IBM® DB2® Universal Database ™

Installation and Configuration Supplement

Version 8

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Before using this information and the product it supports, be sure to read the general information under *Notices*.

Contents

Chapter 1. Manually Installing DB2 servers

Installing a DB2 product manually

It is recommended that you install DB2 products using the interactive installation method (DB2 Setup wizard) or a response file. The DB2 Setup wizard provides advantages such as an easy-to-use graphical interface with installation help, user and group creation, protocol configuration, and instance creation. A response file installation provides the same advantages, except for a graphical interface. In addition, there are advanced configuration capabilities by using response files such as setting individual DBM configuration parameters or profile registry variables. If you do not prefer these installation methods, you can manually install DB2 products on UNIX-based operating systems using the **db2_install** script or your operating system's native installation utility.

Prerequisites:

Refer to the installation documentation for the particular DB2 product you want to install. For example, if you want to install DB2 Enterprise Server Edition, you must refer to the *Quick Beginnings for DB2 Servers* documentation to review installation prerequisites and other important setup information.

Restrictions:

You *cannot* manually install a DB2 product on Windows operating systems. DB2 products can be only be installed on Windows operating systems using the DB2 Setup wizard or a response file.

Procedure:

Select a manual installation method:
- Install DB2 using the db2_install script (can be used to install on any of the supported operating systems)
- Install DB2 on AIX using SMIT
- Install DB2 for Linux using rpm
- Install DB2 for HP-UX using swinstall

Related concepts:
- "Installation methods for DB2" in the *Quick Beginnings for DB2 Servers*

Related tasks:
- "Installing a DB2 product using the db2_install script" on page 3
- "Installing a DB2 product on AIX using SMIT" on page 5
- "Installing a DB2 product on Linux using rpm" on page 7
- "Installing a DB2 product on HP-UX using swinstall" on page 8
- "Installing DB2 Data Links manually using the db2_install command (AIX)" in the *Quick Beginnings for Data Links Manager*
- "Installing DB2 Data Links Manager manually using the db2_install command (Solaris Operating Environment)" in the *Quick Beginnings for Data Links Manager*
- "Installing DB2 Personal Edition using the DB2 Setup wizard (Linux)" in the *Quick Beginnings for DB2 Personal Edition*
- "Response file installation of DB2 on UNIX" on page 93
- "Installing DB2 clients on UNIX" in the *Quick Beginnings for DB2 Clients*
- "Installing DB2 Life Sciences Data Connect on AIX, HP-UX, Linux, and Solaris Operating Environment servers" in the *DB2 Life Sciences Data Connect Planning, Installation, and Configuration Guide*
- "Installing the DB2 Warehouse Manager Connector for SAP R/3" in the *DB2 Warehouse Manager Installation Guide*
- "Installing the DB2 Warehouse Manager Connector for the Web" in the *DB2 Warehouse Manager Installation Guide*
- "Installing DB2 Connect Personal Edition (Linux)" in the *Quick Beginnings for DB2 Connect Personal Edition*
- "Installing DB2 Connect Enterprise Edition (Solaris)" in the *Quick Beginnings for DB2 Connect Personal Edition*
- "Installing DB2 Connect Enterprise Edition (Linux)" in the *Quick Beginnings for DB2 Connect Personal Edition*
- "Installing DB2 Connect Enterprise Edition (HP-UX)" in the *Quick Beginnings for DB2 Connect Personal Edition*
- "Installing DB2 Connect Enterprise Edition (AIX)" in the *Quick Beginnings for DB2 Connect Personal Edition*
- "Setting up the server to access Microsoft SQL Server data sources" in the *Federated Systems Guide*
- "Installing DB2 Spatial Extender for AIX" in the *Spatial Extender User's Guide and Reference*

Installing a DB2 product using the db2_install script

The db2_install script installs all of the components for a particular DB2 product on your system using the operating system's native installation utility. The db2_install script only installs support for English. This means that help, messages, and tool interfaces are in English. Tasks such as user creation and configuration that might otherwise be performed for you during an interactive installation (DB2 Setup wizard) or response file installation, will have to be performed after the product is installed.

Prerequisites:

Before you install DB2 using the db2_install script:
* You must have root authority.
* Refer to the installation documentation for the particular DB2 product you want to install. For example, if you want to install DB2 Enterprise Server Edition, you must refer to the installation documentation for DB2 Enterprise Server Edition to review installation prerequisites and other important setup information. References to installation documentation can be found in the following topic: Installing a DB2 product manually.

Restrictions:

The db2_install script cannot be used to install DB2 on Windows operating systems. DB2 for Windows must be installed using the DB2 Setup wizard or a response file.

Procedure:

To install a DB2 product using the db2_install script:
1. Log in as a user with root authority.
2. Insert and mount the appropriate CD-ROM.
3. Enter the **./db2_install** command to start the db2_install script. The db2_install script can be found in the `root` directory on your DB2 Version 8 product CD-ROM. The db2_install script prompts you for the product keyword.

   DB2.ADCL
   > DB2 Application Development Client

   DB2.ADMCL
   > DB2 Administration Client

   DB2.CONEE
   > DB2 Connect Enterprise Edition

DB2.CONPE
　　　　DB2 Connect Personal Edition

DB2.DLM
　　　　DB2 Data Links Manager

DB2.ESE
　　　　DB2 Enterprise Server Edition

DB2.GSE
　　　　DB2 Spatial Extender

DB2.LSDC
　　　　DB2 Life Sciences Data Connect

DB2.PE
　　　　DB2 Personal Edition

DB2.RCON
　　　　DB2 Relational Connect

DB2.RTCL
　　　　DB2 Run-Time Client

DB2.WM
　　　　DB2 Warehouse Manager

DB2.WMC
　　　　DB2 Warehouse Manager Connectors

DB2.WSE
　　　　DB2 Workgroup Server Edition

4. Type the keywords for the products you want to install. If you specify more than one product keyword, separate the keywords by spaces.

The installation directory for DB2 software is on:

- `/usr/opt/db2_08_01` for AIX
- `/opt/IBM/db2/V8.1` for HP-UX, Linux, or Solaris

For the Solaris operating environment you have the option of specifying a different base directory for DB2. The default base directory for Solaris is `/opt`. If you choose to install DB2 to a different base directory, links will be set established for the default DB2 installation directory, `/opt/IBM/db2/V8.1`. Parts of the product are dependant upon the default installation directory. Creating links allows DB2 to physically exist on a base directory other than `/opt`.

Related tasks:

- "Installing a DB2 product manually" on page 1
- "Mounting the CD-ROM on AIX" on page 135
- "Mounting the CD-ROM on HP-UX" on page 136

- "Mounting the CD-ROM on Linux" on page 137
- "Setting up a DB2 server after manual installation" on page 11

Installing a DB2 product on AIX using SMIT

This task describes how to install a DB2 product using the System Management Interface Tool (SMIT) on AIX. Tasks such as user creation and configuration that might otherwise be performed for you during an interactive installation (DB2 Setup wizard) or response file installation, must be performed after the product is installed.

Prerequisites:

Before you install DB2 on AIX using SMIT:
- You must have root authority.
- Refer to the installation documentation for the particular DB2 product you want to install. For example, if you want to install DB2 Enterprise Server Edition, you must refer to the installation documentation for DB2 Enterprise Server Edition to review installation prerequisites and other important setup information. References to installation documentation can be found in the following topic: Installing a DB2 product manually.

Procedure:

To install a DB2 product using the SMIT:
1. Log in as a user with root authority.
2. Insert and mount the appropriate CD-ROM.
3. Enter the **smit** command.
4. Select **Software Installation and Maintenance** --> **Install and Update Software** --> **Install and Update Software by Package Name**.
5. Specify the input device or directory for the installation media, or click **List** to display all input devices or directories.
6. Select the mounted CD-ROM drive, then press **Enter**.
7. Select the components that you want to install. Each DB2 product CD-ROM provides a file that lists the components available for installation. Use this list to identify required, typical, and optional DB2 components for the product that you want to install. The component list is in a file called ComponentList.htm and is located in the /db2/*plat* directory on your CD-ROM where *plat* is the platform that you are installing on.

Related tasks:
- "Installing a DB2 product manually" on page 1

- "Mounting the CD-ROM on AIX" on page 135
- "Setting up a DB2 server after manual installation" on page 11

Installing a DB2 product on Solaris using pkgadd

This task describes how to install a DB2 product using the **pkgadd** utility on Solaris. Tasks such as user creation and configuration that might otherwise be performed for you during an interactive installation (DB2 Setup wizard) or response file installation, must be performed after the product is installed.

Prerequisites:

Before you install a DB2 product on Solaris using **pkgadd**:
- You must have root authority.
- Refer to the installation documentation for the particular DB2 product that you want to install. For example, if you want to install DB2 Enterprise Server Edition, you must refer to the installation documentation for DB2 Enterprise Server Edition to review installation prerequisites and other important setup information. References to installation documentation can be found in the following topic: Installing a DB2 product manually.

Procedure:

To install a DB2 product on Solaris using **pkgadd**:
1. Log in as a user with root authority.
2. Insert and mount the appropriate CD-ROM.
3. Identify components you want to install. Each DB2 product CD-ROM provides a file that lists the components available for installation. Use this list to identify required, typical, and optional DB2 components. The component list is in a file called ComponentList.htm and is located in the /db2/*plat* directory on your CD-ROM where *plat* is the platform that you are installing on.
4. Run the **pkgadd** command for each component you want to install:

    pkgadd *component_name*

   For example, if you want to install the Control Center, install the db2wcc81 component by entering the following command:

    pkgadd db2wcc81

When installation is complete your DB2 software will be installed in the /opt/IBM/db2/V8.1 directory.

Related tasks:
- "Installing a DB2 product manually" on page 1

- "Setting up a DB2 server after manual installation" on page 11

Installing a DB2 product on Linux using rpm

This task describes how to install a DB2 product using the **rpm** command on Linux. Tasks such as user creation and configuration that might otherwise be performed for you during an interactive installation (DB2 Setup wizard) or response file installation, must be performed after the product is installed.

Prerequisites:

Before you install a DB2 product for Linux using the **rpm** command:
- You must have root authority.
- Refer to the installation documentation for the particular DB2 product you want to install. For example, if you want to install DB2 Enterprise Server Edition, you must refer to the installation documentation for DB2 Enterprise Server Edition to review installation prerequisites and other important setup information. References to installation documentation can be found in the following topic: Installing a DB2 product manually.

Procedure:

To install a DB2 product on Linux using the rpm command:
1. Log in as a user with root authority.
2. Insert and mount the appropriate CD-ROM.
3. Identify the components you want to install. Each DB2 product CD-ROM provides a file that lists the components available for installation. Use this list to identify required, typical, and optional DB2 components. The component list is in a file called ComponentList.htm and is located in the /db2/*plat* directory on your CD-ROM where *plat* is the platform that you are installing on.
4. Run the rpm command for each component you want to install:

        rpm -ivh *component_name*

   For example, if you want to install the Control Center, install the db2wcc81-8.1.0-0.i386.rpm component by entering the following command:

        rpm -ivh IBM_db2wcc81-8.1.0-0.i386.rpm

When installation is complete your DB2 software will be installed in the /opt/IBM/db2/V8.1 directory.

Related tasks:
- "Installing a DB2 product manually" on page 1
- "Mounting the CD-ROM on Linux" on page 137

Installing a DB2 product on HP-UX using swinstall

This task describes how to install a DB2 product using the **swinstall** utility on HP-UX. Tasks such as user creation and configuration that might otherwise be performed for you during an interactive installation (DB2 Setup wizard) or response file installation, must be performed after the product is installed.

Prerequisites:

Before you install a DB2 product on HP-UX using **swinstall**:
• You must have root authority.
• Refer to the installation documentation for the particular DB2 product that you want to install. For example, if you want to install DB2 Enterprise Server Edition, you must refer to the installation documentation for DB2 Enterprise Server Edition to review installation prerequisites and other important setup information. References to installation documentation can be found the following topic: Installing a DB2 product manually.

Procedure:

To install a DB2 product on HP-UX using **swinstall**:
1. Log in as a user with root authority.
2. Insert and mount the appropriate CD-ROM.
3. Run the swinstall program using the following command:

       swinstall -x autoselect_dependencies=true

   This command opens the Software Selection window and the Specify Source window. If necessary, change the **Source Host Name** in the Specify Source window.
4. In the Source Depot Path field enter /cdrom/db2/hpux where */cdrom* represents the CD-ROM mount directory.
5. Click **OK** to return to the Software Selection window.
6. The Software Selection window contains a list of available software to install. Identify the components you want to install. Each DB2 product CD-ROM provides a file that lists the components available for installation. Use this list to identify required, typical, and optional DB2 components. The component list is in a file called ComponentList.htm and is located in the /db2 directory on your CD-ROM.
7. Select **Mark for Install** from the **Actions** menu to choose the components to be installed.
8. Select **OK** if the following message appears:

```
        In addition to the software you just marked, other software was
        automatically marked to resolve dependencies.  This message will
        not appear again.
```

9. Select **Install (analysis)** from the **Actions** menu to begin product installation and to open the Install Analysis window.

10. Select **OK** in the Install Analysis window when the Status field displays a Ready message.

11. Select **Yes** in the Confirmation windows to confirm that you want to install the software.

    View the Install window to read processing data while the software is being installed, until the **Status** field indicates Ready and the Note window opens. The **swinstall** program loads the file set, and runs the control scripts for the file set.

12. Select **Exit** from the **File** menu to exit from **swinstall**.

Related tasks:

- "Installing a DB2 product manually" on page 1
- "Mounting the CD-ROM on HP-UX" on page 136
- "Setting up a DB2 server after manual installation" on page 11

Chapter 2. Setting up the DB2 server after manual installation

Setting up a DB2 server after manual installation

This task provides steps for setting up a DB2 server after manual installation on UNIX operating systems. Manual installation using the db2_install script or your operating system's native installation utility only installs DB2 components. Configuration and setup tasks such as the ones listed below must be performed manually.

Procedure:

To set up a DB2 server after manual installation:
1. Create group and user IDs for a DB2 installation
2. Create a DB2 Administration Server (DAS)
3. Create an instance using **db2icrt**
4. Setup up communications for the instance:
   - Configuring APPC communications for a DB2 instance
   - Configuring TCP/IP communications for a DB2 instance
5. Update your product license key

If you plan to use DB2 tools such as the Task Center or the DB2 Administration Server scheduler functionality, it is recommended that you set up the the DB2 tools catalog. The DB2 tools catalog contains metadata required for DB2 tools and the scheduler to function.

Related tasks:
- "Creating group and user IDs for a DB2 installation" on page 12
- "Creating a DB2 Administration Server (DAS)" on page 14
- "Creating an instance using db2icrt" on page 14
- "Configuring TCP/IP communications for a DB2 instance" on page 59
- "Configuring APPC communications on the DB2 client" on page 39
- "Updating the DB2 product license key" on page 17
- "Installing a DB2 product on AIX using SMIT" on page 5
- "Installing a DB2 product on Solaris using pkgadd" on page 6
- "Installing a DB2 product on Linux using rpm" on page 7
- "Installing a DB2 product on HP-UX using swinstall" on page 8

- "Installing a DB2 product using the db2_install script" on page 3
- "Installing a DB2 product manually" on page 1
- "Tools catalog database and DAS scheduler setup and configuration" in the *Administration Guide: Implementation*

Creating group and user IDs for a DB2 installation

This task is part of the main task of *Setting up a DB2 server after manual installation*.

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

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

Table 1. Required users and groups

Required user	Example user name	Example group name
Instance owner	db2inst1	db2iadm1
Fenced user	db2fenc1	db2fadm1
DB2 administration server user	db2as	db2asgrp

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

Prerequisites:

You must have root authority to create users and groups.

Procedure:

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

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

```
mkgroup id=999 db2iadm1
mkgroup id=998 db2fadm1
mkgroup id=997 db2asgrp
```

Create users for each group:

```
mkuser id=1004 pgrp=db2iadm1 groups=db2iadm1 home=/home/db2inst1
db2inst1 passwd mypasswrd
```

```
mkuser id=1003 pgrp=db2fadm1 groups=db2fadm1 home=/home/db2fenc1
db2fenc1 passwd mypasswrd
```

```
mkuser id=1002 pgrp=db2asgrp 1 groups=db2asgrp home=/home/db2as
db2as passwd mypasswrd
```

HP-UX

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

```
groupadd id=999 dbiadm1
groupadd id=998 db2fadm1
groupadd id=997 db2asgrp
```

Create users for each group:

```
useradd -g db2iadm1 -d /home/db2instl -m db2inst1 passwd mypasswrd
useradd -g db2fadm1 -d /home/db2fenc1 -m db2inst1 passwd mypasswrd
useradd -g dbasgrp -d /home/db2fenc1 -m db2inst1 passwd mypasswrd
```

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

```
mkgroup -g 999 db2iadm1
mkgroup -g 998 db2fadm1
mkgroup -g 997 db2asgrp
```

Create users for each group:

```
mkuser -u 1004 -g db2iadm1 -G db2iadm1 -m -d /home/db2inst1
db2inst1 -p mypasswrd
```

```
mkuser -u 1003 -g db2fadm1 -G dbfadm1 -m -d /home/db2fenc1
db2fenc1 -p mypasswrd
```

```
mkuser -u 1002 -g db2asgrp -G db2asgrp -m -d /home/db2as
db2as -p mypasswrd
```

Solaris Operating Environment

To create groups on Solaris, enter the following commands:

```
groupadd -g 999 db2iadm1
groupadd -g 998 db2fadm1
groupadd -g 997 db2asgrp
```

Create users for each group:

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

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

```
                    db2fenc1 passwd mypasswrd

                    useradd -g db2asgrp -u 1002 -d /export/home/db2as -m
                    db2as passwd mypasswrd
```

Related concepts:
- "Naming rules" in the *Quick Beginnings for DB2 Servers*

Related tasks:
- "Installing a DB2 product manually" on page 1

Creating a DB2 Administration Server (DAS)

This task is part of the main task of *Manually installing DB2*.

The DB2 Administration Server (DAS) provides support services for DB2 tools such as the Control Center and Configuration Assistant.

Prerequisites:
- To create a DAS, you must have root authority.
- You have created a DAS user for DB2.

Procedure:

To create the DAS:
1. Log in as user with root authority.
2. Issue one of the following commands to create the DAS:
   - For AIX, enter:
     ```
     /usr/opt/db2_08_01/instance/dascrt -u DASuser
     ```

   For HP-UX, Solaris, or Linux, enter
     ```
     /opt/IBM/db2/V8.1/instance/dascrt -u DASuser
     ```

   –u   For the **–u** parameter, specify the DAS user you created when creating users and groups for DB2.

Related tasks:
- "Installing a DB2 product manually" on page 1

Creating an instance using db2icrt

This task is part of the main task of *Setting up a DB2 server after manual installation*.

A DB2 instance is an environment in which you store data and run applications. Use the **db2icrt** command to create an instance.

Prerequisites:

You must have root authority.

Procedure:

To create an instance using **db2icrt**:
1. Log in as user with root authority.
2. Run the following command:

```
DB2DIR/instance/db2icrt -a AuthType -u FencedID InstName
```

DB2DIR
> is the DB2 installation directory.
> - On AIX, the DB2 installation directory is `/usr/opt/db2_08_01`
> - On all other UNIX-based operating systems, the installation directory is `/opt/IBM/db2/V8.1`

-a AuthType
> Represents the authentication type for the instance. AuthType can be one of SERVER, CLIENT, DCS, SERVER_ENCRYPT, DCS_ENCRYPT. SERVER is the default. This parameter is optional.

-u FencedID
> Represents the name of the user under which fenced user defined functions (UDFs) and fenced stored procedures will run. This flag is not required if you are creating an instance on a DB2 client. Specify the name of the fenced user you created.

InstName
> Represents the name of instance. The name of the instance must be the same as the name of the instance owning user. Specify the name of the instance owning user you created. The instance will be created in the instance owning user's home directory.

For example, if you are using server authentication, your fenced user is db2fenc1, and your instance owning user is db2inst1, use the following command to create an instance on an AIX system:

```
/usr/opt/db2_08_01/instance/db2icrt -a server -u db2fenc1 db2inst1
```

After you create an instance you may want to configure notification for health monitoring. This task can be performed using the Health Center or CLP.

Related concepts:

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

Related tasks:
- "Installing a DB2 product manually" on page 1

Related reference:
- "db2icrt - Create Instance Command" in the *Command Reference*
- "Health Monitoring configuration parameter - health_mon" in the *Administration Guide: Performance*

Creating links for DB2 files

You can create links for the DB2 files to the /usr/lib directory, and for the include files to the /usr/include directory for a particular version and release level of DB2.

You may want to create these links if you are developing or running applications and want to avoid having to specify the full path to the product libraries and include files.

This is not required for normal DB2 operation.

Prerequisites:

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

Restrictions:

The following restrictions apply:
- Creating links for one version of DB2 will render the other versions of DB2 non-functional. Links can be established for only one version of DB2 on a given system.
- If there are existing links to the /usr/lib and /usr/include directories from a previous version of DB2, they will automatically be removed.
- Links should not be created on systems where multiple versions of DB2 are intended to coexist.

Procedure:

To create links for DB2 files:
1. Log on as a user with root authority
2. Run the appropriate command for your operating system:

AIX   /usr/opt/db2_08_01/cfg/db2ln

All other UNIX-based operating systems
        /opt/IBM/db2/V8.1/cfg/db2ln

If there are existing links to the /usr/lib and /usr/include directories from a previous version of DB2, they will automatically be removed by entering the **db2ln** command to create links for this version of DB2. If you want to re-establish the links to the libraries of the previous version, then you must execute the **db2rmln** command from your current version of DB2 before you execute the **db2ln** command from the previous version of DB2.

Related tasks:
- "Setting up a DB2 server after manual installation" on page 11
- "Installing a DB2 product manually" on page 1

Updating the DB2 product license key

This task is part of the main task of *Setting up a DB2 server after manual installation*.

Updating the DB2 product license key is done by running the **db2licm** command and specifying the license file name for your DB2 product.

You must install a license key on each computer where DB2 is installed.

Procedure:

To update your DB2 product license key using root authority:
1. Log in as a user with root authority.
2. Update the DB2 product license key with the appropriate command:
   ```
   /usr/opt/db2_08_01/adm/db2licm -a filename  on AIX
   /opt/IBM/db2/V8.1/adm/db2licm -a filename  for all
     other UNIX-based operating systems
   ```

   where *filename* is the full pathname and filename for the license file that corresponds to the product you have purchased. The license file is located in the /db2/license directory located at the root of your CD-ROM.

For example, on AIX, if the CD-ROM is mounted in the /cdrom directory and the name of the license file is db2dlm.lic, the command should be as follows:
   ```
   /usr/opt/db2_08_01/adm/db2licm -a /cdrom/db2/license/db2dlm.lic
   ```

The DB2 product license key exists in the following directories dependent on platform:

- For AIX, the product license keys are located in `/var/ifor`.
- For HP-UX, the product license keys are located in `/var/lum`.
- For the Solaris operating environment, the product license keys are located in `/var/lum`.
- For Linux, the product license keys are located in `/var/lum`.

To update your DB2 product license key as the instance owner:

1. Create the instance environment and become the instance owner.
2. Update your DB2 product license with the appropriate command:
   a. On AIX enter:
      ```
      /usr/opt/db2_08_01/adm/db2licm -a filename
      ```
   b. On all other UNIX-based operating systems enter:
      ```
      /opt/IBM/db2/V8.1/adm/db2licm -a filename
      ```

   where *filename* is the full pathname and filename for the license file that corresponds to the product you have purchased. The license file is located in the `/db2/license` directory located at the root of your CD-ROM.

Related tasks:
- "Installing a DB2 product manually" on page 1

Related reference:
- "DB2 product license files" on page 138

Chapter 3. Configuring client to server communications

Configuring a database connection using Discovery

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

Prerequisites:

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

Restrictions:

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

Procedure:

To add a database to your system using Discovery:
1. Log on to the system with a valid DB2 user ID.
2. Start the CA. The CA can be started from the Start menu on Windows or using the **db2ca** command on both Windows and UNIX systems.
3. On the CA menu bar, under **Selected**, choose **Add Database Using Wizard**.
4. Select the **Search the network** radio button and click **Next**.
5. Double-click on the folder beside **Known Systems** to list all the systems known to your client.
6. Click the [+] sign beside a system to get a list of the instances and databases on it. Select the database that you want to add, click the **Next** push button.
7. Enter a local database alias name in the **Database alias** field and optionally enter a comment that describes this database in the **Comment** field.
8. If you are planning to use ODBC, register this database as an ODBC data source. ODBC must be installed to perform this operation.

9. Click **Finish**. You are now able to use the database you added. Click **Close** to exit the CA.

Related tasks:

- "Configuring a database connection using the Configuration Assistant (CA)" on page 20
- "Configuring a database connection using a profile" on page 21
- "Testing a database connection" on page 67

Configuring a database connection using the Configuration Assistant (CA)

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

Prerequisites:

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

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

Procedure:

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

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

   If DB2 Connect is installed on your machine and you select TCP/IP or APPC, you have the option to select **The database physically resides on**

a host or OS/400 system. If you select this check box, you will have the option of selecting the type of connection that you want to make to the host or OS/400 database:

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

Click **Next**.

7. Enter the required communication protocol parameters and click **Next**.
8. Enter the database alias name of the remote database that you want to add in the **Database name** field and a local database alias name in the **Database alias** field.

   If you are adding a host or OS/400 database, type the Location name for an OS/390 or z/OS database, the RDB name for an OS/400 database, or the DBNAME for a VSE or VM database in the **Database name** field. Optionally add a comment that describes this database in the **Comment** field.

   Click **Next**.
9. If you are planning to use ODBC, register this database as an ODBC data source. ODBC must be installed to perform this operation.
10. Click **Finish**. You are now able to use this database. Select the **Exit** menu action to close the CA.

Related tasks:

- "Configuring a database connection using Discovery" on page 19
- "Configuring a database connection using a profile" on page 21
- "Testing a database connection" on page 67

Configuring a database connection using a profile

A server profile contains information about server instances on a system, and databases within each server instance. A client profile contains database information that was cataloged on another client system. Use the steps in the following task to connect to a database using a profile.

Prerequisites:

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

- Ensure that you have a valid DB2 user ID.

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

Procedure:

To connect to a database using a profile:

1. Log on to the system with a valid DB2 user ID.
2. Start the CA. The CA can be started from the Start menu on Windows or using the **db2ca** command on both Windows and UNIX systems.
3. On the CA menu bar, under **Selected**, choose **Add Database Using Wizard**.
4. Select the **Use a profile** radio button and click **Next**.
5. Click the **...** push button and select a profile. Select a remote database from the object tree that is displayed from the profile, and if the database selected is a gateway connection, select a connection route to the database. Click the **Next** push button.
6. Enter a local database alias name in the **Database alias** field and optionally enter a comment that describes this database in the **Comment** field. Click **Next**.
7. If you are planning to use ODBC, register this database as an ODBC data source. ODBC must be installed to perform this operation.
8. Click **Finish**. You are now able to use this database. Select the **Exit** menu action to exit the CA.

Related tasks:
- "Creating client profiles using the export function of the Configuration Assistant (CA)" in the *Quick Beginnings for DB2 Clients*
- "Testing a database connection" on page 67

Configuring a client to server connection using the command line processor

This task describes how to configure a connection from a DB2 client to a remote database using the command line processor (CLP). The task consists of cataloging the database node, cataloging the database, and testing the connection. Before you can complete this task, communications must be configured on the DB2 client and DB2 server.

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

Prerequisites:

Before you configure a client to server connection:

- Communications must be configured on the client computer. Depending on your operating system, communications can be Named Pipes or one of the following communication protocols: APPC, NetBIOS, TCP/IP.
- Communications must be configured on the DB2 server. Depending on your operating system, communications can be Named Pipes or one of the following communication protocols: APPC, NetBIOS, TCP/IP.
- You must use one of the supported client to server connection scenarios. The connection scenarios outline which communication method or protocol can be used by which operating system. You cannot use NetBIOS to connect from a Windows client to a server running on a UNIX-based system.

Procedure:

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

1. On the DB2 client, catalog the database node using one of the following methods:
   - Catalog the TCP/IP node on the DB2 client.
   - Catalog the NetBIOS node on the DB2 client.
   - Catalog the APPC node on the DB2 client.
   - Catalog the Named Pipes node on the DB2 client.
2. Catalog the database on the DB2 client.
3. Test the client to server connection.

