IBM® DB2 Connect™

Quick Beginnings for DB2 Connect™ Enterprise Edition

Version 8.2

GC09-4833-01

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Part 1. Introduction to DB2 Connect

The following section contains an overview of DB2 Connect, including examples of different DB2 Connect environments. Topics discussed include:

- Available versions of DB2 Connect
- Suitability of each version for different business environments
- Administration and client tools that work with DB2 Connect
- How DB2 Connect relates to Java, web applications, and transaction processing scenarios

Who Should Read This Section

- Managers exploring how to integrate DB2 Connect with present or planned business operations
- Technical staff preparing to install DB2 Connect

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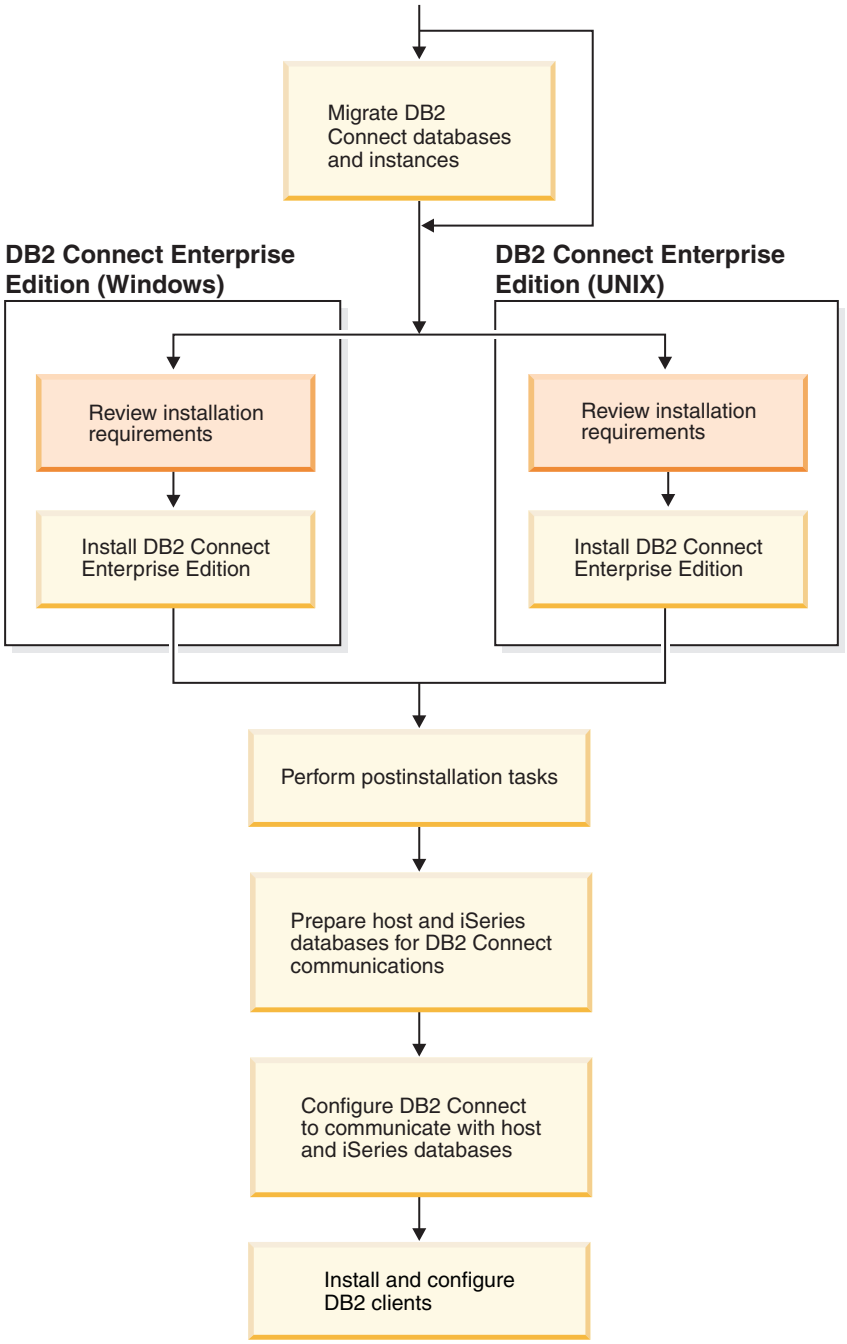
Chapter 1. About DB2 Connect



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

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DB2 Connect product offerings

DB2 Connect has several connection solutions.

DB2 Connect Enterprise Edition

DB2 Connect Enterprise Edition is a connectivity server that concentrates and manages connections from multiple desktop clients and web applications to DB2 servers running on host or iSeries systems. IBM's DB2 Universal Database (UDB) for iSeries, DB2 for OS/390 and z/OS, and DB2 for VSE & VM databases continue to be the systems of choice for managing most critical data for the world's largest organizations. While these host and iSeries databases manage the data, there is a great demand to integrate this data with applications running on Windows and UNIX workstations.

DB2 Connect Enterprise Edition enables local and remote client applications to create, update, control, and manage DB2 databases and host systems using Structured Query Language (SQL), DB2 APIs (Application Programming Interfaces), ODBC (Open Database Connectivity), JDBC (Java Database Connectivity), SQLJ (Embedded SQLJ for Java), or DB2 CLI (Call Level Interface). In addition, DB2 Connect supports Microsoft Windows data interfaces such as ActiveX Data Objects (ADO), Remote Data Objects (RDO), and Object Linking and Embedding (OLE) DB.

DB2 Connect Enterprise Edition is currently available for AIX, HP-UX, Linux, Solaris Operating Environment, and Windows operating systems. These servers provide support for applications running on UNIX (AIX, HP-UX, Linux, and Solaris Operating Environment), and Windows workstations.

DB2 Connect Enterprise Edition is often installed on an intermediate server to connect DB2 clients to a host or iSeries database. It can also be used on machines where multiple local users want to access the host or iSeries servers directly.

For example, DB2 Connect Enterprise Edition may be installed on a large machine with many local users. It may also be installed on a web server, a machine that is running a Transaction Processor (TP) monitor, or other 3-tier application servers with multiple local SQL application processes and threads. In these cases, you can install DB2 Connect Enterprise Edition on the same machine for simplicity, or on a separate machine to off-load CPU cycles.

DB2 Connect Enterprise Edition is most appropriate for environments where:

- Servers do not support native TCP/IP connectivity and direct connectivity from desktop workstations via SNA is not desirable.
- Web servers run web-based applications.
- Web servers run web-based application using data-aware Java applications.
- A middle-tier application server is used.
- TP monitors, such as CICS, Encina, Microsoft Transaction Server (MTS), Tuxedo, Component Broker, and MQSeries, are used.

DB2 Connect Personal Edition

DB2 Connect Personal Edition provides access from a single workstation to DB2 databases residing on servers such as OS/390, z/OS, OS/400, VM and

VSE, as well as to DB2 Universal Database servers on UNIX and Windows operating systems. DB2 Connect Personal Edition provides the same rich set of APIs as DB2 Connect Enterprise Edition.

This product is currently available for Linux and Windows operating systems.

DB2 Connect Personal Edition is used to connect a single Windows operating system, or Linux workstation, to a host or iSeries database. DB2 Connect Personal Edition is best suited for environments where native TCP/IP support is provided by the DB2 servers, and the application being deployed is a traditional 2-tier client-server application.

For example, DB2 Connect Personal Edition is a good choice for enabling traditional 2-tier VisualBasic and Microsoft Access applications. Applications that require a mid-tier application server need to use DB2 Connect Enterprise Edition.

DB2 Connect Unlimited Edition

DB2 Connect Unlimited Edition is a unique package offering that allows complete flexibility of DB2 Connect deployment and simplifies product selection and licensing. This product contains both DB2 Connect Personal Edition and DB2 Connect Enterprise Edition with license terms and conditions that allow the unlimited deployment of any DB2 Connect product. License charges are based on the size of the S/390 or zSeries server that DB2 Connect users will be working with.

This package offering is only available for OS/390 and z/OS systems, and licensing is only valid for DB2 for OS/390 and z/OS data sources.

DB2 Connect Application Server Edition

DB2 Connect Application Server Edition is identical to the DB2 Connect Enterprise Server in its technology. It is designed for large scale demanding environments. However, its licensing terms and conditions are meant to address specific needs of multi-tier client-server applications as well as applications that utilize web technologies.

Related tasks:

- "Installing DB2 Connect Personal Edition (Windows)" in the *Quick Beginnings for DB2 Connect Personal Edition*
- "Installing DB2 Connect Personal Edition (Linux)" in the *Quick Beginnings for DB2 Connect Personal Edition*
- "Installing DB2 Connect Enterprise Edition (Windows)" on page 45
- "Installing DB2 Connect Enterprise Edition (Solaris Operating Environment)" on page 54
- "Installing DB2 Connect Enterprise Edition (Linux)" on page 51
- "Installing DB2 Connect Enterprise Edition (HP-UX)" on page 49
- "Installing DB2 Connect Enterprise Edition (AIX)" on page 47

Host and iSeries support for DB2 Connect

DB2 Connect supports the following host and iSeries servers:

- DB2 for OS/390 Version 6.1 and Version 7.1 with fixes for the following APARs applied: PQ62695, PQ55393, PQ56616, PQ54605, PQ46183, and PQ62139; and DB2 for z/OS Version 8 or later.

- DB2 UDB for iSeries V5R1, and later. Refer to APAR II13348 for required iSeries maintenance levels. To view the APAR detail, go to the following website:
  - http://www-912.ibm.com/supporthome.nsf/document/20300257
- DB2 Server for VM/VSE Version 7 and later. Refer to the following website for required maintenance levels:
  - http://www.ibm.com/software/data/db2/vse-vm/support/dwnldsfs.html

Related concepts:

- "DB2 Connect" in the *DB2 Connect User's Guide*
- "Accessing host or iSeries DB2 data using DB2 Connect EE" on page 7

Related tasks:

- "Configuring a connection to host or iSeries database servers using the CA" on page 79

Related reference:

- "Host databases" in the *DB2 Connect User's Guide*

Chapter 2. DB2 Connect scenarios

Accessing host or iSeries DB2 data using DB2 Connect EE

A DB2® Connect server enables DB2 clients on a LAN access to data that is stored on host or iSeries™ systems. DB2 Universal Database™ Enterprise Server Edition includes the *DB2 Connect™ Server Support* component. All references to DB2 Connect Enterprise Edition also apply to the DB2 Connect Server Support component.

In organizations with large amounts of data, DB2 UDB for iSeries, DB2 UDB for OS/390® and z/OS™, or DB2 Server for VSE & VM are commonly used to manage that data. Applications that run on any of the supported platforms can work with this data transparently, as if a local database server managed it. DB2 Connect Enterprise Edition is required for supporting applications which access host or iSeries data and exploit transaction monitors (for example, IBM® TxSeries CICS® and Encina® Monitor, Microsoft® Transaction Server, BEA Tuxedo) as well as applications that are implemented as Java™ applets.

In addition, you can use a wide range of off-the-shelf or custom-developed database applications with DB2 Connect and its associated tools. For example, you can use DB2 Connect products with:

- *Spreadsheets*, such as Lotus® 1-2-3® and Microsoft Excel, to analyze real-time data without having the cost and complexity of data extract and import procedures.
- *Decision support tools*, such as BusinessObjects, Brio and Impromptu, and Crystal Reports, to provide real-time information.
- *Database products*, such as Lotus Approach and Microsoft Access.
- *Development tools*, such as PowerSoft PowerBuilder, Microsoft Visual Basic, and Borland Delphi, to create client/server solutions.

DB2 Connect Enterprise Edition is most appropriate for environments where:

- Host and iSeries database servers do not support native TCP/IP connectivity, and direct connectivity from desktop workstations via SNA is not desirable (see Figure 1 on page 9).
- Application is implemented using data-aware Java applets (see Figure 5 on page 14).
- Web servers are used to implement web-based applications (see Figure 4 on page 12 and Figure 5 on page 14).
- Middle-tier application server is employed.
- Transaction monitors such as IBM TxSeries CICS and Encina Monitor, IBM Component Broker, IBM MQSeries®, Microsoft Transaction Server (MTS), and BEA Tuxedo are used. (See Figure 2 on page 10.)

DB2 Connect provides transparent access to host or iSeries data through a standard architecture for managing distributed data. This standard is known as Distributed Relational Database Architecture (DRDA). DRDA® allows your applications to establish a fast connection to host and iSeries databases without expensive host or iSeries components or proprietary gateways.

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Although DB2 Connect is often installed on an intermediate server machine to connect DB2 clients to a host or iSeries database, it is also installed on machines where multiple local users want to access the host or iSeries servers directly. For example, DB2 Connect may be installed on a large machine with many local users.

DB2 Connect may also be installed on a Web server, Transaction Processor (TP) monitor, or other 3-tier application server machines with multiple local SQL application processes and threads. In these cases, you can choose to install DB2 Connect on the same machine for simplicity, or on a separate machine to off-load CPU cycles.

A DB2 Connect server enables multiple clients to connect to host or iSeries data and can significantly reduce the effort that is required to establish and maintain access to enterprise data. Figure 1 on page 9 illustrates IBM's solution for environments where a DB2 client makes an indirect connection to a host or iSeries database server through DB2 Connect Enterprise Edition.

In the example, you could replace the DB2 Connect server with a DB2 server that has the DB2 Connect Server Support component installed.

To connect to an IBM mainframe database you require a licensed DB2 Connect product or a licensed product that contains a DB2 Connect component, like DB2 Universal Database Enterprise Server Edition. You cannot connect to an IBM mainframe database using a DB2 Run-Time client.

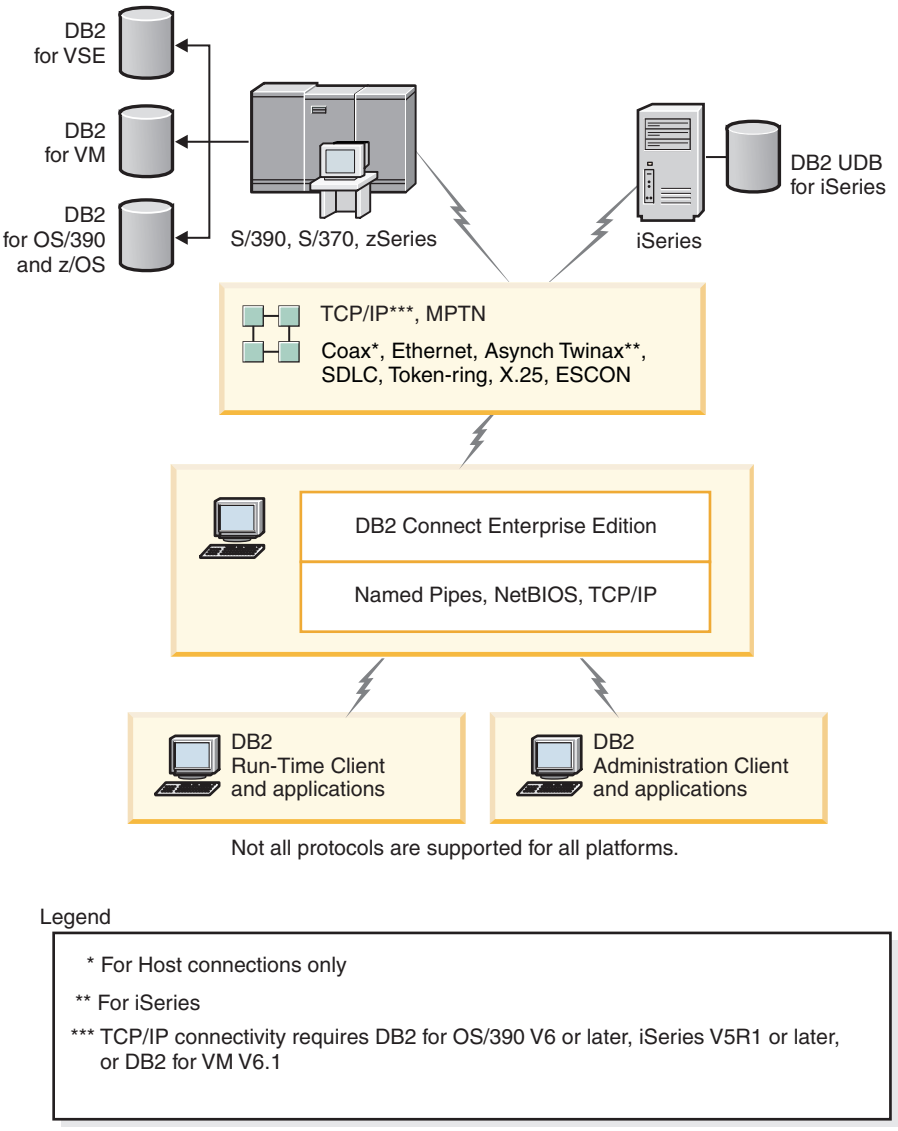


Figure 1. DB2 Connect Enterprise Edition

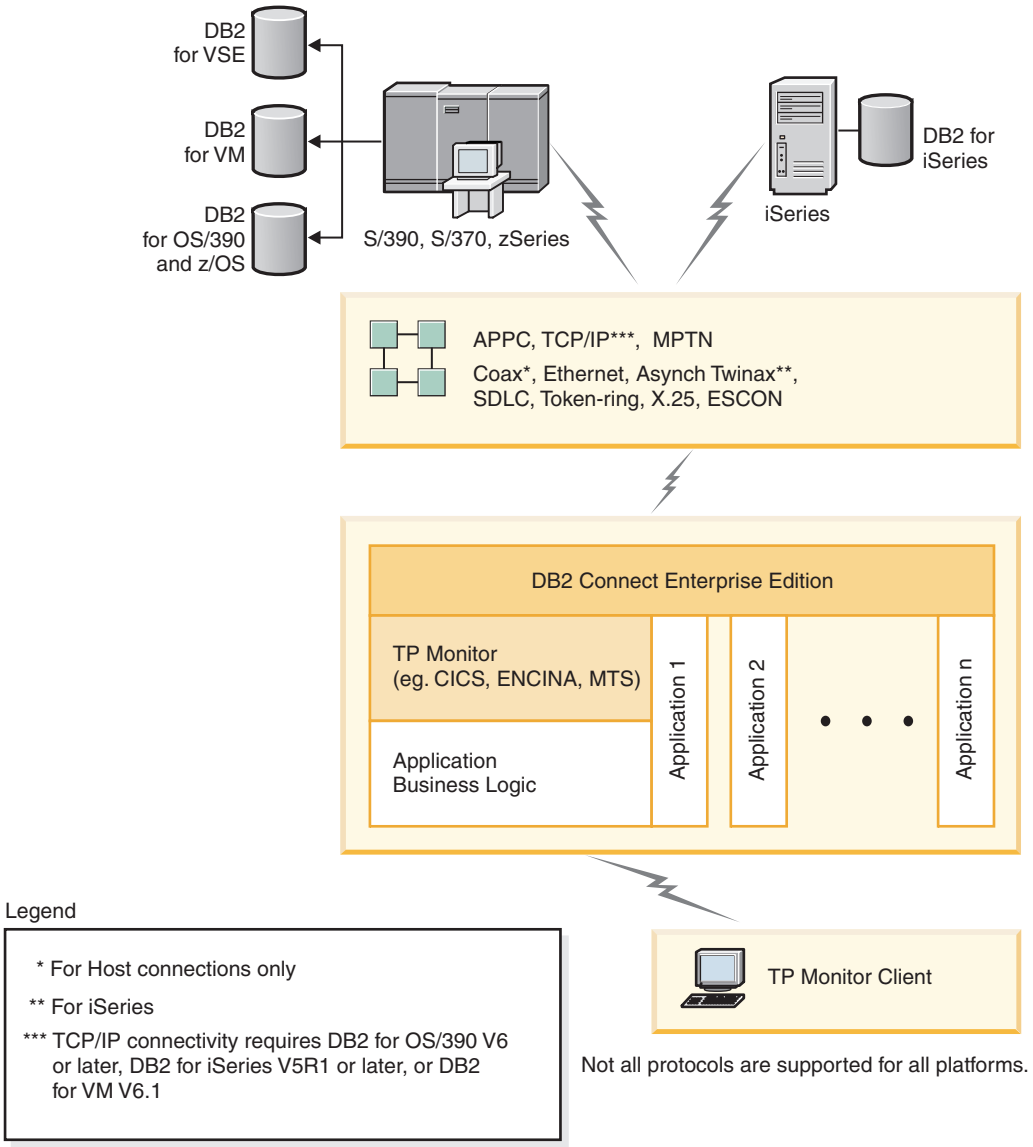


Figure 2. Transaction monitors working with DB2 Connect.

