of the following options:

All If you want to create a profile that contains all of the databases cataloged on your system, and all of the configuration information for this client. Type a name for your client profile and click **Save**.

Database Connections

If you want to create a profile that contains all of the databases cataloged on your system *without* any of the configuration information for this client. Type a name for your client profile and click **Save**.

Customize

If you want to select a subset of the databases that are cataloged on your system, or a subset of the configuration information for this client. In the **Customize Export Profile** window:

- a. Type a name for your client profile.
- b. Select the **Database connections** checkbox to include database connections in the client profile you want to export.
- c. From the **Available database aliases** box, select the databases to be exported and click > to add them to the **Selected database aliases** box. To add all of the available databases to the **Selected database aliases** box, click >>.
- d. Select the check boxes that correspond to the options that you want to set up for the target client.
- e. Click **Export** to complete this task.
- f. Check your results displayed in the Results tab.

Once you have completed this task, you can then use the import function to configure other clients using the client profile you have created.

Related concepts:

- “About client profiles” on page 33

Related tasks:

- “Configuring a database connection using a profile” on page 31

- “Exporting and importing a profile” in the *Installation and Configuration Supplement*
- “Importing and configuring client profiles using the Configuration Assistant” on page 35

Importing and configuring client profiles using the Configuration Assistant

Client profiles are used to create connections between DB2 clients and servers. The information contained in a client profile is determined during the export process. Once the information in a client profile has been determined, it can be used to configure other clients by using the import process.

You can use the Configuration Assistant’s import profiles function to import the connection information for several databases rather than use the **Add Database** wizard. The **Add Database** wizard allows you to only add one database at a time.

Procedure:

To configure client profiles using the Configuration Assistant (CA):

1. Log on to the system with a valid DB2 user ID.
2. Start the CA. The CA can be started from the Start menu on Windows or using the **db2ca** command on both Windows and UNIX systems.
3. From the **Configure** menu, select **Import Profile**.
4. Select one of the following import options. You can choose to import all or a subset of the information in a client profile.

All Select this option to import everything in a client profile. Open the client profile you want to import. A DB2 Message will inform you of the import result.

Customize

Select this option to import a specific database or settings that are defined in a client profile. From the **Customize Import Profile** window:

- a. Select the client profile you want to import and click **Load**.
- b. Select the databases to be imported from the **Available database aliases** box and click > to add them to the **Selected database aliases** box. Click >> to add all of the available databases to the **Selected database aliases** box.
- c. Select the check boxes that correspond to the options that you want to customize.
- d. Click **Import** to complete this task.
- e. Check your results displayed in the Results tab.

Related concepts:

- “About client profiles” on page 33

Related tasks:

- “Configuring a database connection using a profile” on page 31
- “Exporting and importing a profile” in the *Installation and Configuration Supplement*
- “Creating and exporting client profiles using the Configuration Assistant” on page 34

LDAP directory support considerations

In an LDAP-enabled environment, the directory information about DB2[®] servers and databases is stored in the LDAP directory. When a new database is created, the database is automatically registered in the LDAP directory. During a database connection, the DB2 client accesses the LDAP directory to retrieve the required database and protocol information and uses this information to connect to the database.

It is not necessary to run the Configuration Assistant (CA) to configure LDAP protocol information. However, you can still use the CA in the LDAP environment to:

- Manually catalog a database in the LDAP directory.
- Register a database as an ODBC data source.
- Configure CLI/ODBC information.
- Remove a database cataloged in the LDAP directory.

Related tasks:

- “Configuring a database connection manually using the Configuration Assistant (CA)” on page 30

Testing a connection

Testing a database connection using the Configuration Assistant

After configuring your client-to-server connection, the database connection should be tested.

Procedure:

To test a database connection:

1. Start the **Configuration Assistant**.
2. Highlight the database in the details view and select **Test Connection** from the **Selected** menu item. The Test Connection window opens.
3. Select the types of connection that you would like to test (**CLI** is the default). You can test more than one type at the same time. Enter a valid user ID and password for the remote database and click **Test Connection**. If the connection is successful, a message confirming the connection appears on the Results page.
If the connection test failed, you will receive a help message. To change any settings you may have incorrectly specified, select the database in the details view and select **Change Database** from the **Selected** menu item.

Related tasks:

- “Configuring a database connection using discovery” on page 32
- “Configuring a database connection manually using the Configuration Assistant (CA)” on page 30
- “Configuring a database connection using a profile” on page 31

Chapter 6. Configuring client-to-server communications using the command line processor

Configuring client-to-server connections using the command line processor (CLP)

This task describes how to configure a connection from a DB2 client to a remote database server using the command line processor (CLP).

You can also configure a client to server connection using the Configuration Assistant.

Prerequisites:

Before you configure a client to server connection:

- Communications must be configured on the DB2 server and the DB2 client. Depending on your operating system, communications can be Named Pipes, NetBIOS, or TCP/IP.
- You must use one of the supported client to server connection scenarios. The connection scenarios outline which communication method or protocol can be used by which operating system.

Restrictions:

- DB2 UDB servers on Windows and UNIX no longer accept inbound client connections using APPC. DB2 clients can still connect to host systems using APPC if they have DB2 Connect installed.
- You cannot use NetBIOS to connect from a Windows client to a server running on a UNIX-based system.

Procedure:

To configure a client-to-server connection using the command line processor:

1. Identify and record the communication parameter values.
2. Configure the appropriate communication protocol on the client. No configuration is required for Named Pipes.
3. Catalog the database node from the DB2 client using one of the following methods. Your choice of method is based on the communications protocol setup on the system you want to catalog.
 - Catalog the TCP/IP node from the DB2 client.
 - Catalog the NetBIOS node from the DB2 client.
 - Catalog the Named Pipes node from the DB2 client.
4. Catalog the database on the DB2 client.
5. Test the client-to-server connection.

Related tasks:

- “Cataloging a TCP/IP node from the DB2 client” on page 44
- “Cataloging a NetBIOS node from the DB2 client” on page 45
- “Cataloging a Named Pipes node from the client” on page 46

- “Cataloging a database from a DB2 client using the CLP” on page 47
- “Testing the client-to-server connection using the CLP” on page 49
- “Configuring client-to-server connections using the Configuration Assistant (CA)” on page 29

Identify and record the communication parameter values

TCP/IP parameter values worksheet for configuring a client to server connection

As you proceed through the configuration steps, use the *Your Value* column in the following table to record the required values.

Table 4. TCP/IP parameter values worksheet

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 host. To resolve this parameter: • Enter the hostname command at the server to obtain the <i>hostname</i> . • Contact your network administrator to obtain the <i>ip_address</i> or enter the ping hostname command. • On UNIX systems, you can also use the DB2DIR/bin/hostlookup hostname command, where <i>DB2DIR</i> is the directory where DB2 is installed.	myserver or 9.21.15.235	
Service Name • Connection Service name (<i>svcname</i>) or • Port number/Protocol (<i>port_number/tcp</i>)	Values Required in the services file. The Connection Service name is an arbitrary name that represents the connection port number (<i>port_number</i>) on the client. The port number must be the same as the port number that the <i>svcname</i> parameter maps to in the services file on the server system. (The <i>svcname</i> parameter is located in the database manager configuration file on the server instance.) This value must not be in use by any other applications, and must be unique within the services file. On UNIX platforms, this value generally must be 1024 or higher. Contact your database administrator for the values used to configure the server.	server1 or 3700/tcp	

Table 4. TCP/IP parameter values worksheet (continued)

Parameter	Description	Sample Value	Your Value
Node name (<i>node_name</i>)	A local alias, or nickname, that describes the node to which you are trying to connect. You can choose any name you want; however, all node name values within your local node directory must be unique.	db2node	

Related tasks:

- “Configuring TCP/IP communications on the client using the CLP” on page 40
- “Configuring client-to-server connections using the command line processor (CLP)” on page 37

NetBIOS parameter values worksheet

As you proceed through the configuration steps, use this worksheet to record the required values for configuring NetBIOS communications.

Table 5. NetBIOS parameter values worksheet

Parameter	Description	Sample Value	Your Value
Logical adapter number (<i>adapter_number</i>)	The local logical adapter that will be used for the NetBIOS connection.	0	
Workstation name (<i>nname</i>) - on the client	The NetBIOS name of the <i>client</i> workstation. <i>nname</i> is chosen by the user and must be unique among all NetBIOS nodes in the network. The maximum length of the <i>nname</i> is 8 characters.	client1	
Workstation name (<i>nname</i>) - on the server	The NetBIOS name of the <i>server</i> workstation. The maximum length of the <i>nname</i> is 8 characters. This name can be found in the server’s database manager configuration file.	server1	
Node name (<i>node_name</i>)	A local alias, or nickname, that describes the node to which you are trying to connect. You can choose any name you want, however, all node name values within your local node directory must be unique.	db2node	

Related tasks:

- “Configuring NetBIOS communications on the client using the CLP” on page 42
- “Configuring client-to-server connections using the command line processor (CLP)” on page 37

Named Pipes parameter values worksheet for configuring Named Pipes on the client

Use the following worksheet to help identify the required parameter values for configuring Named Pipes communications.

Table 6. Named Pipes parameter values worksheet

Parameter	Description	Sample Value	Your Value
Computer name (<i>computer_name</i>)	The computer name of the server machine. On the server machine, to locate the value for this parameter, click on Start and select Settings, Control Panel . Double-click on the Network folder and select the Identification tab. Record the computer name.	server1	
Instance name (<i>instance_name</i>)	The name of the instance on the server to which you are connecting.	db2	
Node name (<i>node_name</i>)	A local alias, or nickname, that describes the node to which you are trying to connect. You can choose any name you want; however, all node name values within your local node directory must be unique.	db2node	

Related tasks:

- “Configuring Named Pipes on the client using the CLP” in the *Installation and Configuration Supplement*
- “Configuring client-to-server connections using the command line processor (CLP)” on page 37

Configuring communications on the DB2 client

Configuring TCP/IP communications

Configuring TCP/IP communications on the client using the CLP

This task describes how to configure TCP/IP communications on the client using the CLP.

Prerequisites:

Ensure that TCP/IP is functional on the DB2 client. To establish a client to server connection, TCP/IP must also be functional on the DB2 server. To check TCP/IP functionality from the client to server, type **hostname** on the server machine, then ping that hostname from the client machine.

Procedure:

To configure TCP/IP communications on the DB2 client:

1. Resolve the server’s host address.
2. Update the services file on the DB2 client.

Related tasks:

- “Resolving a server host address to configure a client to server connection” on page 41
- “Updating the services file on the client” on page 42
- “Configuring Named Pipes on the client using the CLP” in the *Installation and Configuration Supplement*
- “Configuring NetBIOS communications on the client using the CLP” on page 42

Resolving a server host address to configure a client to server connection

The client will use the host address of the DB2 server to establish a connection. If your network has a name server, or if you plan to directly specify an IP address (*ip_address*) of the server, you can proceed to cataloging the TCP/IP node. If a domain 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.

If you are planning on supporting a UNIX client that is using Network Information Services (NIS), and you are not using a domain name server on your network, you must update the hosts file located on your NIS master server.

The following table lists the location of the local hosts file.

Table 7. Location of the local hosts file

Operating System	Directory
Windows 98/Windows ME	windows
Windows NT/Windows 2000/Windows XP/Windows Server 2003	%SystemRoot%\system32\drivers\etc where %SystemRoot% is a system defined environment variable
UNIX	/etc

Procedure:

Use a text editor to add an entry to the DB2 client’s hosts file for the server’s IP address. For example:

```
9.21.15.235    myserver    # IP address for myserver
```

where:

9.21.15.235
represents the *ip_address*

myserver
represents the *hostname*

represents a comment describing the entry

If the server is not in the same domain as the DB2 client, you must provide a fully qualified domain name such as *myserver.spifnet.ibm.com*, where *spifnet.ibm.com* represents the domain name.

Related tasks:

- “Updating the services file on the client” on page 42

- “Configuring client-to-server connections using the command line processor (CLP)” on page 37

Updating the services file on the client

If you are planning to catalog a TCP/IP node using a port number (*port_number*), you do not need to perform this task.

Prerequisites:

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

Procedure:

Using a text editor, add the Connection Service name and port number to the client’s services file.

The following table lists the location of the services file.

Table 8. Location of the services file

Operating System	Directory
Windows 98/Windows ME	windows
Windows NT/Windows 2000/Windows XP/Windows Server 2003	%SystemRoot%\system32\drivers\etc where %SystemRoot% is a system defined environment variable
UNIX	/etc

For example:

```
server1 50000/tcp # DB2 connection service port
```

where:

server1 represents the Connection Service name

50000 represents the connection port number (50000 is the default)

tcp represents the communication protocol that you are using

represents the beginning of a comment that describes the entry

Related tasks:

- “Cataloging a TCP/IP node from the DB2 client” on page 44

Configuring NetBIOS communications

Configuring NetBIOS communications on the client using the CLP

This task describes how to configure NetBIOS on the client using the DB2 command line processor (CLP). Perform this task if you want to configure a connection from a DB2 client to a DB2 server using NetBIOS. Connections can also be configured using the Configuration Assistant.