Related tasks:

- "Cataloging the TCP/IP node on the client" on page 28
- "Cataloging the NetBIOS node on the DB2 client" on page 35
- "Cataloging the APPC node on the DB2 client" on page 45
- "Cataloging the Named Pipes node on the client" on page 39
- "Cataloging a database using the CLP" on page 30
- "Testing the client to server connection using the CLP" on page 47
- "Configuring communication protocols for a remote DB2 instance" on page 49
- "Configuring communication protocols for a local DB2 instance" on page 51
- "Configuring APPC communications for a DB2 instance" on page 63
- "Configuring NetBIOS communications for a DB2 instance" on page 54
- "Configuring TCP/IP communications for a DB2 instance" on page 59
- "Configuring Named Pipes communications for a DB2 instance" on page 63
- "Configuring a client to server connection using the Configuration Assistant (CA)" in the *Quick Beginnings for DB2 Servers*

Related reference:
- "Client-to-Server communication scenarios" on page 143

Configuring TCP/IP on the client using the CLP

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

Prerequisites:

Before you configure TCP/IP on the client:
- Ensure that TCP/IP is functional on the DB2 client. To establish a client to server connection, TCP/IP must also be functional on the DB2 server. To check TCP/IP functionality, type `hostname` to retrieve the hostname of the local machine and then ping the *hostname*.
- You have identified the following parameter values
  - Hostname (*hostname*) or IP address (*ip_address*) of the server machine.
  - Connection Service name (*svcename*) and/or Port number/Protocol (*port_number/tcp*)
  - Node name (*node_name*)

  For more information about these parameter values, see the TCP/IP parameter values worksheet.

Procedure:

To configure TCP/IP communications between your DB2 client and DB2 server:
1. Resolve the server's host address.
2. Update the services file on the DB2 client.
3. Configure the client to server connection.

Related tasks:
- "Resolving a server host address to configure a client to server connection" on page 26
- "Updating the services file on the client" on page 28
- "Configuring a client to server connection using the command line processor" on page 22
- "Configuring Named Pipes on the client using the CLP" on page 37
- "Configuring NetBIOS on the client using the CLP" on page 32
- "Configuring APPC communications on the DB2 client" on page 39

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

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

Table 2. TCP/IP parmeter values worksheet

Parameter	Description	Sample Value	Your Value
Host name • Hostname (*hostname*) or • IP address (*ip_address*)	Use the *hostname* or *ip_address* of the remote host. To resolve this parameter: • Enter the **hostname** command at the server to obtain the *hostname*. • Contact your network administrator to obtain the *ip_address* or enter the **ping** *hostname* command. • On UNIX systems, you can also use the *DB2DIR*/**bin/hostlookup** *hostname* command. where *DB2* is the directory where DB2 is installed.	myserver or `9.21.15.235`	

Table 2. TCP/IP parmeter values worksheet (continued)

Parameter	Description	Sample Value	Your Value

Service Name
• Connection Service name (*svcename*) or
• Port number/Protocol (*port_number/tcp*)
	Values Required in the `services` file.
	
	The Connection Service name is an arbitrary name that represents the connection port number (*port_number*) on the client.
	
	The port number must be the same as the port number that the *svcename* parameter maps to in the services file on the server system. (The *svcename* parameter is located in the database manager configuration file on the server instance.) This value must not be in use by any other applications, and must be unique within the services file.
	
	On UNIX platforms, this value generally must be 1024 or higher.
	
	Contact your database administrator for the values used to configure the server.
		`server1`
		
		or
		
		`3700/tcp`	

Node name (*node_name*)	A local alias, or nickname, that describes the node to which you are trying to connect. You can choose any name you want; however, all node name values within your local node directory must be unique.	db2node	

Related tasks:

- "Configuring TCP/IP on the client using the CLP" on page 24
- "Configuring a client to server connection using the command line processor" on page 22

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

This task is part of the main task of *Configuring TCP/IP on the client using the CLP*.

The client will use the host address of the DB2 server to establish a connection. If your network has a name server, or if you plan to directly specify an IP address (*ip_address*) of the server, you can proceed to cataloging the TCP/IP node. If a domain name server does not exist on your network, you may directly specify a hostname that maps to the IP address (*ip_address*) of the server in the local hosts file. If you are planning on supporting a UNIX client that is using Network Information Services (NIS), and you are not using a domain name server on your network, you must update the hosts file located on your NIS master server.

The following table lists the location of the local hosts and services files.

Table 3. Location of the Local Hosts and Services Files

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

Procedure:

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

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

where:

9.21.15.235
        represents the *ip_address*

myserver
        represents the *hostname*

represents a comment describing the entry

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

The next step is to update the services file on the client.

Related tasks:
- "Updating the services file on the client" on page 28
- "Configuring a client to server connection using the command line processor" on page 22

Updating the services file on the client

This task is part of the main task of *Configuring TCP/IP on the client using the CLP*.

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

Prerequisites:

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

Procedure:

Using a text editor, add the Connection Service name and port number to the client's services file. This file is located in the same directory as the local hosts file. For example:

```
server1  3700/tcp  # DB2 connection service port
```

where:

server1 represents the Connection Service name

3700 represents the connection port number

tcp represents the communication protocol that you are using

represents the beginning of a comment that describes the entry

The next step is to configure a client to server connection.

Related reference:

- "Supported protocols for accessing DB2 Universal Database servers from Host or OS/400" on page 71

Cataloging the TCP/IP node on the client

This is part of the main task of *Configuring a client to server connection using the CLP*.

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

Procedure:

To catalog a TCP/IP node, perform the following steps:

1. Log on to the system as a user with System Administrative (SYSADM) or System Controller (SYSCTRL) authority. You can also log on to the system without these authority levels if you have the `catalog_noauth` option set to `ON`.

2. If you are using a UNIX client, set up the instance environment and invoke the DB2 command line processor. Run the start-up script as follows:

   ```
   . INSTHOME/sqllib/db2profile    (for bash, Bourne or Korn shell)
   source INSTHOME/sqllib/db2cshrc (for C shell)
   ```

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

3. Catalog the node by entering the following commands from a **db2** prompt:

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

   Where:
   - `system` is the system name of the remote server;
   - `ostype` is the operating system of the remote server system.

   Specifying the `remote_instance`, `system`, and `ostype` is optional, but recommended for users who want to use the DB2 tools. The *service_name* used on the client does not have to be the same as the one on the server. However, the port numbers that they map to *must* match.

   For example, to catalog the remote host *myserver* on the node called *db2node*, using the service name *server1*, enter the following from a **db2** prompt:

   ```
   catalog tcpip node db2node remote myserver server server1
   terminate
   ```

   To catalog a remote server with the IP address *9.21.15.235* on the node called *db2node*, using the port number *3700*, enter the following from a **db2** prompt:

   ```
   catalog tcpip node db2node remote 9.21.15.235 server 3700
   terminate
   ```

   Note: The **terminate** command is needed to refresh the directory cache.

The next step is to catalog the database on the client.

Related tasks:

- "Configuring TCP/IP on the client using the CLP" on page 24

Related reference:
- "CATALOG TCP/IP NODE Command" in the *Command Reference*

Cataloging a database using the CLP

This task describes how to catalog a database using the CLP.

Before a client application can access a remote database, the database must be cataloged on the client. When you create a database, the database is automatically cataloged on the server with a database alias that is the same as the database name, unless a different database alias was specified. The information in the database directory, along with the information in the node directory (unless cataloging a local database where a node is not needed), is used on the DB2 client to establish a connection to the remote database.

Prerequisites:

Before you catalog the database:
- You require a valid DB2 user ID
- If you are cataloging a database on a system that has a DB2 server or DB2 Connect product installed, the user ID must have System Administrative (SYSADM) or System Controller (SYSCTRL) authority on the instance.
- The following parameter values are applicable when cataloging a *remote* database:
  - Database name
  - Database alias
  - Node name
  - Authentication type (optional)
  - Comment (optional)

  Refer to the Parameter values worksheet for cataloging a database. for more information about these parameters.
- The following parameter values are applicable when cataloging a *local* database:
  - Database name
  - Database alias
  - Authentication type (optional)
  - Comment (optional)

  Local databases can be uncataloged and re-cataloged at any time.

Procedure:

To catalog a database on the client, perform the following steps.

1. Log on to the system with a valid DB2 user ID. If you are cataloging a database on a system that has a DB2 server or DB2 Connect server installed, log onto this system as a user with System Administrative (SYSADM) or System Controller (SYSCTRL) authority on the instance.

2. Update the Your Value column in the Parameter values worksheet for cataloging a database..

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

   ```
   . INSTHOME/sqllib/db2profile    (for bash, Bourne or Korn shell)
   source INSTHOME/sqllib/db2cshrc (for C shell)
   ```

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

4. Start the DB2 command line processor. You can do this by issuing the **db2** command from a DB2 command window.

5. Catalog the database by entering the following commands in the command line processor:

   ```
   catalog database database_name as database_alias at\
   node node_name authentication auth_value
   ```

   For example, to catalog a remote database called *sample* so that it has the local database alias *mysample*, on the node *db2node*, enter the following commands:

   ```
   catalog database sample as mysample at node db2node\
   authentication server
   terminate
   ```

The next step is to test the client to server connection.

Related tasks:
- "Testing the client to server connection using the CLP" on page 47

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

Parameter values worksheet for cataloging a database

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

Table 4. Catalog database worksheet

Parameter	Description	Sample Value	Your Value
Database name (*database_name*)	When a database is created, the database alias is set to the database name unless otherwise specified. For example, when the `sample` database is created on the server, a database alias of `sample` is also created. The database name represents the remote database alias (on the server).	`sample`	
Database alias (*database_alias*)	An arbitrary local nickname for the remote database. If you do not provide one, the default is the same as the database name (*database_name*). Use this name when you connect to the database from a client.	`mysample`	
Authentication (*auth_value*)	The value of the authentication required in your environment.	Server	
Node name (*node_name*)	The name of the node directory entry that describes where the database resides. Use the same value for node name (*node_name*) that you used to catalog the node.	`db2node`	

Related tasks:

- "Cataloging a database using the CLP" on page 30
- "Testing the client to server connection using the CLP" on page 47
- "Configuring a client to server connection using the command line processor" on page 22

Configuring NetBIOS on the client using the CLP

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

Prerequisites:

Before you configure NetBIOS on the client:
- Ensure that NetBIOS is functional on the DB2 client. To establish a connection, NetBIOS must also be configured on the DB2 server.
- You have identified the following parameter values
  - Logical adapter number
  - Workstation name (nname) on the client
  - Workstation name (nname) on the server
  - Node name (name of the node entry that describes the DB2 instance where the database resides)

  For more information about identifying these parameter values, see the NetBIOS parameter values worksheet.

Procedure:

To configure NetBIOS communications between your DB2 client and DB2 server:
1. Determine the logical adapter number used for the NetBIOS connection.
2. Update the database manager configuration file.
3. Configure the client to server connection.
4. Catalog a database using the CLP

Related tasks:
- "Determining the logical adapter number of the client for the NetBIOS connection" on page 33
- "Updating the database manager configuration file for a NetBIOS connection" on page 36
- "Configuring a client to server connection using the command line processor" on page 22
- "Cataloging a database using the CLP" on page 30
- "Configuring a client to server connection using the Configuration Assistant (CA)" in the *Quick Beginnings for DB2 Servers*

Determining the logical adapter number of the client for the NetBIOS connection

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

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

Restrictions:

This procedure is for Windows operating systems only.

Procedure:

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

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

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

Related tasks:
- "Configuring a client to server connection using the command line processor" on page 22

NetBIOS parameter values worksheet

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

Table 5. NetBIOS parameter values worksheet

Parameter	Description	Sample Value	Your Value
Logical adapter number (*adapter_number*)	The local logical adapter that will be used for the NetBIOS connection.	0	

Table 5. NetBIOS parameter values worksheet (continued)

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

Related tasks:

- "Configuring NetBIOS on the client using the CLP" on page 32
- "Configuring a client to server connection using the command line processor" on page 22

Cataloging the NetBIOS node on the DB2 client

This task is part of the main task of *Configuring a client to server connection using the command line processor (CLP)*.

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

Prerequisites:

Before you configure NetBIOS on the client:
- You must be able to log on to the system with a valid DB2 user ID. If you are adding a database to a system that has a DB2 server or DB2 Connect server product installed, log on to this system as a user with System Administrative (SYSADM) or System Controller (SYSCTRL) authority on the instance.
- For more information about identifying these parameter values, see the NetBIOS parameter values worksheet.

Procedure:

To catalog the NetBIOS node:
1. Catalog the node by entering the following commands in the command line processor from a **db2** prompt:

       catalog netbios node *node_name* remote *nname* adapter *adapter_number*
       terminate

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

       catalog netbios node *db2node* remote *server1* adapter *0*
       terminate

The next step in *Configuring a client to server connection using the command line processor (CLP)* is to catalog the database on the client.

Related tasks:
- "Configuring NetBIOS on the client using the CLP" on page 32
- "Cataloging a database using the CLP" on page 30

Related reference:
- "CATALOG NETBIOS NODE Command" in the *Command Reference*
- "NetBIOS parameter values worksheet" on page 34

Updating the database manager configuration file for a NetBIOS connection

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

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

Restrictions:

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

Procedure:

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

   For example, if the client's workstation name (*nname*) is client1, use:
   ```
   update database manager configuration using nname client1
   terminate
   ```

The next step is to configure a client to server connection using the CLP.

Related tasks:
- "Configuring a client to server connection using the command line processor" on page 22

Configuring Named Pipes on the client using the CLP

This task describes how to configure Named Pipes on the DB2 client using the command line processor (CLP).

Prerequisites:

Before you configure Named Pipes on the client:
- Ensure that Named Pipes is available on the DB2 client. To establish a connection, Named Pipes must also be available on the DB2 server.
- You have identified the following parameter values:
  - Computer name (the computer name of the server)
  - Instance name (the name of the instance on the server to which you are connecting)
  - Node name (local alias for the server node)

For more information about identifying these parameter values, see the Named Pipes parameter values worksheet.

Procedure:

To configure Named Pipes:

1. Configure a client to server connection using the command line processor.

Related tasks:

- "Configuring a client to server connection using the command line processor" on page 22

Related reference:

- "Named Pipes parameter values worksheet for configuring Named Pipes on the client" on page 38

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

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

Table 6. Named Pipes parameter values worksheet

Parameter	Description	Sample Value	Your Value
Computer name (*computer_name*)	The computer name of the server machine. On the server machine, to locate the value for this parameter, click on **Start** and select **Settings, Control Panel**. Double-click on the **Network** folder and select the **Identification** tab. Record the computer name.	server1	
Instance name (*instance_name*)	The name of the instance on the server to which you are connecting.	db2	
Node name (*node_name*)		db2node	

Related tasks:

- "Configuring Named Pipes on the client using the CLP" on page 37
- "Configuring a client to server connection using the command line processor" on page 22

Cataloging the Named Pipes node on the client

This task is part of the main task of *Configuring a client to server connection using the command line processor (CLP)*.

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

Procedure:

To catalog a Named Pipes node on a DB2 client, use the following command:

```
db2 catalog npipe node node_name remote computer_name instance instance_name
terminate
```

For example, to catalog a remote node called *db2node*, which is located on the server called *server1*, in the *db2* instance, use:

```
db2 catalog npipe node db2node remote server1 instance db2
terminate
```

The next step is to catalog the database on the client.

Related tasks:
- "Configuring Named Pipes on the client using the CLP" on page 37

Related reference:
- "CATALOG NAMED PIPE NODE Command" in the *Command Reference*
- "Named Pipes parameter values worksheet for configuring Named Pipes on the client" on page 38

Configuring APPC communications on the DB2 client

The following support has been withdrawn from DB2 Enterprise Server Edition (ESE) for Windows and UNIX Version 8 and DB2 Connect Enterprise Edition (EE) for Windows and UNIX Version 8:
- Two phase commit capability using SNA. Applications that require two phase commit must use TCP/IP connectivity. Two phase commit using TCP/IP to a host or iSeries database server has been available for several releases. Host or iSeries applications which require two phase commit support can use the new capability of TCP/IP two phase commit support within DB2 ESE Version 8

- Applications can no longer access a DB2 UDB ESE server on UNIX or Windows or a DB2 Connect EE server using SNA. Applications can still access host or iSeries database servers using SNA but only using one phase commit.

APPC parameter values worksheet for the DB2 client

The following support has been withdrawn from DB2 Enterprise Server Edition (ESE) for Windows and UNIX Version 8 and DB2 Connect Enterprise Edition (EE) for Windows and UNIX Version 8:

- Two phase commit capability using SNA. Applications that require two phase commit must use TCP/IP connectivity. Two phase commit using TCP/IP to a host or iSeries database server has been available for several releases. Host or iSeries applications which require two phase commit support can use the new capability of TCP/IP two phase commit support within DB2 ESE Version 8
- Applications can no longer access a DB2 UDB ESE server on UNIX or Windows or a DB2 Connect EE server using SNA. Applications can still access host or iSeries database servers using SNA but only using one phase commit.

Related tasks:

- "Configuring APPC communications on the DB2 client" on page 39
- "Cataloging a database using the CLP" on page 30
- "Configuring a client to server connection using the Configuration Assistant (CA)" in the *Quick Beginnings for DB2 Servers*

Updating APPC profiles on the DB2 client

The following support has been withdrawn from DB2 Enterprise Server Edition (ESE) for Windows and UNIX Version 8 and DB2 Connect Enterprise Edition (EE) for Windows and UNIX Version 8:

- Two phase commit capability using SNA. Applications that require two phase commit must use TCP/IP connectivity. Two phase commit using TCP/IP to a host or iSeries database server has been available for several releases. Host or iSeries applications which require two phase commit support can use the new capability of TCP/IP two phase commit support within DB2 ESE Version 8
- Applications can no longer access a DB2 UDB ESE server on UNIX or Windows or a DB2 Connect EE server using SNA. Applications can still access host or iSeries database servers using SNA but only using one phase commit.

Configuring IBM eNetwork Personal Communications for Windows NT

The following support has been withdrawn from DB2 Enterprise Server Edition (ESE) for Windows and UNIX Version 8 and DB2 Connect Enterprise Edition (EE) for Windows and UNIX Version 8:

- Two phase commit capability using SNA. Applications that require two phase commit must use TCP/IP connectivity. Two phase commit using TCP/IP to a host or iSeries database server has been available for several releases. Host or iSeries applications which require two phase commit support can use the new capability of TCP/IP two phase commit support within DB2 ESE Version 8

- Applications can no longer access a DB2 UDB ESE server on UNIX or Windows or a DB2 Connect EE server using SNA. Applications can still access host or iSeries database servers using SNA but only using one phase commit.

Configuring IBM eNetwork Communications Server for Windows NT

The following support has been withdrawn from DB2 Enterprise Server Edition (ESE) for Windows and UNIX Version 8 and DB2 Connect Enterprise Edition (EE) for Windows and UNIX Version 8:

- Two phase commit capability using SNA. Applications that require two phase commit must use TCP/IP connectivity. Two phase commit using TCP/IP to a host or iSeries database server has been available for several releases. Host or iSeries applications which require two phase commit support can use the new capability of TCP/IP two phase commit support within DB2 ESE Version 8

- Applications can no longer access a DB2 UDB ESE server on UNIX or Windows or a DB2 Connect EE server using SNA. Applications can still access host or iSeries database servers using SNA but only using one phase commit.

Related tasks:
- "Configuring APPC communications on the DB2 client" on page 39
- "Updating APPC profiles on the DB2 client" on page 40

Related reference:
- "APPC parameter values worksheet for the DB2 client" on page 40

Configuring an SNA API Client for IBM eNetwork Communications Server for Windows

The following support has been withdrawn from DB2 Enterprise Server Edition (ESE) for Windows and UNIX Version 8 and DB2 Connect Enterprise Edition (EE) for Windows and UNIX Version 8:
- Two phase commit capability using SNA. Applications that require two phase commit must use TCP/IP connectivity. Two phase commit using TCP/IP to a host or iSeries database server has been available for several releases. Host or iSeries applications which require two phase commit support can use the new capability of TCP/IP two phase commit support within DB2 ESE Version 8
- Applications can no longer access a DB2 UDB ESE server on UNIX or Windows or a DB2 Connect EE server using SNA. Applications can still access host or iSeries database servers using SNA but only using one phase commit.

Related tasks:
- "Cataloging the APPC or APPN node" in the *Connectivity Supplement*
- "Configuring APPC communications on the DB2 client" on page 39

Configuring Microsoft SNA Server

The following support has been withdrawn from DB2 Enterprise Server Edition (ESE) for Windows and UNIX Version 8 and DB2 Connect Enterprise Edition (EE) for Windows and UNIX Version 8:
- Two phase commit capability using SNA. Applications that require two phase commit must use TCP/IP connectivity. Two phase commit using TCP/IP to a host or iSeries database server has been available for several

releases. Host or iSeries applications which require two phase commit support can use the new capability of TCP/IP two phase commit support within DB2 ESE Version 8

- Applications can no longer access a DB2 UDB ESE server on UNIX or Windows or a DB2 Connect EE server using SNA. Applications can still access host or iSeries database servers using SNA but only using one phase commit.

Related tasks:
- "Configuring Microsoft SNA Client" on page 43
- "Configuring APPC communications manually between DB2 Connect and a host and iSeries database server" in the *Connectivity Supplement*
- "Cataloging the APPC or APPN node" in the *Connectivity Supplement*
- "Configuring APPC communications on the DB2 client" on page 39

Configuring Microsoft SNA Client

The following support has been withdrawn from DB2 Enterprise Server Edition (ESE) for Windows and UNIX Version 8 and DB2 Connect Enterprise Edition (EE) for Windows and UNIX Version 8:

- Two phase commit capability using SNA. Applications that require two phase commit must use TCP/IP connectivity. Two phase commit using TCP/IP to a host or iSeries database server has been available for several releases. Host or iSeries applications which require two phase commit support can use the new capability of TCP/IP two phase commit support within DB2 ESE Version 8
- Applications can no longer access a DB2 UDB ESE server on UNIX or Windows or a DB2 Connect EE server using SNA. Applications can still access host or iSeries database servers using SNA but only using one phase commit.

Related tasks:
- "Configuring Microsoft SNA Server" on page 42
- "Configuring APPC communications for a DB2 instance" on page 63
- "Cataloging the APPC or APPN node" in the *Connectivity Supplement*
- "Configuring APPC communications on the DB2 client" on page 39

Configuring IBM eNetwork Communications Server for AIX

The following support has been withdrawn from DB2 Enterprise Server Edition (ESE) for Windows and UNIX Version 8 and DB2 Connect Enterprise Edition (EE) for Windows and UNIX Version 8:

- Two phase commit capability using SNA. Applications that require two phase commit must use TCP/IP connectivity. Two phase commit using TCP/IP to a host or iSeries database server has been available for several releases. Host or iSeries applications which require two phase commit support can use the new capability of TCP/IP two phase commit support within DB2 ESE Version 8
- Applications can no longer access a DB2 UDB ESE server on UNIX or Windows or a DB2 Connect EE server using SNA. Applications can still access host or iSeries database servers using SNA but only using one phase commit.

Related tasks:
- "Configuring APPC communications manually between DB2 Connect and a host and iSeries database server" in the *Connectivity Supplement*
- "Cataloging the APPC or APPN node" in the *Connectivity Supplement*
- "Configuring APPC communications on the DB2 client" on page 39

Configuring Bull SNA for AIX

The following support has been withdrawn from DB2 Enterprise Server Edition (ESE) for Windows and UNIX Version 8 and DB2 Connect Enterprise Edition (EE) for Windows and UNIX Version 8:

- Two phase commit capability using SNA. Applications that require two phase commit must use TCP/IP connectivity. Two phase commit using TCP/IP to a host or iSeries database server has been available for several releases. Host or iSeries applications which require two phase commit support can use the new capability of TCP/IP two phase commit support within DB2 ESE Version 8
- Applications can no longer access a DB2 UDB ESE server on UNIX or Windows or a DB2 Connect EE server using SNA. Applications can still access host or iSeries database servers using SNA but only using one phase commit.

Related tasks:
- "Configuring APPC communications on the DB2 client" on page 39

Configuring SNAPlus2 for HP-UX

The following support has been withdrawn from DB2 Enterprise Server Edition (ESE) for Windows and UNIX Version 8 and DB2 Connect Enterprise Edition (EE) for Windows and UNIX Version 8:

- Two phase commit capability using SNA. Applications that require two phase commit must use TCP/IP connectivity. Two phase commit using TCP/IP to a host or iSeries database server has been available for several releases. Host or iSeries applications which require two phase commit support can use the new capability of TCP/IP two phase commit support within DB2 ESE Version 8
- Applications can no longer access a DB2 UDB ESE server on UNIX or Windows or a DB2 Connect EE server using SNA. Applications can still access host or iSeries database servers using SNA but only using one phase commit.

Related tasks:

- "Configuring APPC communications manually between DB2 Connect and a host and iSeries database server" in the *Connectivity Supplement*
- "Cataloging the APPC or APPN node" in the *Connectivity Supplement*
- "Configuring APPC communications on the DB2 client" on page 39

Configure SNAP-IX for SPARC Solaris

The following support has been withdrawn from DB2 Enterprise Server Edition (ESE) for Windows and UNIX Version 8 and DB2 Connect Enterprise Edition (EE) for Windows and UNIX Version 8:

- Two phase commit capability using SNA. Applications that require two phase commit must use TCP/IP connectivity. Two phase commit using TCP/IP to a host or iSeries database server has been available for several releases. Host or iSeries applications which require two phase commit support can use the new capability of TCP/IP two phase commit support within DB2 ESE Version 8
- Applications can no longer access a DB2 UDB ESE server on UNIX or Windows or a DB2 Connect EE server using SNA. Applications can still access host or iSeries database servers using SNA but only using one phase commit.

Related tasks:

- "Configuring APPC communications on the DB2 client" on page 39

Cataloging the APPC node on the DB2 client

The following support has been withdrawn from DB2 Enterprise Server Edition (ESE) for Windows and UNIX Version 8 and DB2 Connect Enterprise Edition (EE) for Windows and UNIX Version 8:

- Two phase commit capability using SNA. Applications that require two phase commit must TCP/IP connectivity. Two phase commit using TCP/IP to a host or iSeries database server has been available for several releases. Host or iSeries applications which require two phase commit support can use the new capability of TCP/IP two phase commit support within DB2 ESE Version 8
- Applications can no longer access a DB2 UDB ESE server on UNIX or Windows or a DB2 Connect EE server using SNA. Applications can still access host or iSeries database servers using SNA but only using one phase commit.

Related tasks:
- "Configuring APPC communications on the DB2 client" on page 39
- "Cataloging a database using the CLP" on page 30

Related reference:
- "CATALOG APPC NODE Command" in the *Command Reference*

Configuring IBM eNetwork Personal Communications for Windows

The following support has been withdrawn from DB2 Enterprise Server Edition (ESE) for Windows and UNIX Version 8 and DB2 Connect Enterprise Edition (EE) for Windows and UNIX Version 8:

- Two phase commit capability using SNA. Applications that require two phase commit must use TCP/IP connectivity. Two phase commit using TCP/IP to a host or iSeries database server has been available for several releases. Host or iSeries applications which require two phase commit support can use the new capability of TCP/IP two phase commit support within DB2 ESE Version 8
- Applications can no longer access a DB2 UDB ESE server on UNIX or Windows or a DB2 Connect EE server using SNA. Applications can still access host or iSeries database servers using SNA but only using one phase commit.

Related tasks:
- "Configuring IBM eNetwork Personal Communications for Windows NT" on page 41
- "Configuring APPC communications on the DB2 client" on page 39

Related reference:
- "APPC parameter values worksheet for the DB2 client" on page 40

Configuring IBM eNetwork Communications Server for Windows

The following support has been withdrawn from DB2 Enterprise Server Edition (ESE) for Windows and UNIX Version 8 and DB2 Connect Enterprise Edition (EE) for Windows and UNIX Version 8:

- Two phase commit capability using SNA. Applications that require two phase commit must use TCP/IP connectivity. Two phase commit using TCP/IP to a host or iSeries database server has been available for several releases. Host or iSeries applications which require two phase commit support can use the new capability of TCP/IP two phase commit support within DB2 ESE Version 8

- Applications can no longer access a DB2 UDB ESE server on UNIX or Windows or a DB2 Connect EE server using SNA. Applications can still access host or iSeries database servers using SNA but only using one phase commit.