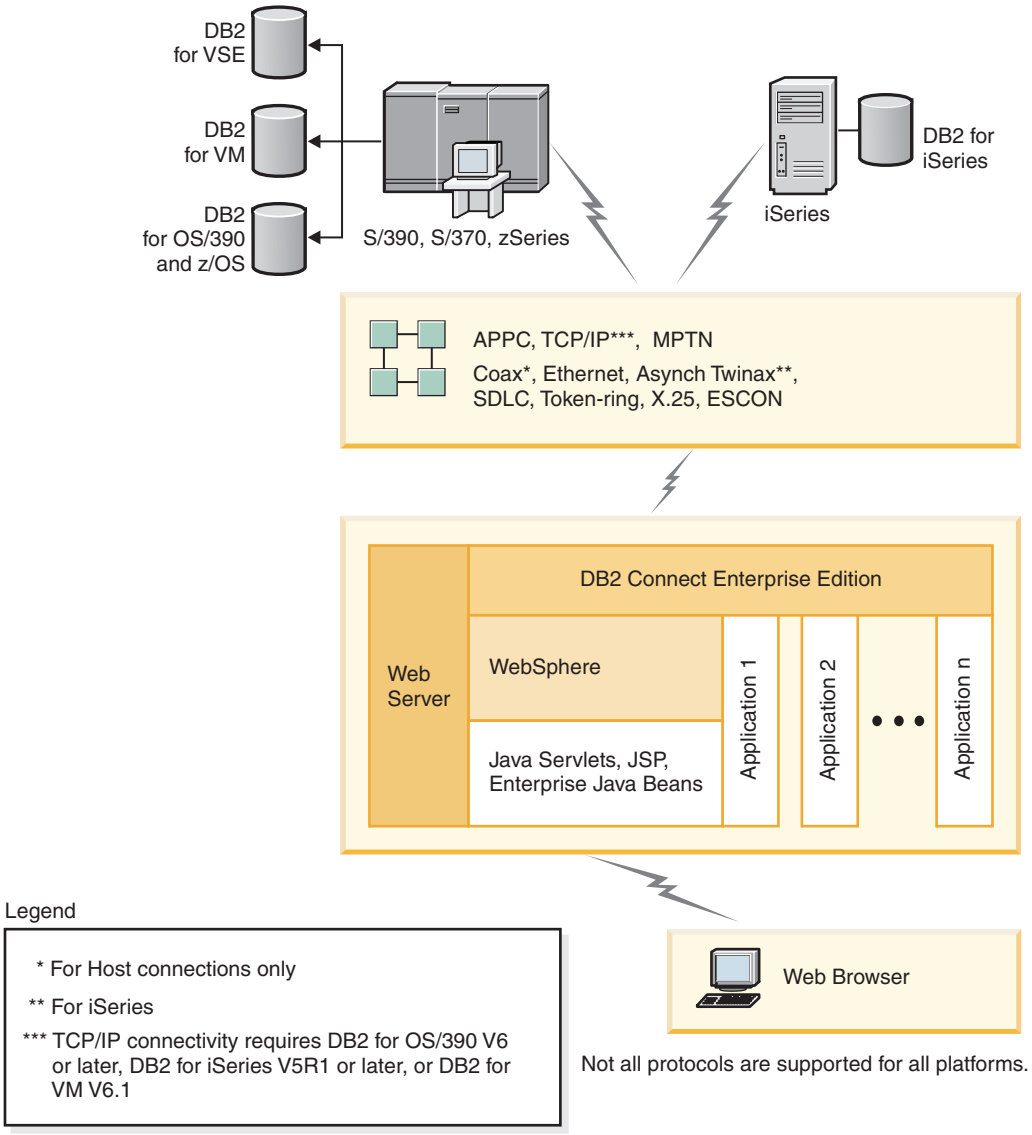


Figure 3. WebSphere® and Java server functionality in DB2 Connect

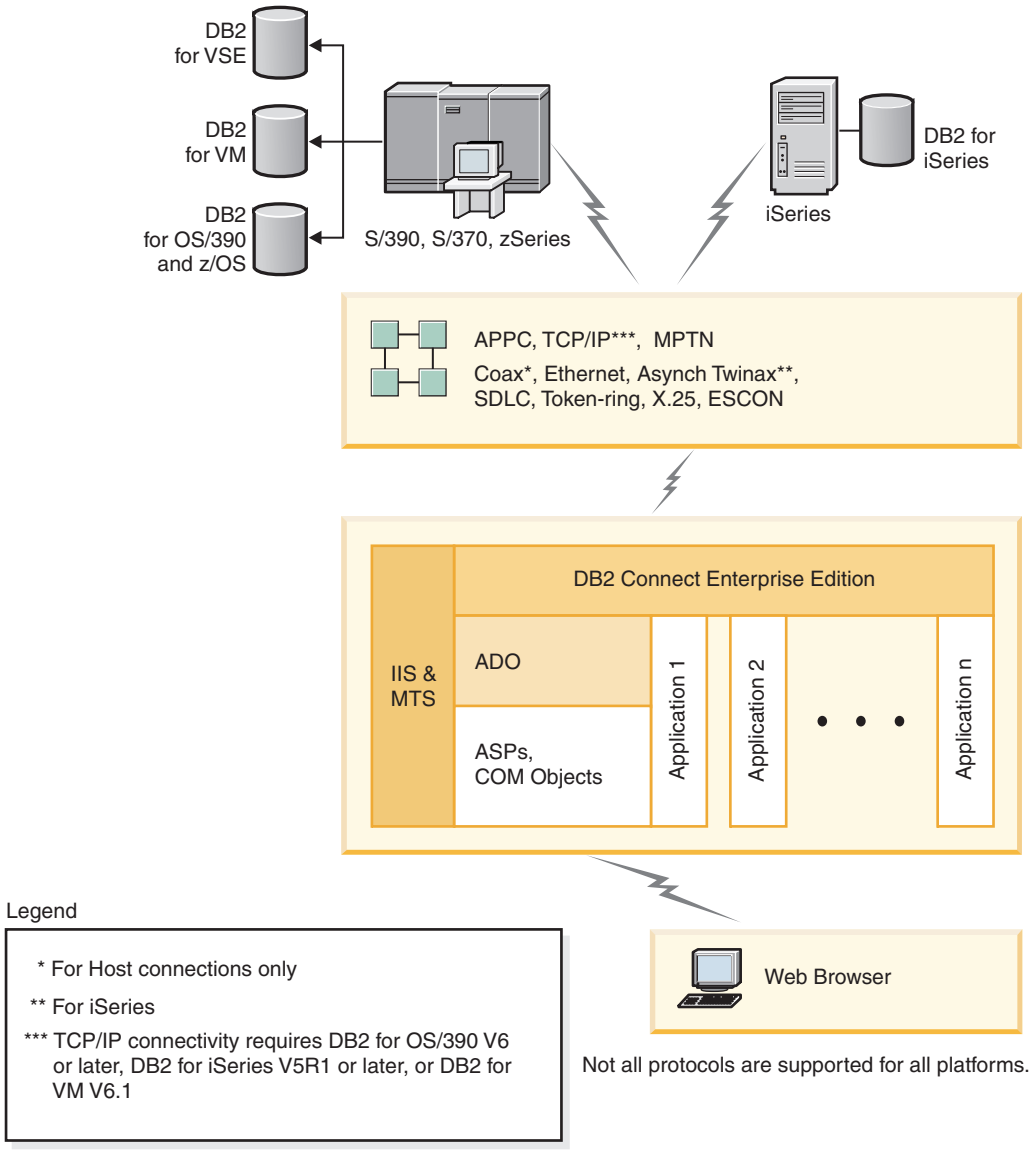


Figure 4. DB2 Connect working with Microsoft Internet Information Server (IIS)

Related concepts:

- "DB2 Connect Enterprise Edition: installation and configuration overview" on page 25

Access DB2 data from remote clients

DB2® clients provide a run-time environment that enables client applications to access one or more remote databases. With a DB2 Administration Client, you can remotely administer DB2 or DB2 Connect™ servers. All applications must access a database through a DB2 client. A Java™ applet can access a remote database through a Java-enabled browser.

DB2 clients are supported on:

- UNIX® (AIX, HP-UX, Linux, and the Solaris Operating Environment)

- Windows® 98, Windows ME Windows NT®, Windows 2000, Windows XP (32-bit and 64-bit), and Windows Server 2003 (32-bit and 64-bit) .

Related concepts:

- "DB2 clients" on page 91
- "DB2 Run-Time Client" on page 93
- "DB2 Administration Client" on page 92
- "DB2 Application Development Client" on page 92

Accessing DB2 data from the web using Java

Java™ Database Connectivity (JDBC) and Embedded SQL for Java (SQLJ) are provided with DB2® to allow you to create applications that access data in DB2 databases from the Web.

Programming languages containing embedded SQL are called host languages. Java differs from the traditional host languages C, COBOL, and FORTRAN, in ways that significantly affect how it embeds SQL:

- SQLJ and JDBC are open standards, enabling you to easily port SQLJ or JDBC applications from other standards-compliant database systems to DB2 Universal Database.
- All Java types representing composite data, and data of varying sizes, have a distinguished value, `null`, which can be used to represent the SQL NULL state, giving Java programs an alternative to NULL indicators that are a fixture of other host languages.
- Java is designed to support programs that, by nature, are heterogeneously portable (also called "super portable" or simply "downloadable"). Along with Java's type system of classes and interfaces, this feature enables component software. In particular, an SQLJ translator written in Java can call components that are specialized by database vendors in order to leverage existing database functions such as authorization, schema checking, type checking, transactional, and recovery capabilities, and to generate code optimized for specific databases.
- Java is designed for binary portability in heterogeneous networks, which promises to enable binary portability for database applications that use static SQL.
- You can run JDBC applets inside a web page on any system with a Java-enabled browser, regardless of the platform of your client. Your client system requires no additional software beyond this browser. The client and the server share the processing of JDBC and SQLJ applets and applications.

The DB2 JDBC Applet server and the DB2 Connect™ server must reside on the same machine as the Web server. The DB2 JDBC Applet server calls the DB2 client to connect to local and remote databases. When the applet requests a connection to a DB2 database, the JDBC client opens a TCP/IP connection to the DB2 JDBC Applet on the machine where the Web server is running.

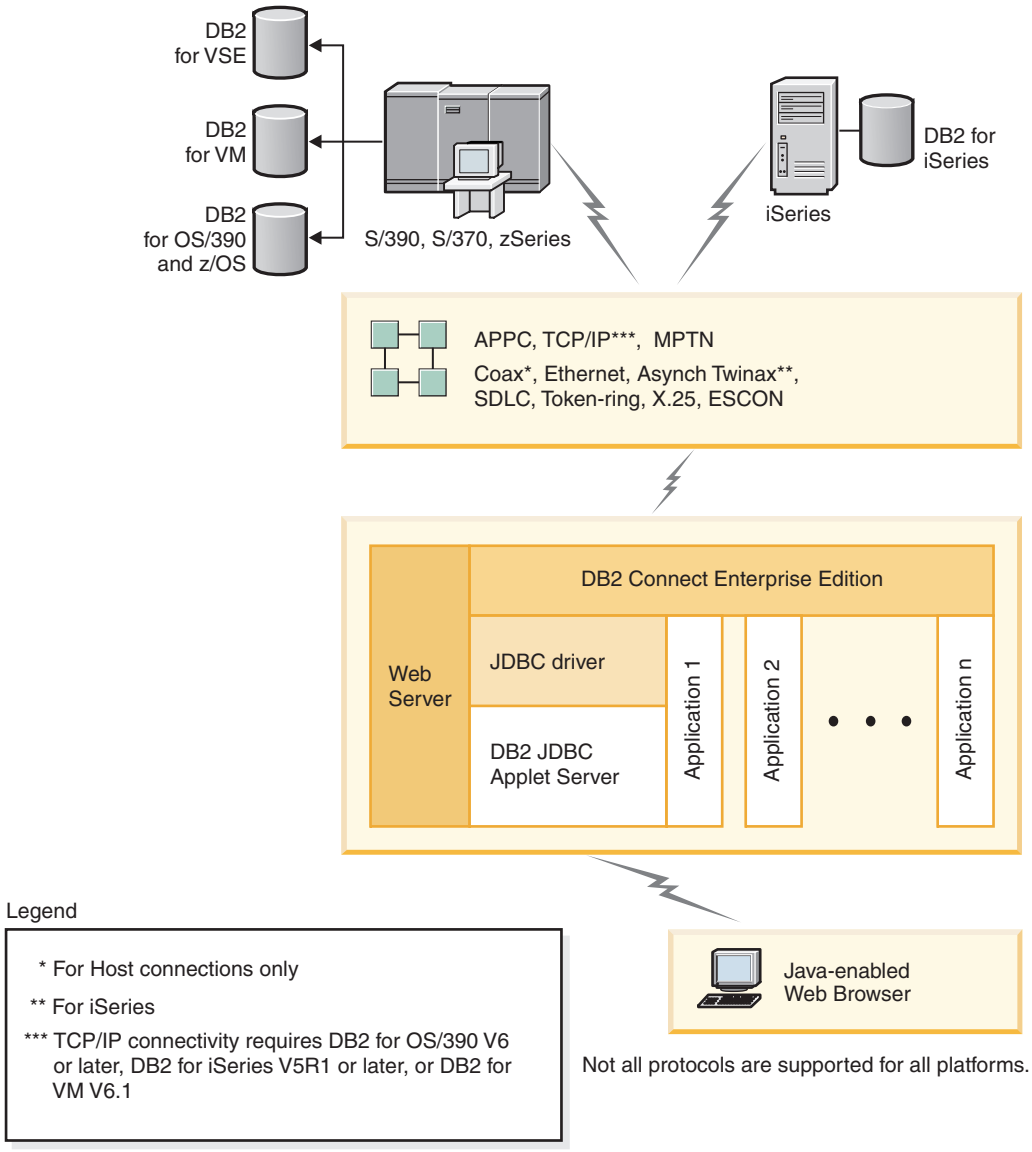


Figure 5. JDBC and DB2 Connect

JDBC and SQLJ applications can be run from any system that has a DB2 client installed; a Web browser and a Web server are not required.

For more information on Java enablement, see the http://www.ibm.com/software/data/db2/java/ web page.

For more information on the JDBC API, see the http://java.sun.com/ web page.

Related concepts:

- "Managing connections to databases using the Configuration Assistant" on page 15

Managing connections to databases using the Configuration Assistant

The Configuration Assistant (CA) helps you manage your database connections to remote servers. This is the preferred method to set up any client to server communications.

You can also use the command line processor to set up DB2® clients on any platform.

With the CA, you can:

- Catalog databases so that they can be used by applications. Three methods are available:
  - Use a profile provided by a database administrator to automatically define your connections. Client access is automatically set up for that database.
  - Search the network for available databases and select one. Client access is automatically set up for those databases defined in the profile. DB2 Connect™ Personal Edition cannot search for host or iSeries™ databases except through a DB2 Connect Enterprise Edition server that has host or iSeries databases defined.
  - Manually configure a connection to a database by entering the required connection parameters.
- Remove cataloged databases, or change the properties of a cataloged database.
- Export and import client profiles that contain database and configuration information for a client.
- Test connections to local or remote databases identified on your system.
- Bind applications to a database by selecting utilities or bind files from a list.
- Add, change, remove CLI/ODBC data sources, and configure CLI/ODBC configuration settings.
- Tune the client configuration parameters on your system. Parameters are logically grouped and suggested settings are provided on the interface as parameters are selected.
- Update the database server password.

Related tasks:

- "Configuring client-to-server connections using the Configuration Assistant (CA)" in the *Quick Beginnings for DB2 Servers*
- Chapter 20, "Binding database utilities on DB2 Connect," on page 117
- "Configuring a connection to host or iSeries database servers using the CA" on page 79

Understanding the Administration Server

The DB2® Administration Server (DAS) responds to requests from the DB2 Administration Tools and the Configuration Assistant (CA). The DB2 Administration Tools, for example, allow you to start, stop, and set database manager configuration parameters for servers. The Administration Server is used by the CA to help users catalog databases on a client.

An Administration Server must reside on each server that you want to administer and detect. The Administration Server is automatically created and started for you; its default name on UNIX® is `db2as`. The setup program creates the Administration

Server on the instance-owning machine and automatically starts it at boot time. By default the DAS instance is DB2AS, which is the default user ID that is created using the DB2 Setup wizard.

Related concepts:

- "DB2 Administration Server" in the *Administration Guide: Implementation*

Related tasks:

- "Create a DB2 Administration Server" in the *Administration Guide: Implementation*

Administering instances and databases with the DB2 administration tools

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

The Control Center has additional support for DB2 UDB for OS/390® and z/OS™. If you want to access DB2 for OS/390 and z/OS functions from the Control Center:

1. Verify the following information with your systems administrator:
   a. You have a DB2 UDB for OS/390 license (Version 6) or DB2 UDB for OS/390 and z/OS (Version 7 or later).
   b. You are using one of the following: DB2 Enterprise Server Edition, DB2 Connect Personal Edition, or DB2 Connect™ Enterprise Edition.
2. Apply the FMIDs for the DB2 Management Clients Package (a feature of DB2 for OS/390 version 6 and DB2 for OS/390 and z/OS version 7 or later) and DB2 Administration Server (DAS) for OS/390 and z/OS (only available for DB2 for OS/390 and z/OS version 7 or later). If you are managing a DB2 for OS/390 Version 6 server, some Control Center functions , including System Console Interface, Cloning, and JCL Building and Creation, are only available if the DB2 Administration Server is installed in the same system where the DB2 for OS/390 Version 6 subsystem resides. DAS is an optional feature that is shipped with DB2 for OS/390 and z/OS Version 7 server, but can also be used with DB2 UDB for OS/390 Version 6 servers. Read the DB2 for OS/390 and z/OS, DB2 Management Clients Package, and DB2 Administration Server for OS/390 and z/OS program directories. The program directory identifies and describes the contents of FMIDs for each tape or cartridge. The program directory also provides the installation requirements and instructions.
3. Apply any additional service to DB2 UDB for OS/390 Version 6 or DB2 UDB for OS/390 and z/OS Version 7 or later as described in the program directories.
4. IBM® DB2 Universal Database™ Control Center Version 8 provides support to help you manage DB2 databases on multiple platforms. When managing DB2 UDB for OS/390 and z/OS subsystems, you need to install a set of stored procedures, user defined functions, and batch programs for each DB2 subsystem.