Prerequisites:

Ensure that NetBIOS is functional on the DB2 client. To establish a connection, NetBIOS must also be configured on the DB2 server.

Procedure:

To configure NetBIOS communications on the DB2 client:

1. Determine the logical adapter number used for the NetBIOS connection.
2. Update the database manager configuration file.

Related tasks:

- “Determining the logical adapter number of the client for the NetBIOS connection (Windows)” on page 43
- “Updating the database manager configuration file for a NetBIOS connection” on page 43
- “Configuring client-to-server connections using the Configuration Assistant (CA)” on page 29

Determining the logical adapter number of the client for the NetBIOS connection (Windows)

This task is part of the main task of *Configuring NetBIOS on the client using the CLP*

The logical adapter number of the client is required to configure a NetBIOS client to server connection using the CLP.

Restrictions:

This procedure is for Windows operating systems only.

Procedure:

To determine the logical adapter number for the NetBIOS connection:

1. From a command prompt, enter the **regedit** command to start the Registry Editor
2. Locate the NetBIOS adapter assignments by expanding the **HKEY_LOCAL_MACHINE** folder and locating the **Software/Microsoft/Rpc/NetBIOS** folder.
3. Double-click on the entry that begins with **ncacn_nb_nb x** , where x can be 0, 1, 2... (normally you want to select the **nb0** adapter), to see that adapter number that is associated with the NetBIOS connection. Record the setting from the **Data value** field in **Edit DWORD Value** window.

Note: Ensure that both ends of the connection are using the same emulation.

The next step in *Configuring NetBIOS on the client using the CLP* is to update the database manager configuration file.

Related reference:

- “NetBIOS parameter values worksheet” on page 39

Updating the database manager configuration file for a NetBIOS connection

Updating the database manager configuration file is required to configure a NetBIOS client-to-server connection using the CLP.

Restrictions:

You must update the database manager configuration file with the *client's* workstation name (*nname*) parameter.

Procedure:

To update the database manager configuration file:

1. Log on to the system as a user with System Administrative (SYSADM) authority.
2. Update the database manager configuration file with the client's Workstation name (*nname*) parameter using the following commands in the command line processor:

```
update database manager configuration using nname nname
terminate
```

For example, if the client's workstation name (*nname*) is *client1*, use:

```
update database manager configuration using nname client1
terminate
```

Related tasks:

- "Configuring communication protocols for a remote DB2 instance" in the *Installation and Configuration Supplement*
- "Cataloging a NetBIOS node from the DB2 client" on page 45

Cataloging a server node

Cataloging a TCP/IP node from the DB2 client

Cataloging a TCP/IP node adds an entry to the DB2 client's node directory that describes the remote node. This entry specifies the chosen alias (*node_name*), the *hostname* (or *ip_address*), and the *svcname* (or *port_number*) that the client uses to access the remote host.

Prerequisites:

- You must have System Administrative (SYSADM) or System Controller (SYSCTRL) authority, or have the `catalog_noauth` option set to ON. You cannot catalog a node using root authority.

Procedure:

To catalog a TCP/IP node:

1. Log on to the system as a user with System Administrative (SYSADM) or System Controller (SYSCTRL) authority.
2. If you are using a UNIX client, set up the instance environment. Run the start-up script:

For bash, Bourne or Korn shell

```
. INSTHOME/sql1lib/db2profile
```

For C shell

```
source INSTHOME/sql1lib/db2cshrc
```

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

3. Start the DB2 command line processor. On Windows, issue the **db2cmd** command from a command prompt. On UNIX, issue the **db2** command from a command prompt.

4. Catalog the node by entering the following commands in the command line processor:

```
db2 => catalog tcpip node node_name remote hostname|ip_address
      server service_name|port_number [remote_instance instance_name]
      [system system_name] [ostype os_type]
```

```
db2 => terminate
```

where:

- *node_name* represents a nickname you can set for the computer that has the database you want to catalog.
- *remote_instance* represents the name of the server instance on which the database resides.
- *system* represents the DB2 system name that is used to identify the server.
- *ostype* represents the operating system type of the server.

Notes:

- a. The **terminate** command is needed to refresh the directory cache.
- b. Although *remote_instance*, *system*, and *ostype* are optional, they are required for users who want to use the DB2 tools.
- c. The *service_name* used on the client does not have to be the same as the one on the server. However, the port numbers that they map to *must* match.

Example:

To catalog a node that you want to call *db2node* on a remote server *myserver.ibm.com* that is using port number *50000*, you would enter the following from a **db2** prompt:

```
db2 => catalog tcpip node db2node remote myserver server 50000
DB20000I The CATALOG TCPIP NODE command completed successfully.
DB21056W Directory changes may not be effective until the directory cache is
refreshed.
```

```
db2 => terminate
DB20000I The TERMINATE command completed successfully.
```

Related tasks:

- “Configuring TCP/IP communications on the client using the CLP” on page 40
- “Testing the client-to-server connection using the CLP” on page 49

Related reference:

- “CATALOG TCPIP NODE Command” in the *Command Reference*

Cataloging a NetBIOS node from the DB2 client

Cataloging a NetBIOS node adds an entry to the client’s node directory to describe the remote node. Use the chosen node alias (*node_name*) as the node entry name. This entry specifies the client’s logical adapter number (*adapter_number*) and the server’s Workstation name (*nname*) that the client will use to access the remote DB2 server.

Prerequisites:

- You must be able to log on to the system with a valid DB2 user ID. If you are adding a database to a system that has a DB2 server 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 about identifying these parameter values, see the NetBIOS parameter values worksheetNetBIOS parameter values worksheet.

Procedure:

To catalog the NetBIOS node:

```
db2 => catalog netbios node node_name remote nname adapter adapter_number
```

```
db2 => terminate
```

For example, to catalog a remote database server *server1* on the node called *db2node*, using the logical adapter number *0*, use:

```
db2 => catalog netbios node db2node remote server1 adapter 0
```

```
db2 => terminate
```

Related tasks:

- “Configuring NetBIOS communications on the client using the CLP” on page 42
- “Cataloging a database from a DB2 client using the CLP” on page 47

Related reference:

- “NetBIOS parameter values worksheet” on page 39
- “CATALOG NETBIOS NODE Command” in the *Command Reference*

Cataloging a Named Pipes node from the client

Cataloging a Named Pipes node adds an entry to the client’s node directory to describe the remote node. This entry specifies the chosen alias (*node_name*), the remote *server’s* workstation name (*computer_name*), and the instance (*instance_name*) that the client will use to access the remote DB2 server.

Procedure:

To catalog a Named Pipes node on a DB2 client, type the following command in the command line processor (CLP):

```
db2 => db2 catalog npipe node node_name /
db2 => remote computer_name instance instance_name
```

```
db2 => terminate
```

Example:

To catalog a remote node called *db2node* that is located on a server called *server1* in the *db2* instance, use:

```
db2 => db2 catalog npipe node db2node remote server1 instance db2
```

```
db2 => terminate
```

Related reference:

- “CATALOG NAMED PIPE NODE Command” in the *Command Reference*

- “Named Pipes parameter values worksheet for configuring Named Pipes on the client” on page 40

Cataloging a database

Cataloging a database from a DB2 client using the CLP

This task describes how to catalog a database from a DB2 client using the DB2 command line processor (CLP).

Before a client application can access a remote database, the database must be cataloged on the client. When you create a database, the database is automatically cataloged on the server with a database alias that is the same as the database name, unless a different database alias was specified.

The information in the database directory, along with the information in the node directory (unless you are cataloging a local database where a node is not needed), is used on the DB2 client to establish a connection to the remote database.

Restrictions:

DB2 does not support using root authority to catalog a database.

Prerequisites:

- You require a valid DB2 user ID.
- You must have System Administrative (SYSADM) or System Controller (SYSCTRL) authority, or have the `catalog_noauth` option set to ON
- The following parameter values are applicable when cataloging a *remote* database:
 - Database name
 - Database alias
 - Node name
 - Authentication type (optional)
 - Comment (optional)

Refer to the parameter values worksheet for cataloging a database for more information about these parameters and to record the values that you use.

- The following parameter values are applicable when cataloging a *local* database:
 - Database name
 - Drive
 - Database alias
 - Authentication type (optional)
 - Comment (optional)

Local databases can be uncataloged and recataloged at any time.

Procedure:

To catalog a database on the client:

1. Log on to the system with a valid DB2 user ID.
2. Optional. Update the Your Value column in the Parameter values worksheet for cataloging a database. Parameter values worksheet for cataloging a database.

3. If you are using DB2 UDB on a UNIX platform, set up the instance environment. Run the start-up script:

For bash, Bourne or Korn shell

```
. INSTHOME/sql1lib/db2profile
```

For C shell

```
source INSTHOME/sql1lib/db2cshrc
```

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

4. Start the DB2 command line processor. On Windows, issue the **db2cmd** command from a command prompt. On UNIX, issue the **db2** command from a command prompt.
5. Catalog the database by entering the following commands in the command line processor:

```
db2 => catalog database database_name as database_alias at  
node node_name [ authentication auth_value ]
```

where:

- *database_name* represents the name of the database you want to catalog.
- *database_alias* represents a local nickname for the database you want to catalog.
- *node_name* represents a nickname you can set for the computer that has the database you want to catalog.
- *auth_value* specifies the type of authentication that will take place when connecting to the database. This parameter defaults to the authentication type specified on the server. Specifying an authentication type can result in a performance benefit. **SERVER**, **CLIENT**, **SERVER_ENCRYPT**, and **KERBEROS** are the authentication value options.

Example:

To catalog a remote database called *sample* so that it has the local database alias *mysample*, on the node *db2node* using authentication *server*, enter the following commands:

```
db2 => catalog database sample as mysample at node db2node  
authentication server
```

```
db2 => terminate
```

Related tasks:

- “Testing the client-to-server connection using the CLP” on page 49

Related reference:

- “Parameter values worksheet for cataloging a database” on page 48
- “CATALOG DATABASE Command” in the *Command Reference*

Parameter values worksheet for cataloging a database

Use the following worksheet to record the parameter values required to catalog a database.

Table 9. Catalog database parameter values worksheet

Parameter	Description	Sample Value	Your Value
Database name (<i>database_name</i>)	When a database is created, the database alias is set to the database name unless otherwise specified. For example, when the <code>sample</code> database is created on the server, a database alias of <code>sample</code> is also created. The database name represents the remote database alias (on the server).	<code>sample</code>	
Database alias (<i>database_alias</i>)	An arbitrary local nickname that represents the remote database. If you do not provide one, the default is the same as the database name (<i>database_name</i>). Use this name when you connect to the database from a client.	<code>mysample</code>	
Authentication (<i>auth_value</i>)	The type of authentication required in your environment.	<code>Server</code>	
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.	<code>db2node</code>	

Related tasks:

- “Cataloging a database from a DB2 client using the CLP” on page 47
- “Testing the client-to-server connection using the CLP” on page 49
- “Configuring client-to-server connections using the command line processor (CLP)” on page 37

Testing the client-to-server connection using the CLP

After cataloging the node and the database, you should connect to the database to test the connection.

Prerequisites:

- The database node and database must be cataloged before you can test the connection.
- 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. Authentication is determined by the authentication parameter specified in the server’s database manager configuration file. If the authentication configured on the client doesn’t match or isn’t compatible with what is configured on the server, you will receive an error.
- The database manager must be started with the correct protocol defined in DB2COMM. If it isn’t started, then you can start the database manager by entering the **db2start** command on the database server.

Procedure:

To test the client to server connection:

1. If you are using DB2 on a UNIX platform, set up the instance environment. Run the start-up script:

For bash, Bourne or Korn shell

```
. INSTHOME/sqllib/db2profile
```

For C shell

```
source INSTHOME/sqllib/db2cshrc
```

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

2. Start the DB2 command line processor. On Windows, issue the **db2cmd** command from a command prompt. On UNIX, issue the **db2** command from a command prompt.

3. Type the following command on the client to connect to the remote database:

```
db2 => connect to database_alias user userid
```

For example, enter the following command:

```
connect to mysample user jtris
```

You will be prompted to enter your password.

