IBM® DB2 Universal Database™

Quick Beginnings for DB2 Servers

Version 8.2

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Single-partition
database environment

Partitioned database
environment

```
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│ requirements        │      │ requirements        │
└─────────────────────┘      └─────────────────────┘

┌─────────────────────┐      ┌─────────────────────┐
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Use this diagram to help navigate through this book. The diagram is not
intended to represent your specific installation steps. Use the information
within this book to create your own specific installation plan.

Chapter 1. DB2 servers

DB2 UDB Enterprise Server Edition

DB2® Universal Database (UDB) Enterprise Server Edition (ESE) is a multiuser version of DB2 that allows you to create and manage single-partitioned or partitioned database environments. Partitioned database systems can manage high volumes of data and provide benefits such as increased performance and high availability. Other features of DB2 UDB Enterprise Server Edition include:

- A data warehouse server and related components.
- DB2 Connect™ functionality for accessing data stored on midrange and mainframe database systems such as DB2 for iSeries™ or DB2 UDB for z/OS™ and OS/390®. DB2 UDB Enterprise Server Edition provides support for both local and remote DB2 clients.

  Use of the DB2 Connect component is limited to five (5) registered users per server. If additional users are required, a separate DB2 Connect program must be acquired. Contact your IBM® sales representative for more information.
- Satellite administration capabilities allow DB2 UDB ESE to remotely administer DB2 UDB Personal Edition and DB2 UDB Workgroup Server Edition database servers that are configured as satellites. For more information about satellite capabilities, refer to the satellite administration documentation.

DB2 UDB Workgroup edition offers a multiuser product similar to DB2 UDB ESE, but without the ability to create partitioned database environments and without DB2 Connect functionality.

The following diagram shows a DB2 UDB ESE configuration with four database partition servers, one per computer. Setup instructions are based on this configuration but can easily be adjusted for partitioned configurations with a fewer or greater number of computers and database partition servers.
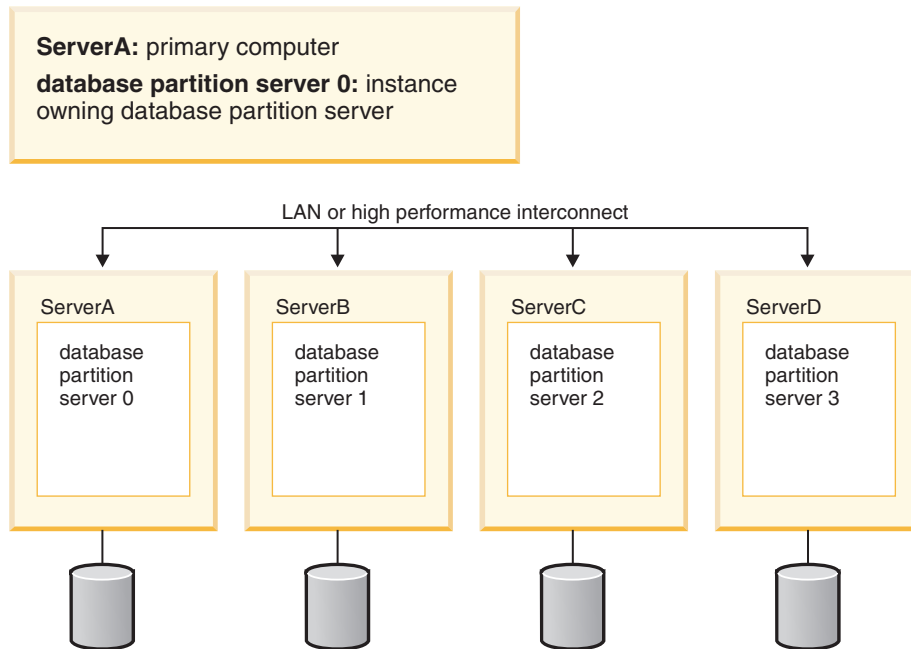
Figure 1. A typical partitioned DB2 server environment with one instance owning computer and four participating computers

ServerA is the primary or instance-owning computer. ServerB, ServerC, and ServerD are additional participating computers.

Related tasks:
- "Single-partition installation (Windows)" on page 46
- "Partitioned installation (Windows)" on page 47
- "Single-partition installation (UNIX)" on page 48
- "Partitioned installation (UNIX)" on page 48

DB2 Workgroup Server Edition

DB2® Workgroup Server Edition is a multi-user version of DB2. It is designed for use in a Local Area Network (LAN) environment and provides support for both local and remote DB2 clients. DB2 Workgroup Server Edition also includes data warehouse capabilities, high availability function, and can be administered remotely from a satellite control database. For more information about satellite functionality, refer to the satellite administration documentation.

Related tasks:
- "Single-partition installation (Windows)" on page 46
- "Single-partition installation (UNIX)" on page 48

DB2 UDB Express Edition

IBM® DB2® Universal Database Express (DB2 UDB Express) is the newest member of the DB2 Universal Database™ Version 8 product family. It combines the power, function, and reliability of IBM's award winning DB2 UDB relational database with simplicity in packaging, installation, and deployment at a minimal investment cost to meet the data management needs of small and medium businesses.

DB2 UDB Express is a specially tailored database offering for small and medium businesses (SMBs). DB2 UDB Express is designed for customers with minimal in house database skills who need an easy-to-install database integrated into their application software solutions. It is a multi-user version of DB2 that supports local and remote applications in standalone and local area network (LAN) environments.

DB2 UDB Express was developed in consultation with IBM Business Partners and delivers the following key functions:

Simplified deployment

The response file installation capability allows an application or solution provider to incorporate the installation of DB2 UDB Express as a transparent part of a solution. Combining response file installation with the ability to create databases and configure DB2 UDB Express using scripts supports the ability to create an up-and-running application solution.

DB2 UDB Express can be deployed on either Linux or Windows® operating systems, offering you flexibility in the choice of hardware and operating system for deployment.

Autonomic management capabilities

DB2 UDB Express incorporates a suite of advanced management and autonomic computing capabilities. These support the simplification and automation of administration tasks, eliminating many of the costs traditionally associated with managing relational databases.

The Configuration Advisor provides facilities to configure the DB2 UDB Express environment to optimize performance. The Health Center monitors your DB2 system, alerting you to potential operational issues, and providing advice about how to resolve them.

Autonomic maintenance can also be set up out of the box with a new Wizard. It creates a new database on the disk or directory of your choice, assigns disk space for your data, configures the new database for performance, and turns on automatic maintenance and configures notification by e-mail or pager if the database needs attention.

Designed for 24-hour availability

DB2 UDB Express is designed to support 24x7 operation; you do not need to shut down the database to perform maintenance. Database backups can be performed online or offline.

Application development support

DB2 UDB Express supports most industry standard application interfaces including SQL, X/Open, ODBC, .NET, JDBC, Java™, XML and Web services. DB2 UDB Express provides add-ins for popular IDEs, such as, WebSphere® Studio Application Developer, Microsoft® Visual Studio .NET, Microsoft Visual Basic, Microsoft Visual C++, Microsoft Visual InterDev.

Application developers can then leverage DB2 UDB Express's advanced functions in the programming model they are familiar with, leverage their existing skills, reduce time to market, cut overall application deployment costs, and accelerate time to value.

Investment protection

DB2 UDB Express offers the same core capabilities across the entire line of IBM database servers. You can benefit from the same reliability, security, application development interfaces and optimization as your data volumes, number of users, or utilization increase. You can leverage your investment

with DB2 UDB Express through upgrades to other scalable editions of DB2 UDB to support more operating systems and higher throughput on larger hardware installations.

For more information, see the *Quick Beginnings for DB2 Universal Database Express Edition* book.

Chapter 2. DB2 clients

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 8
- "DB2 Administration Client" on page 9
- "DB2 Application Development Client" on page 9
- "Response file installation basics" in the *Installation and Configuration Supplement*
- "DB2 Run-Time Client Lite" on page 8

Related tasks:

- "Installing DB2 clients (Windows)" on page 146
- "Installing DB2 clients (UNIX)" on page 153

Related reference:

- "Version 8 incompatibilities with previous releases" in the *Administration Guide: Planning*
- "DB2 client merge modules" in the *Quick Beginnings for DB2 Clients*

Client types

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 consists of one language that has support for all languages and several images that are language specific. All images contain English language 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 8
- "DB2 Administration Client" on page 9
- "DB2 Application Development Client" on page 9

Related tasks:
- "Installing DB2 clients (Windows)" on page 146

Related reference:
- "DB2 client merge modules" in the *Quick Beginnings for DB2 Clients*

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 7
- "DB2 Administration Client" on page 9
- "DB2 Application Development Client" on page 9
- "DB2 Run-Time Client Lite" on page 8

Related tasks:
- "Installing DB2 clients (Windows)" on page 146
- "Installing DB2 clients (UNIX)" on page 153

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 7
- "DB2 Run-Time Client" on page 8
- "DB2 Application Development Client" on page 9
- "DB2 Run-Time Client Lite" on page 8

Related tasks:
- "Installing DB2 clients (Windows)" on page 146
- "Installing DB2 clients (UNIX)" on page 153

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 7
- "DB2 Run-Time Client" on page 8
- "DB2 Administration Client" on page 9
- "DB2 Run-Time Client Lite" on page 8

Related tasks:
- "Installing DB2 clients (Windows)" on page 146
- "Installing DB2 clients (UNIX)" on page 153

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 7

Related reference:
- "Supported and non-supported client configurations" on page 159

Part 2. Migrating DB2 servers
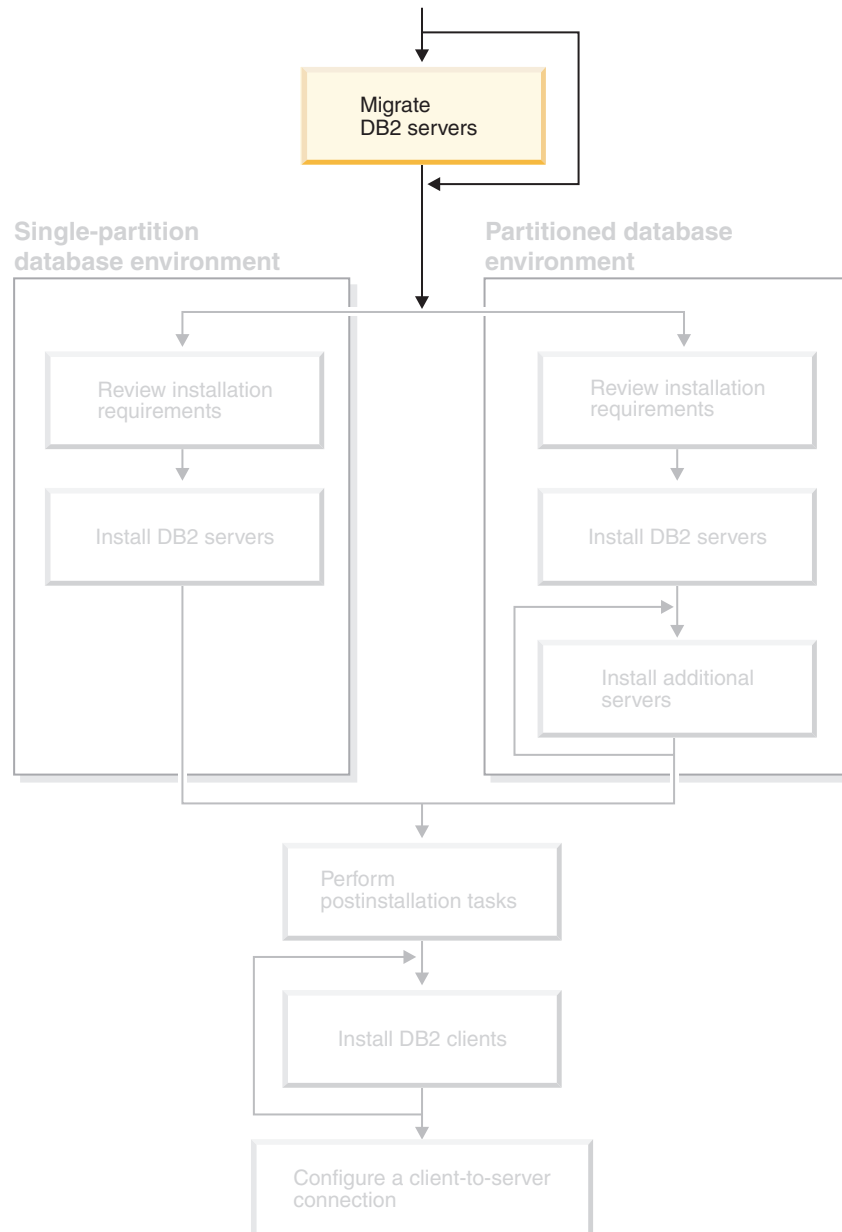
```
                              ┌──────────────┐
                              │   Migrate    │
                              │ DB2 servers  │
                              └──────────────┘
```

**Single-partition   Partitioned database
database environment**   environment**

```
   ┌─────────────────┐                    ┌─────────────────┐
   │ Review installation│                 │ Review installation│
   │ requirements      │                  │ requirements      │
   └─────────────────┘                    └─────────────────┘

   ┌─────────────────┐                    ┌─────────────────┐
   │ Install DB2 servers│                 │ Install DB2 servers│
   └─────────────────┘                    └─────────────────┘

                                          ┌─────────────────┐
                                          │ Install additional│
                                          │ servers           │
                                          └─────────────────┘
```

```
                    ┌─────────────────────┐
                    │ Perform             │
                    │ postinstallation tasks│
                    └─────────────────────┘

                    ┌─────────────────────┐
                    │ Install DB2 clients │
                    └─────────────────────┘

                    ┌─────────────────────┐
                    │ Configure a client-to-server│
                    │ connection          │
                    └─────────────────────┘
```

Use this diagram to help navigate through this book. The diagram is not
intended to represent your specific installation steps. Use the information
within this book to create your own specific installation plan.

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Chapter 3. Migration considerations

Migrating to DB2 UDB Version 8.2

Migrating to DB2 UDB Version 8.2 depends on what level of DB2 UDB you currently have installed.

DB2 UDB Version 8 (with or without any FixPaks installed)
> If you have DB2 UDB Version 8 installed, you can simply install DB2 Version 8.2 using the DB2 Version 8.2 FixPak. On Linux and UNIX operating system, you will also then need to run the **db2iupdt** command as is required when applying any FixPak.
>
> Running the **db2updv8** command after migrating is also recommended if you are moving from an earlier DB2 Version 8 FixPak to a newer one. This command updates the system catalogs in a database to support the current level by enabling several built-in routines. Running the **db2updv8** command is not required, but some functionality in DB2 UDB Version 8.2 will not work if it is not run.

DB2 UDB Version 6, DB2 UDB Version 7 or DataJoiner Version 2
> If you have DB2 UDB Version 6, DB2 UDB Version 7 or DataJoiner Version 2 installed, you can migrate directly to DB2 Version 8.2 on all platforms.

DB2 Migrate Now! web site

The IBM Migrate Now! to DB2 UDB web site provides an invaluable resource for migration from Oracle, Sybase, and Microsoft SQL server. You can also find a variety of tools and information to help you migrate applications, database designs, and data to DB2 UDB.

Point your web browser to:

http://www.ibm.com/software/data/db2/migration/

Migration restrictions

You should be aware of the following restrictions before you migrate to DB2 UDB Version 8:

- Migration is supported only from:
  - DB2 UDB Version 6.x or Version 7.x. (All platforms supported in Version 6.x and Version 7.x; Linux must be at Version 6 FixPak 2.)
  - DB2 DataJoiner V2.1.1 32-bit (AIX, Windows NT, and Solaris Operating Environment).
- Issuing the **migrate database** command from a DB2 UDB Version 8 client to migrate a database to a DB2 Version 8 server is supported; however, issuing the migration command from an DB2 UDB Version 6 or Version 7 client to migrate a database to a DB2 UDB Version 8 server is not supported.
- When migrating from DB2 DataJoiner V2.1.1, DB2 Information Integrator is required to support non-IBM data sources.

- Migration between platforms is not supported. For example, you cannot migrate a database from a DB2 server on Windows to a DB2 server on UNIX.
- Migrating a partitioned database system that has multiple computers requires that database migration be performed after DB2 UDB Version 8 is installed on all participating computers. Any DB2 migration commands need to be run on each of the participating computers.
- Windows allows only one version of DB2 UDB to be installed on a computer. For example, if you have DB2 UDB Version 7 installed and install DB2 UDB Version 8, DB2 UDB Version 7 is removed during the installation. All instances are migrated during DB2 installation on Windows operating systems.
- User objects within your database cannot have DB2 UDB Version 8 reserved schema names as object qualifiers. These reserved schema names include: SYSCAT, SYSSTAT, and SYSFUN.
- User-defined distinct types using the names BIGINT, REAL, DATALINK, or REFERENCE must be renamed before migrating the database.
- You cannot migrate a database that is in one of the following states:
  - Backup pending
  - Roll-forward pending
  - One or more table spaces in an abnormal state
  - Transaction inconsistent
- Restoration of back-level (DB2 Version 6.x or Version 7.x) database backups is supported, but rolling forward of back-level logs is not supported.
- Database transactions executed between database backup time and the time DB2 UDB Version 8 migration is completed are not recoverable.

Related concepts:
- "DataJoiner migration restrictions" in the *IBM DB2 Information Integrator Migration Guide*
- "DB2 Version 7 federated system migration restrictions" in the *IBM DB2 Information Integrator Migration Guide*

Related reference:
- "Reverse migration restrictions" on page 14

Reverse migration restrictions

Beginning with DB2 UDB Version 8 FixPak 1, the maximum number of tablespaces supported in a database increases from 4096 to 32768.

For the most part, you should be able to move your database from DB2 UDB Version 8 to DB2 UDB Version 8 FixPak 1 without noticing a change or having to do anything special to use the new tablespace limit.

Note the following restrictions related to moving a database from DB2 UDB Version 8 FixPak 1 (or a later DB2 UDB Version 8 FixPak) back to the DB2 Version 8 level:

- If you want to move from DB2 Version 8.2 back to DB2 Version 8.1, you will need to run the **db2demigdbd** command before going back to DB2 Version 8.1. The **db2demigdbd** is a reverse database directory files tool that restores your database directory to its Version 8.1 format.

- Moving a database that contains a tablespace ID higher than 4096 to DB2 Version 8 from DB2 Version 8 FixPak 1 or later is unsupported. Attempting to do so will result in anomalous behavior and improper operation.
- Restoring a database image that contains a tablespace ID higher than 4096 on DB2 Version 8 is unsupported. Attempting to do so results in anomalous behavior and improper operation.
- When moving from DB2 UDB Version 8 FixPak 1 (or a later DB2 UDB Version 8 FixPak) back to DB2 UDB Version 8, the log-skipping functionality is disabled until such time as the DB2TSCHG.HIS file is removed.

Related concepts:
- "Migration recommendations" on page 15

Related tasks:
- "Migrating databases" on page 28
- "Migrating DB2 UDB (Windows)" on page 27
- "Migrating DB2 UDB (UNIX)" on page 33

Related reference:
- "Migration restrictions" on page 13
- "db2demigdbd - Demigrate Database Directory Files Command" in the *Command Reference*

Migration recommendations

Consider the following recommendations when planning your database migration:

Back up log files before migration when DB2® UDB uses replication
> If you use replication for your DataJoiner® and DB2 UDB data, you must archive all of the DB2 log files before migration.
>
> For complete information on migrating your DB2 replication environment, see the IBM® DB2 Information Integrator Migration Guide: Migrating to SQL Replication Version 8 at http://www.ibm.com/software/data/integration/db2ii/support.html.

DataJoiner instance migration
> If you want to migrate an instance of DataJoiner or DB2 UDB on which you are running the Capture or Apply programs for DB2 replication, you must prepare to migrate your replication environment before you migrating the instance.
>
> For complete information on migrating your DB2 replication environment, see the IBM DB2 Information Integrator Migration Guide: Migrating to SQL Replication Version 8 at http://www.ibm.com/software/data/integration/db2ii/support.html.

Perform hardware and operating system upgrades separately from DB2 UDB migration
> Performing hardware and operating system upgrades separately from DB2 migration simplifies problem determination if you encounter migration difficulties. If you upgrade your software or hardware prior to migrating to DB2, ensure that your system is operating acceptably before attempting DB2 migration.

Dropping the detailed deadlocks event monitor

At the same time a database is created, a detailed deadlocks event monitor is also created. As with any monitor, there is some overhead associated with this event monitor. If you do not want the detailed deadlocks event monitor, then the event monitor can be dropped using the command:

```
DROP EVENT MONITOR db2detaildeadlock
```

To limit the amount of disk space that this event monitor consumes, the event monitor deactivates, and a message is written to the administration notification log, once it has reached its maximum number of output files. Removing output files that are no longer needed allows the event monitor to activate again on the next database activation.

Back-level server support

As you move your environment from DB2 Version 7 to DB2 Version 8, if you migrate your DB2 clients to Version 8 before you migrate all of your DB2 servers to Version 8, there are several restrictions and limitations. To avoid the known restrictions and limitations, migrate all of your DB2 servers to Version 8 before you migrate any of your DB2 clients to Version 8. These restrictions and limitations are not associated with DB2 Connect™; nor with zSeries®, OS/390®, or iSeries™ database servers.

Benchmark DB2 performance

Run a number of test queries before migrating DB2. Record the exact environment conditions when queries are run. Also, keep a record of the **db2expln** command output for each test query. Compare the results before and after migration. This practice can help to identify and correct any performance degradation.

Devise a plan to back out of a migration

There is no utility to reverse a migration. If you must back out of a migration, you might have to remove DB2 Version 8 code from your system, reinstall the previous version of DB2 to recreate back-level instances, and restore your database backups. If you have to back out of a migration, current database backups and detailed records of database and database configuration settings are essential.

Migrating instances with DB2 DataPropagator™ replication

Before migrating an instance of DataJoiner or DB2 UDB on which you are running the Capture or Apply programs for DB2 DataPropagator, read the migration documentation for DB2 DataPropagator Version 8. You must prepare to migrate your replication environment before you migrate the DB2 or DataJoiner instance. You must also perform specific tasks immediately after the migration of your DB2 or DataJoiner instance. Migration documentation for DB2 DataPropagator Version 8 can be found at the http://www.ibm.com/software/data/dpropr/library.html Web site.

Related concepts:

- "Benchmark testing" in the *Administration Guide: Performance*
- "Explain tools" in the *Administration Guide: Performance*

Related tasks:

- "Migrating DB2 UDB (Windows)" on page 27
- "Migrating DB2 UDB (UNIX)" on page 33

Related reference:

- "DB2 Universal Database planned incompatibilities" in the *Administration Guide: Planning*
- "Version 8 incompatibilities with previous releases" in the *Administration Guide: Planning*
- "Version 7 incompatibilities with previous releases" in the *Administration Guide: Planning*

Migration space recommendations

This topic provides information about disk space recommendations for DB2 migration.

Table spaces

Ensure that you have sufficient table space for databases you are migrating. System catalog table space is required for both old and new database catalogs during migration. The amount of space required varies, depending on the complexity of the database, as well as on the number and size of database objects.

system catalog table space (SYSCATSPACE)

Twice the space currently occupied is recommended.

temporary table space (TEMPSPACE1 is the default name)

Twice the system catalog table space is recommended.

To check the size of your table spaces you can use the following commands:

```
db2 list database directory
db2 connect to database_alias
db2 list tablespaces show detail
```

For the system catalog table space, free pages should be equal to or greater than used pages. Total pages for the temporary table space should be twice the amount of total pages for the system catalog table space. To increase the amount of space to a DMS (Database Managed Space) table space, you can add additional containers.

Log file space

The migration process makes many changes to a database in a single transaction. These changes need adequate log space to contain this transaction. If there is inadequate log space, this transaction is rolled back and migration does not complete successfully. To prevent running out of log file space, you should consider doubling the database configuration values for logfilsiz, logprimary and logsecond.

You must update these database configuration values before you migrate the instance to Version 8.2. You cannot update these database configuration parameters before any migration attempt is made on the database. However, if the database migration fails because there is insufficient log file space, you can set the logfilsiz, logprimary and logsecond database configuration parameters to higher values and then re-issue the database migration command. These settings can be reset after the migration is complete.

DataJoiner

When migrating data from DataJoiner, the log file space that you need depends on the size of the database you are migrating. The total size for

all log files should be twice the size of the database backup file. Use the following formula to determine if you have sufficient log file space on your DataJoiner system:

```
 4096 X logfilsiz X (logprimary + logsecond)  >
    2 X (size of the DataJoiner database backup file)
```

4096 is the page size of the log file. `logfilsiz`, `logprimary`, and `logsecond` are database configuration parameters.

For example, if the backup file size for the DataJoiner database is 117.5 MB. The total size for all log files needs to be 2 X 117.5 = 235 MB.

If the `logfilsiz` is set to 5000 and the DataJoiner database has 6 `logprimary` files and 4 `logsecond` files, then the total size for all log files is:

```
( 4096 X 5000 X ( 6 + 4) ) = 204.8 MB
```

Since the total file size for all log files is less than twice the backup file size of the DataJoiner database, migration will fail.

You can avoid this failure by increasing the `logfilsiz` log file size, or by creating additional log files before you migrate. These changes must be made before instance migration.

Related tasks:
- "Adding a container to a DMS table space" in the *Administration Guide: Implementation*
- "Migrating DB2 UDB (Windows)" on page 27
- "Migrating DB2 UDB (UNIX)" on page 33

Migrating DB2 servers in a partitioned database environment

To migrate DB2 servers in a partitioned database environment:
1. Install DB2 Version 8 server on each participating machine.
2. (UNIX only) Migrate the instance on the instance-owning machine.
3. Migrate the databases on the catalog node.
4. Create the DB2 Version DAS on each participating machine in the partitioned database environment.

Related tasks:
- "Partitioned installation (Windows)" on page 47
- "Migrating instances (UNIX)" on page 34
- "Migrating DB2 UDB (Windows)" on page 27
- "Migrating DB2 UDB (UNIX)" on page 33
- "Partitioned installation (UNIX)" on page 48

Migration test considerations

Migrate to DB2 Version 8 in a test environment before migrating your production environment. This practise allows you to address migration difficulties and to make sure applications and tools work properly before committing your production environment to the migration process.

| If you have a test environment that mimics your production system, you should
| install DB2 Version 8, migrate your instances and databases, and test your
| applications. On UNIX-based systems, multiple versions of DB2 can coexist. You
| can install DB2 Version 8 while your applications are still up and running under
| DB2 Version 6 or 7. Create your DB2 Version 8 test instances and databases to test
| your applications while your production server is still running.

| Once you are satisfied with the results, you can then move your production system
| to DB2 Version 8.

| **Related concepts:**
| - "Migration recommendations" on page 15

| **Related tasks:**
| - "Migrating DB2 UDB (Windows)" on page 27
| - "Migrating DB2 UDB (UNIX)" on page 33

| **Related reference:**
| - "Migration restrictions" on page 13

Migrating explain tables

The **migrate database** command does not migrate explain tables. If you want to
migrate explain tables for a database that you migrated to DB2 version 8 or if you
are migrating from DataJoiner, you must perform the extra step of migrating
explain tables using the **db2exmig** command.

You may want to migrate explain tables if you wish to maintain explain table
information that you previously gathered. If you do not want to maintain
previously gathered explain table information, you can later recreate the explain
tables and gather new information.

Procedure:

To migrate the explain tables, use the **db2exmig** command:

```
db2exmig -d dbname -e explain_schema [-u userid password]
```

where:
- *dbname* represents the database name. This parameter is required.
- *explain_schema* represents the schema name of the explain tables to be migrated.
  This parameter is required.
- *userid* and *password* represent the current user's ID and password. These
  parameters are optional.

The explain tables belonging to the user ID that is running **db2exmig**, or that is
used to connect to the database, will be migrated. The explain tables migration tool
will rename Version 6 or Version 7 tables, create a new set of tables using the
EXPLAIN.DDL, and copy the contents of the old tables to the new tables. Finally, it
will drop the old tables. The **db2exmig** command will preserve any user added
columns on the explain tables.

Related concepts:
- "Explain tools" in the *Administration Guide: Performance*

- "The explain tables and organization of explain information" in the *Administration Guide: Performance*

Related tasks:
- "Migrating databases" on page 28

Chapter 4. Premigration tasks

Backing up databases before DB2 migration

Before you start the migration process, it is recommended that you perform an
offline backup of your databases. If an error occurs during the migration process,
database backups are required for recovery.

This topic does not provide the complete syntax for the backup command.

Prerequisites:
- To backup a database, you require SYSADM, SYSCTRL, or SYSMAINT authority.
- Databases must be cataloged. To view a list of all the cataloged databases in the
  current instance, enter the following command:

      db2 list database directory

Procedure:

Back up each of your local databases by entering the backup database command:

BACKUP Command

```
►►─BACKUP──┬─DATABASE──┬──database-alias───────────────────────────►
           └─DB────────┘
```

```
►───────────────────────────────────────────────────────────────►◄
   └─USER──username─────────────────────────┘
              └─USING──password─┘
```

where:

DATABASE *database-alias*
>   Specifies the alias of the database to back up.

USER *username*
>   Identifies the user name under which to back up the database.

USING *password*
>   Is the password used to authenticate the user name. If the password is
>   omitted, the user is prompted to enter it.

For example, from a DB2 CLP prompt:

```
db2 backup database sample user pparker using auntmay
```

where the database alias is sample, the username is pparker, and the password is
auntmay.

Related concepts:
- "System administration authority (SYSADM)" in the *Administration Guide:
  Implementation*

Related reference:
- "BACKUP DATABASE Command" in the *Command Reference*

- "Migration space recommendations" on page 17

Recording your system configuration settings before DB2 migration

It is recommended that you record database and database manager configuration settings before DB2 migration. Configuration records can be used to verify that migration was successful and can be useful in problem determination, if you encounter post-migration difficulties.

After you have migrated DB2, it is recommended that you compare the configuration records with post-migration settings to ensure that settings were migrated successfully.

Procedure:

To record system configuration settings:

1. Record your database configuration settings.

   Configuration parameters for a database should be the same on each computer in a partitioned database system. If they are not, save a copy of the database configuration settings for each partition. You can compare configuration settings before and after migration to ensure that they have migrated properly.

   You can list the database configuration settings by entering the following command:

   ```
   db2 get database configuration for database_alias
   ```

   You can direct it to a file by entering the following command:

   ```
   db2 get database configuration for database_alias > c:\db_sample_cfg.txt
   ```

   Perform this task for each database that you are migrating.

2. Record your database manager configuration settings. You can list your database manager configuration settings by entering the following command:

   ```
   db2 get database manager configuration
   ```

   Cut and paste this information from the DB2 CLP window and save it as a file.

3. Record the tablespaces for each database you are migrating. You can list your tablespaces using the following command:

   ```
   db2 list tablespaces
   ```

4. Record the list of packages for each database you are migrating. You can retrieve a list of packages using the following command:

   ```
   db2 list packages
   ```

5. For migration from DB2 Version 7, you should record your DB2 profile registry variable settings. After migration, you can add or change your DB2 profile registry variable settings by referring the information you recorded before migration if required.

Related concepts:

- "Configuration parameters" in the *Administration Guide: Performance*

Related reference:

- "GET DATABASE CONFIGURATION Command" in the *Command Reference*
- "GET DATABASE MANAGER CONFIGURATION Command" in the *Command Reference*

- "LIST PACKAGES/TABLES Command" in the *Command Reference*
- "LIST TABLESPACES Command" in the *Command Reference*
- "Configuration parameters summary" in the *Administration Guide: Performance*

Changing the diagnostic error level before DB2 migration

For the duration of migration activities, change the diagnostic error level to 4. The diagnostic error level 4 records all errors, warnings, and informational messages. This information can be used for problem determination should you encounter migration errors. The `diagpath` configuration parameter specifies the directory that contains the error file, event log file (Windows only), alert log file, and any dump files that may be generated based on the value of the `diaglevel` parameter.

Procedure:

To change the diagnostic error level before DB2 migration:
- Set the diagnostic error level in the database manager configuration file using the following command:

      db2 update dbm configuration using diaglevel 4
- Type the **db2stop** command.
- Type the **db2start** command.

The `diagpath` parameter can be set in the database manager configuration file using the following command:

      db2 update dbm configuration using diagpath *directory*

where *directory* represents the location that you have chosen to store your log files.

Related concepts:
- "Migration recommendations" on page 15

Related reference:
- "UPDATE DATABASE CONFIGURATION Command" in the *Command Reference*
- "Migration restrictions" on page 13

Verifying that your databases are ready for migration

This task describes how to use the **db2ckmig** command to verify that your databases are ready for migration.

The **db2ckmig** command to verify that databases owned by the current instance are ready to be migrated. The **db2ckmig** command verifies that:
- A database is not in an inconsistent state
- A database is not in a backup-pending state
- A database is not in rollforward-pending state
- Tablespaces are in a normal state

Prerequisites:

Ensure that the `migration.log` file, found in the instance owner's home directory, contains the following text: `Version of DB2CKMIG being run: VERSION 8`.

Procedure:

1. Log on to the instance that you are migrating from.
   - If you are migrating from a previous version of DB2 for Linux, UNIX, and Windows, log on as the DB2 instance owner.
   - If you are migrating from DataJoiner, log on as the DataJoiner instance owner.
2. Issue the **db2stop** command to stop the instance.
3. On Windows, insert the DB2 Version 8 product CD in the CD-ROM.
4. From a DB2 command line prompt, change to the appropriate directory.
   - On AIX, the path for this command is `/usr/opt/db2_08_01/bin/db2ckmig`.
   - On Linux, HP-UX, and the Solaris Operating Environment, the path for this command is /opt/IBM/db2/V8.1/bin/db2ckmig.
   - On Windows, change to the `\db2\Windows\utilities` directory on the CD.
5. Issue the **db2ckmig** *db_alias* **/l directory** command to verify that the databases that are owned by the current instance are ready to be migrated and to generate a log file.

   If the **db2ckmig** command does not find errors, the following message appears:

   ```
   db2ckmig was successful.  Database(s) can be migrated.
   ```
6. If the **db2ckmig** command finds errors, correct the problems before you migrate.
7. Check the log file to ensure that it contains the following text:
   ```
   Version of DB2CKMIG being run: VERSION 8
   ```

Related concepts:
- "Installation procedures for migrating to DB2 Information Integrator" in the *IBM DB2 Information Integrator Migration Guide*

Related tasks:
- "Migrating DB2 UDB (UNIX)" on page 33

Related reference:
- "db2ckmig - Database Pre-migration Tool Command" in the *Command Reference*

Taking a DB2 UDB Version 6 or Version 7 server offline for migration

This task describes how to take your DB2 UDB Version 6 or Version 7 server offline for DB2 migration. Before you can continue with the migration process, you must stop the DB2 license service, stop all command line processor sessions, disconnect applications and users, and stop the database manager.

Prerequisites:
- Your system must meet the installation requirements for DB2 Version 8 before starting the migration process.
- You must have SYSADM authority.

Procedure:

To take your server offline:
1. Stop the DB2 license service by entering the **db2licd -end** command.

2. On Windows 2000, the properties of a service can be set so that it restarts if the service fails. If the *restart on failure* option is set for any DB2 services, it must be disabled before proceeding.
3. Stop all command line processor sessions by entering the **db2 terminate** command in each session that was running the command line processor.
4. Disconnect all applications and users. To get a list of all database connections for the current instance, enter the **db2 list applications** command. If all applications are disconnected, this command returns the following message:

   ```
   SQL1611W No data was returned by the Database System Monitor.
   SQLSTATE=00000
   ```

   You can disconnect applications and users by issuing the **db2 force applications** command.
5. When all applications and users are disconnected, stop each database manager instance by entering the **db2stop** command.

Related reference:
- "db2stop - Stop DB2 Command" in the *Command Reference*
- "FORCE APPLICATION Command" in the *Command Reference*
- "LIST APPLICATIONS Command" in the *Command Reference*

Chapter 5. Migrating DB2 servers (Windows)

Migrating DB2 UDB (Windows)

This topic lists the steps for migrating to DB2 UDB Version 8 on Windows.

Migration is required if you have instances and databases from DB2 Version 6 or Version 7 that you want to use with DB2 Version 8. No database migration is required if the database has been migrated to a DB2 Version 8 FixPak level. On Windows, all existing instances are automatically migrated during the DB2 Version 8 installation.

Prerequisites:

Before migrating:
* Review the migration recommendations, restrictions, and space recommendations.
* Record configuration settings before DB2 migration.
* Change the diagnostic error level.
* Take the DB2 server offline for DB2 migration.
* Verify that databases are ready for DB2 migration.
* Back up your databases.
* If you are using replication, you must archive all of the DB2 log files.
* You must have SYSADM authority.

Procedure:

To migrate DB2 UDB:
1. Install your DB2 server. On Windows, all existing instances are migrated during the DB2 Version 8 installation.
2. Migrate databases.
3. Optional: Migrate DB2 Explain tables.

Related concepts:
* "System administration authority (SYSADM)" in the *Administration Guide: Implementation*
* "Migration recommendations" on page 15

Related tasks:
* "Recording your system configuration settings before DB2 migration" on page 22
* "Changing the diagnostic error level before DB2 migration" on page 23
* "Taking a DB2 UDB Version 6 or Version 7 server offline for migration" on page 24
* "Verifying that your databases are ready for migration" on page 23
* "Backing up databases before DB2 migration" on page 21
* "Migrating databases" on page 28

- "Migrating explain tables" on page 19

Related reference:
- "ARCHIVE LOG Command" in the *Command Reference*
- "Migration space recommendations" on page 17
- "Migration restrictions" on page 13

Migrating databases

Prerequisites:

You require SYSADM authority.

Restrictions:

Migration is supported only from:
- DB2 Version 6.x or Version 7.x. (all platforms supported in Version 6.x and Version 7.x)
- DB2 DataJoiner Version 2.1.1 (AIX, Windows NT, and Solaris Operating Environment).

No database migration is required if the database has been migrated to a DB2 Version 8 FixPak level.

Procedure:

To migrate a DB2 database:
1. Migrate the database using the **db2 migrate database** command.

   DB2 MIGRATE DATABASE command

   ```
   ►►─MIGRATE──┬─DATABASE─┬──database-alias────────────────────────►
              └─DB───────┘