   If you have DB2 UDB for OS/390 Version 6 installed, you need to install the 390 enablement feature of DB2 UDB for OS/390 Version 6 (JDB661D). If you have DB2 UDB for OS/390 and z/OS Version 7 installed, you need to install the 390 enablement feature of DB2 UDB for OS/390 and z/OS Version 7 (JDB771D). If you want to fully exploit all the DB2 UDB Control Center Version 8 functions for OS/390 and z/OS, including Cloning and JCL building and creation, you need to install the DB2 Administration Server (DAS) for OS/390

and z/OS Version 8 (HDA8810 or HAH8810) which ships as a feature of DB2 for OS/390 and z/OS Version 7.The DB2 Administration Server only needs to be installed once per system.

If you are also managing a DB2 UDB for OS/390 Version 6 on this system, then you can use the DB2 UDB Control Center Version 8 functions that are supported by DB2 UDB for OS/390 Version 6. For information on how to install these products, please refer to the product's program directory:

- JDB661D : Program Directory for IBM DB2 UDB for OS/390 DB2 Management Tools package (GI10-8193-02)
- JDB771D : Program Directory for IBM DB2 UDB Server for OS/390 and z/OS DB2 Management Clients package (GI10-8218-00)
- HDA8810 (or HAH8810)

5. Ensure that you enabled the stored procedures address space.
6. Ensure that the DB2 Administration Server is started.

Managing communications on the server:

The Control Center allows you to view, update, and reset server protocol settings. These functions are accessed by clicking with the right mouse button on an instance and selecting the **Setup communications** option from the pop-up menu. By default, the setup program automatically detects and configures most communication protocols that it detects on your system.

The Control Center allows you to maintain or edit server protocol settings in the database manager configuration file.

- Configure database manager parameters by clicking with the right mouse button on an instance and selecting the **Configure** option from the pop-up menu.
- Export database information in a profile that can be used to configure clients by clicking with the right mouse button on a system and selecting the **Export Server Profile** option from the pop-up menu.

Viewing SQL access plans using Visual Explain:

You cannot use Visual Explain to generate access plans on host or iSeries™ databases.

Visual Explain helps database administrators and application developers to:

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

Related tasks:

• "Developing applications using the DB2 Application Development Client" on page 18

Developing applications using the DB2 Application Development Client

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

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

Through a DB2 client, these applications can access all servers and, by using the DB2 Connect product (or the DB2 Connect functionality supplied with DB2 Enterprise Server Edition), they can also access DB2 UDB for iSeries, DB2 for OS/390 and z/OS, and DB2 for VSE & VM database servers.

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

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

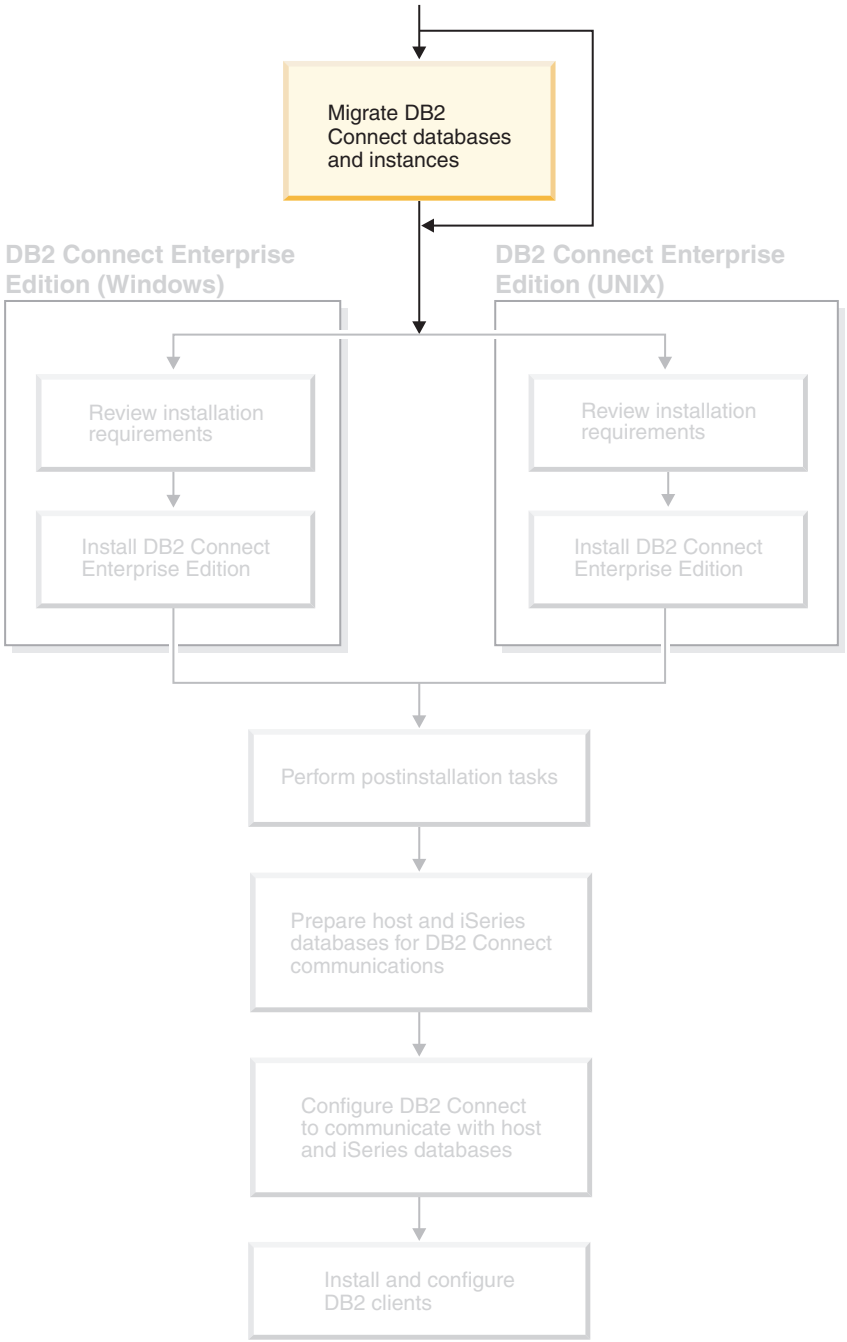
Related concepts:

- "DB2 Developer's Edition Products" in the *Application Development Guide: Building and Running Applications*

Related reference:

- "DB2 Application Development Client" in the *Application Development Guide: Building and Running Applications*

Part 2. Migrating DB2 Connect



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Chapter 3. Migrating from previous versions of DB2 Connect

DB2 Connect Version 8 supports the migration of DB2 databases and instances created with DB2 Version 6 and Version 7. If you are migrating from one of these versions to DB2 Connect Version 8, you should prepare your databases and instances before installing DB2.

Since DB2 Connect Enterprise Edition (EE) is a host database connectivity server, the only databases that may exist within a DB2 Connect EE server instance is a DB2 transaction manager database. This database is used by DB2 to store transaction state information for DB2 coordinated transactions.

On UNIX platforms, you should migrate the DB2 Connect instance to avoid dropping and recreating your instances, because these instances will need to be recataloged on all the remote nodes and databases. If you drop and recreate your instance you will also have to recatalog the NODE, DCS, or DB catalogs that existed prior to the instance being dropped.

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 and resolve any problems prior to running the **db2imigr**. The **db2imigr** command will not migrate as long as the **db2ckmig** command finds problems.

Restrictions:

Migration is only supported from DB2 Connect Version 6.x or Version 7.x.

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-based 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.

Related concepts:

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- "Migration recommendations" in the *Quick Beginnings for DB2 Servers*

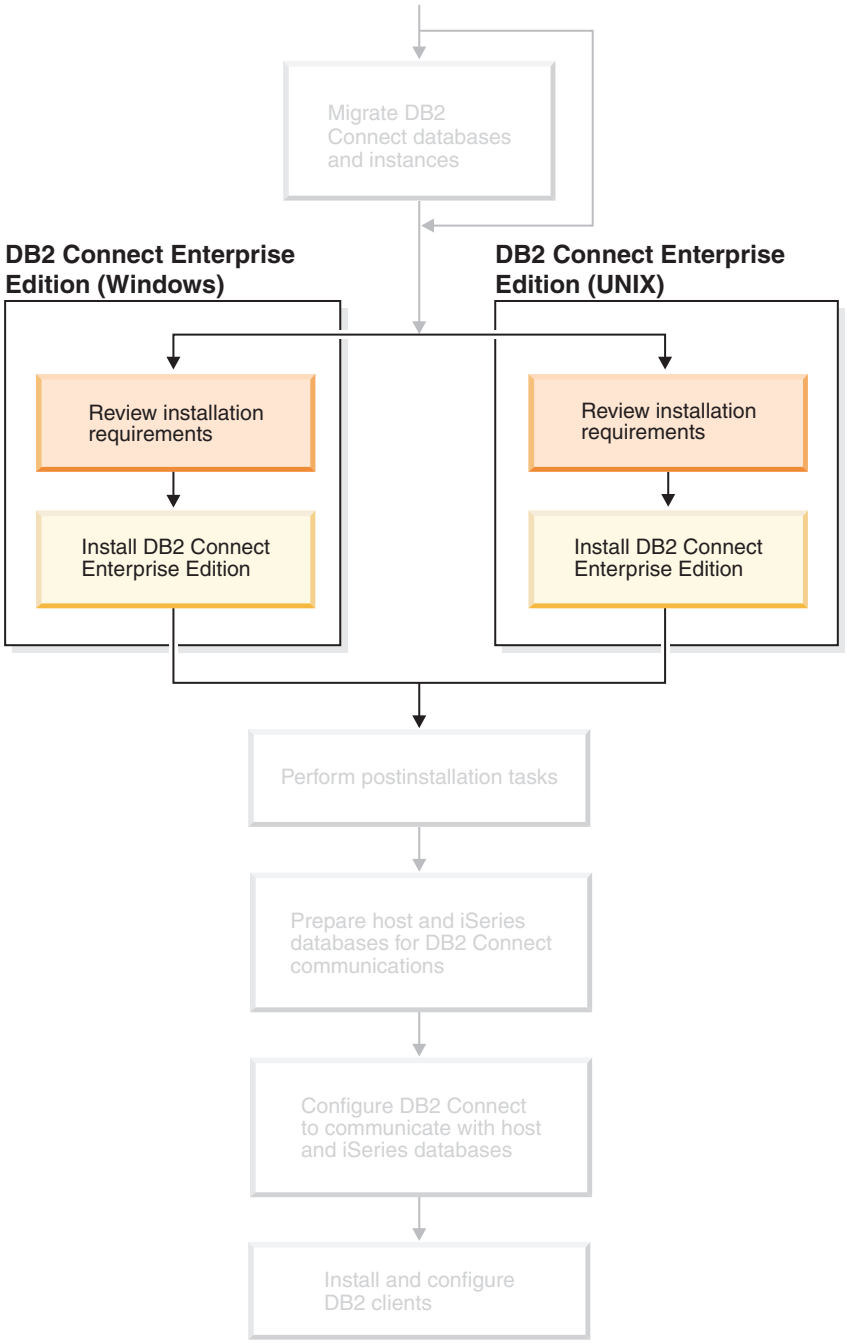
Related tasks:

- "Creating links for DB2 files" in the *Installation and Configuration Supplement*
- "Backing up databases before DB2 migration" in the *Quick Beginnings for DB2 Servers*
- "Verifying that your databases are ready for migration" in the *Quick Beginnings for DB2 Servers*
- "Migrating databases" in the *Quick Beginnings for DB2 Servers*
- "Migrating explain tables" in the *Quick Beginnings for DB2 Servers*
- "Migrating instances (UNIX)" in the *Quick Beginnings for DB2 Servers*
- "Migrating DB2 UDB (Windows)" in the *Quick Beginnings for DB2 Servers*
- "Migrating DB2 UDB (UNIX)" in the *Quick Beginnings for DB2 Servers*

Related reference:

- "Migration restrictions" in the *Quick Beginnings for DB2 Servers*

Part 3. Installing DB2 Connect



Use this section to plan every step of your installation. Prerequisite software and patch levels, operating system, and communications protocol requirements are all provided in simple tables. You can verify that your system meets the requirements for your planned DB2 Connect implementation, then move on to the installation procedure.

If you are planning to migrate from a previous version of DB2 Connect, see Chapter 3, “Migrating from previous versions of DB2 Connect,” on page 21.

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To manually install your DB2 Connect product, see the *Installation and Configuration Supplement* for instructions on manually installing DB2 products.

Who Should Read This Section

- Technical personnel installing and configuring a DB2 Connect system

Chapter 4. Installation overview

DB2 Connect Enterprise Edition: installation and configuration overview

Setting up DB2® Connect is a multi-step process. DB2 Connect™ Enterprise Edition is often installed with hundreds or thousands of clients connecting to host or iSeries™ database servers. For this reason, it is recommended to use a test installation, outlined below. After the test configuration has proven stable, you can use it as the template for an unattended installation of DB2 Connect and your clients across your organization.

The typical steps to installing and configuring DB2 Connect Enterprise Edition are as follows:

1. Determine how you want to use DB2 Connect in your network.
2. Verify that you have the correct hardware and software prerequisites on both your workstation and the host database server.
3. Verify that your host or iSeries database server is configured to accept connections from DB2 Connect servers.
4. Install your DB2 Connect software. You will use this workstation to configure and verify your host and iSeries connections.
5. After installation, establish the connection between DB2 Connect and your host or iSeries database system. DB2 Connect can locate and configure all TCP/IP and most SNA connections for you. You can use the Configuration Assistant (CA) to configure host or iSeries databases.
6. Bind the programs and utilities provided with DB2 Connect to your host or iSeries database.
7. Test the connection.
8. (Optional) Enable the Multisite Update feature.
9. If you are planning to use WebSphere®, transaction monitors, or your own application server software, install these products or applications. For information on installing WebSphere consult the documentation provided with these products as part of the DB2 Connect Enterprise Edition product package. For other products consult the installation documentation provided with the product.
10. Install and configure a DB2 client. Use this workstation to test connectivity from the DB2 client to host and iSeries database servers, as well as to test applications that use this connectivity.
11. Use the Configuration Assistant to connect the client to the host or iSeries system through DB2 Connect.
12. Install DB2 clients on all end-user workstations that will use applications that connect to host and iSeries database servers.
13. You are now ready to use DB2 Connect with all your applications. Workstations that will be used for application development should have the DB2 Application Development Client installed.
14. If you want to use your workstation to administer DB2 UDB for OS/390® and z/OS™ or DB2 Universal Database for UNIX®, Windows® NT, Windows 2000, Windows XP and Windows Server 2003, install the DB2 Administration Client.

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Related concepts:

- "DB2 clients" on page 91

Related tasks:

- "Enabling Multisite Updates using the Control Center" in the *DB2 Connect User's Guide*
- Chapter 20, "Binding database utilities on DB2 Connect," on page 117
- "Configuring a connection to host or iSeries database servers using the CA" on page 79

Chapter 5. 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.

Installation requirements (Windows)

Installation requirements for DB2 Connect Enterprise Edition (Windows)

To install DB2 Connect Enterprise Edition, the following requirements must be met:

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.

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Operating system requirements

One of:

- Windows NT Version 4 with Service Pack 6a or later
- Windows 2000
- Windows XP (for test and development)
- 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 ODBC; or
- Applications that use OLE DB Provider for ODBC with OLE DB resource pooling disabled

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

For more information about this COM+ issue, 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 itself or any applications that are shipped as part of DB2 products.

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.

Communication requirements

- You can use APPC, TCP/IP, and MPTN (APPC over TCP/IP)
- For SNA (APPC) connectivity, one of the following communications products is required:

  Note: You should consider switching to TCP/IP as SNA may no longer be supported in future releases of DB2 Connect. SNA requires significant configuration knowledge and the configuration process itself can prove to be error prone. TCP/IP is simple to configure, has lower maintenance costs, and provides superior performance.

  – Windows NT:
    - IBM Communications Server Version 6.1.1 or later.
    - IBM Personal Communications Version 5.7 or later.
  – Windows 2000:
    - IBM Communications Server Version 6.1.1 or later.
    - IBM Personal Communications Version 5.7 or later.
  – Microsoft SNA Server Version 3 Service Pack 3 or later.

  Windows Server 2003 64-bit does not support SNA.

Related concepts:

- "Non-Administrator installation of DB2 Connect (Windows)" in the *Quick Beginnings for DB2 Connect Personal Edition*

Related tasks:

- "Installing DB2 Connect Enterprise Edition (Windows)" on page 45

Related reference:

- "Java SDK levels for DB2 UDB" on page 39

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:

- "Single-partition installation (Windows)" in the *Quick Beginnings for DB2 Servers*
- "Partitioned installation (Windows)" in the *Quick Beginnings for DB2 Servers*

Installation requirements (UNIX)

Installation requirements for DB2 Connect Enterprise Edition (AIX)

To install DB2 Connect Enterprise Edition, the following requirements must be met:

Hardware requirements

- 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 Connect Enterprise Edition is available on:

Version 4.3.3 (32-bit)

- With maintenance level 9 and APARs IY22308 and IY32690; or
- With maintenance level 10 or later and APAR IY33024 (ML-10 includes IY22308); or

- With maintenance level 11 with no APARs required

Version 5.1.0 (32-bit)

- With maintenance level 2 or later and APARs IY31254, IY32217, IY32905, IY29345 and IY31080; or
- With maintenance level 3 or later

Version 5.1.0 (64-bit)

- With maintenance level 2 or later and APARs IY31254, IY32217, IY32905, IY33023, IY29345, IY32466 and IY31080; or
- With maintenance level 3 or later

Version 5.2.0 (32-bit and 64-bit)

Currently has no APARs requirements.

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
- `xlC.rte` 6.0.
- 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
  - `xlC.aix43.rte` 6.0.
  - `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
  - `xlC.aix50.rte` 6.0.

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.

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.

Communication requirements

You can use APPC, TCP/IP, and MPTN (APPC over TCP/IP)

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

- For SNA (APPC) connectivity, the following communication product is required:
  - IBM eNetwork Communications Server for AIX Version 6.1 or later.

  Note: You should consider switching to TCP/IP as SNA may no longer be supported in future releases of DB2 Connect. SNA requires significant configuration knowledge and the configuration process itself can prove to be error prone. TCP/IP is simple to configure, has lower maintenance costs, and provides superior performance.
- For LDAP (Lightweight Directory Access Protocol) support, you require an IBM SecureWay Directory Client V3.2.1 or later.