If the connection is successful, you receive a message showing the name of the database to which you have connected. A message similar to the following is given:

```
Database Connection Information
Database server = DB2/NT 8.1.0
SQL authorization ID = JTRIS
Local database alias = mysample
```

You can now work with the database. For example, to retrieve a list of all the table names listed in the system catalog table, enter the following SQL statement:

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

An implicit connection occurs when you issue an SQL statement followed by the **db2 terminate** command. To define a default database, run the **db2set db2dbdft = <dbname>** command. After running this command, you can, for example, run the **db2 select * from <table>** command without first connecting to a database. This command uses the value defined in **db2dbdft**. To connect to a database other than the default, you must use the **CONNECT** command to explicitly connect to the database of your choice.

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

Related reference:

- “db2start - Start DB2 Command” in the *Command Reference*
- “db2set - DB2 Profile Registry Command” in the *Command Reference*

Part 3. DB2 thin clients

Chapter 7. Thin client overview

Thin clients (Windows)

A *thin client* refers to a DB2® Administration Client that runs its applications from a code server across a network. A thin client can be set up by installing a DB2 Administration client or DB2 Connect Personal Edition (PE) on a workstation running a Windows® 32-bit operating system. This workstation can then act as a *code server* that allows the application to run with only the immediately necessary modules at the client.

Related concepts:

- “Thin client considerations (Windows)” on page 55
- “Thin client environments (Windows)” on page 53

Related tasks:

- “Setting up a thin-client environment (Windows)” on page 57

Thin client environments (Windows)

A thin client functions like any other DB2® client or DB2 Connect™ Personal Edition workstation. The primary difference between thin clients and other DB2 client or DB2 Connect Personal Edition installations is that the code exists on a code server as compared to a non-thin environment where the files are installed on the local hard disk of each client. Thin clients dynamically load the DB2 Administration client or DB2 Connect Personal Edition code from the code servers across a LAN connection as the code is required. Each thin client then needs only a minimal amount of code and configuration to establish links to a code server. The result is a small, locally installed “footprint” on the thin client, with the majority of the required modules being loaded from the code server.

This method of supporting a DB2 client or DB2 Connect Personal Edition is well suited for many business models. There are obvious advantages associated with installing a thin client in your environment. By implementing this type of environment, disk space requirements for each thin workstation are reduced (approximately 16–112 MB per workstation can be saved), and the code only needs to be installed, updated, or migrated on one machine.

It is important to note, however, that there is a potential loss of system performance at program initialization time. This loss may result as DB2 programs must load from a code server across a LAN connection. The extent of performance loss will depend on variables such as the load and speed of both the network and the code server.

Each thin client machine should have the license for the DB2 Administration client and DB2 Connect Personal Edition.

Another key point is that the catalog information must be maintained on each thin-client workstation, just as you would for a regular DB2 or DB2 Connect client. The catalog files contain all of the information needed for a workstation to connect to a database.

The steps to configure database connections for each thin-client workstation can be automated by using the profile export and import options provided by the Configuration Assistant (CA). After setting up an initial client to server connection, you simply export a profile of the configuration settings to all other clients.

The steps to configure database connections for each thin-client workstation can be avoided by using Lightweight Directory Access Protocol (LDAP) in your environment. Once you have registered the database with an LDAP server from the DB2 server, any LDAP enabled client will retrieve the connection information automatically during connect.

Typical setup of a DB2 thin client

A typical DB2 thin-client environment configuration is shown in the following figure. A DB2 Administration Client is installed on a machine with the thin client code server component. Once configured, this machine will be known as a *DB2 client code server*.

Notes:

1. DB2 Run-Time Clients and Application Development Clients are not supported in a thin-client environment.
2. The `db2rspgn` command is not supported on the thin client.
3. The code server option is available only through a **custom** install.

DB2 thin-client workstations access the code server to dynamically load code as it is required. Once the code is loaded, all processing is done locally on the DB2 thin clients, and a connection to a target DB2 server is made.

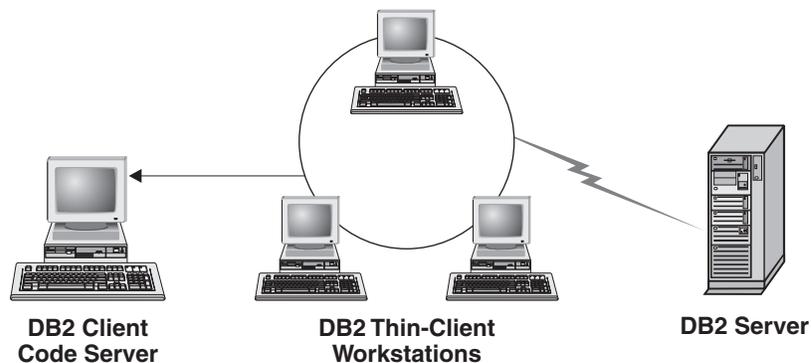


Figure 1. A typical DB2 thin-client environment

Typical setup of a DB2 Connect thin client

A typical DB2 Connect thin-client environment is shown in the following figure. DB2 Connect Personal Edition is installed on a machine with the code server component. Once configured, this machine will be known as a *DB2 Connect code server*. Only a DB2 Connect Personal Edition workstation can act as a code server for DB2 Connect thin workstations. It is important to note that each DB2 Connect thin client needs a DB2 Connect Personal Edition license, however there is no license for the DB2 Administration client.

A DB2 Connect thin workstation functions like the DB2 thin client. It dynamically loads any code required from the DB2 Connect thin code server. Once the code is loaded, all processing is done locally on the DB2

Connect thin workstations. Connection to a target host or AS/400® DB2 server is made by using local database configuration information.

DB2 Connect thin clients can also access databases that reside on DB2 servers for UNIX® and Windows®, as well as databases that reside on host and AS/400 systems.

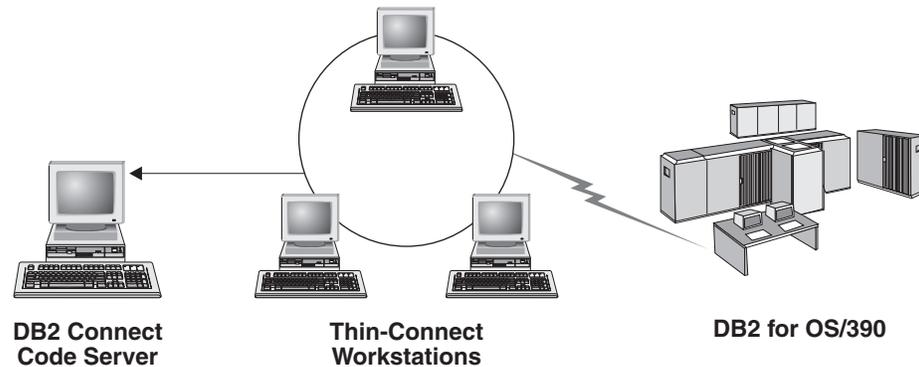


Figure 2. A typical DB2 Connect thin-client environment

Related concepts:

- “Thin client considerations (Windows)” on page 55
- “Thin clients (Windows)” on page 53

Related tasks:

- “Setting up a thin-client environment (Windows)” on page 57

Thin client considerations (Windows)

There are some considerations when using either a Windows® NT, Windows 2000, or Windows XP machine as a code server or as a thin client. This section refers to the adjustments needed to accommodate using Windows NT®, Windows 2000, or Windows XP.

Set up cross-platform support on the code server

A code server on Windows 2000, Windows XP, or Windows NT can support thin clients on Windows 98 or Windows ME. A code server on Windows 98 or Windows ME can support thin clients on Windows 2000, Windows XP, or Windows NT.

If you are creating a thin workstation on a Windows NT, Windows 2000, or Windows XP machine, use the Windows NT, Windows 2000, or Windows XP code base (for example, `c:\sql11ib`) in the remaining steps of the process.

The following command has different parameter values for Windows NT, Windows 2000, or Windows XP.

Enable the code server to service a cross-platform thin workstation by entering the following command:

```
bin\db2thn9x.bat target_platform
```

where:

- *target_platform* represents the platform that this directory will support. If the thin workstations are running Windows NT, Windows 2000, or Windows XP, you would use the *nt* parameter.

Make the code directory available to all thin workstations

1. From the Windows code server, launch **Windows Explorer**.
2. Select the directory where you installed the DB2® product. Use the `c:\sql11ib` directory to set up the share for thin workstations running on Windows NT.
3. Select **File** → **Properties** from the menu bar.
4. Select the **Sharing** tab.
5. Select the **Share this folder** radio button.
6. In the **Share Name** field, enter a share name. For example, enter `NTCODESV`. You can use any name for the share name.
7. All target thin workstations need to have read access to this directory for all users. Specify read access for everyone as follows:
 - a. Select the **Security** tab.
 - b. Click **Advanced**. The Access Control Settings window opens.
 - c. From the **Permissions** tab, highlight the **Everyone** group. The Permission Entry window opens.
 - d. Set the **Read Permissions** option to **Allow**.
 - e. Click **OK** until all windows are closed.

Map a network drive from the thin client to the code server

The following should be noted for Windows NT, Windows 2000, and Windows XP code servers:

- The **Path** field is the **Folder** field in Windows 2000 and Windows XP.
- If you are running Windows NT, Windows 2000, or Windows XP, you may also specify user information in the **Connect as** Input field using the following format:

domain\username

where:

domain

represents the domain where the user account is defined. This is only required if the account is a domain account and you are not logged on to the system with a user account that has read access on the remote code server.

username

represents the user who has access to this machine. This is only required if you are not logged on to the system with a user account that has read access on the remote code server or you have specified the domain parameter.

Related concepts:

- “Thin clients (Windows)” on page 53
- “Thin client environments (Windows)” on page 53

Related tasks:

- “Setting up a thin-client environment (Windows)” on page 57

Chapter 8. Thin client installation

Setting up a thin-client environment (Windows)

Procedure:

This example is specific to a thin client installation setup for a Windows 2000 machine to service a Windows 98 thin client. To set up a thin workstation environment:

1. Install a DB2 Administration Client or DB2 Connect Personal Edition on a machine that will act as a code server.
2. Set up cross-platform support on the code server.
3. Make the code directory available to all thin workstations.
4. Creating a thin client response file.
5. Map a network drive from the thin client to the code server.
6. Enable thin clients.

Related concepts:

- “Thin client considerations (Windows)” on page 55
- “Thin clients (Windows)” on page 53
- “Thin client environments (Windows)” on page 53

Related tasks:

- “Installing a DB2 Administration Client or DB2 Connect Personal Edition on the code server (Windows)” on page 57
- “Setting up cross-platform support on the code server (Windows)” on page 58
- “Making the code directory available to all thin workstations (Windows)” on page 60
- “Creating a thin client response file (Windows)” on page 61
- “Mapping a network drive from the thin client to the code server (Windows)” on page 62
- “Running the thnsetup command to enable thin clients (Windows)” on page 63

Installing a DB2 Administration Client or DB2 Connect Personal Edition on the code server (Windows)

Installing a DB2 Administration Client or DB2 Connect Personal Edition on the code server is part of the larger task of setting up a thin-client environment. A DB2 thin-client workstation can only load code from a DB2 thin-client code server and a DB2 Connect thin workstation can only load code from a DB2 Connect thin code server.

Procedure:

To install a DB2 Administration Client or DB2 Connect Personal Edition on the code server:

1. Select a **Custom** installation from the install wizard.

2. From the Select Components window, select the **Thin Client Code Server** component to install the files needed to set up the thin client.

Your next step is to set up cross-platform support on the code server.

If you want your DB2 product to have access to DB2 documentation either on your local computer or on another computer on your network, then you must install the DB2 Information Center. The DB2 Information Center contains documentation for DB2 Universal Database and DB2 related products.

Related concepts:

- “DB2 Information Center” on page 68
- “DB2 Information Center installation scenarios” on page 69

Related tasks:

- “Setting up cross-platform support on the code server (Windows)” on page 58
- “Installing the DB2 Information Center using the DB2 Setup wizard (Windows)” on page 74

Setting up cross-platform support on the code server (Windows)

Setting up cross-platform support on the code server is part of the larger task of setting up a thin-client environment. If you are not planning to support a mix of Windows 98, Windows 2000, Windows NT, Windows ME, Windows XP, and Windows Server 2003 in your environment, skip this step.

Prerequisites:

In a thin client environment, it is possible to support differing Windows 32-bit operating systems on the server and on the thin client. However, you cannot serve thin clients that exist on different operating systems from a single code server unless you manually copy the installation directory first. A code server on any Windows 32-bit machine can support only one of the following thin client combinations:

1. Windows 98 and/or Windows ME; **OR**
2. Windows 2000, Windows XP, Windows Server 2003 and/or Windows NT.

For example, a code server on a Windows NT machine can serve both a Windows 98 and a Windows ME thin client, however, that same code server cannot simultaneously support a Windows 2000, Windows XP, Windows Server 2003, or Windows NT thin client. Conversely, if you choose to have your Windows NT code server support a Windows 2000 and a Windows NT thin client machine, then you cannot also support a Windows 98 thin client machine in that environment.

