IBM [®] DB2[®] Warehouse Manager

Installation Guide

Version 7

IBM ® DB2 ® Warehouse Manager

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Before using this information and the product it supports, be sure to read the general information under "Notices" on page 73.

Contents

About this book

This book provides the information that you need to install the following Warehouse Manager components: Information Catalog Manager, warehouse agents, and warehouse transformers. Be sure to read the readme file that is included with DB2 Universal Database for important updates to product information.

Who should read this book

You should read this book if you are an Information Catalog Manager administrator or if you are responsible for installing Warehouse Manager components on workstations. You should be familiar with database concepts, client/server architectures, TCP/IP connectivity, and networking concepts.

Prerequisite publications

The following publications contain information that you need before and during the installation of Warehouse Manager components:

- *Data Warehouse Center Administration Guide*
- *Information Catalog Manager Administration Guide*
- *Information Catalog Manager User's Guide*
- *Information Catalog Manager Programming Guide and Reference*
- *Message Reference*

See "Appendix D. Using the DB2 Library" on page 55 for information about printing or ordering these publications.

How to send your comments

Your feedback helps IBM to provide quality information. Please send any comments that you have about this book or other Information Catalog Manager publications. Send your comments from the Web. Visit the Web site at http://www.software.ibm.com/data/vw/

The Web site has a feedback page that you can use to enter and send comments.

Chapter 1. Overview of the Warehouse Manager components

The Warehouse Manager package contains components that enhance the warehousing capability provided by the Data Warehouse Center, which is a part of DB2 Universal Database. Before you install any Warehouse Manager components, you should be familiar with the function each component provides, and the hardware and software prerequisites for each component.

The Warehouse Manager package includes the following components:
- Information Catalog Manager
- Warehouse agents
- Warehouse transformers
- Query Patroller

Installation and usage information about Query Patroller can be found in the *DB2 Query Patroller Installation Guide*, *DB2 Query Patroller User's Guide*, and *DB2 Query Patroller Administration Guide*. Use the Query Patroller installation CD in the Warehouse Manager package to install Query Patroller.

Information Catalog Manager

The Data Warehouse Center is a metadata-driven system. Metadata, or information about your data, provides administrators and business users with descriptions of the data that is stored in the data warehouse. You can create information catalogs that describe business metadata in business terms, organize the metadata into subject areas, and customize it to your workgroup or enterprise's needs. Then, you can use the Information Catalog Manager to provide a graphical representation of data relationships and object definitions for warehouse steps.

The Information Catalog Manager provides a powerful, business-oriented solution to help users locate, understand, and access enterprise data. It enables business users to view aggregations, histories, data derivations, data sources, and descriptions of data.

The Information Catalog Manager consists of the following components: Information Catalog Manager Tools, Information Catalog Administrator, Information Catalog User, and the Information Catalog Manager for the Web.

Warehouse Manager overview

The Information Catalog Manager Tools component includes the Information Catalog Administrator component and the information catalog initialization utility. You must run the information catalog initialization utility to create your information catalogs.

You can use the Information Catalog Administrator component to enable metadata exchange and to keep your information catalog current with the warehouse control database. The Information Catalog Administrator component includes utilities that extract descriptive data from many popular data and information sources, such as Oracle and Microsoft® Excel. The Information Catalog Administrator component also includes a sample information catalog with data. See the *Information Catalog Manager Administration Guide* for more information about extractors and the sample information catalog.

After you install the Information Catalog Administrator component, you can access functions for both the Information Catalog Administrator component and the Information Catalog User component. The Information Catalog User component helps the business user understand the warehouse data through a browse-and-search interface. Using this interface, business users can launch any program or command file required to display the data or business object.

You can use the Information Catalog Manager for the Web to access information catalogs and obtain descriptions of available data, including format, currency, owner, and location. From any Web browser, users can run available helper applications to view data.

Warehouse agents

Warehouse agents manage the flow of data between the data sources and the target warehouses. Warehouse agents are available for the Solaris Operating Environment and on Windows NT®, Windows 2000, AIX®, OS/2®, OS/390®, and AS/400® operating systems. Warehouse agents use Open Database Connectivity (ODBC) drivers or DB2 CLI to communicate with different databases. Several warehouse agents can handle the transfer of data between sources and target warehouses.

Warehouse transformers

Warehouse transformers are stored procedures and user-defined functions that you can use to transform data in a warehouse step. In the Data Warehouse Center, you use steps to create and maintain a warehouse. Steps control how data is transformed into meaningful business information. You can use warehouse transformers in a step to clean, invert, and pivot data; generate primary keys and period tables; and calculate various statistics.

Chapter 2. Software requirements

This chapter describes the software requirements for the Warehouse Manager components.

Warehouse Manager components require a Version 7 DB2 client or DB2 server, depending on the component. Unless otherwise mentioned, the Version 7 DB2 client is installed when you install Warehouse Manager components, if the DB2 client is not already installed. See the *Quick Beginnings* for your operating system for hardware and software requirements for DB2 clients and DB2 servers.

To establish communication between Data Warehouse Center components and Warehouse Manager components, you need to install connectivity software. See the *Quick Beginnings* books for information about the communication protocols that can be used between DB2 clients and DB2 servers.

Information Catalog Manager components

This section describes the software requirements for the following components: Information Catalog Manager Tools, Information Catalog Administrator, Information Catalog User, and the Information Catalog Manager for the Web.

Information Catalog Manager Tools component

To install the Information Catalog Manager Tools component, you need 50 MB of fixed disk space.

Information Catalog Administrator component

To install the Information Catalog Administrator component, you need 47 MB of fixed disk space.

The Information Catalog Administrator component requires one of the Windows 32-bit operating systems (Windows NT, Windows 95, Windows 98, or Windows 2000).

Information catalogs can be hosted on DB2 Universal Database Version 5.2 (including fixpacks or CSDs) for OS/2, AIX, or Windows NT, if those information catalogs are not included in the same database as the warehouse control database.

Software requirements

Information catalogs can also be hosted on Version 6.1 or later of the following DB2 family databases:

- DB2 Universal Database for Windows NT
- DB2 Universal Database for AIX
- DB2 Universal Database for OS/2
- DB2 Universal Database for OS/390
- DB2 Universal Database for AS/400
- DB2 Universal Database for Solaris Operating Environment

If your information catalog is located remotely in an OS/390 or an AS/400 database, you must install DB2 Connect.

You also need a connection to your LAN.

Information Catalog User component

To install the Information Catalog User component, you need 26 MB of fixed disk space.

The Information Catalog User component requires one of the Windows 32-bit operating systems (Windows NT, Windows 95, Windows 98, or Windows 2000).

Information Catalog Manager for the Web

To install the Information Catalog Manager for the Web, you need 500 KB of fixed disk space.

The following products are required on the Web server onto which you will install the Information Catalog Manager for the Web:

- Web server software
- Net.Data® Version 2 or later (and the latest fixpack for languages other than English)
- Perl 5 Interpreter

  You can download Perl executable files for many operating systems from http://www.perl.com/reference/query.cgi?binaries

You must also install the appropriate software to establish connectivity from your Web server to the workstation where your information catalogs reside.

The Web server can be the same workstation as the database server, or a different workstation.

To access the Information Catalog Manager for the Web, the client workstation must have a Web browser that is enabled for HTML 3.2, such as Netscape Navigator 3.0 or Microsoft Internet Explorer 3.0.

Warehouse agent sites

The Warehouse Manager supports the following operating systems as agent sites:

- Microsoft Windows NT Workstation or Windows NT Server Version 4.0 with Service Pack 5 or later.
- Microsoft Windows 2000.
- IBM AIX Version 4.2 or later.
- IBM OS/2 Warp Version 4 or later.
- IBM OS/390 Version 2.6 or later.
- IBM AS/400 Version 4.2 or later, with any prerequisite software fixpacks and PTFs. For a current maintenance list, see the readme file. To determine what software is installed on your AS/400 workstation, enter DSPSFWRSC at an AS/400 command prompt.
- Solaris Operating Environment Version 2.6 or later.

For AS/400, you must have a user ID that has ALLOBJ and JOBCTL authority. This level of authority is required for both the AS/400 RSTLICPGM command and the STRVWD and ENDVWD commands. Also, the user profile that starts the warehouse agent daemon should also have *PGMR (bind capability) as the User Class.

Fixed disk space

Warehouse agents on AIX, OS/2, Windows NT, and the Solaris Operating Environment require 50 MB each of fixed disk space.

The OS/390 warehouse agent requires approximately 95 MB of HFS space.

Fixed disk space is not applicable to warehouse agents on AS/400.

Accessing non-DB2 source databases using ODBC

You can access several non-DB2 warehouse sources from agent sites by using ODBC drivers. Data Warehouse Center ODBC drivers and driver manager for Windows NT, OS/2, AIX, and the Solaris Operating Environment are installed when you install a warehouse agent on one of these operating systems. The Data Warehouse Center ODBC drivers and driver manager are the DataDirect Connect ODBC drivers and driver manager provided by Merant.

To avoid errors, do not configure Informix databases with Oracle or Sybase databases on the same workstation.

For information about setting up database client software, see the *Data Warehouse Center Administration Guide*.

Software requirements

Ensuring that UNICODE support is available

If you are using an OS/390, AIX, or Solaris Operating Environment warehouse agent, you must ensure that UNICODE support is available on your system.

Verifying UNICODE support on OS/390

Iconv supports conversion to and from UCS-2 in all releases of OS/390 that support the OS/390 warehouse agent.

Verifying UNICODE support on AIX

To verify that UNICODE support is available on AIX, enter:

```
lslpp -al | grep -i iconv
```

Ensure that the following filesets are listed:

bos.iconv.ucs.com
>   UNICODE base converters

bos.iconv.ucs.pc
>   UNICODE converters for PC code sets

You must also install the language converter for your language. For more information, go to http://www.austin.ibm.com/resource/aix_resource/Pubs or see the *AIX Packaging Guide for LPP Installation*.

Verifying UNICODE support on the Solaris Operating Environment

To verify UNICODE support on the Solaris Operating Environment, enter:

```
pkginfo | grep -i iconv
```

If UNICODE support is available, you should see the following package:

```
SUNWuiu8 -- Iconv modules for UTF-8 Locale
```

If you are using a national language version of the warehouse agent, ensure that you installed the proper code set and iconv module.

Establishing ODBC connections for the AIX and Solaris Operating Environment warehouse agents

When you install the AIX or Solaris Operating Environment warehouse agent, two ODBC connection types are available:

DB2 CLI
>   This connection type accesses the following sources:
>   - DB2 family
>   - Heterogeneous data sources through DataJoiner®, including:
>   - Oracle
>   - Sybase

- Microsoft SQL Server
- Informix
- VSAM
- IMS™

If you use the DB2 CLI connection type, you must have DataJoiner for heterogeneous data access. VSAM and IMS source access also requires DataJoiner Classic Connect.

Merant-enabled ODBC

This connection type accesses the following sources:
- DB2 family
- Oracle
- Sybase
- Microsoft SQL Server
- Informix
- Data file

Both connection types support the following warehouse target databases:
- DB2 Universal Database Enterprise Edition
- DB2 Universal Database Enterprise - Extended Edition
- DB2 Universal Database for AS/400
- DB2 for MVS/ESA™
- DataJoiner
- Oracle (through DataJoiner)
- Sybase (through DataJoiner)
- Informix (through DataJoiner)

Both connection types include executable files.