Related concepts:

- "Installing the IBM Developer Kit for Java (UNIX)" on page 37

Related tasks:

- "Installing DB2 Connect Enterprise Edition (AIX)" on page 47

Related reference:

- "Java SDK levels for DB2 UDB" on page 39

Installation requirements for DB2 Connect Enterprise Edition (HP-UX)

To install a DB2 Connect Enterprise Edition, the following operating system, software, and communication requirements must be met:

Hardware requirements

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

Operating system requirements

DB2 Connect Enterprise Edition can run on:

HP-UX 11i (11.11) for systems with PA-RISC 2.x (PA-8x00) processors with:

- December 2001 GOLDBASE11i bundle
- December 2001 GOLDAPPS11i bundle
- Patches PHSS_26560, PHKL_28489 and PHCO_27434
- Patches for Java SDK 1.3.1. See http://www.hp.com/products1/unix/java/patches/index.html for required patches.

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

Software requirements

You require a browser to view online help.

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

You can use APPC, TCP/IP, and MPTN (APPC over TCP/IP)

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

- For SNA (APPC) connectivity, you require either SNAplus2 Link R6.11.00.00 or SNAplus2 API R6.11.00.00. You should consider switching to TCP/IP as SNA may no longer be supported in future releases of DB2 Connect. SNA requires significant configuration knowledge and the configuration process itself can prove to be error prone. TCP/IP is simple to configure, has lower maintenance costs, and provides superior performance.

Related concepts:

- "Installing the IBM Developer Kit for Java (UNIX)" on page 37

Related tasks:

- "Installing DB2 Connect Enterprise Edition (HP-UX)" on page 49

Related reference:

- "Java SDK levels for DB2 UDB" on page 39

Installation requirements for DB2 Connect Enterprise Edition (Linux)

To install a DB2 Connect Enterprise Edition, the following hardware, distribution, software, and communication requirements must be met:

Hardware requirements

Your processor can be:

- x86 compatible (Intel, AMD, or Cyrix)
- Intel Itanium processor (IA64) for the 64–bit version of Linux
- AMD 64–bit
- S/390 9672 Generation 5 or later, Multiprise 3000
- IBM eServer zSeries
- IBM eServer iSeries that support Linux
- IBM eServer pSeries that support Linux

Distribution requirements

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

Note: DB2 31–bit for Linux390 is not supported on the Linux390 64–bit operating system, and DB2 64–bit for Linux390 is not supported on the Linux390 31–bit operating system. Use the DB2 64–bit for Linux390 64–bit operating system image on the Linux390 64–bit operating system, and use DB2 31–bit for Linux390 31–bit operating system image on the Linux390 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

- A browser is required to view online help.

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

Related concepts:
- "Installing the IBM Developer Kit for Java (UNIX)" on page 37

Related tasks:
- "Installing DB2 Connect Enterprise Edition (Linux)" on page 51

Related reference:
- "Java SDK levels for DB2 UDB" on page 39

Installation requirements for DB2 Connect Enterprise Edition (Solaris Operating Environment)

To install a DB2 Connect Enterprise Edition, the following operating system, software, and communication requirements must be met:

Hardware requirements
Solaris Operating Environment UltraSPARC-based computer

Operating system requirements
DB2 Enterprise Server Edition is supported on the following Solaris Operating Environment versions:
- Solaris Operating Environment 7 (32-bit) ″Recommended & Security Patches″ + 107226-17 + 107153-01 + 106327-10
- Solaris Operating Environment 7 (64-bit) ″Recommended & Security Patches″ + 107226-17 + 107153-01 +106300-11
- Solaris Operating Environment 8 (32-bit) ″Recommended & Security Patches″ + 108921-12 + 108940-24 + 108434-03 and 108528-12
- Solaris Operating Environment 8 (64-bit) ″Recommended & Security Patches″ + 108921-12 + 108940-24 + 108435-03 + 108434-03 and 108528-12
- Solaris Operating Environment 9 (32-bit)
- Solaris Operating Environment 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.

For DB2 on 64-bit Fujitsu PRIMEPOWER systems, you also require the following:
- Solaris Operating Environment 8 KU15 921040-01
- Solaris Operating Environment 9 FCS 912041-01

The following software is required to install DB2 on Solaris Operating Environments:
- SUNWlibC

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 Solaris Operating Environment 8 or higher with SEAM v1.0.1, which is included in the Solaris Operating Environment 8 Admin Pack.

Communication requirements

You can use APPC or TCP/IP

- For TCP/IP connectivity, no additional software is required.
- For APPC (CPI-C) connectivity, you require SNAP-IX for Solaris Operating Environment V7.02.

  Note: You should consider switching to TCP/IP as SNA may no longer be supported in future releases of DB2 Connect. SNA requires significant configuration knowledge and the configuration process itself can prove to be error prone. TCP/IP is simple to configure, has lower maintenance costs, and provides superior performance.
- DB2 Connect is supported on Sun Cluster 2.2 if:
  - The protocol to the host is TCP/IP (not SNA)
  - Two-phase commit is not used. This restriction is relaxed if the user configures the SPM log to be on a shared disk (this can be done through the *spm_log_path* database manager configuration parameter), and the failover system has an identical TCP/IP configuration (the same host name, IP address, and so on).

Related concepts:

- "Installing the IBM Developer Kit for Java (UNIX)" on page 37

Related tasks:

- "Installing DB2 Connect Enterprise Edition (Solaris Operating Environment)" on page 54

Related reference:

- "Java SDK levels for DB2 UDB" on page 39

Chapter 6. Preinstallation tasks

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`

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Operating System	Command	Installation directory
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`
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 39

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

Operating System		SDK level
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 37

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)" in the *Quick Beginnings for DB2 Servers*

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 1. 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

Table 1. Recommended values for Kernel configuration parameters (HP-UX) (continued)

Kernel parameter	Physical Memory: 64MB - 128MB	Physical Memory: 128MB - 256MB	Physical Memory: 256MB - 512MB	Physical Memory: 512MB+
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
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 41

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*

Chapter 7. Installation tasks

Installing DB2 Connect EE (Windows)

Installing DB2 Connect Enterprise Edition (Windows)

This task describes how to install DB2 Connect Enterprise Edition on Windows operating systems.

Prerequisites:

Before you launch the DB2 Setup wizard:

- Ensure that your system meets:
  - Disk and Memory requirements
  - Hardware, distribution and software requirements
- If you are planning to use LDAP on Windows 2000 or Windows Server 2003 (32-bit and 64-bit), you must extend the directory schema.
- It is recommended that you use an Administrator account to perform the installation. The Administrator account must belong to the local administrator's group on the Windows computer where you are installing your DB2 product and should have the following advanced user rights:
  - Act as part of the operating system
  - Create token object
  - Increase quotas
  - Replace a process level token

  You can perform the installation without advanced user rights, but the setup program may be unable to validate accounts.

Procedure:

To install DB2 Connect Enterprise Edition:

1. Log on to the system as a user with administrator authority.
2. Close all programs so the installation program can update files as required.
3. Insert the CD-ROM into the drive. The auto-run feature automatically starts the DB2 Setup wizard. 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 run the DB2 Setup wizard manually.

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4. The DB2 Launchpad opens.

   From this window, you can view the installation prerequisites and the release notes, or you can proceed directly to the installation.
5. Once you have initiated the installation, 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 exit the installation.

For information on errors encountered during installation, see the `db2.log` file. The `db2.log` file stores general information and error messages resulting from the install and uninstall activities. By default, the `db2.log` file is located in the `My Documents\DB2LOG` directory.

Manually launching the DB2 Setup wizard:

To invoke 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* represents the territory code for your language (for example, EN for English).
3. Click **OK**.

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 136
- "DB2 Information Center installation scenarios" on page 137

Related tasks:

- "Extending the directory schema (Windows)" on page 40
- "Installing the DB2 Information Center using the DB2 Setup wizard (Windows)" on page 142
- "Applying the latest FixPak (Windows and UNIX)" on page 57
- "Installing your DB2 Connect license key using the License Center" on page 60
- "Setting the license type using the License Center" on page 61

Related reference:

- "Installation requirements for DB2 Connect Enterprise Edition (Windows)" on page 27

Installing DB2 Connect EE (UNIX)

Installing DB2 Connect Enterprise Edition (AIX)

We recommend that you use the DB2 Setup wizard to install a DB2 product on AIX. The DB2 Installer program is a Java-based installation tool that automates the installation and configuration of any DB2 product. If you prefer not to use this utility, you can install a DB2 product manually using the db2_install script.

Prerequisites:

Before you begin your installation:

- Ensure that your system meets:
  - Disk and Memory requirements
  - Hardware, distribution and software requirements
- Log on to the system as a user with root authority.
- The DB2 product CD-ROM must be mounted on your system. See Mounting the CD-ROM on AIX.
- 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).
- Ensure that asynchronous I/O has been enabled; it must be enabled before DB2 Version 8 can be successfully installed.

Note: The installation path on AIX for Version 8 has changed. DB2 Version 8 is installed to **/usr/opt/db2_08_01** instead of /usr/lpp/db2_07_01 which was used in Version 7.

Procedure:

To install DB2 Connect Enterprise Edition on AIX:

1. Change to the directory where the CD-ROM is mounted:

   ```
   cd /cdrom
   ```

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

2. **On AIX 4.3.3:** Enter the **./db2setup** command to start the DB2 Setup wizard.

   On AIX 5L:

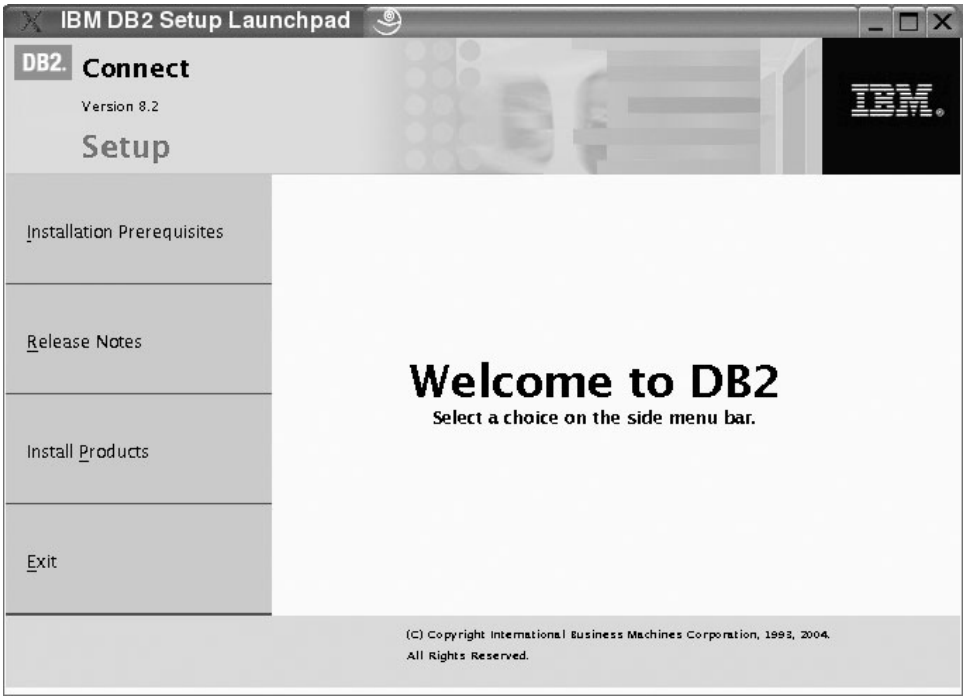
   a. Copy the compressed installation image to a temporary file system containing at least 2 GB of free space. The compressed image on the CD-ROM is called `PRODUCT.tar.Z`, where `PRODUCT` is the DB2 product that you are installing.

   b. Change to the directory where you have copied the installation image by entering **cd /TMP**, where `/TMP` represents the directory where you have copied the compressed image.

   c. Enter the following command to uncompress the installation image: **zcat PRODUCT.tar.Z | tar -xf -** where `PRODUCT` is the DB2 product that you are installing.

   d. Run the following command to start the DB2 Setup wizard: **./PRODUCT/db2setup**

   After a few moments, the IBM DB2 Setup Launchpad opens.



   From this window, you can view the installation prerequisites and the release notes or you can proceed directly to the installation.

   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 DB2 Setup wizard. To invoke the installation help, click **Help** or press F1. You can click **Cancel** at any time to exit the installation. DB2 files will only be copied to your system once you have clicked **Finish** on the last DB2 Setup wizard installation panel.

   When you have completed your installation, DB2 Connect Enterprise Edition will be installed in `/usr/opt/db2_08_01`.

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 136
- "DB2 Information Center installation scenarios" on page 137

Related tasks:

- "Mounting the CD-ROM (AIX)" on page 121
- "Installing the DB2 Information Center using the DB2 Setup wizard (UNIX)" on page 140
- "Applying the latest FixPak (Windows and UNIX)" on page 57
- "Installing your DB2 Connect license key using the License Center" on page 60
- "Setting the license type using the License Center" on page 61

Related reference:

- "Installation requirements for DB2 Connect Enterprise Edition (AIX)" on page 31

Installing DB2 Connect Enterprise Edition (HP-UX)

We recommend that you use the DB2 Setup wizard to install a DB2 product on HP-UX. The DB2 Installer program is a Java-based installation tool that automates the installation and configuration of any DB2 product. If you prefer not to use this utility, you can install a DB2 product manually using swinstall or sam.

Prerequisites:

Before begin your installation:

- Ensure that your system meets:
  - Disk and Memory requirements
  - Hardware, distribution and software requirements
- Log on to the system as a user with root authority.
- The DB2 product CD-ROM must be mounted on your system. See Mounting the CD-ROM on HP-UX.

Procedure:

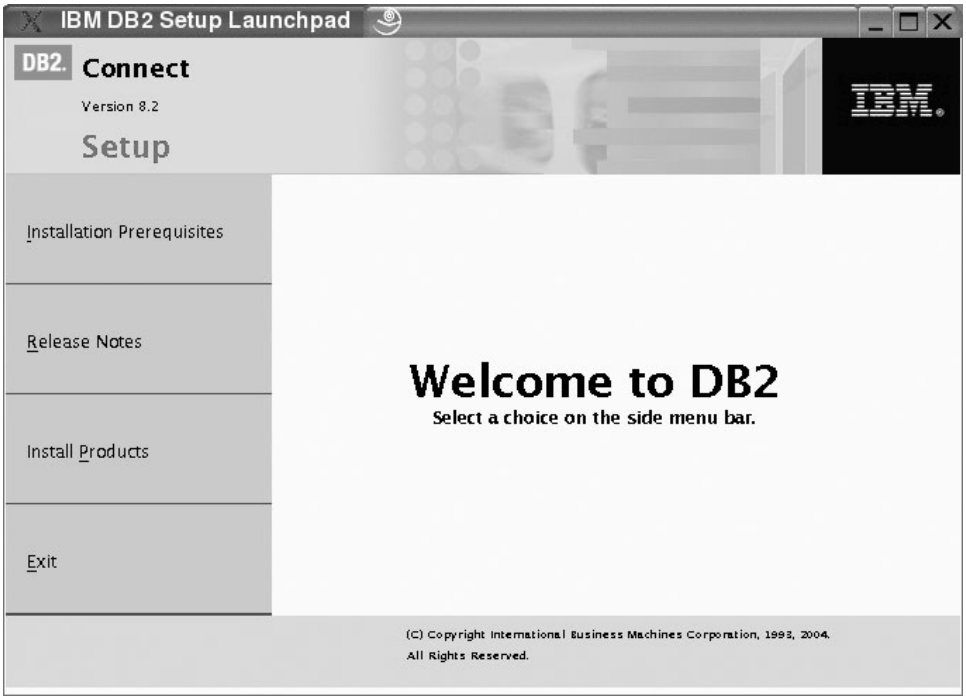
To install DB2 Connect Enterprise Edition on HP-UX:

1. Change to the directory where the CD-ROM is mounted by entering the following command:

   ```
   cd /cdrom
   ```

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

2. Enter the **./db2setup** command to start the DB2 Setup wizard. After a few moments, the IBM DB2 Setup Launchpad opens.



From this window, you can view the installation prerequisites and the release notes or you can proceed directly to the installation.

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 DB2 Setup wizard. To invoke the installation help, click **Help** or press F1. You can click **Cancel** at any time to exit the installation. DB2 files will only be copied to your system once you have clicked **Finish** on the last DB2 Setup wizard installation panel.

When you have completed your installation, DB2 Connect Enterprise Edition will be installed in `/opt/IBM/db2/V8.1`.

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 136
- "DB2 Information Center installation scenarios" on page 137

Related tasks:

- "Mounting the CD-ROM (HP-UX)" on page 122
- "Installing the DB2 Information Center using the DB2 Setup wizard (UNIX)" on page 140
- "Applying the latest FixPak (Windows and UNIX)" on page 57
- "Installing your DB2 Connect license key using the License Center" on page 60
- "Setting the license type using the License Center" on page 61

Related reference:

- "Installation requirements for DB2 Connect Enterprise Edition (HP-UX)" on page 33

Installing DB2 Connect Enterprise Edition (Linux)

We recommend that you use the DB2 Setup wizard to install a DB2 product on Linux. The DB2 Setup wizard is a Java-based installation tool that automates the installation and configuration of any DB2 products. If you prefer not to use this utility, you can install a DB2 product manually using the db2_install script or rpm command.

Prerequisites:

Before you begin your installation:

- Ensure that your system meets:
  - Disk and Memory requirements
  - Hardware, distribution and software requirements
- Log on to the system as a user with root authority.
- The DB2 product CD-ROM must be mounted on your system. See Mounting the CD-ROM on Linux.

Procedure:

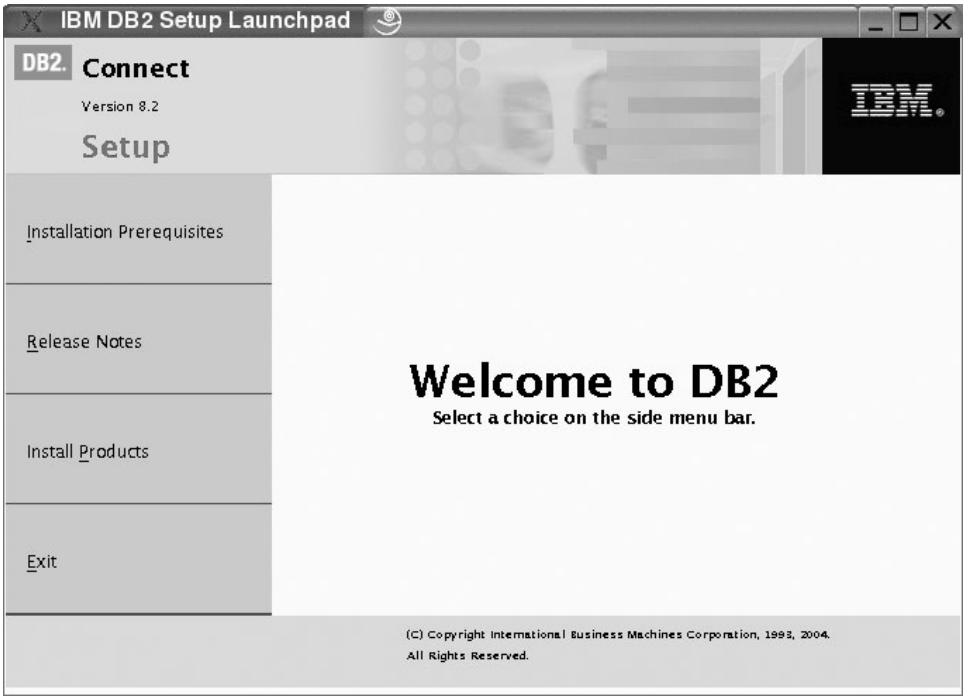
To install DB2 Connect Enterprise Edition on Linux:

1. Change to the directory where the CD-ROM is mounted by entering the following command:

   ```
   cd /cdrom
   ```

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

2. Enter the **./db2setup** command to start the DB2 Setup wizard. After a few moments, the IBM DB2 Setup Launchpad opens.