Important: If you are logged onto a Windows 98 thin client that is accessing a Windows NT or Windows 2000 machine, your user account must be defined locally on the Windows NT or Windows 2000 machine. If your user account on the Windows 98 thin client is `jsmith`, you must create a local user account for `jsmith` by using the Windows User Manager utility. See the Windows operating system help for information about creating local users accounts.

If your configuration environment has differing Windows 32-bit operating systems, you will have to perform the following steps to set up your code server. The following example assumes that you are configuring a Windows NT code server to

service Windows 98 thin clients. However, these instructions are applicable for all combinations of Windows 32-bit operating systems.

Procedure:

To set up cross-platform support on the code server:

Note: For this example, DB2 is installed in `c:\sql1ib` and the directory for serving Windows 98 clients is `d:\sql1ib98`.

1. On the Windows NT machine, create a directory that will be used to service Windows 98 thin workstations by entering the following command:

```
md d:\sql1ib98
```

where:

- *d*: represents a local hard drive.

2. Copy the DB2 product directory located on the code server (for example, `c:\sql1ib`) into the directory that you just created by entering the following command:

```
xcopy c:\sql1ib\*. * d:\sql1ib98 /s /e
```

where:

- *c*: represents the drive on the code server where the DB2 product was installed.
- *d*: represents the drive on the code server where the `sql1ib98` directory was created in the previous step.

3. On the code server, change to the directory that you created in the first step. This is the directory on the code server that will be used to serve thin workstations running on Windows 98. For this example, enter the following commands:

```
d:  
cd sql1ib98
```

4. Enable the code server to service a cross-platform thin workstation by entering the following command:

```
bin\db2thn9x.bat target_platform
```

where:

- *target_platform* represents the platform that this directory will support. For this example, the platform value setting will be `98`. If the thin workstations are running Windows NT or Windows 2000, you would use the *nt* parameter.

You now have two code servers on your machine (one located in `c:\sql1ib` and one in `d:\sql1ib98`). In this example, you are creating a thin client on a Windows 98 workstation, and intend to have the code served by a Windows NT machine, therefore, you must use the Windows 98 code server (for example, `d:\sql1ib98`) in the remaining steps.

Your next step is to make the code directory available to all thin clients.

Related tasks:

- “Installing a DB2 Administration Client or DB2 Connect Personal Edition on the code server (Windows)” on page 57

- “Making the code directory available to all thin workstations (Windows)” on page 60

Making the code directory available to all thin workstations (Windows)

Making the code directory available to all thin workstations is part of the larger task of setting up a thin-client environment. To load the required code from the code server, each of the target thin workstations must be able to read the directory where the DB2 client or DB2 Connect Personal Edition (PE) source code is installed.

It is important to note that the required steps for directory sharing for code servers running on Windows 98 or Windows NT and Windows 2000 differ.

Procedure:

To make the code directory available to all thin workstations (in read mode):

1. On the Windows NT code server, launch **Windows Explorer**.
2. Select the directory on the code server that will be used to serve thin workstations running on Windows 98. For this example, select the `d:\sql11ib98` directory to set up the share.
3. Select **File** → **Properties** from the menu bar.
4. Select the **Sharing** tab.
5. Select the **Shared As** radio button.
6. In the **Share Name** field, enter a share name that is 8 characters or less. For example, enter `NTCODESV`.
7. All thin client users need to have read access to this directory. For example, `jsmith` must have access to this directory if he is to log onto a thin client machine and access the thin client code on the code server. Specify read access as follows:
 - a. Click **Permissions**. The Access Through Share Permissions window opens.
 - b. In the **Name** box, highlight the **Everyone** group.

Note: Access can be given to the **Everyone** group, a group that you have specifically defined for thin client users, or to individual thin client users.
 - c. Click the **Type of Access** drop down box and select **Read**.
 - d. Click **OK** until all windows are closed.

Your next step is to create a thin client response file.

Related concepts:

- “Thin client considerations (Windows)” on page 55

Related tasks:

- “Creating a thin client response file (Windows)” on page 61
- “Setting up cross-platform support on the code server (Windows)” on page 58

Creating a thin client response file (Windows)

A *response file* is an ASCII file that can be customized with the setup and configuration data to automate an installation. When you installed the code server, you performed an interactive installation. In this type of installation, you manually respond to prompts from the setup program to install your product. Your responses provide the information needed to install the DB2 product and configure its environment. This information is provided in the form of keywords and values in a response file.

A response file contains the keywords unique to installation, registry values, environment variable settings, and the database manager configuration parameter settings.

Procedure:

You can create a response file for thin client installation in one of two methods:

- You can create a response file based on an existing client setup using the **db2rspgn** command.
 1. Setup a DB2 thin client with all the appropriate registry values, environment variables, and database manager configuration, as well as database connections.
 2. Run the **db2rspgn** command to create a response file that reproduce all your settings in a response file installation.
- You can customize the sample response file `db2thin.rsp`. You can find this sample response file in the `c:\sql11ib\thinsetup` directory, where `c:\sql11ib` represents the drive where you installed your thin client code server.

In a response file, the asterisk (*) acts like a comment. Any line that is prefixed with an asterisk will be ignored during the installation. To enable a parameter, remove the asterisk. If you do not specify a keyword, or if it is commented out, a default value will be used.

For example, to install support for ODBC, the default entry for this keyword in the response file is:

```
*COMP =ODBC_SUPPORT
```

To install this component, you would remove the asterisk from the line as shown in this example:

```
COMP =ODBC_SUPPORT
```

For some keywords, values *must* be set. To enable these keywords, remove the asterisk. However, ensure that you also replace the contents to the right of the equals sign with the value that you want for that parameter.

For example,

```
*DB2.DIAGLEVEL = 0 - 4
```

would be:

```
DB2.DIAGLEVEL = 4
```

to set this parameter to 4.

Once you have finished editing the response file, save it using a different name to maintain the original sample. For example, call the edited file `test.rsp` and save it in the same directory on which you set up the shared permissions in the previous step (`d:\sql11ib98`).

You can now use this response file with the **thnsetup** command to deploy DB2 thin clients across your network.

Related tasks:

- “Making the code directory available to all thin workstations (Windows)” on page 60
- “Mapping a network drive from the thin client to the code server (Windows)” on page 62

Mapping a network drive from the thin client to the code server (Windows)

Mapping a network drive from the thin client to the code server is part of the larger task of setting up a thin-client environment.

Prerequisites:

You must be logged on to the workstation as a valid user with shared directory access to the code server. You have access to the code server because a locally defined user account was created on the code server.

Procedure:

You can access the thnsetup directory under the shared directory that you created on the code server by mapping a network drive from the thin client as follows:

1. Launch Windows Explorer.
2. From the **Tools** menu, select **Map Network Drive**.
3. In the **Drive** drop down list, select the drive that you want to map the location of the code server to.
4. In Windows 98 or Windows NT, specify the location of the share in the Path field as follows:

\\computer_name\share_name

where:

computer_name

represents the computer name of the code server.

share_name

represents the share name of the shared directory on the code server.

5. Select the **Reconnect at Logon** check box to make the share persistent.

Your next step is enabling your thin client.

Related tasks:

- “Creating a thin client response file (Windows)” on page 61
- “Running the thnsetup command to enable thin clients (Windows)” on page 63

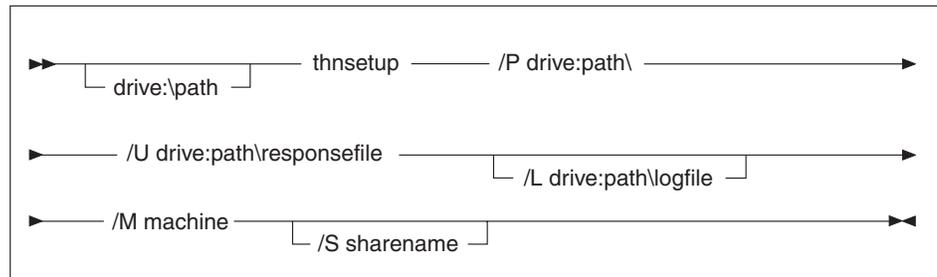
Running the thnsetup command to enable thin clients (Windows)

Running the **thnsetup** command to enable thin clients is the final part of the larger task of setting up a thin-client environment.

Procedure:

To enable the thin client using the **thnsetup** command:

1. Run the **thnsetup** command from the thin-client workstation. This command will set up the DB2 thin client or DB2 Connect thin workstation and the required links to the code server. The **thnsetup** command can be entered with the following parameters:



where:

- /P** specifies the path where the DB2 code is installed on the code server. This parameter is required. If you have not already mapped a persistent network drive to the code server, then this parameter should be the drive letter which will be used to represent the network drive.
- /U** specifies the fully qualified response file name. This parameter is required.
- /L** specifies the fully qualified log file name, where setup information and any errors occurring during setup are logged. If you do not specify the log file's name, the default `db2.log` file name is used. This file will be created in a directory called `db2log`, on the drive where your operating system is installed. This parameter is optional.
- /M** specifies the computer name of the code server. This parameter is required.
- /S** specifies the share name of the code server where the DB2 product was installed. This parameter is only necessary if you did not map a persistent network drive.

For example, to create a thin workstation where:

- the shared directory with the share name *NTCODESV* on a code server is mapped locally to the *x:* drive;
- the response file is called *test.rsp*; and
- the response file is located in the same directory as the code server:

enter the following command from a DOS prompt from the thin workstation:

```
x:\thnsetup\thnsetup /P x: /U x:\thnsetup\test.rsp /M machineName
```

When the **thnsetup** command completes, check the messages in the log file (`db2.log` in the `y:\db2log` directory, where *y* is the drive on which DB2 is installed).

The error messages in the log file will vary, depending on the error that was encountered during the attempted installation. The log file should state the reason for failure, as well as a message stating that the setup did not complete.

Related tasks:

- “Creating a thin client response file (Windows)” on page 61
- “Mapping a network drive from the thin client to the code server (Windows)” on page 62

Part 4. Appendixes

Appendix A. DB2 Universal Database technical information

DB2 documentation and help

DB2[®] technical information is available through the following tools and methods:

- DB2 Information Center
 - Topics
 - Help for DB2 tools
 - Sample programs
 - Tutorials
- Downloadable PDF files, PDF files on CD, and printed books
 - Guides
 - Reference manuals
- Command line help
 - Command help
 - Message help
 - SQL state help
- Installed source code
 - Sample programs

You can access additional DB2 Universal Database[™] technical information such as technotes, white papers, and Redbooks[™] online at ibm.com[®]. Access the DB2 Information Management software library site at www.ibm.com/software/data/pubs/.

DB2 documentation updates

IBM[®] may periodically make documentation FixPaks and other documentation updates to the DB2 Information Center available. If you access the DB2 Information Center at <http://publib.boulder.ibm.com/infocenter/db2help/>, you will always be viewing the most up-to-date information. If you have installed the DB2 Information Center locally, then you need to install any updates manually before you can view them. Documentation updates allow you to update the information that you installed from the *DB2 Information Center CD* when new information becomes available.

The Information Center is updated more frequently than either the PDF or the hardcopy books. To get the most current DB2 technical information, install the documentation updates as they become available or go to the DB2 Information Center at the www.ibm.com site.

Related concepts:

- “CLI sample programs” in the *CLI Guide and Reference, Volume 1*
- “Java sample programs” in the *Application Development Guide: Building and Running Applications*
- “DB2 Information Center” on page 68

Related tasks:

- “Invoking contextual help from a DB2 tool” on page 85

- “Updating the DB2 Information Center installed on your computer or intranet server” on page 77
- “Invoking message help from the command line processor” on page 86
- “Invoking command help from the command line processor” on page 87
- “Invoking SQL state help from the command line processor” on page 87

Related reference:

- “DB2 PDF and printed documentation” on page 79

DB2 Information Center

The DB2[®] Information Center gives you access to all of the information you need to take full advantage of DB2 family products, including DB2 Universal Database[™], DB2 Connect[™], DB2 Information Integrator and DB2 Query Patroller[™]. The DB2 Information Center also contains information for major DB2 features and components including replication, data warehousing, and the DB2 extenders.

The DB2 Information Center has the following features if you view it in Mozilla 1.0 or later or Microsoft[®] Internet Explorer 5.5 or later. Some features require you to enable support for JavaScript[™]:

Flexible installation options

You can choose to view the DB2 documentation using the option that best meets your needs:

- To effortlessly ensure that your documentation is always up to date, you can access all of your documentation directly from the DB2 Information Center hosted on the IBM[®] Web site at <http://publib.boulder.ibm.com/infocenter/db2help/>
- To minimize your update efforts and keep your network traffic within your intranet, you can install the DB2 documentation on a single server on your intranet
- To maximize your flexibility and reduce your dependence on network connections, you can install the DB2 documentation on your own computer

Search

You can search all of the topics in the DB2 Information Center by entering a search term in the **Search** text field. You can retrieve exact matches by enclosing terms in quotation marks, and you can refine your search with wildcard operators (*, ?) and Boolean operators (AND, NOT, OR).

