IBM® DB2 Universal Database™

Quick Beginnings for DB2 Clients

Version 8

GC09-4832-00

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Part 1. Installing DB2 clients

Chapter 1. DB2 clients overview

DB2 clients

There are three types of DB2® clients:

- Run-Time Client
- Administration Client
- Application Development Client

DB2 clients can connect to DB2 servers *two* releases later or *one* release earlier than the client's release level, as well as to servers at the same release level. This means that a DB2 Version 6 client can connect to DB2 servers at versions 5, 6, 7, and 8.

A database cannot be created on a DB2 client. You must access databases that reside on a DB2 server.

Related concepts:

- "DB2 Run-Time Client" on page 3
- "DB2 Administration Client" on page 4
- "DB2 Application Development Client" on page 4

Related tasks:

- "Installing a DB2 client on Windows operating systems" on page 17
- "Installing DB2 clients on UNIX" on page 18

DB2 Run-Time Client

The DB2® Run-Time Client is a light-weight client that provides the functionality required for an application to access DB2 Universal Database™ servers and DB2 Connect servers. Functionality includes communication protocol support and support for application interfaces such as JDBC, SQLj, ODBC, CLI, and OLE DB. As a result of the removal of most of the previous Run-Time Client GUI facilities, the Version 8 Run-Time Client now has diminished disk requirements.

Notes:

1. The Configuration Assistant is not packaged with the Windows® Run-Time Client. The only available GUI is the CLI/ODBC administration GUI.

2. With the DB2 Run-Time Client, you must bind the CLI packages from a machine with the proper bind files before you can make use of it for CLI applications.

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

Related concepts:

- "DB2 clients" on page 3
- "DB2 Administration Client" on page 4
- "DB2 Application Development Client" on page 4

Related tasks:

- "Installing a DB2 client on Windows operating systems" on page 17
- "Installing DB2 clients on UNIX" on page 18

DB2 Administration Client

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

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

Related concepts:

- "DB2 clients" on page 3
- "DB2 Run-Time Client" on page 3
- "DB2 Application Development Client" on page 4

Related tasks:

- "Installing a DB2 client on Windows operating systems" on page 17
- "Installing DB2 clients on UNIX" on page 18

DB2 Application Development Client

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

languages. The Application Development Client also includes the tools and components provided as part of the DB2 Administration Client product.

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

Related concepts:

- "DB2 clients" on page 3
- "DB2 Run-Time Client" on page 3
- "DB2 Administration Client" on page 4

Related tasks:

- "Installing a DB2 client on Windows operating systems" on page 17
- "Installing DB2 clients on UNIX" on page 18

Chapter 2. DB2 client requirements

Memory requirements for DB2 clients

The following list outlines the recommended minimum memory requirements for the different types of DB2 clients:

- The amount of memory required for the DB2 Run-Time client depends on the operating system and the database applications that you are running. In most cases, it should be sufficient to use the minimum memory requirements of the operating system as the minimum requirement for running the DB2 Run-Time client.
- To run graphical tools on an Administration or Application Development client, you will require an additional amount of 64 MB of RAM. For example, to run graphical tools on an Administration Client machine running Windows 2000 Professional, you would need a minimum of 64 MB of RAM for the operating system plus an additional amount of 64 MB of RAM for the tools.

Note: Performance may be affected if less than the recommended minimum memory requirements are used.

Related concepts:

- "DB2 clients" on page 3

Related tasks:

- "Installing a DB2 client on Windows operating systems" on page 17
- "Installing DB2 clients on UNIX" on page 18

Disk requirements for DB2 clients

The actual fixed disk requirements of your installation may vary depending on your file system and the client components you install. Ensure that you have included a disk space allowance for your application development tools and communication products.

The following tables provide minimum disk space requirements for DB2 clients on Windows and UNIX–based operating systems. When you install a DB2 client using the DB2 Setup wizard, size estimates are dynamically provided by the installation program based on installation type and component selection.

Table 1. DB2 Clients for Windows — recommended minimum disk space

DB2 Clients for Windows	Recommended minimum disk space (MB)
DB2 Run-Time Client	20 to 30 MB
DB2 Administration Client	80 to 110 MB
DB2 Application Development Client	325 MB, including the JDK

Table 2. DB2 Clients for UNIX — recommended minimum disk space

DB2 Clients for UNIX	Recommended minimum disk space (MB)
DB2 Run-Time Client	50 to 60 MB **Note:** An additional 20 MB may be needed for the instance creation in the */home* directory.
DB2 Administration Client	125 MB, not including the JRE **Note:** An additional 20 MB may be needed for the instance creation in the */home* directory.
DB2 Application Development Client	130 to 160 MB, not including the JDK **Note:** An additional 20 MB may be needed for the instance creation in the */home* directory.

Related concepts:

- "DB2 clients" on page 3

Related tasks:

- "Installing a DB2 client on Windows operating systems" on page 17
- "Installing DB2 clients on UNIX" on page 18

Installation requirements for DB2 clients (AIX)

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

Hardware requirements
RISC System/6000

Operating system requirements
AIX Version 4.3.3.78 or later

Software requirements

- For LDAP (Lightweight Directory Access Protocol) support, you require an IBM SecureWay Directory Client V3.1.1 running on AIX V4.3.3.78 or later.
- The Java Runtime Environment (JRE) Version 1.3.1 is required to run DB2 graphical tools, such as the Control Center. During the installation process, if the JRE is not already installed, it will be installed. The DB2 JAVA GUI tools are not provided with the DB2 Version 8 Run-Time Client.
- If you are installing the Application Development Client, you may require the Java Developer's Kit. During the installation process, if the JDK is not already installed, it will be installed.
- If you are installing the Application Development Client, you must have a C compiler to build SQL Stored Procedures.

Communication requirements

- TCP/IP (The AIX base operating system provides TCP/IP connectivity, if selected during install.)

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

Related concepts:

- "DB2 clients" on page 3
- "DB2 Run-Time Client" on page 3
- "DB2 Administration Client" on page 4
- "DB2 Application Development Client" on page 4

Related tasks:

- "Installing DB2 clients on UNIX" on page 18

Related reference:

- "Memory requirements for DB2 clients" on page 7
- "Disk requirements for DB2 clients" on page 7

Installation requirements for DB2 clients (HP-UX)

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

Restrictions:

A system reboot is required if the kernel configuration parameters have been updated. The kernel configuration parameters are set in `/etc/system` and if these parameters require modification to accommodate the DB2 client, a reboot will be necessary to make the changes to `/etc/system` effective.

Note: The parameters must be set in advance of the DB2 client install.

Hardware requirements

HP 9000 Series 700 or 800 system

Operating system requirements

- HP-UX 11.0 32-bit with general release bundle + PHSS-24303
- HP-UX 11.0 64-bit with general release bundle + PHSS-24303
- HP-UX 11i 32-bit with June 2001 general release bundle
- HP-UX 11i 64-bit with June 2001 general release bundle

Software requirements

- The Java Runtime Environment (JRE) Version 1.3.1 is required to run DB2 graphical tools, such as the Control Center. During the installation process, if the JRE is not already installed, it will be installed. The DB2 JAVA GUI tools are not provided with the DB2 Version 8 Run-Time Client.
- If you are installing the Application Development Client, you may require the Java Developer's Kit. During the installation process, if the JDK is not already installed, it will be installed.
- If you are installing the Application Development Client, you must have a C compiler to build SQL Stored Procedures.

Communication requirements

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

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

Related concepts:

- "DB2 clients" on page 3
- "DB2 Run-Time Client" on page 3
- "DB2 Administration Client" on page 4
- "DB2 Application Development Client" on page 4

Related tasks:

- "Modifying kernel parameters (HP-UX)" in the *Quick Beginnings for DB2 Servers*

- "Installing DB2 clients on UNIX" on page 18

Related reference:
- "Memory requirements for DB2 clients" on page 7
- "Disk requirements for DB2 clients" on page 7

Installation requirements for DB2 clients (Linux)

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

Restrictions:

A system reboot is required if the kernel configuration parameters have been updated. The kernel configuration parameters are set in `/etc/system` and if these parameters require modification to accommodate the DB2 client, a reboot will be necessary to make the changes to `/etc/system` effective.

Note: The parameters must be set in advance of the DB2 client install.

Operating system requirements

For Intel 32–bit architecture you require:
- kernel level 2.4.9 or higher
- glibc 2.2.4
- RPM 3

For Intel 64–bit architecture you require *one* of the following:
- Red Hat Linux 7.2; OR
- SuSE Linux SLES-7

For z-Series architecture you require *one* of the following:
- Red Hat Linux 7.2; OR
- SuSE Linux SLES-7

Software requirements
- The Java Runtime Environment (JRE) Version 1.3.1 is required to run DB2 graphical tools, such as the Control Center. The DB2 JAVA GUI tools are not provided with the DB2 Version 8 Run-Time Client.
- If you are installing the Application Development Client, you may require the Java Developer's Kit. During the installation process, if

the JDK is not already installed, it will be installed. The same is applicable for JRE on all platforms, except for Linux where the JDK cannot be installed over the JRE.