Related tasks:
- "Configuring APPC communications on the DB2 client" on page 39

Related reference:
- "APPC parameter values worksheet for the DB2 client" on page 40

Testing the client to server connection using the CLP

This task is part of the main task of *Configuring a client to server connection using the command line processor (CLP)*.

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

Prerequisites:

The following prerequisites apply:
1. The database node and database must be cataloged before you can test the connection.
2. The values for *userid* and *password* must be valid for the system on which they are authenticated. By default, authentication takes place on the server.
3. Start the database manager by entering the **db2start** command on the database server (if it was not already started).

Procedure:

To test the client to server connection:

1. If you are using a UNIX client, run the start-up script as follows:

```
. INSTHOME/sqllib/db2profile    (for Bash, Bourne, or Korn shell)
  source INSTHOME/sqllib/db2cshrc (for C shell)
```

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

2. Using the CLP, enter the following command on the client to connect to the remote database:

```
connect to database_alias user userid
```

   For example, enter the following command:

```
connect to mysample user jsmith
```

   You will then be prompted to enter your password.

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

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

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

```
select tabname from syscat.tables
```

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

Related reference:

- "db2start - Start DB2 Command" in the *Command Reference*

Chapter 4. Configuring DB2 server communications

Configuring communication protocols for a remote DB2 instance

This task describes how to configure communication protocols for a remote instance on your DB2 server using the Control Center. Communication protocols on the DB2 server must be configured in order for your DB2 server to accept inbound requests from remote DB2 clients.

Most protocols are automatically detected and configured when you set up DB2 using the DB2 Setup wizard. Perform this task if:

- You deselected a detected communication protocol when you set up DB2 using the DB2 Setup wizard.
- You added a communication protocol to your network since you set up DB2 using the DB2 Setup wizard.
- You are using a communication protocol that could not be detected by the DB2 Setup wizard.
- You installed DB2 manually on a UNIX-based system using the operating system's native installation tools.

Restrictions:

The following restrictions apply:

- You cannot use the Control Center to configure communication protocols for a partitioned DB2 server.
- Modifying an instance's communication protocol settings may require you to update the database connection catalogs on the client (reconfigure client-to-server communications).

Procedure:

To configure DB2 communication protocols for remote instances, perform the following steps:

1. Launch the Control Center.
2. If the system containing the remote instance you want is listed, click on the [+] sign beside the system name to get the Instances folder. Click on the [+] beside the Instances folder to get a list of the system's instances, then go to step 13. If the system containing the remote instance you want is listed, but the instance you want does not appear under that system, go to step 8.

3. If the system containing the remote instance that you want to configure is not listed, select the **Systems** folder, click on the right mouse button and select the **Add** option. The Add System window opens.

4. To add a system to the Control Center, you can do one of the following:
   - If the system name is empty, click on **Discover** to display a list of TCP/IP systems on the network. Select a system and press **OK**. The system information is populated on the Add System window.
   - If the system name is filled, click on **Discover** to invoke a known discovery. If successful, the system information is populated on the Add System window.

   Note: Discovery will only work on remote TCP/IP systems.

5. Click **Apply** to add the system to the Control Center window.

6. Click **Close**.

7. Click on the [+] sign beside the system name you just added to get the Instances folder.

8. Select the **Instances** folder for the new system and click on the right mouse button.

9. Select the **Add** option. The Add Instance window opens.

10. Click **Discover** to obtain a list of available instances to display a list of remote instances on the system.

11. Select the instance that you want to add and click **OK**. The Add Instance window will be populated with the remote instance info.

12. Click **Close**.

13. Select the instance you want to configure and click on the right mouse button.

14. Select the **Setup communications** option from the pop-up menu. The Setup Communications window opens.

15. Use the Setup Communications window to configure communication protocols for the instance. Click on the **Help** push button for more information.

16. You must stop and start the instance for these changes to take effect:
    a. To stop an instance, select the instance, click on the right mouse button, and select the **Stop** option.
    b. To start an instance, select the instance, click on the right mouse button, and select the **Start** option.

Related tasks:
- "Configuring communication protocols for a local DB2 instance" on page 51
- "Configuring APPC communications for a DB2 instance" on page 63
- "Configuring NetBIOS communications for a DB2 instance" on page 54

- "Configuring TCP/IP communications for a DB2 instance" on page 59
- "Configuring Named Pipes communications for a DB2 instance" on page 63

Related reference:
- "Client-to-Server communication scenarios" on page 143

Configuring communication protocols for a local DB2 instance

This task describes how to configure communication protocols for a local DB2 instance using the Control Center. Communication protocols on the DB2 server must be configured in order for your DB2 server to accept inbound requests from remote DB2 clients.

Most protocols are automatically detected and configured when you set up DB2 using the DB2 Setup wizard. Perform this task if:
- You deselected a detected communication protocol when you set up DB2 using the DB2 Setup wizard.
- You added a communication protocol to your network since you set up DB2 using the DB2 Setup wizard.
- You are using a communication protocol that could not be detected by the by the DB2 Setup wizard.
- You installed DB2 manually on a UNIX-based system using the operating system's native installation tools.

Communication protocols can also be configured using the Command Line Processor (CLP).

Restrictions:

The following restrictions apply:
- You cannot use the Control Center to configure communication protocols for a partitioned DB2 server.
- Modifying an instance's communication protocol settings may require you to update the database connection catalogs on the client (reconfigure client-to-server communications).

Procedure:

To configure communication protocols for local instances, perform the following steps:
1. Launch the Control Center.
2. Click on the [+] beside a system's name to get the instances folder.

3. Select either the Databases or Gateway Connections folder and click on the **[+]** beside the **Instances** folder to get a list of instances on a particular system.
4. Select the instance that you want to configure and click on the right mouse button.
5. Select the **Setup communications** option from the pop-up menu. The Setup communications window opens.
6. Use the Setup communications window to configure communication protocols for the instance that you selected. Invoke the online help by clicking **Help** or by pressing **F1**.
7. You must stop and start the instance for these changes to take effect.
    a. To stop the database manager instance, select the instance, click with the right mouse button and select the **Stop** option from the pop-up menu.
    b. To start the database manager instance, select the instance, click with the right mouse button and select the **Start** option from the pop-up menu.

Related tasks:
- "Configuring communication protocols for a remote DB2 instance" on page 49
- "Configuring APPC communications for a DB2 instance" on page 63
- "Configuring NetBIOS communications for a DB2 instance" on page 54
- "Configuring TCP/IP communications for a DB2 instance" on page 59
- "Configuring Named Pipes communications for a DB2 instance" on page 63

Related reference:
- "Client-to-Server communication scenarios" on page 143

DB2 server communications configuration using the Control Center

The Control Center is a graphical tool used to administer DB2® databases. The Control Center's setup communications function allows you to display the protocols and configuration parameters that a server instance is configured to use. It also allows you to modify the parameter values of a configured protocol, as well as add or delete protocols.

When you add support for a new protocol to the server system, the setup communications function detects and generates server instance parameter values for the new protocol. You can accept or modify these values before use. When you remove support for an existing protocol from the server system,

the setup communications function detects the protocol that has been removed and disables its use by the server instance.

You can add a protocol that has not been detected, however, you must supply all of the parameter values required before you proceed.

The setup communications function can be used to maintain communications for both local and remote server instances, provided that an Administration Server is running on the server system.

Modifying instance communication settings that have been previously configured may require you to update the database connection catalogs on the client. You can do this by:

- Using the Configuration Assistant on the client. Select the database connection that you want to change. Under the **Selected** menu, select **Change database**. This will launch a Wizard that will help you with the changes.
- Using the command line processor on the client to uncatalog and recatalog the node, depending on the values changed on the server.

Setting communication protocols for a DB2 instance

Setting communication protocols for a DB2 instance is part of the main tasks of:

- Configuring APPC communications for a DB2 instance
- Configuring NetBIOS communications for a DB2 instance
- Configuring Named Pipes communications for a DB2 instance
- Configuring TCP/IP communications for a DB2 instance

The DB2COMM registry variable allows you to set communication protocols for the current DB2 instance. If the DB2COMM registry variable is undefined or set to null, no protocol connection managers are started when the database manager is started.

The DB2COMM registry variable can be set to any combination of the following keywords, separated by commas:

appc   starts APPC support

netbios
        starts NetBIOS support

npipe   starts NAMED PIPE support

tcpip   starts TCP/IP support

Prerequisites:

You require sysadm authority.

Procedure:

To set the communication protocol(s) for the instance:

• Enter the **db2set DB2COMM** command from the DB2 command window:

```
db2set DB2COMM=protocol_names
```

For example, to set the database manager to start connection managers for
the APPC and TCP/IP communication protocols, enter the following
command:

```
db2set DB2COMM=appc,tcpip
db2stop
db2start
```

Related tasks:

• "Configuring TCP/IP communications for a DB2 instance" on page 59

Related reference:

• "db2start - Start DB2 Command" in the *Command Reference*
• "db2stop - Stop DB2 Command" in the *Command Reference*
• "db2set - DB2 Profile Registry Command" in the *Command Reference*
• "Client-to-Server communication scenarios" on page 143

Configuring NetBIOS communications for a DB2 instance

This tasks describes how to configure NetBIOS communications for a DB2
instance using the DB2 command line processor (CLP). Communication
protocols on the DB2 server must be configured in order for your DB2 server
to accept inbound requests from remote DB2 clients.

Most protocols are automatically detected and configured when you set up
DB2 using the DB2 Setup wizard. Perform this task if:

• You deselected the NetBIOS communication protocol when you set up DB2
using the DB2 Setup wizard.
• You added the NetBIOS communication protocol to your network after you
set up DB2 using the DB2 Setup wizard.
• NetBIOS was not be detected by the by the DB2 Setup wizard.

Prerequisites:

To configure a NetBIOS connection between a DB2 client and DB2 server, ensure that:
- NetBIOS is functional on the server machine.
- You have identified the following parameter values:

  Adapter number (adapter_number)
  > The local logical adapter that will be used for the NetBIOS connection. The server uses adapter 0 if this parameter is not configured.

  Workstation name (nname)
  > The NetBIOS name of the server workstation. nname is a name, chosen by the user, which must be unique among all NetBIOS nodes in the network. If you are using DB2 Enterprise Server Edition in a partitioned configuration, ensure that the last 4 characters are unique among all NetBIOS nodes in the network.

Procedure:

To configure NetBIOS communications for a DB2 instance:
1. Set the communication protocol for the instance.
2. Configure the NetBIOS interface on the server.
3. Update the database manager configuration file on the server.
4. Windows NT only: Configure NetBIOS to autostart when the DB2 instance is started

Related tasks:
- "Setting communication protocols for a DB2 instance" on page 53
- "Configuring the NetBIOS interface to setup communications on the DB2 server" on page 56
- "Updating the database manager configuration file on the server for NetBIOS" on page 58
- "Configuring NetBIOS to start when the DB2 instance is started (Windows NT)" on page 57
- "Configuring communication protocols for a remote DB2 instance" on page 49
- "Configuring communication protocols for a local DB2 instance" on page 51

Related reference:
- "Client-to-Server communication scenarios" on page 143

Configuring the NetBIOS interface to setup communications on the DB2 server

This task is part of the main task of *Configuring NetBIOS for a DB2 instance*.

Prerequisites:

DB2 uses registry parameters to control its use of the NetBIOS resources on the server. You must use the db2nbadapters registry parameter if you want to specify a value other than the default Logical adapter number 0. You can set the db2nbadapters parameter by entering the **db2set db2nbadapters=***adapter_number* command. The *adapter_number* can be a list of adapter numbers separated by commas.

Procedure:

To determine which value(s) can be used for the adapter number on the server:
1. Open the Windows Control Panel.
2. Double-click on the **Network** icon and select the Services tab.
3. Select the **NetBIOS Interface** icon from the Network Services window and click on the **Properties** push button.
4. Scroll through the network routes until you find the Logical adapter number and record it on your worksheet. If you do not want to change this adapter number, go to step 7.
5. To change the logical adapter number, select the associated LAN Number, and click on the **Edit** push button. Enter the new adapter number (or the value that you set for the db2nbadapters) registry variable.
6. Record the new adapter number on your worksheet.
7. Click **OK**.
8. Click Close. The Network Settings Change window opens.
9. Shutdown and reboot your system for these changes to take effect. Select the **Yes** push button to shutdown and reboot your system or select the **No** push button to shutdown and reboot your system at a later time.

Each adapter number must be uniquely associated with a network route. Windows NT, Windows 2000, Windows XP, and Windows .NET have a built in checking facility that will not allow you to specify the same adapter number for different network routes. If a Network route already exists that is using the adapter number 0, assign a different number to that route. Approve the changes by clicking on **OK**.

The next step in configuring NetBIOS communications for a DB2 instance is to update the database manager configuration file.

Related tasks:
- "Updating the database manager configuration file on the server for NetBIOS" on page 58

Related reference:
- "db2set - DB2 Profile Registry Command" in the *Command Reference*

Configuring NetBIOS to start when the DB2 instance is started (Windows NT)

This task is part of the main task of *Configuring NetBIOS communications for a DB2 instance*.

If your NetBIOS protocol was configured when you installed the server (or the instance-owning machine on DB2 Enterprise Server Edition partitioned system), the setup program automatically created a NetBIOS dependency for the server. You will need to perform the steps in this task to manually create a dependency on NetBIOS for any new instances. The dependancy causes NetBIOS to start when the DB2 instance is started.

Prerequisites:

Procedure:

To configure NetBIOS to start when the DB2 instance is started:
1. Go to the x:\Program Files\IBM\SQLLIB\bin directory, where x: represents the drive on which the server was installed.
2. Enter the **db2depnb** command as follows:

       db2depnb *instance_name*

   where *instance_name* is the name of the instance that you want to create a dependency for.

This records a dependency on the startup order which causes NetBIOS to start before a DB2 instance starts.

If you remove the NetBIOS protocol from your network, you must remove the dependencies that were created during installation, and any dependencies that you created for additional instances. Failure to remove these dependencies may cause problems when running DB2 after the NetBIOS protocol has been removed from the network.

To remove a dependency, enter the **db2depnb** command as follows:

       db2depnb *instance_name* /r

where *instance_name* is the name of the instance for which you are removing a dependency.

Related tasks:
- "Configuring the NetBIOS interface to setup communications on the DB2 server" on page 56
- "Updating the database manager configuration file on the server for NetBIOS" on page 58

Updating the database manager configuration file on the server for NetBIOS

This task is part of the main task of *Configuring NetBIOS communications for a DB2 instance*.

This task provides steps for updating the database manager configuration file with the *server's* workstation name (*nname*) parameter using the command line processor (CLP).

Prerequisites:

System Administrative (SYSADM) authority is required.

Procedure:

To update the database manager configuration file:
1. Log on to the system.
2. Update the database manager configuration file with the server's Workstation name (*nname*) parameter using the following commands in the command line processor:

```
update database manager configuration using nname nname
db2stop
db2start
```

For example, if the server's workstation name (*nname*) is server1, use:

```
update database manager configuration using nname server1
db2stop
db2start
```

After the database manager is stopped and started again, view the database manager configuration file to ensure that these changes have taken effect. View the database manager configuration file by entering the following command:

```
get database manager configuration
```

The next step in configuring NetBIOS communications for a DB2 instance is to configure NetBIOS to autostart when the DB2 instance is started. This next step is optional and only performed on Windows NT, Windows 2000, Windows XP, or Windows .NET.

Related tasks:
- "Configuring the NetBIOS interface to setup communications on the DB2 server" on page 56

Related reference:
- "db2start - Start DB2 Command" in the *Command Reference*
- "db2stop - Stop DB2 Command" in the *Command Reference*

Configuring TCP/IP communications for a DB2 instance

This task describes how to configure TCP/IP communications on your DB2 server using the DB2 Command Line Processor (CLP). Communication protocols on the DB2 server must be configured in order for your DB2 server to accept inbound requests from remote DB2 clients.

Most protocols are automatically detected and configured when you set up DB2 using the DB2 Setup wizard. Perform this task if:
- You deselected the TCP/IP communication protocol when you set up DB2 using the DB2 Setup wizard.
- You added the TCP/IP communication protocol to your network after you set up DB2 using the DB2 Setup wizard.
- The TCP/IP communication protocol was not detected by the DB2 Setup wizard.
- You installed DB2 manually on a UNIX-based system using the operating system's native installation tools.

Prerequisites:

Before you configure TCP/IP communications for a DB2 instance:
- Ensure that TCP/IP is functional on the DB2 server. TCP/IP must also be functional on the DB2 client to establish a connection.
- Identify either a Connection Service name *and* Connection Port, or just a Connection Port.

    Connection Service Name and Connection Port
        The name is used to update the Service name (*svcename*) parameter in the database manager configuration file at the server. When a Connection Service name is specified, the services file must be

updated with the same Service name, a port number, and the protocol. The Service name is arbitrary but must be unique within the services file. A sample value for the service name could be `server1`. If you are using DB2 Enterprise Server Edition in a partitioned format, ensure that the port number does not conflict with the port numbers used by the Fast Communications Manager (FCM). The Connection port must be unique within the services file. A sample value for the port number and protocol could be `3700/tcp`.

Connection Port

The Service name (*svcename*) parameter in the database manger configuration file at the server can be updated with a port number. If this is the case, it is not necessary to update the services file. If you are using DB2 Enterprise Server Edition in a partitioned format, ensure that the port number does not conflict with the port numbers used by the Fast Communications Manager (FCM) or any other applications on the system. A sample value for the port number could be 3700.

Procedure:

To configure TCP/IP communications for a DB2 instance:

1. Update the services file on the server.
2. Update the database manager configuration file on the server.

Related tasks:

- "Updating the services file on the server for TCP/IP communications" on page 61
- "Updating the database manager configuration file on the server for TCP/IP communications" on page 60
- "Configuring communication protocols for a remote DB2 instance" on page 49
- "Configuring communication protocols for a local DB2 instance" on page 51

Related reference:

- "Client-to-Server communication scenarios" on page 143

Updating the database manager configuration file on the server for TCP/IP communications

This task is part of the main task of *Configuring TCP/IP communications for a DB2 instance*.

You must update the database manager configuration file with the service name (*svcename*) parameter.

Procedure:

To update the database manger configuration file:
1. Log on to the system as a user with System Administrative (SYSADM) authority.
2. If you are using a UNIX server, set up the instance environment:
   ```
   . INSTHOME/sqllib/db2profile    (for Bash, Bourne or Korn shell)
   source INSTHOME/sqllib/db2cshrc (for C shell)
   ```
3. Start the DB2 command line processor (CLP).
4. Update the database manager configuration file with the Service name (*svcename*) parameter by entering the following commands:
   ```
   update database manager configuration using svcename
     [service_name|port_number]
   db2stop
   db2start
   ```

   If a service name is being specified, the *svcename* used must match the Connection Service name specified in the services file.

   For example, if the Connection Service name in the services file was entered as server1, enter the following commands:
   ```
   update database manager configuration using svcename server1|3100
   db2stop
   db2start
   ```

   After the database manager is stopped and started again, view the database manager configuration file to ensure that these changes have taken effect. View the database manager configuration file by entering the following command:
   ```
   get database manager configuration
   ```

Related reference:
- "db2start - Start DB2 Command" in the *Command Reference*
- "db2stop - Stop DB2 Command" in the *Command Reference*

Updating the services file on the server for TCP/IP communications

This task is part of the main task of *Configuring TCP/IP communications for a DB2 instance*.

The TCP/IP services file specifies the ports that server applications can listen on for client requests. If you specified a service name in the *svcename* field of the DBM configuration file, the services file must be updated with the service name to port number/protocol mapping. If you specified a port number in the *svcename* field of the DBM configuration file, the services file does *not* need to be updated.

Update the services file and specify the ports that you want the server to listen on for incoming client requests. The default location of the services file depends on the operating system:

UNIX   /etc

Windows NT, Windows 2000, Windows XP, and Windows .NET
        %SystemRoot%\system32\drivers\etc

Windows 98 and Window ME
        \windows

Prerequisites:

If you are using Network Information Services (NIS) on your network (for UNIX servers only) you must update the `services` file located on your master server.

Procedure:

Using a text editor, add the Connection entry to the services file. For example:

```
server1  3700/tcp # DB2 connection service port
```

where:

server1
        represents the connection service name

3700   represents the connection port number

tcp   represents the communication protocol that you are using

Related tasks:
* "Updating the database manager configuration file on the server for TCP/IP communications" on page 60

Configuring Named Pipes communications for a DB2 instance

This task describes how to configure Named Pipes for a DB2 instance using the CLP.

Prerequisites:

Before you configure Named Pipes for a DB2 instance:
- Named Pipes must be functional on the server. To configure a connection, Named Pipes must also be functional on the DB2 client.

Procedure:

To configure Named Pipes communications for a DB2 instance, set the DB2COMM registry variable.

Related tasks:
- "Configuring communication protocols for a remote DB2 instance" on page 49
- "Configuring communication protocols for a local DB2 instance" on page 51

Related reference:
- "Client-to-Server communication scenarios" on page 143

Configuring APPC communications for a DB2 instance

The following support has been withdrawn from DB2 Enterprise Server Edition (ESE) for Windows and UNIX Version 8 and DB2 Connect Enterprise Edition (EE) for Windows and UNIX Version 8:
- Two phase commit capability using SNA. Applications that require two phase commit must use TCP/IP connectivity. Two phase commit using TCP/IP to a host or iSeries database server has been available for several releases. Host or iSeries applications which require two phase commit support can use the new capability of TCP/IP two phase commit support within DB2 ESE Version 8
- Applications can no longer access a DB2 UDB ESE server on UNIX or Windows or a DB2 Connect EE server using SNA. Applications can still access host or iSeries database servers using SNA but only using one phase commit.

Related tasks:
- "Configuring communication protocols for a remote DB2 instance" on page 49

APPC parameter values worksheet for configuring APPC on a DB2 server

The following support has been withdrawn from DB2 Enterprise Server Edition (ESE) for Windows and UNIX Version 8 and DB2 Connect Enterprise Edition (EE) for Windows and UNIX Version 8:

- Two phase commit capability using SNA. Applications that require two phase commit must use TCP/IP connectivity. Two phase commit using TCP/IP to a host or iSeries database server has been available for several releases. Host or iSeries applications which require two phase commit support can use the new capability of TCP/IP two phase commit support within DB2 ESE Version 8
- Applications can no longer access a DB2 UDB ESE server on UNIX or Windows or a DB2 Connect EE server using SNA. Applications can still access host or iSeries database servers using SNA but only using one phase commit.

Related tasks:

- "Configuring APPC communications for a DB2 instance" on page 63

Configuring IBMeNetwork Communications Server for AIX (on a DB2 server)

The following support has been withdrawn from DB2 Enterprise Server Edition (ESE) for Windows and UNIX Version 8 and DB2 Connect Enterprise Edition (EE) for Windows and UNIX Version 8:

- Two phase commit capability using SNA. Applications that require two phase commit must use TCP/IP connectivity. Two phase commit using TCP/IP to a host or iSeries database server has been available for several releases. Host or iSeries applications which require two phase commit support can use the new capability of TCP/IP two phase commit support within DB2 ESE Version 8
- Applications can no longer access a DB2 UDB ESE server on UNIX or Windows or a DB2 Connect EE server using SNA. Applications can still access host or iSeries database servers using SNA but only using one phase commit.

Related tasks:

- "Configuring APPC communications for a DB2 instance" on page 63

Related reference:

- "APPC parameter values worksheet for configuring APPC on a DB2 server" on page 64

Configuring IBM eNetwork Communications Server for Windows NT (on a DB2 server)

The following support has been withdrawn from DB2 Enterprise Server Edition (ESE) for Windows and UNIX Version 8 and DB2 Connect Enterprise Edition (EE) for Windows and UNIX Version 8:

- Two phase commit capability using SNA. Applications that require two phase commit must use TCP/IP connectivity. Two phase commit using TCP/IP to a host or iSeries database server has been available for several releases. Host or iSeries applications which require two phase commit support can use the new capability of TCP/IP two phase commit support within DB2 ESE Version 8
- Applications can no longer access a DB2 UDB ESE server on UNIX or Windows or a DB2 Connect EE server using SNA. Applications can still access host or iSeries database servers using SNA but only using one phase commit.

Related tasks:

- "Configuring APPC communications for a DB2 instance" on page 63

Related reference:

- "APPC parameter values worksheet for configuring APPC on a DB2 server" on page 64

Configuring Microsoft SNA Server for Windows NT (on a DB2 server)

The following support has been withdrawn from DB2 Enterprise Server Edition (ESE) for Windows and UNIX Version 8 and DB2 Connect Enterprise Edition (EE) for Windows and UNIX Version 8:

- Two phase commit capability using SNA. Applications that require two phase commit must use TCP/IP connectivity. Two phase commit using TCP/IP to a host or iSeries database server has been available for several releases. Host or iSeries applications which require two phase commit support can use the new capability of TCP/IP two phase commit support within DB2 ESE Version 8
- Applications can no longer access a DB2 UDB ESE server on UNIX or Windows or a DB2 Connect EE server using SNA. Applications can still access host or iSeries database servers using SNA but only using one phase commit.

Related tasks:

- "Configuring APPC communications for a DB2 instance" on page 63

Configuring IBM eNetwork Personal Communications for Windows NT (on a DB2 server)

The following support has been withdrawn from DB2 Enterprise Server Edition (ESE) for Windows and UNIX Version 8 and DB2 Connect Enterprise Edition (EE) for Windows and UNIX Version 8:

- Two phase commit capability using SNA. Applications that require two phase commit must use TCP/IP connectivity. Two phase commit using TCP/IP to a host or iSeries database server has been available for several releases. Host or iSeries applications which require two phase commit support can use the new capability of TCP/IP two phase commit support within DB2 ESE Version 8
- Applications can no longer access a DB2 UDB ESE server on UNIX or Windows or a DB2 Connect EE server using SNA. Applications can still access host or iSeries database servers using SNA but only using one phase commit.

Related tasks:
- "Configuring APPC communications for a DB2 instance" on page 63

Updating the database manager configuration file on the server for APPC communications

The following support has been withdrawn from DB2 Enterprise Server Edition (ESE) for Windows and UNIX Version 8 and DB2 Connect Enterprise Edition (EE) for Windows and UNIX Version 8:

- Two phase commit capability using SNA. Applications that require two phase commit must use TCP/IP connectivity. Two phase commit using TCP/IP to a host or iSeries database server has been available for several releases. Host or iSeries applications which require two phase commit support can use the new capability of TCP/IP two phase commit support within DB2 ESE Version 8

- Applications can no longer access a DB2 UDB ESE server on UNIX or Windows or a DB2 Connect EE server using SNA. Applications can still access host or iSeries database servers using SNA but only using one phase commit.

Testing a database connection

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

Procedure:

To test a database connection:
1. Start the **CA**.
2. Highlight the database in the details view and invoke the **Test Connection** menu action. The Test Connection window opens.
3. Select the type of connection that you would like to test (**CLI** is the default). Enter a valid user ID and password for the remote database and click **Test Connection**. If the connection is successful, a message confirming the connection appears on the Results page.

   If the connection test failed, you will receive a help message. To change any settings you may have incorrectly specified, select the database in the details view and invoke the **Change Database** menu action.

Related tasks:
- "Configuring a database connection using Discovery" on page 19
- "Configuring a database connection using the Configuration Assistant (CA)" on page 20
- "Configuring a database connection using a profile" on page 21

Chapter 5. Configuring access to UDB from host and AS/400 applications

Accessing DB2 Universal Database servers from Host and AS/400 applications

Host and AS/400 applications can access DB2 Universal Database data that is stored on a DB2 Enterprise Server Edition. This task describes the steps required to configure a DB2 Universal Database server to accept inbound client requests from a host or AS/400 client.