Task-oriented table of contents

You can locate topics in the DB2 documentation from a single table of contents. The table of contents is organized primarily by the kind of tasks you may want to perform, but also includes entries for product overviews, goals, reference information, an index, and a glossary.

- Product overviews describe the relationship between the available products in the DB2 family, the features offered by each of those products, and up to date release information for each of these products.
- Goal categories such as installing, administering, and developing include topics that enable you to quickly complete tasks and develop a deeper understanding of the background information for completing those tasks.

- Reference topics provide detailed information about a subject, including statement and command syntax, message help, and configuration parameters.

Show current topic in table of contents

You can show where the current topic fits into the table of contents by clicking the **Refresh / Show Current Topic** button in the table of contents frame or by clicking the **Show in Table of Contents** button in the content frame. This feature is helpful if you have followed several links to related topics in several files or arrived at a topic from search results.

Index You can access all of the documentation from the index. The index is organized in alphabetical order by index term.

Glossary

You can use the glossary to look up definitions of terms used in the DB2 documentation. The glossary is organized in alphabetical order by glossary term.

Integrated localized information

The DB2 Information Center displays information in the preferred language set in your browser preferences. If a topic is not available in your preferred language, the DB2 Information Center displays the English version of that topic.

For iSeries™ technical information, refer to the IBM eServer™ iSeries information center at www.ibm.com/eserver/series/infocenter/.

Related concepts:

- “DB2 Information Center installation scenarios” on page 69

Related tasks:

- “Updating the DB2 Information Center installed on your computer or intranet server” on page 77
- “Displaying topics in your preferred language in the DB2 Information Center” on page 78
- “Invoking the DB2 Information Center” on page 76
- “Installing the DB2 Information Center using the DB2 Setup wizard (UNIX)” on page 72
- “Installing the DB2 Information Center using the DB2 Setup wizard (Windows)” on page 74

DB2 Information Center installation scenarios

Different working environments can pose different requirements for how to access DB2® information. The DB2 Information Center can be accessed on the IBM® Web site, on a server on your organization’s network, or on a version installed on your computer. In all three cases, the documentation is contained in the DB2 Information Center, which is an architected web of topic-based information that you view with a browser. By default, DB2 products access the DB2 Information Center on the IBM Web site. However, if you want to access the DB2 Information Center on an intranet server or on your own computer, you must install the DB2 Information Center using the DB2 Information Center CD found in your product Media Pack. Refer to the summary of options for accessing DB2 documentation which follows, along with the three installation scenarios, to help determine which

method of accessing the DB2 Information Center works best for you and your work environment, and what installation issues you might need to consider.

Summary of options for accessing DB2 documentation:

The following table provides recommendations on which options are possible in your work environment for accessing the DB2 product documentation in the DB2 Information Center.

Internet access	Intranet access	Recommendation
Yes	Yes	Access the DB2 Information Center on the IBM Web site, or access the DB2 Information Center installed on an intranet server.
Yes	No	Access the DB2 Information Center on the IBM Web site.
No	Yes	Access the DB2 Information Center installed on an intranet server.
No	No	Access the DB2 Information Center on a local computer.

Scenario: Accessing the DB2 Information Center on your computer:

Tsu-Chen owns a factory in a small town that does not have a local ISP to provide him with Internet access. He purchased DB2 Universal Database™ to manage his inventory, his product orders, his banking account information, and his business expenses. Never having used a DB2 product before, Tsu-Chen needs to learn how to do so from the DB2 product documentation.

After installing DB2 Universal Database on his computer using the typical installation option, Tsu-Chen tries to access the DB2 documentation. However, his browser gives him an error message that the page he tried to open cannot be found. Tsu-Chen checks the installation manual for his DB2 product and discovers that he has to install the DB2 Information Center if he wants to access DB2 documentation on his computer. He finds the *DB2 Information Center CD* in the media pack and installs it.

From the application launcher for his operating system, Tsu-Chen now has access to the DB2 Information Center and can learn how to use his DB2 product to increase the success of his business.

Scenario: Accessing the DB2 Information Center on the IBM Web site:

Colin is an information technology consultant with a training firm. He specializes in database technology and SQL and gives seminars on these subjects to businesses all over North America using DB2 Universal Database. Part of Colin's seminars includes using DB2 documentation as a teaching tool. For example, while teaching courses on SQL, Colin uses the DB2 documentation on SQL as a way to teach basic and advanced syntax for database queries.

Most of the businesses at which Colin teaches have Internet access. This situation influenced Colin's decision to configure his mobile computer to access the DB2 Information Center on the IBM Web site when he installed the latest version of DB2 Universal Database. This configuration allows Colin to have online access to the latest DB2 documentation during his seminars.

However, sometimes while travelling Colin does not have Internet access. This posed a problem for him, especially when he needed to access to DB2 documentation to prepare for seminars. To avoid situations like this, Colin installed a copy of the DB2 Information Center on his mobile computer.

Colin enjoys the flexibility of always having a copy of DB2 documentation at his disposal. Using the **db2set** command, he can easily configure the registry variables on his mobile computer to access the DB2 Information Center on either the IBM Web site, or his mobile computer, depending on his situation.

Scenario: Accessing the DB2 Information Center on an intranet server:

Eva works as a senior database administrator for a life insurance company. Her administration responsibilities include installing and configuring the latest version of DB2 Universal Database on the company's UNIX[®] database servers. Her company recently informed its employees that, for security reasons, it would not provide them with Internet access at work. Because her company has a networked environment, Eva decides to install a copy of the DB2 Information Center on an intranet server so that all employees in the company who use the company's data warehouse on a regular basis (sales representatives, sales managers, and business analysts) have access to DB2 documentation.

Eva instructs her database team to install the latest version of DB2 Universal Database on all of the employee's computers using a response file, to ensure that each computer is configured to access the DB2 Information Center using the host name and the port number of the intranet server.

However, through a misunderstanding Migual, a junior database administrator on Eva's team, installs a copy of the DB2 Information Center on several of the employee computers, rather than configuring DB2 Universal Database to access the DB2 Information Center on the intranet server. To correct this situation Eva tells Migual to use the **db2set** command to change the DB2 Information Center registry variables (DB2_DOCHOST for the host name, and DB2_DOCPORT for the port number) on each of these computers. Now all of the appropriate computers on the network have access to the DB2 Information Center, and employees can find answers to their DB2 questions in the DB2 documentation.

Related concepts:

- "DB2 Information Center" on page 68

Related tasks:

- "Updating the DB2 Information Center installed on your computer or intranet server" on page 77
- "Installing the DB2 Information Center using the DB2 Setup wizard (UNIX)" on page 72
- "Installing the DB2 Information Center using the DB2 Setup wizard (Windows)" on page 74
- "Setting the location for accessing the DB2 Information Center: Common GUI help"

Related reference:

- "db2set - DB2 Profile Registry Command" in the *Command Reference*

Installing the DB2 Information Center using the DB2 Setup wizard (UNIX)

DB2 product documentation can be accessed in three ways: on the IBM Web site, on an intranet server, or on a version installed on your computer. By default, DB2 products access DB2 documentation on the IBM Web site. If you want to access the DB2 documentation on an intranet server or on your own computer, you must install the documentation from the *DB2 Information Center CD*. Using the DB2 Setup wizard, you can define your installation preferences and install the DB2 Information Center on a computer that uses a UNIX operating system.

Prerequisites:

This section lists the hardware, operating system, software, and communication requirements for installing the DB2 Information Center on UNIX computers.

- **Hardware requirements**

You require one of the following processors:

- PowerPC (AIX)
- HP 9000 (HP-UX)
- Intel 32-bit (Linux)
- Solaris UltraSPARC computers (Solaris Operating Environment)

- **Operating system requirements**

You require one of the following operating systems:

- IBM AIX 5.1 (on PowerPC)
- HP-UX 11i (on HP 9000)
- Red Hat Linux 8.0 (on Intel 32-bit)
- SuSE Linux 8.1 (on Intel 32-bit)
- Sun Solaris Version 8 (on Solaris Operating Environment UltraSPARC computers)

Note: The DB2 Information Center runs on a subset of the UNIX operating systems on which DB2 clients are supported. It is therefore recommended that you either access the DB2 Information Center from the IBM Web site, or that you install and access the DB2 Information Center on an intranet server.

- **Software requirements**

– The following browser is supported:

- Mozilla Version 1.0 or greater

- The DB2 Setup wizard is a graphical installer. You must have an implementation of the X Window System software capable of rendering a graphical user interface for the DB2 Setup wizard to run on your computer. Before you can run the DB2 Setup wizard you must ensure that you have properly exported your display. For example, enter the following command at the command prompt:

```
export DISPLAY=9.26.163.144:0.
```

- **Communication requirements**

- TCP/IP

Procedure:

To install the DB2 Information Center using the DB2 Setup wizard:

1. Log on to the system.
2. Insert and mount the DB2 Information Center product CD on your system.
3. Change to the directory where the CD is mounted by entering the following command:

```
cd /cd
```

where */cd* represents the mount point of the CD.

4. Enter the **./db2setup** command to start the DB2 Setup wizard.
5. The IBM DB2 Setup Launchpad opens. To proceed directly to the installation of the DB2 Information Center, click **Install Product**. Online help is available to guide you through the remaining steps. To invoke the online help, click **Help**. You can click **Cancel** at any time to end the installation.
6. On the **Select the product you would like to install** page, click **Next**.
7. Click **Next** on the **Welcome to the DB2 Setup wizard** page. The DB2 Setup wizard will guide you through the program setup process.
8. To proceed with the installation, you must accept the license agreement. On the **License Agreement** page, select **I accept the terms in the license agreement** and click **Next**.
9. Select **Install DB2 Information Center on this computer** on the **Select the installation action** page. If you want to use a response file to install the DB2 Information Center on this or other computers at a later time, select **Save your settings in a response file**. Click **Next**.
10. Select the languages in which the DB2 Information Center will be installed on **Select the languages to install** page. Click **Next**.
11. Configure the DB2 Information Center for incoming communication on the **Specify the DB2 Information Center port** page. Click **Next** to continue the installation.
12. Review the installation choices you have made in the **Start copying files** page. To change any settings, click **Back**. Click **Install** to copy the DB2 Information Center files onto your computer.

You can also install the DB2 Information Center using a response file.

The installation logs `db2setup.his`, `db2setup.log`, and `db2setup.err` are located, by default, in the `/tmp` directory.

The `db2setup.log` file captures all DB2 product installation information, including errors. The `db2setup.his` file records all DB2 product installations on your computer. DB2 appends the `db2setup.log` file to the `db2setup.his` file. The `db2setup.err` file captures any error output that is returned by Java, for example, exceptions and trap information.

When the installation is complete, the DB2 Information Center will be installed in one of the following directories, depending upon your UNIX operating system:

- AIX: `/usr/opt/db2_08_01`
- HP-UX: `/opt/IBM/db2/V8.1`
- Linux: `/opt/IBM/db2/V8.1`
- Solaris Operating Environment: `/opt/IBM/db2/V8.1`

Related concepts:

- “DB2 Information Center” on page 68
- “DB2 Information Center installation scenarios” on page 69

Related tasks:

- “Installing DB2 using a response file (UNIX)” in the *Installation and Configuration Supplement*
- “Updating the DB2 Information Center installed on your computer or intranet server” on page 77
- “Displaying topics in your preferred language in the DB2 Information Center” on page 78
- “Invoking the DB2 Information Center” on page 76
- “Installing the DB2 Information Center using the DB2 Setup wizard (Windows)” on page 74

Installing the DB2 Information Center using the DB2 Setup wizard (Windows)

DB2 product documentation can be accessed in three ways: on the IBM Web site, on an intranet server, or on a version installed on your computer. By default, DB2 products access DB2 documentation on the IBM Web site. If you want to access the DB2 documentation on an intranet server or on your own computer, you must install the DB2 documentation from the *DB2 Information Center CD*. Using the DB2 Setup wizard, you can define your installation preferences and install the DB2 Information Center on a computer that uses a Windows operating system.

Prerequisites:

This section lists the hardware, operating system, software, and communication requirements for installing the DB2 Information Center on Windows.

- **Hardware requirements**

You require one of the following processors:

- 32-bit computers: a Pentium or Pentium compatible CPU

- **Operating system requirements**

You require one of the following operating systems:

- Windows 2000
- Windows XP

Note: The DB2 Information Center runs on a subset of the Windows operating systems on which DB2 clients are supported. It is therefore recommended that you either access the DB2 Information Center on the IBM Web site, or that you install and access the DB2 Information Center on an intranet server.