- If you are installing the Application Development Client, you must have a C compiler to build SQL Stored Procedures.

Communication requirements

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

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

Related concepts:

- "DB2 clients" on page 3
- "DB2 Run-Time Client" on page 3
- "DB2 Administration Client" on page 4
- "DB2 Application Development Client" on page 4

Related tasks:

- "Installing DB2 clients on UNIX" on page 18
- "Modifying kernel parameters (Linux)" in the *Quick Beginnings for DB2 Servers*

Related reference:

- "Memory requirements for DB2 clients" on page 7
- "Disk requirements for DB2 clients" on page 7

Installation requirements for DB2 clients (Solaris)

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

Restrictions:

A system reboot is required if the kernel configuration parameters have been updated. The kernel configuration parameters are set in `/etc/system` and if these parameters require modification to accommodate the DB2 client, a reboot will be necessary to make the changes to `/etc/system` effective.

Note: The parameters must be set in advance of the DB2 client install.

Hardware requirements

Solaris SPARC-based computer

Operating system requirements

- Solaris Version 2.7 or later

  Note: Solaris Version 2.7 is required for 64-bit.
- The following patches are required for the Solaris operating environment Version 2.7:
  - Solaris 7 (32-bit) patch 106327-8
  - Solaris 7 (64-bit) patch 106300-09
  - Solaris 8 (32-bit) patch 108434-01 + 108528-12
  - Solaris 8 (64-bit) patches 108435-01 + 108528-12

Software requirements

- For 32-bit Solaris, the Java Runtime Environment (JRE) Version 1.3.1 is required to run DB2 graphical tools, such as the Control Center. The DB2 JAVA GUI tools are not provided with the DB2 Version 8 Run-Time Client.
- For 64-bit Solaris, the Java Runtime Environment (JRE) Version 1.4.0 is required to run DB2 graphical tools, such as the Control Center. The DB2 JAVA GUI tools will not be provided with the DB2 Version 8 Run-Time Client.
- If you are installing the Application Development Client, you may require the Java Developer's Kit. The JDK will be available with the electronically downloaded version of DB2. For installation using CDs, the JDK will be included on a separate CD. This is also applicable for the JRE.
- If you are installing the Application Development Client, you must have a C compiler to build SQL Stored Procedures.

Communication requirements

- TCP/IP (The Solaris base operating system provides TCP/IP connectivity.)

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

Related concepts:

- "DB2 clients" on page 3
- "DB2 Run-Time Client" on page 3
- "DB2 Administration Client" on page 4
- "DB2 Application Development Client" on page 4

Related tasks:

- "Modifying kernel parameters (Solaris)" in the *Quick Beginnings for DB2 Servers*
- "Installing DB2 clients on UNIX" on page 18

Related reference:

- "Memory requirements for DB2 clients" on page 7
- "Disk requirements for DB2 clients" on page 7

Installation requirements for DB2 clients (Windows)

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

Operating system requirements

One of the following:

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

Software requirements

- The Java Runtime Environment (JRE) Version 1.3.1 is required to run DB2 graphical tools, such as the Control Center. If the JRE is not already installed, it will be installed for use by DB2. The DB2 JAVA GUI tools are not provided with the DB2 Version 8 Run-Time Client.
- If you plan to use LDAP (Lightweight Directory Access Protocol), you require either a Microsoft LDAP client or an IBM SecureWay LDAP client V3.1.1 or later. Microsoft LDAP client is included with the operating system for Windows ME, Windows 2000, Windows XP, and Windows .NET.
- If you plan to use the Tivoli Storage Manager facilities for backup and restore of your databases, you require the Tivoli Storage Manager Client Version 3 or later.

- If you have the IBM Antivirus program installed on your operating system, it must be disabled or uninstalled to complete a DB2 installation.
- If you are installing the Application Development Client, you must have a C compiler to build SQL Stored Procedures.

Communication requirements

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

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

Related concepts:

- "DB2 clients" on page 3
- "DB2 Run-Time Client" on page 3
- "DB2 Administration Client" on page 4
- "DB2 Application Development Client" on page 4

Related tasks:

- "Installing a DB2 client on Windows operating systems" on page 17

Related reference:

- "Memory requirements for DB2 clients" on page 7
- "Disk requirements for DB2 clients" on page 7

Chapter 3. Installing a DB2 client

Installing a DB2 client on Windows operating systems

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

Prerequisites:

Before you install your DB2 client:

- Ensure that your system meets all of the memory, disk space, and installation requirements.
- Ensure that you have a user account to perform the installation:

  Windows 98, Windows ME
  Any valid Windows 98 user account.

  Windows Terminal Server, Windows NT, Windows 2000, Windows XP, and Windows .NET
  A user account that belongs to a group with more authority than the Guests group, such as the Users group.

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

Procedure:

To install a DB2 client:

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

language. You can run the DB2 Setup wizard in a language other than the default system language by manually invoking the DB2 Setup wizard and specifying a language code.

4. Choose **Install Products** once the DB2 Launchpad opens.
5. Proceed by following the DB2 Setup wizard's prompts. Online help is available to guide you through the remaining steps.

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

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

Related tasks:

- "Configuring a client to server connection using the Configuration Assistant (CA)" in the *Quick Beginnings for DB2 Servers*
- "Configuring remote access to a server database" in the *Installation and Configuration Supplement*
- "Starting the DB2 Setup wizard for a DB2 server installation (Windows)" in the *Quick Beginnings for DB2 Servers*

Related reference:

- "Language identifiers (for running the DB2 Setup wizard in another language)" in the *Quick Beginnings for DB2 Servers*

Installing DB2 clients on UNIX

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

Prerequisites:

Before you begin installing a DB2 client on UNIX:

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

Procedure:

After updating your kernel configuration parameters and rebooting your system (required for Solaris and HP-UX), you can install your DB2 client.

To install a DB2 client on UNIX:

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

When installation is complete DB2 software will be installed in the *DB2DIR* directory,

where *DB2DIR*	= /usr/opt/db2_08_01	on AIX
	= /opt/IBM/db2/V8.1	on all other UNIX operating systems.

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

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

Related tasks:

- "Modifying kernel parameters (Solaris)" in the *Quick Beginnings for DB2 Servers*
- "Modifying kernel parameters (HP-UX)" in the *Quick Beginnings for DB2 Servers*
- "Configuring a client to server connection using the Configuration Assistant (CA)" in the *Quick Beginnings for DB2 Servers*
- "Configuring remote access to a server database" in the *Installation and Configuration Supplement*
- "Modifying kernel parameters (Linux)" in the *Quick Beginnings for DB2 Servers*

Part 2. Configuring client-to-server communications

Chapter 4. Configuration scenarios

Supported and non-supported client configuration scenarios

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

Supported standard and gateway configuration scenarios

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

Table 3. Standard and gateway configuration scenarios

Client	Gateway	Server (UNIX & Windows)	Server (OS/390, VM/VSE, iSeries, and z/OS)	Notes
Version 8 (32-bit & 64-bit)	N/A	Version 8 (32-bit & 64-bit)	All supported versions	
Version 8 (32-bit)	N/A	Version 6 & Version 7 (32-bit)	All supported versions	Only available over DRDA, with restrictions **.
Version 8 (64-bit)	N/A	Version 7 (64-bit)	All supported versions	Only available over DRDA, with restrictions **.
Version 7 (64-bit)	N/A	Version 8 (64-bit)	N/A	Only applicable to a non-Windows server.
Version 7 & Version 6 (32-bit)	N/A	Version 8 (32-bit)	N/A	
Version 7 & Version 6 (32-bit)	N/A	Version 8 (64-bit)	N/A	Only available on a Windows server and utility (non-SQL) requests cannot be accepted.

Table 3. Standard and gateway configuration scenarios (continued)

Client	Gateway	Server (UNIX & Windows)	Server (OS/390, VM/VSE, iSeries, and z/OS)	Notes
OS/390, VM/VSE, iSeries & z/OS	N/A	Version 8 (32-bit & 64-bit)		Available through TCP/IP only (SNA access no longer supported).
Version 8 (32-bit & 64-bit)	Version 8 (32-bit & 64-bit)	Version 8 (32-bit & 64-bit)	All versions	
Version 8 (64-bit)	Version 7 (64-bit)	Version 7 (64-bit)	N/A	Only available over DRDA, with restrictions **.
Version 8 (32-bit)	Version 7 (32-bit)	Version 7 (32-bit)	N/A	
Version 7 (64-bit)	Version 8 (64-bit)	Version 8 (32-bit & 64-bit)	All versions	Only available on a non-Windows gateway and utility (non-SQL) requests cannot be accepted.
Version 6 & Version 7 (32-bit)	Version 8 (64-bit)	Version 8 (32-bit & 64-bit)	All versions	Only available on a Windows gateway and utility (non-SQL) requests cannot be accepted.
Version 6 Version 7 (32-bit)	Version 8 (32-bit)	Version 8 (32-bit & 64-bit)	All versions	Utility (non SQL) requests cannot be accepted.