From this window, you can view the installation prerequisites and the release notes or you can proceed directly to the installation.

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 DB2 Setup wizard. To invoke the installation help, click **Help** or press F1. You can click **Cancel** at any time to exit the installation. DB2 files will only be copied to your system once you have clicked **Finish** on the last DB2 Setup wizard installation panel.

When you have completed your installation, DB2 Connect Enterprise Edition will be installed in `/opt/IBM/db2/V8.1`.

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 136
- "DB2 Information Center installation scenarios" on page 137

Related tasks:

- "Mounting the CD-ROM (Linux)" on page 122
- "Installing the DB2 Information Center using the DB2 Setup wizard (UNIX)" on page 140
- "Installing your DB2 Connect license key using the License Center" on page 60
- "Setting the license type using the License Center" on page 61

Related reference:

- "Installation requirements for DB2 Connect Enterprise Edition (Linux)" on page 34
- "Availability of Asian fonts (Linux)" in the *Release notes*

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)" on page 51

Installing DB2 Connect Enterprise Edition (Solaris Operating Environment)

We recommend that you use the DB2 Setup wizard to install a DB2 product on the Solaris Operating Environment. The DB2 Installer program is a Java-based installation tool that automates the installation and configuration of any DB2 products. If you prefer not to use this utility, you can install a DB2 product manually using pkgadd or admintool.

Prerequisites:

Before you begin your installation:

- Ensure that your system meets:
  - Disk and Memory requirements
  - Hardware, distribution and software requirements
- Log on to the system as a user with root authority.
- The DB2 product CD-ROM must be mounted on your system. See Mounting the CD-ROM on Solaris.
- 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).

Procedure:

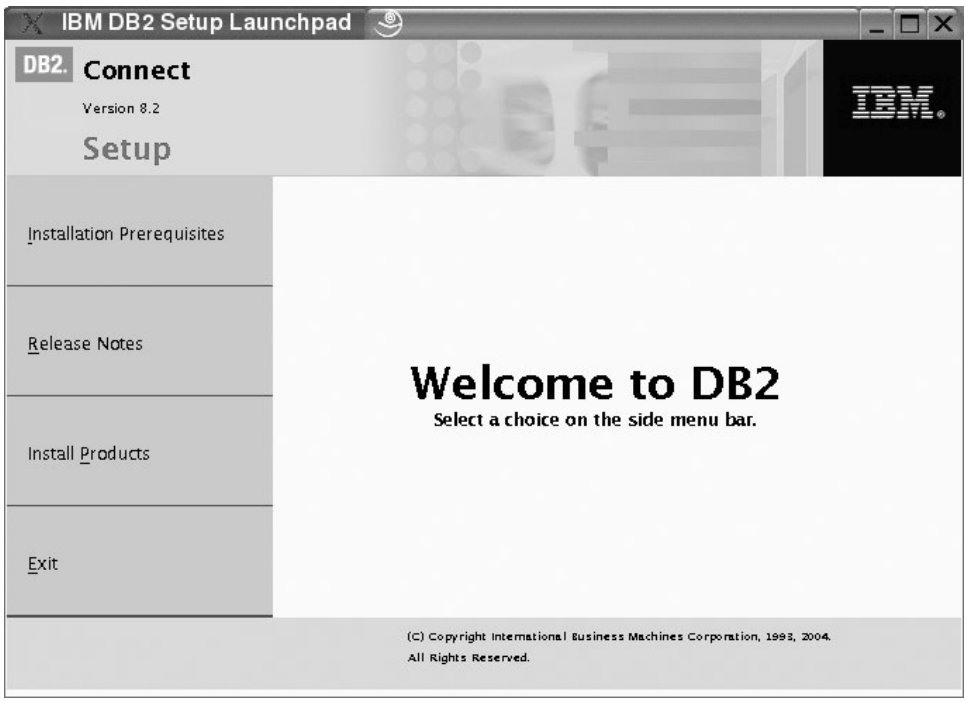
To install DB2 Connect Enterprise Edition on the Solaris Operating Environment:

1. 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.
2. Copy *product*`.tar.Z`, where *product* represents the product you are licensed to install, to a temporary filesystem.
3. Enter the **zcat** *product***.tar.Z | tar -xf - ; ./***product***/db2setup** command to start the DB2 Setup wizard. For example, if the product name for DB2 Connect Enterprise Edition is *conee*, then enter the following command: **zcat** *conee***.tar.Z | tar -xf - ; ./***conee***/db2setup**.

After a moment, the IBM DB2 Setup Launchpad opens.



From this window, you can view the installation prerequisites and the release notes or you can proceed directly to the installation.

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 DB2 Setup wizard. To invoke the installation 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 once you have clicked **Finish** on the last DB2 Setup wizard installation panel.

When you have completed your installation, DB2 Connect Enterprise Edition will be installed in `/opt/IBM/db2/V8.1`.

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 136
- "DB2 Information Center installation scenarios" on page 137

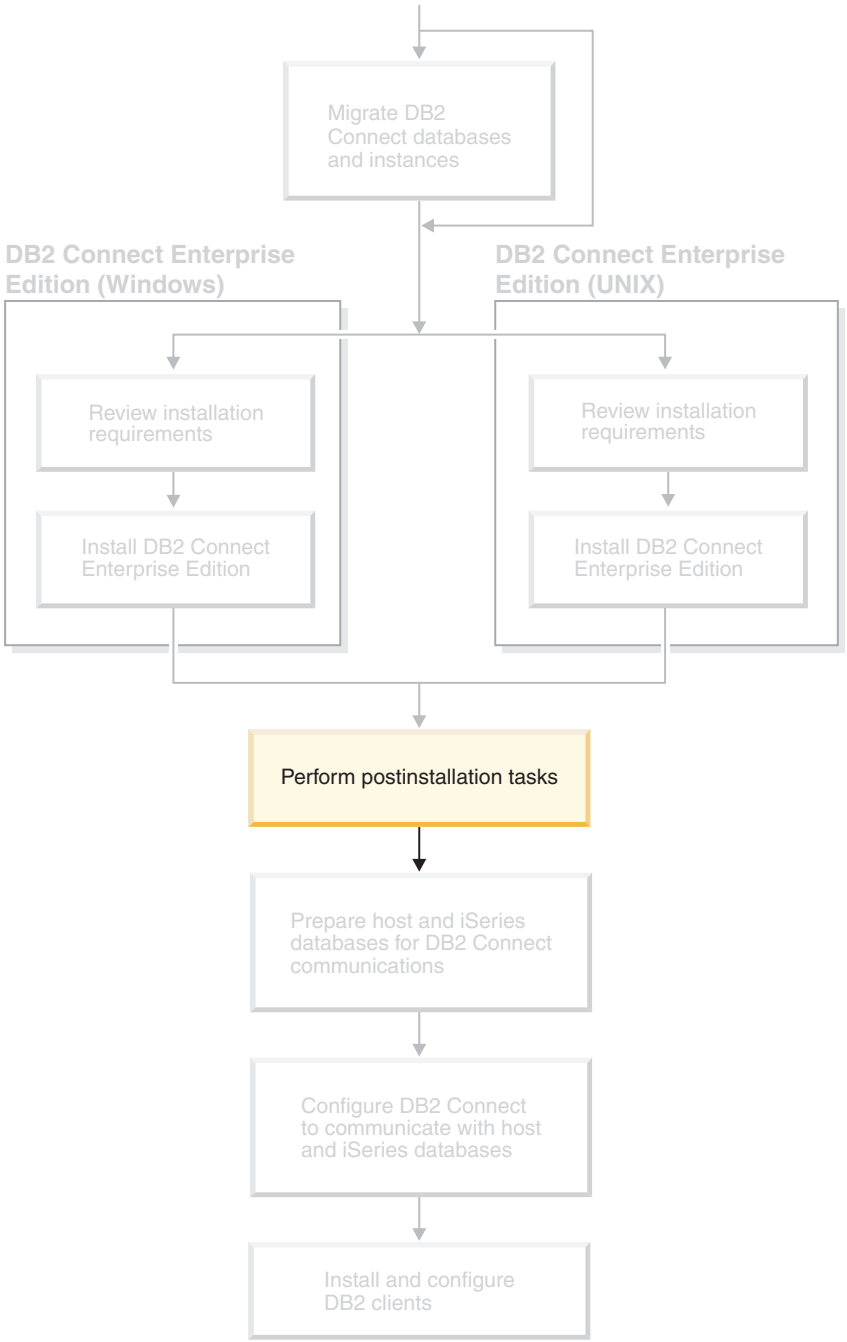
Related tasks:

- "Mounting the CD-ROM (Solaris Operating Environment)" on page 123
- "Installing the DB2 Information Center using the DB2 Setup wizard (UNIX)" on page 140
- "Applying the latest FixPak (Windows and UNIX)" on page 57
- "Installing your DB2 Connect license key using the License Center" on page 60
- "Setting the license type using the License Center" on page 61

Related reference:

- "Installation requirements for DB2 Connect Enterprise Edition (Solaris Operating Environment)" on page 35

Chapter 8. Postinstallation tasks



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.

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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 160

Related tasks:

- "Verifying the installation using the command line processor (CLP)" in the *Quick Beginnings for DB2 Personal Edition*

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 Connect license activation

During the installation of licensed DB2 Connect Enterprise Edition and DB2 Connect Unlimited Edition products, the installation program registers the DB2 Connect Enterprise Edition and DB2 Connect Unlimited Edition licenses.

However, if you need to manually activate a license for your DB2 Connect product, you can use either the DB2 License Center or the **db2licm** command.

Installing your DB2 Connect license key using the db2licm command

You can use the **db2licm** command to add the license key from your DB2 Connect product CD-ROM instead of using the License Center.

Procedure:

To add your license key from your DB2 Connect product CD-ROM using the **db2licm** command:

- On Windows, enter the following command:

  ```
  db2licm -a x:\db2\license\license_filename
  ```

  where x: represents the CD-ROM drive that contains the DB2 Connect product CD.
- On UNIX, enter the following command:

  ```
  db2licm -a db2/license/license_filename
  ```

where *license_filename* represents:

db2conee.lic
DB2 Connect Enterprise Edition

db2conpe.lic
DB2 Connect Personal Edition

db2conue.lic
DB2 Connect Unlimited Edition

db2conas.lic
DB2 Connect Application Server Edition

Related tasks:

- "Installing your DB2 Connect license key using the License Center" on page 60
- "Setting the license type using the db2licm command" on page 61
- "Setting the license type using the License Center" on page 61

Installing your DB2 Connect license key using the License Center

You can install your license key from your DB2 Connect product CD-ROM using the License Center.

Procedure:

To install your license key from your DB2 Connect product CD-ROM using the License Center:

1. Start the DB2 Control Center and select **License Center** from the **Tools** menu.
2. Select the system for which you are installing a license. The **Installed Products** field will display the name of the product that you have installed.
3. Select **Add** from the **License** menu.
4. In the Add License window, you can either choose to add **From a file** or **Manually.**.

   From a file
   Select the **From a file** radio button and select a license file from your DB2 Connect product CD-ROM :
   - On Windows, enter the following command:
     `x:\db2\license\`*`license_filename`*
     where `x:` represents the CD-ROM drive containing DB2 Connect product CD.
   - On UNIX, enter the following command:
     `/db2/license/`*`license_filename`*

   where *license_filename* represents:

   db2conee.lic
   DB2 Connect Enterprise Edition

   db2conpe.lic
   DB2 Connect Personal Edition

   db2conue.lic
   DB2 Connect Unlimited Edition

   db2conas.lic
   DB2 Connect Application Server Edition

   Manually
   Select the **Manually** radio button and enter the **Product name**, **Product version**, and **Product password**.

5. Click **Apply** to add the license key.

Related tasks:

- "Installing your DB2 Connect license key using the db2licm command" on page 59
- "Setting the license type using the db2licm command" on page 61
- "Setting the license type using the License Center" on page 61

Setting the license type using the db2licm command

You can use the **db2licm** command to set your license type instead of using the License Center.

Procedure:

To set your license type using the **db2licm** command:

For DB2 Connect Enterprise Edition:

- If you purchased Concurrent User licenses, enter the following commands:

  ```
  db2licm -p db2conee concurrent
  db2licm -u N
  ```

  where *N* represents the number of concurrent user licenses that you have purchased.
- If you purchased Registered User licenses, enter the following command:

  ```
  db2licm -p db2conee registered
  ```

Related tasks:

- "Installing your DB2 Connect license key using the db2licm command" on page 59
- "Installing your DB2 Connect license key using the License Center" on page 60
- "Setting the license type using the License Center" on page 61

Related reference:

- "db2licm - License Management Tool Command" in the *Command Reference*

Setting the license type using the License Center

You can set your license type using the License Center.

Procedure:

To set your license type:

1. In the License Center, select **Change** from the **License** menu.
2. In the Change License window, select the type of license that you have purchased.
   - If you purchased a Concurrent Users license, select **Concurrent DB2 Connect users** and enter the number of user licenses that you have purchased.

     Note: DB2 Connect Enterprise Edition provides a license for one user. Additional DB2 Connect User licenses must be purchased separately.

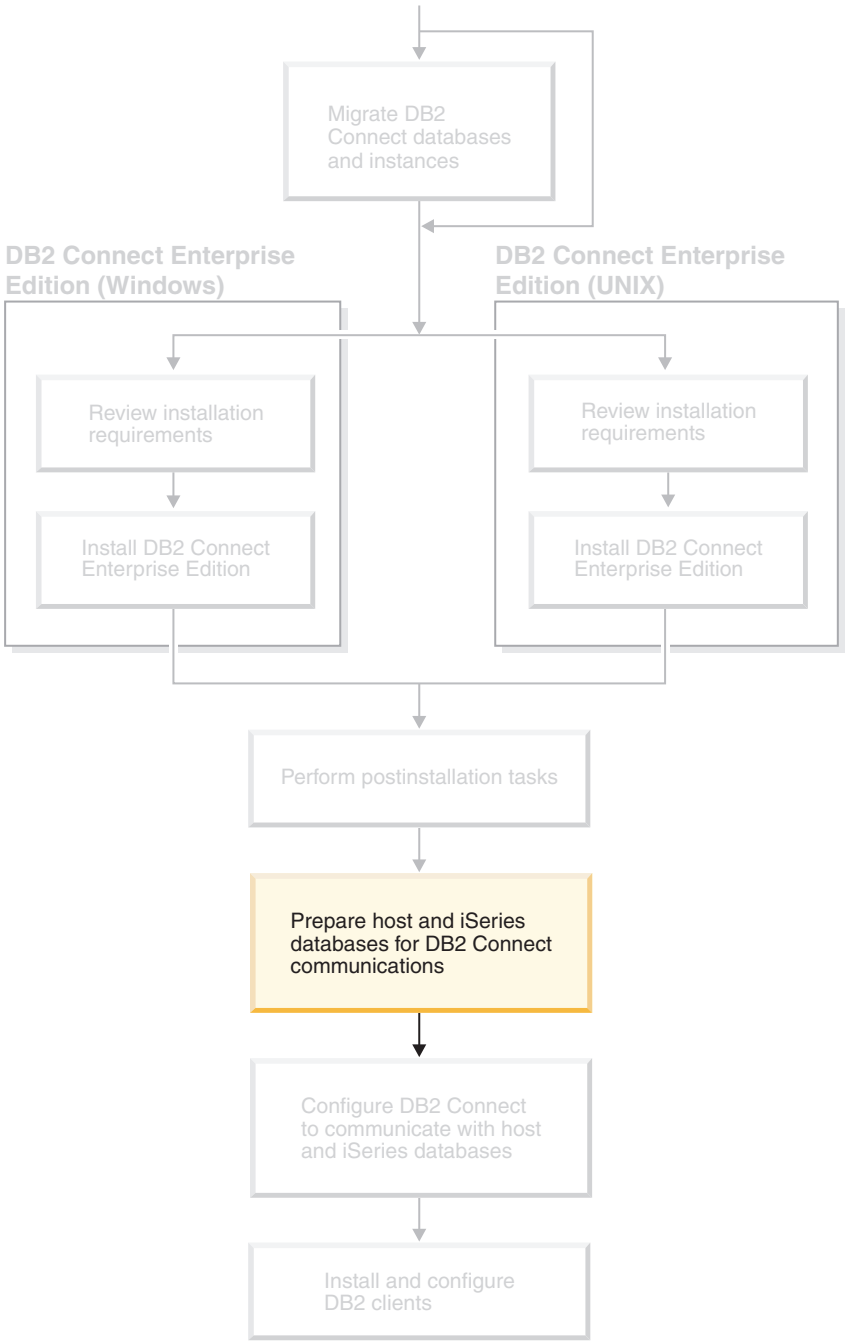
If you purchased a Registered Users license, select **Registered DB2 Connect users** and click **OK** to close the Change License window and return to the License Center. Click on the **Users** tab and add every user ID for which you purchased a license.

3. Choose your **Enforcement policy**. **Soft stop** is the default.

Related tasks:

- "Installing your DB2 Connect license key using the db2licm command" on page 59
- "Installing your DB2 Connect license key using the License Center" on page 60
- "Setting the license type using the db2licm command" on page 61

Part 4. Preparing host and iSeries databases for DB2 Connect communications



These topics describe the steps required to configure host and iSeries database servers to accept connections from DB2 Connect workstations. These steps must be performed by users who have the necessary system privileges and special expertise, such as your network, system, or DB2 administrator.

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For more information on configuring host and iSeries database servers, refer to the following publications:

- The *DB2 for OS/390 and z/OS Installation Guide Version 7* (GC26-9936-01) contains the most complete and up-to-date information for DB2 Universal Database for z/OS and OS/390.
- *Distributed Relational Database Cross Platform Connectivity and Applications* contains useful post-configuration information.
- *AS/400 Distributed Database Programming*

The sample values used in this section match those used elsewhere in this book. When you follow the instructions provided you *must* substitute your own values for elements such as network name, Logical Unit (LU) name, and mode name.

Chapter 9. Preparing DB2 for OS/390 and z/OS databases for DB2 Connect communications

Preparing DB2 Universal Database for OS/390 and z/OS for connections from DB2 Connect

Your VTAM administrator and your host system administrator must configure VTAM and OS/390 or z/OS to prepare DB2 Universal Database for z/OS and OS/390 to receive inbound connection requests from your DB2 Connect workstation.

This topic provides:

- Instructions for establishing TCP/IP network connections between DB2 Connect and DB2 Universal Database for z/OS and OS/390.
- Examples of VTAM definitions required at your DB2 Universal Database for z/OS and OS/390 host for use with DB2 Connect SNA connections. These should be compared with current definitions.
- DB2 host configuration steps. Many details of these steps changed with the introduction of DB2 UDB for OS/390 Version 6.1. These steps apply to users who will connect to DB2 Universal Database for z/OS and OS/390 via TCP/IP. However, some of these steps also apply to SNA users. It is recommended that you use the steps that apply to TCP/IP.

If you anticipate that DB2 for OS/390 or z/OS will participate in a multisite update transaction (two-phase commit) then refer to the *Enabling Multisite Updates* topic.