Warehouse transformers

Warehouse transformers are stored procedures and user-defined functions that you can use to transform data in a warehouse step. To use warehouse transformers, you must install them at the agent site and enable them for use at the target warehouse.

For details on installing and enabling warehouse transformers, see "Chapter 6. Preparing for and installing warehouse transformers" on page 43.

The Java Developer's Kit (JDK) Version 1.1.8 or later must be installed on the database where you plan to use the warehouse transformers. The DB2 Application Development Client includes the JDK for AIX, OS/2, and

Software requirements

Windows NT. For information about obtaining the JDK for other operating systems, see "Chapter 6. Preparing for and installing warehouse transformers" on page 43.

Chapter 3. Installing Information Catalog Manager components

This chapter describes the installation process for the Information Catalog Manager Tools component, the Information Catalog Administrator component, the Information Catalog User component, and the Information Catalog Manager for the Web.

You need to install the Information Catalog Manager Tools component, which includes the Information Catalog Administrator component, on Windows NT workstations that your administrators will use to create an information catalog or to migrate existing information catalogs. Then, you can choose to install the Information Catalog Administrator component or the Information Catalog User component on additional workstations running any Windows 32-bit operating systems (Windows NT, Windows 95, Windows 98, or Windows 2000). These workstations must have connectivity to the workstation where your DB2 Universal Database is located.

After you install the Information Catalog Administrator component (separately from the Information Catalog Manager Tools component) or the Information Catalog User component, you must register the server node and any remote information catalogs. See the *Information Catalog Manager User's Guide* for more information.

You can use the Information Catalog Manager for the Web to access metadata in your information catalogs from any operating system that supports DB2 Universal Database and Net.Data. The workstation where you install the Information Catalog Manager for the Web must also have Net.Data Live Connection Manager and Net.Data Perl Language Environment (LE) installed.

Installing the Information Catalog Manager Tools component

The Information Catalog Manager Tools component includes the Information Catalog Administrator component and the information catalog initialization utility.

Installing the Information Catalog Manager Tools component

You can install the Information Catalog Manager Tools component on a Windows NT or Windows 2000 workstation that has connectivity to your DB2 Universal Database.

Installing Information Catalog Manager components

To install the Information Catalog Manager Tools component:

1. Insert the Warehouse Manager CD-ROM into your CD-ROM drive. The launchpad opens.
2. Click **Install** from the launchpad.
3. In the Select Products window, ensure that the **DB2 Warehouse Manager** check box is selected, then click **Next**.
4. In the Select Type of Install window, click **Custom**, then click **Next**.
5. In the Select DB2 Components window, clear all the check boxes except the **Information Catalog Manager Tools** component.
6. Click **Next** to continue the installation program. The installation program completes.
7. If you are installing the Information Catalog Manager Tools component on AS/400 or OS/390, locate the files `createic.bak` and `flgnmwcr.bak` and rename them to `createic.exe` and `flgnmwcr.exe`, respectively.
8. Run the information catalog initialization utility. See "Running the information catalog initialization utility" for more information.

Running the information catalog initialization utility

Before you can use the Information Catalog Administrator component, you must create an information catalog or migrate existing information catalogs. You do this by running the information catalog initialization utility.

To run the information catalog initialization utility:

1. Create a database in DB2 Universal Database, or locate an existing database that contains an information catalog.
2. Click **Start → Programs → IBM DB2 → Information Catalog Manager → Initialize Information Catalog**. The Initialize Information Catalog window opens.
3. Select a type of information catalog, then click **OK**. The Define Catalog on DB2 UDB for Windows NT window opens.
4. Type the necessary information, then click **Define**. The Connect to Information Catalog window opens.
5. Type the user ID and password for the information catalog that you specified, then click **Connect**.

Installing the Information Catalog Administrator component

To install the Information Catalog Administrator component (separately from the Information Catalog Manager Tools component) on any Windows 32-bit operating systems (Windows NT, Windows 95, Windows 98, or Windows 2000):

1. Insert the DB2 Universal Database CD-ROM into your CD-ROM drive. The launchpad opens.

2. Click **Install** from the launchpad.

3. In the Select Products window, select either the **DB2 Enterprise Edition Server** check box (or the **DB2 Enterprise - Extended Edition Server** check box, if appropriate) or the **DB2 Administrative Client** check box, then click **Next**.

4. In the Select Type of Install window, click **Custom**, then click **Next**.

5. In the Select DB2 Components window, select the check box for the **Data Warehousing tools** component, then click **Subcomponents**.

6. In the Select Subcomponents window, select the check box for the **Information Catalog Administrator** subcomponent.

7. Click **Continue** to return to the Select DB2 Components window, then click **Next** to continue the installation program.

8. When the installation program completes, install the Information Catalog Manager Tools component from the Warehouse Manager CD-ROM and run the information catalog initialization utility (if you have not done so already). See "Installing the Information Catalog Manager Tools component" on page 9 for more information.

Installing the Information Catalog User component

To install the Information Catalog User component on any Windows 32-bit operating systems (Windows NT, Windows 95, Windows 98, or Windows 2000):

1. Insert the DB2 Universal Database CD-ROM into your CD-ROM drive. The launchpad opens.

2. Click **Install** from the launchpad.

3. In the Select Products window, select the **DB2 Administrative Client** check box, clear the **DB2 Enterprise Edition Server** check box (or the **DB2 Enterprise - Extended Edition Server** check box, if appropriate), then click **Next**.

4. In the Select Type of Install window, click **Custom**, then click **Next**.

5. In the Select DB2 Components window, clear all the check boxes except the **Data Warehousing Tools** component, then click **Subcomponents**.

6. In the Select Subcomponents window, select the check box for the **Information Catalog User** subcomponent.

7. Click **Continue** to continue the installation program.

8. When the installation program completes, register the server node and any remote information catalogs. See the *Information Catalog Manager User's Guide* for more information.

Installing the Information Catalog Manager for the Web

You can install the Information Catalog Manager for the Web on any operating system that supports DB2 Universal Database and Net.Data. The operating system must also support Net.Data Live Connection Manager and Perl LE. These operating systems include Windows NT, OS/2, AIX, and the Solaris Operating Environment.

For information about setting MIME types to launch programs, see the *Information Catalog Manager Administration Guide*.

Security considerations

You must enable authentication on the Web server. After you enable authentication, each user must enter a user ID and password to access the Information Catalog Manager for the Web. Because the Net.Data Live Connection Manager manages the database connections, users do not need to know the database user ID and password.

Depending on the sensitivity of the information in the information catalog, you need to implement the appropriate level of security for your Web server. For additional security beyond the authentication function in the Web server, you can install security packages with encryption and keys. For information about advanced Web server security, see the documentation for IBM SecureWay® (part of the Websphere family).

Installing the Information Catalog Manager for the Web on a Windows NT Websphere IBM HTTP Web server

Before you begin to install the Information Catalog Manager for the Web:
1. Make sure that the IBM HTTP Web server is installed.
2. Check the Web server port number. If the Web server has a port other than 80 (the usual default), append the port number to the host name in the Web address when you configure the domain name. For example:
   `http://hostname:portnumber/`
3. Create a directory named `icm` on the Web server to contain the Net.Data executable files (for example, `\IBM HTTP Server\icm`). Point to this directory as the Net.Data cgi-bin directory. Place the executable file `db2www.exe` in this directory.

To install the Information Catalog Manager for the Web:
1. Install the Information Catalog Manager for the Web files onto your Web server:
   a. Insert the DB2 Universal Database CD-ROM into the CD-ROM drive on the Web server workstation. The launchpad opens.
   b. Click **Install** from the launchpad.

    c. In the Select Products window, select the **DB2 Administration Client** check box, then click **Next**.

    d. In the Select Type of Install window, click **Custom**, then click **Next**.

    e. In the Select DB2 Components window, clear the check boxes for all components except the **Data Warehousing Tools** component.

    f. Click **Subcomponents**.

    g. In the Select Subcomponents window, ensure that the check box for the **Information Catalog Manager for the Web** is selected and that all other check boxes are cleared.

    h. Click **Continue**.

    i. In the Select Components window, clear the check boxes for the **Communication Protocols** component, the **Application Development Interfaces** component, and the **Administration and Configuration Tools** component. Make sure that the **Data Warehousing Tools** component remains selected.

    j. Click **Next** to continue with the installation. The installation program creates files in the following directories:

        • `\sqllib\icmweb\macro`

        • `\sqllib\icmweb\html`

        • `\sqllib\icmweb\icons`

2. Copy all the *.mac and *.hti files from the `\sqllib\icmweb\macro` directory to the Net.Data macro directory (usually `\db2www\macro`).

3. Copy all the *.htm and *.gif files from the `\sqllib\icmweb\html` to the document root directory on the Web server (usually `\IBM HTTP Server\htdocs`).

4. Copy all the dg*.gif files from the `\sqllib\icmweb\icons` directory to the image directory on the Web server (usually `\IBM HTTP Server\icons`). This directory will be the value for the image_path variable in the `dg_config.hti` file.

5. Edit the `dg_config.hti` file to include the directories where you copied the files and the server name. The macro_path variable uses the alias that is set up on your Web server to control user access. The `dg_config.hti` file should look like this:

```
%DEFINE {
        server_name="http://winntserver.ibm.com/"
        image_path="$(server_name)icons/"
        macro_path="$(server_name)icm/db2www.exe/"
        help_path="$(server_name)"
%}
```

6. Add a link to an existing Web page, or create a Web page with a link to the Information Catalog Manager for the Web home page.

    To create a Web page, edit the file `icm.html` and add the following lines:

Installing the Information Catalog Manager for the Web

```
<html><head>
<title>Information Catalog Manager for the Web</title>
</head>
<body bgcolor=white>
<p><a href=/icm/db2www.exe/dg_home.mac/Logon>
Information Catalog Manager for the Web</a>
</body>
</html>
```

Place the file in the HTML default directory (usually \IBM HTTP Server\htdocs).

7. Enable basic user authentication on your Web server for each Information Catalog Manager for the Web user.

When users access the Information Catalog Manager for the Web home page, they are prompted for their user ID and password. When they enter these values, the HTTP environment variable REMOTE_USER is set. This variable is used to prompt users for their user ID and password and to create, update, and delete comments.

a. Set up an alias.

Create an alias named icm for the directory where the Net.Data CGI program DB2WWW is located. The macro_path variable that is defined in the dg_config.hti file uses this alias:

```
macro_path="$(server_name)icm/db2www.exe/"
```

The alias directory icm should have the user ID and password authentication enabled. To enable authentication, edit the httpd.conf file. This file is usually located in \IBM HTTP Server\conf directory. Add a ScriptAlias directive, like this:

```
ScriptAlias /icm/ "c:/IBM HTTP Server/icm/"
```

Also make sure that the httpd.conf file contains a directive that defines the access file name, like this:

```
AccessFileName .htaccess
```

b. Create a password file that will contain the authorized user ID and password for each Information Catalog Manager for the Web user. Use the htpasswd command to create and edit the password file.

For example, to create the password file c:/IBM HTTP Server/icmweb.pwd for the user ID ADMIN, enter the following command:

```
htpasswd -c c:/IBM HTTP Server/icmweb.pwd ADMIN
```

Specifying the -c option ensures that you enter a password when you create a password file.

When you are prompted for the password, enter ADMINPW.