Note: ** Refer to the related links section for reference to information regarding restrictions.

Specific non-supported configurations

The following client to server configurations are *not* supported:

- A DB2 UDB Version 7 client connecting to a DB2 UDB Version 7 server using a Version 8 gateway.
- A DB2 UDB Version 8 client connecting to a DB2 UDB Version 7 server using a Version 8 gateway.

- A DB2 UDB Version 7 client (64-bit) client connecting to a DB2 UDB Version 8 (64-bit) server (Windows).
- Neither a DB2 UDB iSeries, OS/390, VM/VSE, nor a z/OS client can connect to a Version 8 server using a Version 8 gateway.
- No use of utilities from DB2 UDB Version 6 and Version 7 clients to Version 8 ESE servers using **AT NODE** support.

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

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 28
- "Configuring a database connection using a profile" on page 33
- "Testing a database connection" on page 96

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 27
- "Configuring a database connection using a profile" on page 33
- "Testing a database connection" on page 96

Client profiles

Client profiles are used to configure database connections between DB2® clients and servers. A client profile is generated from a client using the export function of the Configuration Assistant (CA) or by using the **db2cfexp** command. The information contained in a client profile is determined during the export process. Depending on the settings chosen, it can contain information such as the following:

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

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

Related tasks:

- "Configuring a database connection using a profile" on page 33
- "Exporting and importing a profile" in the *Installation and Configuration Supplement*
- "Creating client profiles using the export function of the Configuration Assistant (CA)" on page 30
- "Configuring client profiles using the import function of the Configuration Assistant (CA)" on page 31

Creating client profiles using the export function of the Configuration Assistant (CA)

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

Procedure:

To create client profiles using the export function of the CA, perform the following steps:

1. Start the CA.
2. Click **Export**. The Select Export Option window opens.
3. Select one of the following options:
   - If you want to create a profile that contains all of the databases cataloged on your system, and all of the configuration information for this client, select the **All** radio button, click **OK**, and go to Step 8.
   - If you want to create a profile that contains all of the databases cataloged on your system *without* any of the configuration information for this client, select the **Database connection information** radio button, click **OK**, and go to Step 8.
   - If you want to select a subset of the databases that are cataloged on your system, or a subset of the configuration information for this client, select the **Customize** radio button, click **OK**, and go to the next step.

4. Select the databases to be exported from the **Available databases** box and add them to the **Selected databases** box by clicking on the push button. To add all of the available databases to the **Databases to be exported** box, click the **>>** button.
5. Select the check boxes from the **Select custom export option** box that correspond to the options that you want to set up for the target client.
6. Click **OK**. The Export Client Profile window opens.
7. Enter a path and file name for this client profile and click **OK**. The DB2 Message window opens.
8. Click **OK**.

Once you have completed this task, you must then use the import function to configure other clients.

Related concepts:

- "Client profiles" on page 29

Related tasks:

- "Configuring a database connection using a profile" on page 33
- "Exporting and importing a profile" in the *Installation and Configuration Supplement*
- "Configuring client profiles using the import function of the Configuration Assistant (CA)" on page 31

Configuring client profiles using the import function of the Configuration Assistant (CA)

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

Procedure:

To configure client profiles using the import function of the CA, perform the following steps:

1. Start the CA.
2. Click **Import**. The Select Profile window opens.
3. Select a client profile to import and click **OK**. The Import Profile window opens.

4. You can choose to import all or a subset of the information in a Client Profile. Select one of the following import options:
   - To import everything in a client profile, select the **All** radio button. If you choose this option, you are now ready to start using your DB2 product.
   - To import a specific database or settings that are defined in a Client Profile, select the **Customize** radio button. Select the check boxes that correspond to the options that you want to customize.
5. Click **OK**.
6. You are presented with a list of systems, instances, and databases. Select the database that you want to add and click **Next**.
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. Click **Next**.
8. If you are planning to use ODBC, register this database as an ODBC data source.

   Note: ODBC must be installed to perform this operation.

   a. Ensure that the **Register this database for ODBC** check box is selected.
   b. Select the radio button that describes how you would like to register this database:
      - If you would like all users on your system to have access to this data source, select the **As a system data source** radio button.
      - If you would like only the current user to have access to this data source, select the **As a user data source** radio button.
      - If you would like to create an ODBC data source file to share database access, select the **As a file data source** radio button and enter the path and file name for this file in the **File data source name** field.
   c. Click the **Optimize for application** drop down box and select the application for which you want to tune the ODBC settings.
   d. Click **Finish** to add the database that you selected. The Confirmation window opens.
9. Click the **Test Connection** push button to test the connection. The Connect to DB2 Database window opens.
10. In the Connect to DB2 Database window, enter a valid user ID and password for the remote database and click **OK**. If the connection is successful, a message confirming the connection appears.

If the connection test failed, you will receive a help message. To change any settings that you may have incorrectly specified, click the **Change** push button in the Confirmation window to return to the Add Database Wizard.

11. You are now able to use this database. Click **Add** to add more databases, or click **Close** to exit the Add Database Wizard. Click **Close** again to exit the CA.

Related concepts:

- "Client profiles" on page 29

Related tasks:

- "Configuring a database connection using a profile" on page 33
- "Exporting and importing a profile" in the *Installation and Configuration Supplement*
- "Creating client profiles using the export function of the Configuration Assistant (CA)" on page 30

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)" on page 30
- "Testing a database connection" on page 96

LDAP Directory Support Considerations

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

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

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

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

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 43
- "Cataloging the NetBIOS node on the DB2 client" on page 47
- "Cataloging the APPC node on the DB2 client" on page 85
- "Cataloging the Named Pipes node on the client" on page 51
- "Cataloging a database using the CLP" on page 36
- "Testing the client to server connection using the CLP" on page 95
- "Configuring communication protocols for a remote DB2 instance" in the *Installation and Configuration Supplement*
- "Configuring communication protocols for a local DB2 instance" in the *Installation and Configuration Supplement*
- "Configuring APPC communications for a DB2 instance" in the *Installation and Configuration Supplement*
- "Configuring NetBIOS communications for a DB2 instance" in the *Installation and Configuration Supplement*
- "Configuring TCP/IP communications for a DB2 instance" in the *Installation and Configuration Supplement*
- "Configuring Named Pipes communications for a DB2 instance" in the *Installation and Configuration Supplement*
- "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" in the *Installation and Configuration Supplement*

Cataloging a database

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 95

Related reference:

- "CATALOG DATABASE" 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	

Table 4. Catalog database worksheet (continued)

Parameter	Description	Sample Value	Your Value
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 36
- "Testing the client to server connection using the CLP" on page 95
- "Configuring a client to server connection using the command line processor" on page 35

Configuring TCP/IP

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 41
- "Updating the services file on the client" on page 43
- "Configuring a client to server connection using the command line processor" on page 35
- "Configuring Named Pipes on the client using the CLP" on page 49
- "Configuring NetBIOS on the client using the CLP" on page 45
- "Configuring APPC communications on the DB2 client" on page 51

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 5. 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 5. 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 39
- "Configuring a client to server connection using the command line processor" on page 35

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 6. 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 43
- "Configuring a client to server connection using the command line processor" on page 35

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" in the *Installation and Configuration Supplement*

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 39

Related reference:

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

Configuring NetBIOS

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 46
- "Updating the database manager configuration file for a NetBIOS connection" on page 48
- "Configuring a client to server connection using the command line processor" on page 35

- "Cataloging a database using the CLP" on page 36
- "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 35

NetBIOS parameter values worksheet

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

Table 7. 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`	
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 45
- "Configuring a client to server connection using the command line processor" on page 35

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 45
- "Cataloging a database using the CLP" on page 36

Related reference:

- "CATALOG NETBIOS NODE" in the *Command Reference*
- "NetBIOS parameter values worksheet" on page 46

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 35

Configuring Named Pipes

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 35

Related reference:

- "Named Pipes parameter values worksheet for configuring Named Pipes on the client" on page 50

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 8. 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 49

- "Configuring a client to server connection using the command line processor" on page 35

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 49

Related reference:

- "CATALOG NAMED PIPE NODE" in the *Command Reference*
- "Named Pipes parameter values worksheet for configuring Named Pipes on the client" on page 50

Configuring APPC

Configuring APPC communications on the DB2 client

This task describes how to configure APPC communications on the DB2 client. Configuring APPC communications is required if you want to establish a client to server connection using APPC.

Prerequisites:

APPC is supported on the DB2 client and DB2 server computers. APPC client communications are supported by AIX, the Solaris operating environment, Windows NT, Windows 2000, Windows XP (32-bit), and Windows .NET (32-bit).