Procedure:

To prepare DB2 Universal Database for z/OS and OS/390 to receive connection requests from DB2 Connect, you need to configure your protocol:

- Configuring TCP/IP for DB2 Universal Database for OS/390 and z/OS
- Configuring DB2 Universal Database for OS/390 and z/OS
- Configuring VTAM

Related tasks:

- "Configuring TCP/IP for DB2 Universal Database for OS/390 and z/OS" on page 65
- "Configuring DB2 Universal Database for OS/390 and z/OS" on page 68
- "Configuring VTAM" on page 69
- "Enabling Multisite Updates using the Control Center" in the *DB2 Connect User's Guide*

Configuring TCP/IP for DB2 Universal Database for OS/390 and z/OS

This topic describes how to configure TCP/IP communications between your DB2 Connect workstation and DB2 UDB for OS/390 Version 6.1 or later. The instructions assume the following conditions:

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- You are connecting to a single host database via TCP/IP. Multiple host connections will be handled in exactly the same way, although the *port number* and *service number* required in each case may be different.
- The target database resides on DB2 UDB for OS/390 Version 6.1 or later.
- All the necessary software prerequisites are installed.
- DB2 clients have been set up as required.

Prerequisite OS/390 software for TCP/IP support:

OS/390 V2R3+ is the minimum operating system level required for TCP/IP support. OS/390 V2R5+ is the recommended operating system level, and the best performer. All versions of z/OS support TCP/IP.

The following informational APARs for DB2 for OS/390 are regularly updated with information about PTFs to install for various OS/390 components, particularly TCP/IP for OS/390. If you use TCP/IP connectivity with DB2 for OS/390, it is extremely important that you review and apply PTFs and APAR fixes described in the following DB2 for OS/390 information APARs:

- II11164
- II11263
- II10962

Collecting information:

Before you can use DB2 Connect over a TCP/IP connection, you must collect information about both the host database server and the DB2 Connect server. For each host server that you are connecting to via TCP/IP, you must have the following information:

- The location of the TCP/IP services and hosts files at the DB2 Connect workstation:

  On UNIX
  `/etc/`

  On Windows NT, Windows 2000, Windows XP and Windows Server 2003
  Usually *%SystemRoot%*\system32\drivers\etc\, where *%SystemRoot%* represents the Windows install path directory.

  On Windows 98 and Windows ME
  Usually *x:*`\windows\`, where *x:* represents the Windows install path directory.

  You may want to add the host information to a *domain name server* to avoid maintaining this file on multiple systems.
- The locations of the equivalent files at the target DB2 Universal Database for z/OS and OS/390 host.
- The TCP/IP *port number* defined to DB2 Universal Database for z/OS and OS/390.

  Note: The associated *service name* information is not exchanged between the DB2 Connect workstation and DB2 Universal Database for z/OS and OS/390. Port number 446 has been registered as the default for communication from a DB2 Connect workstation.
- The TCP/IP addresses and host names for both the host and the DB2 Connect workstation.

- The LOCATION NAME of the DB2 for OS/390 database server.
- The user ID and password to be used when issuing CONNECT requests to the database at the host or iSeries server.

Refer to your local network administrator and your DB2 for OS/390 and z/OS administrator for help getting this information. Use one copy of the example work sheet, Table 2, to plan *each* TCP/IP connection between DB2 Connect and a host database server.

Table 2. Example Worksheet for Planning TCP/IP Connections to DB2 Universal Database for z/OS and OS/390

Ref.	Description	Sample Value	Your Value
User Information			
TCP-1	User name	A.D.B.User	
TCP-2	Contact info	(123)-456-7890	
TCP-5	User ID	ADBUSER	
TCP-6	Database type	db2390	
TCP-7	Connection type (must be TCPIP).	TCPIP	TCPIP
Network Elements at the Host			
TCP-8	Host name	MVSHOST	
TCP-9	Host IP address	9.21.152.100	
TCP-10	Service name	db2inst1c	
TCP-11	Port number	446	446
TCP-12	LOCATION NAME	NEW_YORK3	
TCP-13	User ID		
TCP-14	Password		
Network Elements at the DB2 Connect Workstation			
TCP-18	Host name	mcook02	
TCP-19	IP address	9.21.27.179	
TCP-20	Service name	db2inst1c	
TCP-21	Port number	446	446
DB2 Directory Entries at the DB2 Connect Workstation)			
TCP-30	Node name	MVSIPNOD	
TCP-31	Database name	nyc3	
TCP-32	Database alias	mvsipdb1	
TCP-33	DCS database name	nyc3	

Notes:

1. To obtain the host's IP address TCP-9, enter at the host:

   ```
   TSO NETSTAT HOME
   ```

2. To obtain the port number TCP-11, look for `DSNL004I` in the DB2 master address space or system log.

Configuring the TCP/IP connection:

Use these steps in this section to complete the configuration and make the connection.

Complete the worksheet:

Complete a copy of the example worksheet for each TCP/IP host:

1. Fill in the values to be used for the host name and IP address of the DB2 Universal Database for z/OS and OS/390 host (items 8 and 9).

2. Fill in the values to be used for the host name and IP address of the DB2 Connect workstation (items 18 and 19).
3. Determine the port number or service name to be used for the connection (items 10 and 11, or 20 and 21).
4. Determine the LOCATION NAME of the DB2 for OS/390 and z/OS database server to which you wish to connect.
5. Determine the values to be used for user ID and PASSWORD when connecting to the host database.

Update the DB2 Universal Database for z/OS and OS/390 host:

At your zSeries server:

1. Verify the host address or the host name.
2. Verify the port number or the service name.
3. Update the services file with the correct port number and service name if necessary.
4. Update the hosts file (or the Domain Name Server used by the DB2 Universal Database for z/OS and OS/390 system) with the host name and IP address of the DB2 Connect workstation if necessary.
5. Ensure the new definitions are active before attempting to test the connection. Refer to your host network administrator or change control staff if necessary.
6. Check with the DB2 Universal Database for z/OS and OS/390 administrator that you have a valid user ID, password, and database *LOCATION NAME*.
7. PING the DB2 Connect server, using the correct port number if that option is supported by TCP/IP on the host system. For example:

```
ping remote_host_name -p port_number
```

Related tasks:

• "Configuring VTAM" on page 69

Configuring DB2 Universal Database for OS/390 and z/OS

Before you can use DB2 Connect, your DB2 Universal Database for z/OS and OS/390 Administrator must configure DB2 Universal Database for z/OS and OS/390 to permit connections from DB2 Connect workstations. This section indicates the *minimum* updates required to permit a DB2 Connect client to make a connection to the DB2 Universal Database for z/OS and OS/390 database server. For more detailed examples, refer to the *DB2 for OS/390 and z/OS Installation Guide*.

Recommended APARs:

DB2 for OS/390 and z/OS Version 7: Apply the fixes for APARs PQ50016 and PQ50017.

Updating SYSIBM.LUNAMES:

This section contains examples of commands to update these tables for DB2 Universal Database for z/OS and OS/390. Work with your DB2 administrator to determine the updates required for your DB2 Universal Database for z/OS and OS/390 system. For more information on the DB2 Universal Database for z/OS and OS/390 communications database tables, refer to the *DB2 Universal Database for z/OS and OS/390 SQL Reference*.

To permit database connection requests to be accepted from any incoming DB2 Connect LU, just insert a blank row. Use an SQL similar to the following:

```
INSERT INTO SYSIBM.LUNAMES (LUNAME) VALUES ('        ')
```

Alternatively, if you want to restrict access by LU name, you can use an SQL command similar to the following to update this table:

```
INSERT INTO SYSIBM.LUNAMES (LUNAME,
                            SECURITY_OUT,
                            ENCRYPTPSWDS,
                            USERNAMES)
                    VALUES('NYX1GW01','P','N','O');
```

Result:

Table 3. Result set from update to table

COLUMN	EXAMPLE	REMARK
======	=======	======
LUNAME	NYX1GW01	Name of the DB2 Connect LU
SECURITY_OUT	P	
ENCRYPTPSWDS	N	
USERNAMES	O	

Related tasks:

- "Configuring TCP/IP for DB2 Universal Database for OS/390 and z/OS" on page 65

Configuring VTAM

To configure VTAM, your VTAM Administrator needs to determine the names and options to be used on your system. The following definitions must be provided to enable the DB2 Connect workstation to connect to the host:

- The VTAM APPL definition for DB2 Universal Database for z/OS and OS/390. The APPL name, or LU name, for the DB2 subsystem is NYM2DB2 in these examples.
- The VTAM PU and LU definitions for DB2 Connect. The PU and LU definitions for the DB2 Connect workstation are NYX1 and NYX1GW01 respectively in these examples.
- The VTAM log mode definition for DB2. The log mode entry to be used for the connection is IBMRDB in these examples.

The sample VTAM definitions are provided in the sections that follow.

Sample Network Element Names (VTAM):

The following example shows the sample VTAM definitions used to configure a host database server.

```
DB2 Connect Server:
        - Network ID              : SPIFNET
        - Local Node Name         : NYX1        (PU name)
        - Local Node ID           : 05D27509

        - LU Name                 : SPIFNET.NYX1GW01
                                    (the same LU is used
                                       for DB2 Connect,
                                       for DB2 Universal Database,
                                       and for the SPM)
        - LU Alias                : NYX1GW01

HOST:
        - Network ID              : SPIFNET
        - Node Name               : NYX

        - LU Name                 : SPIFNET.NYM2DB2
        - LU Alias                : NYM2DB2
        - LAN Destination Address : 400009451902 (NCP TIC address)

MODE DEFINITION:
        - Mode Name               : IBMRDB

DB2 for OS/390:
        - Location                : NEW_YORK3

SECURITY:
        - Security Type           : Program
        - Authentication Type     : DCS
```

Sample VTAM APPL Definition for OS/390 or z/OS:
The following example shows the sample VTAM application major node definitions. In most cases, such a definition will already exist with a different LU name. Otherwise, this application major node must be defined, and DB2 Universal Database for z/OS and OS/390 must be customized to use the LU name defined. This name is the Partner LU name required by DB2 Connect.

```
----+----1----+----2----+----3----+----4----+----5----+----6----+----7--

DB2APPLS VBUILD TYPE=APPL

NYM2DB2  APPL  APPC=YES,                                              X
               AUTH=(ACQ),                                             X
               AUTOSES=1,                                              X
               DLOGMOD=IBMRDB,                                         X
               DMINWNL=512,                                            X
               DMINWNR=512,                                            X
               DSESSLIM=2048,                                          X
               EAS=6000,                                               X
               MODETAB=RDBMODES,                                       X
               PARSESS=YES,                                            X
               PRTCT=SFLU,                                             X
               MODETAB=RDBMODES,                                       X
               SECACPT=ALREADYV,                                       X
               SRBEXIT=YES,                                            X
               VERIFY=NONE,                                            X
               VPACING=8
```

Note: Continuations must begin in column 16, with continuation marks in column 72.

Sample VTAM PU and LU Definitions for DB2 Connect:

If your security policies allow it, enable DYNPU and DYNLU in VTAM to allow any PU and LU access through VTAM. Contact your VTAM administrator for more information.

The following example shows the sample VTAM switched major node definitions. Follow this example to enable a specific LU or PU.

If you already use SNA applications on the DB2 Connect workstation, then a PU definition already exists. However, an independent LU definition might not exist. The independent LU definition required for DB2 Connect must have LOCADDR=0 specified.

```
----+----1----+----2----+----3----+----4----+----5----+----6----+----7--

        SWITCHED MAJOR NODE DEFINITION FOR PU NYX1 and
        INDEPENDENT LU NYX1GW01

LOC300    VBUILD TYPE=LOCAL

NYX1            ADDR=01,IDBLK=071,IDNUM=27509,ANS=CONT,DISCNT=NO,       X
                IRETRY=YES,ISTATUS=ACTIVE,MAXDATA=4302,MAXOUT=7,        X
                MAXPATH=1,PUTYPE=2,SECNET=NO,MODETAB=RDBMODES           X
                SSCPFM=USSSCS,PACING=0,VPACING=2

NYX1GW01  LOCADDR=000,MODETAB=RDBMODES,DLOGMODE=IBMRDB

OTHERLU   LOCADDR=002
```

Sample VTAM Log Mode Definition for DB2:
The following example shows the sample VTAM logon mode table definition for the IBMRDB and SNASVCMG modes. This example specifies a 4K *RUSIZE*, which may not be suitable for your environment, for example, if you are using Ethernet, which has a maximum Frame Size of 1536 bytes. Your VTAM administrator should check these values and advise you which mode table entry name and *RUSIZE* to specify for DB2 Connect. You must define the *SNASVCMG* logon mode when using APPC.

```
----+----1----+----2----+----3----+----4----+----5----+----6----+----7---

RDBMODES MODTAB

IBMRDB   MODEENT LOGMODE=IBMRDB,   DRDA DEFAULT MODE                   *
               TYPE=0,             NEGOTIABLE BIND                    *
               PSNDPAC=X'01',      PRIMARY SEND PACING COUNT          *
               SSNDPAC=X'01',      SECONDARY SEND PACING COUNT        *
               SRCVPAC=X'00',      SECONDARY RECEIVE PACING COUNT     *
               RUSIZES=X'8989',    RUSIZES IN-4K    OUT-4K            *
               FMPROF=X'13',       LU6.2 FM PROFILE                   *
               TSPROF=X'07',       LU6.2 TS PROFILE                   *
               PRIPROT=X'B0',      LU6.2 PRIMARY PROTOCOLS            *
               SECPROT=X'B0',      LU6.2 SECONDARY PROTOCOLS          *
               COMPROT=X'D0B1',    LU6.2 COMMON PROTOCOLS             *
               PSERVIC=X'060200000000000000122F00'    LU6.2 LU TYPE

SNASVCMG MODEENT LOGMODE=SNASVCMG, DRDA DEFAULT MODE                   *
               PSNDPAC=X'00',      PRIMARY SEND PACING COUNT          *
               SSNDPAC=X'02',      SECONDARY SEND PACING COUNT        *
               SRCVPAC=X'00',      SECONDARY RECEIVE PACING COUNT     *
               RUSIZES=X'8585',    RUSIZES IN-1K    OUT-1K            *
               FMPROF=X'13',       LU6.2 FM PROFILE                   *
               TSPROF=X'07',       LU6.2 TS PROFILE                   *
               PRIPROT=X'B0',      LU6.2 PRIMARY PROTOCOLS            *
               SECPROT=X'B0',      LU6.2 SECONDARY PROTOCOLS          *
               COMPROT=X'D0B1',    LU6.2 COMMON PROTOCOLS             *
               PSERVIC=X'060200000000000000000300'    LU6.2 LU TYPE
```

Related tasks:

- "Preparing DB2 Universal Database for iSeries for connections from DB2 Connect" on page 73

Chapter 10. Preparing DB2 UDB for iSeries databases for DB2 Connect communications

Preparing DB2 Universal Database for iSeries for connections from DB2 Connect

DB2 Connect gives remote system applications access to data on your DB2 UDB for iSeries system.

Procedure:

To set up the connection, you need to know the following:

1. The local network name. You can get this information by entering `DSPNETA`.
2. The local adapter address. You can get this information by entering `WRKLIND (*trlan)`.
3. The mode name. You can get a list of mode names by entering `WRKMODD`. If the mode IBMRDB has been defined on your iSeries system, you should use it.
4. The local control point name. You can get this information by entering `DSPNETA`.
5. The remote transaction program name. The default is X'07'6DB (X'07F6C4C2'). The default is always used by DB2 UDB for iSeries. If entering a hexadecimal number is not convenient, an alias is QCNTEDDM.
6. The relational database name. You can get this information by entering `DSPRDBDIRE`. This will display a list. The line containing `*LOCAL` in the Remote Location column identifies the RDBNAME which must be defined to the client. If there is no *LOCAL entry, you can add one, or use the system name obtained from the DSPNETA command on the server.

   Here is an example:

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```
                  Display Relational Database Directory Entries

Position to  . . . . . .