   ►──┬────────────────────────────────────────┬──────────────────►◄
      └─USER──username──┬─────────────────────┬─┘
                        └─USING──password─────┘
   ```

   where:

   DATABASE *database-alias*
   Specifies the alias of the database to be migrated to the currently installed version of the database manager.

   USER *username*
   Identifies the user name under which the database is to be migrated.

   USING *password*
   The password used to authenticate the user name. If the password is omitted, but a user name was specified, the user is prompted to enter it.

2. Optional: Update statistics for local tables within the database. When database migration is complete, old statistics that are used to optimize query performance are retained in the catalogs. However, DB2 Version 8 has statistics that are modified or do not exist in DB2 Version 6 or DB2 Version 7. To take

advantage of these statistics, you may want to execute the **runstats** command on tables, particularly those tables that are critical to the performance of your SQL queries.

3. Optional: Rebind packages. During database migration, all existing packages are invalidated. After the migration process, each package is rebuilt when it is used for the first time by the DB2 Version 8 database manager. You can run the **db2rbind** command to rebuild all packages stored in the database.

4. Optional: Revoke EXECUTE privileges on external stored procedures that contain SQL data access from PUBLIC. During database migration, EXECUTE privileges are granted to PUBLIC for all existing functions, methods, and external stored procedures. This will cause a security exposure for external stored procedures that contain SQL data access which allow users to access SQL objects for which they would not otherwise have privileges. Revoke the privileges by entering the **db2undgp - r** command.

5. Optional: Migrate DB2 Explain tables.

6. Optional: If you recorded configuration settings before migration, you might want to compare pre-migration configuration settings to current configuration settings to verify successful migration. Verify:
   - database configuration parameter settings
   - database manger configuration parameter settings
   - tablespaces records
   - packages records

   Note: During migration, the database configuration parameter *maxappls* is set to automatic. If you want it set to a different value, you should update it manually.

Related tasks:
- "Recording your system configuration settings before DB2 migration" on page 22
- "Migrating explain tables" on page 19

Related reference:
- "MIGRATE DATABASE Command" in the *Command Reference*
- "LIST DATABASE DIRECTORY Command" in the *Command Reference*
- "RESTORE DATABASE Command" in the *Command Reference*
- "db2rbind - Rebind all Packages Command" in the *Command Reference*

Migrating databases to a new system

Use this task to migrate DB2 Linux, UNIX, and Windows databases.

Prerequisites:

You must have SYSADM authorization.

You must backup your databases using the **db2 backup database** command.

If you are migrating from DataJoiner, your total log file size must be twice the size of the DataJoiner backup size of your database.

If you are migrating from DataJoiner, DB2 Relational Connect, or DB2 Life Sciences Data Connect, DB2 Information Integrator and DB2 Universal Database for Linux, UNIX, and Windows must be installed on the target system.

Restrictions:

Migration is supported only from:
- DB2 Version 6.x or Version 7.x. (all operating systems supported in Version 6.x and Version 7.x)
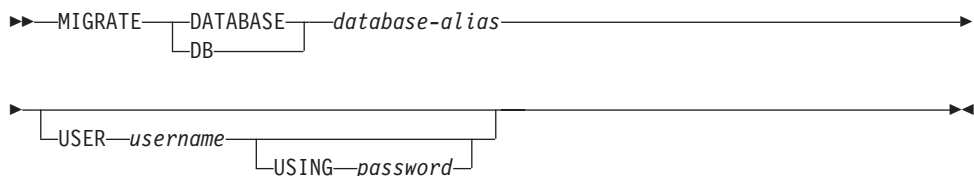- DB2 DataJoiner V2.1.1 (AIX, Windows NT, and Solaris Operating Environment).

Procedure:

To migrate a database to a new system:
1. Migrate the database using the **db2 restore database** command.

   DB2 RESTORE DATABASE command

   ```
   ►►─RESTORE──┬─DATABASE─┬──source-database-alias─────────────►
              └─DB───────┘

   ►──┬──────────────────────────┬──────────────────────────►◄
      └─FROM──directory──device──┘
   ```

   where:

   DATABASE *source-database-alias*
   > Specifies the alias of the database from which the backup was taken.

   FROM *directory/device*
   > The fully qualified path name of the directory or device on which the backup image resides. If the FROM parameter is omitted, the default value is the current working directory of the client system. This target directory or device must exist on the database server.

2. If the following error is returned, the database was restored but the database was not migrated.

   ```
   SQL2519N  The database was restored but the restored database was not migrated
     to the current release.  Error "-1704" with tokens "3" is returned.
     SQLSTATE=57011
   ```

   You must complete the following steps to migrate the database:
   a. Increase the total size for all log files.
      - If you are migrating from DB2 Version 6 or Version 7, double the values of the `logfilsiz`, `logprimary`, and `logsecond` parameters.
      - If you are migrating from DataJoiner, the total size for all log files should be twice the backup file size of the database. Use the following formula to determine if you have sufficient log file space on your DataJoiner system:

        ```
        ( 4096 X logfilsiz X ( logprimary + logsecond) )  >
              2 X (DataJoiner database backup file size)
        ```

        4096 is the page size of the log file `logfilsiz`. `logfilsiz`, `logprimary`, and `logsecond` are database configuration parameters.
   b. Migrate the database using the **db2 migrate database** command.

DB2 MIGRATE DATABASE command

```
►►─MIGRATE──┬─DATABASE─┬──database-alias──────────────────────────────────►
            └─DB───────┘

►──┬──────────────────────────────────┬─────────────────────────────────►◄
   └─USER──username──┬──────────────────┐
                     └─USING──password──┘
```

where:

DATABASE *database-alias*
> Specifies the alias of the database to be migrated to the currently installed version of the database manager.

USER *username*
> Identifies the user name under which the database is to be migrated.

USING *password*
> The password used to authenticate the user name. If the password is omitted, but a user name was specified, the user is prompted to enter it.

   c. If the log file size is still not large enough, the following error is returned. You must increase log file size and issue the **db2 migrate database** command again.

   `SQL1704N  Database migration failed.  Reason code "3".`

   d. Once migration is complete reset the `logfilsiz`, `logprimary`, and `logsecond` parameters.

3. Optional: Rebind packages. During database migration, all existing packages are invalidated. After the migration process, each package is rebuilt when it is used for the first time by the DB2 Version 8 database manager. You can run the **db2rbind** command to rebuild all packages stored in the database.

4. Optional: Revoke EXECUTE privileges on external stored procedures that contain SQL data access from PUBLIC. During database migration, EXECUTE privileges are granted to PUBLIC for all existing functions, methods, and external stored procedures. This will cause a security exposure for external stored procedures that contain SQL data access which allow users to access SQL objects for which they would not otherwise have privileges. Revoke the privileges by entering the **db2undgp - r** command.

5. Optional: Migrate DB2 Explain tables.

6. Optional: If you recorded configuration settings before migration, compare premigration configuration settings to the current configuration settings to verify that the migration was successful. You should verify:

   • Database configuration parameter settings
   • Database manger configuration parameter settings
   • Tablespaces records
   • Packages records

Note: During migration, the database configuration parameter *maxappls* is set to automatic. If you want to set this parameter to a different value, you should update the *maxappls* parameter manually.

Migrating to DB2 UDB Version 8 64-bit (Windows)

This topic lists the steps for migrating your database to DB2 UDB Version 8 on Windows 64-bit.

Prerequisites:
- A 64-bit version of DB2 Version 8 must be installed on your 64-bit system.
- Ensure that your 32-bit Windows system is running DB2 Version 8.

Procedure:

To migrate to DB2 Version 8 on Windows 64-bit:
1. Back up your DB2 Version 8 databases on your 32-bit Windows system.
2. Restore your DB2 Version 8 backup, created in step #1, on your 64-bit Windows system.

Related tasks:
- "Migrating DB2 UDB (Windows)" on page 27

Related reference:
- "BACKUP DATABASE Command" in the *Command Reference*
- "RESTORE DATABASE Command" in the *Command Reference*

Chapter 6. Migrating DB2 servers (UNIX)

Migrating DB2 UDB (UNIX)

This topic lists the steps for migrating to DB2 Version 8 on UNIX.

Migration is required if you have instances and databases from DB2 Version 6 or Version 7 that you want to use with DB2 Version 8.

No database migration is required if the database has been migrated to a DB2 Version 8 FixPak level.

Prerequisites:
* Review migration recommendations, restrictions, and space recommendations.
* Record configuration settings before DB2 migration.
* Change the diagnostic error level.
* Take the DB2 server offline for DB2 migration.
* Back up your databases.
* If you will be using replication, you must archive all of the DB2 log files.
* You require SYSADM authority.

Procedure:

To migrate DB2 UDB:
1. Install your DB2 server.
2. Migrate instances.
3. *Optional:* If you have created a DB2 tools catalog and want to use your existing pre-Version 8 scripts and schedules (for the Control Center), you must migrate the DB2 Administration Server.
4. Migrate databases.

Related concepts:
* "System administration authority (SYSADM)" in the *Administration Guide: Implementation*
* "Migration recommendations" on page 15

Related tasks:
* "Recording your system configuration settings before DB2 migration" on page 22
* "Changing the diagnostic error level before DB2 migration" on page 23
* "Taking a DB2 UDB Version 6 or Version 7 server offline for migration" on page 24
* "Backing up databases before DB2 migration" on page 21
* "Migrating instances (UNIX)" on page 34
* "Migrating the DB2 Administration Server (DAS)" on page 35
* "Migrating databases" on page 28

Related reference:
- "ARCHIVE LOG Command" in the *Command Reference*
- "Migration space recommendations" on page 17
- "Migration restrictions" on page 13

Migrating instances (UNIX)

You can migrate existing DB2 Version 6 or DB2 Version 7 instances using the **db2imigr** command. Migrating instances is done after installing DB2 Version 8.

The **db2imigr** command does the following:
- Checks cataloged databases owned by the instance to make sure they are ready for migration.
- Runs the **db2icrt** command to create the DB2 Version 8 instance.
- Updates system and local database directories to a Version 8 format.
- Merges the DB2 Version 6 and DB2 Version 7 database manager configurations with DB2 Version 8 database manager configuration.

Prerequisites:

You must be logged in as a user with root authority.

Before running the **db2imigr** command, it is recommended:
- You should have 20 MB of /tmp free space. The instance migration trace file is written to /tmp.
- That you run the **db2ckmig** command manually or each database in the instance and resolve any problems prior to running the **db2imigr** command for the instance. The **db2imigr** command will not migrate as long as the **db2ckmig** command finds problems.

Restrictions:

Migration is supported only from:
- DB2 Version 6.x or Version 7.x. (All platforms supported in Version 6.x and Version 7.x; Linux must be at Version 6 FixPak 2.)
- DB2 DataJoiner V2.1.1 (AIX, Windows NT, and Solaris Operating Environment).

Procedure:

To migrate an instance:
1. Migrate instances using the **db2imigr** command:

        DB2DIR/instance/db2imigr [-u fencedID] *InstName*

   where

   DB2DIR
   > is /usr/opt/db2_08_01 on AIX and /opt/IBM/db2/V8.1 on all other UNIX operating systems.

   -u fencedID
   > Is the user under which the fenced user-defined functions (UDFs) and stored procedures will execute. This parameter is required only when migrating from a client instance to a server.

> *InstName*
>> Is the login name of the instance owner.

If you have migrated from a single-partitioned database environment version of DB2 to a partitioned database environment version of the DB2 Enterprise Server Edition, you must update your instances to a partitioned format using the **db2iupdt** command.

Related tasks:
- "Verifying that your databases are ready for migration" on page 23

Related reference:
- "db2ckmig - Database Pre-migration Tool Command" in the *Command Reference*
- "db2imigr - Migrate Instance Command" in the *Command Reference*
- "db2icrt - Create Instance Command" in the *Command Reference*
- "db2iupdt - Update Instances Command" in the *Command Reference*

Migrating the DB2 Administration Server (DAS)

If you have created a DB2 tools catalog on your DB2 Version 8 system and want to use your existing pre-Version 8 scripts and schedules (for the Control Center) that were created in the pre-Version 8 DB2 Administration Server (DAS), you must migrate the DAS to Version 8.

On Windows, this migration is done automatically if you created the DB2 tools catalog during the installation of Version 8. If you created the DB2 tools catalog after installation, this migration must be done manually.

On UNIX, this migration must be done manually after the DB2 tools catalog has been created, either during the installation or at a later time.

Prerequisites:

You must have:
- An existing DB2 tools catalog.
- DASADM authority on Windows systems to migrate the pre-Version 8 information into the DB2 tools catalog.
- root authority on UNIX systems to migrate the pre-Version 8 information into the DB2 tools catalog.

Procedure:

To migrate a pre-Version 8 DAS to the DB2 tools catalog, enter the command:

```
dasmigr previous_das_name new_das_name
```

where *previous_das_name* represents the name of the pre-Version 8 DAS instance, and *new_das_name* represents the name of the new DB2 Version 8 DAS.

Related tasks:
- "Migrating DB2 UDB (Windows)" on page 27
- "Migrating DB2 Personal Edition (Windows)" in the *Quick Beginnings for DB2 Personal Edition*

- "Migrating DB2 Personal Edition (Linux)" in the *Quick Beginnings for DB2 Personal Edition*

Related reference:
- "dasmigr - Migrate the DB2 Administration Server Command" in the *Command Reference*

Migrating databases

Prerequisites:

You require SYSADM authority.

Restrictions:
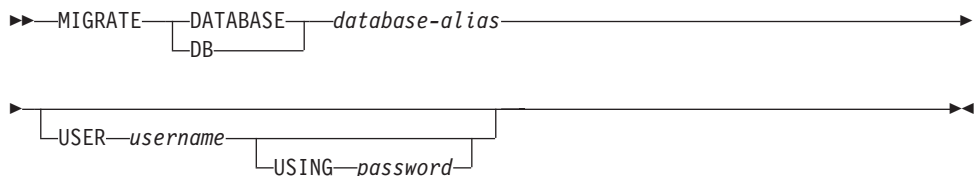
Migration is supported only from:
- DB2 Version 6.x or Version 7.x. (all platforms supported in Version 6.x and Version 7.x)
- DB2 DataJoiner Version 2.1.1 (AIX, Windows NT, and Solaris Operating Environment).

Procedure:

To migrate a DB2 database:
1. Migrate the database using the **db2 migrate database** command.

   DB2 MIGRATE DATABASE command

   ```
   ►►─MIGRATE──┬─DATABASE─┬──database-alias──────────────────────►
              └─DB───────┘

   ►──┬──────────────────────────────────┬──────────────────────►◄
      └─USER──username──┬──────────────────┬─┘
                        └─USING──password──┘
   ```

   where:

   DATABASE *database-alias*
   > Specifies the alias of the database to be migrated to the currently installed version of the database manager.

   USER *username*
   > Identifies the user name under which the database is to be migrated.

   USING *password*
   > The password used to authenticate the user name. If the password is omitted, but a user name was specified, the user is prompted to enter it.

2. Optional: Update statistics. When database migration is complete, old statistics that are used to optimize query performance are retained in the catalogs. However, DB2 Version 8 has statistics that are modified or do not exist in DB2 Version 6 or DB2 Version 7. To take advantage of these statistics, you may want to execute the **runstats** command on tables, particularly those tables that are critical to the performance of your SQL queries.
3. Optional: Rebind packages. During database migration, all existing packages are invalidated. After the migration process, each package is rebuilt when it is

used for the first time by the DB2 Version 8 database manager. You can run the **db2rbind** command to rebuild all packages stored in the database.

4. Optional: Revoke EXECUTE privileges on external stored procedures that contain SQL data access from PUBLIC. During database migration, EXECUTE privileges are granted to PUBLIC for all existing functions, methods, and external stored procedures. This will cause a security exposure for external stored procedures that contain SQL data access which allow users to access SQL objects for which they would not otherwise have privileges. Revoke the privileges by entering the **db2undgp - r** command.

5. Optional: Migrate DB2 Explain tables

6. Optional: If you recorded configuration settings before migration, you might want to compare pre-migration configuration settings to current configuration settings to verify successful migration. Verify:
   - database configuration parameter settings
   - database manger configuration parameter settings
   - tablespaces records
   - packages records

   Note: During migration, the database configuration parameter *maxappls* is set to automatic. If you want it set to a different value, you should update it manually.

Related tasks:
- "Recording your system configuration settings before DB2 migration" on page 22
- "Migrating explain tables" on page 19

Related reference:
- "MIGRATE DATABASE Command" in the *Command Reference*
- "LIST DATABASE DIRECTORY Command" in the *Command Reference*
- "RESTORE DATABASE Command" in the *Command Reference*
- "db2rbind - Rebind all Packages Command" in the *Command Reference*

Migrating databases to a new system

Use this task to migrate DB2 Linux, UNIX, and Windows databases.

Prerequisites:

You must have SYSADM authorization.

You must backup your databases using the **db2 backup database** command.

If you are migrating from DataJoiner, your total log file size must be twice the size of the DataJoiner backup size of your database.

If you are migrating from DataJoiner, DB2 Relational Connect, or DB2 Life Sciences Data Connect, DB2 Information Integrator and DB2 Universal Database for Linux, UNIX, and Windows must be installed on the target system.

Restrictions:

Migration is supported only from:
- DB2 Version 6.x or Version 7.x. (all operating systems supported in Version 6.x and Version 7.x)
- DB2 DataJoiner V2.1.1 (AIX, Windows NT, and Solaris Operating Environment).

Procedure:

To migrate a database to a new system:

1. Migrate the database using the **db2 restore database** command.

   DB2 RESTORE DATABASE command

   ```
   ►►──RESTORE──┬─DATABASE─┬──source-database-alias──────────────────►
               └─DB───────┘
   ```

   ```
   ►──┬───────────────────────────┬──────────────────────────────►◄
      └─FROM──directory──device──┘
   ```

   where:

   DATABASE *source-database-alias*
   > Specifies the alias of the database from which the backup was taken.

   FROM *directory/device*
   > The fully qualified path name of the directory or device on which the backup image resides. If the FROM parameter is omitted, the default value is the current working directory of the client system. This target directory or device must exist on the database server.

2. If the following error is returned, the database was restored but the database was not migrated.

   ```
   SQL2519N  The database was restored but the restored database was not migrated
      to the current release.  Error "-1704" with tokens "3" is returned.
      SQLSTATE=57011
   ```

   You must complete the following steps to migrate the database:

   a. Increase the total size for all log files.
      - If you are migrating from DB2 Version 6 or Version 7, double the values of the `logfilsiz`, `logprimary`, and `logsecond` parameters.
      - If you are migrating from DataJoiner, the total size for all log files should be twice the backup file size of the database. Use the following formula to determine if you have sufficient log file space on your DataJoiner system:

        ```
        ( 4096 X logfilsiz X ( logprimary + logsecond) )  >
               2 X (DataJoiner database backup file size)
        ```

        4096 is the page size of the log file `logfilsiz`. `logfilsiz`, `logprimary`, and `logsecond` are database configuration parameters.

   b. Migrate the database using the **db2 migrate database** command.

      DB2 MIGRATE DATABASE command

      ```
      ►►──MIGRATE──┬─DATABASE─┬──database-alias─────────────────────►
                  └─DB───────┘
      ```

```
                 ►──────────────────────────────────────────────────►◄
                    └─USER──username──┐
                                      └─USING──password──┘
```

where:

DATABASE *database-alias*
> Specifies the alias of the database to be migrated to the currently installed version of the database manager.

USER *username*
> Identifies the user name under which the database is to be migrated.

USING *password*
> The password used to authenticate the user name. If the password is omitted, but a user name was specified, the user is prompted to enter it.

c. If the log file size is still not large enough, the following error is returned. You must increase log file size and issue the **db2 migrate database** command again.

```
SQL1704N  Database migration failed.  Reason code "3".
```

d. Once migration is complete reset the `logfilsiz`, `logprimary`, and `logsecond` parameters.

3. Optional: Rebind packages. During database migration, all existing packages are invalidated. After the migration process, each package is rebuilt when it is used for the first time by the DB2 Version 8 database manager. You can run the **db2rbind** command to rebuild all packages stored in the database.

4. Optional: Revoke EXECUTE privileges on external stored procedures that contain SQL data access from PUBLIC. During database migration, EXECUTE privileges are granted to PUBLIC for all existing functions, methods, and external stored procedures. This will cause a security exposure for external stored procedures that contain SQL data access which allow users to access SQL objects for which they would not otherwise have privileges. Revoke the privileges by entering the **db2undgp - r** command.

5. Optional: Migrate DB2 Explain tables.

6. Optional: If you recorded configuration settings before migration, compare premigration configuration settings to the current configuration settings to verify that the migration was successful. You should verify:
   - Database configuration parameter settings
   - Database manger configuration parameter settings
   - Tablespaces records
   - Packages records

Note: During migration, the database configuration parameter *maxappls* is set to automatic. If you want to set this parameter to a different value, you should update the *maxappls* parameter manually.

Migrating to DB2 Version 8 64-bit (UNIX)

This topic lists the steps for migrating your database to DB2 Version 8 on UNIX 64-bit. DB2 Version 8 64-bit support exists on AIX, HP-UX, Linux, and Solaris Operating Environment.

Prerequisites:
* Before updating to DB2 Version 8 on 64-bit, migrate your databases. This database migration must be done after issuing the **db2imigr** command but before issuing the **db2iupdt –w64** command.

Restrictions:
* You cannot revert to a Version 7 32-bit instance after you have migrated to a Version 8 64-bit instance.
* The information in this topic does not apply to Linux. Use the backup and restore utilities to move from a Linux 32–bit DB2 Version 8 database to a Linux 64-bit DB2 Version 8 database.

Procedure:

To migrate from a DB2 Version 7 database to a DB2 Version 8 64-bit system:
1. Install DB2 Version 8 on your 64-bit system. Do not uninstall the previous version.
2. Run the **DB2DIR/bin/db2ckmig** command as the instance owner to ensure that your database can be migrated.
3. Back up your existing DB2 Version 7 database.
4. Stop your DB2 Version 7 instance.
5. Run the **DB2DIR/instance/db2imigr <instance_name>** command.
6. If your existing database is within a DB2 Version 7 32-bit instance on your 64-bit system, you need to update the instance to a 64-bit instance. To update your Version 7 32-bit instance to a Version 7 64-bit instance, use the **db2iupdt** command, specifying the **–w** parameter with a value of **64**. For example:

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

   where DB2DIR represents the DB2 Version 8 installation path on the appropriate platform.
7. Restart your instance.

You can use the backup and restore utilities to migrate your system. The backup and restore method supports moving from any of AIX, HP-UX, Solaris Operating Environment 32-bit DB2 Version 8 database to any of AIX, HP-UX, Solaris Operating Environment 64-bit Version 8 database; or Linux 32-bit DB2 Version 8 database to Linux 64-bit Version 8 database (Linux IA64 or Linux AMD64).

Related reference:
* "BACKUP DATABASE Command" in the *Command Reference*
* "RESTORE DATABASE Command" in the *Command Reference*
* "db2icrt - Create Instance Command" in the *Command Reference*
* "db2iupdt - Update Instances Command" in the *Command Reference*

Migrating a DB2 Version 7 64-bit instance on AIX Version 4 to DB2 Version 8

This task details the steps required to migrate a DB2 UDB Version 7 64-bit instance on AIX Version 4 to DB2 UDB Version 8.

To migrate a DB2 UDB Version 7 64-bit instance on AIX Version 4 to DB2 UDB Version 8, you have two options. You can:
- Upgrade your AIX operating system to AIX Version 5.
- Remain with AIX Version 4:

Procedure:
- To migrate a DB2 UDB Version 7 64-bit instance on AIX Version 4 to DB2 Version 8 by upgrading to AIX Version 5:
  1. Upgrade your operating system to AIX Version 5.
  2. Upgrade DB2 Version 7 with DB2 Version 7 FixPak 4 for AIX 5.
  3. Update your instances using the **/usr/lpp/db2_07_01/instance/db2iupdt** command.
  4. Ensure your database continues to work. It is not recommended to proceed directly to the next step without confirming your database works in AIX Version 5 on DB2 UDB Version 7.
  5. Install DB2 UDB Version 8 for AIX Version 5
  6. Migrate your instances using the **/usr/opt/db2_08_01/instance/db2imigr** command.
- To migrate a DB2 Version 7 64-bit instance on AIX Version 4 to DB2 Version 8 while remaining at AIX Version 4.
  1. Drop your instances.
  2. Recreate them as 32-bit instances. You may have to reconfigure your instance parameters.
  3. Install DB2 UDB Version 8 for AIX Version 4.
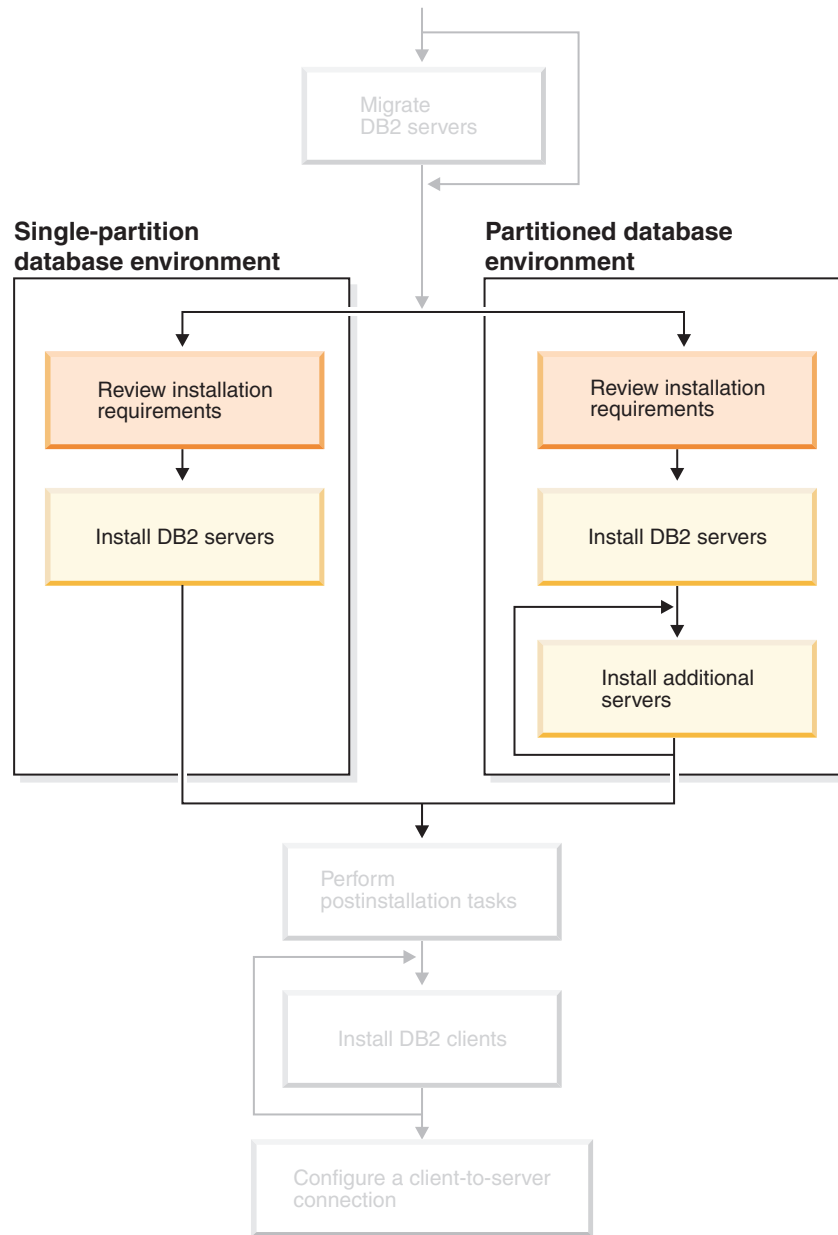 4. Migrate your instances using the **/usr/opt/db2_08_01/instance/db2imigr** command.

Related tasks:
- "Installing the instance-owning server in a partitioned database environment (UNIX)" on page 115
- "Installing DB2 servers in a single-partition environment (UNIX)" on page 113

Related reference:
- "Installation requirements for DB2 servers (AIX)" on page 63

Part 3. Installing DB2 UDB servers

```
                              │
                              ▼
                        ┌──────────────┐
                        │   Migrate    │◄──────┐
                        │ DB2 servers  │       │
                        └──────────────┘       │
                              │                │
                              ▼                │

  Single-partition                   Partitioned database
  database environment                environment