Prerequisites:

- TCP/IP or APPC must be configured on the DB2 Universal Database server.
- One of the following database products must be installed and operational on the host or AS/400 system:
  - DB2 for MVS/ESA Version 3.1 (or higher)
  - DB2 for OS/390 Version 5 (or higher)
  - DB2 for AS/400 Version 3.1 (or higher)
  - DB2 for VSE & VM Version 5 (or higher)

  For information about other IBM and non-IBM products accessing DB2 Universal Database servers, contact the software support for those products.
- You must install the required PTFs for your host or AS/400 environment:
  - DB2 for MVS/ESA Version 3: UN73393
  - DB2 for MVS/ESA Version 4: UN75959
  - DB2 for OS/390 Version 5: PQ07537
  - DB2 for VM/ESA Version 5: VM60922; VM61072
  - OS/400 Version 3 Release 2: SF23270; SF23277; SF23271; SF23721; SF23985; SF23960.
- You must enable Bidirectional Coded Character Set Identifiers (CCSIDs) support.

Restrictions:

User ID translation is not supported by DB2 Universal Database.

Procedure:

To access DB2 Universal Database servers from Host and AS/400 applications:
1. Determine which protocol you will use for your connection.

2. Configure the application requestor on the host or AS/400 system:
   - Configuring an application requestor on DB2 for MVS/ESA
   - Configuring an application requestor on DB2 for OS/390
   - Configuring an application requestor on DB2 for AS/400
   - Configuring an application requestor on DB2 for VSE & VM
3. If you are using DB2 for VM, perform the steps outlined in Configuring DB2 for VM utilities to access a DB2 Universal Database server.
4. Test the connection. For DB2 for MVS/ESA or DB2 for OS/390, you can do this by logging onto TSO and using DB2I/SPUFI.

Data access by host and AS/400 applications are tuned at the DB2 Universal Database server using the DB2 database manager configuration parameters. One parameter, DRDA Heap Size (DRDA_HEAP_SZ), is specifically for host and AS/400 database client connections. You may need to change the setting for some parameters because of the additional resources required for the DB2 Universal Database Server.

On UNIX workstations, DRDA heap size specifies the amount of memory, in pages, that is allocated for use by the DB2 Universal Database server for host and AS/400 connections.

On Windows, DRDA heap size specifies the amount of memory, in segments, that is allocated for use by the DB2 Universal Database server for host and AS/400 connections.

Related tasks:
- "Configuring DB2 for VSE & VM utilities to access a DB2 Universal Database server" on page 73

Related reference:
- "Considerations when accessing DB2 Universal Database servers from Host and AS/400 applications using APPC" on page 71
- "Supported protocols for accessing DB2 Universal Database servers from Host or OS/400" on page 71
- "Examples of accessing DB2 UDB servers from host and AS/400 applications" on page 72
- "Bind options supported by the DB2 DRDA application server (AS)" on page 74
- "DRDA functions supported on the DB2 UDB server" on page 79

Considerations when accessing DB2 Universal Database servers from Host and AS/400 applications using APPC

The following support has been withdrawn from DB2 Enterprise Server Edition (ESE) for Windows and UNIX Version 8 and DB2 Connect Enterprise Edition (EE) for Windows and UNIX Version 8:

- Two phase commit capability using SNA. Applications that require two phase commit must use TCP/IP connectivity. Two phase commit using TCP/IP to a host or iSeries database server has been available for several releases. Host or iSeries applications which require two phase commit support can use the new capability of TCP/IP two phase commit support within DB2 ESE Version 8
- Applications can no longer access a DB2 UDB ESE server on UNIX or Windows or a DB2 Connect EE server using SNA. Applications can still access host or iSeries database servers using SNA but only using one phase commit.

Related tasks:

- "Accessing DB2 Universal Database servers from Host and AS/400 applications" on page 69

Supported protocols for accessing DB2 Universal Database servers from Host or OS/400

The following protocols are supported for accessing DB2 Universal Database servers from Host and OS/400 applications:

Table 7. Supported protocols at the DB2 Universal Database server

DB2 UDB server operating system	Supported protocol(s)
AIX	TCP/IP
Linux	TCP/IP
Solaris	TCP/IP
Windows NT, Windows 2000, Windows XP, and Windows .NET	TCP/IP

Table 8. Supported Protocols on the Host or OS/400 system

Host or OS/400 system	Supported protocol(s)
DB2 for OS/390 Version 5 or higher	TCP/IP, APPC
DB2 for AS/400 Version 4 Release 2 or higher	TCP/IP, APPC

Table 8. Supported Protocols on the Host or OS/400 system (continued)

Host or OS/400 system	Supported protocol(s)
DB2 for VSE & VM	TCP/IP, APPC
DB2 for z/OS Version 7 or higher	TCP/IP, APPC

If your host or OS/400 application requires multisite update support (two-phase commit), you should note the following:

TCP/IP Connections
>   Multisite Update is not supported with any host or OS/400 database clients. Remote Unit of Work (RUW) is supported (one phase commit). Under TCP/IP, all security information is flown in the CONNECT attempt.
>
>   Under TCP/IP, all security information is flown in the CONNECT attempt.

Related tasks:
* "Accessing DB2 Universal Database servers from Host and AS/400 applications" on page 69

Related reference:
* "Considerations when accessing DB2 Universal Database servers from Host and AS/400 applications using APPC" on page 71

Examples of accessing DB2 UDB servers from host and AS/400 applications

Host and AS/400 applications can access DB2 Universal Database data that is stored on a DB2 Workgroup Server Edition or DB2 Enterprise Server Edition. The following are examples of the use of this access:

Host or AS/400 Data Migration
>   If you are migrating data from your host or AS/400 database to a DB2 Universal Database server, you can continue to use your existing host or AS/400 applications by having them access the data from DB2 Universal Database. This can allow for staged migration from the host or the AS/400 system.

Host or AS/400 Applications Leveraging DB2 Enterprise Server Edition partitioning capability
>   Your host or AS/400 application can use the parallel processing power of DB2 Universal Database for CPU intensive queries.

Accessing Distributed Data

Your host or AS/400 application can access distributed data stored in multiple DB2 Universal Database servers.

Related tasks:

- "Accessing DB2 Universal Database servers from Host and AS/400 applications" on page 69

Configuring DB2 for VSE & VM utilities to access a DB2 Universal Database server

This task is part of the main task of *Accessing DB2 Universal Database servers from Host and AS/400 applications*.

This task provides steps to ensure the following DB2 for VSE & VM utilities work properly when accessing a DB2 Universal Database server.

Procedure:

To configuring DB2 for VSE & VM utilities to access a DB2 Universal Database server:

1. Set up dummy tables in your DB2 database by executing the **sqldbsu** utility provided with DB2 as *sqldbsu database_name*.
2. Bind SQLDBSU from the VSE or VM client. Refer to the "Using a DRDA Environment" section in either the *DB2 Server for VSE System Administration* or *DB2 Server for VM System Administration* manuals for details. (You can skip the step on creating and populating the SQLDBA.DBSOPTIONS table because this is done by the **sqldbsu** utility in the previous step.)
3. If you are using ISQL, set up dummy tables in your DB2 database by executing the **isql** utility provided with DB2 as *isql database_name*.
4. Create the ISQL package. Refer to the "Using a DRDA Environment" section in either the *DB2 Server for VSE System Administration* or *DB2 Server for VM System Administration* manuals for details.

On UNIX workstations, the **sqldbsu** and **isql** utilities are in `INSTHOME`/sqllib/misc where *INSTHOME* represent the home directory of the instance owner.

If you installed DB2 on drive C, using the default directory `sqllib`, then no special setup is required for RXSQL. Refer to the *RXSQL Install and Reference* manual for details.

Bind options supported by the DB2 DRDA application server (AS)

The following table lists the bind options supported by the DB2 DRDA application server (AS) on the DB2 Universal Database server.

Table 9. Bind Options Supported by the DB2 DRDA Application Server

Bind Option	Value	Sup-ported	DB2 for MVS/ESA Precompile Option (Note 1)	DB2/VM Preprocessing Option	OS/400 Precompile Option	DB2 Prep or Bind Option
Package Version Name	Null	Yes	VERSION			VERSION
	Any other value	No				
Bind Existence Checking	Object existence optional	No	VALIDATE (RUN)[b]	NOEXIST	GENLVL(10, 11-40)	VALIDATE RUN
	Object existence required	Yes	VALIDATE (BIND)[b]	EXIST	GENLVL(00-09)	VALIDATE BIND
Package Replacement Option	Replacement allowed	Yes	ACTION (REPLACE)	REPLACE	REPLACE(*YES)	ACTION REPLACE
	Replacement not allowed	No	ACTION(ADD)	NEW	REPLACE(*NO)	ACTION ADD
Package Authorization Option	Keep authorizations	Yes		KEEP		RETAIN YES
	Revoke authorizations	No		REVOKE		RETAIN NO
Statement String Delimiter (Note 2)	Apostrophe	Yes	APOSTSQL	SQLAPOST	OPTION[...] *APOSTSQL (Note 3)	STRDEL APOSTROPHE
	Double quote	No	QUOTESQL	SQLQUOTE	OPTION[...] *QUOTESQL (Note 4)	STRDEL QUOTE
Statement Decimal Delimiter (Note 5)	Period	Yes	PERIOD	PERIOD	OPTION[...] *PERIOD) or OPTION[...] *SYSVAL) (Note 6)	DECDEL PERIOD
	Comma	No	COMMA	COMMA	OPTION[...] *COMMA) or OPTION[...] *SYSVAL) (Note 6)	DECDEL COMMA
Date Format (Note 7)	ISO	Yes	DATE(ISO) (Note 8)	DATE(ISO)	DATFMT(*ISO) (Note 8)	DATETIME ISO (Note 9)
	USA	Yes	DATE(USA)	DATE(USA)	DATFMT(*USA)	DATETIME USA
	EUR	Yes	DATE(EUR)	DATE(EUR)	DATFMT(*EUR)	DATETIME EUR
	JIS	Yes	DATE(JIS)	DATE(JIS)	DATFMT(*JIS)	DATETIME JIS
Time Format (Note 7)	ISO	Yes	TIME(ISO) (Note 8)	TIME(ISO)	TIMFMT(*ISO) (Note 8)	DATETIME ISO (Note 9)
	USA	Yes	TIME(USA)	TIME(USA)	TIMFMT(*USA)	DATETIME USA
	EUR	Yes	TIME(EUR)	TIME(EUR)	TIMFMT(*EUR)	DATETIME EUR
	JIS	Yes	TIME(JIS)	TIME(JIS)	TIMFMT(*JIS)	DATETIME JIS

Table 9. Bind Options Supported by the DB2 DRDA Application Server (continued)

Bind Option	Value	Sup-ported	DB2 for MVS/ESA Precompile Option (Note 1)	DB2/VM Preprocessing Option	OS/400 Precompile Option	DB2 Prep or Bind Option
Package Isolation Level (Note 10)	Repeatable read	Yes	ISOLATION(**RR**)[b]	ISOLATION(**RR**)		ISOLATION RR
	Read Stability (All)	Yes		ISOLATION(RS)	COMMIT(*ALL)	ISOLATION RS
	Cursor stability	Yes	ISOLATION(CS)[b]	ISOLATION(CS)	COMMIT(*CS)	ISOLATION **CS**
	Uncommitted Read (Change)	Yes		ISOLATION(UR)	COMMIT(***CHG**)	ISOLATION UR
	No commit	No (Note 11)			COMMIT(*NONE)	ISOLATION NC
Bind Creation Control	**No errors allowed**	Yes	SQLERROR (**NOPACKAGE**)[b]	**NOCHECK**	OPTION([...] *GEN) GENLVL(00-09, **10**, 11-20)	SQLERROR **NOPACKAGE**
	Check only	Yes		CHECK	OPTION([...] *NOGEN)	SQLERROR CHECK
	Errors allowed	No	SQLERROR (CONTINUE)[b]	ERROR	OPTION([...] *GEN) GENLVL(21-40)	SQLERROR CONTINUE
Bind Explain Option	**No SQL statements**	Yes	EXPLAIN(**NO**)[b]	EXPLAIN(**NO**)		EXPLAIN **NO**
	All explainable SQL statements	No	EXPLAIN(YES)[b]	EXPLAIN(YES)		EXPLAIN YES
Package Owner Identifier	<*Authorization ID*>	Yes	OWNER[b]	OWNER		OWNER
	Any other value	No				
RDB Release Option	**Release at commit**	Yes	RELEASE (**COMMIT**)[b]	RELEASE (**COMMIT**)		RELEASE **COMMIT**
	Release at conversation deallocation	No	RELEASE (DEALLOCATE)[b]	RELEASE (DEALLOCATE)		RELEASE DEALLOCATE
Default RDB Collection ID	<*Authorization ID*>	Yes	QUALIFIER[b]	QUALIFIER	DFTRDBCOL	QUALIFIER
	Any other value	No				
Title (Package Description)	Any value (ignored by DB2)	Yes		LABEL	TEXT	TEXT
Query Block Protocol Control	**Fixed row**	Yes	CURRENTDATA (**YES**)[b]	SBLOCK	ALWBLK(***READ**)	BLOCKING **UNAMBIG**
	Limited block	Yes	CURRENTDATA (NO)[b]	BLOCK	ALWBLK (*ALLREAD)	BLOCKING ALL
	Forced fixed row	Yes		**NOBLOCK**	ALWBLK(*NONE)	BLOCKING NO
Package Default Char. Subtype	**Use system default**	Yes				CHARSUB **DEFAULT**

Table 9. Bind Options Supported by the DB2 DRDA Application Server (continued)

Bind Option	Value	Sup-ported	DB2 for MVS/ESA Precompile Option (Note 1)	DB2/VM Preprocessing Option	OS/400 Precompile Option	DB2 Prep or Bind Option
If Default CCSID is SBCS	BIT	No		CHARSUB(BIT)		CHARSUB BIT
If Default CCSID is SBCS	SBCS	Yes		CHARSUB(SBCS)		CHARSUB SBCS
If Default CCSID is SBCS	MBCS	No		CHARSUB(MBCS)		CHARSUB MBCS
If Default CCSID is MBCS	BIT	No		CHARSUB(BIT)		CHARSUB BIT
If Default CCSID is MBCS	SBCS	No		CHARSUB(SBCS)		CHARSUB SBCS
If Default CCSID is MBCS	MBCS	Yes		CHARSUB(MBCS)		CHARSUB MBCS
	Any other value	No				
Package Default CCSID	**Value specified when DB2 database was created**	Yes		CCSIDSBCS() CCSIDGRAPHIC() CCSIDMIXED()		CCSIDS CCSIDG CCSIDM
	Any other value	No				
Decimal Precision (Note 12)	31	Yes	DEC(31)			DEC 31
	Any other value	No	DEC(**15**)			DEC 15
Replaced Package Version Name	**Null**	Yes	REPLVER[b]			REPLVER
	Any other value	No				
Generic Bind Option	**Null**	No				GENERIC
	Any other value	No				
Package Authorization Rule	**Requester**	Yes				DYNAMICRULES RUN
	Owner	No				DYNAMICRULES BIND
	Creator of the user-defined function and stored procedure	No				DYNAMICRULES DEFINE
	Invoker of the user-defined function and stored procedure	No				DYNAMICRULES INVOKE
Degree of Parallelism	1	No				DEGREE 1
	n	No				DEGREE n
	ANY	No				DEGREE ANY

Table 9. Bind Options Supported by the DB2 DRDA Application Server (continued)

Bind Option	Value	Sup- ported	DB2 for MVS/ESA Precompile Option (Note 1)	DB2/VM Preprocessing Option	OS/400 Precompile Option	DB2 Prep or Bind Option

Note:

(*) Default values are in **bold**. (1) Most are precompile options. Bind options are indicated by [b]. (2) Defaults to what the target database supports. For DB2 the default is apostrophe. (3) Default for non-COBOL applications. (4) Default for COBOL applications. (5) Defaults to what the target database supports. For DB2 the default is period. (6) Depending on the installation, *SYSVAL is equivalent to *PERIOD or *COMMA. (7) Date and time formats must be the same for the DB2 DRDA AS. (8) Default is dependent on the installation. (9) Format applies to both date and time. If not specified, it defaults based on the country/region code. This default is mapped to ISO in DRDA flow. (10) Package isolation level has no default because an explicit value is always present in the DRDA datastream. (11) The isolation level will be escalated to Uncommitted Read (Change). (12) Defaults to what the target database supports. For DB2 the default is 31. (13) All variables will default to 1.

Related tasks:
- "Accessing DB2 Universal Database servers from Host and AS/400 applications" on page 69

Related reference:
- "DRDA functions supported on the DB2 UDB server" on page 79

DRDA functions supported on the DB2 UDB server

DRDA functions are categorized as required or optional. The following table identifies which functions are implemented in the application server (AS) on the DB2 Universal Database server.

Table 10. Supported DRDA Functions

Description	Required (R) Optional (O)	Supported
DRDA level 1 required function	R	Yes*
Rebind	O	Yes
Describe user privileges	O	No
Describe RDB table	O	No
Interrupt RDB request	O	No
Stored procedures return multiple row result sets	O	Yes

Related tasks:
- "Accessing DB2 Universal Database servers from Host and AS/400 applications" on page 69

Related reference:
- "Bind options supported by the DB2 DRDA application server (AS)" on page 74

Chapter 6. Performing a response file installation

Response file installation types

DB2® products can be installed non-interactively using response files. This installation type can be used with systems management software such as Microsoft® Systems Management Server (SMS) or simply with a shared CD-ROM or network drive.

To decrease the amount of time it will take to perform the installation, you should copy the contents of the CD to a directory on your machine, and perform the install from there.

Related concepts:
- "Response files" on page 81

Related tasks:
- "Installing DB2 products using Microsoft Systems Management Server (SMS)" on page 101
- "Response file installation of DB2 on UNIX" on page 93
- "Response file installation of DB2 on Windows" on page 95
- "Distributing the DB2 installation package across your network" on page 104

Response files

The first step in any type of distributed installation is the creation of a response file. A response file is an ASCII file that can be customized with the setup and configuration data that will automate an installation. The setup and configuration data would have to be entered during a interactive install, but with a response file, the installation can proceed without any intervention.

A response file specifies configuration and setup parameters such as the destination directory and the products and components to install. It can also be used to set up the following settings:
- Global DB2® registry variables
- Instance variables
- Instance database manager configuration settings

You can create a response file by:

- Modifying the sample response files that are provided.
- Using the response file generator for Windows® systems.
- Using the DB2 Setup Wizard.

The following is a list of response files considerations:
- The created response file can be accessed by running through the GUI portion of the install.
- To use the response file generator, the install process must be completed.
- The response file created using the DB2 Setup wizard can be used to install other nodes in an ESE partitioned configuration. For example, you can customize a sample response file which will install a DB2 Administration Client by using the DB2 Setup Wizard which is a new feature of V8.
- You can install a product and create a response file for installing the same product on another system or you can run the DB2 Setup wizard and create the response file only.

You can use a response file to install an identical configuration across every workstation on your network or to install multiple configurations of a DB2 product. You can then distribute this file to every workstation where you want this product to be installed.

Related concepts:
- "Response file generator" on page 90

Related reference:
- "Response file keywords" on page 83
- "DB2 Control Server response file keywords for Windows operating systems" on page 89
- "db2rspgn - Response file generator" on page 90

Available sample response files

The DB2 CD-ROM includes a ready-to-use sample response files with default entries. The sample response files are located in:

db2/*platform*/samples

where *platform* is one of the following:
- hpux
- aix
- solaris
- linux

- linux64
- linux390
- windows

You can use the following sample response files to install DB2 products on supported workstations:

db2adcl.rsp   DB2 Application Development Client

db2admcl.rsp DB2 Administration Client

db2conee.rsp   DB2 Connect Enterprise Edition

db2conpe.rsp   DB2 Connect Personal Edition

db2dlm.rsp   DB2 Data Links Manager

db2ese.rsp   DB2 Enterprise Server Edition

db2gse.rsp   DB2 Spatial Extender Server

db2lsdc.rsp   DB2 Life Sciences Data Connect

db2pe.rsp   DB2 Personal Edition

db2rcon.rsp   DB2 Relational Connect

db2rtcl.rsp   DB2 Run-Time Client

db2wm.rsp   DB2 Warehouse Manager

db2wmc.rsp   DB2 Warehouse Manager Connectors

db2wse.rsp   DB2 Workgroup Server Edition

Related concepts:
- "Response files" on page 81

Related reference:
- "Response file keywords" on page 83
- "DB2 Control Server response file keywords for Windows operating systems" on page 89

Response file keywords

This section describes some of the keywords that you will specify when performing a distributed installation. You can use the response file to install additional components/products after an initial install.

PROD Specifies the product that you want to install. The options are:
- ADMINISTRATION_CLIENT for the DB2 Administration Client

- `APPLICATION_DEVELOPMENT_CLIENT`for the DB2 Application Development Client
- `CONNECT_PERSONAL_EDITION` for DB2 Connect Personal Edition
- `CONNECT_ENTERPRISE_EDITION` for DB2 Connect Enterprise Edition
- `DATA_LINKS_MANAGER` for DB2 Data Links Manager
- `DB2_HTML_DOCUMENTATION` for the DB2 HTML Documentation CD
- `ENTERPRISE_SERVER_EDITION` for DB2 Enterprise Server Edition
- `LIFE_SCIENCES_DATA_CONNECT` for DB2 Life Sciences Data Connect
- `PERSONAL_EDITION` for DB2 Personal Edition
- `RELATIONAL_CONNECT` for DB2 Relational Connect
- `RUNTIME_CLIENT` for the DB2 Run-Time Client
- `SPATIAL_EXTENDER` for DB2 Spatial Extender Server
- `WAREHOUSE_MANAGER` for DB2 Data Warehouse Manager
- `WAREHOUSE_MANAGER_CONNECTORS` for the DB2 Data Warehouse Manager Connectors
- `WORKGROUP_SERVER_EDITION` for DB2 Workgroup Server Edition

> **Note:** You should not comment out the **PROD** keyword as you may have some missing components even with a successful response file installation.

FILE Specifies the destination directory for a DB2 product.

> **Note: FILE** is for Windows only.

INSTALL_TYPE
Specifies the type of install.

The options are:
- COMPACT
- TYPICAL
- CUSTOM

Important: A compact or typical install type will ignore any custom keywords (COMP).

TYPICAL_OPTION
A typical install contains function applicable for most users of the product. The TYPICAL options adds to this functionality by installing additional functionality that is typical for users installing either a data warehousing environment or a satellite environment. These options are only valid if the INSTALL_TYPE keyword is equal to TYPICAL. For example, remove the ∗ (uncomment) from the following:

```
*TYPICAL_OPTION = DATA_WAREHOUSE
*TYPICAL_OPTION = SATALLITE_ADMIN
```

COMP

Specifies the components that you want to install. The setup program automatically installs components that are required for a product, and ignores requested components that are not available.

In a custom install, you must select components individually. This can be done by uncommenting the COMP keywords for component that you want installed (this differs depending on the product). For example, to install the CA, remove the * (uncomment) from the following:

```
*COMP    = CONFIGURATION_ASSISTANT
```

Note: This keyword is ignored unless your **INSTALL_TYPE** is *CUSTOM*.

LANG

This refers to language selection keywords. You must uncomment any additional languages that you would like to install. The English language is mandatory and is always selected. For example, to install French, remove the * (uncomment) from the following:

```
*LANG=FR
```

REBOOT

Specifies whether to restart the system when the installation has completed.

Note: REBOOT is for Windows only.

KILL_PROCESSES

If you have an existing version of DB2 and it is running and this keyword is set to YES, it will terminate your running DB2 processes without prompt.

Note: KILL_PROCESSES is for Windows only.

DB2 Administration Server settings

To enable any of the following DAS settings, remove the * (uncomment). This setting is applicable for both Windows and UNIX environments:

- On UNIX:

```
*DAS_USERNAME = dasuser
*DAS_PASSWORD = dasp
*DAS_GID = 100
*DAS_UID = 100
*DAS_GROUP_NAME = dasgroup
*DAS_SMTP_SERVER = jsmith.torolab.ibm.com
```

- On Windows:

```
*DAS_USERNAME = dasuser
*DAS_DOMAIN = domain
*DAS_PASSWORD = dasp
*DAS_SMTP_SERVER = jsmith.torolab.ibm.com
```

The options below specify where the DAS contact list will be kept. If the contact list is remote, then you must specify a username and password that has authority to add a contact to the system.

```
*DAS_CONTACT_LIST = LOCAL or REMOTE (DEFAULT = LOCAL)
*DAS_CONTACT_LIST_HOSTNAME = hostname
*DAS_CONTACT_LIST_USERNAME = username
*DAS_CONTACT_LIST_PASSWORD = password
```

Special instance specifications

All of these take instance sections not instance names. The instance section must exist in the response file.

- Windows:
    - DEFAULT_INSTANCE - This is the default instance.
    - CTLSRV_INSTANCE - This is the instance that is configured to act as the satellite control server.
- UNIX:
    - UNIX WAREHOUSE_INSTANCE - This tells the install which instance will be set up to use Data Warehouse. The IWH.environment file will be updated with the name of the instance whose section appears here.

Instance specifications

You can use the response file to create as many instances as you want. To create a new instance you must specify an instance section using the INSTANCE keyword. Once this has been done, any keywords that contain the value specified in INSTANCE as a prefix belong to that instance. The following are examples of instance specifications for both Windows and UNIX environments:

- On UNIX:

```
*INSTANCE=DB2_INSTANCE
*DB2_INSTANCE.NAME = db2inst1
*DB2_INSTANCE.TYPE = ESE
*DB2_INSTANCE.PASSWORD = PASSWORD
*DB2_INSTANCE.UID = 100
*DB2_INSTANCE.GID = 100
*DB2_INSTANCE.GROUP_NAME = db2grp1
*DB2_INSTANCE.HOME_DIRECTORY = /home/db2inst1
*DB2_INSTANCE.SVCENAME = db2cdb2inst1
*DB2_INSTANCE.PORT_NUMBER = 50000
*DB2_INSTANCE.FCM_PORT_NUMBER = 60000
*DB2_INSTANCE.MAX_LOGICAL_NODES = 4
*DB2_INSTANCE.AUTOSTART = YES
```

```
*DB2_INSTANCE.DB2COMM = TCPIP
*DB2_INSTANCE.WORDWIDTH = 32
*DB2_INSTANCE.FENCED_USERNAME = USERNAME
*DB2_INSTANCE.FENCED_PASSWORD = PASSWORD
*DB2_INSTANCE.FENCED_UID = 100
*DB2_INSTANCE.FENCED_GID = 100
*DB2_INSTANCE.FENCED_GROUP_NAME = db2grp1
*DB2_INSTANCE.FENCED_HOME_DIRECTORY =/home/db2inst1
```

- On Windows:

```
*INSTANCE = DB2_INSTANCE
*DB2_INSTANCE.NAME = db2inst1
*DB2_INSTANCE.TYPE = ESE
*DB2_INSTANCE.PASSWORD = PASSWORD
*DB2_INSTANCE.USERNAME = db2admin
*DB2_INSTANCE.SVCENAME = db2cdb2inst1
*DB2_INSTANCE.PORT_NUMBER = 50000
*DB2_INSTANCE.FCM_PORT_NUMBER = 60000
*DB2_INSTANCE.MAX_LOGICAL_NODES = 4
*DB2_INSTANCE.AUTOSTART = YES
*DB2_INSTANCE.DB2COMM = TCPIP, NETBIOS, NPIPE
```

Database Section

These keywords can be used to have the install create or catalog a database on the machine that is being installed.

```
DATABASE = DATABASE_SECTION
DATABASE_SECTION.INSTANCE = DB2_INSTANCE
DATABASE_SECTION.DATABASE_NAME = TOOLSDB
DATABASE_SECTION.LOCATION = LOCAL
DATABASE_SECTION.ALIAS = TOOLSDB
DATABASE_SECTION.USERNAME = username
DATABASE_SECTION.PASSWORD = password


* these keywords are only used for REMOTE databases
    that are being cataloged
DATABASE_SECTION.SYSTEM_NAME = hostname
DATABASE_SECTION.SVCENAME = db2cdb2inst1
```

WAREHOUSE_CONTROL_DATABASE

The value for this keyword should be one of the Database Section keywords that were specified in the response file. For example:

```
*WAREHOUSE_CONTROL_DATABASE = DATABASE_SECTION
```

. The database section that is specified with this keyword must specify the USERNAME and PASSWORD keywords.