To add another user ID, ADMIN2, with the password ADMINPW2, enter the following command:

```
htpasswd c:/IBM HTTP Server/icmweb.pwd ADMIN2 ADMINPW2
```

The user ID must be 8 characters or less in length, because it is stored in the information catalog tables when a comment is created.

c. Restrict access to the \IBM HTTP Server\icm\ directory.

1) To require authentication when users access the \IBM HTTP Server\icm\ directory, edit the `httpd.conf` file. This file is usually located in the \IBM HTTP Server\conf directory. Add a directory directive for the \IBM HTTP Server\icm directory, like this:

```
<Directory "c:/IBM HTTP Server/icm">
AllowOverride AuthConfig
Options None
</Directory>
```

2) Create a file that is named `.htaccess` in the \IBM HTTP Server\icm directory with the AuthName, AuthType, AuthUserFile, and require directives that are set like this:

```
AuthName ICMWeb
AuthType Basic
AuthUserFile "c:/IBM HTTP Server/icmweb.pwd"
require valid-user
```

Because some editors require a file name and a file extension, you might need to create the file with the name `htaccess.txt` and rename it to `.htaccess` after you save it.

You must stop and restart the Web server for these changes to take effect.

Note: This is one way that you can enable authentication on an IBM HTTP Web server. You can set up more complex directory structures, user groups, and permissions, if necessary, along with additional security packages. More information about setting up basic authentication is available in the IBM HTTP Web server documentation. For information about advanced Web server security, see the documentation for IBM SecureWay (part of the Websphere family).

8. Set up Net.Data to run Live Connection Manager for the databases that are used by the Information Catalog Manager for the Web.

a. Edit the Net.Data file \db2www\connect\dtwcm.cnf, and add a CLIETTE DTW_SQL block for each database that the Information Catalog Manager for the Web will use.

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To add the database ICMSAMP with a minimum of one process, a maximum of three processes, starting with private port number 7100, and starting with public port number 7110, add the following block:

```
CLIETTE DTW_SQL:ICMSAMP{
MIN_PROCESS=1
MAX_PROCESS=3
START_PRIVATE_PORT=7100
START_PUBLIC_PORT=7110
EXEC_NAME=./dtwcdb2
DATABASE=ICMSAMP
BINDFILE=NOT_USED
LOGIN=*USE_DEFAULT
PASSWORD=*USE_DEFAULT
}
```

Six ports (7100, 7101, 7102, 7110, 7111, 7112) are allocated to the ICMSAMP database. Make sure that these ports are free and not in use by another application. You must use different port number ranges for each CLIETTE DTW_SQL block. See the *Net.Data Administration and Programming Guide* for more information.

b. Set the LOGIN value to the user ID for the database, and set the PASSWORD value to the password for the database. If the database is local, you can use *USE_DEFAULT.

c. Set up the Net.Data initialization file to use Live Connection Manager for the SQL calls. Edit the DB2WWW.INI file in the document root directory on the Web server. Make sure that the ENVIRONMENT DTW_SQL statement ends with CLIETTE "DTW_SQL:$(DATABASE)".

For example:

```
ENVIRONMENT (DTW_SQL) DTWSQL(IN DATABASE,LOGIN,PASSWORD,
    TRANSACTION_SCOPE,SHOWSQL,ALIGN,START_ROW_NUM)
    CLIETTE "DTW_SQL:$(DATABASE)"
```

d. Start Live Connection Manager by using the executable file /DB2WWW/CONNECT/dtwcm.exe. Live Connection Manager must be running so that the Information Catalog Manager for the Web can access the databases. After Live Connection Manager is started, you can minimize the Live Connection Manager window on the Web server. See the *Net.Data Administration and Programming Guide* for more information.

Follow the steps in "Post-installation customization" on page 25 before using the Information Catalog Manager for the Web.

Installing the Information Catalog Manager for the Web on an AIX Websphere IBM HTTP Web server

Before you begin to install the Information Catalog Manager for the Web:

1. Make sure that IBM HTTP Web server is installed.

2. Check the Web server port number. If the Web server has a port other than 80 (the usual default), append the port number to the host name in the Web address when you configure the domain name. For example:
`http://hostname:portnumber/`

3. Create a directory named `icm` on the Web server to contain the Net.Data executable files (for example, /usr/lpp/HTTPServer/share/icm/). Point to this directory as the Net.Data cgi-bin directory. Place the executable file db2www (usually found in the /usr/lpp/internet/server_root/cgi-bin directory) into this directory.

4. Copy the `db2www.ini` file (usually found in the /usr/lpp/internet/server_root/pub/ directory) to the document root directory (usually /usr/lpp/HTTPServer/share/htdocs). Edit the db2www.ini file and update the DB2 instance and path:

```
DB2INSTANCE db2
MACRO_PATH /usr/lpp/internet/db2www/macro
INCLUDE_PATH /usr/lpp/internet/db2www/macro
HTML_PATH /usr/lpp/HTTPServer/share/htdocs
EXEC_PATH /usr/lpp/internet/db2www/macro
DTW_LOG_DIR /usr/lpp/internet/db2www/logs
```

To install the Information Catalog Manager for the Web:

1. Log in as a user with root authority.

2. Insert and mount the DB2 Universal Database CD-ROM. For information about mounting a CD-ROM, see *DB2 for UNIX Quick Beginnings*.

3. Change to the directory where the CD-ROM is mounted by entering `cd /cdrom`, where *cdrom* is the mount point of your product CD-ROM.

4. Enter the `./db2setup` command. After a few moments, the Install DB2 V7 window opens.

5. Select the products that you want to install and are licensed to install. Press the Tab key to change the highlighted option. Press the Enter key to select or deselect an option. When you select an option, an asterisk is displayed next to it.

   To select or deselect optional components for a DB2 product that you want to install, select the **Customize** option. To go back to a previous window at any time, select the **Cancel** option.

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

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

   The installation program creates files in the following directories:

   - `\sqllib\icmweb\macro`
   - `\sqllib\icmweb\html`
   - `\sqllib\icmweb\icons`

Installing the Information Catalog Manager for the Web

7. Copy all the *.mac and *.hti files from the \sqllib\icmweb\macro directory on the Windows NT workstation to the Net.Data macro directory on the Web server (usually /usr/lpp/internet/db2www/macro. To set the permissions on these files to public read, enter chmod ugo+r *.

8. Copy all the *.htm and *.gif files from the \sqllib\icmweb\html directory on the Windows NT workstation to the document root directory on the Web server (usually /usr/lpp/HTTPServer/share/htdocs). To set the permissions on these files to public read, enter chmod ugo+r *.

9. Copy all the dg*.gif files from the \sqllib\icmweb\icons directory on the Windows NT workstation to the image directory on the Web server (usually /usr/lpp/HTTPServer/share/icons). This directory will be the value for the image_path variable in the dg_config.hti file. To set the permissions on these files to public read, enter chmod ugo+r *.

10. Edit the dg_config.hti file to include the directories where you copied the files and the server name. The macro_path variable uses the alias that is set up on your Web server to control user access. The dg_config.hti file should look like this:

```
%DEFINE {
         server_name="http://aixserver.ibm.com/"
         image_path="$(server_name)icons/"
         macro_path="$(server_name)icm/db2www/"
         help_path="$(server_name)"
%}
```

11. Add a link to an existing Web page, or create a Web page with a link to the Information Catalog Manager for the Web home page.

   To create a Web page, edit the file icm.html and add the following lines:

```
<html><head>
<title>Information Catalog Manager for the Web</title>
</head>
<body bgcolor=white>
<p><a href=/icm/db2www/dg_home.mac/Logon>
Information Catalog Manager for the Web</a>
</body>
</html>
```

   Place the file in the document root directory (usually /usr/lpp/HTTPServer/share/htdocs).

12. Enable basic user authentication on your Web server for each Information Catalog Manager for the Web user.

   When users access the Information Catalog Manager for the Web home page, they are prompted for their user ID and password. When they enter these values, the HTTP environment variable REMOTE_USER is set. This variable is used to prompt users for their user ID and password and to create, update, and delete comments.

a. Set up an alias.

Create an alias named `icm` for the directory where the Net.Data CGI program DB2WWW is located. The macro_path variable that is defined in the `dg_config.hti` file uses this alias:

```
macro_path="$(server_name)icm/db2www/"
```

The alias directory `icm` should have the user ID and password authentication enabled. To enable authentication, edit the `httpd.conf` file. This file is usually located in the `/usr/lpp/HTTPServer/etc/` directory. Add a ScriptAlias directive, like this:

```
ScriptAlias /icm/ /usr/lpp/HTTPServer/share/icm
```

Also make sure that the `httpd.conf` file contains a directive that defines the access file name, like this:

```
AccessFileName .htaccess
```

b. Create a password file that will contain the authorized user ID and password for each Information Catalog Manager for the Web user. Use the htpasswd command to create and edit the password file.

For example, to create the password file `/usr/lpp/HTTPServer/share/icmweb.pwd` for the user ID ADMIN, enter the following command:

```
htpasswd -c /usr/lpp/HTTPServer/share/icmweb.pwd ADMIN
```

Specifying the `-c` option ensures that you enter a password when you create a password file.

When you are prompted for the password, enter ADMINPW.

To add another user ID, ADMIN2, with the password ADMINPW2, enter the following command:

```
htpasswd /usr/lpp/HTTPServer/share/icmweb.pwd ADMIN2 ADMINPW2
```

The user ID must be 8 characters or less in length, because it is stored in the information catalog tables when a comment is created.

c. Restrict access to the `/usr/lpp/HTTPServer/share/icm` directory.

1) To require authentication when users access the `/usr/lpp/HTTPServer/share/icm` directory, edit the `httpd.conf` file. This file is usually located in the `/usr/lpp/HTTPServer/etc/` directory. Add a directory directive for the `/usr/lpp/HTTPServer/share/icm` directory, like this:

```
<Directory /usr/lpp/HTTPServer/share/icm>
AllowOverride AuthConfig
Options None
</Directory>
```

Installing the Information Catalog Manager for the Web

    2) Create a file that is named .htaccess in the
/usr/lpp/HTTPServer/share/icm directory with the AuthName,
AuthType, AuthUserFile, and require directives that are set like
this:

```
AuthName ICMWeb
AuthType Basic
AuthUserFile /usr/lpp/HTTPServer/share/icmweb.pwd
require valid-user
```

    Because some editors require a file name and a file extension, you
might need to create the file with the name htaccess.txt and
rename it to .htaccess after you save it.

You must stop and restart the Web server for these changes to take
effect.

Note: This is one way that you can enable authentication on an IBM
HTTP Web server. You can set up more complex directory
structures, user groups, and permissions, if necessary, along
with additional security packages. More information about
setting up basic authentication is available in the IBM HTTP
Web server documentation. For information about advanced
Web server security, see the documentation for IBM SecureWay
(part of the Websphere family).

13. Set up Net.Data to run Live Connection Manager for the databases that
are used by the Information Catalog Manager for the Web.

  a. Edit the Net.Data file /usr/lpp/internet/db2www/db2/dtwcm.cnf, and
add a CLIETTE DTW_SQL block for each database that the
Information Catalog Manager for the Web will use.