  ┌──────────────────────┐         ┌──────────────────────┐
  │  ┌────────────────┐  │         │  ┌────────────────┐  │
  │  │ Review         │  │         │  │ Review         │  │
  │  │ installation   │  │         │  │ installation   │  │
  │  │ requirements   │  │         │  │ requirements   │  │
  │  └────────────────┘  │         │  └────────────────┘  │
  │         │            │         │         │            │
  │         ▼            │         │         ▼            │
  │  ┌────────────────┐  │         │  ┌────────────────┐  │
  │  │ Install DB2    │  │         │  │ Install DB2    │  │
  │  │ servers        │  │         │  │ servers        │  │
  │  └────────────────┘  │         │  └────────────────┘  │
  │                      │         │         │            │
  │                      │         │         ▼            │
  │                      │         │  ┌────────────────┐  │
  │                      │         │  │ Install        │  │
  │                      │         │  │ additional     │  │
  │                      │         │  │ servers        │  │
  │                      │         │  └────────────────┘  │
  └──────────────────────┘         └──────────────────────┘
              │                               │
              └───────────────┬───────────────┘
                              ▼
                    ┌──────────────────────┐
                    │ Perform              │
                    │ postinstallation     │
                    │ tasks                │
                    └──────────────────────┘
                              │
                              ▼
                    ┌──────────────────────┐
                    │ Install DB2 clients  │
                    └──────────────────────┘
                              │
                              ▼
                    ┌──────────────────────┐
                    │ Configure a          │
                    │ client-to-server     │
                    │ connection           │
                    └──────────────────────┘
```

Use this diagram to help navigate through this book. The diagram is not intended to represent your specific installation steps. Use the information within this book to create your own specific installation plan.

Chapter 7. Installation overview

Installation methods for DB2 UDB (Windows and UNIX)

This topic provides information about DB2® UDB installation methods. The following table shows the installation methods that are available by operating system.

Table 1. Installation method by operating system.

Installation method	Windows®	UNIX®
DB2 Setup wizard	Yes	Yes
db2_install script	No	Yes
Response file installation	Yes	Yes
Native installation tools	No	Yes

The following list describes installation methods for DB2 UDB.

DB2 Setup wizard

The DB2 Setup wizard is a GUI installer available on both UNIX and Windows operating systems. The DB2 Setup wizard provides an easy-to-use interface for installing DB2 UDB and for performing initial setup and configuration tasks. The DB2 Setup wizard can also be used to create instances and response files.

On UNIX systems, the DB2 Setup wizard replaces the text-based installer interface (db2setup).

db2_install script

The db2_install script uses the operating systems's native installation utility to install DB2 UDB. The db2_install script prompts for a DB2 product keyword. This script installs *all* components for the DB2 product you specify, in English only. You cannot select or deselect components or interface language support. The db2_install script does not perform user and group creation, instance creation, or configuration. It installs the DB2 components to your system. This method of installation might be preferred in cases where greater control over the installation setup process than the GUI installer provides is required.

Response file installation

A response file is an ASCII file that contains setup and configuration values. The file is passed to the DB2 setup program and the installation is performed according to the values that have been specified. There are a number of ways to create a response file:

- Using the response file generator (Windows)
- Using the DB2 Setup wizard (UNIX and Windows)
- By customizing sample response files that are provided for each DB2 product (UNIX and Windows)

Using the response file generator, you can create a response file that replicates an existing installation. For example, you might install a DB2 client, fully configure the client, then generate a response file to replicate

the installation and configuration of the client to other computers. The response file generator is available only on Windows.

The DB2 Setup wizard can create a response file for both UNIX and Windows installations. The selections you make as you proceed through the DB2 Setup wizard are recorded in a response file that you can save to a location on your system.

For your convenience, you can create a response file without performing an installation. This feature can be useful in an environment where a DBA does not have the authority required to perform an installation. The DBA can create a response file for the installation and provide it to the system administrator who installs the product on the DBA's behalf.

An alternative to using the response file generator or the DB2 Setup wizard to create a response file is to manually modify a sample response file. Sample response files are provided on the DB2 product CD-ROM.

Native installation tools
Installing DB2 using your operating system's native installation provides the greatest control over the installation process, but it is also more difficult than the other installation methods. When installing a particular DB2 product, you have to ensure that the required components are installed and that component dependencies are maintained. Advanced knowledge of both DB2 and your operating environment is required. User and group creation, instance creation, and configuration must be performed manually.

Related tasks:
- "Installing a DB2 product manually" in the *Installation and Configuration Supplement*
- "Response file installation of DB2 overview (UNIX)" in the *Installation and Configuration Supplement*
- "Response file installation of DB2 overview (Windows)" in the *Installation and Configuration Supplement*

Single-partition installation (Windows)

This topic outlines the steps for installing DB2 Enterprise Server Edition or Workgroup Server Edition in a single-partition database environment on Windows.

Procedure:

To install DB2 Enterprise Server Edition or Workgroup Server Edition in a single-partition database environment on Windows:
1. Review the DB2 product prerequisites.
2. Install the DB2 product using the DB2 Setup wizard. DB2 Setup wizard features include:
   - A launchpad from which you can view installation notes and release notes, and learn about DB2 UDB Version 8 features.
   - Typical, compact, and custom installation types.
   - Multiple language selection in which to perform the installation.
   - The user interface and product messages are available in several languages and are installed in the languages that you choose. By installing multiple languages, you can view the interface and messages in your preferred languages.

- DB2 Administration Server setup (including DAS user setup).
- Administration contact and health monitor notification setup.
- Instance setup and configuration (including instance user setup).
- DB2 tools metadata and data warehouse control database setup.
- Response file creation. You can save your installation choices in a response file for later installation or to duplicate the installation on another computer.

Related tasks:
- "Tools catalog database and DAS scheduler setup and configuration" in the *Administration Guide: Implementation*
- "Notification and contact list setup and configuration" in the *Administration Guide: Implementation*

Related reference:
- "UPDATE ADMIN CONFIGURATION Command" in the *Command Reference*
- "Installation requirements for DB2 servers (Windows)" on page 54
- "Required user accounts for installation of DB2 servers (Windows)" on page 58
- "Disk and memory requirements (Windows and UNIX)" on page 53
- "setup - Install DB2 Command" in the *Command Reference*

Partitioned installation (Windows)

This topic outlines the steps for installing DB2 Enterprise Server Edition server in a partitioned database environment on Windows.

Procedure:

To install DB2 Enterprise Server Edition server in a partitioned database environment on Windows:
1. Review the DB2 product prerequisites.
2. Install the instance owning database partition server.
3. Verify port range availability on participating computers.
4. Install database partition servers on participating computers using a response file.

Related tasks:
- "Installing the instance-owning server in a partitioned database environment (Windows)" on page 105
- "Verifying port range availability on participating computers (Windows)" on page 109
- "Installing database partition servers on participating computers (Windows)" on page 110

Related reference:
- "Required user accounts for installation of DB2 servers (Windows)" on page 58

Single-partition installation (UNIX)

This topic outlines steps for installing DB2 Enterprise Server Edition in a single-partition database environment or DB2 Workgroup Server Edition on AIX, HP-UX, Linux, and Solaris Operating Environment.

Procedure:

To install DB2 Enterprise Server Edition in a single-partition database environment or DB2 Workgroup Server Edition on AIX, HP-UX, Linux, and Solaris Operating Environments:

1. Review the DB2 product prerequisites.
2. Mount the DB2 product CD-ROM.
3. Modify kernel parameters on HP-UX, Linux, and Solaris Operating Environment.
4. Install the DB2 product using the DB2 Setup wizard. DB2 Setup wizard features include:
   - A launchpad from which you can view installation notes and release notes, and learn about DB2 Version 8 features
   - Typical, Compact, and Custom installation types
   - Multiple language selection in which to perform the installation.
   - The user interface and product messages are available in several languages and are installed in the languages that you choose. By installing multiple languages, you can view the interface and messages in your preferred languages.
   - DB2 Administration Server setup (including DAS user setup)
   - Administration contact and health monitor notification setup
   - Instance setup and configuration (including instance user setup)
   - DB2 tools metadata and data warehouse control database setup
   - Response file creation

Related reference:
- "Installation requirements for DB2 servers (AIX)" on page 63
- "Installation requirements for DB2 servers (HP-UX)" on page 66
- "Installation requirements for DB2 servers (Linux)" on page 68
- "Installation requirements for DB2 servers (Solaris Operating Environment)" on page 71
- "db2setup - Install DB2 Command" in the *Command Reference*

Partitioned installation (UNIX)

This topic outlines the steps for setting up DB2 servers in a partitioned database environment on UNIX-based platforms.

Procedure:

To install DB2 servers in a partitioned database environment on UNIX-based platforms:

1. Review the DB2 product prerequisites.

2. Modify kernel parameters on HP-UX, Linux, and Solaris Operating Environment.

3. Verify that NFS is running.

4. Create a home file system for the partitioned database environment.

5. Create the required users.

6. Mount the DB2 product CD-ROM.

7. Install a DB2 server on the primary computer using the DB2 Setup wizard.

8. Install DB2 servers on participating computers using a response file.

9. Update the node configuration file (db2nodes.cfg).

10. Enable communication between database partition servers.

11. Enable the execution of remote commands

12. Enable Control Center administration.

Related tasks:

- "Setting up a working collective to distribute commands to ESE workstations (AIX)" on page 86

DB2 users and group (UNIX)

Three users and three groups are required to operate DB2® UDB on UNIX®. The DB2 Setup Wizard creates the following users and groups automatically during the installation of your DB2 product.

Instance owner
>The DB2 instance is created in the instance owner home directory. This user ID controls all DB2 processes and owns all filesystems and devices used by the databases contained within the instance. The default user is `db2inst1` and the default group is `db2iadm1`.
>
>If a user already exists with the same default name, for example, `db2inst1`, the DB2 installer will then search for the user `db2inst2`. If that user doesn't exist, it will then create that user. If that user does exist, the DB2 installer will continue its search (`db2inst3`, `db2inst4`, etc.) until it finds an available user. This algorithm also applies to the creation of fenced users and DB2 administration server users.

Fenced user
>The fenced user is used to run user defined functions (UDFs) and stored procedures outside of the address space used by the DB2 database. The default user is `db2fenc1` and the default group is `db2fadm1`. If you do not need this level of security, for example in a test environment, you may use your instance owner as your fenced user.

DB2 administration server user
>The user ID for the DB2 administration server user is used to run the DB2 administration server on your system. Default user is `dasusr1` and default group is `dasadm1`. This user ID is also used by the DB2 GUI tools to perform administration tasks against the local server database instances and databases.
>
>This user does not contain any databases and there is only one administration server per machine. For example, one administration server can service multiple database instances.

Related tasks:

- "Creating required users for a DB2 server installation in a partitioned database environment (AIX)" on page 95
- "Creating required users for a DB2 server installation in a partitioned database environment (HP-UX)" on page 97
- "Creating required users for a DB2 server installation in a partitioned database environment (Linux)" on page 98
- "Creating required users for a DB2 server installation in a partitioned database environment (Solaris Operating Environment)" on page 99

Granting user rights (Windows)

This topic describes the steps required to grant user rights on Windows operating systems. Specific user rights are recommended for user accounts required to install and set up DB2.

Prerequisites:

To grant advanced user rights on Windows you must be logged on as a local Administrator.

Procedure:

Windows NT

1. Click **Start** and select **Programs —> Administrative Tools (Common) —> User Manager for Domains**.
2. In the User Manager window, select **Policies —> User Rights** from the menu bar.
3. In the User Rights Policy window, select the **Show Advanced User Rights** check box then in the **Right** drop down box, select the user right you want to grant. Click **Add**.
4. In the Add Users and Groups window select the user or the group you want to grant the right to and click **OK**.
5. In the User Rights Policy window, select the user or the group you have added from the **Grant To** list box and click **OK**.

Windows 2000, Windows XP, and Windows Server 2003

1. Click **Start** and select **Settings —> Control Panel —> Administrative Tools**.

   Note: On Windows XP and Windows Server 2003 computers, for some Windows Themes, this will be: **Settings —> Control Panel —> Performance and Maintenance —> Administrative Tools**.

2. Select **Local Security Policy**.
3. In the left window pane, expand the **Local Policies** object, then select **User Rights Assignment**.
4. In the right window pane, select the user right that you want to assign.
5. From the menu, select **Action —> Security...**
6. Click **Add**, then select a user or group to assign the right to, and click **Add**.
7. Click **OK**.

Note: If your computer belongs to a Windows 2000 or Windows Server 2003 domain, the domain user rights may override your local settings. In this case, your Network Administrator will have to make the changes to the user rights.

Related concepts:
- "User, user ID and group naming rules" in the *Administration Guide: Implementation*

Related tasks:
- "Installing DB2 Personal Edition - overview (Windows)" in the *Quick Beginnings for DB2 Personal Edition*

Related reference:
- "Required user accounts for installation of DB2 servers (Windows)" on page 58

DB2 UDB system administrator group (Windows)

By default, system administrative (SYSADM) authority is granted to any valid DB2® user account that belongs to the Administrators group on the computer where the account is defined. If the account is a local account, then it must belong to the local Administrators group. If the account is a domain account, then it must belong to the Administrators group at the domain controller.

For example, if a user logs on to a domain account and tries to access a DB2 database, DB2 goes to a domain controller to enumerate groups (including the Administrators group). You can force DB2 to always perform group lookup on the local computer by setting the registry variable **DB2_GRP_LOOKUP=local** and adding the domain accounts (or global groups) to the local group.

For a domain user to have SYSADM authority, it must belong to the Administrators group on the domain controller. Since DB2 always performs authorization at the machine where the account is defined, adding a domain user to the local Administrators group on the server does not grant the domain user SYSADM authority to this group.

To avoid adding a domain user to the Administrators group at the domain controller, create a global group and add the domain users to which you want to grant SYSADM authority to it, and then update the DB2 configuration parameter SYSADM_GROUP with the name of the global group. To do so, enter the following commands:

```
db2stop
db2 update dbm cfg using sysadm_group global_group
db2start
```

Related tasks:
- "Installing DB2 Personal Edition - overview (Windows)" in the *Quick Beginnings for DB2 Personal Edition*

Kerberos authentication

AIX   If you plan to use Kerberos Authentication, you require IBM Network Authentication Service client v1.3 or later running on AIX V5.2 or higher.

HP-UX
There is no support for Kerberos Authentication on HP-UX.

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

- krb5-libs
- krb5-workstation

Solaris Operating Environment
If you plan to use Kerberos Authentication, you require Solaris Operating Environment 8 or higher with the SEAM (Sun Enterprise Authentication Mechanism) client, which is included in the Solaris 8 Admin Pack. You also require the IBM NAS Toolkit v1.3.

Windows
If you plan to use Kerberos Authentication, you require Windows 2000 and above.

Related concepts:

- "Authentication methods for your server" in the *Administration Guide: Implementation*

Chapter 8. Installation 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.

NIS installation considerations

In environments that include security software, such as NIS or NIS+, there are some installation considerations. The DB2 installation scripts attempt to update objects that are under the control of the security packages, such as users and groups, and will not be able to do so if NIS or NIS+ is installed.

At instance creation, without a security component present, the instance-owning user's group properties are automatically modified to add the administrative server's group as a secondary group, and the administrative server's group properties are modified to include the instance owner's group. If the instance

creation program is unable to modify these properties (it will not if NIS/NIS+ is controlling the group), it reports that it could not. The warning message provides the necessary information to manually make the changes.

These considerations hold true for any environment in which an external security program does not allow the DB2 installation or instance creation programs to modify user characteristics.

If the DB2 Setup wizard detects NIS on your computer, you are not given the option of creating new users during the installation. Instead, you must choose existing users.

Consider the following restrictions if you are using NIS or NIS+:
- Groups and users must be created on the NIS server before running the DB2 Setup wizard.
- Secondary groups must be created for the DB2 instance owner and the DB2 Administration Server on the NIS server. You must then add the primary group of the instance owner to the secondary DB2 Administration Server group. Likewise, you must add the primary DB2 Administration Server group to the secondary group for the instance owner.
- On a DB2 ESE system, before you create an instance, there must be an entry for the instance in the etc/services file. For example, if you want to create an instance for the user db2inst1, you require an entry similar to the following:

      DB2_db2inst1   50000/tcp

Related tasks:
- "Installing DB2 Personal Edition - overview (Linux)" in the *Quick Beginnings for DB2 Personal Edition*
- "Manually creating required groups and users for DB2 Personal Edition (Linux)" in the *Quick Beginnings for DB2 Personal Edition*

DB2 server installation (Windows)

Installation requirements for DB2 servers (Windows)

To install a DB2 UDB server, the following operating system, software, hardware, and communications requirements must be met:

Operating system requirements

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

DB2 UDB Workgroup Server Edition runs on:
- Windows NT Version 4 with Service Pack 6a or later
- Windows 2000 Professional, Standard Server, Advanced Server, and Datacenter Servers
- Windows XP (32-bit)
- Windows Server 2003 (32-bit)

DB2 UDB Enterprise Server Edition runs on:
- Windows NT Version 4 with Service Pack 6a or later

- Windows 2000 Professional, Standard Server, Advanced Server, and Datacenter Servers. Windows 2000 Service Pack 2 or later is required for Windows Terminal Server.
- Windows Server 2003 (32-bit and 64-bit)

Windows 2000 Service Pack 3 and Windows XP Service Pack 1 are required for running DB2 applications in either of the following environments:

- Applications that have COM+ objects using Open Database Connectivity (ODBC).
- Applications that use OLE DB Provider for ODBC with OLE DB resource pooling disabled

If you are unsure about whether your application environment qualifies, it is recommended that you install the appropriate Windows service level.

For more information about COM+, see the following Microsoft Knowledge Base article:

- http://support.microsoft.com/default.aspx?scid=KB;EN-US;306414

The Windows 2000 Service Pack 3 and Windows XP Service Pack 1 are not required for the DB2 server or any of the applications that are shipped as part of the DB2 products.

Hardware requirements

For 32-bit DB2 products, a Pentium or Pentium compatible CPU is required. For 64-bit DB2 products, an Itanium or Itanium compatible CPU is required.

Software requirements

- MDAC 2.7 is required. The DB2 Setup wizard will install MDAC 2.7 if it is not already installed.
- 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.
- A browser is required to view online help.

Windows 2000 Terminal Server installation limitation:

You cannot install DB2 Version 8 from a network mapped drive using a remote session on Windows 2000 Terminal Server edition. The available workaround uses Universal Naming Convention (UNC) paths to launch the installation or run the installation from the console session.

For example, if the directory `c:\pathA\pathB\...\pathN` on a serverA is shared as `serverdir`, you can open `\\serverA\serverdir\filename.ext` to access the file `c:\pathA\pathB\...pathN\filename.ext` on the server.

Communication requirements

You can use APPC, TCP/IP, MPTN (APPC over TCP/IP), Named Pipes, and NetBIOS. To administer a Version 8 DB2 UDB database remotely, you must connect using TCP/IP. DB2 Version 8 servers, using the DB2 Connect server support feature, support only outbound client APPC requests; there is no support for inbound client APPC requests.

- For TCP/IP, Named Pipes, and NetBIOS connectivity, no additional software is required.

- For APPC (CPI-C) connectivity, through the DB2 Connect server support feature, one of the communication products shown in the following table is required.

Table 2. Supported SNA (APPC) products

Operating system	SNA (APPC) communication product
Windows NT	IBM Communications Server Version 6.1.1 or later IBM Personal Communications for Windows Version 5.0 with CSD 3 Microsoft SNA Server Version 3 Service Pack 3 or later
Windows 2000	IBM Communications Server Version 6.1.1 or later IBM Personal Communications for Windows Version 5.0 with CSD 3 Microsoft SNA Server Version 4 Service Pack 3 or later
Windows XP	IBM Personal Communications for Windows Version 5.5 with APAR IC23490
Windows Server 2003	Not supported.

- 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.

Windows (64–bit) considerations

- Local 32–bit applications are supported.
- 32–bit UDFs and stored procedures are supported.
- SQL requests from remote 32-bit downlevel clients are supported.
- DB2 Version 8 Windows 64-bit servers support connections from DB2 Version 6 and Version 7 32-bit clients only for SQL requests. Connections from Version 7 64-bit clients are not supported.

Related tasks:
- "Single-partition installation (Windows)" on page 46

Related reference:
- "Java SDK levels for DB2 UDB" on page 78

Security issues when installing DB2 Universal Database

Security issues are important to the DB2® administrator from the moment the product is installed.

To complete the installation of DB2 Universal Database™ (DB2 UDB), a user ID, a group name, and a password are required. The GUI-based DB2 UDB install program creates default values for different user IDs and the group. Different defaults are created, depending on whether you are installing on UNIX or Windows platforms:

- On UNIX platforms, the DB2 UDB install program creates different default users for the DAS (`dasusr`), the instance owner (`db2inst`), and the fenced user (`db2fenc`).

  The DB2 UDB install program appends a number from 1-99 to the default user name, until a user ID that does not already exist can be created. For example, if the users `db2inst1` and `db2inst2` already exist, the DB2 UDB install program creates the user `db2inst3`. If a number greater than 10 is used, the character portion of the name is truncated in the default user ID. For example, if the user ID `db2fenc9` already exists, the DB2 UDB install program truncates the `c` in the user ID, then appends the `10` (`db2fen10`). Truncation does not occur when the numeric value is appended to the default DAS user (for example, `dasusr24`).

- On Windows platforms, the DB2 UDB install program creates the default user `db2admin` for the DAS user, the instance owner, and fenced users. Unlike UNIX platforms, no numeric value is appended to the user ID.

To minimize the risk of a user other than the administrator from learning of the defaults and using them in an improper fashion within databases and instances, change the defaults during the install to a new or existing user ID of your choice.

Note: Response file installations do not use default values for user IDs or group names. These values must be specified in the response file.

Passwords are very important when authenticating users. If no authentication requirements are set at the operating system level and the database is using the operating system to authenticate users, users will be allowed to connect. For example on UNIX operating systems, undefined passwords are treated as NULL. In this situation, any user without a defined password will be considered to have a NULL password. From the operating system's perspective, this is a match and the user is validated and able to connect to the database. Use passwords at the operating system level if you want the operating system to do the authentication of users for your database.

Note: You cannot use undefined passwords if you want your database environment to adhere to Common Criteria requirements.

After installing DB2 Universal Database also review, and change (if required), the default privileges that have been granted to users. By default, the installation process grants system administration (SYSADM) privileges to the following users on each operating system:

Windows® 9x   Any Windows 98, or Windows ME user.

Other Windows environments

           On Windows NT, Windows 2000, Windows XP, or Windows Server 2003, a valid DB2 UDB username that belongs to the Administrators group.

UNIX platforms   A valid DB2 UDB username that belongs to the primary group of the instance owner.

SYSADM privileges are the most powerful set of privileges available within DB2 Universal Database. As a result, you may not want all of these users to have SYSADM privileges by default. DB2 UDB provides the administrator with the ability to grant and revoke privileges to groups and individual user IDs.

By updating the database manager configuration parameter *sysadm_group*, the administrator can control which group of users possesses SYSADM privileges. You

must follow the guidelines below to complete the security requirements for both DB2 UDB installation and the subsequent instance and database creation.

Any group defined as the system administration group (by updating *sysadm_group*) must exist. The name of this group should allow for easy identification as the group created for instance owners. User IDs and groups that belong to this group have system administrator authority for their respective instances.

The administrator should consider creating an instance owner user ID that is easily recognized as being associated with a particular instance. This user ID should have as one of its groups the name of the SYSADM group created above. Another recommendation is to use this instance-owner user ID only as a member of the instance owner group and not to use it in any other group. This should control the proliferation of user IDs and groups that can modify the instance, or any object within the instance.

The created user ID must be associated with a password to provide authentication before being permitted entry into the data and databases within the instance. The recommendation when creating a password is to follow your organization's password naming guidelines.

Related concepts:
- "Naming rules in an NLS environment" in the *Administration Guide: Planning*
- "Naming rules in a Unicode environment" in the *Administration Guide: Planning*
- "Windows NT platform security considerations for users" in the *Administration Guide: Implementation*
- "UNIX platform security considerations for users" in the *Administration Guide: Implementation*
- "Authentication" in the *Administration Guide: Planning*
- "Authorization" in the *Administration Guide: Planning*
- "Location of the instance directory" in the *Administration Guide: Implementation*
- "General naming rules" in the *Administration Guide: Implementation*
- "User, user ID and group naming rules" in the *Administration Guide: Implementation*

Required user accounts for installation of DB2 servers (Windows)

If you are installing on Windows NT, Windows 2000, Windows XP, or Windows Server 2003, you require the following DB2 server user accounts:
- an installation user account and
- one or more setup user accounts
  - a DB2 Administration Server (DAS) user account
  - a DB2 instance user account.

The installation user account must be defined prior to running the DB2 Setup wizard. The setup user accounts can be defined prior to installation or you can have the DB2 Setup program create them for you.

All user account names must adhere to your system naming rules and to DB2 naming rules.

DB2 enhanced security on Windows:

DB2 now offers enhanced Windows security. You can install DB2 with a user ID, but unless that user ID belongs to either the DB2ADMNS or DB2USERS group, that user ID won't be able to run any DB2 commands.

The DB2 installer creates these two new groups. You can either use a new name or accept the default names.

To enable this security feature, select the Enable operating system security check box on the Enable operating system security for DB2 object panel during the installation of DB2. Accept the default values for the DB2 Administrators Group field, and the DB2 Users Group field. The default group names are DB2ADMNS and DB2USERS. If there is a conflict with existing group names, you will be prompted to change the group names. If required, you can specify your own values.

DB2 server user accounts:

Installation user account
A local or domain user account is required to perform the installation. The user account must belong to the *Administrators* group on the machine where you will perform the installation.

For domain accounts, to verify userIDs on the DB2 server, the installation userID must belong to the Domain Administrators group on the domain where the accounts are going to be created.

You may also use the built-in LocalSystem account to run the installation for all products except DB2 UDB Enterprise Server Edition.

DB2 Administration Server (DAS) user account
A local or domain user account is required for the DB2 Administration Server (DAS).

If you are performing a response file installation, you can also specify the Local System Account in the response file. For more details, refer to the sample response files in the db2\windows\samples directory.

The DB2 Administration Server (DAS) is a special DB2 administration service used to support the GUI tools and assist with administration tasks on local and remote DB2 servers. The DAS has an assigned user account that is used to log the DAS service on to the computer when the DAS service is started.

You can create the DAS user account before installing DB2 or you can have the DB2 Setup wizard create it for you. If you want to have the DB2 Setup wizard create a new domain user account, the user account you use to perform the installation must have authority to create domain user accounts. The user account must belong to the *Administrators* group on the machine where you will perform the installation. This account will be granted the following user rights:
- Act as part of the operating system
- Debug programs
- Create token object
- Lock pages in memory
- Log on as a service
- Increase quotas

- Replace a process level token

The Lock pages in memory privilege is required for AWE (Advanced Windowing Extensions) support. The "Debug programs" privilege is only needed when DB2 group lookup is explicitly specified to use the access token.

If the user account is created by the install program, the user account will be granted these privileges and if the user account already exists, this account will also be granted these privileges. If the install grants the privileges, some of them will only be effective on first log-on by the account that was granted the privileges or reboot.

It is recommended that the DAS user have SYSADM authority on each of the DB2 systems within your environment so that it can start or stop other instances if required. By default, any user that is part of the *Administrator* group has SYSADM authority.

DB2 instance user account

A local or domain user account is required for the DB2 instance. Every DB2 instance has one user that is assigned when the instance is created. DB2 logs on with this user name when the instance is started.

You may also use the the built-in LocalSystem account to run the installation for all products except DB2 UDB Enterprise Server Edition.

You can create the DB2 instance user account before installing DB2 or you can have the DB2 Setup wizard create it for you. If you want to have the DB2 Setup wizard create a new domain user account, the user account you use to perform the installation must have authority to create domain user accounts. The user account must belong to the *Administrators* group on the machine where you will perform the installation. This account will be granted the following user rights:
- Act as part of the operating system
- Debug programs
- Create token object
- Increase quotas
- Lock pages in memory
- Log on as a service
- Replace a process level token

The Lock pages in memory privilege is required for AWE (Advanced Windowing Extensions) support. The "Debug programs" privilege is only needed when DB2 group lookup is explicitly specified to use the access token.

If the user account is created by the install program, the user account will be granted these privileges and if the user account already exists, this account will also be granted these privileges. If the install grants the privileges, some of them will only be effective on first log-on by the account that was granted the privileges or reboot.

Related concepts:
- "User, user ID and group naming rules" in the *Administration Guide: Implementation*

Related tasks:

Preparing the environment for a partitioned DB2 server (Windows)

This topic describes the steps required to prepare your Windows environment for a partitioned installation of DB2 Enterprise Server Edition.

Restrictions:

Each participating computer must have the same operating system. For example, you cannot have a partitioned database system that includes both Windows NT and Windows 2000 operating systems.

Procedure:

To prepare your Windows environment for installation:

1. Ensure that the primary computer and participating computers belong to the same Windows domain.

   Windows NT
   > Check the domain that computer belongs to using the Network dialog, accessible through the Control Panel.

   Windows 2000 or Windows Server 2003
   > Check the domain that computer belongs to using the System Properties dialog, accessible through the Control Panel.

2. Ensure that time and date settings on the primary computer and participating computers are consistent. To be considered consistent, the difference in GMT time between all computers must be no greater than 1 hour.

   System date and time can be modified using the Date/Time Properties dialog, accessible through the Control Panel. You can use the `max_time_diff` configuration parameter to change this restriction. The default is `max_time_diff` = 60, which allows a difference of less than 60 minutes.

3. Ensure that all participating computers can communicate with each other using TCP/IP:

   a. On one participating computer, enter the **hostname** command, which will return the hostname of the computer.

   b. On another participating computer, enter the following command:

      ```
      ping hostname
      ```

      where *hostname* represents the hostname of the primary computer. If the test is successful, you will receive output similar to the following:

      ```
      Pinging ServerA.ibm.com [9.21.27.230] with 32 bytes of data:

      Reply from 9.21.27.230: bytes=32 time<10ms TTL=128
      Reply from 9.21.27.230: bytes=32 time<10ms TTL=128
      Reply from 9.21.27.230: bytes=32 time<10ms TTL=128
      ```

      Repeat these steps until you are sure that all participating computers can communicate with each other using TCP/IP. Each computer must have a static IP address.

If you are planning to use multiple network adapters, you can specify which adapter to use to communicate between database partition servers. Use the **db2nchg** command to specify the netname field in the db2nodes.cfg file after the installation is complete.

4. During the installation you will be asked to provide a DB2 Administration Server user account. This is a local or domain user account that will be used by the DB2 Administration Server (DAS). The DAS is an administration service used to support the GUI tools and assist with administration tasks. You can define a user now or have the DB2 Setup wizard create one for you. If you want to create a new domain user using the DB2 Setup wizard, the account used to perform the installation must have authority to create domain users.

5. On the primary computer, where you will install the instance-owning partition, you must have a domain user account that belongs to the local *Administrators* group. You will log on as this user when you install DB2. You must add the same user account to the local *Administrators* group on each participating computer. This user must have the *Act as part of the operating system* user right.

6. Ensure that you install DB2 to the same drive on each participating computer. For example, do not install DB2 on the c: drive of the instance-owning database server, on the d: drive of a database partition server, and on the j: drive of another database partition server. Install DB2 on the c: drive of the instance-owning database server and install DB2 on the c: drive of any other participating database partition servers.

7. During the installation you will be asked to provide a domain user account to be associated with the DB2 instance. Every DB2 instance has one user assigned. DB2 logs on with this user name when the instance is started. You can define a user now, or you can have the DB2 Setup wizard create a new domain user for you.

   If you want to create a new domain user using the DB2 Setup wizard, the account used to perform the installation must have authority to create domain users. The instance user domain account must belong to the local *Administrators* group on all the participating computers and will be granted the following user rights:

   • Act as part of the operating system
   • Create token object
   • Lock pages in memory
   • Log on as a service
   • Increase quotas
   • Replace a process level token

   The installation program grants all these privileges except the Debug programs privilege.

Related reference:
• "db2nchg - Change Database Partition Server Configuration Command" in the *Command Reference*
• "Required user accounts for installation of DB2 servers (Windows)" on page 58

Fast communications manager (Windows)

The fast communication manager (FCM) provides communication support for DB2® UDB Enterprise Server Edition. Each database partition server has one FCM

thread to provide communications between database partition servers to handle agent requests and to deliver message buffers. The FCM thread is started when you start the instance.

If communications fail between database partition servers or if they re-establish communications, the FCM thread updates information (that you can query with the database system monitor) and causes the appropriate action (such as the rollback of an affected transaction) to be performed. You can use the database system monitor to help you set the FCM configuration parameters.

Note: You can specify the number of FCM message buffers with the *fcm_num_buffers* database manager configuration parameter.

Related tasks:
- "Verifying port range availability on participating computers (Windows)" on page 109

Virtual Interface Architecture

On Windows®, a partitioned DB2® UDB Enterprise Server Edition environment can take advantage of Virtual Interface (VI) Architecture. VI Architecture was developed to address the need for a standard, high-volume interconnect for data transfer between servers. VI Architecture permits high volumes of data to pass quickly between clustered servers.

Prior to the release of VI Architecture, communication between database partition servers in a cluster was done through the network infrastructure provided by the operating system. This previous method had a processing overhead on the operating system each time any communication between partitioned database servers took place.

VI Architecture defines a thin, fast interface that connects software applications directly to the networking hardware, while retaining the robust security protection of the operating system. In a communications-intensive environment, implementing VI Architecture with DB2 ESE can realize significant improvements in overall system throughput of database transactions and queries.

Related concepts:
- "DB2 UDB Enterprise Server Edition" on page 3

Related tasks:
- "Partitioned installation (Windows)" on page 47

DB2 server installation (UNIX)

Installation requirements for DB2 servers (AIX)

This topic lists the hardware, operating system, software, and communications requirements for DB2 Enterprise Server Edition and DB2 Workgroup Server Edition on AIX.

Hardware requirements
One of:
- IBM RISC/6000

- eServer pSeries

Operating system requirements

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

DB2 Enterprise Server Edition, for either single-partition or partitioned
database environment, is available on:

AIX Version 4.3.3 (32-bit only)
    with Maintenance level 11

    For JFS filesystems:
        APAR IY49385

    For Java:
        OpenGL.OpenGL_X.rte.base

        OpenGL.OpenGL_X.rte.soft

        X11.adt.lib

AIX Version 5.1.0 (32-bit and 64-bit)
    with Maintenance level 5

    For JFS filesystems:
        APAR IY48735

    For JFS2 filesystems:
        APAR IY49254

    For Java:
        Recommended Maintenance Package AIX 5100-04 and
        APAR IY46667

    For running more than 1000 db2agents:
        APAR IY49220, and specify ″vmtune -T 0″ before db2start
        or in AIX bootup

AIX Version 5.2.0 (32-bit and 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

DB2 Workgroup Server Edition, on single-partition environments only, is
available on:

AIX Version 4.3.3 (32-bit only)
   with Maintenance level 11

   For JFS filesystems:
      APAR IY49385

   For Java:
      OpenGL.OpenGL_X.rte.base

      OpenGL.OpenGL_X.rte.soft

      X11.adt.lib

AIX Version 5.1.0 (32-bit and 64-bit)
   with Maintenance level 5

   For JFS filesystems:
      APAR IY48735

   For JFS2 filesystems:
      APAR IY49254

   For Java:
      Recommended Maintenance Package AIX 5100-04 and
      APAR IY46667

   For running more than 1000 db2agents:
      APAR IY49220, and specify "vmtune -T 0" before db2start
      or in AIX bootup

Note: You can query your system to see if a particular APAR is installed
   with the **instfix -v -i -k** *<APAR>* command. For example, `instfix -v
   -i -k IY31254`.

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

- `X11.fnt.ucs.ttf` (AIX Windows Unicode TrueType Fonts)
- `xlC.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 sets are required:
  - `xlC.aix43.rte` 5.0.2.x or 6.0.0.x
  - `OpenGL.OpenGL_X.rte.base` 4.3.3.76
  - `OpenGL.OpenGL_X.rte.soft` 4.3.3.75
  - `X11.adt.lib` 4.3.3.10
- On AIX Version 5.x the following file set is required:
  - `xlC.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

- 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.
- A browser is required to view online help.

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DB2 Administration Server (DAS) requirements

The following requirements must be met:

- A DAS must be created on each DB2 server that you wish to administer for the GUI tools to work properly, only one DAS needs to reside on each physical machine.
- Each DAS must be created under a user ID (same as an instance).
- If the same user ID is to be used on all physical computers, then that userID's home directory cannot be shared (cross mounted) with the other computers.
- If a different user ID is used for each DAS, then the home directories of the user IDs that are used can be shared (cross mounted).
- As long as a DAS is created on each computer, it does not matter whether:
  - A different user ID is used for each DAS, or
  - The same user ID is used and that the user ID's home directory is not shared.

DB2 UDB installation on NFS (Network File System)

The installation of DB2 products on NFS (Network File System) is not supported. Installing DB2 on NFS (for example, NFS mounting /usr/opt/db2_08_01 or /opt/IBM/db2/V8.1) can be error prone and these errors can be difficult to diagnose.

Only the DB2 installation image can be NFS-mounted (located on a system other than the one DB2 runs on, or a remote filesystem or partition). DB2 must be installed to a local drive and not an NFS-mounted drive.

For example, you can copy your DB2 product CD onto system A (for example, an NFS server), and install DB2 on systems B, C, and D using NFS to launch the DB2 installation code from system A. However, you cannot install your DB2 product on system A, and then use DB2 on systems B, C, or D. Additionally, you cannot launch the DB2 installation process on system B, install the code on system A, and use it on system B. The DB2 code must be local to the system running DB2.

Related tasks:

- "Single-partition installation (UNIX)" on page 48

Related reference:

- "Java SDK levels for DB2 UDB" on page 78

Installation requirements for DB2 servers (HP-UX)

This topic lists hardware, operating system, software and communication requirements for DB2 servers on HP-UX.

Hardware requirements

- HP 9000 Series 700 or 800 system
- HP Integrity Series server

Operating system requirements

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

DB2 Workgroup Server Edition (single-partition database environments only) and DB2 Enterprise Server Edition (single-partition and partitioned database environments) can run on 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. See http://www.hp.com/products1/unix/java/patches/index.html for required patches.

DB2 Workgroup Server Edition (single-partition database environments only) and DB2 Enterprise Server Edition (single-partition and partitioned database environments) 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.
- A browser is required to view online help.

Communication requirements

APPC or TCP/IP. You can use only TCP/IP to remotely administer databases.

- For TCP/IP connectivity, no additional software is required.
- For APPC (CPI-C) connectivity through the DB2 Connect server support feature, the following software is required:
  - SNAplus2 Link R6.11.00.00
  - SNAplus2 API R.6.11.00.00

DB2 UDB Version 8 servers, using the DB2 Connect server support feature, support only outbound client APPC requests; there is no support for inbound client APPC requests.

DB2 Version 8 HP-UX 64-bit servers do not support running DB2 Version 7 64-bit local applications.

DB2 Administration Server (DAS) requirements

The following requirements must be met:

- A DAS must be created on each physical system for the Control Center and the Task Center to work properly.
- Each DAS must be created under a userID (same as an instance).
- If the same userID is to be used on all physical systems, then that userID's home directory cannot be shared (cross mounted) with the other systems.
- If a different userID is used for each DAS, then the home directories of the userIDs that are used can be shared (cross mounted).
- As long as a DAS is created on each system, it does not matter whether:
  - A different userID is used for each DAS, or
  - The same userID is used and that the userID's home directory is not shared.

DB2 UDB installation on NFS (Network File System)

The installation of DB2 products on NFS (Network File System) is not

| supported. Installing DB2 on NFS (for example, NFS mounting
| /usr/opt/db2_08_01 or /opt/IBM/db2/V8.1) can be error prone and these
| errors can be difficult to diagnose.

| Only the DB2 installation image can be NFS-mounted (located on a system
| other than the one DB2 runs on, or a remote filesystem or partition). DB2
| must be installed to a local drive and not an NFS-mounted drive.

| For example, you can copy your DB2 product CD onto system A (for
| example, an NFS server), and install DB2 on systems B, C, and D using
| NFS to launch the DB2 installation code from system A. However, you
| cannot install your DB2 product on system A, and then use DB2 on
| systems B, C, or D. Additionally, you cannot launch the DB2 installation
| process on system B, install the code on system A, and use it on system B.
| The DB2 code must be local to the system running DB2.

Related tasks:
- "Modifying kernel parameters (HP-UX)" on page 80

Related reference:
- "Java SDK levels for DB2 UDB" on page 78

Installation requirements for DB2 servers (Linux)

This topic lists the hardware, distribution, package, software, and communication
requirements for DB2 Enterprise Server Edition, DB2 Workgroup Server Edition,
and DB2 Workgroup Server Unlimited Edition on Linux.

Hardware requirements

DB2 Workgroup Server Edition and DB2 Workgroup Server Unlimited
Edition are supported on:
- Intel 32–bit
- IBM eServer iSeries that support Linux
- IBM eServer pSeries that support Linux

DB2 Enterprise Server Edition, in either a single-partition or partitioned
environment, is supported on:
- Intel 32–bit and 64–bit
- AMD 64–bit
| - PowerPC 64–bit
| - DB2 31-bit requires S/390 9672 Generation 5 or later, Multiprise 3000 or
| eServer zSeries.
| - DB2 64-bit requires eServer zSeries.
- IBM eServer iSeries that support Linux
- IBM eServer pSeries that support Linux

Distribution requirements

For the latest information on supported distribution and kernel levels,
point your browser to http://www.ibm.com/db2/linux/validate

| **Package requirements**
| The following tables list the package requirements for SuSE and RedHat
| distributions for DB2 partitioned servers (Linux) Version 8. The pdksh
| package is required for all DB2 systems. The rsh-server and nfs-utils
| packages are required for partitioned database systems. Both packages
| should be installed and running to continue with the setup of DB2 on

partition database systems. To have the rsh-server running, inetd (or xinetd) must be installed and running as well.

For more information, see your Linux distribution documentation.

Package requirements for SuSE

Package name	Description
pdksh	Korn Shell. This package is required for partitioned database environments.
rsh-server	This package contains a set of server programs which allow users to run commands on remote computers, login in to other computers, and copy files between computers (rsh, rexec, rlogin, and rcp).
nfs-utils	Network File System support package. It allows access for local files to remote computers.

Package requirements for RedHat

Directory	Package name	Description
/System Environment/Shell	pdksh	Korn Shell. This package is required for partitioned database environments.
/System Environment/Daemons	rsh-server	This package contains a set of programs which allow users to run commands on a remote computer. Required for partitioned database environments.
/System Environment/Daemons	nfs-utils	Network File System support package. It allows access for local files to remote computers.

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.
- A web browser is required to view online help.
- X Window System software capable of rendering a graphical user interface is required. You require this software if you want to use the DB2 Setup wizard to install DB2 Enterprise Server Edition or if you want to use any DB2 graphical tools.

Communication requirements

TCP/IP is required to access remote databases. Your particular Linux distribution provides TCP/IP connectivity if it is selected during the installation. If your Linux computer is installed on an existing network and is required to use a static IP address, then information similar to that found in the following table should be collected from your network administrator:

Example of TCP/IP settings

Name	Example number
Host IP address	191.72.1.3
Subnet mask	255.255.255.0
Gateway	191.72.1.1
Domain name	191.72.3.1

This information should be specified either during the installation of your Linux distribution, or after the installation is finished using your distribution's setup utility.

DB2 Administration Server (DAS) requirements
The following requirements must be met:

- A DAS must be created on each physical system for the Control Center and the Task Center to work properly.
- Each DAS must be created under a userID (same as an instance).
- If the same userID is to be used on all physical systems, then that userID's home directory cannot be shared (cross mounted) with the other systems.
- If a different userID is used for each DAS, then the home directories of the userIDs that are used can be shared (cross mounted).
- As long as a DAS is created on each system, it does not matter whether:
  - A different userID is used for each DAS, or
  - The same userID is used and that the userID's home directory is not shared.

Installing DB2 products or sharing instance directory on NFS (Network File System)
The installation of DB2 products on NFS (Network File System) is not supported. Installing DB2 on NFS (for example, NFS mounting /usr/opt/db2_08_01 or /opt/IBM/db2/V8.1) can be error prone and these errors can be difficult to diagnose.

Only the DB2 installation image can be NFS-mounted (located on a system other than the one DB2 runs on, or a remote filesystem or partition). DB2 must be installed to a local drive and not an NFS-mounted drive.

For example, you can copy your DB2 product CD onto system A (for example, an NFS server), and install on systems B, C, and D using NFS to launch the DB2 installation code from system A. However, you cannot install your DB2 product on system A, and then use DB2 on systems B, C, or D. Additionally, you cannot launch the DB2 installation process on system B, install the code on system A, and use it on system B. The DB2 code must be local to the system running DB2.

Related tasks:
- "Preparing to install DB2 UDB for Linux on zSeries" on page 70
- "Modifying kernel parameters (Linux)" on page 82

Related reference:
- "Java SDK levels for DB2 UDB" on page 78

Preparing to install DB2 UDB for Linux on zSeries

To install DB2 UDB or DB2 Connect on an S/390 computer that is running Linux, you must make the installation image accessible to the S/390 computer. You can use FTP to send the installation image to the S/390 computer running Linux, or use an NFS mount to make the product CD-ROM available to the S/390 computer running Linux.

Using FTP to access the installation image:

From the S/390 computer running Linux:

1. Enter the following command: **ftp** *yourserver.com*, where *yourserver.com* represents the FTP server where the installation image resides.
2. Enter your user ID and password.
3. Enter the following commands:

   ```
   bin
   get product.tar
   ```

   where *product* represents the appropriate product package name: *db2ese* for DB2 Enterprise Server Edition, *db2cee* for DB2 Connect Enterprise Edition, or *db2rtc* for DB2 Run-Time Client.
4. Untar the installation image by entering the following command:

   ```
   tar -xvf product.tar
   ```

Using the DB2 product CD-ROM over NFS to access the installation image:

To use the DB2 or DB2 Connect product CD-ROM on a UNIX operating system:

1. Mount the appropriate CD-ROM.
2. Export the directory where you mounted the CD-ROM. For example, if you mounted the CD-ROM under /cdrom, then export the /cdrom directory.
3. On the S/390 computer running Linux, NFS mount this directory using the following command:

   ```
   mount -t nfs -o ro nfsservername:/cdrom /local_directory_name
   ```

   where *nfsservername* represents the name of the NFS server, *cdrom* represents the name of the directory on the NFS server, and *local_directory_name* represents the name of the local directory.
4. From the S/390 computer running Linux, change to the directory where the CD-ROM is mounted. You can do this by entering the **cd** */local_directory_name* command, where *local_directory_name* represents the mount point of your product CD-ROM.

Related tasks:

- "Installing DB2 Personal Edition - overview (Linux)" in the *Quick Beginnings for DB2 Personal Edition*
- "Installing DB2 Connect Enterprise Edition (Linux)" in the *Quick Beginnings for DB2 Connect Enterprise Edition*

Installation requirements for DB2 servers (Solaris Operating Environment)

This topic lists the hardware, operating system, software, and communication requirements for DB2 Enterprise Server Edition or Workgroup Server Edition on the Solaris Operating Environment.

Hardware requirements
Solaris UltraSPARC-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.

DB2 Workgroup Server Edition (single-partition database environment only) is supported on the following Solaris Operating Environment versions:

- Solaris 7 (32-bit) "Recommended & Security Patches" + 107226-17 + 107153-01 + 106327-10
- Solaris 8 (32-bit) "Recommended & Security Patches" + 108921-12 + 108940-24 + 108434-03 and 108528-12
- Solaris 9 (32–bit)

DB2 Enterprise Server Edition, on both single-partition and partitioned database environment, is supported on the following Solaris Operating Environment versions:

- 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 and the SUNWlibC software are also required and can be obtained from the http://sunsolve.sun.com Web site.

For DB2 on 64-bit Fujitsu PRIMEPOWER systems, you require the following:

- Solaris 8 Kernel Update Patch 108528-16 or later to get the fix for patch 912040-01.
- Solaris 9 Kernel Update Patch 112233-01 or later to get the fix for patch 912041-01.

The Fujitsu PRIMEPOWER patches for the Solaris Operating Environment can be downloaded from FTSI at: http://download.ftsi.fujitsu.com/.

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.
- A browser is required to view online help.

Communication requirements

APPC or TCP/IP. DB2 UDB Version 8 servers, using the DB2 Connect server support feature, support only outbound APPC client requests; there is no support for inbound APPC client requests. You can use only TCP/IP to remotely administer databases.

- For TCP/IP connectivity, no additional software is required.

- For APPC (CPI-C) connectivity, through the DB2 Connect server support feature, you require SNAP-IX for Solaris V7.02.

DB2 Administration Server (DAS) requirements
The following requirements must be met:

- A DAS must be created on each physical computer for the Control Center and the Task Center to work properly.
- Each DAS must be created under a userID (same as an instance).
- If the same user ID is to be used on all physical computer, then that userID's home directory cannot be shared (cross mounted) with the other computers.
- If a different user ID is used for each DAS, then the home directories of the user IDs that are used can be shared (cross mounted).
- As long as a DAS is created on each computer , it does not matter whether:
  - A different user ID is used for each DAS, or
  - The same user ID is used and that the user ID's home directory is not shared.

DB2 UDB installation on NFS (Network File System)
The installation of DB2 products on NFS (Network File System) is not supported. Installing DB2 on NFS (for example, NFS mounting /usr/opt/db2_08_01 or /opt/IBM/db2/V8.1) can be error prone and these errors can be difficult to diagnose.

Only the DB2 installation image can be NFS-mounted (located on a system other than the one DB2 runs on, or a remote filesystem or partition). DB2 must be installed to a local drive and not an NFS-mounted drive.

For example, you can copy your DB2 product CD onto system A (for example, an NFS server), and install DB2 on systems B, C, and D using NFS to launch the DB2 installation code from system A. However, you cannot install your DB2 product on system A, and then use DB2 on systems B, C, or D. Additionally, you cannot launch the DB2 installation process on system B, install the code on system A, and use it on system B. The DB2 code must be local to the system running DB2.

Related tasks:
- "Modifying kernel parameters (Solaris Operating Environment)" on page 83

Related reference:
- "Java SDK levels for DB2 UDB" on page 78

Fast communications manager (UNIX)

The fast communications manager (FCM) provides communication support for DB2® UDB Enterprise Server Edition. Each database partition server has one FCM daemon to provide communications between database partition servers to handle agent requests and to deliver message buffers. The FCM daemon is started when you start the instance.

If communications fail between database partition servers or if they re-establish communications, the FCM daemon updates information (that you can query with the database system monitor) and causes the appropriate action (such as the

rollback of an affected transaction) to be performed. You can use the database system monitor to help you set the FCM configuration parameters.

You can specify the number of FCM message buffers with the *fcm_num_buffers* database manager configuration parameter.

Related tasks:
- "Enabling communications between database partition servers (UNIX)" on page 135

Chapter 9. Preinstallation tasks

Extending the directory schema (Windows)

If you plan to use Lightweight Directory Access Protocol (LDAP) with Windows 2000 or Windows Server 2003, you must extend the directory schema to contain DB2 object classes and attribute definitions. You must perform this task before you install any DB2 products.

Prerequisites:

Your Windows user account must have Schema Administration authority.

Procedure:

To extend the directory schema:
1. Log on as a domain controller.
2. Run the **db2schex.exe** program from the installation CD with Schema Administration authority. You can run this program with Schema Administration authority without logging off and logging on again, as follows:

   ```
   runas /user:MyDomain\Administrator x:\db2\Windows\utilities\db2schex.exe
   ```

   where x: represents the CD-ROM letter.

   When **db2schex.exe** completes, you can proceed with the installation of your DB2 product.

Related reference:
- "Installation requirements for DB2 servers (Windows)" on page 54

Installing the IBM Developer Kit for Java (UNIX)

Depending upon your operating system, the IBM® Developer Kit for Java™ (SDK) 1.3.1, SDK 1.4.1, or SDK 1.4.2 is required for DB2® to use the DB2 Control Center or to create and run Java applications, including stored procedures and user-defined functions. The IBM Software Developer's Kit (SDK) is supported, as well as the HP-UX JDK and the Solaris Operating Environment JDK.

A hybrid platform is a platform where you get 32–bit and 64–bit instance support in the same install. On hybrid platforms, the 32–bit version of the SDK is installed during the DB2 product installation, but not the 64–bit version of the SDK. The 64–bit version of the SDK is shipped on another CD-ROM. On non-hybrid platforms, the correct 31–bit, 32–bit, or 64–bit SDK is installed during the DB2 product installation.

The 64-bit SDK is part of the DB2 product CD-ROM on non-hybrid 64-bit platforms. For hybrid 64–bit platforms the 64–bit SDK is available on a separate CD-ROM and is not shipped as part of the DB2 product CD-ROM.

The SDK is installed whenever a component that requires Java is being installed. However, if the installer detects that SDK is already installed, it will not install it again. The SDK is installed in its own directory and does not overwrite any previous levels of the SDK.

In cases where 64-bit Java is required, a message appears telling you that Java 64-bit is required. If this message appears, you must install Java 64-bit. This applies to hybrid platforms only.

Restrictions:

The installation of the Java SDK is attempted only if you use one of the following DB2 installation methods:
* GUI install program (db2setup)
* Response file installation (db2setup -r response_file)

Other methods, either using SMIT or db2_install script, will not install the Java SDK.

Procedure:

To install the SDK manually:
1. Run the command appropriate for your operating system from the `/cdrom/db2/<platform>/Java-1.4` directory, where `<platform>` represents your operating system (for example, aix or solaris).

Operating System	Command	Installation directory
AIX® 32–bit (SDK 1.3.1)	`installp -acgqX -d . Java131.adt`	`/usr/java131`
AIX 64–bit (SDK 1.3.1)	`installp -acgqX -d . Java131_64.adt`	`/usr/java13_64`
AIX 32-bit	`installp -acgqX -Y -d . Java14.sdk`	`/usr/java141`
AIX 64-bit	`installp -acgqX -Y -d . Java14_64.sdk`	`/usr/java14_64`
HP-UX 32-bit and 64–bit	`swinstall -x allow_incompatible=true -x mount_all_filesystems=false -s <path_to_depot_dir>/sdk14_1420 _1100.depot T1456AA` **Note:** `path_to_depot_dir` must be the actual path to the directory which contains the depot fileset, starting from the ″/″. For example, `path_to_depot_dir` on the HP-UX 32-bit CD would be `/cdrom/db2/hpux/Java-1.4/`.	`/opt/java1.4`

Operating System	Command	Installation directory

HP Itanium 32-bit and 64-bit	`swinstall -x allow_incompatible=true`
	`  -x mount_all_filesystems=false -s`
	`  <path_to_depot_dir>/sdk14_14201_`
	`  1122.depot`
	`  T1458AA`
	
	Note: `path_to_depot_dir` must be the actual path to the directory which contains the depot fileset, starting from the "/". For example, `path_to_depot_dir` on the HP-UX 32-bit CD would be `/cdrom/db2/hpux/Java-1.4/`
		`/opt/java1.4`

Linux IA32	`rpm -ivh IBMJava2-SDK-1.4.1-2.0.i386.rpm`	`/opt/IBMJava2-141`
Linux IA64	`rpm -ivh IBMJava2-SDK-1.4.1-2.0.ia64.rpm`	`/opt/IBMJava2-141`
Linux 390	`rpm -ivh IBMJava2-SDK-1.4.1-2.0.s390.rpm`	`/opt/IBMJava2-s390-141`
Linux 390 64-bit	`rpm -ivh IBMJava2-SDK-1.4.1-2.0.s390x.rpm`	`/opt/IBMJava2-s390-141`
Linux PPC 32-bit	`rpm -ivh IBMJava2-SDK-1.4.1-2.0.ppc.rpm`	`/opt/IBMJava2-ppc-141`
Linux PPC 64-bit	`rpm -ivh IBMJava2-SDK-1.4.1-2.0.ppc64.rpm`	`/opt/IBMJava2-ppc64-141`
SUN 32-bit	`pkgadd -d . SUNWj3rt SUNWj3dev` `     SUNWj3man SUNWj3dmo`	`/usr/j2se`

SUN 64-bit	`pkgadd -d . SUNWj3rt SUNWj3dev`
	`     SUNWj3man SUNWj3dmo SUNWj3rtx`
	`     SUNWj3dmx SUNWj3dvx`
		`/usr/j2se`

2. To verify that the IBM SDK is installed, run the **<path>/jre/bin/java -version** command, where <path> represents the path where the SDK was installed. Refer to the installation directory for each platform listed above.

   You should receive output similar to the following, which is for AIX:

   ```
   java version "1.4.1"
   Java(TM) 2 Runtime Environment, Standard Edition (build 1.4.1)
   Classic VM (build 1.4.1, J2RE 1.4.1 IBM AIX build ca141-20030930
   (JIT enabled: jitc))
   ```

The IBM SDK is also available from the IBM developerWorks® web site at:

- http://www.ibm.com/developerworks/java/jdk/index.html

RPM-based installation of DB2 on Linux:

When you install DB2 Universal Database™ Version 8 on Linux, the RPM-based installation attempts to install the IBM Java RPM (IBM SDK 1.4.1 SR2). If a later level of the RPM, such as IBM SDK 1.5.1 SR1, already exists, the back-level RPM is not installed.

However, in this case, the installation leaves the JDK_PATH database configuration parameter pointing to the back-level path. As a result, none of the Java-dependant functionality, including the installation of the DB2 Tools Catalog, will work.

To solve this problem, run the following command as the instance owner:

```
db2 update dbm cfg using JDK_PATH <exisitng SDK path> <back-level SDK path>
```

This update will point DB2 Universal Database to the correct IBM Developer Kit.

Related reference:
- "Java SDK levels for DB2 UDB" on page 78

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)" on page 75

Creating group and user IDs for a DB2 UDB installation (UNIX)

Three users and groups are required to operate DB2. The user and group names used in the following instructions are documented in the table below. You may specify your own user and group names as long as they adhere to system naming rules and DB2 naming rules.

The user IDs you create will be required to complete subsequent setup tasks.

Table 3. Required users and groups

Required user	Example user name	Example group name
Instance owner	db2inst1	db2iadm1
Fenced user	db2fenc1	db2fadm1
DB2 administration server user	dasusr1	dasadm1

- The instance owner home directory is where the DB2 instance will be created.
- The fenced user is used to run user defined functions (UDFs) and stored procedures outside of the address space used by the DB2 database.
- The user ID for the *DB2 administration server user* is used to run the DB2 administration server on your system.

Prerequisites:

You must have root authority to create users and groups.

Procedure:

To create the required groups and user IDs for DB2:
1. Log in as a user with root authority.
2. Enter the appropriate commands for your operating system.

> **Note:** These command line examples do not contain passwords. They are examples only. You can use the *passwd username* parameter from the command line to set the password.

AIX To create groups on AIX, enter the following commands:

```
mkgroup id=999 db2iadm1
mkgroup id=998 db2fadm1
mkgroup id=997 dasadm1
```

Create users for each group:

```
mkuser id=1004 pgrp=db2iadm1 groups=db2iadm1
    home=/home/db2inst1 db2inst1
mkuser id=1003 pgrp=db2fadm1 groups=db2fadm1
    home=/home/db2fenc1 db2fenc1
mkuser id=1002 pgrp=dasadm1 groups=dasadm1
    home=/home/dasusr1 dasusr1
```

HP-UX
To create groups on HP-UX, enter the following commands:

```
groupadd -g 999 db2iadm1
groupadd -g 998 db2fadm1
groupadd -g 997 dasadm1
```

Create users for each group:

```
useradd -g db2iadm1 -d /home/db2inst1 -m db2inst1
useradd -g db2fadm1 -d /home/db2fenc1 -m db2fenc1
useradd -g dbasgrp -d /home/dasusr1 -m dasusr1
```

Linux To create groups on Linux, enter the following commands:

```
groupadd -g 999 db2iadm1
groupadd -g 998 db2fadm1
groupadd -g 997 dasadm1
```

Create users for each group:

```
mkuser -u 1004 -g db2iadm1 -m -d /home/db2inst1 db2inst1
mkuser -u 1003 -g db2fadm1 -m -d /home/db2fenc1 db2fenc1
mkuser -u 1002 -g dasadm1 -m -d /home/dasusr1 dasusr1
```

Solaris Operating Environment

To create groups on Solaris Operating Environment, enter the following commands:

```
groupadd -g 999 db2iadm1
groupadd -g 998 db2fadm1
groupadd -g 997 dasadm1
```

Create users for each group:

```
useradd -g db2iadm1 -u 1004 -d /export/home/db2inst1 -m db2inst1

useradd -g db2fadm1 -u 1003 -d /export/home/db2fenc1 -m db2fenc1

useradd -g dasadm1 -u 1002 -d /export/home/dasusr1 -m  dasusr1
```

Related concepts:

- "General naming rules" in the *Administration Guide: Implementation*

Related tasks:

- "Installing a DB2 product manually" in the *Installation and Configuration Supplement*

Kernel parameters (UNIX)

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 4. 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
nflocks	2048	4096	8192	8192
ninode	512	1024	2048	2048
nfile	(4 * ninode)	(4 * ninode)	(4 * ninode)	(4 * ninode)
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
semmni	128	256	512	2048
semmap	130	258	514	2050
semmns	256	512	1024	4096

Kernel parameter	Physical Memory: 64MB - 128MB	Physical Memory: 128MB - 256MB	Physical Memory: 256MB - 512MB	Physical Memory: 512MB+
semmnu	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 80

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.

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*

Additional partitioned database environment preinstallation tasks (UNIX)

Updating environment settings for a partitioned DB2 installation (AIX)

This task describes the environment settings that you need to update on each computer that will participate in your partitioned database system.

Procedure:

To update AIX environment settings:

1. Log on to the computer as a user with `root` authority.
2. Set the AIX `maxuproc` (maximum number of processes per user) device attribute to *4096* by entering the following command:

   ```
   chdev -l sys0 -a maxuproc='4096'
   ```
3. Set the TCP/IP network parameters on all the workstations that are participating in your partitioned database system to the following values. These values are the minimum values for these parameters. If any of the network-related parameters are already set to a higher value, do not change it.

   ```
   thewall       = 65536
   sb_max        = 1310720
   rfc1323       = 1
   tcp_sendspace = 221184
   tcp_recvspace = 221184
   udp_sendspace = 65536
   udp_recvspace = 65536
   ipqmaxlen     = 250
   somaxconn     = 1024
   ```

   To list the current settings of all network-related parameters, enter the following command:

   ```
   no -a | more
   ```

   To set a parameter, enter the follow command:

   ```
   no -o parameter_name=value
   ```

   where:
   - *parameter_name* represents the parameter you want to set.
   - *value* represents the value that you want to set for this parameter.

   For example, to set the `tcp_sendspace` parameter to 221184, enter the following command:

   ```
   no -o tcp_sendspace=221184
   ```
4. If you are using a high speed interconnect, you must set the *spoolsize* and *rpoolsize* for *css0* to the following values:

   ```
   spoolsize      16777216
   rpoolsize      16777216
   ```

   To list the current settings of these parameters, enter the following command:

   ```
   lsattr -l css0 -E
   ```

   To set these parameters, enter the following commands:

   ```
   /usr/lpp/ssp/css/chgcss -l css0 -a spoolsize=16777216
   /usr/lpp/ssp/css/chgcss -l css0 -a rpoolsize=16777216
   ```

If you are not using the /tftpboot/tuning.cst file to tune your system, you can use the /opt/lpp/db2_08_01/misc/rc.local.sample sample script file to update the network-related parameters after installation. To update the network-related parameters using the sample script file after installation, perform the following steps:

a. Copy this script file to the /etc directory and make it executable by root by entering the following commands:

```
cp /opt/lpp/db2_08_01/misc/rc.local.sample /etc/rc.local
chown root:sys /etc/rc.local
chmod 744 /etc/rc.local
```

b. Review the /etc/rc.local file and update it if necessary.

c. Add an entry to the /etc/inittab file so that the /etc/rc.local script is executed whenever the machine is rebooted. You can use the **mkitab** command to add an entry to the /etc/inittab file. To add this entry, enter the following command:

```
mkitab "rclocal:2:wait:/etc/rc.local > /dev/console 2>&1"
```

d. Ensure that /etc/rc.nfs entry is included in the /etc/inittab file by entering the following command:

```
lsitab rcnfs
```

e. Update the network parameters without rebooting your system by entering the following command:

```
/etc/rc.local
```

5. Ensure that you have enough paging space for a partitioned installation of DB2 ESE to run. If you do not have sufficient paging space, the operating system will kill the process that is using the most virtual memory (this is likely to be one of the DB2 processes). To check for available paging space, enter the following command:

```
lsps -a
```

This command will return output similar to the following:

```
Page Space  Physical Volume  Volume Group  Size  %Used  Active  Auto  Type
paging00    hdisk1           rootvg        60MB  19     yes     yes   lv
hd6         hdisk0           rootvg        60MB  21     yes     yes   lv
hd6         hdisk2           rootvg        64MB  21     yes     yes   lv
```

We recommend that the paging space available be equal to twice the amount of physical memory installed on your computer.

6. If you are creating a small to intermediate size partitioned database system, the number of network file system daemons (NFSDs) on the instance-owning computer should be close to:

```
# of biod on a computer X # of computers in the instance
```

We recommended that you run 10 biod processes on every computer. According to the above formula, on a four computer system with 10 biod processes, you would use 40 NFSDs.

If you are installing a larger system, you can have up to 120 NFSDs on the computer.

For additional information about NFS, refer to your NFS documentation.

Setting up a working collective to distribute commands to ESE workstations (AIX)

In a partitioned database environment on AIX, you can set up a working collective to distribute commands to the set of RS/6000 SP workstations that participate in your partitioned database system. Commands can be distributed to the workstations by the `dsh` command.

This can be useful when installing or administrating a partitioned database system on AIX, to enable you quickly execute the same commands on all the computers in your environment with less opportunity for error.

Prerequisites:

You must know the hostname of each computer that you want to include in the working collective.

You must be logged on to the Control workstation as a user with `root` authority.

Procedure:

Have a file that lists the hostnames for all of the RS/6000 SP workstations that will participate in your partitioned database system. To set up the working collective to distribute commands to this list of workstations:

1. Create a file called `eeelist.txt` that will list the *hostnames* for all of the workstations that will participate in the working collective.

   For example, assume that you wanted to create a working collective with two SP nodes called `workstation1` and `workstation2`. The contents of this file would be:

   ```
   workstation1
   workstation2
   ```

2. Update the working collective environment variable. To update this list, enter the following command:

   ```
   export WCOLL=path/eeelist.txt
   ```

   where *path* is the location where *eeelist.txt* was created, and *eeelist.txt* is the name of the file that you created that lists the RS/6000 SP workstations in the working collective.

3. Verify that the names in the working collective are indeed the workstations that you want, by entering the following command:

   ```
   dsh -q
   ```

   You will receive output similar to the following:

   ```
   Working collective file /eeelist.txt:
   workstation1
   workstation2
   Fanout: 64
   ```

Related tasks:

- "Verifying that NFS is running (UNIX)" on page 87

Copying the contents of the DB2 product CD-ROM to your computer

This task describes the steps for copying the contents of the DB2 ESE product CD-ROM to the shared DB2 home file system. Copying the contents of the DB2 CD-ROM is a step unique to partitioned installations of DB2. Because you are likely to be installing DB2 to multiple computers simultaneously, installing from hard disk is significantly faster than installing from a CD-ROM. This method is recommended for any system that includes more than four computers.

The alternative is to NFS mount the CD-ROM file system from each computer. You may want to mount the CD-ROM from each computer if you do not have enough disk space on the DB2 home file system or if you are installing on fewer than four computers.

Procedure:

To mount the DB2 installation CD and copy the contents
1. Create a directory on your /db2home file system for the DB2 product CD-ROM:
   ```
   mkdir /db2home/db2cdrom
   ```
2. Copy the contents of the CD-ROM to directory that you created:
   ```
   cp -R /cdrom /db2home/db2cdrom
   ```

Verifying that NFS is running (UNIX)

Network File System (NFS) must be running on each computer.

Procedure:

To verify that Network File System (NFS) is running on each computer that will participate in your partitioned database system:

AIX   Type the following command on each computer:
   ```
   lssrc -g nfs
   ```

The `Status` field for NFS processes should indicate `active`.

Once you have verified that NFS is running on each system, check for the specific NFS processes required by DB2. The required processes are:
   ```
   rpc.lockd
   rpc.statd
   ```

HP-UX and Solaris Operating Environment
   Type the following command:
   ```
   showmount -e hostname
   ```

Entering the **showmount** command without the *hostname* parameter will check the local system.

If NFS is not active you will receive a message similar to the following:
   ```
   showmount: ServerA: RPC: Program not registered
   ```

Once you have verified that NFS is running on each system, check for the specific NFS processes required by DB2. The required processes are:

```
rpc.lockd
rpc.statd
```

You can use the following commands to check for these processes:
```
ps -ef | grep rpc.lockd
ps -ef | grep rpc.statd
```

LINUX

Type the following command:
```
showmount -e hostname
```

Entering the **showmount** command without the *hostname* parameter will check the local system.

If NFS is not active you will receive a message similar to the following:
```
showmount: ServerA: RPC: Program not registered
```

Once you have verified that NFS is running on each system, check for the specific NFS processes required by DB2. The required process is `rpc.statd`. You can use the **ps -ef | grep rpc.statd** commands to check for this process.

If these processes are not running, consult your operating system documentation.

Creating file system for a partitioned database environment

Creating a DB2 home file system for a partitioned database system (AIX)

This task describes how to create a DB2 home file system, NFS export the home file system, and NFS mount the home file system from each participating computer.

It is recommended that you create a home file system that is 1 GB in size or greater. Later installation instruction will ask that you copy the contents of the DB2 product CD-ROM to a directory on your DB2 home file system. The DB2 product CD-ROM will temporarily occupy approximately 700 MB of space. A DB2 instance will require at least 50 MB of space. If you do not have 1 GB of free space, you can mount the DB2 product CD-ROM from each participating computer as an alternative to copying the contents to disk.

Prerequisites:

You must have:
* root authority to create a file system
* Created a volume group where your file system is to physically reside.

Procedure:

To create, NFS export, and NFS mount the DB2 home file system, perform the following steps:

Creating the DB2 home file system

Log on to the primary computer (ServerA) in your partitioned database system as a user with root authority and create a home file system for your partitioned database system called /db2home.

1. Enter the **smit jfs** command.
2. Click on the **Add a Journaled File System** icon.
3. Click on the **Add a Standard Journaled File System** icon.
4. Select an existing volume group from the **Volume Group Name** list where you want this file system to physically reside.
5. Set the **SIZE of file system (in 512–byte blocks) (Num.)** field to 180 000 (this is about 90 MB).
6. Enter the mount point for this file system in the **MOUNT POINT** field. In this example, the mount point is /db2home.
7. Set the **Mount AUTOMATICALLY at system restart** field to yes.

   The remaining fields can be left to the default settings.
8. Click **OK**.

Exporting the DB2 home file system

1. NFS export the /db2home file system so that it is available to all of the computers that will participate in your partitioned database system:
   a. Enter the **smit nfs** command.
   b. Click on the **Network File System (NFS)** icon.
   c. Click on the **Add a Directory to Exports List** icon.
   d. Enter the pathname and directory to export (for example, /db2home) in the **PATHNAME of directory to export** field.
   e. Enter the name of each workstation that will participate in your partitioned database system in the **HOSTS allowed root access** field. Use a comma (,) as the delimiter between each name. For example, ServerA, ServerB, ServerC. If you are using a high speed interconnect, we recommend that you specify the high speed interconnect names for each workstation in this field as well. The remaining fields can be left to the default settings.
   f. Click **OK**.
2. Log out.

Mounting the DB2 home file system from each participating computer

Log on to *each* participating computer (ServerB, ServerC, ServerD) and NFS mount the file system that you exported by performing the following steps:

1. Enter the **smit nfs** command.
2. Click on the **Network File System (NFS)** icon.
3. Click on the **Add a File System for Mounting** icon.
4. Enter the pathname of the mount point in the **PATHNAME of the mount point (Path)** field.

   The path name of the mount point is where you should create the DB2 home directory. For this example, use/db2home.
5. Enter the pathname of the remote directory in the **PATHNAME of the remote directory** field.

   For our example, you should enter the same value that you entered in the **PATHNAME of the mount point (Path)** field.
6. Enter the *hostname* of the machine where you exported the file system in the **HOST where the remote directory resides** field.

   This is the hostname of the machine where the file system that you are mounting was created.

To improve performance, you may want to NFS mount the file system that you created over a high speed interconnect. If you want to mount this file system using a high speed interconnect, you must enter its name in the **HOST where remote directory resides** field.

You should be aware that if the high speed interconnect ever becomes unavailable for some reason, every workstation that participates in your partitioned database system will lose access to the DB2 home directory.

7. Set the **MOUNT now, add entry to /etc/filesystems or both?** field to both.

8. Set the **/etc/filesystems entry will mount the directory on system RESTART** field to yes.

9. Set the **MODE for this NFS file system** field to read-write.

10. Set the **Mount file system soft or hard** field to soft.

A soft mount means that the computer *will not* try for an infinite period of time to remotely mount the directory. A hard mount means that your machine will infinitely try to mount the directory. This could cause problems in the event of a system crash. We recommend that you set this field to soft.

The remaining fields can be left to the default settings.

11. Ensure that this file system is mounted with the **Allow execution of SUID and sgid programs in this file system?** field set to Yes. This is the default setting.

12. Click **OK**.

13. Log out.

Related tasks:

- "Copying the contents of the DB2 product CD-ROM to your computer" on page 87

Creating a DB2 home file system for a partitioned database system (HP-UX)

This task describes how to create a DB2 home file system, NFS export the home file system, and NFS mount the home file system from each participating computer.

It is recommended that you create a home file system that is 1 GB in size or greater. Later installation instruction will ask that you copy the contents of the DB2 product CD-ROM to a directory on your DB2 home file system. The DB2 product CD-ROM will temporarily occupy approximately 700 MB of space. A DB2 instance will require at least 50 MB of space. If you do not have 1 GB of free space, you can mount the DB2 product CD-ROM from each participating computer as an alternative to copying the contents to disk.

Prerequisites:

You must have root authority to create a file system.

Procedure:

To create, NFS export, and NFS mount the DB2 home file system, perform the following steps:

Creating the DB2 home file system

Manually:

1. Select a disk partition or logical volume and use a utility like `newfs` to create this file system. For more information, enter the **man newfs** command.

2. Mount this file system locally and add an entry to the `/etc/fstab` file so that this file system is mounted each time the system is restarted.

Using SAM:

1. Enter the **sam** command.
2. Click on the **Disks and File Systems** icon.
3. Click on the **File Systems** icon.
4. Select **Action —> Add Local File systems**.
5. You can choose either to use or not to use a Logical Volume Manager. It is recommended to use a Logical Volume Manager.

Exporting the DB2 home file system

If you are installing DB2 ESE on a cluster of HP-UX systems, you can add an entry to the `/etc/exports` file to export this file system via NFS, or use SAM.

To export the file system using SAM:

1. Enter the **sam** command.
2. Click on the **Networking and Communications** icon.
3. Click on the **Networked File Systems** icon.
4. Click on the **Exported Local File Systems** icon.
5. Click the **Action** menu and select **Add Exported File System**
6. Enter the pathname and directory to export (for example, `/db2home`) in the **Local Directory Name** field.
7. Click the **User Access** button and add read-write access for the other computers in the instance in the window that appears.
8. Click the **Root User Access** button and add access for the other computers in the instance in the window that appears.
9. Click **OK**.
10. Log out.

Mounting the DB2 home file system from each participating computer

After you have exported this file system, you must mount this file system on each of the participating computers.

On each participating computer:

1. Enter the **sam** command.
2. Click on the **Networking and Communications** icon.
3. Click on the **Networked File Systems** icon.
4. Click on the **Mounted Remote File Systems** icon.
5. Click the **Action** menu and select **Add Remote File System Using NFS**
6. Enter the mount point of the file system to mount (for example, `/db2home`) in the **Local Directory Name** field.
7. Enter the name of the remote server (for example, `ServerA`) in the **Remote Server Name** field.

8. Enter the pathname and directory of the remote directory (for example, /db2home) in the **Remote Directory Name** field.
9. Set the **Mount At System Boot** option on.
10. Click the **NFS Mount Options** button and set **soft** mount type and the **Allow SetUID Execution** option on.

    A soft mount means that the computer *will not* try for an infinite period of time to remotely mount the directory. A hard mount means that your machine will infinitely try to mount the directory. This could cause problems in the event of a system crash. We recommend that you set this field to soft.

    The remaining fields can be left to the default settings.
11. Click **OK**.
12. Log out.

Related tasks:
- "Copying the contents of the DB2 product CD-ROM to your computer" on page 87

Creating a file system for a partitioned DB2 server (Linux)

This task is part of the larger task of installing DB2 ESE on Linux.

You must have a file system that is available to all machines that will participate in your partitioned database system. This file system will be used as the instance home directory.

For configurations that use more than one machine for a single database instance, NFS (Network File System) is used to share this file system. Typically, one machine in a cluster is used to export the file system using NFS, and the remaining machines in the cluster mount the NFS file system from this machine. The machine that exports the file system has the file system mounted locally.

For more command information, see your Linux distribution documentation.

Procedure:

To create this file system:
1. On one machine, select a disk partition or create one using **fdisk**.
2. Using a utility like **mkfs**, create a file system on this partition. The file system should be large enough to contain the necessary DB2 program files as well as enough space for your database needs.
3. Locally mount the file system you have just created and add an entry to the /etc/fstab file so that this file system is mounted each time the system is rebooted. For example:

       /dev/hda1   /db2home   ext2   defaults   1 2
4. To automatically export an NFS file system on Linux at boot time, add an entry to the /etc/exports file. Be sure to include all of the host names participating in the cluster as well as all of the names that a machine might be known as. Also, ensure that each machine in the cluster has root authority on the exported file system by using the ″root″ option.

    The /etc/exportfs is an ASCII file which contains the following type of information:

       /db2home *machine1_name*(rw) *machine2_name*(rw)

To export the NFS directory, run

```
/usr/sbin/exportfs -r
```

5. On each of the remaining machines in the cluster, add an entry to the `/etc/fstab` file to NFS mount the file system automatically at boot time. As in the following example, when you specify the mount point options, ensure that the file system is mounted at boot time, is read-write, is mounted hard, includes the `bg` (background) option, and that `setuid` programs can be run properly.

```
fusion-en:/db2home /db2home nfs - rw,time0=300,retrans=5,
hard,intr,bg,suid,rw
```

where *fusion-en* represents the machine name.

6. NFS mount the exported file system on each of the remaining machines in the cluster by entering the following command:

```
mount /db2home
```

If the mount command fails, use the **showmount** command to check the status of the NFS server. For example:

```
showmount -e fusion-en
```

This **showmount** command should list the file systems which are exported from the machine named `fusion-en`. If this command fails, the NFS server may not have been started. Run the following command as root on the NFS server to start the server manually:

```
/etc/rc.d/init.d/nfs restart
```

Assuming the present run level is 3, you can have this command run automatically at boot time by renaming `K20nfs` to `S20nfs` under the following directory: `/etc/rc.d/rc3.d`.

7. Ensure that the following steps were successful:

   a. On a single machine in the cluster, you have created a file system to be used as the instance and home directory.

   b. If you have a configuration that uses more than one machine for a single database instance, you have exported this file system using NFS.

   c. You have mounted the exported file system on each of the remaining machines in the cluster.

Related tasks:

- "Copying the contents of the DB2 product CD-ROM to your computer" on page 87

Creating a file system for a partitioned DB2 server (Solaris Operating Environment)

This task describes how to create a DB2 home file system, NFS export the home file system, and NFS mount the home file system from each participating computer.

It is recommended that you create a home file system that is 1 GB in size or greater. Later installation instructions will ask that you copy the contents of the DB2 product CD-ROM to a directory on your DB2 home file system. The DB2 product CD-ROM will temporarily occupy approximately 700 MB of space. A DB2 instance will require at least 50 MB of space. If you do not have 1 GB of free space,

you can mount the DB2 product CD-ROM from each participating computer as an alternative to copying the contents to disk.

There are a number of ways to create a local file system on a Solaris Operating Environment system. If you want to use a product, such as Veritas, to create the file system, refer to the product's documentation.

Prerequisites:

You must have root authority to create a file system.

Procedure:

To create, NFS export, and NFS mount the DB2 home file system, perform the following steps:

Creating the DB2 home file system

1. On the primary computer (ServerA), select a disk partition or configure one using the **format** command. When using the **format** command, ensure that the disk partitions being used do not overlap. Overlapping partitions can cause data corruption or file system failures. Ensure you have correctly entered the command, as mistakes can cause serious problems.

2. Using a utility like **newfs** or **mkfs**, create a file system on this partition. The file system should be large enough to contain the necessary DB2 files as well as other non-DB2 files. A minimum of 300 MB is recommended.

3. Locally mount the file system you have just created and add an entry to the /etc/vfstab file so that this file system is mounted each time the system is rebooted. For example:

   ```
   /dev/dsk/c1t0d2s2   /dev/rdsk/c1t0d2s2 /db2home  ufs  2  yes  -
   ```

Exporting the DB2 home file system

1. To automatically export an NFS file system on Solaris at boot time, add an entry to the /etc/dfs/dfstab file. Be sure to include all of the host names of the participating computers as well as all of the names that a given computer might be known as. Also, ensure that each computer has root authority on the exported file system by using the "root" option.

   In the following example, an entry for a four computer partitioned database system is added to the /etc/dfs/dfstab file. The participating computers, ServerB, ServerC, and ServerD, are given permission to mount the file system /db2home, which will be used as the DB2 home file system.

   ```
   share -F nfs -o \
   rw=ServerB.torolab.ibm.com,\
   root=ServerB.torolab.ibm.com \

   rw=ServerC.torolab.ibm.com, \
   root=ServerC.torolab.ibm.com\

   rw=ServerD.torolab.ibm.com,\
   root=ServerD.torolab.ibm.com \
   -d "homes" /db2home
   ```

   If a computer is known by more than one hostname, all aliases must be included in the /etc/dfs/dfstab file. For example, if ServerB was also

known by the name ServerB-tokenring, the entry in the /etc/dfs/dfstab for ServerB would appear as follows:

```
rw=ServerB.torolab.ibm.com:ServerB-tokenring.torolab.ibm.com,\
root=ServerB.torolab.ibm.com:ServerB-tokenring.torolab.ibm.com \
```

2. On each of the participating computers, add an entry to the /etc/vfstab file to NFS mount the file system automatically at boot time. As in the following example, when you specify the mount point options, ensure that the file system is mounted at boot time, is read-write, is mounted hard, includes the bg (background) option, and that suid programs can be run properly:

```
ServerA:/db2home - /db2home  nfs - yes   rw,hard,intr,bg,suid
```

Mounting the DB2 home file system from each participating computer

1. Create and NFS mount the exported file system on each of the participating computers in the partitioned database environment by entering the following commands:

```
mkdir /db2home
mount /db2home
```

If the mount command fails, use the showmount command to check the status of the NFS server. For example:

```
showmount -e ServerA
```

This showmount command should list the file systems which are exported from the computer named ServerA. If this command fails, the NFS server may not have been started. To start the server manually, run the following commands as root on the NFS server:

```
/usr/lib/nfs/mountd
/usr/lib/nfs/nfsd -a 16
```

These commands are run automatically at boot time if there are any entries in the /etc/dfs/dfstab file. After starting the NFS server, export the NFS file system again by running the following command:

```
sh /etc/dfs/dfstab
```

Ensure that you have completed the following steps:

1. On a single computer in the partitioned database environment, you have created a file system to be used as the instance and home directory.
2. You have exported this file system via NFS.
3. You have mounted the exported file system on each participating computer.

Related tasks:

- "Copying the contents of the DB2 product CD-ROM to your computer" on page 87

Creating required users

Creating required users for a DB2 server installation in a partitioned database environment (AIX)

Three users and groups are required to operate DB2. The user and group names used in these instructions are documented in the following table.

Table 5. Required users and groups (AIX)

Required user	User name	Group name
Instance owner	db2inst1	db2iadm1
Fenced user	db2fenc1	db2fadm1
Administration server user	db2as	dasadm1

If the Administration server user is an existing user, this user must exist on all the participating computers before the installation. If you use the DB2 Setup wizard to create a new user for the Administration server on the instance-owning computer, then this user is also created (if necessary) during the response file installations on the participating computers. If the user already exists on the participating computers, the user must have the same primary group.

Prerequisites:
- You must have `root` authority to create users and groups.
- If you manage users and groups with NIS/NIS+ or similar security software, see *NIS/NIS+ considerations* before creating users and groups. Additional steps may be required to when defining DB2 users and groups.

Restrictions:

The user names you create must conform to both your operating system's naming rules, and those of DB2.

Procedure:

To create all three of these users, perform the following steps:

1. Log on to the primary computer.
2. Create a group for the instance owner (for example, `db2iadm1`), the user that will execute UDFs or stored procedures (for example, `db2fadm1`), and the Administration Server (for example, `dasadm1`) by entering the following commands:

   ```
   mkgroup id=999 db2iadm1
   mkgroup id=998 db2fadm1
   mkgroup id=997 dasadm1
   ```

3. Create a user that belongs to each group that you created in the previous step using the following commands. The home directory for each user will be the DB2 home directory that you previously created and shared (db2home).

   ```
   mkuser id=1004 pgrp=db2iadm1 groups=db2iadm1 home=/db2home/db2inst1
       core=-1 data=491519 stack=32767 rss=-1 fsize=-1 db2inst1
   mkuser id=1003 pgrp=db2fadm1 groups=db2fadm1 home=/db2home/db2fenc1
       db2fenc1
   mkuser id=1002 pgrp=dasadm1 groups=dasadm1 home=/home/dasusr1
       dasusr1
   ```

4. Set an initial password for each user that you created by entering the following commands:

   ```
   passwd db2inst1
   passwd db2fenc1
   passwd dasusr1
   ```

5. Log out.
6. Log on to the primary computer as each user that you created (`db2inst1`, `db2fenc1`, and `dasusr1`). You may be prompted to change each user's password since this is the first time that these users have logged onto the system.

7. Log out.
8. Create the exact same user and group accounts on each computer that will participate in your partition database system. For our example, perform this task on ComputerB, ComputerC, and ComputerD.

Related reference:
- "NIS installation considerations" on page 53

Creating required users for a DB2 server installation in a partitioned database environment (HP-UX)

Three users and groups are required to operate DB2. The user and group names used in the following instructions are documented in the following table. You may specify your own user and group names as long as they adhere to your system naming rules and DB2 naming rules.

Table 6. Required users and groups

Required user	User name	Group name
Instance owner	db2inst1	db2iadm1
Fenced user	db2fenc1	db2fadm1
Administration server user	dasusr1	dasadm1

If an existing user is used as the Administration server user, this user must also exist on all the participating computers before installation. If you use the DB2 Setup wizard to create a new user for the Administration server on the instance owning computer, then this user will also be created (if necessary) during the response file installations on the participating computers. If the user already exists on the participating computers, it must have the same primary group.

Prerequisites:
- You must root authority to create users and groups.
- If you manage users and groups with NIS/NIS+ or similar security software, see *NIS/NIS+ considerations* before creating users and groups. Additional steps may be required to when defining DB2 users and groups.

Restrictions:

The user names you create must conform to both your operating system's naming rules, and those of DB2.

Procedure:

To create all three of these users, perform the following steps:
1. Log on to the primary computer.
2. Create a group for the instance owner (for example, db2iadm1), the user that will execute UDFs or stored procedures (for example, db2fadm1), and the Administration Server (for example, dasadm1) by entering the following commands:

```
groupadd -g 999 db2iadm1
groupadd -g 998 db2fadm1
groupadd -g 997 dasadm1
```

3. Create a user that belongs to each group that you created in the previous step using the following commands. The home directory for each user will be the DB2 home directory that you previously created and shared (db2home).

```
useradd -u 1004 db2iadm1 -d /db2home/db2inst1 -m db2inst1
useradd -u 1003 db2fadm1 -d /db2home/db2fenc1 -m db2fenc1
useradd -u 1002 dbasgrp -d /home/dasusr1 -m dasusr1
```

4. Set an initial password for each user that you created by entering the following commands:

```
passwd db2inst1
passwd db2fenc1
passwd dasusr1
```

5. Log out.

6. Log on to the primary computer as each user that you created (db2inst1, db2fenc1, and dasusr1). You may be prompted to change each user's password since this is the first time that these users have logged onto the system.

7. Log out.

8. Create the exact same user and group accounts on each computer that will participate in your partition database system. For our example, perform this task on ComputerB, ComputerC, and ComputerD.

Related reference:
- "NIS installation considerations" on page 53

Creating required users for a DB2 server installation in a partitioned database environment (Linux)

Three users and groups are required to operate DB2. The user and group names used in the following instructions are documented in the following table. You may specify your own user and group names as long as they adhere to your system naming rules and DB2 naming rules.

Table 7. Required users and groups

Required user	user name	group name
Instance owner	db2inst1	db2iadm1
Fenced user	db2fenc1	db2fadm1
Administration server user	dasusr1	dasadm1

If an existing user is used as the Administration server user, this user must also exist on all the participating computers before installation. If you use the DB2 Setup wizard to create a new user for the Administration server on the instance owning computer, then this user will also be created (if necessary) during the response file installations on the participating computers. If the user already exists on the participating computers, it must have the same primary group.

Prerequisites:
- You must have root authority to create users and groups.
- If you manage users and groups with NIS/NIS+ or similar security software, see *NIS/NIS+ considerations* before creating users and groups. Additional steps may be required when defining DB2 users and groups.

Restrictions:

The user names you create must conform to both your operating system's naming rules, and those of DB2.

Procedure:

To create all three of these users, perform the following steps:

1. Log on to the primary computer.
2. Create a group for the instance owner (for example, `db2iadm1`), the user that will execute UDFs or stored procedures (for example, `db2fadm1`), and the Administration Server (for example, `dasadm1`) by entering the following commands:

   ```
   groupadd -g 999 db2iadm1
   groupadd -g 998 db2fadm1
   groupadd -g 997 dasadm1
   ```

   Ensure that the specific numbers you are using do not currently exist on any of the machines.
3. Create a user that belongs to each group that you created in the previous step using the following commands. The home directory for each user will be the DB2 home directory that you previously created and shared (db2home).

   ```
   useradd -u 1004 -g db2iadm1 -m -d /db2home/db2inst1 db2inst1 -p password1
   useradd -u 1003 -g db2fadm1 -m -d /db2home/db2fenc1 db2fenc1 -p password2
   useradd -u 1002 -g dasadm1 -m -d /home/dasusr1 dasusr1 -p password3
   ```
4. Set an initial password for each user that you created by entering the following commands:

   ```
   passwd db2inst1
   passwd db2fenc1
   passwd dasusr1
   ```
5. Log out.
6. Log on to the primary computer as each user that you created (`db2inst1`, `db2fenc1`, and `dasusr1`). You may be prompted to change each user's password since this is the first time that these users have logged onto the system.
7. Log out.
8. Create the exact same user and group accounts on each computer that will participate in your partition database system. For our example, perform this task on ComputerB, ComputerC, and ComputerD.

Related reference:

- "NIS installation considerations" on page 53

Creating required users for a DB2 server installation in a partitioned database environment (Solaris Operating Environment)

Three users and groups are required to operate DB2. The user and group names used in the following instructions are documented in the following table. You may specify your own user and group names as long as they adhere to your system naming rules and DB2 naming rules.

Table 8. Required users and groups

Required user	user name	group name
Instance owner	db2inst1	db2iadm1
Fenced user	db2fenc1	db2fadm1

Table 8. Required users and groups (continued)

Required user	user name	group name
Administration server user	dasusr1	dasadm1

If an existing user is used as the Administration server user, this user must also exist on all the participating computers before installation. If you use the DB2 Setup wizard to create a new user for the Administration server on the instance owning computer, then this user will also be created (if necessary) during the response file installations on the participating computers. If the user already exists on the participating computers, it must have the same primary group.

Prerequisites:
- You must have `root` authority to create users and groups.
- If you manage users and groups with NIS/NIS+ or similar security software, see *NIS/NIS+ considerations* before creating users and groups.

Restrictions:

The user names you create must conform to both your operating system's naming rules, and those of DB2.

Procedure:

To create all three of these users, perform the following steps:

1. Log on to the primary computer.
2. Create a group for the instance owner (for example, `db2iadm1`), the user that will execute UDFs or stored procedures (for example, `db2fadm1`), and the Administration Server (for example, `dasadm1`) by entering the following commands:

   ```
   groupadd id=999 db2iadm1
   groupadd id=998 db2fadm1
   groupadd id=997 dasadm1
   ```

3. Create a user for each group using the following commands. The home directory for each user will be the DB2 home directory that you previously created and shared (/db2home).

   ```
   useradd -g db2iadm1 -d /db2home/db2inst1 -m db2inst1 passwd mypasswrd
   useradd -g db2fadm1 -d /db2home/db2fenc1 -m db2fenc1 passwd mypasswrd
   useradd -g dbasgrp -d /export/home/dasusr1 -m dasusr1 passwd mypasswrd
   ```

4. Set an initial password for each user that you created by entering the following commands:

   ```
   passwd db2inst1
   passwd db2fenc1
   passwd dasusr1
   ```

5. Log out.
6. Log on to the primary computer as each user that you created (`db2inst1`, `db2fenc1`, and `dasusr1`). You may be prompted to change each user's password since this is the first time that these users have logged onto the system.
7. Log out.
8. Create the exact same user and group accounts on each computer that will participate in your partition database system. For our example, perform this task on ComputerB, ComputerC, and ComputerD.

Related reference:
- "NIS installation considerations" on page 53

Chapter 10. Installation tasks

Single-partition database environment (Windows)

Installing DB2 servers in a single-partition database environment (Windows)

This task describes how to start the DB2 Setup wizard on Windows. You will use the DB2 Setup wizard to define your installation and install DB2 to your system.

Prerequisites:

Before you start the DB2 Setup wizard:
* Ensure that your system meets installation, memory, and disk requirements.
* If you are planning to use LDAP on Windows 2000 or Windows Server 2003 to register the DB2 server in Active Directory, you must extend the directory schema before you install.
* You must have a local *Administrator* user account with the recommended user rights to perform the installation.
* Close all programs so the installation program can update files as required.

Procedure:

To start the DB2 Setup wizard:
1. Log on to the system with the Administrator account that you have defined for DB2 installation.
2. Insert the CD-ROM into the drive. If enabled, the auto-run feature automatically starts the DB2 Setup launchpad:
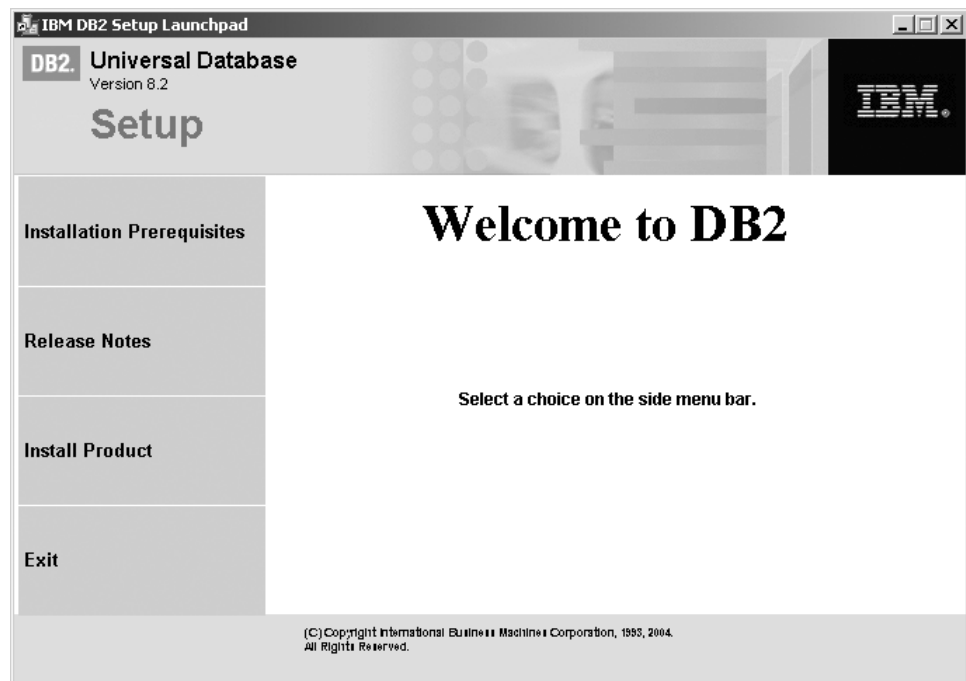
From this window, you can view installation prerequisites and the release notes, or you can proceed directly to the installation. You may want to review the installation prerequisites and release notes for late-breaking information. Select **Install Products** and select the DB2 product to install.

3. The DB2 Setup wizard will determine the system language, and launch the setup program for that language. If you want to run the setup program in a different language, or the setup program failed to auto-start, you can start the DB2 Setup wizard manually.

   To start the DB2 Setup wizard manually:

   a. Click **Start** and select the **Run** option.

   b. In the **Open** field, enter the following command:

      ```
      x:\setup /i language
      ```

      where:

      - *x:* represents your CD-ROM drive
      - *language* is the territory identifier for your language (for example, EN for English).

      If the /i flag is not specified, the installation program will run in the default language of the operating system.

   c. Click **OK**.

4. Launch the installation and proceed by following the setup program's prompts. Online help is available to guide you through the remaining steps. To invoke the online help, click Help or press F1. You can click **Cancel** at any time to end the installation.

   If you want to verify your installation using the sample database, be sure to install the sample database component under the Getting Started component group. The sample database is included as part of a Typical 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 installations.

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:
- "DB2 Information Center" on page 198
- "DB2 Information Center installation scenarios" on page 199

Related tasks:
- "Installing the DB2 Information Center using the DB2 Setup wizard (Windows)" on page 204
- "Installing DB2 Personal Edition - overview (Windows)" in the *Quick Beginnings for DB2 Personal Edition*
- "Installing database partition servers on participating computers (Windows)" on page 110

- "Tools catalog database and DAS scheduler setup and configuration" in the *Administration Guide: Implementation*
- "Notification and contact list setup and configuration" in the *Administration Guide: Implementation*

Related reference:
- "UPDATE ADMIN CONFIGURATION Command" in the *Command Reference*
- "Installation requirements for DB2 servers (Windows)" on page 54
- "Language identifiers for running the DB2 Setup wizard in another language" on page 191
- "Disk and memory requirements (Windows and UNIX)" on page 53

Partitioned database environment (Windows)

Installing the instance-owning server in a partitioned database environment (Windows)

This task describes how to install the instance owning database partition server on the primary computer using the DB2 Setup wizard.

Prerequisites:

Before you install the instance owning database partition server:
- Ensure that your system meets installation, memory, and disk requirements.
- If you are planning to use LDAP on Windows 2000 or Windows Server 2003 to register the DB2 server in Active Directory, you must extend the directory schema before you install.
- You must have a local *Administrators* user account with the recommended user rights to perform the installation.
- During instance creation a number of ports equal to the number of logical nodes that the instance is capable of supporting will be reserved in the /etc/services. These ports will be used by the Fast Communication Manager. The reserved ports will be in the following format:

  ```
  DB2_InstanceName
  DB2_InstanceName_1
  DB2_InstanceName_2
  DB2_InstanceName_END
  ```

  The only mandatory entries are the beginning (DB2_InstanceName) and ending (DB2_InstanceName_END) ports. The other entries are reserved in the services file so that other applications do not use these ports.
- To support multiple physical nodes, the computer on which you want to install DB2 must belong to an accessible domain. However, you can add local nodes to this computer even though the computer doesn't belong to a domain. See the related links section at the end of this topic for more information.

Procedure:

To install the instance owning database partition server:
1. Log on to the system with the domain user account that you will use to perform the installation. This is the domain user account that you added to the local *Administrators* group on each computer.

2. Close all programs so the installation program can update files as required.
3. Insert the CD-ROM into the drive. If enabled, the auto-run feature automatically starts the DB2 Setup Launchpad:

From this window, you can view installation prerequisites and the release notes, or you can proceed directly to the installation. You may want to review the installation prerequisites and release notes for late-breaking information. Select **Install Products** and select the DB2 product to install.

4. The DB2 Setup wizard will determine the system language, and launch the setup program for that language. If you want to run the setup program in a different language, or the setup program failed to auto-start, you can start the DB2 Setup wizard manually.

   To start the DB2 Setup wizard manually:

   a. Click **Start** and select the **Run** option.

   b. In the **Open** field, enter the following command:

   ```
   x:\setup /i language
   ```

   where:

   - *x:* represents your CD-ROM drive
   - *language* is the territory identifier for your language (for example, EN for English).

   If the /i flag is not specified, the installation program will run in the default language of the operating system.

   c. Click **OK**.

5. When you have finished viewing launchpad information, proceed with the installation. The following list provides information about specific DB2 Setup wizard installation panels and the selections you must make to correctly install the instance owning partition on the primary computer:

   Select how this computer will be used

   On the *Select how this computer will be used* panel, you must select the **Partitioned database environment** radio button and the

Instance-owning database partition server radio button.
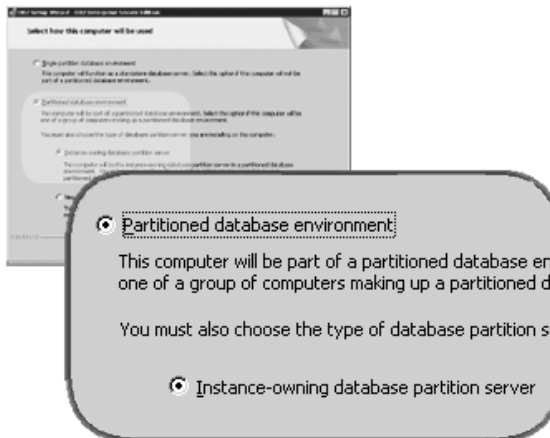
Set up the administration contact list

On the *Set up the administration contact list panel*, select **Local**. This selection will create a file on the primary computer that will store contact information for your system.

The contact information is used by DB2 to send notifications and alerts to a system administrator. A notification may state that a job has completed. An alert may state that a system threshold has been breached. You can specify notification and alert parameters after setup is complete.

Participating computers will remotely access the contact list on this computer.

Set user information for the DB2 instance

On the *Set user information for the DB2 instance* panel, you must specify a domain for the DB2 instance and the maximum number of database partitions you can have on a computer.

Select the domain in which your partitioned database will exist from the drop-down box. You can also specify a domain name by entering the domain name in the **Domain** field.

The default maximum logical partitions for a computer is four. If you have one database partition server per computer, only one port is required. If you keep the default value of four, four ports will be reserved for database partition server communication. DB2 will attempt to reserve identical port numbers when you install database partition
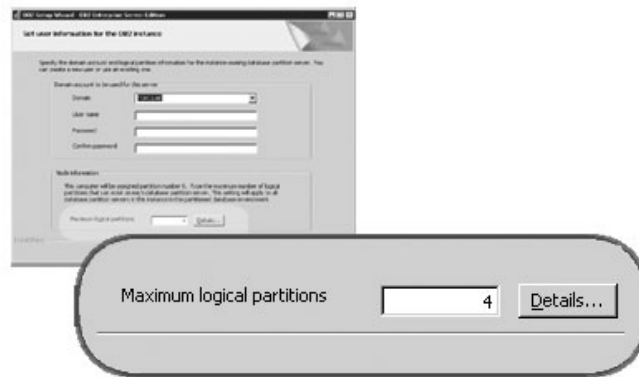
servers on participating computers.

Online help is available to guide you through the remaining steps. To invoke the online help, click **Help** or press **F1**. You can click **Cancel** at any time to end the installation. DB2 files will only be copied to your system after you click **Finish** on the last DB2 Setup wizard installation panel.

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 installations.

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:
- "When to use multiple logical nodes" in the *Administration Guide: Implementation*
- "DB2 Information Center" on page 198
- "DB2 Information Center installation scenarios" on page 199

Related tasks:
- "Installing the DB2 Information Center using the DB2 Setup wizard (Windows)" on page 204
- "Configuring multiple logical nodes" in the *Administration Guide: Implementation*
- "Installing database partition servers on participating computers (Windows)" on page 110

Related reference:
- "Required user accounts for installation of DB2 servers (Windows)" on page 58
- "Language identifiers for running the DB2 Setup wizard in another language" on page 191
- "setup - Install DB2 Command" in the *Command Reference*

Verifying port range availability on participating computers (Windows)

This task describes the steps required to verify port range availability on participating computers. The port range is used by the Fast Communications Manager (FCM). FCM is a feature of DB2 that handles communications between database partition servers.

When you install the instance-owning database partition server on the primary machine, DB2 reserves a port range according to the specified number of database partition servers participating in partitioned database environment. The default range is four ports. The DB2 Setup wizard must be able to reserve an identical port range when database partition servers are installed on participating computers; the port range needs to be free on each of the partition servers.

This task should be done after you install the instance-owning database partition server and before you install any participating database partition servers.

Procedure:

To verify the port range availability on participating computers:

1. Open the `services` file located in the `%SystemRoot%\system32\drivers\etc` directory, where `%SystemRoot%` is your Windows root directory.

2. Locate the ports reserved for the DB2 Fast Communications Manager (FCM). The entries should appear similar to the following:

   ```
   DB2_DB2         60000/tcp
   DB2_DB2_1       60001/tcp
   DB2_DB2_2       60002/tcp
   DB2_DB2_END     60003/tcp
   ```

   DB2 reserves the first four available ports after 60000.

3. On each participating computer, open the `services` file and verify that the ports reserved for DB2 FCM in the services file of the primary computer are not being used.

4. In the event that the required ports are in use on a participating computer, identify an available port range for all computers and update each service file, including the services file on the primary computer.

Related concepts:
- "Fast communications manager (Windows)" on page 62

Related tasks:
- "Installing database partition servers on participating computers (Windows)" on page 110

Related reference:
- "DB2 node configuration file - db2nodes.cfg (UNIX)" on page 129

Installing database partition servers on participating computers (Windows)

This task describes how to install database partition servers on participating computers using the DB2 Setup wizard. You must perform this task on each participating computer.

Prerequisites:

Before you install a database partition server on a participating computer:
- The instance owning database server partition must be installed on the primary computer.
- The domain user account that you added to the local Administrators group on the primary computer, must be added to the local Administrators group on the participating computer. You will use this account to perform the installation.

Procedure:

To start the DB2 Setup wizard:
1. Log on to the system with the domain user account that you will use to perform the installation. This is the domain user account that you added to the local Administrators group on each computer.
2. Close all programs so the installation program can update files as required.
3. Insert the CD-ROM into the drive. If enabled, the auto-run feature automatically starts the DB2 Setup Launchpad:

From this window, you can view installation prerequisites and the release notes, or you can proceed directly to the installation. You may want to review the installation prerequisites and release notes for late-breaking information. Select **Install Products** and select the DB2 product to install.
4. The DB2 Setup wizard will determine the system language, and launch the setup program for that language. If you want to run the setup program in a

different language, or the setup program failed to auto-start, you can start the DB2 Setup wizard manually. The syntax for starting the DB2 Setup wizard is described at the end of this procedure.

5. The following list provides information about specific DB2 Setup wizard installation panels and the selections you must make to correctly install a database partition server on a participating computer:

Select how this computer will be used

On the Select how this computer will be used panel, you must select the Partitioned database environment radio button and the **New database partition server** radio button.
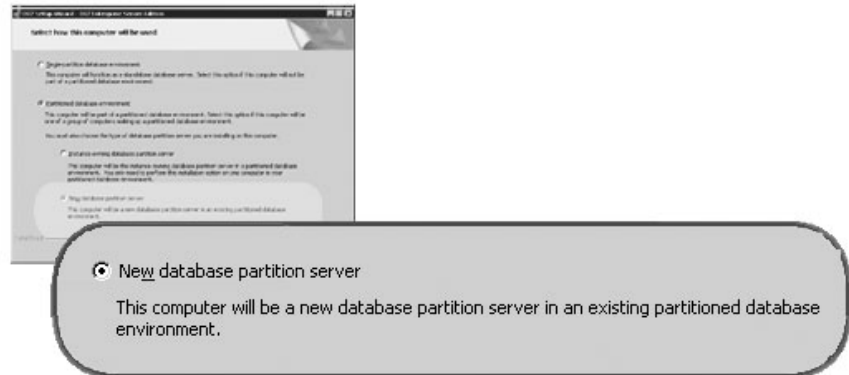
Set up an administration contact list

On the Set up an administration contact list panel, select **Remote**. Specify the host name of the primary computer where you installed the instance owning database partition server and set up the contact list.

Add a new database partition server

On the Add a new database partition server panel:

- Specify the host name of the primary computer (instance-owning computer), where you installed the instance owning database partition server.
- In the drop-down box, select the name of the instance that was created when you installed the instance-owning database partition server. The default name instance name is *DB2*.
- For the partition number, specify a unique value in the range of 1 to 999. If this is the first new database partition server you are installing, it is recommended that you enter a value of 1. For the next database partition server, enter 2, and so on. The instance owning partition server is always assigned partition number 0. Values must be in ascending order, but gaps in the sequence are acceptable.

Online help is available to guide you through the remaining steps. To invoke the online help, click **Help** or press **F1**. You can click **Cancel** at any time to end the installation. DB2 files will only be copied to you system after you click **Finish** on the last DB2 Setup wizard installation panel.

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 installations.

To start the DB2 Setup wizard manually:
1. Click **Start** and select the **Run** option.
2. In the **Open** field, enter the following command:

       x:\setup /i *language*

   where:
   - *x:* represents your CD-ROM drive
   - *language* is the territory identifier for your language (for example, EN for English).

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:
- "DB2 Information Center" on page 198
- "DB2 Information Center installation scenarios" on page 199

Related tasks:
- "Installing the DB2 Information Center using the DB2 Setup wizard (Windows)" on page 204
- "Installing DB2 servers in a single-partition database environment (Windows)" on page 103
- "Installing the instance-owning server in a partitioned database environment (Windows)" on page 105

- "Verifying port range availability on participating computers (Windows)" on page 109

Single-partition database environment (UNIX)

Installing DB2 servers in a single-partition environment (UNIX)

This task describes how to start the DB2 Setup wizard on UNIX systems. The DB2 Setup wizard is used to define your installation preferences and install DB2 to your system.

Prerequisites:

Before you start the DB2 Setup wizard:
- Ensure that your system meets installation, memory, and disk requirements.
- Review the installation considerations for IBM Developer Kit for Java 1.3.1.
- You require root authority to perform the installation.
- The DB2 product CD-ROM must be mounted on your system.
- The DB2 Setup wizard is a graphical installer. You must have Xwindow software capable of rendering a graphical user interface for the DB2 Setup wizard to run on your machine. Ensure that you have properly exported your display. For example, export DISPLAY=9.26.163.144:0.
- If NIS/NIS+ or similar security software is used in your environment, you must manually create required DB2 users before you start the DB2 Setup wizard. Refer to the referenced NIS topic before you begin.
- On Solaris, the files required to uninstall a FixPak or modification level using the backoutallpatch script, are stored in the /var/sadm directory. Disk space requirements for each FixPak or modification level in the /var/sadm directory can reach almost the same amount of disk space required by DB2 in the /opt/IBM/db2/V8.1 directory.
- For Solaris Operating Environment and AIX 5L, you need to have a filesystem with 2 GB of free space to contain the tar.Z file and the uncompressed installation image, in addition to the software disk requirements.
- On AIX and Linux, ensure that Asynchronous I/O (AIO) has been enabled. It must be enabled before DB2 UDB can be successfully installed. AIO can be enabled and disabled at run time by issuing the **db2set** command. To use AIO on Linux, you must install libaio-0.3.96 or later, have a kernel that supports AIO (for example, version 2.6), run the **db2set DB2NOLIOAIO=false** command, and restart DB2.

Procedure:

To start the DB2 Setup wizard:
1. Log on to the system as a user with root authority.
2. Refer to the CD-ROM label to ensure that you are using the CD-ROM with your appropriate language.
3. Change to the directory where the CD-ROM is mounted by entering the following command:

       cd /cdrom

   where /cdrom represents mount point of the CD-ROM.
4. See the appropriate section for your operating system:

For AIX 4.3.3, HP-UX and Linux

Enter the **./db2setup** command to start the DB2 Setup wizard.

For Solaris Operating Environment and AIX 5L

a. Copy *product*.tar.Z, where *product* represents the product you are licensed to install, to a temporary filesystem.

b. Enter the following command to start the DB2 Setup wizard:

zcat *product*.**tar.Z** | **tar -xf - ;** .**/***product***/db2setup**

For example, if the product name for DB2 Enterprise Server Edition is *ese*, then enter the following command:

zcat *ese*.**tar.Z** | **tar -xf - ;** .**/***ese***/db2setup**

5. After a moment, the IBM DB2 Setup Launchpad opens.
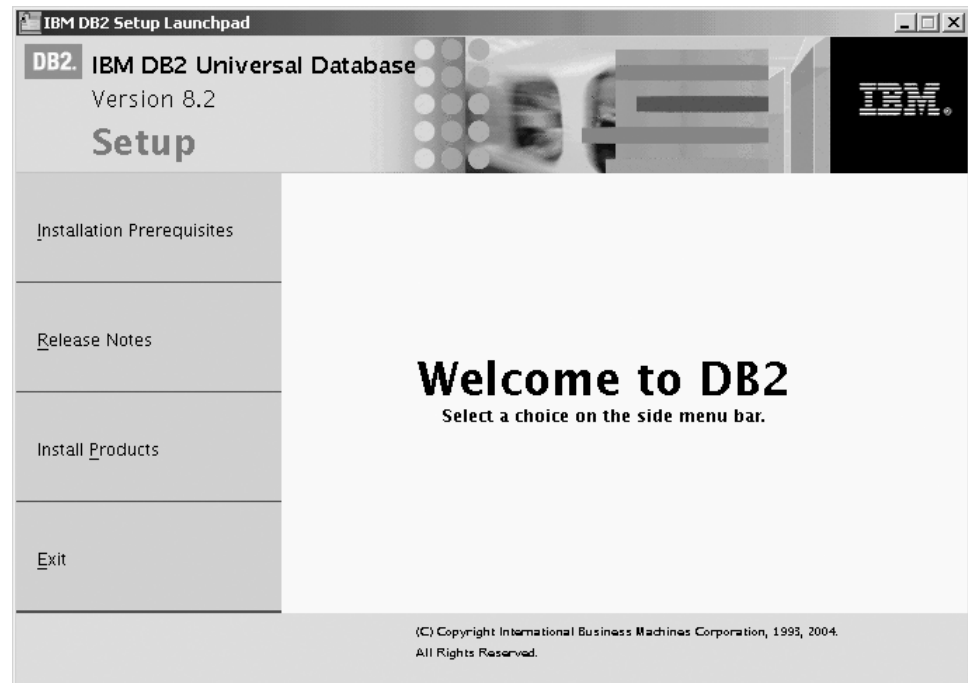
From this window, you can view installation prerequisites and the release notes, or you can proceed directly to the installation. You may want to review the installation prerequisites and release notes for late-breaking information.

Once you have initiated the installation, proceed through the DB2 Setup wizard installation panels and make your selections. Installation help is available to guide you through the remaining steps. To invoke the installation help, click **Help** or press **F1**. You can click **Cancel** at any time to end the installation.

When you have completed your installation, DB2 will be installed in the one of the following directories:

AIX   /usr/opt/db2_08_01

HP-UX, Linux, Solaris Operating Environment

/opt/IBM/db2/V8.1

The installation logs db2setup.his, db2setup.log, and db2setup.err are located, by default, in the /tmp directory. You can specify the location of the log files.

The db2setup.log file captures all DB2 installation information including errors. The db2setup.his records all DB2 installations on your machine. 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).

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:
- "DB2 Information Center" on page 198
- "Installing the IBM Developer Kit for Java (UNIX)" on page 75
- "DB2 Information Center installation scenarios" on page 199

Related tasks:
- "Installing the DB2 Information Center using the DB2 Setup wizard (UNIX)" on
  page 202
- "Tools catalog database and DAS scheduler setup and configuration" in the
  Administration Guide: Implementation
- "Notification and contact list setup and configuration" in the *Administration
  Guide: Implementation*

Related reference:
- "UPDATE ADMIN CONFIGURATION Command" in the *Command Reference*

Partitioned database environment (UNIX)

Installing the instance-owning server in a partitioned database environment (UNIX)

This task describes how to launch the DB2 Setup wizard and install a DB2 ESE
database partition server on the primary computer in your partitioned system.
Information is provided for specific DB2 Setup wizard panels that are key to
setting up your partitioned database system. Not all of the DB2 Setup wizard
panels are documented in this topic. Use the DB2 Setup wizard installation help
when in doubt.

Prerequisites:

You must have root authority to install DB2.

Refer to the CD-ROM label to ensure that you are using the CD-ROM with your
appropriate language.

During instance creation a number of ports equal to the number of logical nodes
that the instance is capable of supporting will be reserved in the /etc/services.
These ports will be used by the Fast Communication Manager. The reserved ports
will be in the following format:

```
DB2_InstanceName
DB2_InstanceName_1
DB2_InstanceName_2
DB2_InstanceName_END
```

The only mandatory entries are the beginning (DB2_InstanceName) and ending (DB2_InstanceName_END) ports. The other entries are reserved in the services file so that other applications do not use these ports.

For Solaris Operating Environment and AIX 5L, you need to have a filesystem with 2 GB of free space to contain the tar.Z file and the uncompressed installation image, in addition to the software disk requirements.

On Solaris, the files required to uninstall a FixPak or modification level using the backoutallpatch script, are stored in the /var/sadm directory. Disk space requirements for each FixPak or modification level in the /var/sadm directory can reach almost the same amount of disk space required by DB2 in the /opt/IBM/db2/V8.1 directory.

On AIX and Linux, ensure that Asynchronous I/O (AIO) has been enabled. It must be enabled before DB2 UDB can be successfully installed. AIO can be enabled and disabled at run time by issuing the **db2set** command. To use AIO on Linux, you must install libaio-0.3.96 or later, have a kernel that supports AIO (for example, version 2.6), run the **db2set DB2NOLIOAIO=false** command, and restart DB2.

Procedure:

To install DB2 ESE on the primary computer using the DB2 Setup wizard:

1. On AIX 4.3.3, HP-UX and Linux, from the directory on the /db2home file system where you copied the contents of the DB2 product CD-ROM, enter the **db2setup** command to start the DB2 Setup wizard. On the Solaris Operating Environment and AIX 5L, from the directory on the /db2home file system where you copied the contents of the DB2 product CD-ROM, enter the following command to start the DB2 Setup wizard:

   zcat *product***.tar.Z │ tar -xf - ; ./***product***/db2setup**

   For example, if the product name for DB2 Enterprise Server Edition is *ese*, then enter the following command:

   zcat *ese***.tar.Z │ tar -xf - ; ./***ese***/db2setup**

After a few moments, the DB2 Version 8 Installation Launchpad opens.
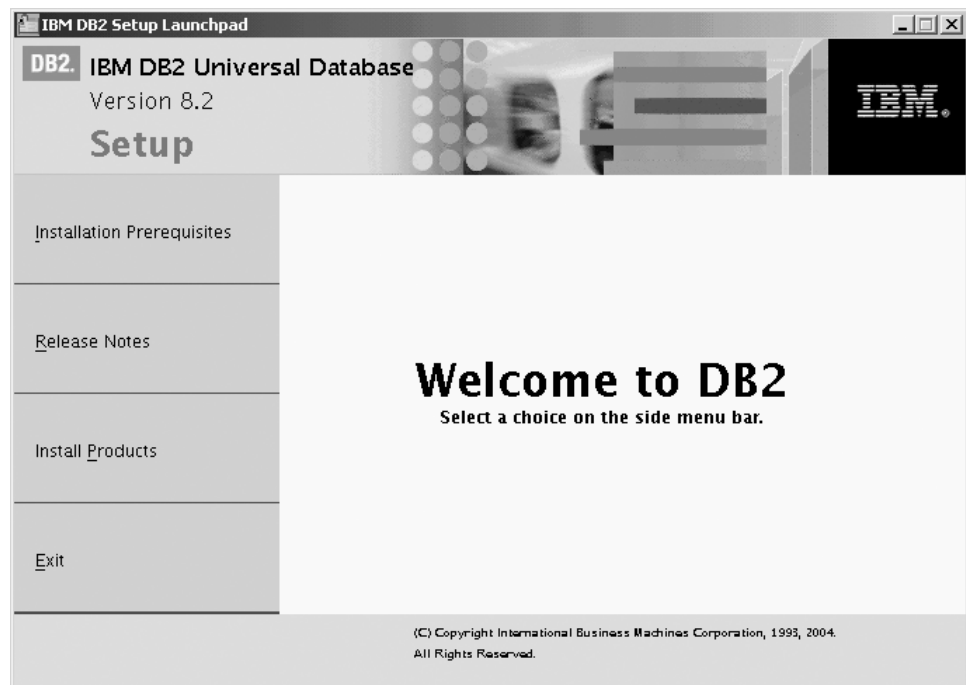
From the DB2 Launchpad, you can view the Installation Prerequisites and Release Notes.

2. When you have finished viewing Launchpad information, proceed with the installation.

The following list provides information about specific DB2 Setup wizard installation panels and the selections you must make to correctly install DB2 ESE on your primary computer.

Select the installation action

On the *Select the installation action* panel, you must select both **Install DB2 UDB Enterprise Server Edition on this computer** and **Save your setting to a response file**. The response file will be used to install DB2 on participating computers.
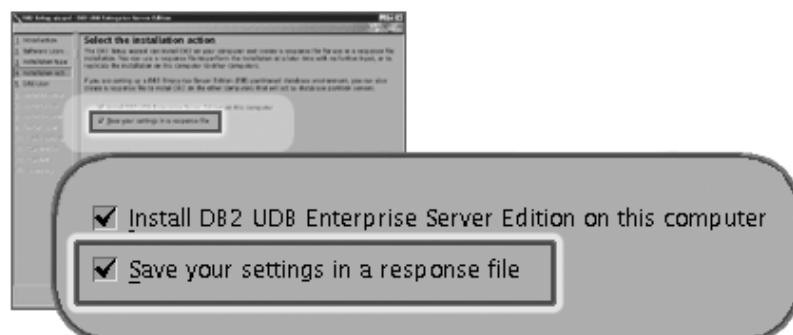
Set user information for the DB2 Administration Server (DAS)

On the *Set user information for the DB2 Administration Server (DAS)* panel you must select the DAS user that you created when you prepared your environment for installation. To do this, select the **Existing user** radio button and enter the user or use the **...** button to locate the DAS user you

previously created.

Set up a DB2 instance

On the *Set up a DB2 instance* panel, select **Create a DB2 instance**.

Select how this instance will be used

On the *Select how this instance will be used* panel, you must select **Partitioned instance**.
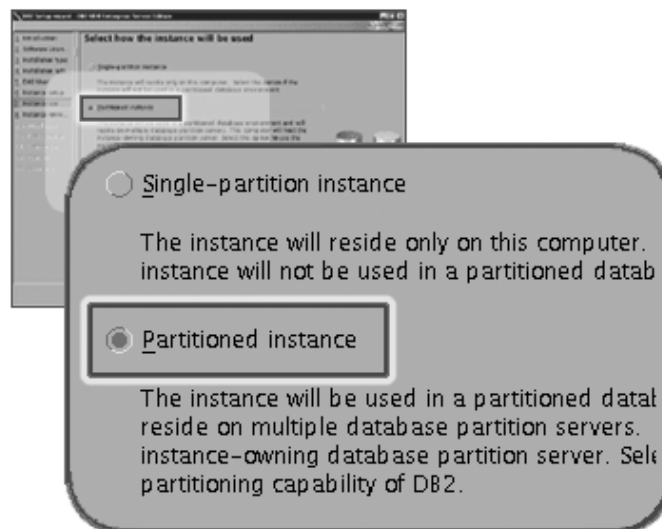
Set user information for the DB2 instance

On the *Set user information for the DB2 instance* panel, you must select the instance owner that you created when you prepared your environment for installation. To do this, select the **Existing user** radio button and enter the

user or use the **...** button to select the instance owner.

Set user information for the fenced user

On the *Set user information for the fenced user* panel, select the existing fenced user that you created when you prepared your environment for installation. Select the Existing user radio button and enter the user or use the **...** button to select the fenced user.

Set up an administration contact list panel

On the *Set up an administration contact list panel*, select **Local**. This selection will create a file on the primary computer that will store contact information for your system.

The contact information is used by DB2 to send notifications and alerts to a system administrator. You can specify notification and alert parameters after setup is complete. Participating computers will remotely access this

contact list on the primary computer.
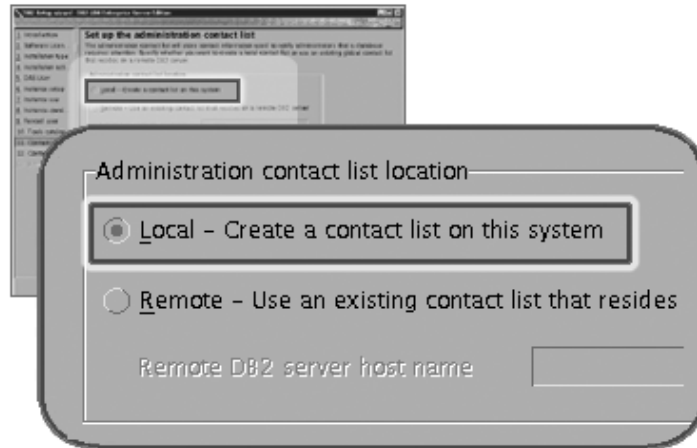
Start copying files

On the *Start copying files panel* you must specify a location and name for two response files. The first response file is for installing a replica of the primary computer installation. The second response file is for installing database partition servers on participating computers. You can place the first response file where you like. The second response file, which we have named AddPartitionResponse.file, must be saved to the /db2home directory, where it will be accessible to participating computers.
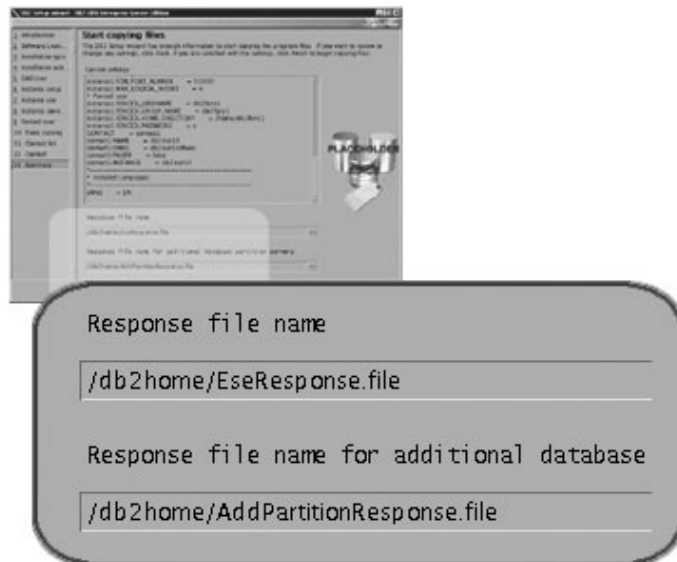
The installation logs db2setup.his, db2setup.log, and db2setup.err are located, by default, in the /tmp directory. You can specify the location of log files.

The db2setup.log file captures all DB2 installation information including errors. The db2setup.his records all DB2 installations on your machine. 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).

The next step in installing an ESE partitioned database system is to use the response file you created (AddPartitionResponse.file) to install database partition servers on the participating computers.

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)
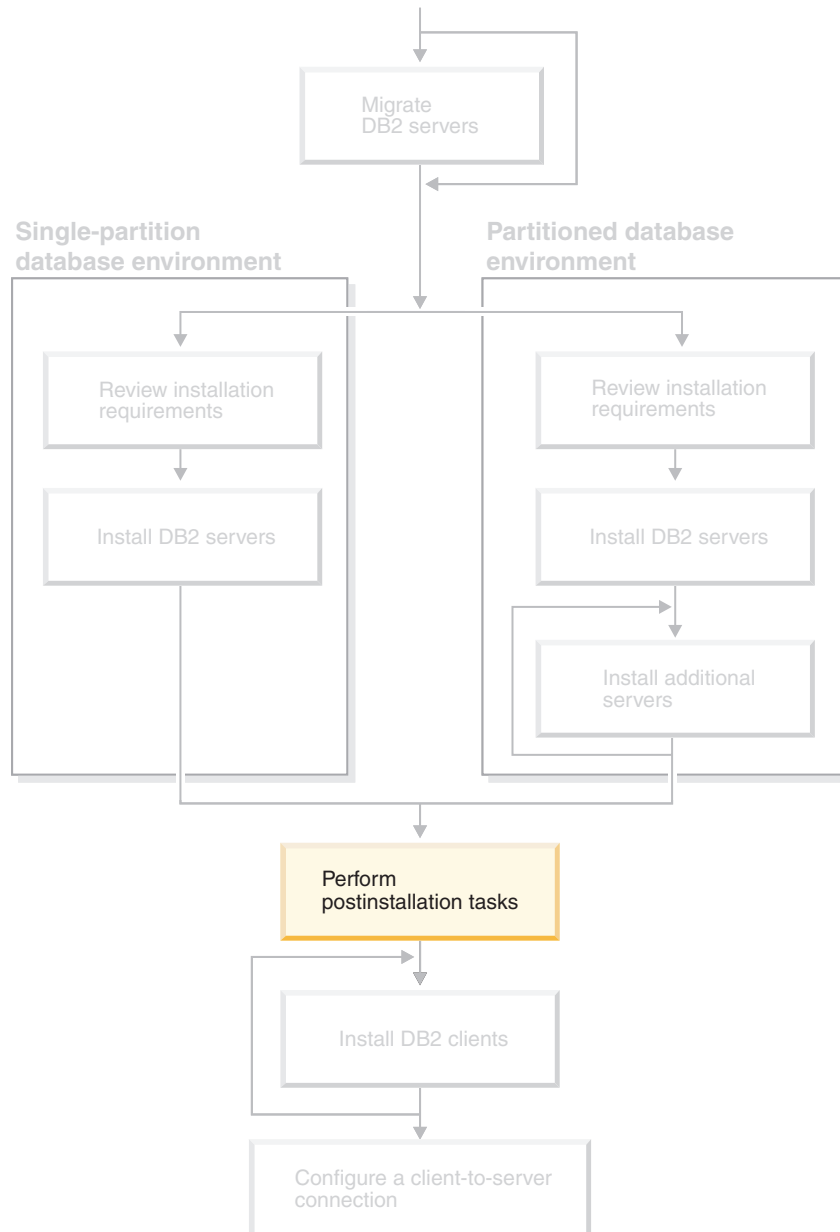
Related concepts:
- "DB2 Information Center" on page 198
- "DB2 Information Center installation scenarios" on page 199

Related tasks:
- "Installing the DB2 Information Center using the DB2 Setup wizard (UNIX)" on page 202

Related reference:
- "Supported DB2 interface languages" on page 190
- "db2setup - Install DB2 Command" in the *Command Reference*

Verifying port range availability on participating computers (UNIX)

This task describes the steps required to verify port range availability on participating computers. The port range is used by the Fast Communications Manager (FCM). FCM is a feature of DB2 that handles communications between database partition servers.

When you install the instance-owning database partition server on the primary machine, DB2 reserves a port range according to the specified number of database partition servers participating in partitioned database environment. The default range is four ports. The DB2 Setup wizard must be able to reserve an identical port range when database partition servers are installed on participating computers; the port range needs to be free on each of the partition servers.

This task should be done after you install the instance-owning database partition server and before you install any participating database partition servers.

Prerequisites:

To make changes to the services file, you require root authority.

Procedure:

To verify the port range availability on participating computers:
1. Open theservices file located in the /etc/services directory.
2. Locate the ports reserved for the DB2 Fast Communications Manager (FCM). The entries should appear similar to the following:

```
DB2_db2inst1        60000/tcp
DB2_db2inst1_1      60001/tcp
DB2_db2inst1_2      60002/tcp
DB2_db2inst1_END    60003/tcp
```

| DB2 reserves the first four available ports after 60000.
3. On each participating computer, open the `services` file and verify that the ports reserved for DB2 FCM in the services file of the primary computer are not being used.
4. In the event that the required ports are in use on a participating computer, identify an available port range for all computers and update each service file, including the services file on the primary computer.

Related concepts:
- "Fast communications manager (UNIX)" on page 73

Related tasks:
- "Installing database partition servers on participating computers using a response file (UNIX)" on page 122

Related reference:
- "DB2 node configuration file - db2nodes.cfg (UNIX)" on page 129

Installing database partition servers on participating computers using a response file (UNIX)

In this task you will use the response file you created using the DB2 Setup wizard to install database partition servers on participating computers.

Prerequisites:
- You have installed DB2 on the primary computer using the DB2 Setup wizard and have created a response file for installing on participating computers.
- You must have root authority on participating computers.

Procedure:

To install additional database partition servers using a response file:
1. As root, log on to a computer that will participate in the partitioned database environment.
2. Change to the directory where you copied the contents of the DB2 product CD-ROM:

       cd /db2home/db2cdrom
3. Enter the **./db2setup** command as follows:

   `./db2setup -r /responsefile_directory/response_file_name`

   In our example, we saved the response file, `AddPartitionResponse.file`, to the /db2home directory. The command for our example, would be:

   `./db2setup -r /db2home/AddPartitionResponse.file`
4. Check the messages in the log file when the installation finishes.

   The installation logs db2setup.his, db2setup.log, and db2setup.err are located, by default, in the /tmp directory. You can specify the location of log file.

   The db2setup.log file captures all DB2 installation information including errors. The db2setup.his records all DB2 installations on your machine. 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).

You must log onto each participating computer and perform a response file installation.

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:

- "DB2 Information Center" on page 198
- "DB2 Information Center installation scenarios" on page 199

Related tasks:

- "Installing the DB2 Information Center using the DB2 Setup wizard (UNIX)" on page 202
- "Installing the instance-owning server in a partitioned database environment (UNIX)" on page 115

Part 4. Postinstallation tasks

Migrate
DB2 servers

**Single-partition
database environment**

**Partitioned database
environment**

Review installation
requirements

Review installation
requirements

Install DB2 servers

Install DB2 servers

Install additional
servers

Perform
postinstallation tasks

Install DB2 clients

Configure a client-to-server
connection

Use this diagram to help navigate through this book. The diagram is not
intended to represent your specific installation steps. Use the information
within this book to create your own specific installation plan.

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Chapter 11. After installing DB2 UDB

Setting up notification and contact lists

For DB2 to contact you or others regarding the health of your databases, you will have to set up notification and contact lists. If you did not do this during the DB2 installation, you can manually set up these lists.

Procedure:

To set up notification and contact lists:

1. If the SMTP server was not set up during the installation process, you can configure it manually using the following command:

   ```
   db2 update admin cfg using smtp_server host1
   ```

   where `host1` represents the TCP/IP host name for the SMTP server used for e-mail notification.

2. If you want the contact information to be located on a remote DB2 administration server (DAS), you can specify the contact_host parameter using the following command:

   ```
   db2 update admin cfg using contact_host host2
   ```

   where `host2` represents the TCP/IP host name for the DAS. If the contact_host parameter is not specified, the DAS assumes the contact information is local.

3. Turn on the scheduler using the following command:

   ```
   db2 update admin cfg using sched_enable on
   ```

4. For these changes to take effect, you need to restart the DAS use the following commands:

   ```
   db2admin stop
   db2admin start
   ```

5. In the Control Center, click the Contacts icon in the Task bar. Select System name, then click **Add Contact**. Type in contact information and then press OK. You can also add the new contact using the Task Center.

Related reference:

- "db2admin - DB2 Administration Server Command" in the *Command Reference*

Password rules and maintenance

When choosing a password, be aware that:

- On UNIX®, your password can be a maximum of eight (8) characters.
- On Windows®, your password can be a maximum of fourteen (14) characters.

You might be required to perform password maintenance tasks. Since such tasks are required at the server and many users are not able or comfortable working with the server environment, performing these tasks can pose a significant challenge.

DB2® UDB provides a way to update and verify passwords without having to be at the server. For example, DB2 for OS/390® Version 5 supports the following method of changing a user's password. If an error message SQL1404N "Password expired" is received, use the CONNECT statement to change the password as follows:

```
CONNECT TO <database> USER <userid> USING <password>
   NEW <new_password> CONFIRM <new_password>
```

The "Change password" dialog of the DB2 Configuration Assistant (CA) can also be used to change the password.

Related concepts:
- "General naming rules" in the *Administration Guide: Implementation*

Adding your user ID to the DB2ADMNS and DB2USERS user groups

After successfully completing a DB2 installation, you now have to add users to the DB2ADMNS or the DB2USERS groups to give them access to DB2. The DB2 installer creates two new groups. You can either use a new name or accept the default names. The default group names are DB2ADMNS and DB2USERS.

Prerequisites:
- You must have installed DB2.
- You must have selected the Enable operating system security check box on the Enable operating system security for DB2 object panel during the installation of DB2.

Procedure:

To add users to the appropriate group:
1. Launch the Users and Passwords Manager tool.
2. Select the user name you want to add from the list.
3. Click Properties. In the Properties window, click the Group Membership tab.
4. Select the Other radio button.
5. Select the appropriate group from the drop-down list.

If you did the install and chose not to enable the new security feature you can still do so post-install by running the **db2secv82.exe** command.

Once you enable this security feature using the **db2secv82.exe** command, you have two options for backing out:
1. Run the db2secv82.exe command again immediately WITHOUT making any additional changes to the system. If there have been any changes at all made to the system you must use option 2.
2. Add the Everyone group to the DB2ADMNS and DB2USERS groups.

Related reference:
- "db2secv82 - Set permissions for DB2 objects Command" in the *Command Reference*

DB2 node configuration file - db2nodes.cfg (UNIX)

This topic provides information about the format of the node configuration file (db2nodes.cfg). The db2nodes.cfg file is used to define the database partition servers that participate in a DB2 instance. The db2nodes.cfg file is also used to specify the IP address or host name of a high-speed interconnect, if you want to use a high-speed interconnect for database partition server communication.

The format of the db2nodes.cfg file is as follows:

```
nodenum    hostname    logical port    netname    resourcesetname
```

nodenum, hostname, logical port, netname, and resourcesetname are defined in the following section.

The format of the db2nodes.cfg file on Windows is different than the same file on UNIX. On Windows, the column format is:

```
nodenumber hostname computername logical_port netname  resourcesetname
```

nodenum A unique number, between 0 and 999, that identifies a database partition server in a partitioned database system.

To scale your partitioned database system, you add an entry for each database partition server to the db2nodes.cfg file. The *nodenum* value that you select for additional database partition servers must be in ascending order, however, gaps can exist in this sequence. You can choose to put a gap between the *nodenum* values if you plan to add logical partition servers and wish to keep the nodes logically grouped in this file.

This entry is required.

hostname The TCP/IP host name of the database partition server for use by the FCM.

This entry is required.

logical port Specifies the logical port number for the database partition server. This field is used to specify a particular database partition server on a workstation that is running logical database partition servers.

DB2 reserves a port range (for example, 60000 - 60003) in the etc/services file for inter-partition communications at the time of installation. This logical_port field in db2nodes.cfg specifies which port in that range you want to assign to a particular logical partition server.

If there is no entry for this field, the default is 0. However, if you add an entry for the *netname* field, you must enter a number for the *logical port* field.

If you are using logical database partitions, the *logical port* value you specify *must* start at 0 and continue in ascending order with no gaps (for example, 0,1,2).

Furthermore, if you specify a *logical port* entry for one database partition server, you must specify a *logical port* for each database partition server listed in your db2nodes.cfg file.

This field is optional only if you are *not* using logical database partitions or a high speed interconnect.

netname
> Specifies the host name or the IP address of the high speed interconnect for FCM communication.
>
> If an entry is specified for this field, all communication between database partition servers (except for communications as a result of the **db2start**, **db2stop**, and **db2_all** commands) is handled through the high speed interconnect.
>
> This parameter is required only if you are using a high speed interconnect for database partition communications.

resourcesetname
> The resourcesetname defines the operating system resource that the node should be started in. The resourcesetname is for process affinity support, used for multiple logical nodes (MLNs), provided with a string type field formerly known as quadname.
>
> This parameter is only supported on AIX, HP-UX, and Solaris Operating Environment.
>
> On AIX 5.2, this concept is known as "resource sets" and on Solaris Operating Environment it is called "projects". Refer to your operating systems documentation for more information on resource management.
>
> On HP-UX, the resourcename parameter is a name of PRM group. Refer to "HP-UX Process Resource Manager. User Guide. (B8733-90007)" documentation from HP for more information.
>
> On Windows operating systems, process affinity for a logical node can be defined through the db2processor registry variable. See the related links section for more information on system environment variables.
>
> The netname parameter must be specified if the resourcesetname parameter is used.

Example configurations:

Use the following example configurations to determine the appropriate configuration for your environment.

One computer, four database partitions servers
> If you are not using a clustered environment and want to have four database partition servers on one physical workstation called ServerA, update the db2nodes.cfg file as follows:
>
> ```
> 0          ServerA        0
> 1          ServerA        1
> 2          ServerA        2
> 3          ServerA        3
> ```

Two computers, one database partition server per computer
> If you want your partitioned database system to contain two physical workstations, called ServerA and ServerB, update the db2nodes.cfg file as follows:
>
> ```
> 0          ServerA        0
> 1          ServerB        0
> ```

Two computers, three database partition server on one computer
> If you want your partitioned database system to contain two physical workstations, called ServerA and ServerB, and ServerA is running 3 database partition servers, update the db2nodes.cfg file as follows:

```
               4            ServerA        0
               6            ServerA        1
               8            ServerA        2
               9            ServerB        0
```

Two computers, three database partition servers with high speed switches

> If you want your partitioned database system to contain two computers,
> called ServerA and ServerB (with ServerB running two database partition
> servers), and use a high speed interconnect called switch1 and switch2,
> update the db2nodes.cfg file as follows:

```
       0            ServerA        0                switch1
       1            ServerB        0                switch2
       2            ServerB        1                switch2
```

Examples using resourcename:

These restrictions apply to the following examples:

- This example shows the usage of resourcename when there is no high speed
  interconnect in the configuration.

- The netname is fourth column and a hostname also can be specified on that
  column where there is no switch name and you want to use resourcename. The
  fifth parameter isresourcename if it is defined. The resource group specification
  can only show as the fifth column in the db2nodes.cfg file. This means that for
  you to specify a resource group, you must also enter a fourth column. The
  fourth column is intended for a high speed switch.

- If you do not have a high speed switch or you do not want to use it, you must
  then enter the hostname (same as the second column). In other words, DB2 UDB
  does not support column gaps (or interchanging them) in the db2nodes.cfg files.
  This restriction already applies to the first three columns, and now it applies to
  all five columns.

AIX example:

Here is an example of how to set up the resource set for AIX 5.2.

In this example, there is one physical node with 32 processors and 8 logical
database partitions (MLNs). This example shows how to provide process affinity to
each MLN.

1. Define resource sets in /etc/rset:

```
DB2/MLN1:
    owner     = db2inst1
    group     = system
    perm      = rwr-r-
    resources = sys/cpu.00000,sys/cpu.00001,sys/cpu.00002,sys/cpu.00003

DB2/MLN2:
    owner     = db2inst1
    group     = system
    perm      = rwr-r-
    resources = sys/cpu.00004,sys/cpu.00005,sys/cpu.00006,sys/cpu.00007

DB2/MLN3:
    owner     = db2inst1
    group     = system
    perm      = rwr-r-
    resources = sys/cpu.00008,sys/cpu.00009,sys/cpu.00010,sys/cpu.00011

DB2/MLN4:
    owner     = db2inst1
```

```
                               group     = system
                               perm      = rwr-r-
                               resources = sys/cpu.00012,sys/cpu.00013,sys/cpu.00014,sys/cpu.00015

                          DB2/MLN5:
                               owner     = db2inst1
                               group     = system
                               perm      = rwr-r-
                               resources = sys/cpu.00016,sys/cpu.00017,sys/cpu.00018,sys/cpu.00019

                          DB2/MLN6:
                               owner     = db2inst1
                               group     = system
                               perm      = rwr-r-
                               resources = sys/cpu.00020,sys/cpu.00021,sys/cpu.00022,sys/cpu.00023

                          DB2/MLN7:
                               owner     = db2inst1
                               group     = system
                               perm      = rwr-r-
                               resources = sys/cpu.00024,sys/cpu.00025,sys/cpu.00026,sys/cpu.00027

                          DB2/MLN8:
                               owner     = db2inst1
                               group     = system
                               perm      = rwr-r-
                               resources = sys/cpu.00028,sys/cpu.00029,sys/cpu.00030,sys/cpu.00031
```

2. Enable memory affinity by typing the following command: `vmo -p -o memory_affinity=1`.

3. Give instance permissions to use resource sets:

   ```
   chuser capabilities=CAP_BYPASS_RAC_VMM,CAP_PROPAGATE,CAP_NUMA_ATTACH   db2inst1
   ```

4. Add the resource set name as the fifth column in db2nodes.cfg:

   ```
   1 regatta 0 regatta DB2/MLN1
   2 regatta 1 regatta DB2/MLN2
   3 regatta 2 regatta DB2/MLN3
   4 regatta 3 regatta DB2/MLN4
   5 regatta 4 regatta DB2/MLN5
   6 regatta 5 regatta DB2/MLN6
   7 regatta 6 regatta DB2/MLN7
   8 regatta 7 regatta DB2/MLN8
   ```

HP-UX example:

The sample shows how to use PRM groups for CPU shares on machine with 4 CPUs and 4 MLNs and we want to set 24% of CPU share per MLN, leaving 4% for other applications. The DB2 instance name is db2inst1.

1. Edit GROUP section of /etc/prmconf:

   ```
     OTHERS:1:4::
    db2prm1:50:24::
     db2prm2:51:24::
      db2prm3:52:24::
    db2prm4:53:24::
   ```

2. Add instance owner entry to /etc/prmconf:

   ```
      db2inst1:::::OTHERS,db2prm1,db2prm2,db2prm3,db2prm4
   ```

3. Initialize groups and enable CPU manager by entering the following command:

   ```
      prmconfig -i
      prmconfig -e CPU
   ```

4. Add PRM group names as a fifth column to db2nodes.cfg:

```
1 voyager 0 voyager db2prm1
2 voyager 1 voyager db2prm2
3 voyager 2 voyager db2prm3
4 voyager 3 voyager db2prm4
```

PRM configuration (steps 1-3) may be done using interactive GUI tool xprm.

Solaris Operating Environment example:

Here is an example of how to set up the project for Solaris Version 9.

In this example, we have 1 physical node with 8 processors: one CPU will be used for the default project, three (3) CPUs will used by the Application Server, and four (4) CPUs for DB2. The instance name is db2inst1.

1. Create a resource pool configuration file using an editor. For this example, the file will be called pool.db2. Here's the content:

   ```
   create system hostname
   create pset pset_default (uint pset.min = 1)
   create pset db0_pset (uint pset.min = 1; uint pset.max = 1)
   create pset db1_pset (uint pset.min = 1; uint pset.max = 1)
   create pset db2_pset (uint pset.min = 1; uint pset.max = 1)
   create pset db3_pset (uint pset.min = 1; uint pset.max = 1)
   create pset appsrv_pset (uint pset.min = 3; uint pset.max = 3)
   create pool pool_default (string pool.scheduler="TS";
        boolean pool.default = true)
   create pool db0_pool (string pool.scheduler="TS")
   create pool db1_pool (string pool.scheduler="TS")
   create pool db2_pool (string pool.scheduler="TS")
   create pool db3_pool (string pool.scheduler="TS")
   create pool appsrv_pool (string pool.scheduler="TS")
   associate pool pool_default (pset pset_default)
   associate pool db0_pool (pset db0_pset)
   associate pool db1_pool (pset db1_pset)
   associate pool db2_pool (pset db2_pset)
   associate pool db3_pool (pset db3_pset)
   associate pool appsrv_pool (pset appsrv_pset)
   ```

2. Edit the /etc/project file to add the DB2 projects and appsrv project as follows:

   ```
   system:0::::
   user.root:1::::
   noproject:2::::
   default:3::::
   group.staff:10::::
   appsrv:4000:App Serv project:root::project.pool=appsrv_pool
   db2proj0:5000:DB2 Node 0 project:db2inst1,root::project.pool=db0_pool
   db2proj1:5001:DB2 Node 1 project:db2inst1,root::project.pool=db1_pool
   db2proj2:5002:DB2 Node 2 project:db2inst1,root::project.pool=db2_pool
   db2proj3:5003:DB2 Node 3 project:db2inst1,root::project.pool=db3_pool
   ```

3. Create the resource pool: # poolcfg -f pool.db2.

4. Activate the resource pool: # pooladm -c

5. Add the project name as the fifth column in db2nodes.cfg file:

   ```
   0 hostname 0 hostname db2proj0
   1 hostname 1 hostname db2proj1
   2 hostname 2 hostname db2proj2
   3 hostname 3 hostname db2proj3
   ```

Related tasks:

- "Updating the node configuration file (UNIX)" on page 134
- "Verifying port range availability on participating computers (UNIX)" on page 121

- "System environment variables" in the *Administration Guide: Performance*

Updating the node configuration file (UNIX)

The node configuration file (db2nodes.cfg), located in the instance owner's home directory, contains configuration information that tells DB2 which servers participate in an instance of the database partitioned environment. A db2nodes.cfg file exists for each instance in a partitioned database environment.

The db2nodes.cfg file must contain one entry for each server participating in the instance. When you create an instance, the db2nodes.cfg file is automatically created and an entry for the instance-owning server is added.

For example, when you created the DB2 instance using the DB2 Setup wizard, on the instance-owning server ServerA, the db2nodes.cfg file is updated as follows:

```
0     ServerA     0
```

This task provides steps for updating the db2nodes.cfg file to include entries for participating computers.

Prerequisites:

- DB2 UDB must be installed on all participating computers.
- A DB2 instance must exist on the primary computer.
- You must be a user with SYSADM authority.
- If you plan to use a high speed switch for communication between database partition servers or if your partitioned configuration will have logical database partition servers, review the *DB2 node configuration file* topic for configuration examples and information about file format of db2nodes.cfg.

Restrictions:

The hostnames used in the steps of the Procedure section must be fully qualified hostnames.

Procedure:

To update the db2nodes.cfg file:

1. Log on as the instance owner (in our example, db2inst1 is the instance owner).
2. Ensure that the DB2 instance is stopped by entering:

   INSTHOME/sqllib/adm/db2stop

   where *INSTHOME* is the home directory of the instance owner (the db2nodes.cfg file is locked when the instance is running and can only be edited when the instance is stopped).

   For example, if your instance home directory is /db2home/db2inst1, enter the following command:

   ```
   /db2home/db2inst1/sqllib/adm/db2stop
   ```
3. Add an entry to the .rhosts file for each DB2 instance. Update the file by adding the following:

   ```
   <hostname> <db2instance>
   ```

where <hostname> is the TCP/IP host name of the database server and <db2instance> is the name of the instance you use to access the database server.

4. Add an entry to the db2nodes.cfg file of each participating server. When you first view the db2nodes.cfg file, it should contain an entry similar to the following:

```
0     ServerA     0
```

This entry includes the database partition server number (node number), the TCP/IP host name of the server where the database partition server resides, and a logical port number for the database server partition.

If you are installing the partitioned configuration described in the installation overview, with four computers and a database partition server on each computer, the updated db2nodes.cfg should appear similar to the following:

```
0     ServerA     0
1     ServerB     0
2     ServerC     0
3     ServerD     0
```

5. When you have finished updating the db2nodes.cfg file, enter the *INSTHOME***/sqllib/adm/db2start** command, where *INSTHOME* is the home directory of the instance owner. For example, if your instance home directory is /db2home/db2inst1, enter the following command:

```
/db2home/db2inst1/sqllib/adm/db2start
```

6. Log out.

Related reference:
• "DB2 node configuration file - db2nodes.cfg (UNIX)" on page 129

Enabling communications between database partition servers (UNIX)

This task describes how to enable communication between the database partition servers that participate in your partitioned database system. Communication between database partition servers is handled by the Fast Communications Manager (FCM). To enable FCM, a port or port range must be reserved in the /etc/services file on each computer in your partitioned database system.

Prerequisites:

You must have a user ID with root authority.

Restrictions:

You must perform this task on participating computers only. When you create an instance using the DB2 Setup wizard, a port range is automatically reserved on the primary (instance-owning) computer.

Procedure:

To enable communications between servers in a partitioned database environment:

1. Log on to the primary computer (instance owning computer) as a user with root authority.
2. View the default port range that has been reserved in the /etc/services file. In addition to the base configuration, the FCM ports should appear similar to the following:

```
            db2inst1          50000/tcp
#Add FCM port information
   DB2_db2inst1     60000/tcp
   DB2_db2inst1_1   60001/tcp
   DB2_db2inst1_2   60002/tcp
   DB2_db2inst1_END 60003/tcp
```

By default, the first available four ports above 60000 are reserved. One port is for the instance-owning database partition server and three ports are for logical database partition servers that you might choose to add to the computer after installation is complete.

DB2 port entries use the following format:

```
   DB2_instance_name     port_number
```

where:

- *instance_name* is the name of the partitioned instance.
- *port_number* is the port number that you reserve for database partition server communications.

3. In turn, log onto each participating computer as a root user and add identical entries to the /etc/services file.

You can add a comment to describe each entry using the # comment identifier. For example:

```
DB2_db2inst1     60000/tcp   # instance-owning partition port
DB2_db2inst1_1   60001/tcp   # logical partition port
DB2_db2inst1_2   60002/tcp   # logical partition port
DB2_db2inst1_END 60003/tcp   # logical partition port
```

Related concepts:

- "Fast communications manager (UNIX)" on page 73

Related reference:

- "DB2 node configuration file - db2nodes.cfg (UNIX)" on page 129

Enabling the execution of remote commands (UNIX)

You must update your .rhosts file in both a single-partition and partitioned database environment to execute remote commands.

In a partitioned database system, each database partition server must have the authority to perform remote commands on all the other database partition servers participating in an instance. This authority can be granted by updating the .rhosts file in the home directory for the instance. Because the home directory for the instance is on the shared DB2 home file system, only one .rhosts file is required.

Prerequisites:

- You must have root authority.
- You must know the host name of each participating computer
- You must know the instance owner's user name.

Procedure:

1. Log onto the primary computer as a user with root authority.

2. Create a .rhosts file in the instance home directory. For example, if your instance home directory is /db2home/db2inst1, you can use a text editor to create the .rhosts file by entering the following command:

        vi /db2home/db2inst1/.rhosts

3. Add entries to the .rhosts file for each computer including the primary computer. The .rhosts file has the following format:

        hostname   instance_owner_user_name

Some systems might require a long host name to be specified, for example: ServerA.yourdomain.com. Before you add host name entries to the .rhosts file, make sure the host names in the /etc/hosts and the /etc/resolv.conf files can be resolved.

The *INSTHOME*/.rhosts file should contain entries similar to the following:

        ServerA.yourdomain.com db2inst1
        ServerB.yourdomain.com db2inst1
        ServerC.yourdomain.com db2inst1
        ServerD.yourdomain.com db2inst1

Rather than specifying each host name individually, you can specify the following entry in the .rhosts file, but this action may pose a security risk and should only be done in a test environment.

        + db2inst1

If you have specified a high speed switch (netname) in the db2nodes.cfg file, you should also add netname entries for each computer to the .rhosts file. The netname values are specified in the fourth column of the db2nodes.cfg file. A .rhosts file with high speed switch (netname) entries may look similar to the following:

        ServerA.yourdomain.com db2inst1
        ServerB.yourdomain.com db2inst1
        ServerC.yourdomain.com db2inst1
        ServerD.yourdomain.com db2inst1
        Switch1.yourdomain.com db2inst1
        Switch2.yourdomain.com db2inst1
        Switch3.yourdomain.com db2inst1
        Switch4.yourdomain.com db2inst1

An alternative to using a .rhosts file is to use /etc/hosts.equiv file. The /etc/hosts.equiv file would contain the exact same entries as the .rhosts file, but must be created on each computer.

For more information about the .rhosts file or the /etc/hosts.equiv file, see your operating system documentation.

Enabling Control Center administration (UNIX)

Before you can use the Control Center to administer your partitioned database system, you must start the DB2 Administration server on all computers.

Procedure: To enable Control Center administration for a partitioned database system:

Start the DB2 Administration Server on each computer

1. In turn, log on to each computer (ServerA, ServerB, ServerC, ServerD) as the DB2 Administration Server user. In our example, db2as is the DAS user.

2. Enter the following command to start the DB2 Administration Server:

```
/DASHOME/das/bin/db2admin start
```

where *DASHOME* is the home directory for the DB2 Administration Server. In our example, the *DASHOME* is /db2home/db2as.

Applying the latest FixPak (Windows and UNIX)

A DB2 FixPak contains updates and fixes for problems (Authorized Program Analysis Reports, or "APARs") found during testing at IBM, as well as fixes for problems reported by customers. Every FixPak is accompanied by a document, called APARLIST.TXT, that describes the fixes it contains.

FixPaks are cumulative. This means that the latest FixPak for any given version of DB2 contains all of the updates from previous FixPaks for the same version of DB2. It is recommended that you keep your DB2 environment running at the latest FixPak level to ensure problem-free operation.

When installing a FixPak on a partitioned ESE system, all participating computers must have the same FixPak installed while the system is offline.

Prerequisites:

Each FixPak has specific prerequisites. See the FixPak Readme that accompanies the FixPak for more information.

Restrictions:

If you are installing DB2 Universal Database to set up a Common Criteria certified configuration, do not install FixPaks. Because FixPaks are not evaluated for Common Criteria compliance, installing a FixPak makes the configuration no longer compliant.

Procedure:
1. Download the latest DB2 FixPak from the IBM DB2 UDB and DB2 Connect Online Support Web site at http://www.ibm.com/software/data/db2/udb/winos2unix/support. Each FixPak contains a set of Release Notes and a Readme. The Readme provides instructions for installing the FixPak.
2. Install the FixPak.
3. On UNIX systems, run the **db2iupdt** command to update the instance.

Related concepts:
* "Common Criteria certification of DB2 Universal Database products" on page 222

Related tasks:
* "Verifying the installation using the command line processor (CLP)" on page 139

Verifying the installation (Windows and UNIX)

Verifying the installation using the command line processor (CLP)

You can verify the installation by creating a sample database and running SQL commands to retrieve sample data.

Prerequisites:
- The sample database component must be installed on your system and is included in a typical installation.
- You require a user with SYSADM authority.

Procedure:

To verify the installation:
1. Log on to the system as a user with SYSADM authority.
2. Start the database manager by entering the **db2start** command.
3. Enter the **db2sampl** command to create the SAMPLE database.

   This command may take a few minutes to process. There is no completion message; when the command prompt returns, the process is complete.

   The SAMPLE database is automatically cataloged with the database alias SAMPLE when it is created.
4. Enter the following DB2 commands from a DB2 command window to connect to the SAMPLE database, retrieve a list of all the employees that work in department 20, and reset the database connection:

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

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

Related tasks:
- "Verifying the installation of DB2 servers using First Steps" on page 141

Verifying access to the registry on the instance-owning computer (Windows)

After installing DB2 on a participating computer, you should verify that you have access to the registry on the instance-owning computer. This verification step should be run from all participating computers.

Prerequisites:

You must have DB2 UDB installed.

Procedure:

To verify access to the registry on the instance-owning computer:

1. From a command prompt, type the **regedit** command. The Registry Editor window opens.
2. Click the **Registry** menu item.
3. Select **Connect Network Registry**.
4. Type the name of the instance-owning computer in the **Computer name** field.

If the information is returned, then you have successfully verified that you have access to the registry on the instance-owning computer.

Related tasks:
• "Installing the instance-owning server in a partitioned database environment (UNIX)" on page 115

Verifying a partition database server installation (Windows)

To verify that your DB2 server installation was successful, you will create a sample database and run SQL commands to retrieve sample data and to verify that the data has been distributed to all participating database partition servers.

Prerequisites:

You have completed all of the installation steps.

Procedure:

To create the SAMPLE database:
1. Log on to the primary computer (ServerA). as user with SYSADM authority.
2. Enter the **db2sampl** command to create the SAMPLE database.

   This command may take a few minutes to process. There is no completion message; when the command prompt returns, the process is complete.

   The SAMPLE database is automatically cataloged with the database alias SAMPLE when it is created.
3. Start the database manager by entering the **db2start** command.
4. Enter the following DB2 commands from a DB2 command window to connect to the SAMPLE database, retrieve a list of all the employees that work in department 20:
   ```
   db2 connect to sample
   db2 "select * from staff where dept = 20"
   ```
5. To verify that data has been distributed across database partition servers, enter the following commands from a DB2 command window:
   ```
   select distinct dbpartitionnum(empno) from employee;
   ```

   The output will list the database partitions used by the employee table. The specific output will depend on the number of partitions in the database and the number of partitions in the partition group that is used by the tablespace where the employee table was created.

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

Verifying the installation of DB2 servers using First Steps

You should verify that the DB2 server installation has completed successfully by accessing data from the SAMPLE database.

Prerequisites:

- You must have the Control Center and the First Steps component installed to perform this task. First Steps is part of the getting started component grouping in the DB2 Setup wizard. It is installed as part of a Typical installation or may be selected when performing a Custom installation.
- You must have SYSADM or SYSCTRL authority to perform this task.

Procedure:

1. Log on to the system with the user account that you want to use to verify the installation. Ensure that the domain user account you use to create the sample database has SYSADM or SYSCTRL authority.
2. Start First Steps.
   - On UNIX, type **db2fs**
   - On Windows, type **db2fs.bat**
3. Select **Create Sample Databases** in the First Steps launchpad to open the Create Sample Databases window.
4. In the Create Sample Databases window, select the databases you want to create.

   The DB2 UDB sample database is used to verify the installation. The Data Warehouse sample database is used with the Business Intelligence tutorial.

   Note: The Data Warehousing sample database applies only if you installed the Base Warehouse components.
5. Click **OK**.

   By default, the SAMPLE database is created on the drive where DB2 is installed.

   This command may take a few minutes to process. When the SAMPLE database has been created, you receive a completion message. Click **OK**.
6. Once the database is created, select **Work with Databases** on the First Steps launchpad to start the Control Center. You can perform administration tasks on different instance and database objects through the Control Center.

   In the left pane of the Control Center screen, expand the object tree to view the SAMPLE database and SAMPLE database objects. Select the Tables object to view the SAMPLE database tables in the right pane of the Control Center screen.

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

Related tasks:

- "Verifying the installation using the command line processor (CLP)" on page 139
- "Installing DB2 Personal Edition - overview (Windows)" in the *Quick Beginnings for DB2 Personal Edition*
- "Installing DB2 Personal Edition - overview (Linux)" in the *Quick Beginnings for DB2 Personal Edition*

Related reference:

- "db2fs - First Steps Command" in the *Command Reference*

Part 5. Installing DB2 clients
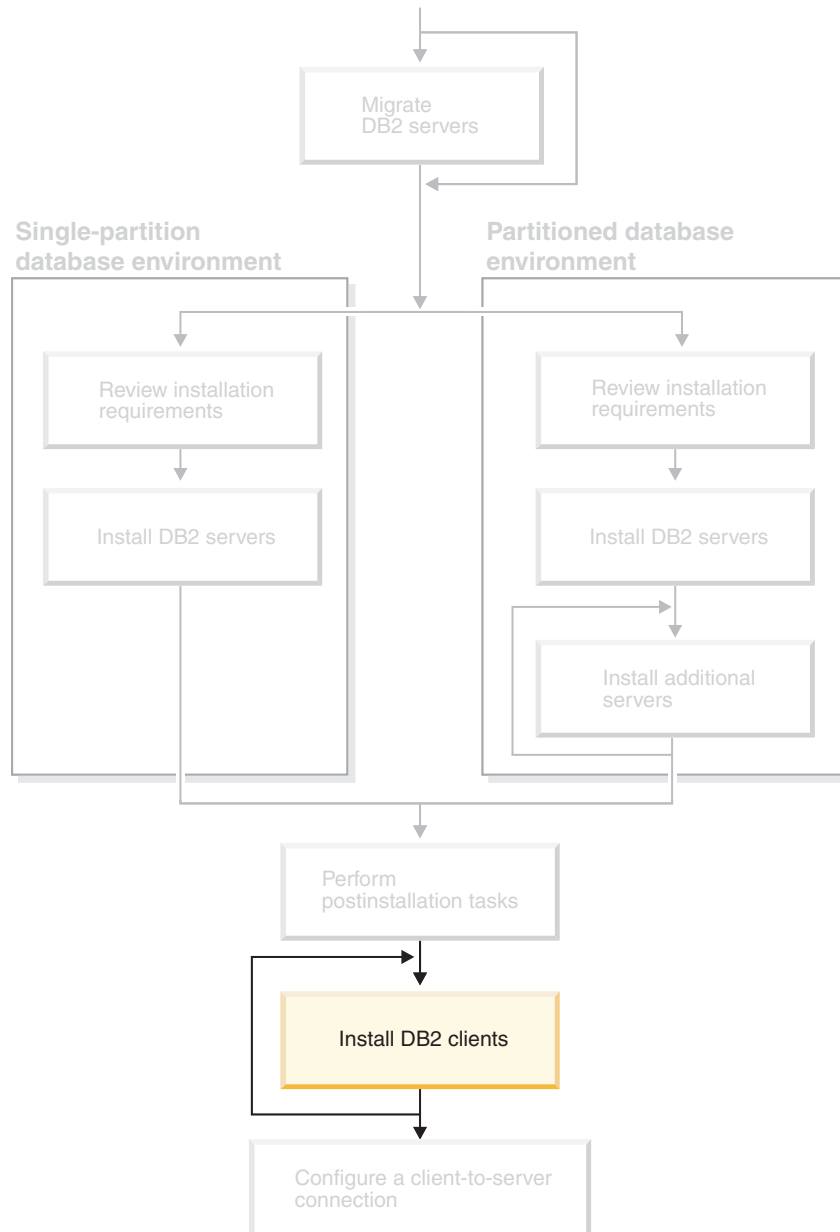
```
                              Migrate
                              DB2 servers

    Single-partition                      Partitioned database
    database environment                  environment

         Review installation                  Review installation
         requirements                         requirements