Note: APPC client communications are *not* supported on Windows 64-bit operating systems such as Windows XP and Windows .NET 64-bit editions.

Procedure:

To set up a APPC communications:

- Update APPC profiles on the DB2 client.
- Configure a client to server connection using the CLP.

Related tasks:

- "Updating APPC profiles on the DB2 client" on page 54
- "Configuring a client to server connection using the command line processor" on page 35

APPC parameter values worksheet for the DB2 client

Use the following worksheet to identify the parameter values required to configure APPC communications.

After you fill in the entries in the *Your Value* column, you can use the worksheet to configure APPC communications. During the configuration process, replace the sample values that appear in the configuration instructions with your values from the worksheet.

The worksheet and configuration instructions supply suggested or sample values for required configuration parameters. For other parameters, use the communications program's default values. If your network configuration is different from these instructions, consult your Network Administrator for values that are appropriate to your network.

Table 9. APPC parameter values worksheet

Ref.	Name at the Client Workstation	Network or Server Name	Sample Value	Your Value
Network Elements at the Host				
1	Server name	Local network name	SPIFNET	
2	Partner LU name	Application name	NYM2DB2	
3	PLU Alias			
4	Partner node name	Local Control Point name	NYX	

Table 9. APPC parameter values worksheet (continued)

Ref.	Name at the Client Workstation	Network or Server Name	Sample Value	Your Value
5	Database alias		sample	
6	Mode name		IBMRDB	
7	Connection name (link name)		LINKHOST	
8	Remote network or LAN address	Local adapter or destination address	400009451902	
Network Elements at the DB2 client				
9	Network ID		SPIFNET	
10	Local control point name		NYX1GW	
11	Local LU name		NYX1GW0A	
12	Local LU alias		NYX1GW0A	
13	Local node or node ID	ID BLK	071	
14		ID NUM	27509	
15	Mode name		IBMRDB	
16	Symbolic destination name		DB2CPIC	
17	Remote Transaction program (TP) name		DB2DRDA (Application TP) or X'X'07'6DB' (Service TP)	
DB2 Directory Entries at the DB2 Connect server				
18	Node name		db2node	
19	Security		None	
20	Database name		sample	
21	Database alias		TOR1	

For each server that you are connecting to, fill in a copy of the worksheet as follows:

1. For *network ID*, determine the network name of both the server and the client computers. (1 , 3 , and 9). Usually these values will be the same.
2. For the *partner LU name* (2), determine the Local LU name defined on the server for inbound connections
3. For *partner node name* (4), determine the local control point name defined on the server.
4. For *database alias* (5), determine the name of the target database.
5. For *mode name* (6 and 15), usually the default `IBMDRB` is sufficient.

6. For *remote network address* (**8**), determine the controller address or local adapter address of the target server computer.
7. Determine the *local control point name* (**10**) of the of the client computer. This is usually the same as the PU name for the system.
8. Determine the *local LU name* (**11**) to be used by the client computer.
9. For *local LU alias* (**12**), you usually use the same value as for the local LU name (**11**).
10. For *symbolic destination name* (**16**), choose a suitable value.
11. For (remote) *transaction program (TP) name* (**17**), determine the transaction program name defined on the server for your APPC connections.
12. Leave the other items blank for now (**18** to **21**).

Related tasks:

- "Configuring APPC communications on the DB2 client" on page 51
- "Cataloging a database using the CLP" on page 36
- "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

This task is part of the main task of *Configuring APPC communications on the DB2 client.*

Procedure:

To configure APPC communications on the DB2 client, you need to update the APPC profile that is appropriate for your network setup:

- Configuring IBM eNetwork Personal Communication for Windows
- Configuring IBM eNetwork Communication Server for Windows NT and Windows 2000
- Configure an SNA API Client for IBM eNetwork Communications Server for Windows
- Configure Microsoft SNA Server for Windows
- Configure Microsoft SNA Client
- Configure IBM eNetwork Communications Server for AIX
- Configure Bull SNA for AIX
- Configure SNAPlus2 for HP-UX
- Configure SNAP-IX for SPARC Solaris

The next step to catalog the APPC node on the DB2 client.

Related tasks:

- "Configuring IBM eNetwork Personal Communications for Windows" on page 87
- "Configuring IBM eNetwork Communications Server for Windows" on page 90
- "Configuring an SNA API Client for IBM eNetwork Communications Server for Windows" on page 62
- "Configuring Microsoft SNA Server" on page 64
- "Configuring Microsoft SNA Client" on page 69
- "Configuring IBM eNetwork Communications Server for AIX" on page 70
- "Configuring Bull SNA for AIX" on page 75
- "Configuring SNAPlus2 for HP-UX" on page 78
- "Configure SNAP-IX for SPARC Solaris" on page 82
- "Configuring APPC communications for a DB2 instance" in the *Installation and Configuration Supplement*
- "Configuring a client to server connection using the command line processor" on page 35

Configuring IBM eNetwork Personal Communications for Windows NT

This section describes how to configure IBM eNetwork Personal Communications for Windows NT (PCOMM/NT) to accept inbound APPC client connections.

Prerequisites:

Before you begin, ensure that the IBM eNetwork Personal Communications software that you installed:

- Is Version 4.30 or higher.
- Has the LLC2 driver installed from the IBM Communications Server installation directory. To confirm this, perform the following steps:
  1. Click on **Start** and select **Settings —> Control Panel**.
  2. Double-click on the Network icon. The Network window opens.
  3. In the Network window, click on the **Protocols** tab.
  4. Verify that `IBM LLC2 Protocol` is one of the protocols listed. If it is not, you need to install this protocol from your IBM Personal Communications for Windows NT software. Refer to its documentation for instructions.
- The basic installation of the PCOMM/NT package has already been completed.
- DB2 Connect or DB2 Universal Database has been installed

Procedure:

To start IBM Personal Communications, complete the following steps:

1. Click **Start** and select **Programs —> IBM Communications Server —> SNA Node Configuration**. The Personal Communications SNA Node Configuration window opens.
2. Select **File —> New** from the menu bar. The Define the Node window opens. Subsequent steps will begin from this window.

To configure APPC communications, perform the following steps:

1. Configure the node by performing the following:
   a. In the **Configuration options** box, select **Configure Node**, then click on the **New** push button. The Define the Node window opens.
   b. In the **Fully qualified CP name** fields, type in your Network ID (**1**) and Local Control Point name (**2**).
   c. Optionally, in the **CP alias** field, type in a CP alias. If you leave this blank the Local Control Point name (**2**) will be used.
   d. Enter your Node ID (**3**) in the **Local Node ID** fields.
   e. Click on **OK**.
2. Configure the device by performing the following:
   a. In the **Configuration options** box, select **Configure devices**.
   b. Select the appropriate DLC from **DLCs** field. These instructions use the **LAN** DLC.
   c. Click on the **New** button. The appropriate window opens with default values displayed. In this case, the Define a LAN device window opens.
   d. Click **OK** to accept the default values.
3. Configure the modes by performing the following:
   a. In the **Configuration options** box, select **Configure modes**, then click on the **New** push button. The Define a Mode window opens.
   b. Enter your Mode name (**6**) in the **Mode name** field of the **Basic** tab.
   c. Select the **Advanced** tab.
   d. Select **#CONNECT** from the **Class of Service Name** field.
   e. Click **OK**.
4. Configure Local LU 6.2 by performing the following:
   a. In the **Configuration options** box, select **Configure Local LU 6.2**, then click on the **New** button. The Define a Local LU 6.2 window opens.
   b. Enter your Local LU name (**4**) in the **Local LU name** field.
   c. Type in a value for the **LU session limit** field. The default, `0`, specifies the maximum allowed value.
   d. Accept the defaults for the other fields and click on **OK**.

5. Create a service Transaction Program by performing the following:
   a. In the **Configuration options** field, select **Configure Transaction Programs**.
   b. Click on the **New** push button. The Define a Transaction Program window opens.
   c. Select the **Basic** tab.
   d. Specify a service TP (**7**) in the **TP name** field.
   e. Select the **Advanced** tab.
   f. Change the default in the **Receive Allocate timeout** field to `0` (no timeout).
   g. Accept the defaults for the other fields and click on **OK**.
6. Create an Application Transaction Program by performing the following:
   a. In the **Configuration options** field, select **Configure Transaction Programs**, then click on the **New** button. The Define a Transaction Program window opens.
   b. Select the **Basic** tab.
   c. Clear the **Service TP** check box.
   d. Specify an application TP name (**8**) in the **TP name** field.
   e. Select the **Background Process** check box.
   f. Select the **Advanced** tab.
   g. Change the default in the **Receive Allocate timeout** field to `0` (no timeout).
   h. Accept the defaults for the other fields.
   i. Click **OK**.
7. Save the configuration by performing the following:
   a. Select **File —> Save As**. The Save As window opens.
   b. Type in a file name, for example `ny3.acg`, and click **OK**.
   c. In the window that opens, you are asked if you want this configuration to be the default. Click on the **Yes** push button.
8. Update the environment by performing the following:

   IBM Personal Communications uses an environment variable called APPCLLU to set the default Local LU used for APPC communications. You may set this variable on a per-session basis by opening a command window and entering `set appcllu=`*`local_lu_name`*, where *local_lu_name* represents the name of the local LU you want to use.