To add the database ICMSAMP with a minimum of one process, a
maximum of three processes, starting with private port number 7100,
and starting with public port number 7110, add the following block:

```
CLIETTE DTW_SQL:ICMSAMP{
MIN_PROCESS=1
MAX_PROCESS=3
START_PRIVATE_PORT=7100
START_PUBLIC_PORT=7110
EXEC_NAME=./dtwcdb2
DATABASE=ICMSAMP
BINDFILE=NOT_USED
LOGIN=*USE_DEFAULT
PASSWORD=*USE_DEFAULT
}
```

Six ports (7100, 7101, 7102, 7110, 7111, 7112) are allocated to the
ICMSAMP database. Make sure that these ports are free and not in
use by another application. You must use different port number

ranges for each CLIETTE DTW_SQL block. See the *Net.Data Administration and Programming Guide* for more information.

b. Set the LOGIN value to the user ID for the database, and set the PASSWORD value to the password for the database. If the database is local, you can use `*USE_DEFAULT`.

c. Set up the Net.Data initialization file to use Live Connection Manager for the SQL calls. Edit the `DB2WWW.INI` file in the document root directory on the Web server (usually `/usr/lpp/HTTPServer/share/htdocs`). Make sure that the `ENVIRONMENT DTW_SQL` statement ends with `CLIETTE "DTW_SQL:$(DATABASE)"`.

For example:

```
ENVIRONMENT (DTW_SQL) DTWSQL(IN DATABASE,LOGIN,PASSWORD,
    TRANSACTION_SCOPE,SHOWSQL,ALIGN,START_ROW_NUM)
    CLIETTE "DTW_SQL:$(DATABASE)"
```

d. Start Live Connection Manager by using the executable file `/usr/lpp/internet/db2www/db2/dtwcm`. Live Connection Manager must be running so that the Information Catalog Manager for the Web can access data from the databases. After Live Connection Manager is started, you can minimize the Live Connection Manager window on the Web server. See the *Net.Data Administration and Programming Guide* for more information.

Note: Live Connection Manager must be started with the DB2 instance that is specified in the `db2www.ini` file. The DB2 environment must be set up before you run the `dtwcm` executable file.

14. Log out.

Follow the steps in "Post-installation customization" on page 25 before using the Information Catalog Manager for the Web.

Installing the Information Catalog Manager for the Web on any Web server

Before you begin to install the Information Catalog Manager for the Web:

1. Make sure that the Web server software is installed on the Web server.

2. If the Web server has a port number other than 80 (the usual default), append the port number to the host name in the Web address: `http://hostname:portnumber/`

3. When you install Net.Data, you are prompted for the Web server's CGI-BIN and HTML directories. Make sure that you specify the Web server's directory where the CGI programs are run, and the document root directory for HTML files. The Net.Data CGI program db2www is placed in this CGI-BIN directory. The Net.Data `DB2WWW.INI` file is placed in the document root directory.

Installing the Information Catalog Manager for the Web

To install the Information Catalog Manager for the Web:

1. Install the Information Catalog Manager for the Web files onto your Web server or Windows NT workstation:

   a. Insert the DB2 Universal Database CD-ROM into the CD-ROM drive on the Web server workstation. The launchpad opens.

   b. Click **Install** from the launchpad.

   c. In the Select Products window, select the **DB2 Administration Client** check box, then click **Next**.

   d. In the Select Type of Install window, click **Custom**, then click **Next**.

   e. In the Select DB2 Components window, clear the check boxes for all components except the **Data Warehousing Tools** component.

   f. Click **Subcomponents**.

   g. In the Select Subcomponents window, ensure that the check box for the **Information Catalog Manager for the Web** is selected and that all other check boxes are cleared.

   h. Click **Continue**.

   i. In the Select Components window, clear the check boxes for the **Communication Protocols** component, the **Application Development Interfaces** component, and the **Administration and Configuration Tools** component. Make sure that the **Data Warehousing Tools** component remains selected.

   j. Click **Next** to continue with the installation. The installation program creates files in the following directories:
      - \sqllib\icmweb\macro
      - \sqllib\icmweb\html
      - \sqllib\icmweb\icons

2. Copy or use FTP to transfer as binary all the *.mac and *.hti files from the \sqllib\icuweb\macro directory to the \db2www\macro directory on the Web server. Set the file permissions to allow public read access.

3. Copy or use FTP to transfer as binary all the *.htm and *.gif files from the \sqllib\icuweb\html directory to the document root directory on the Web server. Set the file permissions to allow public read access.

4. Copy or use FTP to transfer as binary all the dg_*.gif files from the \sqllib\icuweb\icons directory to the icons directory on the Web server. Set the file permissions to allow public read access.

5. Edit the dg_config.hti file. Add the names of the directories where you copied the files and the server name. The macro_path variable can be set to an alias that is set up on your Web server to control user access.
   - Use the server_name variable to identify your Web server.
   - Map the value for the image_path variable to the ICONS directory that is defined in the Web server configuration file.

- Use the value of the macro_path variable to specify the path icm/db2www.

On UNIX® operating systems, the dg_config.hti file will look like this:

```
%DEFINE {
            server_name="http://server.ibm.com/"
            image_path="$(server_name)icons/"
            macro_path="$(server_name)icm/db2www/"
            help_path="$(server_name)"
%}
```

On Windows NT and OS/2 operating systems, the dg_config.hti file will look like this:

```
%DEFINE {
            server_name="http://server.ibm.com/"
            image_path="$(server_name)icons/"
            macro_path="$(server_name)icm/db2www.exe/"
            help_path="$(server_name)"
%}
```

6. Add a link to an existing Web page, or create a Web page with a link to the Information Catalog Manager for the Web home page.

To create a Web page, edit the file *document_root*\icm.html (where *document_root* is the Web server's document root directory). Set the file permission to allow public read access.

- On UNIX operating systems, add the following lines:

```
<html><head>
<title>Information Catalog Manager for the Web</title>
</head>
<body bgcolor=white>
<p><a href=/icm/db2www/dg_home.mac/Logonø
Information Catalog Manager for the Web</a>
</body>
</html>
```

- On Windows NT and OS/2 operating systems, add the following lines:

```
<html><head>
<title>Information Catalog Manager for the Web</title>
</head>
<body bgcolor=white>
<p><a href=/icm/db2www.exe/dg_home.mac/Logonø
Information Catalog Manager for the Web</a>
</body>
</html>
```

7. Enable basic user authentication on your Web server for each Information Catalog Manager for the Web user.

When users access the Information Catalog Manager for the Web home page, they are prompted for their user ID and password. When they enter these values, the HTTP environment variable REMOTE_USER is

set. This variable is used to prompt users for their user ID and password
and to create, update, and delete comments.

The user ID must be 8 characters or less, because it is stored in the
information catalog tables when a comment is created.

a. Create an alias named `icm` for the directory where the Net.Data CGI
program `db2www` is located.

- On UNIX operating systems, the macro_path variable that is
defined in the `dg_config.hti` file uses this alias:

`macro_path="$(server_name)icm/db2www/"`

- On Windows NT and OS/2 operating systems, the macro_path
variable that is defined in the `dg_config.hti` file uses this alias:

`macro_path="$(server_name)icm/db2www.exe/"`

b. Enable user ID and password authentication for the alias directory
`icm` and set the proper permissions.

See the Web server documentation for more information about enabling
authentication.

8. Set up Net.Data to run Live Connection Manager for the databases that are
used by the Information Catalog Manager for the Web.

a. Edit the Net.Data file `dtwcm.cnf`, and add a CLIETTE DTW_SQL block
for each database that will be used by the Information Catalog
Manager for the Web.

To add the database ICMSAMP with a minimum of one process, a
maximum of three processes, starting with private port number 7100
and starting with public port number 7110, add the following block:

```
CLIETTE DTW_SQL:ICMSAMP{
MIN_PROCESS=1
MAX_PROCESS=3
START_PRIVATE_PORT=7100
START_PUBLIC_PORT=7110
EXEC_NAME=./dtwcdb2
DATABASE=ICMSAMP
BINDFILE=NOT_USED
LOGIN=*USE_DEFAULT
PASSWORD=*USE_DEFAULT
}
```

This block allocates six ports (7100, 7101, 7102, 7110, 7111, 7112) to the
database ICMSAMP. Make sure that these ports are free and not in use
by another application. You must use different port number ranges for
each CLIETTE DTW_SQL block. See the *Net.Data Administration and
Programming Guide* for more information.

b. Set the LOGIN value to the user ID and PASSWORD value to the
password for the database. If you are using a local database, then you
can use the `*USE_DEFAULT` value.

    c. Set the Net.Data initialization file to use Live Connection Manager for the SQL calls. Edit the `db2www.ini` file in the Web server's document root directory. Make sure that the environment DTW_SQL statement has `CLIETTE "DTW_SQL:$(DATABASE)"` at the end.

    For example:

```
ENVIRONMENT (DTW_SQL) DTWSQL(IN DATABASE,LOGIN,PASSWORD,
   TRANSACTION_SCOPE,SHOWSQL,ALIGN,START_ROW_NUM)
   CLIETTE "DTW_SQL:$(DATABASE)"
```

    d. Start Live Connection Manager by using the executable file `dtcmf` in the Net.Data directory. Live Connection Manager must be running so that the Information Catalog Manager for the Web can access data in the databases. After Live Connection Manager is started, you can minimize the Live Connection Manager window on the Web server. See the *Net.Data Administration and Programming Guide* for more information.

Follow the steps in "Post-installation customization" before using the Information Catalog Manager for the Web.

Post-installation customization

After you install the Information Catalog Manager for the Web, complete the following steps to customize the Information Catalog Manager for the Web for your users:

1. Edit the file `dg_home.hti`. Add a link for each information catalog that you want users to access from the Information Catalog Manager for the Web. Use the following format for the links:

   `<LI><A HREF=$(macro_path)dg_frame.mac/frame?DATABASE=xxxx> zzzz </A>`

   xxxx   The information catalog database name (for example, ICMSAMP)

   zzzz   A descriptive comment that is displayed on the Web page (for example, `CelDial sample catalog`)

   You can add HTML tags to the dg_home.hti file either before or after the information catalog list. These tags can include links, images, text, or other valid HTML 3.2 tags that you want to add.

2. Catalog the server node and databases by using the necessary DB2 client function. See the *Installation and Configuration Supplement* for more information. From the DB2 Command Line Processor, verify that the Web server can connect successfully to the databases.

Before you access information catalogs through the Information Catalog Manager for the Web, make sure that the database manager is started on the database servers, Live Connection Manager is started on the Web server, and the Web server is started.

Installing the Information Catalog Manager for the Web

Notify users of their user IDs and passwords, and inform them of the Web address that they can use to access the Information Catalog Manager for the Web.

Creating a sample information catalog

The Information Catalog Administrator provides a sample program to help you verify that the installation was successful. The program installs the sample data that is included with the Information Catalog Administrator. This sample data is used in the scenarios in the *Information Catalog Manager User's Guide*.

The *Information Catalog Manager Administration Guide* describes how to create the sample information catalog.

Chapter 4. Installing warehouse agents

When you install the warehouse server with DB2 Universal Database on Windows NT or Windows 2000, a default agent is installed. If you require a warehouse agent that is remote from the warehouse server, you can install another warehouse agent using the DB2 Warehouse Manager.

Your warehouse server and all of your warehouse agents must be at the Version 7 level.

Before you install any DB2 Version 7 warehouse agents, you must remove any warehouse agents from Visual Warehouse Version 5.2 or earlier that are located on that workstation.

Warehouse agents are available for the Windows NT, Windows 2000, OS/2, AIX, AS/400, and OS/390 operating systems, and for the Solaris Operating Environment. When you install warehouse agents on Windows NT, Windows 2000, OS/2, AIX, and the Solaris Operating Environment, the Data Warehouse Center ODBC drivers and driver manager are also installed.