- **Software requirements**

– The following browsers are supported:

- Mozilla 1.0 or greater
- Internet Explorer Version 5.5 or 6.0 (Version 6.0 for Windows XP)

- **Communication requirements**

- TCP/IP

Restrictions:

- You require an account with administrative privileges to install the DB2 Information Center.

Procedure:

To install the DB2 Information Center using the DB2 Setup wizard:

1. Log on to the system with the account that you have defined for the DB2 Information Center installation.
2. Insert the CD into the drive. If enabled, the auto-run feature starts the IBM DB2 Setup Launchpad.
3. The DB2 Setup wizard determines the system language and launches the setup program for that language. If you want to run the setup program in a language other than English, or the setup program fails to auto-start, you can start the DB2 Setup wizard manually.

To start the DB2 Setup wizard manually:

- a. Click **Start** and select **Run**.
- b. In the **Open** field, type the following command:

```
x:\setup.exe /i 2-letter language identifier
```

where *x*: represents your CD drive, and *2-letter language identifier* represents the language in which the setup program will be run.

- c. Click **OK**.
4. The IBM DB2 Setup Launchpad opens. To proceed directly to the installation of the DB2 Information Center, click **Install Product**. Online help is available to guide you through the remaining steps. To invoke the online help, click **Help**. You can click **Cancel** at any time to end the installation.
 5. On the **Select the product you would like to install** page, click **Next**.
 6. Click **Next** on the **Welcome to the DB2 Setup wizard** page. The DB2 Setup wizard will guide you through the program setup process.
 7. To proceed with the installation, you must accept the license agreement. On the **License Agreement** page, select **I accept the terms in the license agreement** and click **Next**.
 8. Select **Install DB2 Information Center on this computer** on the **Select the installation action** page. If you want to use a response file to install the DB2 Information Center on this or other computers at a later time, select **Save your settings in a response file**. Click **Next**.
 9. Select the languages in which the DB2 Information Center will be installed on **Select the languages to install** page. Click **Next**.
 10. Configure the DB2 Information Center for incoming communication on the **Specify the DB2 Information Center port** page. Click **Next** to continue the installation.
 11. Review the installation choices you have made in the **Start copying files** page. To change any settings, click **Back**. Click **Install** to copy the DB2 Information Center files onto your computer.

You can install the DB2 Information Center using a response file. You can also use the **db2rspgn** command to generate a response file based on an existing installation.

For information on errors encountered during installation, see the `db2.log` and `db2wi.log` files located in the 'My Documents'\DB2LOG\ directory. The location of the 'My Documents' directory will depend on the settings on your computer.

The `db2wi.log` file captures the most recent DB2 installation information. The `db2.log` captures the history of DB2 product installations.

|

| **Related concepts:**

- “DB2 Information Center” on page 68
- “DB2 Information Center installation scenarios” on page 69

|

| **Related tasks:**

- “Installing a DB2 product using a response file (Windows)” in the *Installation and Configuration Supplement*
- “Updating the DB2 Information Center installed on your computer or intranet server” on page 77
- “Displaying topics in your preferred language in the DB2 Information Center” on page 78
- “Invoking the DB2 Information Center” on page 76
- “Installing the DB2 Information Center using the DB2 Setup wizard (UNIX)” on page 72

|

| **Related reference:**

- “db2rspgn - Response File Generator Command (Windows)” in the *Command Reference*

Invoking the DB2 Information Center

|

| The DB2 Information Center gives you access to all of the information that you

| need to use DB2 products for Linux, UNIX, and Windows operating systems such

| as DB2 Universal Database, DB2 Connect, DB2 Information Integrator, and DB2

| Query Patroller.

You can invoke the DB2 Information Center from one of the following places:

- Computers on which a DB2 UDB client or server is installed
- An intranet server or local computer on which the DB2 Information Center installed
- The IBM Web site

|

| **Prerequisites:**

Before you invoke the DB2 Information Center:

- *Optional:* Configure your browser to display topics in your preferred language
- *Optional:* Configure your DB2 client to use the DB2 Information Center installed on your computer or intranet server

|

| **Procedure:**

To invoke the DB2 Information Center on a computer on which a DB2 UDB client or server is installed:

- From the Start Menu (Windows operating system): Click **Start** → **Programs** → **IBM DB2** → **Information** → **Information Center**.
- From the command line prompt:
 - For Linux and UNIX operating systems, issue the **db2icdocs** command.
 - For the Windows operating system, issue the **db2icdocs.exe** command.

To open the DB2 Information Center installed on an intranet server or local computer in a Web browser:

- Open the Web page at <http://<host-name>:<port-number>/>, where <host-name> represents the host name and <port-number> represents the port number on which the DB2 Information Center is available.

To open the DB2 Information Center on the IBM Web site in a Web browser:

- Open the Web page at publib.boulder.ibm.com/infocenter/db2help/.

Related concepts:

- “DB2 Information Center” on page 68
- “DB2 Information Center installation scenarios” on page 69

Related tasks:

- “Displaying topics in your preferred language in the DB2 Information Center” on page 78
- “Invoking contextual help from a DB2 tool” on page 85
- “Updating the DB2 Information Center installed on your computer or intranet server” on page 77
- “Invoking command help from the command line processor” on page 87
- “Setting the location for accessing the DB2 Information Center: Common GUI help”

Related reference:

- “HELP Command” in the *Command Reference*

Updating the DB2 Information Center installed on your computer or intranet server

The DB2 Information Center available from <http://publib.boulder.ibm.com/infocenter/db2help/> will be periodically updated with new or changed documentation. IBM may also make DB2 Information Center updates available to download and install on your computer or intranet server. Updating the DB2 Information Center does not update DB2 client or server products.

Prerequisites:

You must have access to a computer that is connected to the Internet.

Procedure:

To update the DB2 Information Center installed on your computer or intranet server:

1. Open the DB2 Information Center hosted on the IBM Web site at: <http://publib.boulder.ibm.com/infocenter/db2help/>
2. In the Downloads section of the welcome page under the Service and Support heading, click the **DB2 Universal Database documentation** link.
3. Determine if the version of your DB2 Information Center is out of date by comparing the latest refreshed documentation image level to the documentation level you have installed. The documentation level you have installed is listed on the DB2 Information Center welcome page.

4. If a more recent version of the DB2 Information Center is available, download the latest refreshed *DB2 Information Center* image applicable to your operating system.
5. To install the refreshed *DB2 Information Center* image, follow the instructions provided on the Web page.

Related concepts:

- “DB2 Information Center installation scenarios” on page 69

Related tasks:

- “Invoking the DB2 Information Center” on page 76
- “Installing the DB2 Information Center using the DB2 Setup wizard (UNIX)” on page 72
- “Installing the DB2 Information Center using the DB2 Setup wizard (Windows)” on page 74

Displaying topics in your preferred language in the DB2 Information Center

The DB2 Information Center attempts to display topics in the language specified in your browser preferences. If a topic has not been translated into your preferred language, the DB2 Information Center displays the topic in English.

Procedure:

To display topics in your preferred language in the Internet Explorer browser:

1. In Internet Explorer, click the **Tools** → **Internet Options** → **Languages...** button. The Language Preferences window opens.
2. Ensure your preferred language is specified as the first entry in the list of languages.
 - To add a new language to the list, click the **Add...** button.

Note: Adding a language does not guarantee that the computer has the fonts required to display the topics in the preferred language.

- To move a language to the top of the list, select the language and click the **Move Up** button until the language is first in the list of languages.
3. Refresh the page to display the DB2 Information Center in your preferred language.

To display topics in your preferred language in the Mozilla browser:

1. In Mozilla, select the **Edit** → **Preferences** → **Languages** button. The Languages panel is displayed in the Preferences window.
2. Ensure your preferred language is specified as the first entry in the list of languages.
 - To add a new language to the list, click the **Add...** button to select a language from the Add Languages window.
 - To move a language to the top of the list, select the language and click the **Move Up** button until the language is first in the list of languages.
3. Refresh the page to display the DB2 Information Center in your preferred language.

Related concepts:

- “DB2 Information Center” on page 68

DB2 PDF and printed documentation

The following tables provide official book names, form numbers, and PDF file names. To order hardcopy books, you must know the official book name. To print a PDF file, you must know the PDF file name.

The DB2 documentation is categorized by the following headings:

- Core DB2 information
- Administration information
- Application development information
- Business intelligence information
- DB2 Connect information
- Getting started information
- Tutorial information
- Optional component information
- Release notes

The following tables describe, for each book in the DB2 library, the information needed to order the hard copy, or to print or view the PDF for that book. A full description of each of the books in the DB2 library is available from the IBM Publications Center at www.ibm.com/shop/publications/order

Core DB2 information

The information in these books is fundamental to all DB2 users; you will find this information useful whether you are a programmer, a database administrator, or someone who works with DB2 Connect, DB2 Warehouse Manager, or other DB2 products.

Table 10. Core DB2 information

Name	Form Number	PDF File Name
<i>IBM DB2 Universal Database Command Reference</i>	SC09-4828	db2n0x81
<i>IBM DB2 Universal Database Glossary</i>	No form number	db2t0x81
<i>IBM DB2 Universal Database Message Reference, Volume 1</i>	GC09-4840, not available in hardcopy	db2m1x81
<i>IBM DB2 Universal Database Message Reference, Volume 2</i>	GC09-4841, not available in hardcopy	db2m2x81
<i>IBM DB2 Universal Database What's New</i>	SC09-4848	db2q0x81

Administration information

The information in these books covers those topics required to effectively design, implement, and maintain DB2 databases, data warehouses, and federated systems.

Table 11. Administration information

Name	Form number	PDF file name
IBM DB2 Universal Database Administration Guide: Planning	SC09-4822	db2d1x81
IBM DB2 Universal Database Administration Guide: Implementation	SC09-4820	db2d2x81
IBM DB2 Universal Database Administration Guide: Performance	SC09-4821	db2d3x81
IBM DB2 Universal Database Administrative API Reference	SC09-4824	db2b0x81
IBM DB2 Universal Database Data Movement Utilities Guide and Reference	SC09-4830	db2dmx81
IBM DB2 Universal Database Data Recovery and High Availability Guide and Reference	SC09-4831	db2hax81
IBM DB2 Universal Database Data Warehouse Center Administration Guide	SC27-1123	db2ddx81
IBM DB2 Universal Database SQL Reference, Volume 1	SC09-4844	db2s1x81
IBM DB2 Universal Database SQL Reference, Volume 2	SC09-4845	db2s2x81
IBM DB2 Universal Database System Monitor Guide and Reference	SC09-4847	db2f0x81

Application development information

The information in these books is of special interest to application developers or programmers working with DB2 Universal Database (DB2 UDB). You will find information about supported languages and compilers, as well as the documentation required to access DB2 UDB using the various supported programming interfaces, such as embedded SQL, ODBC, JDBC, SQLJ, and CLI. If you are using the DB2 Information Center, you can also access HTML versions of the source code for the sample programs.

Table 12. Application development information

Name	Form number	PDF file name
IBM DB2 Universal Database Application Development Guide: Building and Running Applications	SC09-4825	db2axx81
IBM DB2 Universal Database Application Development Guide: Programming Client Applications	SC09-4826	db2a1x81
IBM DB2 Universal Database Application Development Guide: Programming Server Applications	SC09-4827	db2a2x81

Table 12. Application development information (continued)

Name	Form number	PDF file name
<i>IBM DB2 Universal Database Call Level Interface Guide and Reference, Volume 1</i>	SC09-4849	db211x81
<i>IBM DB2 Universal Database Call Level Interface Guide and Reference, Volume 2</i>	SC09-4850	db212x81
<i>IBM DB2 Universal Database Data Warehouse Center Application Integration Guide</i>	SC27-1124	db2adx81
<i>IBM DB2 XML Extender Administration and Programming</i>	SC27-1234	db2sxx81

Business intelligence information

The information in these books describes how to use components that enhance the data warehousing and analytical capabilities of DB2 Universal Database.

Table 13. Business intelligence information

Name	Form number	PDF file name
<i>IBM DB2 Warehouse Manager Standard Edition Information Catalog Center Administration Guide</i>	SC27-1125	db2dix81
<i>IBM DB2 Warehouse Manager Standard Edition Installation Guide</i>	GC27-1122	db2idx81
<i>IBM DB2 Warehouse Manager Standard Edition Managing ETI Solution Conversion Programs with DB2 Warehouse Manager</i>	SC18-7727	iwhe1mstx80

DB2 Connect information

The information in this category describes how to access data on mainframe and midrange servers using DB2 Connect Enterprise Edition or DB2 Connect Personal Edition.