   However, you will probably find it more convenient to permanently set the variable. To permanently set the variable in Windows NT, complete the following steps:
   a. Click on **Start** and select **Settings —> Control Panel**.

b. Double-click on the **System** icon. The System Properties window opens.
c. Select the **Environment** tab.
d. Enter `appcllu` in the **Variable** field.
e. Enter your local LU name (**4**) in the **Value** field.
f. Click on the **Set** push button to accept the changes.
g. Click **OK** to exit the System Properties window. The environment variable will now remain set for future sessions.

9. Start SNA Node Operations by performing the following:
   a. Click **Start** and select **Programs —> IBM Personal Communications —> Administrative and PD Aids —> SNA Node Operations**. The Personal Communications SNA Node Operations window opens.
   b. From the menu bar, select **Operations —> Start Node**.
   c. In the window that opens, select the configuration file you saved in the previous step (for example, `ny3.acg`) and click **OK**.

You have now finished setting up your workstation for inbound APPC communications.

Related tasks:

- "Configuring IBM eNetwork Personal Communications for Windows" on page 87
- "Configuring APPC communications on the DB2 client" on page 51
- "Updating APPC profiles on the DB2 client" on page 54

Related reference:

- "APPC parameter values worksheet for the DB2 client" on page 52

Configuring IBM eNetwork Communications Server for Windows NT

This task describes how to configure IBM eNetwork Communications Server for Windows NT (CS/NT) to accept inbound APPC client connections.

Prerequisites:

Before you begin, ensure that the IBM Communications Server for Windows NT you installed complies with the following restrictions:

- APAR fixes JR11529 and JR11170. These fixes are required to enable cancelling of queries in progress by using **Ctrl-Break** or issuing the SQLCancel ODBC/CLI call.
- IBM Communications Server IEEE 802.2 LAN interface (an installation option for Communications Server) or LLC2 driver installed from the IBM Communications Server installation directory. During installation CS/NT

asks if you want to install LLC2. If you are not sure whether LLC2 was installed with your copy of CS/NT, you can find out as follows:

1. Click on **Start** and select **Settings —> Control Panel**.
2. Double-click on the **Network** icon.
3. In the Network window, click on the **Protocols** tab. `IBM LLC2 Protocol` must be one of the protocols listed. If it is not, you need to install this protocol from your IBM Communications Server for Windows NT software. Refer to its documentation for instructions.

- The basic installation of the IBM eNetwork Communication Server for Windows NT package has already been completed.

Procedure:

To configure CS/NT to accept inbound APPC connections, perform the following steps:

1. Start IBM Communications Server for Windows NT by performing the following:
   a. Click **Start** and select **Programs —> IBM Communications Server —> SNA Node Configuration**. The IBM Communications Server SNA Node Configuration window opens.
   b. Select **File —> New —> Advanced.**
2. Configure the node by performing the following:
   a. In the **Configuration options** box, select **Configure Node**, then click on the **New** push button. The Define the Node window opens.
   b. Enter your Network ID (**1**) and local Control Point name (**2**) in the **Fully qualified CP name** fields.
   c. Enter the same name (**2**) in the **CP alias** field .
   d. Enter your Node ID (**3**) in the **Local Node ID** field.
   e. Select the **End Node** radio button.
   f. Click **OK**.
3. Configure the devices by performing the following:
   a. In the **Configuration options** field, select **Configure devices**.
   b. Select the appropriate DLC from **DLCs** field. These instructions use the **LAN** DLC.
   c. Click on the **New** button. The appropriate window opens with default values displayed. In this case, the Define a LAN Device window opens.
   d. Click **OK** to accept the default values.
4. (Optional) Configure the gateway. Perform this step only if you are setting up Communications Server to accept requests from Communications Server for Windows NT SNA API Client.

a. In the **Configuration options** field, select **Configure the Gateway**, then click on the **New** button. The Define Gateway window opens.
b. Select the **SNA Clients** tab.
c. Select the **Enable SNA API Client Services** check box.
d. Click **OK** to accept the default values.

5. Configure the modes by performing the following:
   a. In the **Configuration options** field, select **Configure modes**, then click on the **New** button. The Define a Mode window opens.
   b. Enter your Mode name (**6**) in the **Mode name** field.
   c. Select the **Advanced** tab.
   d. Select **#CONNECT** from the **Class of Service Name** field.
   e. Click **OK**.
6. Configure Local LU 6.2 by performing the following:
   a. In the **Configuration options** field, select **Configure local LU 6.2**, then click on the **New** push button. The Define a Local LU 6.2 window opens.
   b. Enter your Local LU name (**4**) in the **Local LU name** field.
   c. Enter a value for the **LU session limit** field. The default, `0`, specifies the maximum allowed value.
   d. Accept the defaults for the other fields and click **OK**.
7. Create a service Transaction Program (TP) by performing the following:
   a. In the **Configuration options** field, select **Configure Transaction Programs**.
   b. Click on the **New** push button. The Define a Transaction Program window opens.
   c. Select the **Basic** tab.
   d. Select the **Service TP** check box.
   e. Specify a service TP (**7**) in the **TP name** field.
   f. Select the **Background Process** check box.
   g. Select the **Advanced** tab.
   h. Change the default in the **Receive Allocate timeout** field to `0` (no timeout).
   i. If you are configuring Communications Server for use with Communication Server SNA Client, select the **For SNA API Client use** check box.
   j. Accept the defaults for the other fields.
   k. Click **OK**.
8. Create an Application Transaction Program by performing the following:

a. In the **Configuration options** field, select **Configure Transaction Programs**, then click on the **New** push button. The Define a Transaction Program window opens.
b. Select the **Basic** tab.
c. Clear the **Service TP** check box.
d. Specify an application TP name (**8**) in the **TP name** field.
e. Select the **Background Process** check box.
f. Select the **Advanced** tab.
g. Change the default in the **Receive Allocate timeout** field to `0` (no timeout).
h. If you are configuring Communications Server for use with Communication Server SNA Client, select the **For SNA API Client use** check box.
i. Accept the defaults for the other fields and click **OK**.

9. Save the configuration by performing the following:
   a. Select **File —> Save As**. The Save As window opens.
   b. Type in a file name, for example `ny3.acg`, and click **OK**.
   c. In the window that opens, you are asked if you want this configuration to be the default. Click on the **Yes** button.
10. Update the environment by performing the following:

    IBM Communications Server uses an environment variable called APPCLLU to set the default Local LU used for APPC communications. You may set this variable on a per-session basis by opening a command window and entering `set appcllu=`*`local_lu_name`*, where *local_lu_name* represents the name of the Local LU you want to use.

    However, you will probably find it more convenient to permanently set the variable. To permanently set the variable in Windows NT, perform the following steps:
    a. Click **Start** and select **Settings —> Control Panel**.
    b. Double-click on the System icon. The System Properties window opens.
    c. Select the **Environment** tab.
    d. Type `APPCLLU` in the **Variable** field.
    e. Type your Local LU name (**4**) in the **Value** field.
    f. Click on the **Set** push button to accept the changes.
    g. Click **OK** to exit the System Properties window. The environment variable will now remain set for future sessions.
11. Start the SNA Node Operations by performing the following:
    a. Click **Start** and select **Programs —> IBM Communication Server —> SNA Node Operations**. The **SNA Node Operations** window opens.

b. Select **Operations —> Start Node** from the menu bar.

c. In the window that opens, select the configuration file you saved in the previous step (for example, `ny3.acg`) and click **OK**.

12. After installing Communications Server you should register it as a Windows NT Service. This will automatically start Communications Server when the machine is booted.

    To register Communications Server as an NT service enter one of the following commands:

    ```
    csstart -a
    ```

    to register Communications Server with the default configuration, or:

    ```
    csstart -a c:\ibmcs\private\your.acg
    ```

    where `c:\ibmcs\private\your.acg` represents the name of the non-default Communications Server configuration file that you want to use.

    Whenever your machine is booted in the future, Communications Server will be started automatically with the required configuration file. Now that you have configured the server, you are ready to install a DB2 client.

Related tasks:

- "Configuring APPC communications on the DB2 client" on page 51
- "Updating APPC profiles on the DB2 client" on page 54

Related reference:

- "APPC parameter values worksheet for the DB2 client" on page 52

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

This task is part of the main tasks of *Updating APPC profiles on the DB2 Connect server* and *Updating APPC profiles on the DB2 client*.