To remove a DB2 Version 7 warehouse agent, see "Removing DB2 Version 7 warehouse agents" on page 35.

Preparing to install warehouse agents

Warehouse agent sites must have access to warehouse sources and warehouse targets. You must register these source and target databases with ODBC as system DSNs. On AIX or the Solaris Operating Environment, you must specify them in the .ODBC.INI file. This applies also to the server workstation for data that is accessed by the default local agent. See the *Data Warehouse Center Administration Guide* for more information.

You must install TCP/IP on the warehouse agent site to establish connectivity between the warehouse agent site and the warehouse server. See "Establishing connectivity" on page 34 for information about setting up connectivity.

If you want to serve a remote client from a DB2 server, set the DB2COMM environment variable on the DB2 server:

```
db2set -i instance DB2COMM=TCPIP
```

This setting allows the server to accept TCP/IP requests from remote clients.

Installing a Windows NT warehouse agent

Before you install a Windows NT warehouse agent, you must remove the Visual Warehouse Version 5.2 or earlier Windows NT agent that is located on that workstation.

Removing a Visual Warehouse Windows NT agent

To remove a Visual Warehouse Windows NT agent:

1. Click **Start → Settings → Control Panel**.
2. Double-click the **Add/Remove Programs** icon.
3. On the Install/Uninstall page, click **Visual Warehouse**, then click the **Add/Remove** button.

   The Confirm Removal window opens.
4. Click **Remove**.
5. Delete the VWSWIN directory:
   a. Open Windows NT Explorer.
   b. Locate the VWSWIN directory on the drive where you installed the Visual Warehouse Windows NT agent.
   c. Delete the VWSWIN directory.
6. Remove Visual Warehouse from the Windows NT registry:
   a. Click **Start → Run**.
   b. In the **Open** field, type regedit, then click **OK**.
   c. Expand the **HKEY_LOCAL_MACHINE** folder.
   d. Expand the **Software** folder.
   e. Expand the **IBM** folder.
   f. Delete the **Visual Warehouse** folder.

Installing a Windows NT warehouse agent

Before you install a Windows NT warehouse agent, ensure that you are using a Windows NT user ID that has administrator privileges. If DB2 Universal Database is installed on the warehouse agent site, it must be at Version 7.

To install a Windows NT warehouse agent:

1. Close all Windows programs.
2. Insert the Warehouse Manager CD-ROM into your CD-ROM drive. The launchpad opens.
3. Click **Install** from the launchpad.
4. In the Select Products window, ensure that the **DB2 Warehouse Manager** check box is selected, then click **Next**.
5. In the Select Installation Type window, click **Custom**, then click **Next**.

6. In the Select DB2 Components window, select the **Warehouse Agent** check box, then click **Next**.

7. In the Start Copying Files window, review your selections. If you want to change any of your selections, click **Back** to return to the window where you can change the selection. Click **Next** to begin copying files.

8. In the Setup Complete window, click **Finish** to restart the workstation.

After you install the warehouse agent, click **Start ⟶ Settings ⟶ Control Panel ⟶ ODBC** to register your source and target databases as system DSNs.

Installing the OS/2 warehouse agent

Before you install the OS/2 warehouse agent, you must remove the Visual Warehouse Version 5.2 or earlier OS/2 agent that is located on that workstation.

Removing the Visual Warehouse OS/2 agent

To remove the Visual Warehouse OS/2 agent components from your workstation:

- For Visual Warehouse Version 3.1, start the **Uninstall** program icon in the Visual Warehouse Agent folder on the desktop.
- For Visual Warehouse Version 5.2, use the Installation Utility in the Visual Warehouse folder.

Installing the OS/2 warehouse agent

Installing a warehouse agent on OS/2 consists of installing the warehouse agent code and cataloging the databases that will be accessed by the agent as ODBC data sources. You can do this by using the ODBC Administrator. To access non-DB2 databases with the installed Data Warehouse Center ODBC drivers, you must install licensed clients for those database types, and the clients must be accessible by the warehouse agent, on the node where the warehouse agent runs.

Before you install the OS/2 warehouse agent:

1. Verify that the DB2 ODBC driver and driver manager (available from the DB2 Universal Database CD-ROM) are installed in the \OS2 directory of your boot drive.

2. To access databases with the installed Data Warehouse Center ODBC drivers, ensure that the correct client software is installed for the data sources that you plan to use. See the *Data Warehouse Center Administration Guide* for information on supported data sources.

Installing warehouse agents

To install the warehouse agent and executable versions of the sample programs:

1. Insert the Warehouse Manager CD-ROM into your CD-ROM drive.
2. Run *f*:\install.exe, where *f* is your CD-ROM drive.
3. If you are upgrading from Visual Warehouse, find the file ODBC.DLL in the \SQLLIB\BIN directory, and rename it to ODBC.BAK. Doing this will ensure that the ODBC driver manager in the \OS2 directory on your boot drive will be used.
4. Restart your workstation.

You must catalog the DB2 nodes and databases, and register each source and warehouse database that you want to use with the warehouse agent as a system DSN. See the *Installation and Configuration Supplement* for more information.

When you install the warehouse agent, the warehouse agent daemon is added to your OS/2 Startup folder. When the warehouse agent daemon starts from the OS/2 Startup folder, the daemon runs in a window in a foreground session. While the daemon is running, this window provides status information about the daemon. You can end this session by closing the window.

The warehouse agent creates log files in the directory that is specified by the VWS_LOGGING environment variable. The default value for this variable is C:\SQLLIB\LOGGING.

Installing the OS/390 warehouse agent

Before you install the warehouse agent, verify that you have the following software products installed on your system:

- OS/390 Version 2.6 or later
- DB2 Universal Database Version 7
- UNIX System Services

To install the warehouse agent, unload the code for the warehouse agent from the System Modification Program Extended (SMP/E) tape.

For details about unloading and installing the code, see the *Program Guide for DB2 Warehouse Manager* and the *DB2 Version 7 Program Directory*.

To prepare to use the warehouse agent, see the *Data Warehouse Center Administration Guide*.

Installing the AS/400 warehouse agent

Before you install the AS/400 warehouse agent, you must remove the Visual Warehouse Version 5.2 AS/400 agent that is located on that workstation.

Removing the Visual Warehouse AS/400 agent

To delete the Visual Warehouse AS/400 agent code, enter DLTLICPGM LICPGM(5639VW5) at an AS/400 command prompt.

The delete command:

- Removes the SRVTBLE entries.
- Removes the IFS directory.
- Removes the /QIBM/ProdData/IWH subdirectory.
- Stops the daemon.
- Deletes the product.

Installing the AS/400 warehouse agent

Before you install the warehouse agent, you must define security and privileges for your warehouse. For information about defining warehouse security, see the *Data Warehouse Center Administration Guide* and the online help for the Data Warehouse Center.

To install the warehouse agent, you must have a user ID that has ALLOBJ and JOBCTL authority. This level of authority is required for both the AS/400 RSTLICPGM command and the STRVWD and ENDVWD commands. To use the agent after installation is complete, you only need a user ID that has authority to create, destroy, and execute AS/400 objects.

To install the warehouse agent:

1. Insert the Warehouse Manager CD-ROM into your CD-ROM drive.
2. Log on to AS/400.
3. At an AS/400 command prompt, enter:
   RSTLICPGM LICPGM(5697G23) DEV(OPT01)

   where OPT01 is the name of the device that holds the Warehouse Manager CD-ROM.

The /QIBM/UserData/IWH subdirectory and the /QIBM/ProdData/IWH subdirectory are created by the install process. Traces are written to the /QIBM/UserData/IWH subdirectory.

Installing the AIX and Solaris Operating Environment warehouse agents

Before you install the AIX or Solaris Operating Environment warehouse agents, you must remove any Visual Warehouse Version 5.2 or earlier AIX or Solaris Operating Environment agents that are located on that workstation.

Removing the Visual Warehouse AIX agent

To remove the Visual Warehouse AIX agent:

1. Log on to AIX as *root*.
2. Enter `smit`.

   The System Management window opens.
3. Select **Software Installation and Maintenance**.

   The Software Installation and Maintenance window opens.
4. Select **Maintain Installed Software**.

   The Maintain Installed Software window opens.
5. Select **Remove Software Products**.

   The Remove Software Products window opens.
6. Click the arrow next to the **Software Name** field.
7. Select **IWH.agent** from the list.
8. Click **OK**.

   The Remove Software Products configuration window opens.
9. Type `No` in the **Preview only?** field.
10. Click **OK**.

    A confirmation window opens.
11. Click **OK** to confirm your selection.

After the Visual Warehouse AIX agent is removed, the Output window opens. The Results column at the bottom of the Output window displays the status of the removal process. If the removal process fails, contact IBM Software Support.

Removing the Visual Warehouse Solaris Operating Environment agent

To remove the Visual Warehouse Solaris Operating Environment agent, enter the following command at a command prompt:

```
usr/sbin/pkgrm IBMiwh
```

To confirm the removal of the Visual Warehouse Solaris Operating Environment agent, enter `yes` in the confirmation display.

Installing the AIX or the Solaris Operating Environment warehouse agents

Use the db2setup utility to install a warehouse agent on AIX.

See "Appendix C. Warehouse agent environment structures" on page 53 for information about the AIX and Solaris Operating Environment directory structure.

Before you install the warehouse agent, you should create and configure at least one DB2 instance. For more information, see *DB2 for UNIX Quick Beginnings*.

To install the warehouse agent using the db2setup utility:

1. Log in as a user with root authority.
2. Insert and mount the Warehouse Manager CD-ROM. For information about mounting a CD-ROM, see *DB2 for UNIX Quick Beginnings*.
3. Change to the directory where the CD-ROM is mounted by entering `cd /cdrom`, where *cdrom* is the mount point of your product CD-ROM.
4. Enter the `./db2setup` command. After a few moments, the Install DB2 V7 window opens.
5. Select the products that you want to install and are licensed to install. Press Tab to change the highlighted option. Press Enter to select or deselect an option. When you select an option, an asterisk is displayed next to it.

   To select or deselect optional components for a DB2 product that you want to install, select the **Customize** option. To go back to a previous window at any time, select the **Cancel** option.
6. When you have finished selecting the DB2 product and its components, select **OK** to continue with the installation.

   For more information or assistance during the installation of any DB2 product or component, select the Help option.
7. Log out.

When the installation process completes, your warehouse agent is installed in the following directory:

- On AIX, the `/usr/lpp/db2_07_01` directory
- On the Solaris Operating Environment, the `/opt/IBMdb2/V7.1/` directory

Follow the instructions in "Chapter 5. Configuring the AIX and Solaris Operating Environment warehouse agent environments" on page 37 to configure the warehouse agent environment and to catalog the DB2 nodes and databases.

If the installation failed, contact IBM Software Support.

Establishing connectivity

You must establish connectivity from the warehouse agent sites to the warehouse sources and targets.

To access your warehouse sources and targets, you need the Data Warehouse Center ODBC drivers or DB2 Connect, connectivity software (such as TCP/IP), and database clients on your warehouse agent sites.

ODBC drivers

Data Warehouse Center ODBC drivers for several non-DB2 databases are installed when you install a warehouse agent. Your DB2 Universal Database CD-ROM also includes ODBC drivers for DB2.