WAREHOUSE_SCHEMA

For example, to set the warehouse schema, remove the * (uncomment) from the following:

```
*WAREHOUSE_SCHEMA = wm_schema
```

ICM_DATABASE

This specifies the database to use to store the information catalog. The

value for this keyword should be one of the Database Section keywords that were specified in the response file.

```
*ICM_DATABASE = DATABASE_SECTION
```

ICM_SCHEMA
For example, to set the information catalog schema, remove the * (uncomment) from the following:

```
*ICM_SCHEMA = icm_schema
```

TOOLS_CATALOG_DATABASE
This specifies the database to use to store the tools catalog. The value for this keyword should be one of the Database Section keywords that were specified in the response file.

```
*TOOLS_CATALOG_DATABASE = DATABASE_SECTION
```

TOOLS_CATALOG_SCHEMA
For example, to set the tools catalog schema, remove the * (uncomment) from the following:

```
*TOOLS_CATALOG_SCHEMA = toolscat_schema
```

SATELITE_CONTROL_DATABASE
This section specifies the database you would like to use as the satellite Control Server. The value for this keyword should be one of the Database Section keywords that were specified in the response file:

```
*SATELITE_CONTROL_DATABASE = DATABASE_SECTION
```

Contact Section
These keywords define a contact section that will be created by the installation process if it does not already exist and the Health notifications for the instance that is specified will be sent to this contact.

```
CONTACT = contact_section
contact_section.CONTACT_NAME = contact name
contact_section.INSTANCE = DB2_INSTANCE
contact_section.EMAIL = Email address
contact_section.PAGER = NO
```

Related concepts:
- "Response files" on page 81

Related reference:
- "Available sample response files" on page 82

DB2 Control Server response file keywords for Windows operating systems

This section describes some of the keywords that you will specify when performing a distributed installation of the DB2 Control Server on Windows operating systems (Windows NT, Windows 2000, Windows XP, and Windows .NET). The DB2 Control Server provides administrative and status reporting support for satellites by using the satellite control database SATCTLDB. This database is automatically created when the Control Server component is installed. These keywords can be used to specify the values of database manager configuration parameters and the values of the DB2 registry variables.

To install the Control Server, select the CONTROL_SERVER component (COMP=CONTROL_SERVER), which is only available on ESE.

CTLSRV.AUTOSTART
> Specifies whether or not to automatically start the DB2 Control Server instance (DB2CTLSV) each time the system is rebooted.
>
> The default is YES, the DB2CTLSV instance starts automatically.

CTLSRV.SVCENAME
> Specifies the DB2 Control Server instance, TCP/IP service name and can be used to override the default service name generated by the installation program. When used in conjunction with the CTLSRV.PORT_NUMBER keyword to override the default port number, you have complete control over the TCP/IP configuration for the DB2 Control Server instance.

CTLSRV.PORT_NUMBER
> Specifies the DB2 Control Server instance, TCP/IP service name and can be used to override the default service name generated by the installation program. When used in conjunction with the CTLSRV.SVCENAME keyword to override the default port number, you have complete control over the TCP/IP configuration for the DB2 Control Server instance.

Related concepts:
- "Response files" on page 81

Related reference:
- "Available sample response files" on page 82

Response file generator

The response file generator utility, which is available on Windows® 32-bit and 64-bit operating systems, creates a response file from an existing installed and configured DB2® product. You can use the generated response file to recreate the exact setup on other machines.

For example, you could install and configure a DB2 Run-Time client to connect to various databases across your network. Once this DB2 client is installed and configured to access all the databases that your users to have access to, you can run the response file generator to create a response file and a profile for each instance.

The response file generator creates a response file for the installation and instance profiles for each instance that you specify. You can then use the response file to create identical clients across your network.

The response file generator also gives you the option to create the installation response file without an instance profile. This would allow you to create identical copies of your installed client without the configuration information.

Related tasks:
- "Response file installation of DB2 on UNIX" on page 93
- "Response file installation of DB2 on Windows" on page 95
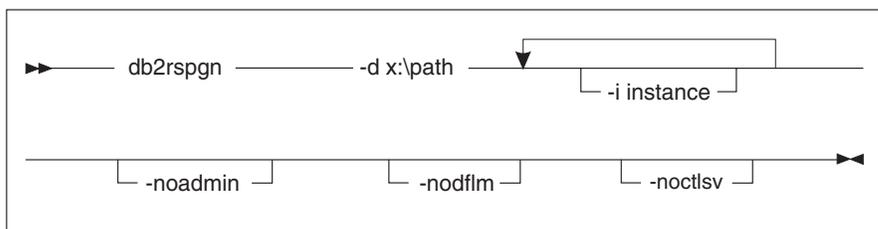- "Distributing the DB2 installation package across your network" on page 104

Related reference:
- "db2rspgn - Response file generator" on page 90

db2rspgn - Response file generator

The response file generator is available on Windows only.

The syntax for the **db2rspgn** command is as follows:

-d   Destination directory for a response file and any instance files. This parameter is required.

-i   A list of instances for which you want to create a profile. The administration instance (DB2DAS00) does not need to be specified. The default is to generate an instance profile file for all instances. This parameter is optional.

-noadmin

Disables the saving of the administration instance (DB2DAS00). The administration instance will then be created with the standard defaults. The default is to save the administration instance. This parameter is optional.

-noctlsrv

Indicates that an instance profile file will not be generated for the Control Server instance. This parameter is optional.

Related concepts:

- "Response file generator" on page 90

Killing DB2 processes during an interactive installation

If any DB2 processes are running when the DB2 setup command is issued, the installation of DB2 cannot occur. For example, during an interactive installation, the following message is issued: DB2 is currently running and locked by the following process(es). The user is then prompted to kill the DB2 processes so that the installation can proceed. You should exercise extreme caution when you kill active DB2 processes so that an installation can occur. The termination of a DB2 process can cause the loss of data. The following describes how to kill these processes.

Restrictions:

The ability to specify that any running DB2 processes are killed when the DB2 setup command is issued is available on Windows 32-bit operating systems only. This process is not a necessary step on UNIX to perform an installation.

Procedure:

To kill any running DB2 processes for an interactive installation, specify the **/F** option for the setup command. The **/F** option kills the running processes, and the message and prompt are not displayed.

In addition, DB2 services can be viewed in the Services Window to ensure that they have been stopped.

Note: We recommend issuing the **db2stop** command for each instance before installing to lessen the risk of data loss.

Related tasks:
- "Killing DB2 processes during a response file installation" on page 92

Related reference:
- "db2stop - Stop DB2 Command" in the *Command Reference*

Killing DB2 processes during a response file installation

If any DB2 processes are running when the DB2 setup command is issued, the installation of DB2 cannot occur. The user must kill the DB2 processes so that the installation can proceed. You should exercise extreme caution when you kill active DB2 processes so that an installation can occur. The termination of a DB2 process can cause the loss of data. The following describes how to kill these processes.

Restrictions:

The ability to specify that any running DB2 processes are killed when the DB2 setup command is issued is available on Windows 32-bit and 64-bit operating systems only. This process is not a necessary step on UNIX to perform an installation.

Procedure:

For a response file installation, you can use either of the following methods to kill any active DB2 processes. If you specify either of these options, the active DB2 processes are killed before the installation proceeds.
- Specify the **/F** option for the setup command. You can use this option along with the **/U**, **/L** and **/I** options that are already available.
- Set the KILL_PROCESSES keyword to YES (the default is NO).

Note: We recommend issuing the **db2stop** command for each instance before installing to lessen the risk of data loss.

Related tasks:
- "Killing DB2 processes during an interactive installation" on page 91

Related reference:
- "db2stop - Stop DB2 Command" in the *Command Reference*

Response file installation of DB2 on UNIX

This task describes how to perform response file installations on UNIX. You can use the response file to install additional components/products after an initial install.

Restrictions:

You should be aware of the following limitations when using the response files method to install DB2 on UNIX platforms:

- If you set any instance or global profile registry keywords to BLANK (the word "BLANK"), the effect is to delete that keyword from the list of currently set keywords. If the registry variable corresponding to a keyword is not already set, and you run a response file install with this keyword set to BLANK, the installation will fail.
- If you are using the response file to install on Linux, please ensure that you have sufficient space prior to installing. Otherwise you may need to do some manual cleanup (such as removing RPMs that may be partially installed) if the installation fails.
- We recommend installing from a file system network drive rather than a CD-ROM drive. Installing from a network drive will significantly decrease the amount of time it will take to perform the install. If you are planning on installing multiple clients, you should set up a mounted file system on a code server to improve performance.

Prerequisites:

Before you begin the installation, ensure that:

- Your system meets all of the memory, hardware, and software requirements to install your DB2 product.
- For systems using NIS, you must set up all of the userids/groups before running the response file installation.

Procedure:

- Mount the CD-ROM for one of the following platforms:
  - Mounting the CD-ROM on AIX
  - Mounting the CD-ROM on HP-UX
  - Mounting the CD-ROM on Linux
  - Mounting the CD-ROM on Solaris
- Create a response file on UNIX
- Perform an unattended installation

Related tasks:

Creating a response file on UNIX

Creating a response file is part of the larger task of *Response file installation of DB2 on UNIX*. The DB2 CD-ROM includes a ready-to-use sample response file with default entries. The sample response files are located in

    <cd-rom>/db2/*platform*/samples

where <cd-rom> represents the location of the installable version of DB2.

Sample response files are available for each DB2 product.

Procedure:

To create a customized response file from the sample, perform the following steps:

1. Copy the sample response file to a local file system and edit it.
2. To activate an item in the response file, remove the asterisk (*) to the left of the keyword. Then, replace the current setting to the right of the value with the new setting. The possible settings are listed to the right of the equal sign.

   Keywords that are unique to installation are only specified in a response file during a response file installation.
3. Save the file on an exported file system available to everyone on the network.

If you are installing directly from the CD-ROM, you must store the renamed response file on another drive.

Important: You can specify the name of the instance owner in the response file. If this user does not already exist, DB2 will create this user on your system.

Your next step is to perform a response file installation on UNIX.

Performing a response file installation on UNIX

Performing a response file installation is part of the larger task of *Response file installation of DB2 on UNIX*.

Prerequisites:

Before you begin the installation, ensure that:
- Installation of DB2 products using a response file requires that you have root authority.
- Refer to the installation documentation for the particular DB2 product that you want to install. For example, if you want to install DB2 Enterprise Server Edition, you must refer to the installation documentation for DB2 Enterprise Server Edition to review installation prerequisites, information about required users, and other important setup information.

Procedure:

To perform a response file installation, perform the following steps:
1. Enter the **db2setup** command as follows:

    ```
    <cd-rom>/db2setup -r <reponsefile_directory>/<reponse_file>
    ```

    where:
    - `<cd-rom>` represents the location of the DB2 installable image;
    - `<responsefile_directory>` represents the directory where the customized response file is located; and
    - `<response_file>` represents the name of the response file.
2. Check the messages in the log file when the installation finishes. The location of the log file is: `/tmp/db2setup.log`

Response file installation of DB2 on Windows

This section describes how to perform a response file installation on Windows.

Prerequisites:

Before you begin the installation, ensure that:
1. Your system meets all of the memory, hardware, and software requirements to install your DB2 product.
2. You have all of the required user accounts to perform the installation.

Procedure:

To distribute a response file installation of DB2:
- Make DB2 Files available for installation
- Set up shared access to a directory
- Create response files
- Run setup with the response file from the client workstation

Related tasks:
- "Making DB2 files available for a response file installation" on page 96
- "Setting up shared access to a directory on Windows" on page 97
- "Creating a response file on Windows" on page 98
- "Running setup with the response file from the client workstation on Windows" on page 99
- "Configuring db2cli.ini for a response file installation" on page 108
- "Installing DB2 products using Microsoft Systems Management Server (SMS)" on page 101
- "Response file installation of DB2 on UNIX" on page 93

Related reference:
- "Memory requirements for partitioned DB2 servers (UNIX)" in the *Quick Beginnings for DB2 Servers*
- "Installation requirements for DB2 servers (Windows)" in the *Quick Beginnings for DB2 Servers*

Making DB2 files available for a response file installation

Making DB2 files available for a response file installation is part of the larger task of a *Response file installation of DB2 on Windows*.

Prerequisites:

To make DB2 files available for a response file installation, you must copy the required files from the CD-ROM to the shared network drive that will act as the install server.

Procedure:

To copy the required files from the CD-ROM to the shared network drive that will act as the install server, perform the following steps:
1. Insert the appropriate CD-ROM into the drive.
2. Create a directory by entering the following command:
   ```
   md c:\db2prods
   ```

3. Enter the **cpysetup.bat** command to copy the DB2 installation files to your install server. This command is located in the *x:*\db2\windows directory, where *x:* represents your CD-ROM drive.

The command syntax is as follows:

```
cpysetup.bat directory language
```

where:
- *directory* represents the directory that you created in the previous step (for example, c:\db2prods).
- *language* represents the two-character country/region code for your language (for example, en for English).

For example, to copy all of the English DB2 install files to the c:\db2prods directory, enter the following command:

```
cpysetup.bat c:\db2prods en
```

Related tasks:
- "Setting up shared access to a directory on Windows" on page 97

Setting up shared access to a directory on Windows

Setting up shared access to a directory is part of the larger task of a *Response file installation of DB2 on Windows*. This task will allow you to grant your network workstations access to a directory on the code server.

Procedure:

To set up shared access to a directory on the code server:
1. Open Windows Explorer.
2. Select the directory that you want to share. For example, c:\db2prods.
3. Select **File—>Properties** from the menu bar. The properties window for the directory will open.
4. Select the **Sharing** tab.
5. Select the **Shared As** radio button.
6. In the **Share Name** field, enter a share name. For example, db2nt.
7. To specify *Read access* for everyone:
   a. Click the **Permissions** push button. The Access Through Share Permissions window opens.
   b. Ensure that the **Everyone** option is selected in the **Name** box.
   c. Click the **Type of Access** drop down box and select the **Read** option.

d. Click **OK**. You are returned to the properties window of the directory for which you want to set up shared access.

e. Click **OK**.

Your next step is to create a response file on Windows.

Related tasks:

- "Creating a response file on Windows" on page 98
- "Making DB2 files available for a response file installation" on page 96

Creating a response file on Windows

Creating a response file is part of the larger task of a *Response file installation of DB2 on Windows*.

If you have already set up and configured a DB2 product and you want to distribute this exact configuration across your network, we recommend that you use the response file generator to create the response file for your installation.

The DB2 CD-ROM includes a ready-to-use sample response file with default entries. The sample response files are located in `x:db2\windows\samples` directory, where `x:` represents the CD-ROM drive.

Response files are available for each DB2 product.

Procedure:

To edit the appropriate sample response file, perform the following steps:

1. Customize the response file.

    To activate an item in the response file, remove the asterisk (*) to the left of the keyword. Then, replace the current setting to the right of the value with the new setting. The possible settings are listed to the right of the equal sign.

    Some product response files have mandatory keywords that you must provide values for. The mandatory keywords are documented in the comments of each response file.

    Keywords that are unique to installation are only specified in a response file during a response file installation.

2. Save the file. If you have made any changes, save the file under a new file name to preserve the original sample response file. If you are installing directly from the CD-ROM, you should store the renamed response file on another drive.

For example, the following response file would install a DB2 Administration Client on the c:\sqllib directory, with the REBOOT and the catalog NO AUTHORIZATION options enabled

Note: The COMP keywords will be effective only if the *Install_Type* is CUSTOM.

```
FILE                = c:\sqllib
INSTALL_TYPE        = CUSTOM
PROD                = ADMIN_CLIENT
REBOOT              = YES
DB2.CATALOG_NOAUTH  = YES
```

If you specify the DB2.CATALOG_NOAUTH=YES keyword, users will not be required to have System Administrative (SYSADM) or System Controller (SYSCTRL) authority to catalog databases. This is the default setting with DB2 Client and DB2 Connect Personal Edition response files.

You should install DB2 products only on a drive which is local to the target workstation. Installing on a non-local drive can cause performance and availability problems.

Your next step is to run setup with the response file from the client workstation.

Related tasks:
- "Running setup with the response file from the client workstation on Windows" on page 99
- "Setting up shared access to a directory on Windows" on page 97

Running setup with the response file from the client workstation on Windows

Running setup with the response file from the client workstation is part of the larger task of a response file installation of DB2 on Windows.

Prerequisites:

Log on to the system with a user account that you want to use to perform the installation.

Procedure:

To perform an installation from the workstation where the DB2 products will be installed:
1. Connect to the shared directory of the network drive or CD-ROM drive by entering the following command from the command prompt:
   ```
   net use x: \\computer_name\directory_sharename /USER:domain\username
   ```
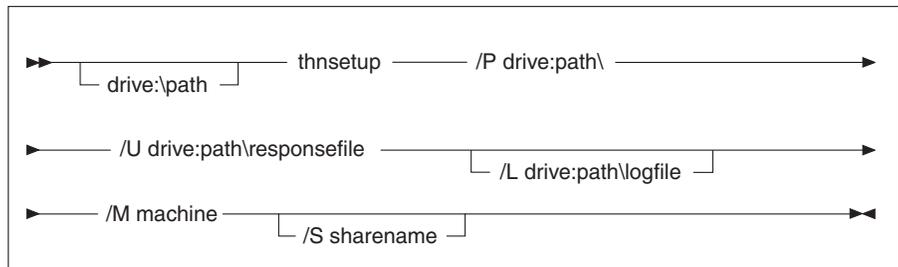
where:

- *x:* represents the shared directory on the local drive.
- *computer_name* represents the computer name of the remote machine where the DB2 install files reside.
- *directory_sharename* represents the share name of the directory on network drive or CD-ROM drive where the DB2 install files reside.
- *domain* represents the domain where the account is defined.
- *username* represents a user that has access to this machine.

For example, to use the remote db2prods directory, which was shared as db2nt and is located on the remote server codesrv, as the local x: drive, enter the following command:

```
net use x: \\codesrv\db2nt
```

Depending on how security is set up across your network, you may have to specify the */USER* parameter.

2. Run the setup program by issuing the following from a command prompt:

where:

/U Specifies the fully qualified response file name. If you changed and renamed the sample response file that is provided, make sure that this parameter matches the new name. This parameter is required.

/L Specifies the fully qualified log file name, where setup information and any errors occurring during setup are logged. This parameter is optional.

If you do not specify the log file's name, DB2 names it db2.log. The db2.log file is located in the Start/Documents/My Documents folder.

/I Specifies the two-character country/region code that represents your language. If you do not specify the language, setup will determine the system language, and launch the appropriate DB2 install for that language. This parameter is optional.

For example, to install a DB2 Administration Client using a custom response file that you created called admin.rsp (located in the same directory as the DB2 install files), enter the following command:

```
x:\setup /U admin.rsp
```

If you are using a response file that was created using the response file generator, ensure that all the instance profiles are located in the same drive and directory as the response file that you specify.

3. Check the messages in the log file when the installation finishes.

Related tasks:

- "Creating a response file on Windows" on page 98

Installing DB2 products using Microsoft Systems Management Server (SMS)

With Microsoft Systems Management Server (SMS), you can install DB2 across a network, and set up the installation from a central location. An SMS install will minimize the amount of work the users will have to perform. This installation method is ideal if you want to roll out an installation on a large number of clients all based on the same setup.

Prerequisites:

You must have at least SMS Version 1.2 installed and configured on your network for both your SMS server and SMS workstation. Refer to *Microsoft's Systems Management Server Administrator's Guide* for your platform for more details on how to:

- Set up SMS (including setting up primary and secondary sites).
- Add clients to the SMS system.
- Set up inventory collection for clients.

Procedure:

To install DB2 products using SMS:

1. Import the DB2 install file into SMS
2. Create the SMS package on the SMS server
3. Distribute the DB2 installation package across your network

When you are using SMS, you have control over which response file you will use. You can have several different installation options, resulting in several different response files. When you configure the SMS install package, you can specify which response file to use.

Related tasks:

Importing the DB2 install file into SMS

Importing the DB2 install file into SMS is part of the larger task of installing DB2 products using SMS.

To set up a package through SMS, you will use the sample SMS package description (**db2.pdf**) file and your customized response file and instance profile. If you are using a response file that was created using the response file generator, you must ensure that all the instance profiles are located in the same drive and directory as the response file that you specify.

Procedure:

To import the DB2 install files into SMS:

1. Insert the appropriate CD-ROM into the drive.
2. Start the **Microsoft SMS Administrator**. The **Microsoft SMS Administrator Logon** window opens.
3. Enter your logon ID and password, and click **OK**. The **Open SMS** window opens.
4. Select the **Packages** window type and click **OK**. The **Packages** window opens
5. Select **File—>New** from the menu bar. The **Package Properties** window opens.
6. Click the **Import** push button. The **File Browser** opens. Find the db2.pdf file located in x:\db2\common\, where x: represents the CD-ROM drive.
7. Click **OK**.

Related tasks:

Creating the SMS package on the SMS server

Creating the SMS package on the SMS server is part of the larger task of *Installing DB2 products using SMS*.

An *SMS package* is a bundle of information that you send from the SMS server to an SMS client. The package consists of a set of commands that can be run on the client workstation. These commands could be for system maintenance, changing client configuration parameters, or installing software.

Procedure:

To create an SMS package:

1. From the **Package Properties** window, click on the **Workstations** push button. The **Setup Package For Workstations** window opens, with the imported response file and instance profile ready to use.
2. In the **Source Directory** field, enter the name of the parent directory where you put the copied DB2 files. For example, x:\db2prods, where x: represents your CD-ROM drive.
3. Select the name of the product to install from the **Workstation Command Lines** window.
4. If you changed and renamed the sample response file, click on the **Properties** push button. The **Command Line Properties** window opens. Change the value of the **Command Line** parameter to match the new response file name and path. If you are using a response file that was created using the response file generator, ensure that all the instance profiles are located in the same drive and directory as the response file that you specify.
5. Click **OK**.
6. Click the **Close** push button.
7. Click **OK** to close the opened windows. The Packages window shows the name of the new SMS package.

Related tasks:

- "Distributing the DB2 installation package across your network" on page 104
- "Importing the DB2 install file into SMS" on page 102

Distributing the DB2 installation package across your network

Distributing the DB2 installation package across your network is part of the larger task of *Installing DB2 products using SMS*.

Now that you have created the package, you have three options:

- You can distribute your SMS package and then log on locally on the client workstation to run the package. This option requires that the user account used to perform the installation belongs to the *local Administrators* group where the account is defined.
- You can distribute your SMS package and then log on remotely on the client workstation to run the package. This option requires that the user account used to perform the installation belongs to the *Domain Admins* group.
- You can set up your SMS package with an auto-install feature.

Options 1 and 2 are available to you, but for a large number of installations we recommend option 3, which will be our focus for this step.

Once sent to the client workstation, the SMS package will tell the client workstation what code to execute, and the location, on the SMS server, of that code.

Procedure:

To send the code to a client workstation:

1. Open the **Sites** window.
2. Open the **Packages** window.
3. In the **Packages** window, select the appropriate package and drag it onto the target client in the **Sites** window. The **Job Details** window opens. This window lists the package that will be sent to the client machine (Machine Path) and the command that will be executed at the workstation.
4. Select the **Run Workstation Command** check box and select the installation package that you want to use.
5. In the **Run Phase** box of the **Job Details** window, select the **Mandatory After** check box. A default mandatory date is set one week from the current date. Adjust the date as required.
6. Deselect the **Not Mandatory over Slow Link** check box. This feature is critical if you are installing across a large number of workstations. It is recommended that you stagger the installation to avoid overloading your server. For example, if you are considering an overnight install, then spread out the install time for a manageable amount of client

workstation. For more information about completing the **Job Details** window, refer to *Microsoft's Systems Management Server Administrator's Guide* for your platform.

7. When the job specifications are complete, click **OK**. You are returned to the **Job Properties** window.

8. Add a comment that explains what the job will do. For example, `Install DB2 Run-Time Client`.

9. Click the **Schedule** push button and the **Job Schedule** window opens. This window will arrange a priority for this job. By default, the job is low priority and all other jobs will be executed first. It is recommended that you select medium or high priority. You can also select a time to start the job.

10. Click **OK** to close the **Job Schedule** window.

11. Click **OK**.

The job is created and the package is sent to the SMS client workstation.

To run the installation on the SMS client, perform the following steps:

1. On the target SMS client workstation, log on to the workstation with a user account that belongs to the *local Administrators* group where the account is defined. This level of authority is required because a system program install is being performed instead of a user program install.

2. Start the **Package Command Manager**. The **Package Command Manager** window opens.

3. When the SMS client workstation receives the packages from the SMS server, it is listed in the **Package Name** section of the window. Select the package and click on the **Execute** push button. The installation runs automatically.

4. Following installation, you must reboot the SMS client workstation before using DB2. **Important:** If you specified `REBOOT = YES` in your response file, the SMS client will reboot automatically.

5. Click **Start** and select **Programs—>SMS Client—>Package Command Manager** . The **Package Command Manager** window opens.

6. Click the **Executed Commands** folder and verify the execution of the package. Similarly, you can verify completion on the SMS server by checking the status of the job and ensuring that it has been changed to complete from pending or active.

On the SMS client, open the Package Command Manager again. When the package, which you created and sent to the client, appears under the Executed Commands folder, the installation has completed.

Related tasks:
- "Creating the SMS package on the SMS server" on page 103

Configuring remote access to a server database

Once you have installed your DB2 product, you can configure your product to access remote databases individually on each client workstation using the Configuration Assistant or the command line processor. DB2 uses the **CATALOG** command to catalog remote database access information:

- The **CATALOG NODE** command specifies the protocol information on how to connect to the host or to the server.
- The **CATALOG DATABASE** command catalogs the remote database name and assigns it a local alias.
- The **CATALOG DCS** command specifies that the remote database is a host or OS/400 database. (This command is only required for DB2 Connect Personal or Enterprise Editions).
- The **CATALOG ODBC DATA SOURCE** command registers the DB2 database with the ODBC driver manager as a data source.

Prerequisites:

If you plan to roll out multiple copies of DB2 clients with identical configurations, then you can create a batch file that will run your customized script.

For example, consider the following sample batch file, myscript.bat, used to run the script file:

```
@echo off
cls
db2cmd catmvs.bat
```

The DB2CMD command initializes the DB2 environment and the catmvs.bat file calls the batch job of the same name.

Here is a sample catalog script file, catmvs.bat, that could be used to add databases to a DB2 Connect Personal Edition workstation:

```
db2 catalog tcpip node tcptst1 remote mvshost server 446
db2 catalog database mvsdb at node tcptst1 authentication dcs
db2 catalog dcs database mvsdb as mvs_locator
db2 catalog system odbc data source mvsdb
db2 terminate
exit
```

Procedure:

You can either send these files to your client workstations manually or use SMS and have the script execute automatically after the installation and reboot have completed. To create another SMS package with the catalog script, perform the following steps:

1. Start the **SMS Administrator**. The **Open SMS** window opens.
2. Select the **Packages** window type and click **OK**. The **Packages** window opens.
3. Select **File—>New** from the menu bar. The **Package Properties** window opens.
4. Enter a name for your new package. For example, `batchpack`.
5. Enter a comment about the package. For example, `Package for batch file`.
6. Click on the **Workstations** push button. The **Setup Package for Workstations** window opens.
7. Enter the source directory. Ensure that the source directory is a location that both the server and the client have access to, and that contains the batch file that is to be run from the client workstation.
8. Under the **Workstation Command Lines** section, click on **New**. The **Command Line Properties** window opens.
9. Enter a command name.
10. Enter the command line.
11. Click the check box for the platforms that should be supported, under the **Supported Platforms** section.
12. Click **OK**.
13. Click **Close**.
14. Click **OK**.

Distribute this package in the same way as an installation package.

Related tasks:
- "Configuring db2cli.ini for a response file installation" on page 108
- "Installing DB2 products using Microsoft Systems Management Server (SMS)" on page 101
- "Distributing the DB2 installation package across your network" on page 104

Configuring db2cli.ini for a response file installation

The db2cli.ini file is an ASCII file which initializes the DB2 CLI configuration. This file is shipped to help you get started and can be found in the x:\sqllib directory, where x:\sqllib represents the install path for DB2.

Procedure:

If you need to use any specific CLI optimization values or CLI parameters, you can use your customized db2cli.ini file for your DB2 client workstations. To do so, copy your db2cli.ini file to the DB2 install directory (e.g. c:\Program Files\IBM\SQLLIB) on each DB2 client workstation.