Table 14. DB2 Connect information

Name	Form number	PDF file name
<i>IBM Connectivity Supplement</i>	No form number	db2h1x81
<i>IBM DB2 Connect Quick Beginnings for DB2 Connect Enterprise Edition</i>	GC09-4833	db2c6x81
<i>IBM DB2 Connect Quick Beginnings for DB2 Connect Personal Edition</i>	GC09-4834	db2c1x81
<i>IBM DB2 Connect User's Guide</i>	SC09-4835	db2c0x81

Getting started information

The information in this category is useful when you are installing and configuring servers, clients, and other DB2 products.

Table 15. Getting started information

Name	Form number	PDF file name
<i>IBM DB2 Universal Database Quick Beginnings for DB2 Clients</i>	GC09-4832, not available in hardcopy	db2itx81
<i>IBM DB2 Universal Database Quick Beginnings for DB2 Servers</i>	GC09-4836	db2isx81
<i>IBM DB2 Universal Database Quick Beginnings for DB2 Personal Edition</i>	GC09-4838	db2i1x81
<i>IBM DB2 Universal Database Installation and Configuration Supplement</i>	GC09-4837, not available in hardcopy	db2iyx81
<i>IBM DB2 Universal Database Quick Beginnings for DB2 Data Links Manager</i>	GC09-4829	db2z6x81

Tutorial information

Tutorial information introduces DB2 features and teaches how to perform various tasks.

Table 16. Tutorial information

Name	Form number	PDF file name
<i>Business Intelligence Tutorial: Introduction to the Data Warehouse</i>	No form number	db2tux81
<i>Business Intelligence Tutorial: Extended Lessons in Data Warehousing</i>	No form number	db2tax81
<i>Information Catalog Center Tutorial</i>	No form number	db2aix81
<i>Video Central for e-business Tutorial</i>	No form number	db2twx81
<i>Visual Explain Tutorial</i>	No form number	db2tvx81

Optional component information

The information in this category describes how to work with optional DB2 components.

Table 17. Optional component information

Name	Form number	PDF file name
<i>IBM DB2 Cube Views Guide and Reference</i>	SC18-7298	db2aax81

Table 17. Optional component information (continued)

Name	Form number	PDF file name
IBM DB2 Query Patroller Guide: Installation, Administration and Usage Guide	GC09-7658	db2dwx81
IBM DB2 Spatial Extender and Geodetic Extender User's Guide and Reference	SC27-1226	db2sbx81
IBM DB2 Universal Database Data Links Manager Administration Guide and Reference	SC27-1221	db2z0x82
DB2 Net Search Extender Administration and User's Guide	SH12-6740	N/A
Note: HTML for this document is <i>not</i> installed from the HTML documentation CD.		

Release notes

The release notes provide additional information specific to your product's release and FixPak level. The release notes also provide summaries of the documentation updates incorporated in each release, update, and FixPak.

Table 18. Release notes

Name	Form number	PDF file name
DB2 Release Notes	See note.	See note.
DB2 Installation Notes	Available on product CD-ROM only.	Not available.

Note: The Release Notes are available in:

- XHTML and Text format, on the product CDs
- PDF format, on the PDF Documentation CD

In addition the portions of the Release Notes that discuss *Known Problems and Workarounds* and *Incompatibilities Between Releases* also appear in the DB2 Information Center.

To view the Release Notes in text format 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:

- For AIX operating systems: /usr/opt/db2_08_01
- For all other UNIX-based operating systems: /opt/IBM/db2/V8.1

Related concepts:

- "DB2 documentation and help" on page 67

Related tasks:

- "Printing DB2 books from PDF files" on page 84
- "Ordering printed DB2 books" on page 84
- "Invoking contextual help from a DB2 tool" on page 85

Printing DB2 books from PDF files

You can print DB2 books from the PDF files on the *DB2 PDF Documentation* CD. Using Adobe Acrobat Reader, you can print either the entire book or a specific range of pages.

Prerequisites:

Ensure that you have Adobe Acrobat Reader installed. If you need to install Adobe Acrobat Reader, it is available from the Adobe Web site at www.adobe.com

Procedure:

To print a DB2 book from a PDF file:

1. Insert the *DB2 PDF Documentation* CD. On UNIX operating systems, mount the DB2 PDF Documentation CD. Refer to your *Quick Beginnings* book for details on how to mount a CD on UNIX operating systems.
2. Open `index.htm`. The file opens in a browser window.
3. Click on the title of the PDF you want to see. The PDF will open in Acrobat Reader.
4. Select **File** → **Print** to print any portions of the book that you want.

Related concepts:

- “DB2 Information Center” on page 68

Related tasks:

- “Mounting the CD-ROM (AIX)” in the *Quick Beginnings for DB2 Servers*
- “Mounting the CD-ROM (HP-UX)” in the *Quick Beginnings for DB2 Servers*
- “Mounting the CD-ROM (Linux)” in the *Quick Beginnings for DB2 Servers*
- “Ordering printed DB2 books” on page 84
- “Mounting the CD-ROM (Solaris Operating Environment)” in the *Quick Beginnings for DB2 Servers*

Related reference:

- “DB2 PDF and printed documentation” on page 79

Ordering printed DB2 books

If you prefer to use hardcopy books, you can order them in one of three ways.

Procedure:

Printed books can be ordered in some countries or regions. Check the IBM Publications website for your country or region to see if this service is available in your country or region. When the publications are available for ordering, you can:

- Contact your IBM authorized dealer or marketing representative. To find a local IBM representative, check the IBM Worldwide Directory of Contacts at www.ibm.com/planetwide
- Phone 1-800-879-2755 in the United States or 1-800-IBM-4YOU in Canada.

- Visit the IBM Publications Center at <http://www.ibm.com/shop/publications/order>. The ability to order books from the IBM Publications Center may not be available in all countries.

At the time the DB2 product becomes available, the printed books are the same as those that are available in PDF format on the *DB2 PDF Documentation CD*. Content in the printed books that appears in the *DB2 Information Center CD* is also the same. However, there is some additional content available in DB2 Information Center CD that does not appear anywhere in the PDF books (for example, SQL Administration routines and HTML samples). Not all books available on the DB2 PDF Documentation CD are available for ordering in hardcopy.

Note: The DB2 Information Center is updated more frequently than either the PDF or the hardcopy books; install documentation updates as they become available or refer to the DB2 Information Center at <http://publib.boulder.ibm.com/infocenter/db2help/> to get the most current information.

Related tasks:

- “Printing DB2 books from PDF files” on page 84

Related reference:

- “DB2 PDF and printed documentation” on page 79

Invoking contextual help from a DB2 tool

Contextual help provides information about the tasks or controls that are associated with a particular window, notebook, wizard, or advisor. Contextual help is available from DB2 administration and development tools that have graphical user interfaces. There are two types of contextual help:

- Help accessed through the **Help** button that is located on each window or notebook
- Infopops, which are pop-up information windows displayed when the mouse cursor is placed over a field or control, or when a field or control is selected in a window, notebook, wizard, or advisor and F1 is pressed.

The **Help** button gives you access to overview, prerequisite, and task information. The infopops describe the individual fields and controls.

Procedure:

To invoke contextual help:

- For window and notebook help, start one of the DB2 tools, then open any window or notebook. Click the **Help** button at the bottom right corner of the window or notebook to invoke the contextual help.

You can also access the contextual help from the **Help** menu item at the top of each of the DB2 tools centers.

Within wizards and advisors, click on the Task Overview link on the first page to view contextual help.

- For infopop help about individual controls on a window or notebook, click the control, then click **F1**. Pop-up information containing details about the control is displayed in a yellow window.

Note: To display infopops simply by holding the mouse cursor over a field or control, select the **Automatically display infopops** check box on the **Documentation** page of the Tool Settings notebook.

Similar to infopops, diagnosis pop-up information is another form of context-sensitive help; they contain data entry rules. Diagnosis pop-up information is displayed in a purple window that appears when data that is not valid or that is insufficient is entered. Diagnosis pop-up information can appear for:

- Compulsory fields.
- Fields whose data follows a precise format, such as a date field.

Related tasks:

- “Invoking the DB2 Information Center” on page 76
- “Invoking message help from the command line processor” on page 86
- “Invoking command help from the command line processor” on page 87
- “Invoking SQL state help from the command line processor” on page 87
- “Access to the DB2 Information Center: Concepts help”
- “How to use the DB2 UDB help: Common GUI help”
- “Setting the location for accessing the DB2 Information Center: Common GUI help”
- “Setting up access to DB2 contextual help and documentation: Common GUI help”

Invoking message help from the command line processor

Message help describes the cause of a message and describes any action you should take in response to the error.

Procedure:

To invoke message help, open the command line processor and enter:

```
? XXXnnnnn
```

where *XXXnnnnn* represents a valid message identifier.

For example, ? SQL30081 displays help about the SQL30081 message.

Related concepts:

- “Introduction to messages” in the *Message Reference Volume 1*

Related reference:

- “db2 - Command Line Processor Invocation Command” in the *Command Reference*

Invoking command help from the command line processor

Command help explains the syntax of commands in the command line processor.

Procedure:

To invoke command help, open the command line processor and enter:

```
? command
```

where *command* represents a keyword or the entire command.

For example, ? catalog displays help for all of the CATALOG commands, while ? catalog database displays help only for the CATALOG DATABASE command.

Related tasks:

- “Invoking contextual help from a DB2 tool” on page 85
- “Invoking the DB2 Information Center” on page 76
- “Invoking message help from the command line processor” on page 86
- “Invoking SQL state help from the command line processor” on page 87

Related reference:

- “db2 - Command Line Processor Invocation Command” in the *Command Reference*

Invoking SQL state help from the command line processor

DB2 Universal Database returns an SQLSTATE value for conditions that could be the result of an SQL statement. SQLSTATE help explains the meanings of SQL states and SQL state class codes.

Procedure:

To invoke SQL state help, open the command line processor and enter:

```
? sqlstate or ? class code
```

where *sqlstate* represents a valid five-digit SQL state and *class code* represents the first two digits of the SQL state.

For example, ? 08003 displays help for the 08003 SQL state, and ? 08 displays help for the 08 class code.

Related tasks:

- “Invoking the DB2 Information Center” on page 76
- “Invoking message help from the command line processor” on page 86
- “Invoking command help from the command line processor” on page 87

DB2 tutorials

The DB2® tutorials help you learn about various aspects of DB2 Universal Database. The tutorials provide lessons with step-by-step instructions in the areas of developing applications, tuning SQL query performance, working with data warehouses, managing metadata, and developing Web services using DB2.

Before you begin:

You can view the XHTML versions of the tutorials from the Information Center at <http://publib.boulder.ibm.com/infocenter/db2help/>.

Some tutorial lessons use sample data or code. See each tutorial for a description of any prerequisites for its specific tasks.

DB2 Universal Database tutorials:

Click on a tutorial title in the following list to view that tutorial.

Business Intelligence Tutorial: Introduction to the Data Warehouse Center

Perform introductory data warehousing tasks using the Data Warehouse Center.

Business Intelligence Tutorial: Extended Lessons in Data Warehousing

Perform advanced data warehousing tasks using the Data Warehouse Center.

Information Catalog Center Tutorial

Create and manage an information catalog to locate and use metadata using the Information Catalog Center.

Visual Explain Tutorial

Analyze, optimize, and tune SQL statements for better performance using Visual Explain.

DB2 troubleshooting information

A wide variety of troubleshooting and problem determination information is available to assist you in using DB2[®] products.

DB2 documentation

Troubleshooting information can be found throughout the DB2 Information Center, as well as throughout the PDF books that make up the DB2 library. You can refer to the "Support and troubleshooting" branch of the DB2 Information Center navigation tree (in the left pane of your browser window) to see a complete listing of the DB2 troubleshooting documentation.

DB2 Technical Support Web site

Refer to the DB2 Technical Support Web site if you are experiencing problems and want help finding possible causes and solutions. The Technical Support site has links to the latest DB2 publications, TechNotes, Authorized Program Analysis Reports (APARs), FixPaks and the latest listing of internal DB2 error codes, and other resources. You can search through this knowledge base to find possible solutions to your problems.

Access the DB2 Technical Support Web site at <http://www.ibm.com/software/data/db2/udb/winos2unix/support>

DB2 Problem Determination Tutorial Series

Refer to the DB2 Problem Determination Tutorial Series Web site to find information on how to quickly identify and resolve problems you might encounter while working with DB2 products. One tutorial introduces you to the DB2 problem determination facilities and tools available, and helps you decide when to use them. Other tutorials deal with related topics, such

as "Database Engine Problem Determination", "Performance Problem Determination", and "Application Problem Determination".