Connectivity products

Install the connectivity products that are needed to access remote warehouse sources and targets. This might include TCP/IP or NetBIOS customization, SNA Client for Windows NT, or SNA Server for Windows NT.

You need to install the connectivity products on the warehouse server (if you are using a local warehouse agent) and on your warehouse agent sites. For example, you can access a DB2 family database through TCP/IP or NetBIOS. You can also access a DB2 for MVS/ESA database through TCP/IP or NetBIOS if a DB2 Connect gateway is accessible on the network with connectivity to the host database that you need.

For more information about non-DB2 source databases and defining warehouse sources and targets within the Data Warehouse Center, see the *Data Warehouse Center Administration Guide*.

See the *Data Warehouse Center Administration Guide* for connectivity requirements when you are using IBM Classic Connect to access IMS databases or VSAM data sets on MVS™.

Database clients

Install the client component of a remote non-DB2 database on your warehouse agent sites and on your warehouse server (if you are using a local warehouse agent). See the *Data Warehouse Center Administration Guide* for more information, or refer to the documentation for the database.

For the DB2 family of databases, the necessary DB2 client function is included with DB2 Universal Database.

Testing connectivity

Test TCP/IP connectivity between the following workstations:
- Warehouse server to the warehouse agent sites
- Warehouse agent sites to the warehouse server

- Data Warehouse Center administrative client to the warehouse server
- Warehouse server to the Data Warehouse Center administrative client

To test the connectivity, enter ping *hostname* where *hostname* is the TCP/IP host name of the warehouse server, Data Warehouse Center administrative client, or warehouse agent site. On AIX and Windows 32-bit operating systems, you will see several messages in the window that verify the TCP/IP connection, similar to those shown in Figure 1.

```
[C:\]ping dgntserv2.stl.ibm.com
PING dgntserv2.stl.ibm.com: 56 data bytes
64 bytes from 9.112.46.127: icmp_seq=1. time=0. ms
64 bytes from 9.112.46.127: icmp_seq=2. time=0. ms
64 bytes from 9.112.46.127: icmp_seq=3. time=0. ms
64 bytes from 9.112.46.127: icmp_seq=4. time=0. ms

----dgntserv2.stl.ibm.com PING Statistics----
5 packets transmitted, 4 packets received, 20% packet loss
round-trip (ms)  min/avg/max = 0/0/0
```

Figure 1. Sample response from PING command

On the Solaris Operating Environment, the ping command will return the following information:

```
host is alive
```

For a workstation with OS/2 or AIX warehouse agents, make sure that you can ping the workstation using only the host name without the local domain name. For example, enter ping dgntserv2 instead of ping dgntserv2.stl.ibm.com. You might need to add an entry in the /etc/hosts file such as:

```
123.45.67.89        dgntserv2        dgntserv2.stl.ibm.com
```

Test ODBC connectivity between any non-DB2 database clients and servers. If you are using a Windows NT warehouse agent, verify that connectivity can be established as a Windows NT system process.

Removing DB2 Version 7 warehouse agents

To remove DB2 Version 7 warehouse agents, see the section on removing DB2 products in the *Quick Beginnings* for your operating system.

To remove the DB2 Version 7 OS/390 warehouse agent, use SMP/E. For more information, see the *Program Guide for DB2 Warehouse Manager* and the *DB2 Version 7 Program Directory*.

Chapter 5. Configuring the AIX and Solaris Operating Environment warehouse agent environments

After you install an AIX or Solaris Operating Environment warehouse agent, you must configure the warehouse agent environment and catalog the DB2 nodes and databases. This chapter describes how to configure the warehouse agent environment.

Configuring the warehouse agent environment

This section describes the environment variables that you need to set in your IWH.environment file. All the environment variables that you must change are located between the START and END comment lines. Figure 2 on page 38 displays the configurable portion of a sample IWH.environment file.

The following rules apply to both ODBC and DB2 CLI users:

1. You must set the DB2INSTANCE variable in all situations.
2. For DB2 CLI access, you need to set only the variables in the DB2 environment section.

   To access warehouse sources or targets in DB2 databases, you must configure the variables in the DB2 environment section.
3. You must remove the comment characters (#) for the variables that you set.

The following rules apply to ODBC users:

1. For ODBC access, you must set the IS_ODBC variable to the ODBC install path. This variable must not have comments.

   On AIX, the default path is /usr/lpp/db2_07_01/odbc. On the Solaris Operating Environment, the default path is /opt/IBMdb2/V7.1/odbc.
2. Set the ODBC environment variables for any databases that you selected.

When you change settings in the IWH.environment file, you must restart the warehouse agent daemon.

Configuring warehouse agent environments

```
# !!!!!!!!!!!!!!!!!!!!!!!!!! ATTENTION !!!!!!!!!!!!!!!!!!!!!!!!!!!
# !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
# !      START OF MUST SET ENVIRONMENT VARIABLES SECTION        !
# !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
# ! DB2 environment section. Please set DB2 instance id         !
#
DB2INSTANCE=<.... your DB2 instance id ....>
LANG=en_US
LC_ALL=en_US
DB2CODEPAGE=819
export DB2INSTANCE LANG LC_ALL DB2CODEPAGE

# ! If using Data Warehouse Center ODBC drivers, set the
# ! IS_ODBC environment variable to the path for
# ! Data Warehouse Center ODBC drivers directory.
#
# IS_ODBC=<....your ODBC base install directory>
# Should have path for Data Warehouse Center ODBC drivers odbc dir

# ! For essbase udp, set the following path :                   !
#
# ARBORPATH=<..../essbase>
# export ARBORPATH

# ! If using Oracle ODBC driver, set the following paths: !
#
# ORACLE_HOME=<.... your Oracle client HOME dir ....>
# TNS_ADMIN=<.... your TNS_ADMIN dir ....>
# ORACLE_SID=<.... your ORACLE_SID ....>
# export ORACLE_HOME TNS_ADMIN ORACLE_SID

# ! If using Sybase ODBC driver, set the following paths: !
#
# SYBASE=<.... your Sybase client dir ....>
# DSQUERY=<.... your DSQUERY value ....>
# export SYBASE DSQUERY

# ! If using Informix ODBC driver, set the following paths:!
#
# INFORMIXDIR=<.... your Informix client dir ....>
# INFORMIXSERVER=<.... your Informix Server ....>
# export INFORMIXDIR INFORMIXSERVER

# Environment variables for JCL templates and logs.
# You can choose to change values for following environment variables !
#
VWSPATH=<... the warehouse agent base install directory ...>
VWS_LOGGING=/var/IWH/                    # default path
export VWS_LOGGING VWSPATH

# !!!!!!!!!!!!!!!!!!!!!!!!!!! ATTENTION !!!!!!!!!!!!!!!!!!!!!!!!!!!
# !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
# !     END OF MUST SET ENVIRONMENT VARIABLES SECTION           !
# !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
```

Figure 2. Sample IWH.environment file

To configure the warehouse agent environment:

1. Set the connection type:

   a. Log on as `root`.

   b. Change to the bin subdirectory in the install directory by entering one of the following commands:

      - On AIX, enter `cd /usr/lpp/db2_07_01/bin`
      - On the Solaris Operating Environment, enter `cd /opt/IBMdb2/V7.1/bin`

   c. Establish the correct soft link to IWH2AGNT. To do this, run the IWH.agent.db.interface command. The syntax for this command is:

      `IWH.agent.db.interface [ odbc | db2cli ]`

      The warehouse agent executable file has two versions:

      - The IWH2AGNT.db2cli file is the DB2 CLI link. Use this link to access DB2 family and heterogeneous data through DataJoiner (Oracle, Sybase, Microsoft SQL Server, Informix, VSAM, and IMS).

        This is the default link.
      - The IWH2AGNT.ivodbc file is the ODBC link. Use this link to access DB2 family, Oracle, Sybase, and Informix databases, and data files.

2. To access DB2 or DataJoiner source or target data, set the following variables in your IWH.environment file. On AIX, the file is located in the `/usr/lpp/db2_07_01/bin` directory. On the Solaris Operating Environment, the file is located in the `/opt/IBMdb2/V7.1/bin` directory. You need to set these variables whether you use a double-byte character set (DBCS) or a single-byte character set (SBCS).

   - DB2INSTANCE = the name of the DB2 instance on which you plan to run the warehouse agent

     If you have multiple DB2 instances, you must choose one instance to be the master DB instance.
   - LANG = your local locale
   - LC_ALL = your local locale

     The LANG and LC_ALL environment variables direct the warehouse agent to set the locale to your local locale.
   - DB2CODEPAGE = the code page of the client database

     The DB2CODEPAGE variable overrides the system code page. This variable is used to communicate with servers that cannot interpret the default code page from the client. The DB2CODEPAGE variable sets the default code page to a code page that the server supports. For more information, see the *Installation and Configuration Supplement*.

3. To access ODBC data using the Data Warehouse Center ODBC drivers, set the following variables in your IWH.environment file:

Configuring warehouse agent environments

- IS_ODBC = the base directory where you installed the Data Warehouse Center ODBC drivers
- To access Oracle data, set the following environment variables:
  - ORACLE_HOME
  - TNS_ADMIN
  - ORACLE_SID
- To access Sybase data, set the following environment variables:
  - SYBASE
  - DSQUERY
- To access Informix data, set the following environment variables:
  - INFORMIXDIR
  - INFORMIXSERVER

4. To access Essbase or DB2 OLAP Server™ data, set the ARBORPATH environment variable in your IWH.environment file.

5. Optional: Customize your environment further by setting the following variables in your IWH.environment file:

   - VWS_LOGGING = the directory where the warehouse agent trace files, program output logs, and environment output files are stored.

     The default directory is /var/IWH.

   - VWSPATH = the warehouse agent base install directory.
   - ODBCINI = the default .odbc.ini file for ODBC users.
   - VWA_LOCALE_TABLE = locale conversion table.

     If you are using a national language version of the Solaris Operating Environment warehouse agent, you might need to choose a user-defined conversion table that the agent can use for string conversions. To do this, add the environment variable VWA_LOCALE_TABLE to the IWH.environment file and set its value to the code set that you want to use (for example, 8859-1 for en_US).

6. If you are using a shared /etc/services file in the NIS or AFS environment, add the following services to the shared /etc/services file.

   If these port numbers are already in use in your operating environment, you can change them in the /etc/services file on your system. However, you must also change the same port numbers on the workstation where the Data Warehouse Center administrative client and warehouse server are installed, and on all the associated warehouse agent sites.

You must add these services because the install process updates only your local /etc/services file.

Port Name	Port Number
vwd	11001/tcp
vwlogger	11002/tcp

7. For these changes to take effect, stop and restart the warehouse agent daemon:

   a. Determine the daemon process ID by entering:

      ```
      ps -e | grep vwdaemon
      ```

   b. Stop the daemon by entering:

      ```
      kill pid
      ```

      where `pid` is the daemon process ID.

   After you stop the daemon, it will restart automatically.

Cataloging the DB2 nodes and databases

After you install the AIX or Solaris Operating Environment warehouse agent and configure the warehouse agent environment, you must configure the DB2 nodes and databases:

1. Log on to the DB2 instance ID.

2. Catalog the DB2 nodes and databases that you plan to access. See the *Installation and Configuration Supplement* for more information.

   If you have multiple DB2 instances on the same workstation, note the value of the DB2INSTANCE variable in the IWH.environment file. Any databases that are not created on this instance must be cataloged as remote.