Related tasks:

- "Configuring remote access to a server database" on page 106
- "Installing DB2 products using Microsoft Systems Management Server (SMS)" on page 101

Exporting and importing a profile

Procedure:

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

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

Chapter 7. Configuring DB2 thin clients

Thin clients

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

Related concepts:
- "Thin client considerations (Windows)" on page 112
- "Thin client environments" on page 109

Related tasks:
- "Setting up a thin-client environment" on page 114

Thin client environments

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

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

It is important to note, however, that there is a potential loss of system performance at program initialization time. This loss may result as DB2

programs must load from a code server across a LAN connection. The extent of performance loss will depend on variables such as the load and speed of both the network and the code server.

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

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

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

Typical setup of a DB2 thin client

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

Notes:

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

DB2 thin-client workstations access the code server to dynamically load code as it is required. Once the code is loaded, all processing is done locally on the DB2 thin clients, and a connection to a target DB2 server is made.
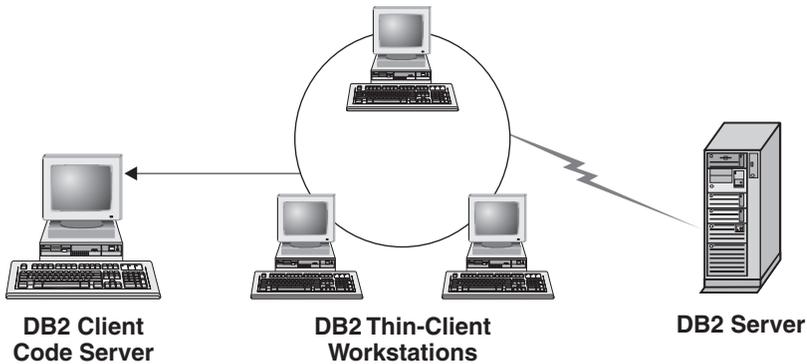
Figure 1. A typical DB2 thin-client environment

Typical setup of a DB2 Connect thin client

A typical DB2 Connect thin-client environment is shown in the following figure. DB2 Connect PE is installed on a machine with the code server component. Once configured, this machine will be known as a *DB2 Connect code server*. Only a DB2 Connect PE workstation can act as a code server for DB2 Connect thin workstations. It is important to note that each DB2 Connect thin client needs a DB2 Connect Personal license.

A DB2 Connect thin workstation functions like the DB2 thin client. It dynamically loads any code required from the DB2 Connect thin code server. Once the code is loaded, all processing is done locally on the DB2 Connect thin workstations. Connection to a target host or AS/400® DB2 server is made by using local database configuration information.

DB2 Connect thin clients can also access databases that reside on DB2 servers for UNIX® and Windows, as well as databases that reside on host and AS/400 systems.
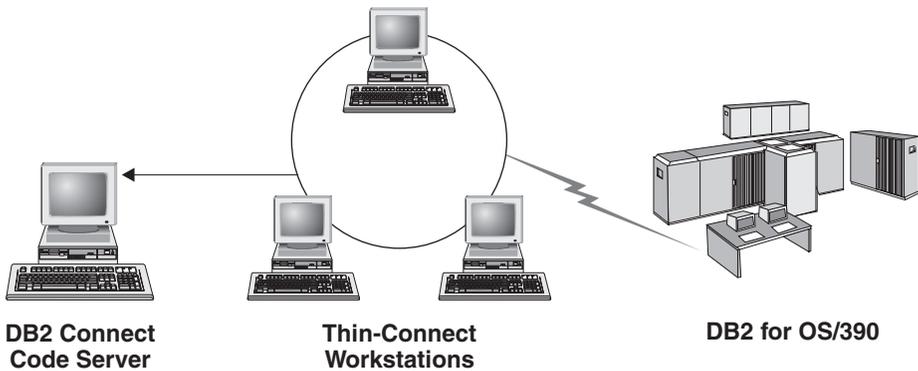
Figure 2. A typical DB2 Connect thin-client environment

Related concepts:

- "Thin client considerations (Windows)" on page 112
- "Thin clients" on page 109

Related tasks:

- "Setting up a thin-client environment" on page 114

Thin client considerations (Windows)

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

Set up cross-platform support on the code server

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

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

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

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

where:

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

Make the code directory available to all thin workstations

The process for setting up a share for Windows 2000 or Windows XP code servers is different from the process for Windows NT® or Windows 98/Windows ME code servers:

1. From the Windows 2000 or Windows XP code server, launch **Windows Explorer**.

2. Select the directory where you installed the DB2® product. Use the `c:\sqllib` directory to set up the share for thin workstations running on Windows NT.

3. Select **File —> Properties** from the menu bar.

4. Select the **Sharing** tab.

5. Select the **Share this folder** radio button.

6. In the **Share Name** field, enter a share name. For example, enter `NTCODESV`. You can use any name for the share name.

7. All target thin workstations need to have read access to this directory for all users. Specify read access for everyone as follows:

   a. Select the **Security** tab.

   b. Click **Advanced**. The Access Control Settings window opens.

   c. From the **Permissions** tab, highlight the **Everyone** group. The Permission Entry window opens.

   d. Set the **Read Permissions** option to **Allow**.

   e. Click **OK** until all windows are closed.

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

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

- The **Path** field is the **Folder** field in Windows 2000 and Windows XP.

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

      domain\username

  where:

  domain

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

  username

  represents the user who has access to this machine. This is only required if you are not logged on to the system with a

user account that has read access on the remote code server
or you have specified the domain parameter.

Related concepts:
- "Thin clients" on page 109
- "Thin client environments" on page 109

Setting up a thin-client environment

Procedure:

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

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

Related concepts:
- "Thin client considerations (Windows)" on page 112
- "Thin clients" on page 109
- "Thin client environments" on page 109

Related tasks:
- "Installing a DB2 Administration Client or DB2 Connect Personal Edition
  on the code server" on page 115
- "Setting up cross-platform support on the code server" on page 115
- "Making the code directory available to all thin workstations" on page 117
- "Creating a thin client response file" on page 118
- "Mapping a network drive from the thin client to the code server" on page
  120
- "Running the thnsetup command to enable thin clients" on page 121

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

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

Procedure:

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

1. Select a **Custom** installation from the install wizard.
2. From the Select Components window, select the **Thin Client Code Server** component to install the files needed to set up the thin client.

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

Related tasks:

- "Setting up cross-platform support on the code server" on page 115

Setting up cross-platform support on the code server

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

Prerequisites:

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

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

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

NT code server support a Windows 2000 and a Windows NT thin client machine, then you cannot also support a Windows 98 thin client machine in that environment.

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

If your configuration environment has differing Windows 32-bit operating systems, you will have to perform the following steps to set up your code server. The following example assumes that you are configuring a Windows NT code server to service Windows 98 thin clients. However, these instructions are applicable for all combinations of Windows 32-bit operating systems.

Procedure:

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

Note: For this example, DB2 is installed in `c:\sqllib` and the directory for serving Windows 98 clients is `d:\sqllib98`.

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

   `md d:\sqllib98`

   where:
   - *d:* represents a local hard drive.
2. Copy the DB2 product directory located on the code server (for example, `c:\sqllib`) into the directory that you just created by entering the following command:

   ```
   xcopy c:\sqllib\*.* d:\sqllib98 /s /e
   ```

   where:
   - *c:* represents the drive on the code server where the DB2 product was installed.
   - *d:* represents the drive on the code server where the `sqllib98` directory was created in the previous step.
3. On the code server, change to the directory that you created in the first step. This is the directory on the code server that will be used to serve thin workstations running on Windows 98. For this example, enter the following commands:

```
d:
cd sqllib98
```

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

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

   where:

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

You now have two code servers on your machine (one located in `c:\sqllib` and one in `d:\sqllib98`). In this example, you are creating a thin client on a Windows 98 workstation, and intend to have the code served by a Windows NT machine, therefore, you must use the Windows 98 code server (for example, `d:\sqllib98`) in the remaining steps.

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

Related tasks:

• "Installing a DB2 Administration Client or DB2 Connect Personal Edition on the code server" on page 115
• "Making the code directory available to all thin workstations" on page 117

Making the code directory available to all thin workstations

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

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

Procedure:

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

1. On the Windows NT code server, launch **Windows Explorer**.
2. Select the directory on the code server that will be used to serve thin workstations running on Windows 98. For this example, select the `d:\sqllib98` directory to set up the share.
3. Select **File —> Properties** from the menu bar.

4. Select the **Sharing** tab.

5. Select the **Shared As** radio button.

6. In the **Share Name** field, enter a share name that is 8 characters or less. For example, enter NTCODESV.

7. All thin client users need to have read access to this directory. For example, jsmith must have access to this directory if he is to log onto a thin client machine and access the thin client code on the code server. Specify read access as follows:

    a. Click **Permissions**. The Access Through Share Permissions window opens.

    b. In the **Name** box, highlight the **Everyone** group.

       Note: Access can be given to the **Everyone** group, a group that you have specifically defined for thin client users, or to individual thin client users.

    c. Click the **Type of Access** drop down box and select **Read**.

    d. Click **OK** until all windows are closed.

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

Related concepts:

- "Thin client considerations (Windows)" on page 112

Related tasks:

- "Creating a thin client response file" on page 118
- "Setting up cross-platform support on the code server" on page 115

Creating a thin client response file

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

A response file contains the keywords unique to installation, registry values, environment variable settings, and the database manager configuration parameter settings. In a response file, the asterisk (*) acts like a comment. Any line that is prefixed with an asterisk will be ignored during the installation. To enable a parameter, remove the asterisk. If you do not specify a keyword, or if it is commented out, a default value will be used.

You can create or customize a response file by using the sample response file called db2thin.rsp.

Sample response file (db2thin.rsp)
For a DB2 thin client or DB2 Connect thin workstation, there is a sample response file called db2thin.rsp, which you can use to install either type of thin workstation. The default settings for the most common installation type are provided in this file. You can find this response file in the c:\sqllib\thnsetup directory, where *c:\sqllib* represents the drive where you installed your DB2 product.

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

```
*COMP =ODBC_SUPPORT
```

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

```
COMP =ODBC_SUPPORT
```

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

For example,

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

would be:

```
DB2.DIAGLEVEL = 4
```

to set this parameter to 4.

Once you have finished editing the response file, save it using a different name to maintain the original sample. For example, call the edited file test.rsp and save it in the same directory on which you set up the shared permissions in the previous step (d:\sqllib98).

Related tasks:
- "Making the code directory available to all thin workstations" on page 117
- "Mapping a network drive from the thin client to the code server" on page 120

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

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

Prerequisites:

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

Procedure:

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

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

   ```
   \\computer_name\share_name
   ```

   where:

   computer_name
   represents the computer name of the code server.

   share_name
   represents the share name of the shared directory on the code server.
5. Select the **Reconnect at Logon** check box to make the share persistent.

Your next step is enabling your thin client.

Related tasks:
- "Creating a thin client response file" on page 118
- "Running the thnsetup command to enable thin clients" on page 121

Running the thnsetup command to enable thin clients

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

Procedure:

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

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

```
>>──┬──────────────┬── thnsetup ── /P drive:path\ ──────────────>
    └─ drive:\path ─┘

>──── /U drive:path\responsefile ──────────────────────────────>
                         └─ /L drive:path\logfile ─┘

>──── /M machine ──────────────────────────────────────────────><
              └─ /S sharename ─┘
```
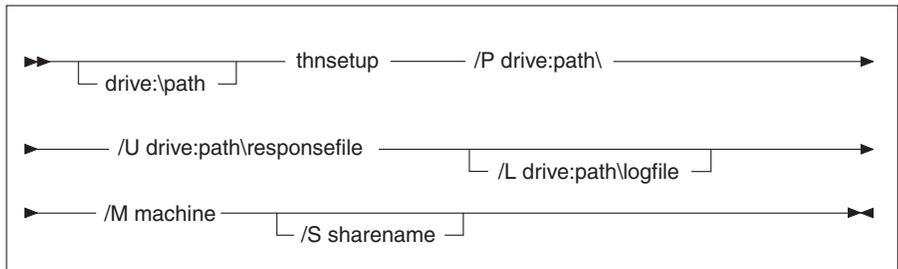
where:

/P specifies the path where the DB2 code is installed on the code server. This parameter is required. If you have not already mapped a persistent network drive to the code server, then this parameter should be the drive letter which will be used to represent the network drive.

/U specifies the fully qualified response file name. This parameter is required.

/L specifies the fully qualified log file name, where setup information and any errors occurring during setup are logged. If you do not specify the log file's name, the default db2.log file name is used. This file will be created in a directory called db2log, on the drive where your operating system is installed. This parameter is optional.

/M specifies the computer name of the code server. This parameter is required.

/S specifies the share name of the code server where the DB2 product was installed. This parameter is only necessary if you did not map a persistent network drive.

For example, to create a thin workstation where:

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

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

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

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

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

Related tasks:
- "Mapping a network drive from the thin client to the code server" on page 120

Chapter 8. Setting up DB2 Web Tools

Deploying DB2 Web Tools on WebSphere application servers

This task describes how to deploy and configure DB2 Web Tools (including the Web Command Center and the Web Health Center) on WebSphere 4.0. These tools run as web applications on a web server to provide access to DB2 servers through web browsers.

Prerequisites:

Before you install DB2 Web Tools on WebSphere, ensure that you have:

- IBM WebSphere 4.0 Application Server (or later).

  Note: IBM WebSphere 4.0 can be installed using a DB2 Version 8 database as its administration server database (WAS40) after changing the prereq.properties file section as follows:

  ```
  [WAS]: prereq_checker=0
  ```

  rather than:

  ```
  [WAS]: prereq_checker=1
  ```

  This enables the verification to pass the database version check. The prereq.properties is in the same path with the Setup.exe that starts the IBM WebSphere 4.0 install.

- IBM Version 8 DB2 Administration Client.
- A web browser that is compliant with HTML 4.0.

Restrictions:

It is recommended that a new virtual host and application server be created for use with the DB2 Web Tools enterprise application. If WebSphere contains a Default Server and a default_host that can be modified by changing the classpath, the creation of a new virtual host or application server is not required.

Procedure:

To install DB2 Web Tools on WebSphere application servers:

1. Prepare the DB2 Web Tools application server from the WebSphere Administrator's Console:

a. Start the WebSphere Application Server and open the WebSphere Administrator's Console.

b. Create a new virtual host by clicking **WebSphere Administrative Domain** and then **Virtual Hosts** in the left pane of the window.

c. Select or right click **Virtual Hosts** and then choose **New**.

d. Enter db2tools_host in the **Name** field and click **Add**.

e. Enter an alias under the **Host Aliases** heading. Enter the value *:9090 (or any other available TCPIP port).

f. Create a new application server by clicking **WebSphere Administrative Domain**, and then click **Nodes** in the left pane of the window. You may use any name, just ensure that you remember it as you will have to recall it later in the setup procedure. Select or right click **Application Servers** and choose **New**. The values should be as follows:

   1) On the **General** tab: enter *Working directory* using the install directory for WebSphere/AppServer/bin

   2) On the **File**:
      - enter *Standard output* using the install directory for \WebSphere\AppServer/logs/DB2Tools_stdout.txt
      - enter *Standard outerr* using the install directory for \WebSphere\AppServer/logs/DB2Tools_stderr.txt

      Note: The remaining default values are acceptable for the setup procedure. However, after a successful deployment and run, you may modify the values if necessary.

g. Open a DB2 command window.

   Note: Running **startup.bat** from a command prompt window would not set DB2PATH.

2. Import DB2 Web Tools configuration from the DB2 command window:

a. Extract from db2wa.war (using an unzip utility) the DB2 Web Tools configuration files:
   - importDB2WebTools.xml, and
   - importDB2WebTools.bat

   and place them in the WebSphere\AppServer\bin location.

b. Open a DB2 command window and change the directory to the WebSphere\AppServer\bin location.

c. Execute the following command:

   importDB2WebTools.bat [application_server_name]

   using the name of the application server that was previously created or determined.

Note: The application server name is case sensitive. In case of mismatch, a new Application Server is going to be created.

   d. Return to the WebSphere Administrator's Console.

3. Install the DB2 Web Tools enterprise application from the WebSphere Administrator's Console:

   a. Under **WebSphere Administrative Domain**, right click **Enterprise Applications** and choose the **Install Enterprise Application** menu item. The **Install Enterprise Application Wizard** window opens.

   b. Choose the **Install stand-alone module (*.war, *.jar)** radio button.

   c. Browse and locate `SQLLIB\tools\web\db2wa.war` file (i.e. DB2 Web Tools set of web applications). The following values should be entered for application name and context root:

      • Application name: `DB2 Web Tools`

      • Context root: `/db2wa`

     Note: `/db2wa` is the required name. The application will fail if this is not specified.

   d. Click **Next** until **Select Virtual Host** appears and select the virtual host that was previously created or determined.

   e. Click **Next** until **Select Server** appears and select the application that was previously created or determined. Click **Finish**.

   f. Start the Application Server used for the DB2 Web Tools install. Ensure that the event messages reports the correct HTTP port that was chosen for the virtual host. For example,

     `Transport http is listening on port 9,090.`

     Note: If the port does not match, you may need to stop the application server and change the virtual host port to the value reported in the event message.

4. Invoke the DB2 Web Tools enterprise application from a browser by entering the following:

   `http://`*localhost*`: `*port number* `/db2wa`

   where `localhost` is the node name used to create the new application server, and the `port number` is the value reported in the event message after the application server started.

Related concepts:
- "DB2 Web Command Center (DB2 Web Tools)" on page 131
- "DB2 Web Health Center (DB2 Web Tools)" on page 131

Related tasks:

Deploying DB2 Web Tools on WebLogic application servers

This task describes how to deploy and configure DB2 Web Tools (including the Web Command Center and the Web Health Center) on BEA WebLogic 7.0. These tools run as web applications on a web server to provide access to DB2 servers through web browsers.

Prerequisites:

Before you install DB2 Web Tools on WebSphere, ensure that you have:
- BEA WebLogic 7.0 application server.
- IBM Version 8 DB2 Administration Client.
- A web browser that is compliant with HTML 4.0.

Procedure:

To install DB2 Web Tools on WebLogic application servers:
1. Configure the JVM classpath for DB2 Web Tools into WebLogic application server by completing the following:
   a. Locate **startWLS.cmd** in the WebLogic install path weblogic700\server\bin. For example:

      ```
      D:\BEA\weblogic700\server\bin\
      ```
   b. Locate the following line:

      ```
      set CLASSPATH=%JAVA_HOME%\lib\tools.jar;
         %WL_HOME%\server\lib\weblogic_sp.jar;
         %WL_HOME%\server\lib\weblogic.jar;%CLASSPATH%
      ```
   c. Insert the following *after*:

      ```
      set DB2PATH=DB2_install_path
      set CLASSPATH=%CLASSPATH%;%DB2PATH%\tools\web\webtools.jar;
         %DB2PATH%\tools\databean.jar;%DB2PATH%\tools\xalan.jar;
         %DB2PATH%\tools\xerces.jar;%DB2PATH%\tools\das.jar;
         %DB2PATH%\tools\db2cmn.jar;%DB2PATH%\tools\db2ca.jar;
         %DB2PATH%\tools\db2cc.jar;%DB2PATH%\tools\db2hcapi.jar;
         %DB2PATH%\tools\db2ssmonapis.jar;%DB2PATH%\java\Common.jar;
         %DB2PATH%\java\db2java.zip
      ```
2. Deploy the DB2 Web Tools through the WebLogic administrative console by completing the following:
   a. Start the WebLogic administrative console.
   b. Click **domain**—>**deployments**—> **Web Applications** on the left hand pane of the window.

c. Click on the **Configure a new Web Application** link to install DB2 Web Tools web application.

d. Browse the listing of the file system to locate `Sqllib\tools\web\db2wa.war`.

e. Click on **select** beside the `db2wa.war` file name.

f. Choose from the list of available servers one to house DB2 Web Tools, select and click the arrow to move it to target servers.

   Note: Preserving the original name **db2wa** is mandatory, as DB2 Web Tools has it hardcoded.

g. Click the **Configure and Deploy** button.

h. Wait until the application server refreshes the deployment status of the web application on the selected server. If successful, it should show **Deployed=true**

3. Invoke the DB2 Web Tools web application which is located at:

   `http://`*server_name*`:`*app_server_port_number*`/db2wa`

   For example, `http://`*server_name*`:7001/db2wa`.

Related concepts:
- "DB2 Web Command Center (DB2 Web Tools)" on page 131
- "DB2 Web Health Center (DB2 Web Tools)" on page 131

Related tasks:
- "Deploying DB2 Web Tools on WebSphere application servers" on page 123
- "Deploying DB2 Web Tools on other application servers" on page 127
- "Debugging DB2 Web Tools" on page 132

Deploying DB2 Web Tools on other application servers

This task describes how to deploy and configure DB2 Web Tools (including the Web Command Center and the Web Health Center) on other application servers such as Tomcat 4.0 and Macromedia JRun 4.0. These tools run as web applications on a web server to provide access to DB2 servers through web browsers.

Prerequisites:

Before you install DB2 Web Tools, ensure that you have:
- An application server, such as:
  - Tomcat 4.0 Servlet/JSP Container (http://jakarta.apache.org/tomcat/)
  - Macromedia JRun 4.0

- IBM Version 8 DB2 Administration Client.
- A web browser that is compliant with HTML 4.0.

Procedure:

The following are the procedures for installing DB2 Web Tools using application servers such as Tomcat 4.0 or Macromedia JRun 4.0:

Tomcat 4.0

1. Prepare the Tomcat 4.0 configuration file (CLASSPATH) by completing the following:

   a. Create a new environment/system variable **CATALINA_HOME** to contain the path (root directory) to Tomcat 4.0. For example, `D:\jakarta-tomcat-4.0.3`.

      Note: This step is not mandatory on Windows operating systems, however, **step c** depends on this value to be set or the original path to be used.

   b. Confirm that the Tomcat Servlet/JSP Container is functional:

      1) Start Tomcat by running **startup.bat** from Tomcat's `bin` directory.

      2) Access the main web page **http://localhost:8080/** through a web browser.

      3) Shut down Tomcat by running **shutdown.bat** from Tomcat's `bin` directory or by closing the original command window where Tomcat was started.

   c. Change the **setclasspath.bat** configuration file located in the `bin` directory. For example, `D:\jakarta-tomcat-4.0.3\bin` by appending the following to the end of the file:

      ```
      set CLASSPATH=%CLASSPATH%; %CATALINA_HOME%\common\lib\
         servlet.jar;%DB2PATH%\tools\web\webtools.jar;
         %DB2PATH%\tools\xalan.jar;%DB2PATH%\tools\xerces.jar;
         %DB2PATH%\tools\db2cmn.jar;%DB2PATH%\tools\das.jar;
         %DB2PATH%\tools\db2ca.jar;%DB2PATH%\tools\db2cc.jar;
         %DB2PATH%\tools\db2hcapi.jar;%DB2PATH%\tools\databean.jar;
         %DB2PATH%\tools\db2ssmonapis.jar;%DB2PATH%\java\Common.jar;
         %DB2PATH%\java\db2java.zip
      ```

2. Deploy the DB2 Web Tools into the Tomcat Servlet/JSP Container by locating the DB2 Web Tools install path (i.e. `Sqllib\tools\web\db2wa.war`) and copying **db2wa.war** into Tomcat's deployment directory (i.e. Tomcat's webapps directory).

3. Invoke DB2 Web Tools on Tomcat Servlet/JSP Container by completing the following:

   a. Open a DB2 Command Window and change the directory to Tomcat's `bin` directory.

b. Start Tomcat using **startup.bat** and confirm that a new
   directory (**db2wa**) has been added into the webapps directory.

   Note: Running **startup.bat** from a command prompt window
   would not set DB2PATH. In order to enable that, the
   CLASSPATH line needs to be changed to explicitly
   reference the DB2 install path rather than the
   %DB2PATH% environment variable.

c. The DB2 Web Tools enterprise application is located at
   http://localhost:8080/db2wa and can be accessed with an
   HTML 4.0 compliant web browser.

JRun

1. Prepare a new application server for DB2 Web Tools by completing
   the following:

   Note: Creating a new application server is recommended, but not
   mandatory. For testing purposes, the default server may be
   used, and only the configuration of the JVM classpath and
   the deployment is required.

   a. Start the JRun Management Console and login as the
      administrator of the application server.

   b. Create a new application server using **Create New Server**
      located at the top right side of the main page. Do not change
      the host name selection from localhost.

   c. Enter the new server name (**DB2WebToolsServer**) and click on
      the JRun Server Directory. The value is automatically filled in.

   d. Click the **Create Server** button.

   e. Record the generated values or enter new values for:
      - JNDI Provider URL
      - Web Server Port Number. This would be the value to be
        used in the URL for the DB2 Web Tools (i.e.
        http://localhost:*web_server_port_numer*/db2wa)
      - Web Connector Proxy Port Number

   f. Click **update port numbers** if necessary and close the window.

2. Configure the JVM classpath for the application server by
   completing the following

   a. Select the newly created **DB2WebToolsServer** in the table of
      contents (left side panel) and select **Settings**, and then click
      JVM Settings

   b. Add a new entry in the **New Classpath** containing the
      following value after *DB2_install_path* is replaced by the
      explicit value on your system:

```
DB2_install_path\tools\web\webtools.jar;
    DB2_install_path\tools\databean.jar;
    DB2_install_path\tools\xalan.jar;
    DB2_install_path\tools\xerces.jar;
    DB2_install_path\tools\das.jar;
    DB2_install_path\tools\db2cmn.jar;
    DB2_install_path\tools\db2ca.jar;
    DB2_install_path\tools\db2cc.jar;
    DB2_install_path\tools\db2hcapi.jar;
    DB2_install_path\tools\db2ssmonapis.jar;
    DB2_install_path\java\Common.jar;
    DB2_install_path\java\db2java.zip
```

3. Deploy DB2 Web Tools on the JRun application server by completing the following:

   a. Start the application server selected to host DB2 Web Tools web application (DB2WebToolsServer, default or any other except admin).

   b. Click **Web Applications** and then click **Add**.

   c. Browse the **Deployment File** section to select the Sqllib\tools\web\db2wa.war file in the DB2 install path.

   d. Click **Deploy** and confirm that the context path is /db2wa.

   e. Select the application server and confirm that the DB2 Web Tools application appears in the **Web Applications** section. Do *not* click on **Apply** on this page.

   f. Select the **Home** link from the upper left side panel of the main page.

   g. Restart the application server from **Home** view that contains the DB2 Web Tools (**DB2WebToolsServer**).

4. The DB2 Web Tools enterprise application is located at **http://localhost:web_server_port_numer/db2wa** and can be accessed with an HTML 4.0 compliant web browser.

Related concepts:

- "DB2 Web Command Center (DB2 Web Tools)" on page 131
- "DB2 Web Health Center (DB2 Web Tools)" on page 131

Related tasks:

- "Deploying DB2 Web Tools on WebSphere application servers" on page 123
- "Deploying DB2 Web Tools on WebLogic application servers" on page 126
- "Debugging DB2 Web Tools" on page 132

DB2 Web Command Center (DB2 Web Tools)

The DB2 Web Command Center is part of a suite of DB2 Web Tools (along with the DB2 Web Health Center) that allows remote administration for DB2 database servers. These tools run as web applications on a web application server to provide access to DB2 servers through web browsers.

The DB2 Web Command Center is based on a three-tier architecture. The first tier is the web client HTTP browser. The middle tier is an application server that hosts the business logic and set of applications. This middle tier provides the underlying mechanisms for the (HTTP/HTTPS) communication with the first tier (web client browser) and also the third tier (database or transaction server). This architecture implies the existence of a web (HTTP) server and a servlet container (defined by Sun's Servlet specifications). The combination of this type of server and servlet container is also known as a *servlet-enabled web server*, and constitutes the fundamental functionality of commercial application servers like BEA WebLogic® or IBM WebSphere®. As a result of the three tier architecture, the code would only need to be installed on the middle tier, assuming the existence of the client HTTP browser (first tier), and the DB2 server (third tier).

The DB2 Web Command Center implements many of the already existing features of the DB2 Command Center, however, it does not feature the SQLAssist and Visual Explain.

The DB2 Web Command Center is targeted for use with the HTTP clients (browsers) available on mobile laptops and notebooks, as well as web-enabled PDAs and Palm devices.