Type options, press Enter.
    5=Display details   6=Print details

                  Relational                  Remote

Option            Database                    Location Text


       _          ____________________

       _          DLHX                        RCHAS2FA

       _          JORMT2FA                    JORMT2FA

       _          JORMT4FD                    JORMT4FD

       _          JOSNAR7B                    RCHASR7B

       _          RCHASR7B                    *LOCAL

       _          RCHASR7C                    RCHASR7C

       _          R7BDH3SNA                   RCH2PDH3

       _          RCHASDH3                    RCHASDH3
```

When you have obtained these parameters from your iSeries server, enter your values into the worksheet that follows:

Table 4. Configuration parameters from iSeries

Item	Parameter	Example	Your value
A-1	Local network name	SPIFNET	
A-2	Local adapter address	400009451902	
A-3	Mode name	IBMRDB	
A-4	Local control point name	SYD2101A	
A-5	Remote transaction program	X'07F6C4C2'(default)	
A-6	Relational database name	NEW_YORK3	

For more information, refer to the *DRDA Connectivity Guide*.

Related tasks:

• "Preparing DB2 for VSE & VM for connections from DB2 Connect" on page 75

Chapter 11. Preparing DB2 for VM & VSE databases for DB2 Connect communications

Preparing DB2 for VSE & VM for connections from DB2 Connect

For information about how to set up DB2 Server for VSE & VM as an application server, refer to the *DRDA Connectivity Guide*.

Related concepts:

- "DB2 for VM" in the *Connectivity Supplement*
- "DB2 for VSE" in the *Connectivity Supplement*

Related tasks:

- "Preparing the application requester or application server for DRDA communications (VM)" in the *Connectivity Supplement*

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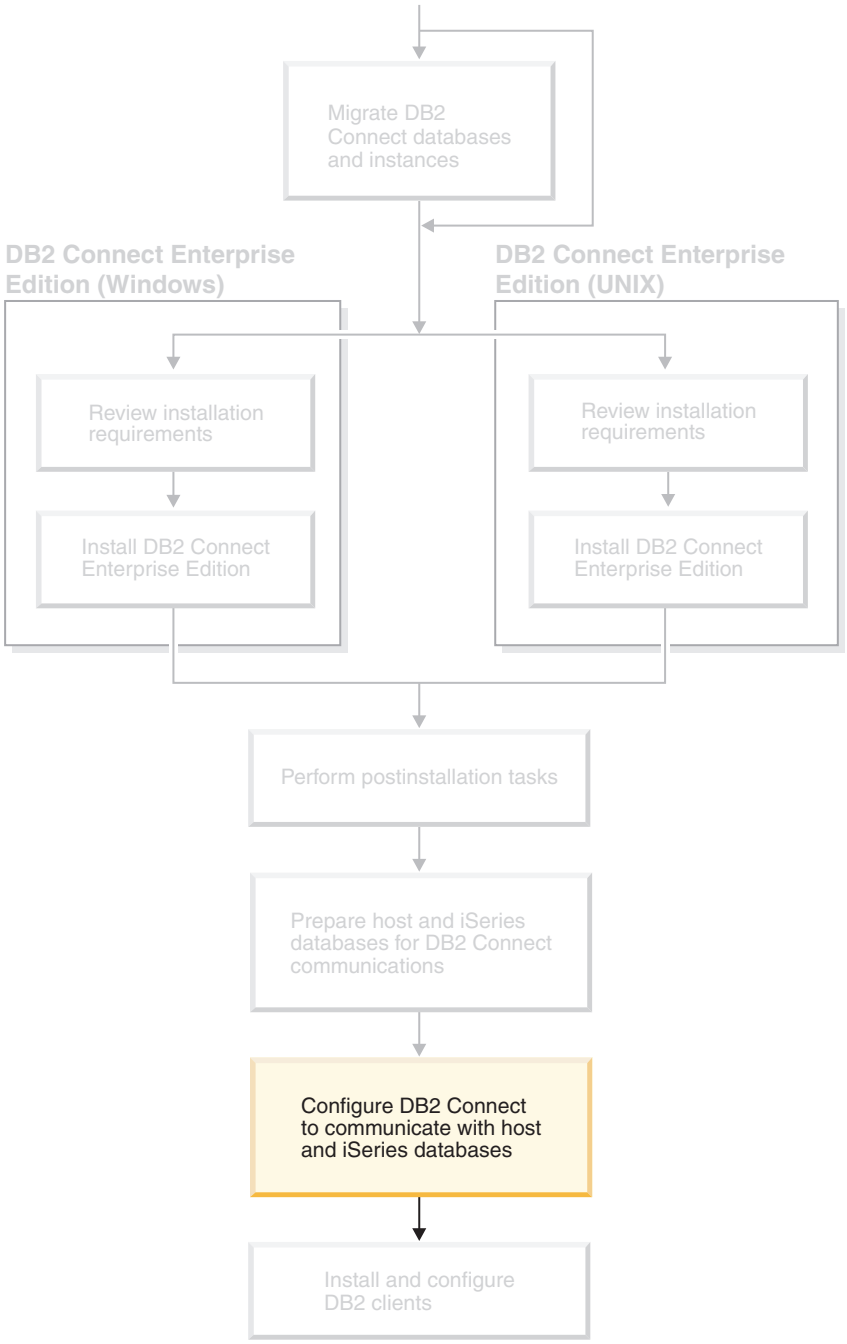
Part 5. Configuring access to host and iSeries databases



After DB2 Connect is installed and the database server is configured to accept communications, you need to establish and fine-tune the connection between the two systems. This section describes how to use the Configuration Assistant (CA) to find, connect, and bind to a database server.

Who Should Read This Section

- Network or system administrators

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- Technical personnel installing and configuring a DB2 Connect system

Chapter 12. Using the Configuration Assistant

Configuring a connection to host or iSeries database servers using the CA

This task describes how to connect DB2 Connect Personal Edition (PE) or DB2 Connect Enterprise Edition to a remote database host or iSeries database server 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.

Prerequisites:

- The Configuration Assistant must be installed on DB2 Connect workstation. In DB2 version 8, the Configuration Assistant 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.

Procedure:

To configure a connection to a database using the CA, select 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

Related tasks:

- "Configuring a database connection using discovery" on page 79
- "Configuring a database connection using a profile" on page 80
- "Configuring a database connection manually using the Configuration Assistant (CA)" on page 81

Configuration tasks

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.

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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 81
- "Configuring a database connection using a profile" on page 80
- "Testing a database connection using the Configuration Assistant" on page 83

Configuring a database connection using a profile

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

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

Prerequisites:

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

Procedure:

To configure a database connection using a profile:

1. Log on to the system with a valid DB2 user ID.
2. Start the CA. The CA can be started from the Start menu on Windows or using the **db2ca** command on both Windows and UNIX systems.
3. On the CA menu bar, under **Selected**, choose **Add Database Using Wizard**.
4. Select the **Use a profile** radio button and click **Next**.
5. Click **...** and select a profile.
6. Click **Load** and select a database in the profile.
7. Click **Next**.
8. Type a local database alias name in the **Database alias** field and optionally type a comment that describes this database in the **Comment** field. Click **Next**.
9. If you are planning to use ODBC, you need to register this database as an ODBC data source. Ensure that the **Register this database for ODBC** check box is selected. ODBC must be installed to perform this operation.
10. Click **Finish**. You can now use this database.

Related tasks:

- "Creating and exporting client profiles using the Configuration Assistant" on page 109
- "Importing and configuring client profiles using the Configuration Assistant" on page 110

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 79
- "Configuring a database connection using a profile" on page 80
- "Testing a database connection using the Configuration Assistant" on page 83

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 79
- "Configuring a database connection manually using the Configuration Assistant (CA)" on page 81
- "Configuring a database connection using a profile" on page 80

Chapter 13. DB2 Connect Sysplex support

DB2 Connect Sysplex support

A Sysplex is a collection of zSeries® servers that cooperate, using hardware and software, to process work. The Sysplex coordinates the cooperation by increasing the number of processors working together, which increases the amount of work that can be processed. In addition to an increase in processing capability, a Sysplex can provide flexibility in mixing levels of hardware and software, and in dynamically adding systems.

Sysplex permits DB2 Connect to seamlessly transfer an incoming connection from one remote database server to a designated backup server in the event that the first server fails. DB2 Connect support for Sysplex is enabled by default, however each DCS database catalog entry must be configured to enable Sysplex support.

Note: If the DB2 Connect concentrator is not active, then *active* connections are **not** transferred between hosts in the event of server failure; if a server fails all existing connections to that server are lost. If the concentrator is active, then only connections with in-flight transactions to the particular Sysplex member that goes down will be lost. Other connections will be maintained and the next transaction will be sent to a remaining member.

Related concepts:

- "Configuration requirements for Sysplex" on page 86
- "Considerations for OS/390 and zSeries SYSPLEX exploitation" on page 85
- "DB2 Sysplex exploitation" on page 86

Considerations for OS/390 and zSeries SYSPLEX exploitation

DB2 Connect Enterprise Edition servers provide load balancing and fault-tolerance when routing connections to multiple Sysplexes. When connected to a DB2® for OS/390® and z/OS™ database server running in a data sharing environment, DB2 Connect will spread the workload amongst the different DB2 subsystems comprising the data sharing group, based on the system load information provided by the Workload Manager (WLM). This support requires DB2 for OS/390 Version 6 or later.

DB2 Connect™ receives a prioritized list of Sysplex members from the WLM. Each Sysplex returns weighted priority information for each connection address. This list is then used by the DB2 Connect server to handle the incoming CONNECT requests by distributing them among the Sysplex members with the highest assigned priorities. For load balancing, the list of Sysplex weighted priority information is obtained during each connection. If the DB2 Connect connection concentrator is enabled, this list is also used when determining where to send each transaction.

Note: OS/390 and z/OS DDF configuration does not need to be changed to take advantage of the DB2 Connect Sysplex exploitation.

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DB2 Connect Enterprise Edition servers also provide fault-tolerance by attempting to connect to an alternate sysplex machine in the event of a connection failure. An error will only be returned to the application if all known connections have failed.

A new profile (or registry) variable DB2SYSPLEX_SERVER has been created to enable this feature. If DB2SYSPLEX_SERVER is not present or is set to a non-zero value, then Sysplex exploitation is enabled. If DB2SYSPLEX_SERVER is set to zero, then Sysplex exploitation is disabled. Setting DB2SYSPLEX_SERVER to a value of zero disables the Sysplex exploitation for the server regardless of how the DCS database catalog entry has been specified.

The DB2 registry variable DB2CONNECT_IN_APP_PROCESS can be used to allow clients running on the same machine as the DB2 Connect Enterprise Edition server to exploit the Sysplex support. If you are using AIX® then its recommended that the EXTSHM variable be configured as well to exploit the Sysplex support.

With the addition of the concentrator, DB2 Connect now has the ability to balance the workload at transaction boundaries. The DB2 Connect concentrator must be enabled for this to work. Depending on the version of DB2 on the host, different granularity of load balancing will be achieved. If load balancing is running against DB2 for OS/390 Version 6.1 or later, DB2 Connect will receive updated status from the WLM on each transaction.

However, long running connections can be used with OS/390 Version 6.1 and Sysplex support.

Related concepts:

- "DB2 Connect Sysplex support" on page 85
- "Configuration requirements for Sysplex" on page 86
- "DB2 Sysplex exploitation" on page 86

Configuration requirements for Sysplex

- On a DB2 Connect Enterprise Edition server, Sysplex exploitation is enabled by default, but it can be turned off by setting the DB2SYSPLEX_SERVER profile variable to the value zero.
- Sysplex exploitation will not be used for a given database unless the DCS directory entry for that database contains Sysplex (not case-sensitive) in the 6th positional parameter.

Related concepts:

- "DB2 Connect Sysplex support" on page 85
- "Considerations for OS/390 and zSeries SYSPLEX exploitation" on page 85
- "DB2 Sysplex exploitation" on page 86

DB2 Sysplex exploitation

In a typical scenario, the DB2 Connect Enterprise Edition server machine A would be in conversation with a Sysplex containing two DB2® for OS/390® and z/OS™ servers, say machines B and C:

Sysplex machine B	Sysplex machine C
HOST_NAME=MVSHOST	HOST_NAME=MVSHOST1

Suppose that in this scenario an application now issues:

```
db2 connect to aliasb user xxxxxxx using xxxxxxxx
```

The connection to database MVSHOST is established. Because Sysplex exploitation is enabled both for the DB2 Connect server and the DCS directory entry, DB2 for OS/390 and z/OS identifies the network addresses to DB2 Connect for each Sysplex participant (MVSHOST and MVSHOST1. DRDA4 protocols and message flows are used to return this information). Once an initial connection has been made, the returned list of addresses is cached at the DB2 Connect server. Once the initial CONNECT is issued for a TCP/IP node, then the IP addresses are returned.

Priority information used for load balancing and fault tolerance:

The list of addresses provided by DB2 for OS/390 and z/OS also includes priority information, including the number of connections for each network address. The list is refreshed whenever a new connection is made by DB2 Connect. This additional information is used for load balancing purposes, as well as for fault tolerance.

Cached Address List used by DB2 Connect:

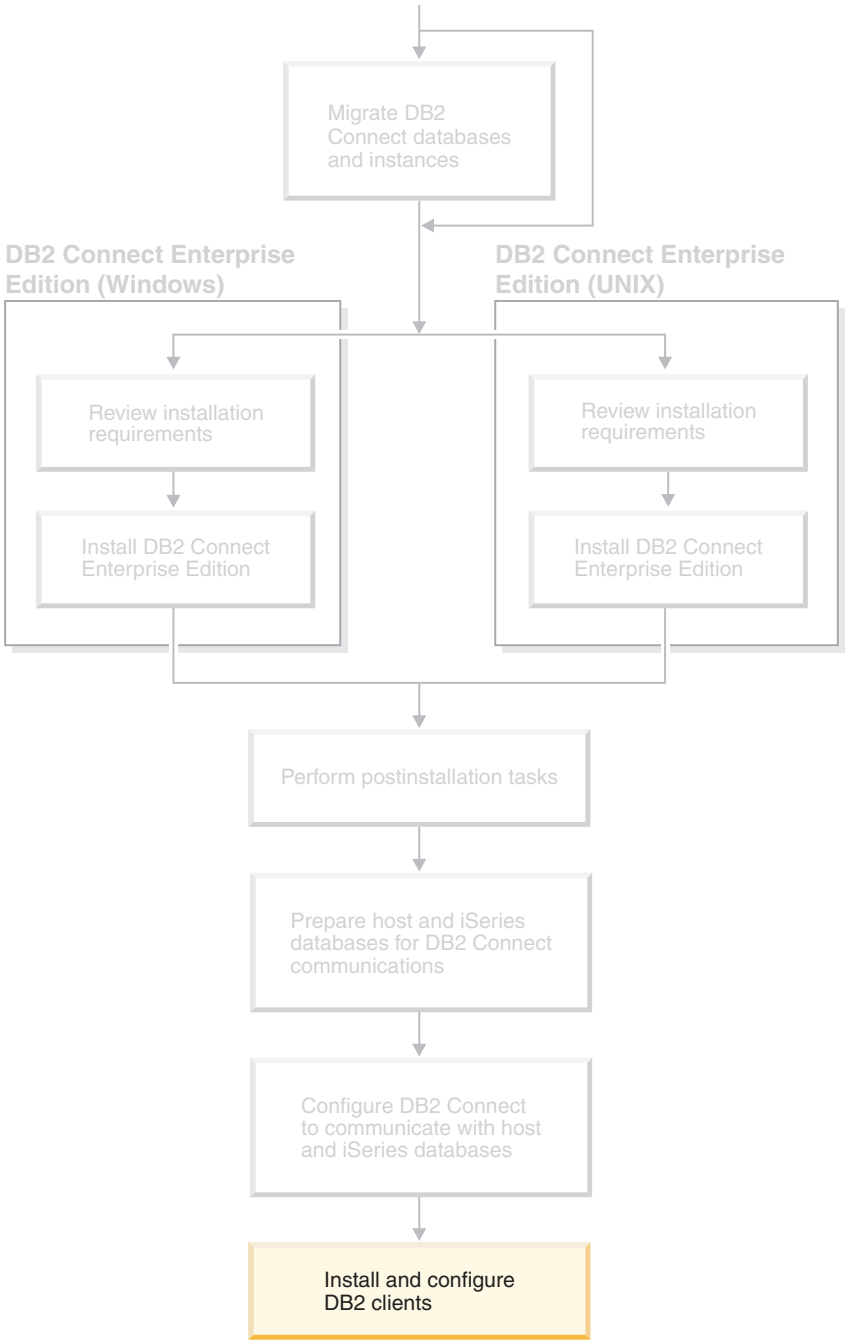
If the database connection to ALIASB fails, then an error message SQL30081N is issued, and the connection will be dropped. If a further connection request is received for ALIASB, DB2 Connect does the following:

1. It tries the highest priority machine from the cached list of addresses based on the priority information that was returned by DB2 for OS/390 and z/OS. This strategy is always used by DB2 Connect, and it is by this means that load balancing is achieved.
2. If this connection attempt fails, then the other addresses in the list are tried, in descending order of priority, as returned by DB2 for OS/390 and z/OS. This is how DB2 Connect exploits the Sysplex information to achieve fault tolerance.
3. If all other attempts to connect fail, then DB2 Connect will retry the connection to ALIASB using the address contained in the cataloged node directory.

Related concepts:

- "DB2 Connect Sysplex support" on page 85
- "Configuration requirements for Sysplex" on page 86
- "Considerations for OS/390 and zSeries SYSPLEX exploitation" on page 85

Part 6. Installing and configuring clients



Your client applications must be properly configured so that they can communicate with host– or iSeries-based databases through DB2 Connect. This section shows how to install your DB2 client software and configure it to use DB2 Connect.

Who Should Read This Section

- Network or system administrators
- Anyone wishing to use a DB2 database client on a PC

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Chapter 14. Installation overview

DB2 clients

There are four types of DB2® clients:

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

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

Client backlevel support:

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

Related concepts:

- "DB2 Run-Time Client" on page 93
- "DB2 Administration Client" on page 92
- "DB2 Application Development Client" on page 92
- "Response file installation basics" in the *Installation and Configuration Supplement*
- "DB2 Run-Time Client Lite" on page 93

Related tasks:

- "Installing DB2 clients (Windows)" on page 101
- "Installing DB2 clients (UNIX)" on page 102

Related reference:

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

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DB2 client types

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 91
- "DB2 Run-Time Client" on page 93
- "DB2 Application Development Client" on page 92
- "DB2 Run-Time Client Lite" on page 93

Related tasks:

- "Installing DB2 clients (Windows)" on page 101
- "Installing DB2 clients (UNIX)" on page 102

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 91
- "DB2 Run-Time Client" on page 93
- "DB2 Administration Client" on page 92
- "DB2 Run-Time Client Lite" on page 93

Related tasks:

- "Installing DB2 clients (Windows)" on page 101
- "Installing DB2 clients (UNIX)" on page 102

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 91
- "DB2 Administration Client" on page 92
- "DB2 Application Development Client" on page 92
- "DB2 Run-Time Client Lite" on page 93

Related tasks:

- "Installing DB2 clients (Windows)" on page 101
- "Installing DB2 clients (UNIX)" on page 102

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 93
- "DB2 Administration Client" on page 92
- "DB2 Application Development Client" on page 92

Related tasks:

- "Installing DB2 clients (Windows)" on page 101

Related reference:

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

Chapter 15. Installation 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.

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

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Related reference:

- "Java SDK levels for DB2 UDB" on page 39

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 39

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 39

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 39

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 39

Chapter 16. Installation

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.

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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 136
- "DB2 Information Center installation scenarios" on page 137

Related tasks:

- "Installing the DB2 Information Center using the DB2 Setup wizard (Windows)" on page 142
- "Configuring remote access to a server database" in the *Installation and Configuration Supplement*
- "Response file installation of DB2 overview (Windows)" in the *Installation and Configuration Supplement*
- "Installing DB2 servers in a single-partition database environment (Windows)" in the *Quick Beginnings for DB2 Servers*

Related reference:

- "Language identifiers for running the DB2 Setup wizard in another language" on page 131
- "setup - Install DB2 Command" in the *Command Reference*
- "DB2 Run-Time Client Lite command line options" in the *Quick Beginnings for DB2 Clients*

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 136
- "DB2 Information Center installation scenarios" on page 137

Related tasks:

- "Installing the DB2 Information Center using the DB2 Setup wizard (UNIX)" on page 140
- "Modifying kernel parameters (Solaris Operating Environment)" on page 43
- "Modifying kernel parameters (HP-UX)" on page 41
- "Configuring client-to-server connections using the Configuration Assistant (CA)" in the *Quick Beginnings for DB2 Servers*
- "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 42

Related reference:

- "db2setup - Install DB2 Command" in the *Command Reference*

Chapter 17. Configuring DB2 clients to use DB2 Connect

When installing DB2 Connect Personal Edition, you can also choose to install a DB2 run-time client. These topics detail the instructions of how to configure a connection from the DB2 run-time client to a DB2 UDB server. The DB2 run-time client can connect to databases on Windows and UNIX, as well as host or iSeries databases using DB2 Connect. You can connect directly to host or iSeries databases using DB2 Connect Personal Edition, if you have it installed on the same workstation as the DB2 run-time client, or you can connect through a DB2 Connect Enterprise Edition server.

This task describes how to connect a DB2 client to a remote database host or iSeries database server 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.

Prerequisites:

- The Configuration Assistant must be installed on DB2 Connect workstation. In DB2 Version 8, the Configuration Assistant 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.

Procedure:

To configure a connection to a database using the CA, select 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

Configuration tasks

Configuring a database connection using Discovery

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

Prerequisites:

Before you configure a connection to a database using Discovery:

- Ensure that you have a valid DB2 user ID.
- If 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.

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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 a database using wizard**.
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.
6. Click the **[+]** sign beside a system to get a list of the instances and databases on it. Select the database that you want to add, click the **Next** push button,
7. Enter a local database alias name in the **Database alias** field and optionally enter 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 are now able to 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 81
- "Configuring a database connection using a profile" on page 80
- "Testing a database connection using the Configuration Assistant" on page 83

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 connect to a database using a profile.

Prerequisites:

Before you connect to a database through the CA using a profile:

- Ensure that you have a valid DB2 user ID.
- If 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 connect to a database 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 a database using wizard**.
4. Select the **Use a profile** radio button and click **Next**.
5. Click the **...** push button and select a profile. Select a remote database from the object tree that is displayed from the profile, and if the database selected is a gateway connection, select a connection route to the database. Click the **Next** push button.
6. Enter a local database alias name in the **Database alias** field and optionally enter a comment that describes this database in the **Comment** field. Click **Next**.
7. If you are planning to use ODBC, register this database as an ODBC data source. ODBC must be installed to perform this operation.
8. Click **Finish**. You are now able to use this database. Select the **Exit** menu action to exit the CA.

Related tasks:

- "Creating and exporting client profiles using the Configuration Assistant" on page 109
- "Importing and configuring client profiles using the Configuration Assistant" on page 110

Configuring a database connection 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 via the command line processor, however, the parameters are presented graphically.

Prerequisites:

Before you configure a connection to a database using the CA:

- Ensure that you have a valid DB2 user ID.
- If 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 a 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 would like your 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 machine 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 will 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. Enter the required communication protocol parameters and click **Next**.
8. Enter 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 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. Click **Finish**. You are now able to use this database. Select the **Exit** menu action to close the CA.

Related tasks:

- "Configuring a database connection using discovery" on page 79
- "Configuring a database connection using a profile" on page 80
- "Testing a database connection using the Configuration Assistant" on page 83

Testing a database connection

After configuring the database, the database connection should be tested.

Procedure:

To test a database connection:

1. Start the **CA**.
2. Highlight the database in the details view and invoke the **Test Connection** menu action. The Test Connection window opens.
3. Select the type of connection that you would like to test (**CLI** is the default). 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 invoke the **Change Database** menu action.

Related tasks:

- "Configuring a database connection using discovery" on page 79
- "Configuring a database connection manually using the Configuration Assistant (CA)" on page 81
- "Configuring a database connection using a profile" on page 80

Chapter 18. Using client and server profiles

About client profiles

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

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

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

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

Related tasks:

- "Exporting and importing a profile" on page 111
- "Creating and exporting client profiles using the Configuration Assistant" on page 109
- "Importing and configuring client profiles using the Configuration Assistant" on page 110

Related reference:

- "db2cfimp - Connectivity Configuration Import Tool Command" in the *Command Reference*
- "db2cfexp - Connectivity Configuration Export Tool Command" in the *Command Reference*

Creating and exporting client profiles using the Configuration Assistant

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

Procedure:

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

1. Log on to the system with a valid DB2 user ID.
2. Start the CA. The CA can be started from the Start menu on Windows or using the **db2ca** command on both Windows and UNIX systems.

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3. From the **Configure** menu, select **Export Profile**.
4. Select one of the following options:

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

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

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

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

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

Related concepts:

- "About client profiles" on page 109

Related tasks:

- "Configuring a database connection using a profile" on page 80
- "Exporting and importing a profile" on page 111
- "Importing and configuring client profiles using the Configuration Assistant" on page 110

Importing and configuring client profiles using the Configuration Assistant

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

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

Procedure:

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

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

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

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

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

Related concepts:

- "About client profiles" on page 109

Related tasks:

- "Configuring a database connection using a profile" on page 80
- "Exporting and importing a profile" on page 111
- "Creating and exporting client profiles using the Configuration Assistant" on page 109

Exporting and importing a profile

Procedure:

If you did not use a configuration profile when you installed your DB2 product using the response file that was created by the response file generator, you can enter the **db2cfexp** command to create a configuration profile. The **db2cfimp** command can then be used to import a configuration profile.

You can also use the CA to export and import a configuration profile.

Related concepts:

- "About the response file generator (Windows)" in the *Installation and Configuration Supplement*

Related reference:

- "db2cfimp - Connectivity Configuration Import Tool Command" in the *Command Reference*

- "db2cfexp - Connectivity Configuration Export Tool Command" in the *Command Reference*
- "db2rspgn - Response File Generator Command (Windows)" in the *Command Reference*

Part 7. Using DB2 Connect

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Chapter 19. Running your own applications

You can build and run DB2® applications with a DB2 Application Development Client installed. You can also run DB2 applications on the DB2 Run-Time Client and the DB2 Administration Client.

Various types of applications can access DB2 databases:

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

On Windows® operating systems, the following can also access DB2 databases:

- ActiveX Data Objects (ADO) implemented in Microsoft® Visual Basic and Microsoft Visual C++
- Remote Data Objects (RDO) implemented in Microsoft Visual Basic
- Object Linking and Embedding (OLE) Automation Routines (UDFs and Stored Procedures)
- Object Linking and Embedding Database (OLE DB) table functions

An application on a DB2 client can access a remote database without knowing its physical location. The DB2 client determines the location of the database, manages the transmission of the requests to the database server, and returns the results.

To run a database client application:

1. Ensure the server is configured and running.
2. On the DB2 UDB server, ensure that the database manager is started on the database server to which the application program is connecting. If it is not, you must issue the **db2start** command at the server before starting the application.
3. Ensure that you can connect to the database that the application uses.
4. Bind the utilities and the applications to the database.
5. Run the application program.

Related concepts:

- "DB2 Supported Programming Interfaces" in the *Application Development Guide: Programming Client Applications*

Related tasks:

- "Setting up the CLI environment" in the *CLI Guide and Reference, Volume 1*
- "Setting up the UNIX ODBC environment" in the *CLI Guide and Reference, Volume 1*
- "Setting up the Windows CLI environment" in the *CLI Guide and Reference, Volume 1*

Related reference:

- "DB2 Application Development Client" in the *Application Development Guide: Building and Running Applications*

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Chapter 20. Binding database utilities on DB2 Connect

You must bind the database utilities (import, export, reorg, the Command Line Processor) and DB2 CLI bind files to each database before they can be used with that database. In a network environment, if you are using multiple clients that run on different operating systems or are at different versions or service levels of DB2, you must bind the utilities once for each operating system and DB2-version combination.

Binding a utility creates a *package*, which is an object that includes all of the information that is needed to process specific SQL statements from a single source file.

The bind files are grouped together in different `.lst` files in the `bnd` directory, under the installation directory (typically `sqllib` for Windows). Each file is specific to a server.

Procedure:

Binding to host or iSeries databases

To bind the utilities and applications to the host or iSeries database server, connect to the host or iSeries server and use the following example as a template:

```
connect to dbalias user userid using password
bind path/bnd/@ddcsmvs.lst blocking all sqlerror continue
        messages mvs.msg grant public
connect reset
```

where *path* corresponds to the *DB2PATH* registry value.

Binding to DB2 Universal Databases

How you bind the database utilities to a database depends on your workstation's operating system:

- Using the Configuration Assistant:
  1. Start the Configuration Assistant (CA).
  2. Select the database to which you want to bind the utilities.
  3. Right click and select **Bind**.
  4. Select the utility or files to bind.
  5. Add any desired bind options.
  6. Enter a user ID and password to connect to the database. The user ID must have the authority to bind new packages against the database. Click **Bind**.
- Use the command line processor:
  1. Change to the `bnd` directory, which is `x:\sqllib\bnd`, where x: represents the drive where you installed DB2.
  2. To connect to the database, enter the following commands in the Command Center or the Command Line Processor:

     ```
     connect to database_alias
     ```

     where *database_alias* represents the alias of the database to which you want to connect.

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3. Enter the following commands in the Command Center or the Command Line Processor:

   ```
   "bind @db2ubind.lst messages bind.msg grant public"
   "bind @db2cli.lst messages clibind.msg grant public"
   ```

   In this example, `bind.msg` and `clibind.msg` are the output message files, and EXECUTE and BINDADD privileges are granted to *public*.

4. Reset the connection to the database by entering the following command:

   ```
   connect reset
   ```

Notes:

1. The `db2ubind.lst` file contains the list of bind (.bnd) files required to create the packages for the database utilities. The `db2cli.lst` file contains the list of bind (.bnd) files required to create packages for the DB2 CLI and the DB2 ODBC driver.
2. Binding may take a few minutes to complete.
3. If you have BINDADD authority, the first time you use the DB2 CLI or ODBC driver, the DB2 CLI packages will be bound automatically. If the applications that you are using require binding to the database, you can use the Configuration Assistant's Bind facility, or the command line processor, to perform the bind action.

Related reference:

- "BIND Command" in the *Command Reference*
- "DB2 CLI bind files and package names" in the *CLI Guide and Reference, Volume 1*

Part 8. Reference

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Chapter 21. Mounting the DB2 product CD-ROM

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.

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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)" in the *Quick Beginnings for DB2 Servers*

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.

Chapter 22. Uninstalling DB2 Connect

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:

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- "Uninstalling DB2 UDB (UNIX)" on page 126

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

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)" in the *Quick Beginnings for DB2 Servers*
- "Removing the DB2 administration server (DAS)" in the *Quick Beginnings for DB2 Servers*
- "Stopping DB2 instances" in the *Quick Beginnings for DB2 Servers*
- "Removing DB2 instances" in the *Quick Beginnings for DB2 Servers*
- "Removing DB2 products using the db2_deinstall command (UNIX)" in the *Quick Beginnings for DB2 Servers*
- "Uninstalling DB2 UDB (Windows)" on page 125

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

Part 9. 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 130

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.

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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 130

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" in the *Quick Beginnings for DB2 Servers*
- "Changing the DB2 interface language (Windows)" on page 129
- "Changing the DB2 interface language (UNIX)" on page 129

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 5. 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

Conversion of character data

When character data is transferred between machines, it must be converted to a form that the receiving machine can use.

For example, when data is transferred between a DB2 Connect server and a host or iSeries™ database server, it is usually converted from a server code page to a host CCSID, and vice versa. If the two machines use different code pages or CCSIDs, code points are mapped from one code page or CCSID to the other. This conversion is always performed at the receiver.

Character data sent *to* a database consists of SQL statements and input data. Character data sent *from* a database consists of output data. Output data that is interpreted as bit data is not converted. For example, data from a column declared with the FOR BIT DATA clause. Otherwise all input and output character data is converted if the two machines have different code pages or CCSIDs.

For example, if DB2 Connect is used to access DB2 Universal Database for z/OS and OS/390 data, the following happens:

1. DB2® Connect sends an SQL statement and input data to OS/390® or z/OS.
2. DB2 Universal Database for z/OS and OS/390 converts the data to an EBCDIC CCSID and processes it.
3. DB2 Universal Database for z/OS and OS/390 sends the result back to the DB2 Connect server.
4. DB2 Connect™ converts the result to an ASCII or ISO code page and returns it to the user.

The table that follows shows the conversions that are supported between code pages (on the DB2 Connect Server) and CCSIDs (on the host or iSeries server).

Table 6. Server Code Page to host or iSeries CCSID Conversion

Host CCSIDs	Code Page	Territory
037, 273, 277, 278, 280, 284, 285, 297, 500,871, 1140-1149	437, 819, 850, 858, 860, 863, 1004, 1051,1252, 1275	Albania, Australia, Austria, Belgium, Brazil, Canada, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, Latin America, Netherlands, New Zealand, Norway, Portugal, South Africa, Spain, Sweden, Switzerland, UK, USA
423, 875	737, 813, 869, 1253, 1280	Greece
870	852, 912, 920[4] ,1250, 1282	Croatia, Czech Republic, Hungary, Poland, Romania, Serbia/Montenegro (Latin), Slovakia, Slovenia
1025	855, 866, 915, 1251, 1283	Bulgaria, FYR Macedonia, Russia, Serbia/Montenegro(Cyrillic)
1026	857, 920, 1254, 1281	Turkey
424	862, 916, 1255	Israel[3]
420	864, 1046, 1089, 1256	Arabic countries[3]

Table 6. Server Code Page to host or iSeries CCSID Conversion (continued)

Host CCSIDs	Code Page	Territory
838	874	Thailand
930, 939, 5026, 5035	932, 942, 943, 954, 5039	Japan
937	938, 948, 950, 964	Taiwan
933, 1364	949, 970, 1363	Korea
935, 1388	1381, 1383, 1386	Republic of China
1112, 1122	921, 922	Estonia, Latvia, Lithuania
1025	915, 1131, 1251, 1283	Belarus
1123	1124, 1125, 1251	Ukraine

Notes:

1. Code page 1004 is supported as code page 1252.
2. In general, data can be converted from a code page to a CCSID and back again to the same code page with no change. The following are the only exceptions to that rule:
   - In double-byte character set (DBCS) code pages, some data containing user-defined characters may be lost.
   - For single-byte code pages defined within mixed-byte code pages, and for some newer single-byte code pages, characters that do not exist in both the source and the target may be mapped to substitution characters and then lost when the data is converted back to the original code page.
3. For bidirectional languages, a number of special "BiDi CCSIDS" have been defined by IBM® and are supported by DB2 Connect.

   If the bidirectional attributes of the database server are different from those of the client you can use these special CCSIDS to manage the difference.

   See the DB2 Connect Release notes for detailed information about how to set them up for host or iSeries connections.
4. This code page is not supported on VM systems.

Related concepts:

- "Character-conversion guidelines" in the *Administration Guide: Performance*

Appendix B. 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 136

Related tasks:

- "Invoking contextual help from a DB2 tool" on page 153

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- "Updating the DB2 Information Center installed on your computer or intranet server" on page 145
- "Invoking message help from the command line processor" on page 154
- "Invoking command help from the command line processor" on page 154
- "Invoking SQL state help from the command line processor" on page 155

Related reference:

- "DB2 PDF and printed documentation" on page 147

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 137

Related tasks:

- "Updating the DB2 Information Center installed on your computer or intranet server" on page 145
- "Displaying topics in your preferred language in the DB2 Information Center" on page 146
- "Invoking the DB2 Information Center" on page 144
- "Installing the DB2 Information Center using the DB2 Setup wizard (UNIX)" on page 140
- "Installing the DB2 Information Center using the DB2 Setup wizard (Windows)" on page 142

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 136

Related tasks:

- "Updating the DB2 Information Center installed on your computer or intranet server" on page 145
- "Installing the DB2 Information Center using the DB2 Setup wizard (UNIX)" on page 140
- "Installing the DB2 Information Center using the DB2 Setup wizard (Windows)" on page 142
- "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 136
- "DB2 Information Center installation scenarios" on page 137

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 145
- "Displaying topics in your preferred language in the DB2 Information Center" on page 146
- "Invoking the DB2 Information Center" on page 144
- "Installing the DB2 Information Center using the DB2 Setup wizard (Windows)" on page 142

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

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

Prerequisites:

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

- **Hardware requirements**

  You require one of the following processors:

  – 32-bit computers: a Pentium or Pentium compatible CPU
- **Operating system requirements**

  You require one of the following operating systems:

  – Windows 2000

  – Windows XP

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

  – The following browsers are supported:

    - Mozilla 1.0 or greater

    - Internet Explorer Version 5.5 or 6.0 (Version 6.0 for Windows XP)
- **Communication requirements**

  – TCP/IP

Restrictions:

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

Procedure:

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

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

   To start the DB2 Setup wizard manually:

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

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

      where *x:* represents your CD drive, and *2-letter language identifier* represents the language in which the setup program will be run.
   c. Click **OK**.
4. The IBM DB2 Setup Launchpad opens. To proceed directly to the installation of the DB2 Information Center, click **Install Product**. Online help is available to guide you through the remaining steps. To invoke the online help, click **Help**. You can click **Cancel** at any time to end the installation.
5. On the **Select the product you would like to install** page, click **Next**.
6. Click **Next** on the **Welcome to the DB2 Setup wizard** page. The DB2 Setup wizard will guide you through the program setup process.
7. To proceed with the installation, you must accept the license agreement. On the **License Agreement** page, select **I accept the terms in the license agreement** and click **Next**.
8. Select **Install DB2 Information Center on this computer** on the **Select the installation action** page. If you want to use a response file to install the DB2 Information Center on this or other computers at a later time, select **Save your settings in a response file**. Click **Next**.
9. Select the languages in which the DB2 Information Center will be installed on **Select the languages to install** page. Click **Next**.
10. Configure the DB2 Information Center for incoming communication on the **Specify the DB2 Information Center port** page. Click **Next** to continue the installation.
11. Review the installation choices you have made in the **Start copying files** page. To change any settings, click **Back**. Click **Install** to copy the DB2 Information Center files onto your computer.

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

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

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

Related concepts:

- "DB2 Information Center" on page 136
- "DB2 Information Center installation scenarios" on page 137

Related tasks:

- "Installing a DB2 product using a response file (Windows)" in the *Installation and Configuration Supplement*
- "Updating the DB2 Information Center installed on your computer or intranet server" on page 145
- "Displaying topics in your preferred language in the DB2 Information Center" on page 146
- "Invoking the DB2 Information Center" on page 144
- "Installing the DB2 Information Center using the DB2 Setup wizard (UNIX)" on page 140

Related reference:

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

Invoking the DB2 Information Center

The DB2 Information Center gives you access to all of the information that you need to use DB2 products for Linux, UNIX, and Windows operating systems such as DB2 Universal Database, DB2 Connect, DB2 Information Integrator, and DB2 Query Patroller.

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

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

Prerequisites:

Before you invoke the DB2 Information Center:

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

Procedure:

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

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

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

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

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

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

Related concepts:

- "DB2 Information Center" on page 136
- "DB2 Information Center installation scenarios" on page 137

Related tasks:

- "Displaying topics in your preferred language in the DB2 Information Center" on page 146
- "Invoking contextual help from a DB2 tool" on page 153
- "Updating the DB2 Information Center installed on your computer or intranet server" on page 145
- "Invoking command help from the command line processor" on page 154
- "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 137

Related tasks:

- "Invoking the DB2 Information Center" on page 144
- "Installing the DB2 Information Center using the DB2 Setup wizard (UNIX)" on page 140
- "Installing the DB2 Information Center using the DB2 Setup wizard (Windows)" on page 142

Displaying topics in your preferred language in the DB2 Information Center

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

Procedure:

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

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

     Note: Adding a language does not guarantee that the computer has the fonts required to display the topics in the preferred language.
   - To move a language to the top of the list, select the language and click the **Move Up** button until the language is first in the list of languages.
3. Refresh the page to display the DB2 Information Center in your preferred language.

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

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

Related concepts:

- "DB2 Information Center" on page 136

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 7. 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 8. 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 9. 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 9. 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 10. 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 11. 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 12. 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 13. 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 14. Optional component information

Name	Form number	PDF file name
IBM DB2 Cube Views Guide and Reference	SC18–7298	db2aax81

Table 14. 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 15. 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 135

Related tasks:

- "Printing DB2 books from PDF files" on page 152
- "Ordering printed DB2 books" on page 152
- "Invoking contextual help from a DB2 tool" on page 153

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 136

Related tasks:

- "Mounting the CD-ROM (AIX)" on page 121
- "Mounting the CD-ROM (HP-UX)" on page 122
- "Mounting the CD-ROM (Linux)" on page 122
- "Ordering printed DB2 books" on page 152
- "Mounting the CD-ROM (Solaris Operating Environment)" on page 123

Related reference:

- "DB2 PDF and printed documentation" on page 147

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 152

Related reference:

• "DB2 PDF and printed documentation" on page 147

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 144
- "Invoking message help from the command line processor" on page 154
- "Invoking command help from the command line processor" on page 154
- "Invoking SQL state help from the command line processor" on page 155
- "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 153
- "Invoking the DB2 Information Center" on page 144
- "Invoking message help from the command line processor" on page 154
- "Invoking SQL state help from the command line processor" on page 155

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 144
- "Invoking message help from the command line processor" on page 154
- "Invoking command help from the command line processor" on page 154

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 136
- “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 158.
- DB2 documentation is provided in an accessible format. For more information, see "Accessible documentation" on page 158.

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 158

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 157

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/.

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