See the full set of DB2 problem determination tutorials on the DB2 Technical Support site at <http://www.ibm.com/software/data/support/pdm/db2tutorials.html>

Related concepts:

- "DB2 Information Center" on page 68
- "Introduction to problem determination - DB2 Technical Support tutorial" in the *Troubleshooting Guide*

Accessibility

Accessibility features help users with physical disabilities, such as restricted mobility or limited vision, to use software products successfully. The following list specifies the major accessibility features in DB2[®] Version 8 products:

- All DB2 functionality is available using the keyboard for navigation instead of the mouse. For more information, see "Keyboard input and navigation."
- You can customize the size and color of the fonts on DB2 user interfaces. For more information, see "Accessible display."
- DB2 products support accessibility applications that use the Java[™] Accessibility API. For more information, see "Compatibility with assistive technologies" on page 90.
- DB2 documentation is provided in an accessible format. For more information, see "Accessible documentation" on page 90.

Keyboard input and navigation

Keyboard input

You can operate the DB2 tools using only the keyboard. You can use keys or key combinations to perform operations that can also be done using a mouse. Standard operating system keystrokes are used for standard operating system operations.

For more information about using keys or key combinations to perform operations, see Keyboard shortcuts and accelerators: Common GUI help.

Keyboard navigation

You can navigate the DB2 tools user interface using keys or key combinations.

For more information about using keys or key combinations to navigate the DB2 Tools, see Keyboard shortcuts and accelerators: Common GUI help.

Keyboard focus

In UNIX[®] operating systems, the area of the active window where your keystrokes will have an effect is highlighted.

Accessible display

The DB2 tools have features that improve accessibility for users with low vision or other visual impairments. These accessibility enhancements include support for customizable font properties.

Font settings

You can select the color, size, and font for the text in menus and dialog windows, using the Tools Settings notebook.

For more information about specifying font settings, see [Changing the fonts for menus and text: Common GUI help](#).

Non-dependence on color

You do not need to distinguish between colors in order to use any of the functions in this product.

Compatibility with assistive technologies

The DB2 tools interfaces support the Java Accessibility API, which enables you to use screen readers and other assistive technologies with DB2 products.

Accessible documentation

Documentation for DB2 is provided in XHTML 1.0 format, which is viewable in most Web browsers. XHTML allows you to view documentation according to the display preferences set in your browser. It also allows you to use screen readers and other assistive technologies.

Syntax diagrams are provided in dotted decimal format. This format is available only if you are accessing the online documentation using a screen-reader.

Related concepts:

- “Dotted decimal syntax diagrams” on page 90

Dotted decimal syntax diagrams

Syntax diagrams are provided in dotted decimal format for users accessing the Information Center using a screen reader.

In dotted decimal format, each syntax element is written on a separate line. If two or more syntax elements are always present together (or always absent together), they can appear on the same line, because they can be considered as a single compound syntax element.

Each line starts with a dotted decimal number; for example, 3 or 3.1 or 3.1.1. To hear these numbers correctly, make sure that your screen reader is set to read out punctuation. All the syntax elements that have the same dotted decimal number (for example, all the syntax elements that have the number 3.1) are mutually exclusive alternatives. If you hear the lines 3.1 USERID and 3.1 SYSTEMID, you know that your syntax can include either USERID or SYSTEMID, but not both.

The dotted decimal numbering level denotes the level of nesting. For example, if a syntax element with dotted decimal number 3 is followed by a series of syntax elements with dotted decimal number 3.1, all the syntax elements numbered 3.1 are subordinate to the syntax element numbered 3.

Certain words and symbols are used next to the dotted decimal numbers to add information about the syntax elements. Occasionally, these words and symbols might occur at the beginning of the element itself. For ease of identification, if the word or symbol is a part of the syntax element, it is preceded by the backslash (\) character. The * symbol can be used next to a dotted decimal number to indicate

that the syntax element repeats. For example, syntax element *FILE with dotted decimal number 3 is given the format 3 * FILE. Format 3* FILE indicates that syntax element FILE repeats. Format 3* * FILE indicates that syntax element * FILE repeats.

Characters such as commas, which are used to separate a string of syntax elements, are shown in the syntax just before the items they separate. These characters can appear on the same line as each item, or on a separate line with the same dotted decimal number as the relevant items. The line can also show another symbol giving information about the syntax elements. For example, the lines 5.1*, 5.1 LASTRUN, and 5.1 DELETE mean that if you use more than one of the LASTRUN and DELETE syntax elements, the elements must be separated by a comma. If no separator is given, assume that you use a blank to separate each syntax element.

If a syntax element is preceded by the % symbol, this indicates a reference that is defined elsewhere. The string following the % symbol is the name of a syntax fragment rather than a literal. For example, the line 2.1 %OP1 means that you should refer to separate syntax fragment OP1.

The following words and symbols are used next to the dotted decimal numbers:

- ? means an optional syntax element. A dotted decimal number followed by the ? symbol indicates that all the syntax elements with a corresponding dotted decimal number, and any subordinate syntax elements, are optional. If there is only one syntax element with a dotted decimal number, the ? symbol is displayed on the same line as the syntax element, (for example 5? NOTIFY). If there is more than one syntax element with a dotted decimal number, the ? symbol is displayed on a line by itself, followed by the syntax elements that are optional. For example, if you hear the lines 5 ?, 5 NOTIFY, and 5 UPDATE, you know that syntax elements NOTIFY and UPDATE are optional; that is, you can choose one or none of them. The ? symbol is equivalent to a bypass line in a railroad diagram.
- ! means a default syntax element. A dotted decimal number followed by the ! symbol and a syntax element indicates that the syntax element is the default option for all syntax elements that share the same dotted decimal number. Only one of the syntax elements that share the same dotted decimal number can specify a ! symbol. For example, if you hear the lines 2? FILE, 2.1! (KEEP), and 2.1 (DELETE), you know that (KEEP) is the default option for the FILE keyword. In this example, if you include the FILE keyword but do not specify an option, default option KEEP will be applied. A default option also applies to the next higher dotted decimal number. In this example, if the FILE keyword is omitted, default FILE(KEEP) is used. However, if you hear the lines 2? FILE, 2.1, 2.1.1! (KEEP), and 2.1.1 (DELETE), the default option KEEP only applies to the next higher dotted decimal number, 2.1 (which does not have an associated keyword), and does not apply to 2? FILE. Nothing is used if the keyword FILE is omitted.
- * means a syntax element that can be repeated 0 or more times. A dotted decimal number followed by the * symbol indicates that this syntax element can be used zero or more times; that is, it is optional and can be repeated. For example, if you hear the line 5.1* data area, you know that you can include one data area, more than one data area, or no data area. If you hear the lines 3*, 3 HOST, and 3 STATE, you know that you can include HOST, STATE, both together, or nothing.

Appendix B. DB2 client merge modules

Using Windows installer merge modules, you can easily add DB2 client functionality to any product that uses the Windows installer.

For more information on merge module technology, see the documentation included with your installation authoring product or at <http://msdn.microsoft.com>.

If you install an application that includes DB2 client merge modules, it must be removed before installing other DB2 applications. Similarly, if another DB2 product is already installed, you must remove this product before installing your application.

The following merge modules are available for your use:

DB2 Base Client Merge Module.msm

This module provides the functionality required for database connection, SQL, and DB2 command functionality.

DB2 Bind Files Merge Module.msm

This module contains the system bind files which are used by DB2 for such tasks as creating databases or accessing remote host databases.

DB2 Client Administration Tools Merge Module.msm

This module provides various DB2 graphical and command line tools used to administer local and remote databases.

DB2 JDBC and SQLJ Support.msm

This module contains JDBC and SQLJ support allowing Java samples to be built and run using the JDBC driver.

DB2 LDAP Exploitation Merge Module.msm

This module allows DB2 to use an LDAP directory to store database directory and configuration information.

DB2 Named Pipes Support Merge Module.msm

This module allows you to use the Named Pipes communication protocol to transfer data in a client-server environment.

DB2 ODBC Support Merge Module.msm

This module provides support for applications that use Open Database Connectivity (ODBC) to access data.

DB2 OLE DB Support Merge Module.msm

This module provides a set of interfaces that allow applications to uniformly access data stored in different data sources.

DB2 Merge Module Configurator.msm

This configurable module allows you to create a response file which can be used to configure DB2 within your installation. The configurable option specifies the location of a response file used to configure DB2. Types of configuration include creating instances, setting database manager configuration parameters or DB2 profile registry variables.

For information about the sequence of various custom actions and the proposed sequences, view the merge module with a tool like Orca.

The following merge modules contain DB2 client messages used by DB2.
Depending on the language(s) of your product, include and install the components
in the appropriate merge module.

DB2 Client Messages - Arabic.msm
DB2 Client Messages - Bulgarian.msm
DB2 Client Messages - Chinese(Simplified).msm
DB2 Client Messages - Chinese(Traditional).msm
DB2 Client Messages - Croatian.msm
DB2 Client Messages - Czech.msm
DB2 Client Messages - Danish.msm
DB2 Client Messages - Dutch.msm
DB2 Client Messages - English.msm
DB2 Client Messages - Finnish.msm
DB2 Client Messages - French.msm
DB2 Client Messages - German.msm
DB2 Client Messages - Greek.msm
DB2 Client Messages - Hebrew.msm
DB2 Client Messages - Hungarian.msm
DB2 Client Messages - Italian.msm
DB2 Client Messages - Japanese.msm
DB2 Client Messages - Korean.msm
DB2 Client Messages - Norwegian.msm
DB2 Client Messages - Polish.msm
DB2 Client Messages - Portuguese(Brazilian).msm
DB2 Client Messages - Portuguese(Standard).msm
DB2 Client Messages - Romanian.msm
DB2 Client Messages - Russian.msm
DB2 Client Messages - Slovak.msm
DB2 Client Messages - Slovenian.msm
DB2 Client Messages - Spanish.msm
DB2 Client Messages - Swedish.msm

Related concepts:

- “Response file installation basics” in the *Installation and Configuration Supplement*
- “DB2 Run-Time Client Lite” on page 4

Related tasks:

- “Response file installation of DB2 overview (Windows)” in the *Installation and Configuration Supplement*
- “Installing a DB2 product using a response file (Windows)” in the *Installation and Configuration Supplement*
- “Installing DB2 clients (Windows)” on page 21

Appendix C. DB2 Run-Time Client Lite command line options

The following list is a subset of the available command line options for the installation of the DB2 Run-Time Client Lite.

/w This option forces `setup.exe` to wait until the installation is complete before exiting. For a batch file installation, you may want to insert `/WAIT` before the `setup.exe` command. For example:

```
start /WAIT setup.exe /w
```

/l*v[log file name]

This option allows you to create a log of the installation. The log can be used to troubleshoot any problems that you may encounter during the installation.

/v This option allows you to pass additional command line options and public properties to the Windows Installer. You must specify this options to perform a silent installation. For more information on the available Windows Installer options, see <http://www.msdn.microsoft.com/>

/qn This option allows you to perform a silent installation.

/L This option allow you to specify the setup language. For example, to specify French as the setup language, type the **setup.exe /L1036** command.

Table 19. Language Identifiers

Language	Identifier
Arabic (Saudi Arabia)	1025
Bulgarian	1026
Chinese (Simplified)	2052
Chinese (Traditional)	1028
Croatian	1050
Czech	1029
Danish	1030
Dutch (Standard)	1043
English	1033
Finnish	1035
French (Standard)	1036
German	1031
Greek	1032
Hebrew	1037
Hungarian	1038
Italian (Standard)	1040
Japanese	1041
Korean	1042
Norwegian (Bokmal)	1044
Polish	1045
Portuguese (Brazilian)	1046

Table 19. Language Identifiers (continued)

Language	Identifier
Portuguese (Standard)	2070
Romanian	1048
Russian	1049
Slovak	1051
Slovenian	1060
Spanish (Traditional Sort)	1034
Swedish	1053
Turkish	1055

Here are public properties which can be specified to control the installation of a DB2 Run-Time Client Lite:

- These parameters must be the last parameters in the command line.
- RSP_FILE_PATH - this should contain the full path to the response file that will be used to drive the installation of the runtime client. This is only valid when /qn is specified.

To perform a response file installation, the following command line parameter should be used:

```
setup /v"/qn RSP_FILE_PATH=[Full Path to the Response File]"
```

Related concepts:

- "DB2 Run-Time Client Lite" on page 4

Related tasks:

- "Installing DB2 clients (Windows)" on page 21

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C/370	PowerPC
CICS	pSeries
Database 2	QBIC
DataHub	QMF
DataJoiner	RACF
DataPropagator	RISC System/6000
DataRefresher	RS/6000
DB2	S/370
DB2 Connect	SP
DB2 Extenders	SQL/400
DB2 OLAP Server	SQL/DS
DB2 Information Integrator	System/370
DB2 Query Patroller	System/390
DB2 Universal Database	SystemView
Distributed Relational Database Architecture	Tivoli
DRDA	VisualAge
eServer	VM/ESA
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