Related concepts:
- "DB2 Web Health Center (DB2 Web Tools)" on page 131

Related tasks:
- "Deploying DB2 Web Tools on WebSphere application servers" on page 123
- "Deploying DB2 Web Tools on WebLogic application servers" on page 126
- "Deploying DB2 Web Tools on other application servers" on page 127
- "Debugging DB2 Web Tools" on page 132

DB2 Web Health Center (DB2 Web Tools)

The DB2 Web Health Center is part of a suite of DB2 Web Tools (along with the DB2 Web Command Center) that allows remote administration for DB2 database servers. These tools run as web applications on a web application server to provide access to DB2 servers through web browsers.

The DB2 Web Health Center enables data relating to the health of a DB2 instance to be externalized to the web. This internal data is provided by a server-side health monitoring process. While the server-side process is supported only on UNIX and Windows, the DB2 Web Health Center can be accessed from any HTML 4.0 compliant web browser.

The primary function of this tool is to support the remote retrieval of the health monitoring data for the instance, database, and database objects and to provide recommended actions to counteract any problems that arise.

The health monitoring process will generate e-mail notifications of alerts and/or warnings. You should set a default contact (i.e. email address) to send notifications to during installation. These notifications will include information on how to access the Web Health Center (WHC).

Related concepts:
- "DB2 Web Command Center (DB2 Web Tools)" on page 131

Related tasks:
- "Deploying DB2 Web Tools on WebSphere application servers" on page 123
- "Deploying DB2 Web Tools on WebLogic application servers" on page 126
- "Deploying DB2 Web Tools on other application servers" on page 127
- "Debugging DB2 Web Tools" on page 132

Debugging DB2 Web Tools

If you experience problems associated with the deployment of the DB2 Web Tools enterprise application, there are methods that you may use to debug the process.

Procedure:

WebSphere

Trace can be enabled for DB2 Web Tools on WebSphere using the following methods:

1. Modifying the deployment descriptor file web.xml located in the install directory for DB2 Web Tools

   ```
   \WebSphere\AppServer\installedApps\DB2_Web_Tools.ear
      \db2wa.war\WEB-INF
   ```

   By changing the value to **true**, the trace is enabled and the information is output to the log files. The application server must be restarted.

2. Use the WebSphere **Administrator's Console** and the **Application Assembly Tools** that are located in the Console's menu under

Tools, to change the `SQLLIB\tools\web\db2wa_war.ear` file. The `trace.on` parameter (false by default, true to collect trace) can be modified. Locate the Initialization Parameters by clicking **Web Modules**—> **DB2 Web Tools**—> **Web Component**—>**Portal** —>**Initialization Parameters**. After saving the `db2wa_war.ear`, the enterprise application must be reinstalled and restarted.

The trace files are located in the install directory (`\WebSphere\AppServer\logs`). Depending on the method of installation, they can be located as follows:

1. If a new application server was set, the files containing the trace information are:
   - `DB2Tools_stdout.txt`. This file contains all the trace information generated by the WebSphere application server, as well as the trace information generated by the DB2 Web Tools code.
   - `DB2Tools_stderr.txt`. This file may contain stack dump information caused by unexpected exceptions generated generated at runtime by the WebSphere application server and DB2 Web Tools code.
2. If the default application server was used to install, the trace information can be found in the default log files:
   - Default_Server_stdout.log
   - Default_Server_stderr.log

WebLogic 7.0

To enable the DB2 Web Tools web application trace, modify the deployment descriptor file using the **Edit Web Application Deployment Descriptors** by completing the following:

1. Select the web application from the WebLogic administrative console navigation tree by clicking **domain** —> **deployments** —> **Web Applications**.
2. Click on the link **Edit Web Application Deployment Descriptors**.
3. Navigate to **Web Application Descriptor**—>**Servlets**—>**Portal**—>**Parameters** and select **trace.on** to be changed from the default value **false** to **true**.

All of the information generated in the application server and DB2 Web Tools is collected in the install path for:

```
\user_projects\domain\
    server_name\server_name.log
```

For example, `D:\BEA\`*user_projects*`\`*domain*`\`*server_name*`.log`

JRun 4.0

To enable DB2 Web Tools web application trace, modify the deployment descriptor file **web.xml** located in the JRun install path. For example:

```
D:\JRun\servers\WebDB2\SERVER-INF\temp\db2wa.war-560049872
  \WEB-INF\web.xml
```

However, trace information is collected when the **trace.on** value is **true**. The log contains all of the trace information generated by the application server and DB2 Web Tools.

For JRun, the trace information is located in the install path under the `logs` directory. The name of the file is *app_server_name*-event.log. For example, D:\JRun\logs\DB2WebToolsServer-event.log.

Tomcat 4.0

To enable trace information for DB2 Web Tools web module, the deployment descriptor **web.xml** needs to be located in the install path. For example:

```
D:\jakarta-tomcat-4.0.3\webapps\db2wa\WEB-INF\web.xml
```

The parameter is **trace.on** and the default value is **false**. However, trace information is collected when the **trace.on** value is **true**. Tomcat needs to be restarted for the value to be considered.

For Tomcat 4.0 the trace information can be located in the install directory for logs. The log file name is `localhost_log.`*time_stamp*`.txt` where *time_stamp* is the date of generation. For example, `localhost_log.2002-06-05.txt`. The log contains all of the trace information generated by the servlet container and DB2 Web Tools code.

Related concepts:
- "DB2 Web Command Center (DB2 Web Tools)" on page 131
- "DB2 Web Health Center (DB2 Web Tools)" on page 131

Related tasks:
- "Deploying DB2 Web Tools on WebSphere application servers" on page 123
- "Deploying DB2 Web Tools on WebLogic application servers" on page 126
- "Deploying DB2 Web Tools on other application servers" on page 127

Chapter 9. Referenced information

Mounting the CD-ROM on AIX

Prerequisites:

Root authority is required to perform this task.

Procedure:

To mount the CD-ROM on AIX using the System Management Interface Tool (SMIT), perform the following steps:

1. Log in as a user with root authority.
2. Insert the CD-ROM in the drive.
3. Create a CD-ROM mount point by entering the `mkdir -p /cdrom` command, where `cdrom` represents the CD-ROM mount point directory.
4. Allocate a CD-ROM file system using SMIT by entering the **smit storage** command.
5. After SMIT starts, select **File Systems —> Add / Change / Show / Delete File Systems —> CDROM File Systems —> Add CDROM File System**.
6. In the Add a File System window:
   - Enter a device name for your CD-ROM file system in the **DEVICE Name** field. Device names for CD-ROM file systems must be unique. If there is a duplicate device name, you may need to delete a previously-defined CD-ROM file system or use another name for your directory. In our example, we will use `/dev/cd0` as the device name.
   - Enter the CD-ROM mount point directory in the **MOUNT POINT** window. In our example, the mount point directory is `/cdrom`.
   - In the **Mount AUTOMATICALLY at system restart** field, select `yes` to enable automatic mounting of the file system.
   - Click **OK** to close the window, then click **Cancel** three times to exit SMIT.
7. Next, mount the CD-ROM file system by entering the **smit mountfs** command.
8. In the Mount a File System window:
   - Enter the device name for this CD-ROM file system in the **FILE SYSTEM name** field. In our example, the device name is `/dev/cd0`.
   - Enter the CD-ROM mount point in the **Directory over which to mount** field. In our example, the mount point is `/cdrom`.

- Enter cdrfs in the **Type of Filesystem** field. To view the other kinds of file systems you can mount, click **List**.
- In the **Mount as READ-ONLY system** field, select yes.
- Accept the remaining default values and click OK to close the window.

Your CD-ROM file system is now mounted. To view the contents of the CD-ROM, place the disk in the drive and enter the **cd /cdrom** command where **cdrom** is the CD-ROM mount point directory.

Mounting the CD-ROM on HP-UX

Because DB2 Version 8.1 for HP-UX contains several files with long file names, the mount command may fail. The following steps will enable you to successfully mount your DB2 for HP-UX product CD-ROM.

Prerequisites:

Root authority is required to perform this task.

Procedure:

To mount your DB2 for HP-UX product CD-ROM:
1. Log in as a user with root authority.
2. In the /etc directory, add the following line to the pfs_fstab file:

   ```
   /dev/dsk/c0t2d0 mount_point pfs-rrip ro,hard
   ```

   where *mount_point* represents the mount point of the CD-ROM.
3. Start the *pfs* daemon by entering the following commands (if they are not already running):

   ```
   /usr/sbin/pfs_mountd &
   /usr/sbin/pfsd 4 &
   ```
4. Insert the CD-ROM in the drive and enter the following commands:

   ```
    mkdir /cdrom
    /usr/sbin/pfs_mount /cdrom
   ```

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

Your CD-ROM file system is now mounted. To view the contents of the CD-ROM, place the CD in the drive and enter the **cd /cdrom** command where **cdrom** is the CD-ROM mount point directory.

Mounting the CD-ROM on Linux

Prerequisites:

Root authority is required to perform this task.

Procedure:

To mount the CD-ROM on Linux:

1. Log in as a user with root authority.
2. Insert the CD-ROM in the drive and enter the following command:

   ```
   mount -t iso9660 -o ro /dev/cdrom /cdrom
   ```

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

Your CD-ROM file system is now mounted. To view the contents of the CD-ROM, place the disk in the drive and enter the **cd /cdrom** command where **cdrom** is the CD-ROM mount point directory.

Mounting the CD-ROM on Solaris

Prerequisites:

If you are mounting the CD-ROM drive from a remote system using NFS, the CD-ROM file system on the remote machine must be exported with root access. You must also mount that file system with root access on the local machine.

Procedure:

To mount the CD-ROM on Solaris:

1. Log in as a user with root authority.
2. Insert the CD-ROM into the drive.
3. If the Volume Manager is not running on your system, enter the following commands to mount the CD-ROM:

   ```
   mkdir -p /cdrom/unnamed_cdrom
   mount -F hsfs -o ro /dev/dsk/c0t6d0s2 /cdrom/unnamed_cdrom
   ```

   where /cdrom/unnamed_cdrom represents the CD-ROM mount directory and /dev/dsk/c0t6d0s2 represents the CD-ROM drive device.

If the Volume Manager (vold) is running on your system, the CD-ROM is automatically mounted as:

```
/cdrom/unnamed_cdrom
```

4. Log out.

Your CD-ROM file system is now mounted. To view the contents of the CD-ROM, place the disk in the drive and enter the **cd /cdrom** command where **cdrom** is the CD-ROM mount point directory.

DB2 product license files

The following list provides license file names for DB2 products. You must install the license file before using DB2.

db2conee.lic
DB2 Connect Enterprise Edition

db2conpe.lic
DB2 Connect Personal Edition

db2dlm.lic
DB2 Data Links Manager

db2gse.lic
DB2 Spatial Extender

db2rcon.lic
DB2 Relational Connect

db2ese.lic
DB2 Enterprise Server Edition

db2pe.lic
DB2 Personal Edition

db2wm.lic
DB2 Warehouse Manager

db2wse.lic
DB2 Workgroup Server Edition

db2conue.lic
DB2 Connect Unlimited Edition

db2nse.lic
Net Search Extender

db2wsue.lic
DB2 Workgroup Server Unlimited Edition

Related tasks:

Installing your DB2 license key using the db2licm command

You can use the **db2licm** command to add the license key instead of using the License Center.

Restrictions:

The DB2 license key must be installed on each computer where DB2 is installed.

Procedure:

To add your license key using the **db2licm** command:
1. Change directory to the directory in which the **db2licm** command is installed.
   - On Windows servers, this is the SQLLIB/bin directory.
   - On UNIX servers, this is the INSTALLPATH/adm directory, where INSTALLPATH is the directory in which DB2 is installed.
2. On Windows servers, enter the following command:

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

   where x: represents the CD-ROM drive that contains the DB2 product CD.

   On UNIX servers, enter the following command:

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

   where *license_filename* for DB2 Universal Database products are as follows:

   db2conee.lic
   > DB2 Connect Enterprise Edition

   db2conpe.lic
   > DB2 Connect Personal Edition

   db2dlm.lic
   > DB2 Data Links Manager

   db2gse.lic
   > DB2 Spatial Extender

   db2rcon.lic
   > DB2 Relational Connect

   db2ese.lic
   > DB2 Enterprise Server Edition

db2pe.lic
    DB2 Personal Edition

db2wm.lic
    DB2 Warehouse Manager

db2wse.lic
    DB2 Workgroup Server Edition

db2conue.lic
    DB2 Connect Unlimited Edition

db2nse.lic
    Net Search Extender

db2wsue.lic
    DB2 Workgroup Server Unlimited Edition

Related tasks:
- "Installing your DB2 license key using the License Center" on page 140
- "Setting the DB2 license policy using the db2licm command" on page 142
- "Setting the DB2 license policy using the License Center" on page 142

Related reference:
- "DB2 product license files" on page 138

Installing your DB2 license key using the License Center

You can install your license key using the License Center.

Procedure:

To install your license key using the License Center:
1. Start the DB2 Control Center and select **License Center** from the **Tools** menu.
2. Select the system for which you are installing a license. The **Installed Products** field will display the name of the product that you have installed.
3. Select **Add** from the **License** menu.
4. In the Add License window, select the **From a file** radio button and select a license file:
   - On Windows servers: x:\db2\license*license_filename* where x: represents the CD-ROM drive containing DB2 product CD.
   - On UNIX servers: /db2/license/*license_filename*

   where *license_filename* for DB2 Universal Database products are as follows:

db2conee.lic
> DB2 Connect Enterprise Edition

db2conpe.lic
> DB2 Connect Personal Edition

db2dlm.lic
> DB2 Data Links Manager

db2gse.lic
> DB2 Spatial Extender

db2rcon.lic
> DB2 Relational Connect

db2ese.lic
> DB2 Enterprise Server Edition

db2pe.lic
> DB2 Personal Edition

db2wm.lic
> DB2 Warehouse Manager

db2wse.lic
> DB2 Workgroup Server Edition

db2conue.lic
> DB2 Connect Unlimited Edition

db2nse.lic
> Net Search Extender

db2wsue.lic
> DB2 Workgroup Server Unlimited Edition

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

Related tasks:
- "Installing your DB2 license key using the db2licm command" on page 139
- "Setting the DB2 license policy using the db2licm command" on page 142
- "Setting the DB2 license policy using the License Center" on page 142

Related reference:
- "DB2 product license files" on page 138

Setting the DB2 license policy using the db2licm command

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

Procedure:

To set your license policy using the **db2licm** command, perform *one* of the following depending on the type of licenses that you purchased:

- If you purchased Concurrent User licenses, enter the following commands (This example is for DB2 UDB Enterprise Server Edition):

  ```
  db2licm -p db2ese concurrent
  db2licm -u N
  ```

  where *N* represents the number of concurrent user licenses that you have purchased.

- If you purchased Registered User licenses, enter the following command (This example is for DB2 UDB Enterprise Server Edition):

  ```
  db2licm -p db2ese registered
  ```

- If you purchased *both* Concurrent User and Registered User licenses, enter the following command (This example is for DB2 UDB Enterprise Server Edition):

  ```
  db2licm -p db2ese concurrent registered
  ```

For DB2 Workgroup Server Edition the internet policy is applicable and for DB2 Connect EE the measured policy is also applicable.

Related tasks:

- "Installing your DB2 license key using the db2licm command" on page 139
- "Installing your DB2 license key using the License Center" on page 140
- "Setting the DB2 license policy using the License Center" on page 142

Setting the DB2 license policy using the License Center

You can set your license policy using the License Center.

Procedure:

To set your license policy, perform the following depending on the type of licenses that you purchased:

1. In the License Center, select **Change** from the **License** menu.

2. In the Change License window, select the type of license that you have purchased:
   - If you purchased a Concurrent Users license, select **Concurrent connect users** and enter the number of user licenses that you have purchased.
   - If you purchased a Registered Users license, select **Concurrent registered users** and click **OK** to close the Change License window and return to the License Center. Click on the **Users** tab and add every user ID for which you purchased a license.

Notes:

1. For Workgroup Server Edition, you would choose either **Concurrent users** or **Registered users**.
2. For DB2 Connect products, you would choose either **Concurrent connect users** or **Registered connect users**.

There are also processor based licenses. You will also need to modify the number of processor licenses that you have bought.

Related tasks:

- "Installing your DB2 license key using the db2licm command" on page 139
- "Installing your DB2 license key using the License Center" on page 140
- "Setting the DB2 license policy using the db2licm command" on page 142

Client-to-Server communication scenarios

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

Table 11. Client-to-Server communication scenarios

	AIX server	HP-UX server	Linux server	Solaris server	Windows NT/ Windows 2000/Windows XP/Windows .NET server
OS/400 V4R5 client	APPC TCP/IP	TCP/IP	TCP/IP	APPC TCP/IP	APPC TCP/IP
OS/400 V5R1 client	APPC TCP/IP	TCP/IP	TCP/IP	APPC TCP/IP	APPC TCP/IP
AIX client	APPC TCP/IP	TCP/IP	TCP/IP	APPC TCP/IP	APPC TCP/IP
HP-UX client	APPC TCP/IP	TCP/IP	TCP/IP	APPC TCP/IP	APPC TCP/IP
Linux client	TCP/IP	TCP/IP	TCP/IP	TCP/IP	TCP/IP
OS/390 or z/OS client	APPC TCP/IP	TCP/IP	TCP/IP	APPC TCP/IP	APPC TCP/IP
SQL/DS client	APPC	N/A	N/A	APPC	APPC
Solaris client	APPC TCP/IP	TCP/IP	TCP/IP	APPC TCP/IP	APPC TCP/IP

Table 11. Client-to-Server communication scenarios (continued)

	AIX server	HP-UX server	Linux server	Solaris server	Windows NT/ Windows 2000/Windows XP/Windows .NET server
VSE V6 batch client	APPC	APPC	APPC	APPC	APPC
VSE V6 online client	APPC	APPC	N/A	APPC	APPC
VM V6 client	APPC TCP/IP	APPC TCP/IP	APPC TCP/IP	APPC TCP/IP	APPC TCP/IP
VSE V7 batch client	APPC TCP/IP	APPC TCP/IP	APPC TCP/IP	APPC TCP/IP	APPC TCP/IP
VSE V7 online client	TCP/IP	TCP/IP	TCP/IP	TCP/IP	TCP/IP
VM V7 client	APPC TCP/IP	APPC TCP/IP	APPC TCP/IP	APPC TCP/IP	APPC TCP/IP
Windows 98 client	TCP/IP	TCP/IP	TCP/IP	TCP/IP	NPIPE NetBIOS TCP/IP
Windows ME client	TCP/IP	TCP/IP	TCP/IP	TCP/IP	NPIPE NetBIOS TCP/IP
Windows NT/ Windows 2000 client	APPC TCP/IP	TCP/IP	TCP/IP	APPC TCP/IP	NPIPE NetBIOS TCP/IP
Windows XP/Windows .NET (32-bit) client	APPC TCP/IP	TCP/IP	TCP/IP	APPC TCP/IP	NPIPE NetBIOS TCP/IP
Windows XP/Windows .NET (64-bit) client	TCP/IP	TCP/IP	TCP/IP	TCP/IP	NPIPE NetBIOS TCP/IP

Chapter 10. Removing DB2

Removing DB2 on Windows

This task provides steps for completely removing DB2 version 8 from your Windows operating system. You should only perform this task if you no longer require existing DB2 instances and databases.

Procedure:

To remove DB2 version 8 on Windows:

1. Drop all databases. You can drop databases using the Control Center or **drop database** command.
2. Stop all DB2 processes and services. This can be done through the Windows Services panel or by issuing a **db2stop** command. If DB2 services and process are not stopped before attempting to remove DB2, you will receive a warning containing a list of processes and services that are holding DB2 DLLs in memory.
3. Accessible through the Windows Control Panel, use the Add/Remove Programs window to remove DB2 products. Refer to your operating system's help for more information about removing software products from your Windows operating system.

Related tasks:
- "Removing DB2 on UNIX" on page 145

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

Removing DB2 on UNIX

This task provides steps for removing DB2 Version 8 from your UNIX operating system. This task is not required to install a new version of DB2. Each version of DB2 on UNIX has a different installation path and can therefore coexist on the same computer.

Procedure:

To remove DB2 on UNIX:

1. Optional: Drop all databases. You can drop databases using the Control Center or the **drop database** command.
2. Stop the DB2 Administration Server.
3. Stop DB2 instances.
4. Remove the Administration Server.
5. Remove DB2 instances.
6. Remove DB2 products.

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

Related tasks:
- "Stopping the DB2 administration server (DAS)" on page 146
- "Stopping DB2 instances" on page 147
- "Removing the DB2 administration server (DAS)" on page 148
- "Removing DB2 instances" on page 148
- "Removing DB2 products on UNIX" on page 149
- "Removing DB2 on Windows" on page 145

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

Stopping the DB2 administration server (DAS)

This task is part of the main task of *Removing DB2 on UNIX*.

You must stop the DB2 administration server (DAS) before you remove DB2 on UNIX.

Procedure:

To stop the Administration Server:
1. Log in as the DB2 administration server owner.
2. Stop the DB2 administration server by entering the **db2admin stop** command.

The next step in removing DB2 on UNIX is to stop DB2 instances.

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

Related tasks:

- "Removing DB2 products on UNIX" on page 149

Related reference:
- "db2admin - DB2 Administration Server Command" in the *Command Reference*

Stopping DB2 instances

This task is part of the main task of *Removing DB2 on UNIX*.

You must stop all DB2 instances before you remove DB2.

Procedure:

To stop a DB2 instance:
1. Log in as a user with root authority.
2. To obtain a list of the names of all DB2 instances on your system, enter the *DB2DIR***/bin/db2ilist** command.

   where *DB2DIR* is /usr/opt/db2_08_01 on AIX and /opt/IBM/db2/V8.1 on all other UNIX-based operating systems.
3. Log out.
4. Log back in as the owner of the instance you want to stop.
5. Run the start up script:

   ```
   . INSTHOME/sqllib/db2profile       (bash, Bourne, or Korn shells)
   source INSTHOME/sqllib/db2cshrc     (C shell)
   ```

   where *INSTHOME* is the home directory of the instance.
6. Back up files in the *INSTHOME*/sqllib directory, if needed, where *INSTHOME* is the home directory of the instance owner.
7. You might want to save the database manager configuration file, db2systm, the db2nodes.cfg file, or user defined function or fenced stored procedure applications in *INSTHOME*/sqllib/function.
8. Stop all database applications by entering the **db2 force application all** command.
9. Stop the DB2 database manager by entering the **db2stop** command.
10. Confirm that the instance is stopped by entering the **db2 terminate** command.
11. Repeat these steps for each instance.

The next step in removing DB2 on UNIX is to remove DB2 instances.

Related reference:

- "db2stop - Stop DB2 Command" in the *Command Reference*
- "FORCE APPLICATION Command" in the *Command Reference*
- "db2ilist - List Instances Command" in the *Command Reference*

Removing the DB2 administration server (DAS)

This task is part of the main task of *Removing DB2 on UNIX*.

You must remove the DB2 administration server (DAS) before you remove DB2.

Procedure:

To remove the DB2 administration server:
1. Log in as the DB2 administration server owner.
2. Run the start up script:

   ```
   . DASHOME/das/dasprofile (bash, Bourne, or Korn shells)
   source DASHOME/das/dascshrc  (C shell)
   ```

   where *DASHOME* is the home directory of the DB2 administration server.
3. Back up the files in the DASHOME/das directory.
4. Log off.
5. Log in as root and remove the DB2 administration server by entering the following command: *DB2DIR***/instance/dasdrop**

   where *DB2DIR* is /usr/opt/db2_08_01 on AIX and /opt/IBM/db2/V8.1 on all other UNIX-based operating systems.

The next step in removing DB2 on UNIX is to remove DB2 instances.

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

Related tasks:
- "Removing DB2 products on UNIX" on page 149

Removing DB2 instances

This task is part of the main task of *Removing DB2 on UNIX*.

You can remove some or all of the DB2 version 8 instances on your system. Once an instance is removed, all the DB2 databases owned by the instance, if any, will not be usable. Remove DB2 instances only if you are not planning to use DB2 Version 8 products, or if you do not want to migrate existing instances to a later version of DB2.

Procedure:

To remove an instance:

1. Remove the instance by entering the following command:

       DB2DIR/instance/db2idrop *InstName*

   where *DB2DIR* is /usr/opt/db2_08_01 on AIX and /opt/IBM/db2/V8.1 on all other UNIX-based operating systems.

   The **db2idrop** command removes the instance entry from the list of instances and removes the *INSTHOME*/sqllib directory, where *INSTHOME* is the home directory of the instance and where *InstName* is the login name of the instance.

2. Optional: As a user with root authority, remove the instance owner's user ID and group (if used only for that instance). Do not remove these if you are planning to re-create the instance.

   This step is optional since the instance owner and the instance owner group may be used for other purposes.

The next step in removing DB2 on UNIX is to remove DB2 products.

Related tasks:
- "Removing DB2 products on UNIX" on page 149

Related reference:
- "db2idrop - Remove Instance Command" in the *Command Reference*

Removing DB2 products on UNIX

This task is part of the main task of *Removing DB2 on UNIX*.

This task provides steps for removing DB2 Version 8 products using the **db2_deinstall** command. The **db2_deinstall** command removes all DB2 products from your system. If you want to remove a subset of DB2 products, use your operating system's native tools to remove DB2 components, packages, or file sets.

Prerequisites:

Before you remove DB2 products from your UNIX system:

- Ensure that you have performed all steps outlined in *Removing DB2 on UNIX* before removing DB2 products from your UNIX system.
- You must have root authority to remove DB2 products.
- The **db2_deinstall** command is found in the root directory on the DB2 Version 8 product CD-ROM. You will need your product CD-ROM to use the **db2_deinstall** command.

Root authority is required to remove DB2 products.

Procedure:

To remove DB2 products from your UNIX system:

1. Log in as user with root authority.
2. Mount the DB2 Version 8 product CD-ROM.
3. Run the **db2_deinstall -n** command from the root directory of your DB2 Version 8 product CD-ROM. The *-n* parameter makes **pkgrm** non-interactive. The *-n* parameter is only on System V (Solaris).

   This command will remove all DB2 products from your system.

There are alternative methods for removing DB2 products from your operating system. You may employ one of these methods if you only want to remove a subset of DB2 products from your system. Alternative methods for removing DB2 products include:

AIX   On AIX systems you can use the System Management Interface Tool (SMIT) to remove some or all DB2 products. If you use SMIT to remove DB2, DB2 Version 8 products can be identified by their prefix of db2_08_01. You can also remove all DB2 products from AIX systems using the **installp** command by entering **installp -u db2_08_01**.

HP-UX
           On HP-UX systems you can use the **swremove** command to remove some or all DB2 products.

Linux   On Linux systems you can use the **rpm** command to remove some or all DB2 products.

Solaris operating environment
           On the Solaris operating environment, you can remove some or all DB2 products using the **pkgrm** command.

Appendix A. DB2 Universal Database technical information

Overview of DB2 Universal Database technical information

DB2 Universal Database technical information can be obtained in the following formats:

- Books (PDF and hard-copy formats)
- A topic tree (HTML format)
- Help for DB2 tools (HTML format)
- Sample programs (HTML format)
- Command line help
- Tutorials

This section is an overview of the technical information that is provided and how you can access it.

FixPaks for DB2 documentation

IBM may periodically make documentation FixPaks available. Documentation FixPaks allow you to update the information that you installed from the *DB2 HTML Documentation CD* as new information becomes available.

Note: If you do install documentation FixPaks, your HTML documentation will contain more recent information than either the DB2 printed or online PDF manuals.

Categories of DB2 technical information

The DB2 technical information is categorized by the following headings:

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

The following tables describe, for each book in the DB2 library, the information needed to order the hard copy, print or view the PDF, or locate the HTML directory for that book. A full description of each of the books in

the DB2 library is available from the IBM Publications Center at
www.ibm.com/shop/publications/order

The installation directory for the HTML documentation CD differs for each
category of information:

```
htmlcdpath/doc/htmlcd/%L/category
```

where:
- *htmlcdpath* is the directory where the HTML CD is installed.
- *%L* is the language identifier. For example, en_US.
- *category* is the category identifier. For example, core for the core DB2
  information.