Prerequisites:

- The Communications Server for Windows Server and its SNA API client act as a split client. This configuration requires that you have an APPC-enabled application running on the SNA API client workstation.
- You have a Windows workstation that has IBM eNetwork Communications Server for Windows SNA API Client Version 5.0 or higher installed.
- You want to connect to an IBM eNetwork Communications Server for Windows Server.

The instructions in this topic use a Windows NT client. The instructions for other supported operating systems are similar.

Procedure:

To configure the Windows NT SNA API client for APPC communications, complete the following:

1. Create a user account for the SNA API client on the Communications Server for Windows NT Server by performing the following:
   a. Click **Start** and select **Programs —> Administrative Tools (Common) —> User Manager**. The User Manager window opens.
   b. Select **User —> New User** from the menu bar. The New User window opens.
   c. Fill in the fields for the new SNA client user account.
   d. Ensure that this user account belongs to the *Administrators*, *IBMCSADMIN*, and *IBMCSAPI* groups:
      1) Click **Groups**.
      2) Select a group from the **Not member of** box and click **<- Add**. Repeat this step for each group that your user account must belong to.
      3) Click **OK**.
   e. Click **OK**.
2. Start the configuration GUI for the IBM eNetwork CS/NT SNA API Client. Click **Start** and select **Programs —> IBM Communications Server SNA Client —> Configuration**. The CS/NT SNA Client Configuration window opens.
3. Configure Global Data by performing the following:
   a. In the **Configuration options** box, select the **Configure Global Data** option and click **New**. The Define Global Data window opens.
   b. Enter the user name for the SNA API client in the **User name** field. This user name was defined in Step 1.
   c. Enter the password for the user account in the **Password** and **Confirm Password** fields.
   d. Click **OK**.
4. Configure APPC Server List by performing the following:
   a. In the **Configuration options** box, select the **Configure APPC Server List** option. Click **New**. The Define APPC Server List window opens.
   b. Type in the IP address of the server. For example, `123.123.123.123`.
   c. Click **OK**.
5. Configure CPI-C Side Information by performing the following:
   a. In the **Configuration options** box, select the **Configure CPI-C side information** option and click **New**. The Define CPI-C Side Information window opens.

b. Enter the symbolic destination name (**16**) in the **Symbolic destination name** field.
c. Enter your Local LU alias (**12**) in the **Local LU alias** field.
d. Enter the mode name (**15**) in the **Mode name** field.
e. Enter the transaction program name (**17**) in the **TP name** field.
f. Select the **For SNA API Client use** check box for this transaction program.
g. Enter the network ID (**3**) and partner LU name (**2**) in the **Partner LU name** field.
h. Click **OK**.

6. Save the Configuration by performing the following:
   a. Select **File —> Save As** from the menu bar. The Save As window opens.
   b. Enter a file name, and click **Save**.

Your next step is to catalog the APPC or APPN node.

Related tasks:

- "Cataloging the APPC or APPN node" in the *Connectivity Supplement*
- "Configuring APPC communications on the DB2 client" on page 51

Configuring Microsoft SNA Server

This task is part of the main task of *Updating APPC profiles on the DB2 Connect server* and *Updating APPC Profiles on the DB2 client*.

You can define the properties of your SNA connections in the Microsoft SNA Server Manager (Server Manager). The Server Manager uses a interface similar to that of the Windows NT Explorer. There are two panes in the main window of the Server Manager. All the configuration options we will be using can be accessed by right-clicking on objects in the left-hand pane of the window. Every object has a *context menu* that you can access by right-clicking on the object.

Prerequisites:

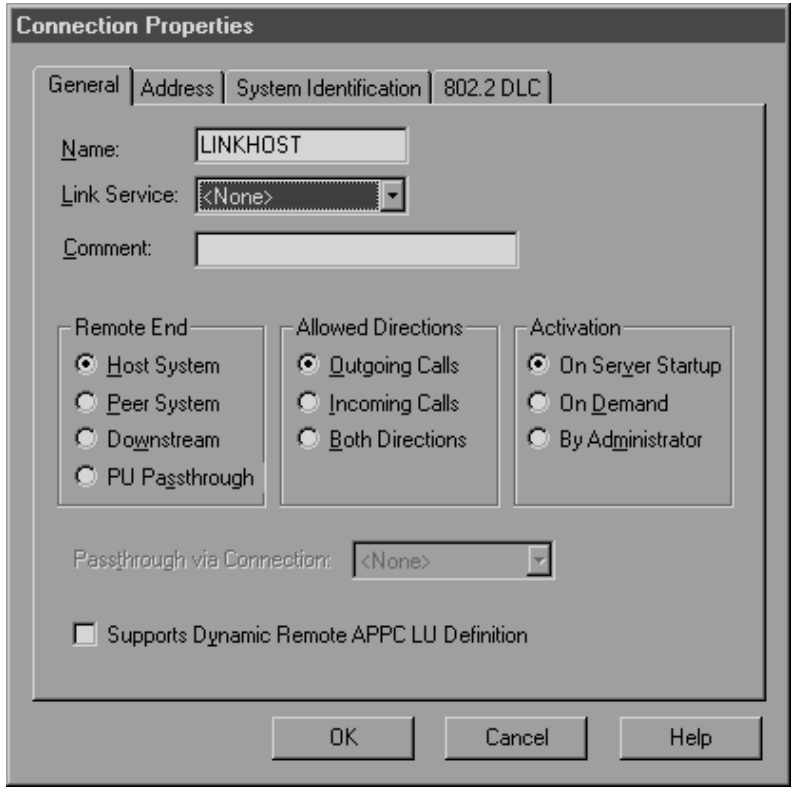
If you are using DB2 Connect's Multisite Update feature, your minimum requirement is Microsoft SNA Server Version 4 Service Pack 3.

Procedure:

To configure APPC communications for use by DB2 Connect or DB2 using Microsoft SNA Server Manager, complete the following:

1. Start the Server Manager. Click **Start** and select **Programs —> Microsoft SNA Server —> Manager**. The Microsoft SNA Server Manager window opens.
2. Define the control point name by performing the following:
   a. Click on the [+] sign beside the **Servers** folder.
   b. Right-click on **SNA Service** folder and select the **Properties** option from the pop-up menu. The Properties window opens.
   c. Enter the correct **NETID** (**9**) and **Control Point Name** (**10**) in the corresponding fields.
   d. Click **OK**.
3. Define the link service (802.2) by performing the following:
   a. Right-click on the **SNA Service** icon and select the **Insert —> Link Service** option from the pop-up menu. The Insert Link Service window opens.
   b. Select **DLC 802.2 Link Service**.
   c. Click **Add**.
   d. Click **Finish**.
4. Define the connection properties by performing the following:

a. Right-click on **SNA Service** and select the **Insert —> Connection —> 802.2** option. The Connection Properties window opens.



b. Enter a connection name (**7**) in the **Name** field.

c. Select the **SnaDlc1** option from the **Link Service** drop-down box.

d. Select the **Host System** radio button from the **Remote End** box.

e. Select the **Both Directions** radio button from the **Allowed Directions** box.

f. Select the **On Server Startup** radio button from the **Activation** box.

g. Click the **Address** tab.

h. Fill in the **Remote Network Address** field (**8**). Accept the default numbers in the other fields.

i. Click the **System Identification** tab.

j. Enter the following information:

   1) For the **Local Node Name**, add the **Network ID** (**9**), the **Local PU Name** (**10**), and the **Local Node ID** (**1** plus **14**). Accept the **XID Type** default.

2) For the **Remote Node Name**, add the **NETID** (**1**) and the **Control Point Name** (**4**).

k. Accept the other defaults and click **OK**.

5. Define a local LU by performing the following:
   a. Right-click on the **SNA Service** icon and select the **Insert —> APPC —> Local LU** option. The Local APPC LU Properties window opens.
   b. Enter the following information:
      - The **LU Alias** (**12**).
      - The **NETID** (**9**).
      - The **LU Name** (**11**).
   c. Click the **Advanced** tab. If you are planning to use DB2 multisite update support, ensure that you have:
      1) Installed Microsoft SNA Server V4 Service Pack 3
      2) De-selected the **Member of Default Outgoing Local APPC LU Pool** option. DB2 requires exclusive use of this LU for multisite update.
      3) From the **SyncPoint Support** field:
         - Select **Enable**.
         - Enter the SNA Server name in the **Client** field.

         Syncpoint support must be enabled on this server. It is not supported on SNA clients. Therefore, the **Client** field must contain the name of the local SNA Server. Multisite update is typically required if you use Transaction Processing (TP) Monitors.