         Install DB2 servers                  Install DB2 servers

                                              Install additional
                                              servers

                              Perform
                              postinstallation tasks

                              Install DB2 clients

                              Configure a client-to-server
                              connection
```

Use this diagram to help navigate through this book. The diagram is not
intended to represent your specific installation steps. Use the information
within this book to create your own specific installation plan.

Chapter 12. Installing DB2 clients (Windows)

Client requirements

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.

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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 78

Disk and memory requirements (Windows and UNIX)

This topic lists the memory and disk requirements for DB2.

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 component selected during a typical, compact, or custom installation.

On Windows, you may 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 requires 256 MB of RAM. 512M of RAM memory is recommended if you use the DB2 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 might be required for software other than DB2 that is running on your system.
- Additional memory may 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, ensure that your SWAP space is at least twice as much as your RAM.

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 198
- "DB2 Information Center installation scenarios" on page 199

Related tasks:

- "Installing the DB2 Information Center using the DB2 Setup wizard (Windows)" on page 204
- "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)" on page 103

Related reference:
- "Language identifiers for running the DB2 Setup wizard in another language" on page 191
- "setup - Install DB2 Command" in the *Command Reference*
- "DB2 Run-Time Client Lite command line options" in the *Quick Beginnings for DB2 Clients*

Chapter 13. Installing DB2 clients (UNIX)

DB2 client requirements

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)
* xlC.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:
    - `xlC.aix43.rte` 5.0.2.x or 6.0.0.x
- On AIX Version 5.x the following file set is required:
    - `xlC.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 78

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 78

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 78

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 78

Disk and memory requirements (Windows and UNIX)

This topic lists the memory and disk requirements for DB2.

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 component selected during a typical, compact, or custom installation.

On Windows, you may 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 requires 256 MB of RAM. 512M of RAM memory is recommended if you use the DB2 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 might be required for software other than DB2 that is running on your system.
- Additional memory may 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, ensure that your SWAP space is at least twice as much as your RAM.

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** */cdrom* command where */cdrom* 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 198
- "DB2 Information Center installation scenarios" on page 199

Related tasks:
- "Installing the DB2 Information Center using the DB2 Setup wizard (UNIX)" on page 202
- "Modifying kernel parameters (Solaris Operating Environment)" on page 83

- "Modifying kernel parameters (HP-UX)" on page 80
- "Configuring client-to-server connections using the Configuration Assistant (CA)" on page 163
- "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 82

Related reference:
- "db2setup - Install DB2 Command" in the *Command Reference*

Part 6. Configuring a client-to-server connection
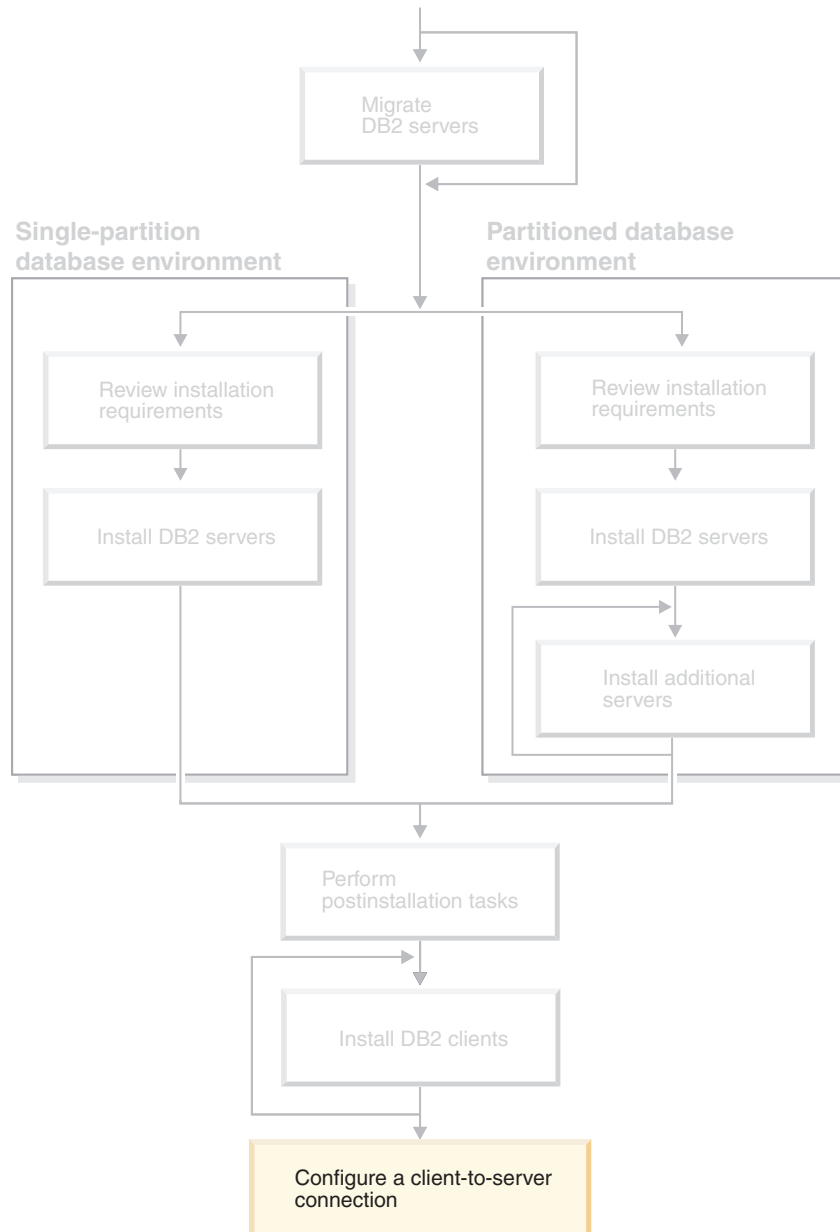
Use this diagram to help navigate through this book. The diagram is not intended to represent your specific installation steps. Use the information within this book to create your own specific installation plan.

Chapter 14. Client-to-server support

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 9. 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 7

Related reference:
- "Client-to-Server communication scenarios" in the *Quick Beginnings for DB2 Clients*
- "Version 8 incompatibilities with previous releases" in the *Administration Guide: Planning*

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® operating systems, and from DB2 Connect™ Version 8 Enterprise Edition (EE) for Windows and UNIX 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 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 15. Configuring a connection using the Configuration Assistant (CA)

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 166
- "Configuring a database connection using a profile" on page 165
- "Configuring a database connection manually using the Configuration Assistant (CA)" on page 164
- "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 169

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 166
- "Configuring a database connection using a profile" on page 165
- "Testing a database connection using the Configuration Assistant" on page 175

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" in the *Quick Beginnings for DB2 Clients*
- "Importing and configuring client profiles using the Configuration Assistant" in the *Quick Beginnings for DB2 Clients*

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 164
- "Configuring a database connection using a profile" on page 165
- "Testing a database connection using the Configuration Assistant" on page 175

Chapter 16. Configuring a connection using the command line processor (CLP)

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 170
- "Cataloging a NetBIOS node from the DB2 client" on page 171
- "Cataloging a Named Pipes node from the client" on page 172

- "Cataloging a database from a DB2 client using the CLP" on page 172
- "Testing the client-to-server connection using the CLP" on page 174
- "Configuring client-to-server connections using the Configuration Assistant (CA)" on page 163

Cataloging the 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 *svcename* (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*`/sqllib/db2profile`

   For C shell

   > `source` *INSTHOME*`/sqllib/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" in the *Installation and Configuration Supplement*
- "Testing the client-to-server connection using the CLP" on page 174

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" in the *Installation and Configuration Supplement*
- "Cataloging a database from a DB2 client using the CLP" on page 172

Related reference:
- "NetBIOS parameter values worksheet" in the *Installation and Configuration Supplement*
- "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" in the *Installation and Configuration Supplement*

Cataloging the database and testing the connection

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.
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/sqllib/db2profile
   ```

   For C shell
   ```
   source INSTHOME/sqllib/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 174

Related reference:
- "Parameter values worksheet for cataloging a database" in the *Installation and Configuration Supplement*
- "CATALOG DATABASE Command" in the *Command Reference*

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 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 tabname 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*

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 166
- "Configuring a database connection manually using the Configuration Assistant (CA)" on page 164
- "Configuring a database connection using a profile" on page 165

Part 7. Uninstalling DB2

Chapter 17. Uninstalling DB2 UDB (Windows)

Uninstalling DB2 UDB (Windows)

This task provides steps for completely removing DB2 UDB Version 8 from your Windows operating system. You should only perform this task if you no longer require existing DB2 instances and databases.

Procedure:

To remove DB2 UDB Version 8 from Windows:

1. Drop all databases. You can drop databases using the Control Center or **drop database** command.
2. Stop all DB2 processes and services. This can be done through the Windows Services panel or by issuing a **db2stop** command. If DB2 services and processes are not stopped before attempting to remove DB2, you will receive a warning containing a list of processes and services that are holding DB2 DLLs in memory.
3. Accessible through the Windows Control Panel, use the Add/Remove Programs window to remove DB2 products. Refer to your operating system's help for more information about removing software products from your Windows operating system.
4. To remove DB2 silently, enter the following command on your command line:

   ```
   msiexec /x <product_code> /qn
   ```

   where <product code> is the code for the product you want to remove. Here is a list of the DB2 product codes:

   - ESE {D8F53726-C7AD-11D4-9155-00203586D551}
   - WSE {7A28F948-4945-4BD1-ACC2-ADC081C24830}
   - PE {C0AA883A-72AE-495F-9601-49F2EB154E93}
   - WM {84AF5B86-19F9-4396-8D99-11CD91E81724}
   - DLM {1D16CA65-F7D9-47E5-BB26-C623A44832A3}
   - RCON {273F8AB8-C84B-4EE6-85E7-D7C5270A6D08}
   - CONEE {9C8DFB63-66DE-4299-AC6B-37D799A728A2}
   - CONPE {F1912044-6E08-431E-9B6D-90ED10C0B739}
   - ADMCL {ABD23811-AA8F-416B-9EF6-E54D62F21A49}
   - ADCL {68A40485-7F7F-4A91-9AB6-D67836E15CF2}
   - RTCL {63F6DCD6-0D5C-4A07-B27C-3AE3E809D6E0}
   - GSE {F6846BF9-F4B5-4BB2-946D-3926795D5749}
   - LSDC {DD30AEB3-4323-40D7-AB39-735A0523DEF3}
   - WMC {5FEA5040-22E2-4760-A88C-73DE82BE4B6E}
   - DOC {73D99978-A255-4150-B4FD-194ECF4B3D7C}
   - QP {7A8BE511-8DF3-4F22-B61A-AF0B8755E354}
   - CUBE {C8FEDF8F-84E8-442F-A084-0A0F6A772B52}
   - EXP {58169F10-CA30-4F40-8C6D-C6DA8CE47E16}

Related tasks:

- "Uninstalling DB2 UDB (UNIX)" on page 181

Related reference:
- "DROP DATABASE Command" in the *Command Reference*

Chapter 18. Uninstalling DB2 UDB (UNIX)

Uninstalling DB2 UDB (UNIX)

This task provides steps for removing DB2 Version 8 from your UNIX operating system. This task is not required to install a new version of DB2. Each version of DB2 on UNIX has a different installation path and can therefore coexist on the same computer.

Procedure:

To remove DB2 UDB from UNIX:

1. Optional: Drop all databases. You can drop databases using the Control Center or the **drop database** command.
2. Stop the DB2 Administration Server.
3. Remove the Administration Server.
4. Stop DB2 instances.
5. Remove DB2 instances.
6. Remove DB2 products.

Related concepts:

- "DB2 Administration Server" in the *Administration Guide: Implementation*

Related tasks:

- "Stopping the DB2 administration server (DAS)" on page 181
- "Removing the DB2 administration server (DAS)" on page 182
- "Stopping DB2 instances" on page 182
- "Removing DB2 instances" on page 183
- "Removing DB2 products using the db2_deinstall command (UNIX)" on page 184
- "Uninstalling DB2 UDB (Windows)" on page 179

Related reference:

- "DROP DATABASE Command" in the *Command Reference*

Stopping the DB2 administration server (DAS)

You must stop the DB2 administration server (DAS) before you remove DB2 on UNIX.

Procedure:

To stop the Administration Server:

1. Log in as the DB2 administration server owner.
2. Stop the DB2 administration server by entering the **db2admin stop** command.

Related concepts:

- "DB2 Administration Server" in the *Administration Guide: Implementation*

Related tasks:

- "Removing DB2 products using the db2_deinstall command (UNIX)" on page 184

Related reference:

- "db2admin - DB2 Administration Server Command" in the *Command Reference*

Removing the DB2 administration server (DAS)

You must remove the DB2 administration server (DAS) before you remove DB2.

Procedure:

To remove the DB2 administration server:

1. Log in as the DB2 administration server owner.
2. Run the start up script:

   ```
   . DASHOME/das/dasprofile  (bash, Bourne, or Korn shells)
   source DASHOME/das/dascshrc  (C shell)
   ```

   where *DASHOME* is the home directory of the DB2 administration server.
3. Back up the files in the DASHOME/das directory.
4. Log off.
5. Log in as root and remove the DB2 administration server by entering the following command: *DB2DIR*/**instance/dasdrop**

   where *DB2DIR* is /usr/opt/db2_08_01 on AIX and /opt/IBM/db2/V8.1 on all other UNIX-based operating systems.

Related concepts:

- "DB2 Administration Server" in the *Administration Guide: Implementation*

Related tasks:

- "Removing DB2 products using the db2_deinstall command (UNIX)" on page 184

Stopping DB2 instances

You must stop all DB2 instances before you remove DB2.

Procedure:

To stop a DB2 instance:

1. Log in as a user with root authority.
2. To obtain a list of the names of all DB2 instances on your system, enter the *DB2DIR*/**bin/db2ilist** command.

   where *DB2DIR* is /usr/opt/db2_08_01 on AIX and /opt/IBM/db2/V8.1 on all other UNIX-based operating systems.
3. Log out.
4. Log back in as the owner of the instance you want to stop.
5. Run the start up script:

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

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

6. Back up files in the *INSTHOME*/sqllib directory, if needed, where *INSTHOME* is the home directory of the instance owner.

7. You might want to save the database manager configuration file, db2systm, the db2nodes.cfg file, or user defined function or fenced stored procedure applications in *INSTHOME*/sqllib/function.

8. Stop all database applications by entering the **db2 force application all** command.

9. Stop the DB2 database manager by entering the **db2stop** command.

10. Confirm that the instance is stopped by entering the **db2 terminate** command.

11. Repeat these steps for each instance.

The next step in removing DB2 on UNIX is to remove DB2 instances.

Related reference:
- "db2stop - Stop DB2 Command" in the *Command Reference*
- "FORCE APPLICATION Command" in the *Command Reference*
- "db2ilist - List Instances Command" in the *Command Reference*

Removing DB2 instances

You can remove some or all of the DB2 version 8 instances on your system. Once an instance is removed, all the DB2 databases owned by the instance, if any, will not be usable. Remove DB2 instances only if you are not planning to use DB2 Version 8 products, or if you do not want to migrate existing instances to a later version of DB2.

Procedure:

To remove an instance:

1. Log in as a user with root authority.

2. Remove the instance by entering the following command:

        DB2DIR/instance/db2idrop *InstName*

   where *DB2DIR* is /usr/opt/db2_08_01 on AIX and /opt/IBM/db2/V8.1 on all other UNIX-based operating systems.

   The **db2idrop** command removes the instance entry from the list of instances and removes the *INSTHOME*/sqllib directory, where *INSTHOME* is the home directory of the instance and where *InstName* is the login name of the instance. If you are storing any files in /sqllib directory, these files will be removed by this action. If you still need these files, you must make a copy of them before dropping the instance.

3. Optional: As a user with root authority, remove the instance owner's user ID and group (if used only for that instance). Do not remove these if you are planning to re-create the instance.

   This step is optional since the instance owner and the instance owner group may be used for other purposes.

The next step in removing DB2 on UNIX is to remove DB2 products.

Related tasks:

- "Removing DB2 products using the db2_deinstall command (UNIX)" on page 184

Related reference:
- "db2idrop - Remove Instance Command" in the *Command Reference*

Removing DB2 products using the db2_deinstall command (UNIX)

This task provides steps for removing DB2 Version 8 products using the **db2_deinstall** command. The **db2_deinstall** command removes all DB2 products from your system. If you want to remove a subset of DB2 products, use your operating system's native tools to remove DB2 components, packages, or file sets.

Prerequisites:

Before you remove DB2 products from your UNIX system:
- Ensure that you have performed all steps outlined in *Removing DB2 on UNIX* before removing DB2 products from your UNIX system.
- You must have root authority to remove DB2 products.
- You will need your product CD-ROM to use the **db2_deinstall** command. The **db2_deinstall** command is found in the root directory on the DB2 Version 8 product CD-ROM.

Procedure:

To remove DB2 products from your UNIX system:
1. Log in as user with root authority.
2. Mount the DB2 Version 8 product CD-ROM.
3. Run the **db2_deinstall -n** command from the root directory of your DB2 Version 8 product CD-ROM. The *-n* parameter makes **pkgrm** non-interactive. The *-n* parameter is only on System V (Solaris).

   This command will remove all DB2 products from your system.

There are alternative methods for removing DB2 products from your operating system. You may employ one of these methods if you only want to remove a subset of DB2 products from your system. Alternative methods for removing DB2 products include:

AIX   You can use the System Management Interface Tool (SMIT) to remove some or all DB2 products. If you use SMIT to remove DB2, DB2 Version 8 products can be identified by their prefix of db2_08_01. You can also remove all DB2 products from AIX systems using the **installp** command by entering **installp -u db2_08_01**.

HP-UX

   You can use the **swremove** command to remove some or all DB2 products.

Linux   You can use the **rpm** command to remove some or all DB2 products.

Solaris Operating Environment

   You can remove some or all DB2 products using the **pkgrm** command.

Related tasks:
- "Removing DB2 instances" on page 183
- Chapter 19, "Removing DB2 FixPaks," on page 185

Chapter 19. Removing DB2 FixPaks

This section describes how to remove DB2 FixPaks from your system (if required).

Restrictions:

The following restrictions apply when removing DB2 FixPaks:
- On AIX, you must *not* have committed the FixPak. The FixPak can either be committed at the time of the FixPak installation, or manually later.

Procedure:

On Windows

> To remove a DB2 FixPak on Windows, you must first uninstall DB2. You can then reinstall the desired product level, FixPak level, or both. You must then recatalog your databases.
>
> **Note: db2cfexp** and **db2cfimp** can be used to export and import configuration settings. This also exports catalog settings.

On UNIX-based operating systems

> There are differing ways to remove DB2 FixPaks from UNIX-based operating systems:
>
> **AIX** On AIX, you can reject the FixPak using the **installp** command or by using SMIT (System Management Interface Tool).
>
> **HP-UX**
> > For HP-UX, use the **swremove** command or SAM (System Activity Monitor).
>
> **Solaris Operating Environments**
> > For Solaris Operating Environments, call `/var/sadm/patch/backoutallpatch*`.
>
> **Linux** For Linux, you must uninstall and reinstall the desired product level, FixPak level, or both.

Related tasks:
- "Removing DB2 products using the db2_deinstall command (UNIX)" on page 184
- "Uninstalling DB2 UDB (Windows)" on page 179
- "Uninstalling DB2 UDB (UNIX)" on page 181
- "Installing multiple levels of DB2 using installAltFixPak (UNIX)" in the *Installation and Configuration Supplement*

Part 8. Appendixes

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Appendix A. Language support

Changing the DB2 interface language (Windows)

The interface language of DB2 is the language that appears in messages, help, and graphical tool interfaces. When installing DB2, you have the option of installing support for one or more languages. If, at some time after installation, you want to change the interface language for DB2 to one of the other installed interface languages, use the steps outlined in this task.

Do not confuse languages supported by DB2 with languages supported by the DB2 interface. Languages supported by DB2, that is, languages that *data* can exist in, are a superset of languages supported by the DB2 interface.

Prerequisites:

The DB2 interface language you want to use must be installed on your system. DB2 interface languages are selected and installed when you install DB2 using the DB2 Setup wizard. If you change the interface language of DB2 to a supported interface language that has not been installed, the DB2 interface language will default to the operating system language first, and if that is not supported, English.

Procedure:

Changing the interface language for DB2 on Windows requires that you change the default language setting for your Windows operating system.

To change the DB2 interface language on Windows:
1. Through the Control Panel on your Windows operating system, select **Regional Options**.
2. In the Regional Options dialog window, change the default language setting for the system to the language in which you want to interface with DB2.

Refer to your operating system help for additional information about changing the default system language.

Related reference:
- "Supported territory codes and code pages" in the *Administration Guide: Planning*
- "Supported DB2 interface languages" on page 190

Changing the DB2 interface language (UNIX)

The interface language of DB2 is the language that appears in messages, help, and graphical tool interfaces. When installing DB2, you have the option of installing support for one or more languages. If, at some time after installation, you want to change the interface language for DB2 to one of the other installed interface languages, use the steps outlined in this task.

Do not confuse languages supported by DB2 with languages supported by the DB2 interface. Languages supported by DB2, that is, languages that *data* can exist in, are a superset of languages supported by the DB2 interface.

Prerequisites:

Support for the DB2 interface language you want to use must be installed on your system. DB2 interface language support is selected and installed when you install DB2 using the DB2 Setup wizard. If you change the interface language of DB2 to a supported interface language that has not been installed, the DB2 interface language will default to the operating system language first, and if that is not supported, English.

Procedure:

To change the DB2 interface language on UNIX systems, set the LANG environment variable to the desired locale.

For example, to interface with DB2 in French using DB2 for AIX, you must have French language support installed and you must set the LANG environment variable to a French locale, for example, fr_FR.

Related reference:
- "Supported territory codes and code pages" in the *Administration Guide: Planning*
- "Supported DB2 interface languages" on page 190

Supported DB2 interface languages

DB2 language support for DB2 interfaces can be categorized into server group languages and client group languages. Server group languages will translate most messages, help, and DB2 graphical interface elements. Client group languages will translate the DB2 Run-Time Client component, which will include most messages and certain help documentation.

Server group languages include: Brazilian Portuguese, Czech, Danish, Finnish, French, German, Italian, Japanese, Korean, Norwegian, Polish, Russian, Simplified Chinese, Spanish, Swedish, and Traditional Chinese.

Client group languages include: Arabic, Bulgarian, Croatian, Dutch, Greek, Hebrew, Hungarian, Portuguese, Romanian, Slovak, Slovenian, and Turkish.

Do not confuse languages supported by DB2 with languages supported by the DB2 interface. Languages supported by DB2 that is, languages that *data* can exist in, are a superset of languages supported by the DB2 interface.

Related tasks:
- "Changing the diagnostic error level before DB2 migration" on page 23
- "Changing the DB2 interface language (Windows)" on page 189
- "Changing the DB2 interface language (UNIX)" on page 189

Related reference:
- "National language versions" in the *Administration Guide: Planning*
- "Supported territory codes and code pages" in the *Administration Guide: Planning*

- "Conversion tables for code pages 923 and 924" in the *Administration Guide: Planning*
- "Conversion table files for euro-enabled code pages" in the *Administration Guide: Planning*

Language identifiers for running the DB2 Setup wizard in another language

If you want to run the DB2 Setup wizard in a language different from the default language on your computer, you can start the DB2 Setup wizard manually, specifying a language identifier. The language must be available on the platform where you are running the installation.

Table 10. Language identifiers

Language	Language identifier
Arabic	ar
Brazilian Portuguese	br
Bulgarian	bg
Chinese, Simplified	cn
Chinese, Traditional	tw
Croatian	hr
Czech	cz
Danish	dk
Dutch	nl
English	en
Finnish	fi
French	fr
German	de
Greek	el
Hebrew	iw
Hungarian	hu
Italian	it
Japanese	jp
Korean	kr
Norwegian	no
Polish	pl
Portuguese	pt
Romanian	ro
Russian	ru
Slovak	sk
Slovenian	sl
Spanish	es
Swedish	se
Turkish	tr

Displaying the db2setup command in your national language

The **db2setup** command queries the operating system to determine the existing language settings. If the language setting of your operating system is supported by **db2setup**, then that language will be used.

If your system uses the same code pages but different locale names than those supported by the DB2 interface, you can still see the translated **db2setup** by setting your LANG environment variable to the appropriate value by entering the following command:

export LANG= *<locale>* where *locale* is a locale supported by the DB2 interface.

For example, if your Linux system's default locale is `ja_JP.ujis` and the codepage of `ja_JP.ujis` is 954, you can set your LANG environment variable to `ja_JP.eucJP` by issuing the following command, assuming you are using Bourne shell (or a variant):

```
export LANG=ja_JP.eucJP
```

The **db2setup** command will now be displayed in Japanese (in codepage 954).

Note: The **db2setup** command can be translated into a subset of the languages supported by the DB2 product you are installing.

Related reference:
- "Supported DB2 interface languages" on page 190
- "db2setup - Install DB2 Command" in the *Command Reference*
- "setup - Install DB2 Command" in the *Command Reference*

Appendix B. Mounting the DB2 product CD-ROM (UNIX)

Mounting the CD-ROM (AIX)

Prerequisites:

Root authority is required to perform this task.

Procedure:

To mount the CD-ROM on AIX using the System Management Interface Tool (SMIT), perform the following steps:

1. Log in as a user with root authority.
2. Insert the CD-ROM in the drive.
3. Create a CD-ROM mount point by entering the `mkdir -p /cdrom` command, where `cdrom` represents the CD-ROM mount point directory.
4. Allocate a CD-ROM file system using SMIT by entering the **smit storage** command.
5. After SMIT starts, select **File Systems —> Add / Change / Show / Delete File Systems —> CDROM File Systems —> Add CDROM File System**.
6. In the Add a File System window:
   - Enter a device name for your CD-ROM file system in the **DEVICE Name** field. Device names for CD-ROM file systems must be unique. If there is a duplicate device name, you may need to delete a previously-defined CD-ROM file system or use another name for your directory. In our example, we will use `/dev/cd0` as the device name.
   - Enter the CD-ROM mount point directory in the **MOUNT POINT** window. In our example, the mount point directory is `/cdrom`.
   - In the **Mount AUTOMATICALLY at system restart** field, select `yes` to enable automatic mounting of the file system.
   - Click **OK** to close the window, then click **Cancel** three times to exit SMIT.
7. Next, mount the CD-ROM file system by entering the **smit mountfs** command.
8. In the Mount a File System window:
   - Enter the device name for this CD-ROM file system in the **FILE SYSTEM name** field. In our example, the device name is `/dev/cd0`.
   - Enter the CD-ROM mount point in the **Directory over which to mount** field. In our example, the mount point is `/cdrom`.
   - Enter `cdrfs` in the **Type of Filesystem** field. To view the other kinds of file systems you can mount, click **List**.
   - In the **Mount as READ-ONLY system** field, select `yes`.
   - Accept the remaining default values and click OK to close the window.

Your CD-ROM file system is now mounted. To view the contents of the CD-ROM, place the disk in the drive and enter the **cd /cdrom** command where **cdrom** is the CD-ROM mount point directory.

Mounting the CD-ROM (HP-UX)

The following steps will enable you to successfully mount your DB2 for HP-UX product CD-ROM.

Prerequisites:

Root authority is required to perform this task.

Procedure:

To mount your DB2 UDB for HP-UX product CD-ROM:
1. Log in as a user with root authority.
2. If necessary, define a new directory as the mount point for the CD-ROM drive. Define /cdrom as the mount point using the **mkdir /cdrom** command.
3. If necessary, identify the drive device file using the **ioscan -fnC disk** command. This command lists all recognized CD-ROM drives and their associated device files. The filename will be something similar to /dev/dsk/c1t2d0.
4. Mount the CD drive to the mount-point directory:

        mount -F cdfs -o rr /dev/dsk/c1t2d0 /cdrom
5. Obtain a file listing to verify the mount using the **ls /cdrom** command.
6. Log out.

Your CD-ROM file system is now mounted. To view the contents of the CD-ROM, place the CD in the drive and enter the **cd /cdrom** command where **cdrom** is the CD-ROM mount point directory.

Related reference:
- "DB2 product license files" in the *Installation and Configuration Supplement*
- "Installation requirements for DB2 servers (HP-UX)" on page 66

Mounting the CD-ROM (Linux)

Prerequisites:

Root authority is required to perform this task.

Procedure:

To mount the CD-ROM on Linux:
1. Log in as a user with root authority.
2. Insert the CD-ROM in the drive and enter the following command:

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

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

Your CD-ROM file system is now mounted. To view the contents of the CD-ROM, place the disk in the drive and enter the **cd /cdrom** command where **cdrom** is the CD-ROM mount point directory.

Related concepts:

- "Multiple DB2 level installations" in the *Installation and Configuration Supplement*

Related reference:
- "DB2 product license files" in the *Installation and Configuration Supplement*

Mounting the CD-ROM (Solaris Operating Environment)

Prerequisites:

If you are mounting the CD-ROM drive from a remote system using NFS, the CD-ROM file system on the remote computer must be exported with root access. You must also mount that file system with root access on the local computer.

Procedure:

To mount the CD-ROM on Solaris Operating Environment:
1. Log in as a user with root authority.
2. Insert the CD-ROM into the drive.
3. If the Volume Manager (vold) is running on your system, the CD-ROM is automatically mounted as /cdrom/*cd_label* if the CD has a label or /cdrom/unnamed_cdrom if it is unlabeled.

   If the Volume Manager is not running on your system, complete the following steps to mount the CD-ROM:

   a. Determine the name of the device by entering the following command:
      ```
      ls -al /dev/sr* |awk '{print "/" $11}'
      ```
      This command returns the name of the CD-ROM device. In this example, the command returns the string   /dev/dsk/c0t6d0s2.

   b. Enter the following commands to mount the CD-ROM:
      ```
      mkdir -p /cdrom/unnamed_cdrom
       mount -F hsfs -o ro /dev/dsk/c0t6d0s2 /cdrom/unnamed_cdrom
      ```

      where /dev/dsk/c0t6d0s2 represents the name of the device that was returned in the preceding step and /cdrom/unnamed_cdrom represents the CD-ROM mount directory.

      Note: If you are mounting the CD-ROM drive from a remote system using NFS, the CD-ROM file system on the remote machine must be exported with root access. You must also mount that file system with root access on the local machine.
4. Log out.

Your CD-ROM file system is now mounted. To view the contents of the CD-ROM, place the disk in the drive and enter the **cd /cdrom** command where **cdrom** is the CD-ROM mount point directory.

Appendix C. 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 198

Related tasks:

- "Invoking contextual help from a DB2 tool" on page 215

- "Updating the DB2 Information Center installed on your computer or intranet server" on page 207
- "Invoking message help from the command line processor" on page 216
- "Invoking command help from the command line processor" on page 216
- "Invoking SQL state help from the command line processor" on page 217

Related reference:
- "DB2 PDF and printed documentation" on page 209

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/iseries/infocenter/.

Related concepts:

• "DB2 Information Center installation scenarios" on page 199

Related tasks:

• "Updating the DB2 Information Center installed on your computer or intranet server" on page 207
• "Displaying topics in your preferred language in the DB2 Information Center" on page 208
• "Invoking the DB2 Information Center" on page 206
• "Installing the DB2 Information Center using the DB2 Setup wizard (UNIX)" on page 202
• "Installing the DB2 Information Center using the DB2 Setup wizard (Windows)" on page 204

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 198

Related tasks:
- "Updating the DB2 Information Center installed on your computer or intranet server" on page 207
- "Installing the DB2 Information Center using the DB2 Setup wizard (UNIX)" on page 202
- "Installing the DB2 Information Center using the DB2 Setup wizard (Windows)" on page 204
- "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 198
- "DB2 Information Center installation scenarios" on page 199

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 207
- "Displaying topics in your preferred language in the DB2 Information Center" on page 208
- "Invoking the DB2 Information Center" on page 206
- "Installing the DB2 Information Center using the DB2 Setup wizard (Windows)" on page 204

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.

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 198
- "DB2 Information Center installation scenarios" on page 199

Related tasks:
- "Displaying topics in your preferred language in the DB2 Information Center" on page 208
- "Invoking contextual help from a DB2 tool" on page 215
- "Updating the DB2 Information Center installed on your computer or intranet server" on page 207
- "Invoking command help from the command line processor" on page 216
- "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 199

Related tasks:
- "Invoking the DB2 Information Center" on page 206
- "Installing the DB2 Information Center using the DB2 Setup wizard (UNIX)" on page 202
- "Installing the DB2 Information Center using the DB2 Setup wizard (Windows)" on page 204

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.

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 11. Core DB2 information

Name	Form Number	PDF File Name
IBM DB2 Universal Database Command Reference	SC09-4828	db2n0x81
IBM DB2 Universal Database Glossary	No form number	db2t0x81
IBM DB2 Universal Database Message Reference, Volume 1	GC09-4840, not available in hardcopy	db2m1x81
IBM DB2 Universal Database Message Reference, Volume 2	GC09-4841, not available in hardcopy	db2m2x81
IBM DB2 Universal Database What's New	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 12. 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 13. 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 13. Application development information (continued)

Name	Form number	PDF file name
IBM DB2 Universal Database Call Level Interface Guide and Reference, Volume 1	SC09-4849	db2l1x81
IBM DB2 Universal Database Call Level Interface Guide and Reference, Volume 2	SC09-4850	db2l2x81
IBM DB2 Universal Database Data Warehouse Center Application Integration Guide	SC27-1124	db2adx81
IBM DB2 XML Extender Administration and Programming	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 14. Business intelligence information

Name	Form number	PDF file name
IBM DB2 Warehouse Manager Standard Edition Information Catalog Center Administration Guide	SC27-1125	db2dix81
IBM DB2 Warehouse Manager Standard Edition Installation Guide	GC27-1122	db2idx81
IBM DB2 Warehouse Manager Standard Edition Managing ETI Solution Conversion Programs with DB2 Warehouse Manager	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 15. DB2 Connect information

Name	Form number	PDF file name
IBM Connectivity Supplement	No form number	db2h1x81
IBM DB2 Connect Quick Beginnings for DB2 Connect Enterprise Edition	GC09-4833	db2c6x81
IBM DB2 Connect Quick Beginnings for DB2 Connect Personal Edition	GC09-4834	db2c1x81
IBM DB2 Connect User's Guide	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 16. Getting started information

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

Tutorial information

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

Table 17. Tutorial information

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

Optional component information

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

Table 18. Optional component information

Name	Form number	PDF file name
IBM DB2 Cube Views Guide and Reference	SC18–7298	db2aax81

Table 18. 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 **Note:** HTML for this document is *not* installed from the HTML documentation CD.	SH12-6740	N/A

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 19. 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 197

Related tasks:
- "Printing DB2 books from PDF files" on page 214
- "Ordering printed DB2 books" on page 214
- "Invoking contextual help from a DB2 tool" on page 215

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 198

Related tasks:
- "Mounting the CD-ROM (AIX)" on page 193
- "Mounting the CD-ROM (HP-UX)" on page 194
- "Mounting the CD-ROM (Linux)" on page 194
- "Ordering printed DB2 books" on page 214
- "Mounting the CD-ROM (Solaris Operating Environment)" on page 195

Related reference:
- "DB2 PDF and printed documentation" on page 209

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 214

Related reference:
- "DB2 PDF and printed documentation" on page 209

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 206
- "Invoking message help from the command line processor" on page 216
- "Invoking command help from the command line processor" on page 216
- "Invoking SQL state help from the command line processor" on page 217
- "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 215
- "Invoking the DB2 Information Center" on page 206
- "Invoking message help from the command line processor" on page 216
- "Invoking SQL state help from the command line processor" on page 217

Related reference:
- "db2 - Command Line Processor Invocation Command" in the *Command Reference*

Invoking SQL state help from the command line processor

DB2 Univerrsal 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 206
- "Invoking message help from the command line processor" on page 216
- "Invoking command help from the command line processor" on page 216

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 198
- "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 220.
- DB2 documentation is provided in an accessible format. For more information, see "Accessible documentation" on page 220.

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 220

Related tasks:
- "Keyboard shortcuts and accelerators: Common GUI help"
- "Changing the fonts for menus and text: Common GUI help"

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.

Notes:

1. If a dotted decimal number has an asterisk (*) next to it and there is only one item with that dotted decimal number, you can repeat that same item more than once.

2. If a dotted decimal number has an asterisk next to it and several items have that dotted decimal number, you can use more than one item from the list, but you cannot use the items more than once each. In the previous example, you could write HOST STATE, but you could not write HOST HOST.

3. The * symbol is equivalent to a loop-back line in a railroad syntax diagram.

- + means a syntax element that must be included one or more times. A dotted decimal number followed by the + symbol indicates that this syntax element must be included one or more times; that is, it must be included at least once and can be repeated. For example, if you hear the line 6.1+ data area, you must include at least one data area. If you hear the lines 2+, 2 HOST, and 2 STATE, you know that you must include HOST, STATE, or both. Similar to the * symbol, the + symbol can only repeat a particular item if it is the only item with that dotted decimal number. The + symbol, like the * symbol, is equivalent to a loop-back line in a railroad syntax diagram.

Related concepts:
- "Accessibility" on page 219

Related tasks:
- "Keyboard shortcuts and accelerators: Common GUI help"

Related reference:
- "How to read the syntax diagrams" in the *SQL Reference, Volume 2*

Common Criteria certification of DB2 Universal Database products

DB2 Universal Database is being evaluated for certification under the Common Criteria at evaluation assurance level 4 (EAL4). For more information about Common Criteria, see the Common Criteria web site at: http://niap.nist.gov/cc-scheme/.

Appendix D. Notices

IBM may not offer the products, services, or features discussed in this document in all countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

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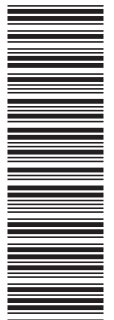
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