In the PDF file name column in the following tables, the character in the sixth
position of the file name indicates the language version of a book. For
example, the file name db2d1e80 identifies the English version of the
Administration Guide: Planning and the file name db2d1g80 identifies the
German 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
Arabic	w
Brazilian Portuguese	b
Bulgarian	u
Croatian	9
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
Romanian	8
Russian	r
Simp. Chinese	c
Slovakian	7
Slovenian	l

Spanish	z
Swedish	s
Trad. Chinese	t
Turkish	m

No form number indicates that the book is only available online and does not have a printed version.

Core DB2 information
The information in this category covers DB2 topics that are fundamental to all DB2 users. You will find the information in this category useful whether you are a programmer, a database administrator, or you work with DB2 Connect, DB2 Warehouse Manager, or other DB2 products.

The installation directory for this category is `doc/htmlcd/%L/core`.

Table 12. Core DB2 information

Name	Form Number	PDF File Name
IBM DB2 Universal Database Command Reference	SC09-4828	db2n0x80
IBM DB2 Universal Database Glossary	No form number	db2t0x80
IBM DB2 Universal Database Master Index	SC09-4839	db2w0x80
IBM DB2 Universal Database Message Reference, Volume 1	GC09-4840	db2m1x80
IBM DB2 Universal Database Message Reference, Volume 2	GC09-4841	db2m2x80
IBM DB2 Universal Database What's New	SC09-4848	db2q0x80

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

The installation directory for this category is `doc/htmlcd/%L/admin`.

Table 13. Administration information

Name	Form number	PDF file name
IBM DB2 Universal Database Administration Guide: Planning	SC09-4822	db2d1x80
IBM DB2 Universal Database Administration Guide: Implementation	SC09-4820	db2d2x80
IBM DB2 Universal Database Administration Guide: Performance	SC09-4821	db2d3x80
IBM DB2 Universal Database Administrative API Reference	SC09-4824	db2b0x80
IBM DB2 Universal Database Data Movement Utilities Guide and Reference	SC09-4830	db2dmx80
IBM DB2 Universal Database Data Recovery and High Availability Guide and Reference	SC09-4831	db2hax80
IBM DB2 Universal Database Data Warehouse Center Administration Guide	SC27-1123	db2ddx80
IBM DB2 Universal Database Federated Systems Guide	GC27-1224	db2fpx80
IBM DB2 Universal Database Guide to GUI Tools for Administration and Development	SC09-4851	db2atx80
IBM DB2 Universal Database Replication Guide and Reference	SC27-1121	db2e0x80
IBM DB2 Installing and Administering a Satellite Environment	GC09-4823	db2dsx80
IBM DB2 Universal Database SQL Reference, Volume 1	SC09-4844	db2s1x80
IBM DB2 Universal Database SQL Reference, Volume 2	SC09-4845	db2s2x80
IBM DB2 Universal Database System Monitor Guide and Reference	SC09-4847	db2f0x80

Application development information

The information in this category is of special interest to application developers or programmers working with DB2. You will find information about supported languages and compilers, as well as the documentation required to access DB2 using the various supported programming interfaces, such as embedded SQL, ODBC, JDBC, SQLj, and CLI. If you view this information online in HTML you can also access a set of DB2 sample programs in HTML.

The installation directory for this category is `doc/htmlcd/%L/ad`.

Table 14. Application development information

Name	Form number	PDF file name
IBM DB2 Universal Database Application Development Guide: Building and Running Applications	SC09-4825	db2axx80
IBM DB2 Universal Database Application Development Guide: Programming Client Applications	SC09-4826	db2a1x80
IBM DB2 Universal Database Application Development Guide: Programming Server Applications	SC09-4827	db2a2x80
IBM DB2 Universal Database Call Level Interface Guide and Reference, Volume 1	SC09-4849	db2l1x80
IBM DB2 Universal Database Call Level Interface Guide and Reference, Volume 2	SC09-4850	db2l2x80
IBM DB2 Universal Database Data Warehouse Center Application Integration Guide	SC27-1124	db2adx80
IBM DB2 XML Extender Administration and Programming	SC27-1234	db2sxx80

Business intelligence information

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

The installation directory for this category is doc/htmlcd/*%L*/wareh.

Table 15. Business intelligence information

Name	Form number	PDF file name
IBM DB2 Warehouse Manager Information Catalog Center Administration Guide	SC27-1125	db2dix80
IBM DB2 Warehouse Manager Installation Guide	GC27-1122	db2idx80

DB2 Connect information
The information in this category describes how to access host or iSeries data using DB2 Connect Enterprise Edition or DB2 Connect Personal Edition.

The installation directory for this category is doc/htmlcd/*%L*/conn.

Table 16. DB2 Connect information

Name	Form number	PDF file name
APPC, CPI-C, and SNA Sense Codes	No form number	db2apx80
IBM Connectivity Supplement	No form number	db2h1x80
IBM DB2 Connect Quick Beginnings for DB2 Connect Enterprise Edition	GC09-4833	db2c6x80
IBM DB2 Connect Quick Beginnings for DB2 Connect Personal Edition	GC09-4834	db2c1x80
IBM DB2 Connect User's Guide	SC09-4835	db2c0x80

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

The installation directory for this category is doc/htmlcd/*%L*/start.

Table 17. Getting started information

Name	Form number	PDF file name
IBM DB2 Universal Database Quick Beginnings for DB2 Clients	GC09-4832	db2itx80

Table 17. Getting started information (continued)

Name	Form number	PDF file name
IBM DB2 Universal Database Quick Beginnings for DB2 Servers	GC09-4836	db2isx80
IBM DB2 Universal Database Quick Beginnings for DB2 Personal Edition	GC09-4838	db2i1x80
IBM DB2 Universal Database Installation and Configuration Supplement	GC09-4837	db2iyx80
IBM DB2 Universal Database Quick Beginnings for DB2 Data Links Manager	GC09-4829	db2z6x80

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

The installation directory for this category is `doc/htmlcd/%L/tutr`.

Table 18. Tutorial information

Name	Form number	PDF file name
Business Intelligence Tutorial: Introduction to the Data Warehouse	No form number	db2tux80
Business Intelligence Tutorial: Extended Lessons in Data Warehousing	No form number	db2tax80
Development Center Tutorial for Video Online using Microsoft Visual Basic	No form number	db2tdx80
Information Catalog Center Tutorial	No form number	db2aix80
Video Central for e-business Tutorial	No form number	db2twx80
Visual Explain Tutorial	No form number	db2tvx80

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

The installation directory for this category is `doc/htmlcd/%L/opt`.

Table 19. Optional component information

Name	Form number	PDF file name
IBM DB2 Life Sciences Data Connect Planning, Installation, and Configuration Guide	GC27-1235	db2lsx80
IBM DB2 Spatial Extender User's Guide and Reference	SC27-1226	db2sbx80
IBM DB2 Universal Database Data Links Manager Administration Guide and Reference	SC27-1221	db2z0x80
IBM DB2 Universal Database Net Search Extender Administration and Programming Guide **Note:** HTML for this document is not installed from the HTML documentation CD.	SH12-6740	N/A

Release notes

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

Table 20. Release notes

Name	Form number	PDF file name
DB2 Release Notes	See note.	See note.
DB2 Installation Notes	Available on product CD-ROM only.	Available on product CD-ROM only.

Note: The HTML version of the release notes 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/opt/db2_08_01` on AIX
- `/opt/IBM/db2/V8.1` on all other UNIX operating systems

Related tasks:

- "Printing DB2 books from PDF files" on page 159

- "Ordering printed DB2 books" on page 160
- "Accessing online help" on page 160
- "Finding product information by accessing the DB2 Information Center from the administration tools" on page 164
- "Viewing technical documentation online directly from the DB2 HTML Documentation CD" on page 166

Printing DB2 books from PDF files

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

Prerequisites:

Ensure that you have Adobe Acrobat Reader. It is available from the Adobe Web site at www.adobe.com

Procedure:

To print a DB2 book from a PDF file:

1. Insert the *DB2 PDF Documentation* CD. On UNIX operating systems, mount the DB2 PDF Documentation CD. Refer to your *Quick Beginnings* book for details on how to mount a CD on UNIX operating systems.
2. Start Adobe Acrobat Reader.
3. Open the PDF file from one of the following locations:
   - On Windows operating systems:

     `x:\doc\`*language* directory, where *x* represents the CD-ROM drive letter and *language* represents the two-character territory code that represents your language (for example, EN for English).
   - On UNIX operating systems:

     /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.

Related tasks:

- "Ordering printed DB2 books" on page 160
- "Finding product information by accessing the DB2 Information Center from the administration tools" on page 164
- "Viewing technical documentation online directly from the DB2 HTML Documentation CD" on page 166

Related reference:

- "Overview of DB2 Universal Database technical information" on page 151

Ordering printed DB2 books

Procedure:

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

You can also obtain printed DB2 manuals by ordering Doc Packs for your DB2 product from your IBM Reseller. The Doc Packs are subsets of the manuals in the DB2 library selected to help you to get started using the DB2 product that you purchased. The manuals in the Doc Packs are the same as those that are available in PDF format on the *DB2 PDF Documentation CD* and contain the same content as the documentation that is available on the *DB2 HTML Documentation CD*.

Related tasks:
- "Printing DB2 books from PDF files" on page 159
- "Finding topics by accessing the DB2 Information Center from a browser" on page 162
- "Viewing technical documentation online directly from the DB2 HTML Documentation CD" on page 166

Related reference:
- "Overview of DB2 Universal Database technical information" on page 151

Accessing online help

The online help that comes with all DB2 components is available in three types:
- Window and notebook help
- Command line help
- SQL statement help

Window and notebook help explain the tasks that you can perform in a window or notebook and describe the controls. This help has two types:

- Help accessible from the **Help** button
- Infopops

The **Help** button gives you access to overview and prerequisite information. The infopops describe the controls in the window or notebook. Window and notebook help are available from DB2 centers and components that have user interfaces.

Command line help includes Command help and Message help. Command help explains the syntax of commands in the command line processor. Message help describes the cause of an error message and describes any action you should take in response to the error.

SQL statement help includes SQL help and SQLSTATE help. DB2 returns an SQLSTATE value for conditions that could be the result of an SQL statement. SQLSTATE help explains the syntax of SQL statements (SQL states and class codes).

Note: SQL help is not available for UNIX operating systems.

Procedure:

To access online help:
- For window and notebook help, click **Help** or click that control, then click **F1**. If the **Automatically display infopops** check box on the **General** page of the **Tool Settings** notebook is selected, you can also see the infopop for a particular control by holding the mouse cursor over the control.
- For command line help, open the command line processor and enter:
  - For Command help:
        ? *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.
- For Message help:
        ? *XXXnnnnn*

  where *XXXnnnnn* represents a valid message identifier.

  For example, ? `SQL30081` displays help about the SQL30081 message.
- For SQL statement help, open the command line processor and enter:
        ? *sqlstate* or ? *class code*

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

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

Related tasks:
- "Finding topics by accessing the DB2 Information Center from a browser" on page 162
- "Viewing technical documentation online directly from the DB2 HTML Documentation CD" on page 166

Finding topics by accessing the DB2 Information Center from a browser

The DB2 Information Center accessed from a browser enables you to access the information you need to take full advantage of DB2 Universal Database and DB2 Connect. The DB2 Information Center also documents major DB2 features and components including replication, data warehousing, metadata, and DB2 extenders.

The DB2 Information Center accessed from a browser is composed of the following major elements:

Navigation tree
> The navigation tree is located in the left frame of the browser window. The tree expands and collapses to show and hide topics, the glossary, and the master index in the DB2 Information Center.

Navigation toolbar
> The navigation toolbar is located in the top right frame of the browser window. The navigation toolbar contains buttons that enable you to search the DB2 Information Center, hide the navigation tree, and find the currently displayed topic in the navigation tree.

Content frame
> The content frame is located in the bottom right frame of the browser window. The content frame displays topics from the DB2 Information Center when you click on a link in the navigation tree, click on a search result, or follow a link from another topic or from the master index.

Prerequisites:

To access the DB2 Information Center from a browser, you must use one of the following browsers:
- Microsoft Explorer, version 5 or later

• Netscape Navigator, version 6.1 or later

Restrictions:

The DB2 Information Center contains only those sets of topics that you chose to install from the *DB2 HTML Documentation CD*. If your Web browser returns a `File not found` error when you try to follow a link to a topic, you must install one or more additional sets of topics from the *DB2 HTML Documentation CD*.

Procedure:

To find a topic by searching with keywords:
1. In the navigation toolbar, click **Search**.
2. In the top text entry field of the Search window, enter one or more terms related to your area of interest and click **Search**. A list of topics ranked by accuracy displays in the **Results** field. The numerical ranking beside the hit provides an indication of the strength of the match (bigger numbers indicate stronger matches).

   Entering more terms increases the precision of your query while reducing the number of topics returned from your query.
3. In the **Results** field, click the title of the topic you want to read. The topic displays in the content frame.

To find a topic in the navigation tree:
1. In the navigation tree, click the book icon of the category of topics related to your area of interest. A list of subcategories displays underneath the icon.
2. Continue to click the book icons until you find the category containing the topics in which you are interested. Categories that link to topics display the category title as an underscored link when you move the cursor over the category title. The navigation tree identifies topics with a page icon.
3. Click the topic link. The topic displays in the content frame.

To find a topic or term in the master index:
1. In the navigation tree, click the "Index" category. The category expands to display a list of links arranged in alphabetical order in the navigation tree.
2. In the navigation tree, click the link corresponding to the first character of the term relating to the topic in which you are interested. A list of terms with that initial character displays in the content frame. Terms that have multiple index entries are identified by a book icon.

3. Click the book icon corresponding to the term in which you are interested. A list of subterms and topics displays below the term you clicked. Topics are identified by page icons with an underscored title.

4. Click on the title of the topic that meets your needs. The topic displays in the content frame.

Related concepts:
- "Accessibility" on page 171
- "DB2 Information Center accessed from a browser" on page 174

Related tasks:
- "Finding product information by accessing the DB2 Information Center from the administration tools" on page 164
- "Updating the HTML documentation installed on your machine" on page 166
- "Troubleshooting DB2 documentation search with Netscape 4.x" on page 169
- "Searching the DB2 documentation" on page 170

Related reference:
- "Overview of DB2 Universal Database technical information" on page 151

Finding product information by accessing the DB2 Information Center from the administration tools

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

The DB2 Information Center accessed from the tools provides six types of information.

Tasks Key tasks you can perform using DB2.

Concepts
Key concepts for DB2.

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

Troubleshooting
Error messages and information to help you with common DB2 problems.

Samples
Links to HTML listings of the sample programs provided with DB2.

Tutorials
>   Instructional aid designed to help you learn a DB2 feature.

Prerequisites:

Some links in the DB2 Information Center point to Web sites on the Internet. To display the content for these links, you will first have to connect to the Internet.

Procedure:

To find product information by accessing the DB2 Information Center from the tools:

1. Start the DB2 Information Center in one of the following ways:
   - From the graphical administration tools, click on the **Information Center** icon in the toolbar. You can also select it from the **Help** menu.
   - At the command line, enter **db2ic**.
2. Click the tab of the information type related to the information you are attempting to find.
3. Navigate through the tree and click on the topic in which you are interested. The Information Center will then launch a Web browser to display the information.
4. To find information without browsing the lists, click the **Search** icon to the right of the list.

   Once the Information Center has launched a browser to display the information, you can perform a full-text search by clicking the **Search** icon in the navigation toolbar.

Related concepts:
- "Accessibility" on page 171
- "DB2 Information Center accessed from a browser" on page 174

Related tasks:
- "Finding topics by accessing the DB2 Information Center from a browser" on page 162
- "Searching the DB2 documentation" on page 170

Viewing technical documentation online directly from the DB2 HTML Documentation CD

All of the HTML topics that you can install from the *DB2 HTML Documentation CD* can also be read directly from the CD. Therefore, you can view the documentation without having to install it.

Restrictions:

As the Tools help is installed from the DB2 product CD and not from the *DB2 HTML Documentation CD*, you must install the DB2 product to view the help.

Procedure:

1. Insert the *DB2 HTML Documentation* CD. On UNIX operating systems, mount the *DB2 HTML Documentation CD*. Refer to your *Quick Beginnings* book for details on how to mount a CD on UNIX operating systems.
2. Start your HTML browser and open the appropriate file:
   - For Windows operating systems:

     ```
     e:\program files\IBM\SQLLIB\doc\htmlcd\%L\index.htm
     ```

     where *e* represents the CD-ROM drive, and %L is the locale of the documentation that you wish to use, for example, **en_US** for English.
   - For UNIX operating systems:

     ```
     /cdrom/program files/IBM/SQLLIB/doc/htmlcd/%L/index.htm
     ```

     where */cdrom/* represents where the CD is mounted, and %L is the locale of the documentation that you wish to use, for example, **en_US** for English.

Related tasks:

- "Finding topics by accessing the DB2 Information Center from a browser" on page 162
- "Copying files from the DB2 HTML Documentation CD to a Web server" on page 168

Related reference:

- "Overview of DB2 Universal Database technical information" on page 151

Updating the HTML documentation installed on your machine

It is now possible to update the HTML installed from the *DB2 HTML Documentation CD* when updates are made available from IBM. This can be done in one of two ways:

- Using the Information Center (if you have the DB2 administration GUI tools installed).
- By downloading and applying a DB2 HTML documentation FixPak .

Note: This will NOT update the DB2 code; it will only update the HTML documentation installed from the *DB2 HTML Documentation CD*.

Procedure:

To use the Information Center to update your local documentation:
1. Start the DB2 Information Center in one of the following ways:
   - From the graphical administration tools, click on the **Information Center** icon in the toolbar. You can also select it from the **Help** menu.
   - At the command line, enter **db2ic**.
2. Ensure your machine has access to the external Internet; the updater will download the latest documentation FixPak from the IBM server if required.
3. Select **Information Center** —> **Update Local Documentation** from the menu to start the update.
4. Supply your proxy information (if required) to connect to the external Internet.

The Information Center will download and apply the latest documentation FixPak, if one is available.

To manually download and apply the documentation FixPak :
1. Ensure your machine is connected to the Internet.
2. Open the DB2 support page in your Web browser at: www.ibm.com/software/data/db2/udb/winos2unix/support.
3. Follow the link for Version 8 and look for the "Documentation FixPaks" link.
4. Determine if the version of your local documentation is out of date by comparing the documentation FixPak level to the documentation level you have installed. This current documentation on your machine is at the following level: **DB2 v8.1 GA**.
5. If there is a more recent version of the documentation available then download the FixPak applicable to your operating system. There is one FixPak for all Windows platforms, and one FixPak for all UNIX platforms.
6. Apply the FixPak:
   - For Windows operating systems: The documentation FixPak is a self extracting zip file. Place the downloaded documentation FixPak in an empty directory, and run it. It will create a **setup** command which you can run to install the documentation FixPak.

- For UNIX operating systems: The documentation FixPak is a compressed tar.Z file. Uncompress and untar the file. It will create a directory named `delta_install` with a script called **installdocfix**. Run this script to install the documentation FixPak.

Related tasks:
- "Copying files from the DB2 HTML Documentation CD to a Web server" on page 168

Related reference:
- "Overview of DB2 Universal Database technical information" on page 151

Copying files from the DB2 HTML Documentation CD to a Web server

The entire DB2 information library is delivered to you on the *DB2 HTML Documentation CD* and may be installed on a Web server for easier access. Simply copy to your Web server the documentation for the languages that you want.

Note: You might encounter slow performance if you access the HTML documentation from a Web server through a low-speed connection.

Procedure:

To copy files from the *DB2 HTML Documentation CD* to a Web server, use the appropriate source path:
- For Windows operating systems:
  ```
  E:\program files\IBM\SQLLIB\doc\htmlcd\%L\*.*
  ```

  where *E* represents the CD-ROM drive and *%L* represents the language identifier.
- For UNIX operating systems:
  ```
  /cdrom/program files/IBM/SQLLIB/doc/htmlcd/%L/*.*
  ```

  where *cdrom* represents the mount point for the CD-ROM drive and *%L* represents the language identifier.

Related tasks:
- "Searching the DB2 documentation" on page 170

Related reference:
- "Supported DB2 interface languages, locales, and code pages" in the *Quick Beginnings for DB2 Servers*
- "Overview of DB2 Universal Database technical information" on page 151

Troubleshooting DB2 documentation search with Netscape 4.x

Most search problems are related to the Java support provided by web browsers. This task describes possible workarounds.

Procedure:

A common problem with Netscape 4.x involves a missing or misplaced security class. Try the following workaround, especially if you see the following line in the browser Java console:

```
Cannot find class  java/security/InvalidParameterException
```

- On Windows operating systems:

  From the *DB2 HTML Documentation CD*, copy the supplied `x:program files\IBM\SQLLIB\doc\htmlcd\`*locale*`\InvalidParameterException.class` file to the `java\classes\java\security\` directory relative to your Netscape browser installation, where *x* represents the CD-ROM drive letter and *locale* represents the name of the desired locale.

  Note: You may have to create the `java\security\` subdirectory structure.

- On UNIX operating systems:

  From the *DB2 HTML Documentation CD*, copy the supplied `/cdrom/program files/IBM/SQLLIB/doc/htmlcd/`*locale*`/InvalidParameterException.class` file to the `java/classes/java/security/` directory relative to your Netscape browser installation, where *cdrom* represents the mount point of the CD-ROM and *locale* represents the name of the desired locale.

  Note: You may have to create the `java/security/` subdirectory structure.

If your Netscape browser still fails to display the search input window, try the following:

- Stop all instances of Netscape browsers to ensure that there is no Netscape code running on the machine. Then open a new instance of the Netscape browser and try to start the search again.
- Purge the browser's cache.
- Try a different version of Netscape, or a different browser.

Related tasks:

- "Searching the DB2 documentation" on page 170

Searching the DB2 documentation

You can search the library of DB2 documentation to locate information that you need. A pop-up search window opens when you click the search icon in the navigation toolbar of the DB2 Information Center (accessed from a browser). The search can take a minute to load, depending on the speed of your computer and network.

Prerequisites:

You need Netscape 6.1 or higher, or Microsoft's Internet Explorer 5 or higher. Ensure that your browser's Java support is enabled.

Restrictions:

The following restrictions apply when you use the documentation search:
- Search is not case sensitive.
- Boolean searches are not supported.
- Wildcard and partial searches are not supported. A search on *java** (or *java*) will only look for the literal string *java** (or *java*) and would not, for example, find *javadoc*.

Procedure:

To search the DB2 documentation:
1. In the navigation toolbar, click the **Search** icon.
2. In the top text entry field of the Search window, enter one or more terms (separated by a space) related to your area of interest and click **Search**. A list of topics ranked by accuracy displays in the **Results** field. The numerical ranking beside the hit provides an indication of the strength of the match (bigger numbers indicate stronger matches).

   Entering more terms increases the precision of your query while reducing the number of topics returned from your query.
3. In the **Results** list, click the title of the topic you want to read. The topic displays in the content frame of the DB2 Information Center.

Note: When you perform a search, the first (highest-ranking) result is automatically loaded into your browser frame. To view the contents of other search results, click on the result in the results list.

Related tasks:
- "Troubleshooting DB2 documentation search with Netscape 4.x" on page 169

Online DB2 troubleshooting information

With the release of DB2® UDB Version 8, there will no longer be a
Troubleshooting Guide. The troubleshooting information once contained in this
guide has been integrated into the DB2 publications. By doing this, we are
able to deliver the most up-to-date information possible. To find information
on the troubleshooting utilities and functions of DB2, access the DB2
Information Center from any of the tools.

Refer to the DB2 Online Support site if you are experiencing problems and
want help finding possible causes and solutions. The support site contains a
large, constantly updated database of DB2 publications, TechNotes, APAR
(product problem) records, FixPaks, and other resources. You can use the
support site to search through this knowledge base and find possible solutions
to your problems.

Access the Online Support site at
www.ibm.com/software/data/db2/udb/winos2unix/support, or by clicking
the **Online Support** button in the DB2 Information Center. Frequently
changing information, such as the listing of internal DB2 error codes, is now
also available from this site.

Related concepts:

Related tasks:

Accessibility

Accessibility features help users with physical disabilities, such as restricted
mobility or limited vision, to use software products successfully. These are the
major accessibility features in DB2® Universal Database Version 8:
* DB2 allows you to operate all features using the keyboard instead of the
  mouse. See "Keyboard Input and Navigation" on page 172.
* DB2 enables you customize the size and color of your fonts. See "Accessible
  Display" on page 172.
* DB2 allows you to receive either visual or audio alert cues. See "Alternative
  Alert Cues" on page 172.
* DB2 supports accessibility applications that use the Java™ Accessibility API.
  See "Compatibility with Assistive Technologies" on page 172.

- DB2 comes with documentation that is provided in an accessible format. See "Accessible Documentation".

Keyboard Input and Navigation

Keyboard Input
You can operate the DB2 Tools using only the keyboard. You can use keys or key combinations to perform most operations that can also be done using a mouse.

Keyboard Focus
In UNIX-based systems, the position of the keyboard focus is highlighted, indicating which area of the window is active and where your keystrokes will have an effect.

Accessible Display
The DB2 Tools have features that enhance the user interface and improve accessibility for users with low vision. These accessibility enhancements include support for customizable font properties.

Font Settings
The DB2 Tools allow you to select the color, size, and font for the text in menus and dialog windows, using the Tools Settings notebook.

Non-dependence on Color
You do not need to distinguish between colors in order to use any of the functions in this product.

Alternative Alert Cues
You can specify whether you want to receive alerts through audio or visual cues, using the Tools Settings notebook.

Compatibility with Assistive Technologies
The DB2 Tools interface supports the Java Accessibility API enabling use by screen readers and other assistive technologies used by people with disabilities.

Accessible Documentation
Documentation for the DB2 family of products is available in HTML format. This allows you to view documentation according to the display preferences set in your browser. It also allows you to use screen readers and other assistive technologies.

DB2 tutorials

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

Before you begin:

Before you can access these tutorials using the links below, you must install the tutorials from the *DB2 HTML Documentation* CD-ROM.

If you do not want to install the tutorials, you can view the HTML versions of the tutorials directly from the *DB2 HTML Documentation CD*. PDF versions of these tutorials are also available on the *DB2 PDF Documentation CD*.

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

DB2 Universal Database tutorials:

If you installed the tutorials from the *DB2 HTML Documentation* CD-ROM, you can click on a tutorial title in the following list to view that tutorial.

Business Intelligence Tutorial: Introduction to the Data Warehouse Center
> Perform introductory data warehousing tasks using the Data Warehouse Center.

Business Intelligence Tutorial: Extended Lessons in Data Warehousing
> Perform advanced data warehousing tasks using the Data Warehouse Center.

Development Center Tutorial for Video Online using Microsoft® Visual Basic
> Build various components of an application using the Development Center Add-in for Microsoft Visual Basic.

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

Video Central for e-business Tutorial
> Develop and deploy an advanced DB2 Web Services application using WebSphere® products.

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

DB2 Information Center accessed from a browser

The DB2[®] Information Center gives you access to all of the information you need to take full advantage of DB2 Universal Database™ and DB2 Connect™ in your business. The DB2 Information Center also documents major DB2 features and components including replication, data warehousing, the Information Catalog Center, Life Sciences Data Connect, and DB2 extenders.

The DB2 Information Center accessed from a browser has the following features if you view it in Netscape Navigator 6.1 or later or Microsoft Internet Explorer 5 or later. Some features require you to enable support for Java or JavaScript:

Regularly updated documentation
> Keep your topics up-to-date by downloading updated HTML.

Search
> Search all of the topics installed on your workstation by clicking **Search** in the navigation toolbar.

Integrated navigation tree
> Locate any topic in the DB2 library from a single navigation tree. The navigation tree is organized by information type as follows:
> - Tasks provide step-by-step instructions on how to complete a goal.
> - Concepts provide an overview of a subject.
> - Reference topics provide detailed information about a subject, including statement and command syntax, message help, requirements.

Master index
> Access the information installed from the *DB2 HTML Documentation CD* from the master index. The index is organized in alphabetical order by index term.

Master glossary
> The master glossary defines terms used in the DB2 Information Center. The glossary is organized in alphabetical order by glossary term.

Related tasks:
- "Finding topics by accessing the DB2 Information Center from a browser" on page 162
- "Finding product information by accessing the DB2 Information Center from the administration tools" on page 164
- "Updating the HTML documentation installed on your machine" on page 166

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