         An additional LU should be defined without Syncpoint support enabled, or if multisite update is not required. For this LU, you should ensure that **Member of Default Outgoing Local APPC LU Pool** option is selected
   d. Accept the other defaults and click **OK**.
6. Define a remote LU by performing the following:
   a. Right-click on **SNA Services** icon and select the **Insert —> APPC —> Remote LU** option. The Remote APPC LU Properties window opens.
   b. Click on the **Connection** drop down box and select the appropriate connection name (**7**).
   c. Enter the partner LU name (**2**) in the **LU Alias** field.
   d. Enter the Network ID (**1**) in the **Network Name** field.

      The other fields will be filled in by the program. If your LU alias is not the same as your LU Name, specify the LU Name in the appropriate field. The program will fill it in automatically, but it will be incorrect if the alias and the name are not the same.
   e. Click **OK**.

7. Define a mode by performing the following:
   a. Right-click on **APPC Modes** folder and select the **Insert —> APPC —> Mode Definition** option. The APPC Mode Properties window opens.
   b. Enter the Mode Name **6** in the **Mode Name** field.
   c. Click the **Limits** tab.
   d. Enter appropriate numbers for the **Parallel Session Limit** and **Minimum Contention Winner Limit** fields. Your Host-Side or LAN administrator should be able to supply you with the numbers if you do not know the limits you should place here.
   e. Accept the other defaults and click **OK**.
8. Define the CPIC Name Properties by performing the following:
   a. Right-click on **CPIC Symbolic Name** folder icon and select the **Insert —> APPC —> CPIC Symbolic Name** option. The CPIC Name Properties window opens.
   b. Enter the Symbolic Destination Name (**16**) in the **Name** field.
   c. Click on the **Mode Name** drop down box and select a mode name, for example, **IBMRDB**.
   d. Click the **Partner Information** tab.
   e. In **Partner TP Name** box, select the **SNA Service TP (in hex)** radio button and enter the Service TP name (**17**), or select the **Application TP** radio button and enter the Application TP name (**17**).
   f. In the **Partner LU Name** box, select the **Fully Qualified** radio button.
   g. Enter the fully-qualified Partner LU Name (**1** and **2**) or alias.
   h. Click **OK**.
   i. Save the configuration.
      1) Select **File —> Save** from the menu bar of the Server Manager window. The Save File window opens.
      2) Enter a unique name for your configuration into the **File Name** field.
      3) Click **Save**.

Your next step is to catalog the APPC or APPN node.

Related tasks:

- "Configuring Microsoft SNA Client" on page 69
- "Configuring APPC communications manually between DB2 Connect and a host or 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 51

Configuring Microsoft SNA Client

This task is part of the main tasks of *Updating APPC profiles on the DB2 Connect server* and *Updating APPC profiles on the DB2 client*.

Prerequisites:

- The Microsoft SNA Server has already been configured for APPC communications with the host, and is enabled for ODBC and DRDA.
- Microsoft SNA Client Version 2.11 is not already installed on your workstation.

Procedure:

To configure the Microsoft SNA client, complete the following:

1. Obtain required information. For your Microsoft SNA client software to function properly you must have access to a properly configured Microsoft SNA Server. Request that your SNA Server administrator:
   a. Obtain the proper license for you to use Microsoft SNA Client on your workstation.
   b. Define a user ID and password for you on the SNA Server domain.
   c. Define connections to the server databases that you need to access.
   d. Provide you with the symbolic destination name (**16**), database name (**5**), and user account to use for each database connection defined in the previous step.

      If you plan to change host passwords, the SNA administrator will also need to provide you with symbolic destination names for password management tasks on each host.
   e. Provide you with the Microsoft SNA Server domain name and the protocol used for communicating with the SNA server (TCP/IP, NetBEUI).
2. Install the Microsoft SNA Client on your workstation by performing the following:
   a. Obtain the Microsoft SNA Client software, and follow its instructions to start the installation program.
   b. Follow the instructions on the screen to complete the installation. Choose your SNA Server domain name and communication protocol according to the instructions provided by your SNA Server administrator.
   c. When you reach the Optional Components window, *deselect* Install ODBC/DRDA driver so that it will not be installed.
   d. Complete the installation.

3. Install and configure DB2 or DB2 Connect for Windows by performing the following:
   a. Install DB2 or DB2 Connect.
   b. Open the DB2 Folder, and click on the **Configuration Assistant** to start the configuration dialog.
   c. Click **Start** and select **Programs —> IBM DB2 —> Configuration Assistant**.
   d. You need to provide the following information:
      1) The Symbolic destination name (**16**) defined at the Microsoft SNA Server for the Partner LU (**2**) of the target database server.
      2) The real database name (**5**).

Your next step is to catalog the APPC or APPN node.

Related tasks:

- "Configuring Microsoft SNA Server" on page 64
- "Configuring APPC communications for a DB2 instance" in the *Installation and Configuration Supplement*
- "Cataloging the APPC or APPN node" in the *Connectivity Supplement*
- "Configuring APPC communications on the DB2 client" on page 51

Configuring IBM eNetwork Communications Server for AIX

This task is part of the main tasks of *Updating APPC profiles on the DB2 Connect server* and *Updating APPC profiles on the DB2 Client*.

IBM eNetwork Communication Server for AIX is the only SNA product supported for DB2 or DB2 Connect running on RS/6000 or pSeries machines.

Prerequisites:

Before configuring your IBM eNetwork Communications Server for AIX, ensure that:

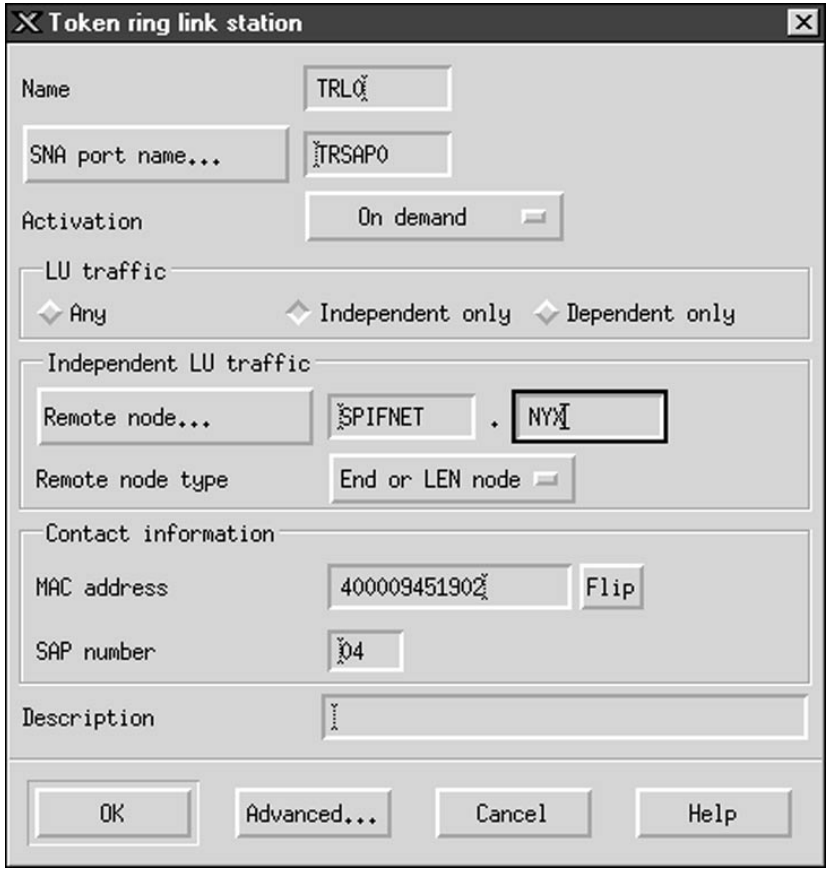
- You contact your database or network administrators to have your local LU names added to the appropriate tables to access the server database.
- Your workstation has IBM eNetwork Communication Server V5.0.3 for AIX (CS/AIX) installed and PTF 5.0.3 has been applied.
- DB2 or DB2 Connect has been installed.
- You have a userID with root authority.