3. For ODBC users: When you define the DB2 data source in the appropriate .odbc.ini file, ensure that the DSN is the true name of the DB2 database name or database alias name. The .odbc.ini file must reside in the home directory of the user ID that is used on the agent site.

Tip: If you are using Data Warehouse Center ODBC drivers, see the sample .odbc.ini file. On AIX, this file is located in the `/usr/lpp/db2_07_01/odbc` directory. On the Solaris Operating Environment, this file is located in the `/opt/IBMdb2/V7.1/odbc` directory. The name of the file is .ODBC.INI.

Chapter 6. Preparing for and installing warehouse transformers

This chapter describes how to install and enable warehouse transformers.

Preparing your environment

Before you enable the warehouse transformers, you must:

- Install a warehouse agent. See "Chapter 4. Installing warehouse agents" on page 27 for more information.
- Install the JDK for your operating system.
- Update the environment variables.
- Update the database manager configuration for the target DB2 instance.
- Update the database configuration for the target database.

Obtaining the JDK

The DB2 Application Development Client includes the JDK for AIX, OS/2, and Windows NT.

- When you install the DB2 Application Development Client on AIX, the JDK is installed if an earlier version of the JDK is not detected.
- When you install the DB2 Application Development Client on OS/2, the JDK is not installed. See the *Installation and Configuration Supplement* for information about installing the JDK.
- When you install the DB2 Application Development Client on Windows NT, the JDK is always installed.

For more information, see the *Installation and Configuration Supplement*.

To obtain and install the JDK for the Solaris Operating Environment, go to http://www.sun.com/java/products/platform.html and follow the instructions provided.

Updating the environment variables

This section contains steps for updating environment variables on Windows NT, AIX, and the Solaris Operating Environment.

Updating environment variables on Windows NT
To update the Path and CLASSPATH environment variables:

1. Open the Windows NT Control Panel.
2. Double-click **System**.

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3. Click the **Environment** tab to view the variables.
4. Click the **Path** system variable and add the path of the JDK bin subdirectory to the end of the path. The default path is `c:\sqllib\java\jdk`.
5. Click **Set**.
6. Click the **CLASSPATH** system variable. Add the path where the transformers are installed, and the path of the directory that contains the DB2 Java support classes. Separate the path names with a semicolon. If the CLASSPATH variable does not exist, you must define it.

   For example, you might add `C:\SQLLIB\FUNCTION;C:\SQLLIB\JAVA\DB2JAVA.ZIP;` to your CLASSPATH variable.
7. Click **Set**.
8. Click **OK** to close the window.

Updating environment variables on AIX

Make sure that the current directory is in the CLASSPATH variable by entering the following command:

```
$ echo $CLASSPATH
```

For example:

```
 .:/INSTHOME/sqllib/java/db2java.zip
```

where */INSTHOME* is the home directory of the instance owner.

Enter the following commands to change the CLASSPATH variable:

```
CLASSPATH=.:$CLASSPATH
export CLASSPATH
```

Make sure that the PATH variable includes /sqllib/bin. For example:

```
/INSTHOME/sqllib/bin
```

where */INSTHOME* is the home directory of the instance owner.

Make sure that the LIBPATH variable includes /sqllib/lib. For example:

```
/INSTHOME/sqllib/lib
```

where */INSTHOME* is the home directory of the instance owner.

Updating environment variables on the Solaris Operating Environment

Update the db2profile file, located in the sqllib subdirectory (for example, /home/db2inst1/sqllib), to include *jdk11_path*/lib/sparc/native_threads in the LD_LIBRARY_PATH variable, where *jdk11_path* is the subdirectory where the JDK is installed.

Make sure that the current directory is in the CLASSPATH variable by entering the following command:

```
$ echo $CLASSPATH
```

For example:

```
.:/INSTHOME/sqllib/java/db2java.zip
```

where */INSTHOME* is the home directory of the instance owner.

Enter the following commands to change the CLASSPATH variable:

```
CLASSPATH=.:$CLASSPATH
export CLASSPATH
```

Make sure that the PATH variable includes sqllib/bin. For example:

```
/INSTHOME/sqllib/bin
```

where */INSTHOME* is the home directory of the instance owner.

Updating the database manager configuration

To update the database manager configuration, use the DB2 Command Line Processor to change the following database settings:

- Set the JDK path parameter (JDK11_PATH) to the subdirectory where the JDK is installed:

  ```
  UPDATE DATABASE MANAGER CONFIGURATION USING JDK11_PATH path
  ```

  where *path* is the subdirectory where the JDK is installed.
- Set the Java Virtual Machine heap size parameter (JAVA_HEAP_SZ) to 4096:

  ```
  UPDATE DATABASE MANAGER CONFIGURATION USING JAVA_HEAP_SZ 4096
  ```

Updating the database configuration

To update the database configuration for the target database, use the DB2 Command Line Processor to set the default application heap parameter (APPLHEAPSZ) for this database to 1024:

```
UPDATE DATABASE CONFIGURATION FOR warehouse_database_name USING APPLHEAPSZ 1024
```

Setting up authorities and privileges

Warehouse transformers are stored procedures. Before you enable the warehouse transformers, certain authorization levels are needed for the database in which the target warehouse resides. The authorization ID of the statement must hold at least one of the following authorities or privileges:

- SYSADM or DBADM authority
- IMPLICIT_SCHEMA authority on the database, if the implicit or explicit schema name of the procedure does not exist

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- CREATEIN privilege on the schema, if the schema name of the procedure refers to an existing schema

To create a fenced stored procedure, no additional authorities or privileges are required.

To create a not-fenced stored procedure, the authorization ID of the statement must also hold one of the following authorities:

- CREATE_NOT_FENCED authority on the database
- SYSADM or DBADM authority

Installing warehouse transformers

To install warehouse transformers:

1. Insert the Warehouse Manager CD-ROM into your CD-ROM drive. The launchpad opens.
2. Click **Install** on the launchpad.
3. In the Select Products window, ensure that the **DB2 Warehouse Manager** check box is selected, then click **Next**.
4. In the Select Installation Type window, click **Custom**, then click **Next**.
5. In the Select DB2 Components window, select the **Warehouse Transformers** check box, then click **Next**.
6. In the Start Copying Files window, review your selections. If you want to change any of your selections, click **Back** to return to the window where you can change the selection. Click **Next** to begin copying files.
7. In the Setup Complete window, click **Finish** to restart the workstation.

Enabling warehouse transformers

To enable warehouse transformers for use by the warehouse target:

1. Start the Data Warehouse Center:
   a. Start the Control Center by clicking **Start ⟶ Programs ⟶ IBM DB2 ⟶ Control Center**.
   b. Click the **Data Warehouse Center** icon in the Control Center toolbar.
2. In the tree view on the left, locate the warehouse target for which you want to enable warehouse transformers, and open the Properties notebook.
3. On the Database page, in the **Target database** area, click either **Create transformers and register as fenced** or **Create transformers and register as unfenced**. See the online help or the *SQL Reference* for more information about fenced and unfenced stored procedures.
4. In the **Warehouse target** area, click **Enable target for transformers**.
5. Click **OK**.

6. Close the notebook.

A single database can contain several warehouse targets; however, you must enable the warehouse transformers for each warehouse target. If you have multiple warehouse targets in a single database and you change these settings for one warehouse target, the other warehouse targets in that database will be affected.

For example, if you drop the warehouse transformers after enabling them for several warehouse targets, a message is displayed, indicating that this change will affect other warehouse targets defined to the database. The names of the other warehouse targets will be listed in the message. You can choose to cancel the drop procedure or to continue. If you continue, any processes or steps in those warehouse targets that use warehouse transformers will not run, unless you recreate the warehouse transformers.

If you change the warehouse transformers from fenced to unfenced, or from unfenced to fenced, and there are multiple warehouse targets defined to the database, a message is displayed, indicating that this change will affect other warehouse targets defined to the database. The names of the other warehouse targets will be listed in the message. You can choose to cancel the change or to continue. If you continue, the transformers will be dropped, then recreated as specified.

Appendix A. Environment structure for Information Catalog Manager components

When you install the Information Catalog Manager Tools component, the Information Catalog Administrator component, or the Information Catalog User component, entries are added or modified for the several Windows NT environment variables and user variables. In Table 1 and Table 2, the drive letter C indicates a local drive.

Table 1. Environment variable updates for Information Catalog Manager components

The environment variable:	Is added to, or modified, to include:
PATH	C:\SQLLIB\BIN
LOCPATH	C:\SQLLIB\LOCALE
DGWPATH	C:\SQLLIB\DGWIN
VWSPATH	C:\SQLLIB
VWS_FOLDER	DB2 Universal Database folder name (for example, IBM DB2)
LIB	C:\SQLLIB\LIB
INCLUDE	C:\SQLLIB\LIB
MDIS_PROFILE	If this variable does not exist, it is added and set as C:\SQLLIB\METADATA\PROFILES. If the variable exists, it is not changed.
VWS_TEMPLATES	C:\SQLLIB\TEMPLATES
VWS_LOGGING	C:\SQLLIB\LOGGING
LC_ALL	If this variable does not exist, it is added and set as ll_cc, where ll is the language code and cc is the country code (see Table 3 on page 51). If the variable exists, it is not changed.

Table 2. User variable updates for the Information Catalog Manager

The user variable:	Is added to, or modified, to include:
LOCPATH	%LOCPATH%
LIB	%LIB%
INCLUDE	%INCLUDE%

Environment structure for Information Catalog Manager components

Appendix B. National language support considerations for the Information Catalog Manager

If you install the English version of the Information Catalog Manager on a non-English system, and you want to enter text in a language other than English, you can change the Information Catalog Manager LC_ALL environment variable. When the English version of the Information Catalog Manager is installed, the LC_ALL environment variable is set to EN_US. The LC_ALL environment variable is set in the AUTOEXEC.BAT file in Windows 95 and Windows 98, and in the system environment variables in Windows NT and Windows 2000.

To change the value of the variable for Windows 95 and Windows 98, include the following statement in your AUTOEXEC.BAT file:

```
SET LC_ALL=language
```

where *language* is the value in Table 3 for the language that you want to use.

To change the value of the variable for Windows NT and Windows 2000:

1. Click **Start** ⟶ **Settings** ⟶ **Control Panel.**
2. Double-click the **System** icon.
3. Click the **Environment** tab in the System Properties window.
4. In the **System Variables** list, click the **LC_ALL** variable.
5. In the **Value** field, type the value given in Table 3 for the language that you want to use.
6. Click **Set**.
7. Click **Apply**.
8. Close the window. Restart your workstation for the change to take effect.

Table 3. Language identifiers

Language - country	LC_ALL value
Arabic - Arabic	AR_AA
Bulgarian - Bulgaria	BG_BG
Chinese - China	ZH_CN
Chinese - Taiwan	ZH_TW
Croatian - Croatia	HR_HR
Czech - Czech Republic	CS_CZ
Danish - Denmark	DA_DK

National language support considerations

Table 3. Language identifiers (continued)

Language - country	LC_ALL value
Dutch - Belgium	NL_BE
Dutch - Netherlands	NL_NL
English - Great Britain	EN_GB
English - Japan	EN_JP
English - United States	EN_US
Finnish - Finland	FI_FI
French - Belgium	FR_BE
French - Canada	FR_CA
French - France	FR_FR
French - Switzerland	FR_CH
German - Germany	DE_DE
German - Switzerland	DE_CH
Greek - Greece	EL_GR
Hebrew - Israel	IW_IL
Hungarian - Hungary	HU_HU
Icelandic - Iceland	IS_IS
Italian - Italy	IT_IT
Japanese - Japan	JA_JP
Korean - Korea	KO_KR
Macedonian - Macedonia	MK_MK
Norwegian - Norway	NO_NO
Polish - Poland	PL_PL
Portuguese - Brazil	PT_BR
Portuguese - Portugal	PT_PT
Romanian - Romania	RO_RO
Russian - Russian Federation	RU_RU
Slovak - Slovak Republic	SK_SK
Slovenian - Slovenia	SL_SI
Spanish - Spain	ES_ES
Swedish - Sweden	SV_SE
Thai - Thailand	TH_TH
Turkish - Turkey	TR_TR

Appendix C. Warehouse agent environment structures

The information in this appendix describes the structure of the AIX and Solaris Operating Environment warehouse agent environments. Use this information to help you configure the AIX and Solaris Operating Environment warehouse agent environments.

Table 4 shows the directory structures for the AIX and Solaris Operating Environment warehouse agents.

Table 4. Directory structures for the warehouse agents

On this operating system:	This directory:	Contains:
AIX	/usr/bin/IWH.startup	Agent daemon startup file.
	/usr/bin/IWH2AGNT /usr/bin/vwdemon /usr/bin/iwhetrig	Soft links.
	/usr/lpp/db2_07_01/bin	Agent, ETI, and user-defined program executable files, and the environment setup file. This is the default install directory.
	/usr/lpp/db2_07_01/odbc	Sample .odbc.ini file and Data Warehouse Center ODBC drivers.
	/var/IWH	Trace files. This is the default directory for the daemon traces, agent traces, and user-defined program output files.
Solaris Operating Environment	/usr/bin/IWH.startup	Agent daemon startup file.
	/usr/bin/IWH2AGNT /usr/bin/vwdemon /usr/bin/iwhetrig	Soft links.
	/opt/IBMdb2/V7.1	Default install base directory.
	/opt/IBMdb2/V7.1/bin	Agent, ETI, and user-defined program executable files, and the environment setup file.
	/opt/IBMdb2/V7.1/odbc	Sample .odbc.ini file and Data Warehouse Center ODBC drivers.
	/opt/IBMdb2/V7.1/lib	Solaris Operating Environment run-time library.
	/var/IWH	Trace files. This is the default directory for the daemon traces, agent traces, and user-defined program output files.

Warehouse agent environments

Appendix D. Using the DB2 Library

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

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

DB2 PDF Files and Printed Books

DB2 Information

The following table divides the DB2 books into four categories:

DB2 Guide and Reference Information
These books contain the common DB2 information for all platforms.

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

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

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

The installation manuals, release notes, and tutorials are viewable in HTML directly from the product CD-ROM. Most books are available in HTML on the product CD-ROM for viewing and in Adobe Acrobat (PDF) format on the DB2 publications CD-ROM for viewing and printing. You can also order a printed copy from IBM; see "Ordering the Printed Books" on page 65. The following table lists books that can be ordered.

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

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

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

You can obtain DB2 books and access information in a variety of ways:
- "Viewing Information Online" on page 68
- "Searching Information Online" on page 72
- "Ordering the Printed Books" on page 65
- "Printing the PDF Books" on page 64

Table 5. DB2 Information

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

Table 5. DB2 Information (continued)

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

Table 5. DB2 Information (continued)

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

Table 5. DB2 Information (continued)

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

Table 5. DB2 Information (continued)

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

Table 5. DB2 Information (continued)

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

Table 5. DB2 Information (continued)

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

Table 5. DB2 Information (continued)

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

Notes:

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

Language	Identifier
Brazilian Portuguese	b

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

2. Late breaking information that could not be included in the DB2 books is available in the Release Notes in HTML format and as an ASCII file. The HTML version is available from the Information Center and on the product CD-ROMs. To view the ASCII file:

- On UNIX-based platforms, see the `Release.Notes` file. This file is located in the `DB2DIR/Readme/%L` directory, where `%L` represents the locale name and `DB2DIR` represents:
  - `/usr/lpp/db2_07_01` on AIX
  - `/opt/IBMdb2/V7.1` on HP-UX, PTX, Solaris, and Silicon Graphics IRIX
  - `/usr/IBMdb2/V7.1` on Linux.

- On other platforms, see the `RELEASE.TXT` file. This file is located in the directory where the product is installed. On OS/2 platforms, you can also double-click the **IBM DB2** folder and then double-click the **Release Notes** icon.

Printing the PDF Books

If you prefer to have printed copies of the books, you can print the PDF files found on the DB2 publications CD-ROM. Using the Adobe Acrobat Reader, you can print either the entire book or a specific range of pages. For the file name of each book in the library, see Table 5 on page 56.

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

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

1. Insert the DB2 publications CD-ROM. On UNIX-based platforms, mount the DB2 publications CD-ROM. Refer to your *Quick Beginnings* book for the mounting procedures.
2. Start the Acrobat Reader.
3. Open the desired PDF file from one of the following locations:
   - On OS/2 and Windows platforms:

     `x:\doc\`*language* directory, where *x* represents the CD-ROM drive and *language* represent the two-character country code that represents your language (for example, EN for English).
   - On UNIX-based platforms:

     /cdrom`/doc/%L` directory on the CD-ROM, where */cdrom* represents the mount point of the CD-ROM and *%L* represents the name of the desired locale.

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

Ordering the Printed Books

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

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

Table 6. Ordering the printed books

SBOF Number	Books Included	
SBOF-8931	• Administration Guide: Planning • Administration Guide: Implementation • Administration Guide: Performance • Administrative API Reference • Application Building Guide • Application Development Guide • CLI Guide and Reference • Command Reference • Data Movement Utilities Guide and Reference • Data Warehouse Center Administration Guide • Data Warehouse Center Application Integration Guide • DB2 Connect User's Guide • Installation and Configuration Supplement • Image, Audio, and Video Extenders Administration and Programming • Message Reference, Volumes 1 and 2	• OLAP Integration Server Administration Guide • OLAP Integration Server Metaoutline User's Guide • OLAP Integration Server Model User's Guide • OLAP Integration Server User's Guide • OLAP Setup and User's Guide • OLAP Spreadsheet Add-in User's Guide for Excel • OLAP Spreadsheet Add-in User's Guide for Lotus 1-2-3 • Replication Guide and Reference • Spatial Extender Administration and Programming Guide • SQL Getting Started • SQL Reference, Volumes 1 and 2 • System Monitor Guide and Reference • Text Extender Administration and Programming • Troubleshooting Guide • What's New
SBOF-8935	• Information Catalog Manager Administration Guide • Information Catalog Manager User's Guide • Information Catalog Manager Programming Guide and Reference	• Query Patroller Administration Guide • Query Patroller User's Guide

DB2 Online Documentation

Accessing Online Help

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

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

Type of Help	Contents	How to Access...
SQL Help	Explains the syntax of SQL statements.	From the command line processor in interactive mode, enter: `help statement` where *statement* represents an SQL statement. For example, `help SELECT` displays help about the SELECT statement. **Note:** SQL help is not available on UNIX-based platforms.
SQLSTATE Help	Explains SQL states and class codes.	From the command line processor in interactive mode, 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, while `? 08` displays help for the 08 class code.

Viewing Information Online

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

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

To view online books or sample programs:
- If you are running DB2 administration tools, use the Information Center.
- From a browser, click **File —>Open Page**. The page you open contains descriptions of and links to DB2 information:
  - On UNIX-based platforms, open the following page:
    ```
    INSTHOME/sqllib/doc/%L/html/index.htm
    ```

    where `%L` represents the locale name.
  - On other platforms, open the following page:
    ```
    sqllib\doc\html\index.htm
    ```

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

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

Installing the Netscape Browser

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

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

Accessing Information with the Information Center

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

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

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

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

Tasks Key tasks you can perform using DB2.

Reference DB2 reference information, such as keywords, commands, and APIs.

Books DB2 books.

Troubleshooting
  Categories of error messages and their recovery actions.

Sample Programs
  Sample programs that come with the DB2 Application Development Client. If you did not install the DB2 Application Development Client, this tab is not displayed.

Web DB2 information on the World Wide Web. To access this information, you must have a connection to the Web from your system.

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

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

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

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

On Windows
> Click **Start** and select **Programs —> IBM DB2 —> Information —> Start HTML Search Server**.

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

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

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

Using DB2 Wizards

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

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

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

Wizard	Helps You to...	How to Access...
Configure Multisite Update	Configure a multisite update, a distributed transaction, or a two-phase commit.	From the Control Center, right-click the **Databases** folder and select **Multisite Update**.
Create Database	Create a database, and perform some basic configuration tasks.	From the Control Center, right-click the **Databases** folder and select **Create —> Database Using Wizard**.
Create Table	Select basic data types, and create a primary key for the table.	From the Control Center, right-click the **Tables** icon and select **Create —> Table Using Wizard**.
Create Table Space	Create a new table space.	From the Control Center, right-click the **Table Spaces** icon and select **Create —> Table Space Using Wizard**.
Create Index	Advise which indexes to create and drop for all your queries.	From the Control Center, right-click the **Index** icon and select **Create —> Index Using Wizard**.
Performance Configuration	Tune the performance of a database by updating configuration parameters to match your business requirements.	From the Control Center, right-click the database you want to tune and select **Configure Performance Using Wizard**.

For the partitioned database environment, from the Database Partitions view, right-click the first database partition you want to tune and select **Configure Performance Using Wizard**. |
| *Restore Database* | Recover a database after a failure. It helps you understand which backup to use, and which logs to replay. | From the Control Center, right-click the database you want to restore and select **Restore —> Database Using Wizard**. |

Setting Up a Document Server

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

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

2. Configure the Web server to look for the files in the new location. For information, refer to the NetQuestion Appendix in the *Installation and Configuration Supplement*.

3. If you are using the Java version of the Information Center, you can specify a base URL for all HTML files. You should use the URL for the list of books.

4. When you are able to view the book files, you can bookmark commonly viewed topics. You will probably want to bookmark the following pages:
   - List of books
   - Tables of contents of frequently used books
   - Frequently referenced articles, such as the ALTER TABLE topic
   - The Search form

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

Searching Information Online

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

- Click **Search** in the top frame. Use the search form to find a specific topic. This function is not available in the Linux, PTX, or Silicon Graphics IRIX environments.
- Click **Index** in the top frame. Use the index to find a specific topic in the book.
- Display the table of contents or index of the help or the HTML book, and then use the find function of the Web browser to find a specific topic in the book.
- Use the bookmark function of the Web browser to quickly return to a specific topic.
- Use the search function of the Information Center to find specific topics. See "Accessing Information with the Information Center" on page 69 for details.

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Bibliography

This bibliography contains publications that you might find useful while working with the Warehouse Manager package.

DB2 Universal Database information

- *DB2 for Windows Quick Beginnings* (GC09-2971)
- *Installation and Configuration Supplement* (GC09-2957)
- *Connectivity Supplement* (online only)

Query Patroller information

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http://www.ibm.com/software/data/
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http://www.ibm.com/software/data/db2/library/
> The DB2 Product and Service Technical Library provides access to frequently asked questions, fixes, books, and up-to-date DB2 technical information.
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http://www.elink.ibmlink.ibm.com/pbl/pbl/
> The International Publications ordering Web site provides information on how to order books.

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

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

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

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