Procedure:

You can use either the **/usr/bin/snaadmin** program or the **/usr/bin/X11/xsnaadmin** program. To configure CS/AIX for use by DB2 or DB2 Connect using the **xsnaadmin** program:

1. Enter the command **xsnaadmin**. The Node window for the server opens.
2. Define a node by performing the following:
   a. Select **Services —> Configure Node Parameters**. The Node Parameters window opens.
   b. Select **End node** from the **APPN support** drop-down menu.
   c. In the **SNA addressing** box:
      - Enter your network ID and the local PU name (**9** and **10**) in the **Control point name** fields.
      - Enter the local PU name (**10**) in the **Control point alias** field.
   d. Enter your Node ID (**13** and **14**) in the **Node ID** fields.
   e. Click **OK**.
3. Define a port by performing the following:
   a. Select the Connectivity and Dependent LUs window.
   b. Click the **Add** push button. The Add to Node window opens.
   c. Select the **Port using** radio button.
   d. Click the **Port Using** drop down box and select the appropriate port type. For the purpose of our example, we will select the **Token ring card** option.
   e. Click **OK**. The Port window for the chosen port type opens.
   f. Enter a name for the port in the **SNA port name** field.
   g. Select the **Initially active** check box.
   h. From the **Connection network** box:
      - Select **Define on connection network** check box.
      - Enter your SNA Network Name (**9**) in the first part of the **CN name** field.
      - Enter the Local PU Name (**10**) associated with your AIX computer in the second part of the **CN name** field.
   i. Click **OK**. The Port window closes and a new port opens in the Connectivity and Dependent LUs window.
4. Define a link station by performing the following:
   a. In the Connectivity and Dependent LUs window, select the port that you defined in the previous step.
   b. Click the **Add** push button. The Add to Node window opens.
   c. Select the **Add a link station to port** radio button.

d. Click **OK**. The Token ring link station window opens.



e. Enter a name for the link in the **Name** field.

f. Select the **On demand** option from the **Activation** drop-down box.

g. Select the **Independent only** option in the **LU traffic** box.

h. In the **Independent LU traffic** box:

   1) Enter the network ID (**3**) and the partner LU name (**2**) in the **Remote node** fields.

   2) Click the **Remote node type** drop-down box and select the type of node that applies to your network.

i. In the **Contact information** box, enter the SNA destination address (**8**) assigned for the host or iSeries system in the **Mac address** field.

j. Click **OK**. The Link Station window closes and a new link station appears in the Connectivity and Dependent LUs window.

5. Define a local LU by performing the following:

   a. Select the **Independent local LUs** window.

b. Click the **Add** push button. The Local LU window opens.
c. Enter your independent local LU Name (**11**) in the **LU name** field.
d. Enter the same name in the **LU alias** field (**12**).
e. Click **OK**. The new LU appears in the Independent Local LUs window.

6. Define a partner LU over the link station by performing the following:
   a. Select **Services —> APPC —> New PLUs —>Over Link Station** from the menu bar. The Partner LU on link station window opens.
   b. Enter the name for the local LU (**11**) you defined previously in the **LU name** field.
   c. Enter the name for the link station you defined previously in the **LS name** field.
   d. Enter the name of the partner LU you want to connect to (**2**) in the **Partner LU name** field.
   e. Click **OK**. The Partner LU appears in the Independent Local LUs window of the Local LU that was created in the previous step.
7. Define an alias for the partner LU by performing the following:
   a. Select the Remote Systems window.
   b. Click the **Add** push button. The Add to Node window opens.
   c. Select the **Define partner LU alias** radio button.
   d. Click **OK**. The Partner LU window opens.
   e. Enter an alias for the partner LU in the **Alias** field.
   f. Enter the same value in the **Uninterpreted name** field.
   g. Click **OK**.
8. Define a mode by performing the following:
   a. Select **Services —> APPC—> Modes** from the menu bar. The Modes window opens.
   b. Click the **New** push button. The Mode window opens.
   c. Enter a mode name (**15**) in the **Name** field.
   d. The configuration values below are suggested for the following fields:
      - **Initial session limits**: 20
      - **Maximum session limits**: 32767
      - **Min con. winner sessions**: 10
      - **Min con. loser sessions**: 10
      - **Auto-activated sessions**: 4
      - **Initial receive pacing window**: 8

      These values are suggested because they are known to work. You will need to tailor these values so that they are optimized for your particular application environment.

e. Click **OK**. The new mode appears in the Modes window.

f. Click **Done**.

9. Define the CPI-C destination name by performing the following:

   a. Select **Services —> APPC—> CPI-C** from the menu bar. The CPI-C destination names window opens.

   b. Click the **New** push button. The CPI-C destination window opens.

   c. In the **Name** field, enter the Symbolic Destination Name (**16**) you want to associate with the host or iSeries server database. This example uses `db2cpic`.

   d. In the **Partner LU and mode** box:

      1) Select the **Use PLU alias** radio button, and enter the partner LU alias (**2**) you created in a previous step.

      2) In the **Mode** field, enter the mode name (**15**) for the mode that you created in a previous step.

   e. In the **Partner TP** box:

      - For DB2 UDB for OS/390 and z/OS, and DB2 UDB for iSeries, select the **Service TP (hex)** radio button, and enter the hexadecimal TP number (**17**). (For DB2 Universal Database for OS/390 and z/OS you can also use the default application TP `DB2DRDA`. For DB2 for iSeries you can also use the default application TP `QCNTEDDM`.)
      - For DB2 for VM or VSE, select the **Application TP** radio button. For DB2 for VM, enter the DB2 for VM database name. For DB2 for VSE, enter the AXE as the application TP (**17**).

   f. In the **Security** box, select the radio button that corresponds to the type of security level that you want to run on your network.

   g. Click **OK**. The new destination name appears in the Destination Names window.

   h. Click **Done**.

10. Test the APPC connection by performing the following:

    a. Start the SNA subsystem by entering the **/usr/bin/sna start** command. You can enter the **/usr/bin/sna stop** command to stop the SNA subsystem first, if required.

    b. Start the SNA administration program. You can enter either the **/usr/bin/snaadmin** command or the **/usr/bin/X11/xsnaadmin** command.

    c. Start the subsystem node. Select the appropriate node icon in the button bar, and click the **Start** push button.

    d. Start the link station. Select the link station you defined previously in the Connectivity and Dependent LUs window, and click the **Start** push button.

e. Start the session. Select the LU you defined previously in the Independent Local LUs window, and click the **Start** push button. A session activation window opens.
f. Select or enter a partner LU and mode.
g. Click **OK**.

Your next step is to catalog the APPC or APPN node.

Related tasks:

- "Configuring APPC communications manually between DB2 Connect and a host or 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 51

Configuring Bull SNA for AIX

This task is part of the main task of *Configuring APPC communications on the host for DB2 Connect* and *Updating APPC profiles on the DB2 client*.

If Bull DPX/20 SNA/20 Server is installed prior to installing the DB2 client, the client uses Bull SNA. Otherwise, you need to configure DB2 Connect to work with IBM eNetwork Communications Server V5.0.2.5 for AIX.

Prerequisites:

If you want to install the Bull DPX/20 SNA/20 Server, then you must have the following software:

- AIX V4.1.4
- Express SNA Server V2.1.3

Restrictions:

DB2 Connect, when used with the Bull SNA server, cannot have inbound APPC connections from remote clients. The only APPC connections it can have are outbound APPC connections to the host.

Procedure:

To configure Bull SNA for AIX, complete the following:

1. Determine if Bull SNA is installed on your AIX 4.2 (or later) system:

```
lslpp -l express.exsrv+dsk
```

   If Bull SNA is installed, you will see output similar to the following:

```
  Fileset                      Level  State      Description
  ----------------------------------------------------------------------------
Path: /usr/lib/objrepos
  express.exsrv+dsk          2.1.3.0  COMMITTED  EXPRESS SNA Server and
                                                 Integrated Desktop
```

2. If you installed Bull SNA after installing the DB2 client or DB2 Connect, log on to the system as a user with `root` authority and enter the following command:

   ```
   /usr/lpp/db2_08_01/cfg/db2cfgos
   ```

3. If you installed DB2 Connect after installing Bull SNA, then you need to configure Bull SNA for use by DB2 Connect.

   Enter the **express** command to configure the following SNA parameters:

   ```
   Config         Express           Default configuration for EXPRESS
      Node          NYX1              SPIFNET.NYX1 (HOSTNAME=NYX1)
       Indep. LUs   6.2 LUs Using All Stations
         LU         NYX1              Control Point LU
       Link         tok0.00001        Link (tok0)
        Station     MVS               To MVS from NYX1
         LU         NYX1GW01          To MVS from NYX1
          LU Pair   NYM2DB2           To MVS from NYX1
           Mode     IBMRDB            IBMRDB
   ```

   Use default values for fields not listed.

   The following example illustrates the sample configuration:

   ```
   Defining hardware:

   System (hostname) = NYX1
   Adapter and Port  = NYX1.tok0
     MAC Address     = 400011529778

   Defining SNA node:

   Name          = NYX1
   Description   = SPIFNET.NYX1 (HOSTNAME=NYX1)
   Network ID    = SPIFNET
   Control Point = NYX1
   XID Block     = 05D
   XID ID        = 29778

   Defining token ring link:

   Name            = tok0.00001
   Description     = Link (tok0)
   Connection Network name
     Network ID    = SPIFNET
     Control Point = NYX

   Defining token ring station:
   ```

```
Name               = MVS
Description        = To MVS from NYX1
Remote MAC address = 400009451902
Remote Node name
  Network ID       = SPIFNET
  Control Point    = NYX

Defining Local LU 6.2:

Name        = NYX1GW01
Description = To MVS from NYX1
Network ID  = SPIFNET
LU name     = NYX1GW01

Defining Remote LU 6.2:

Name                 = NYM2DB2
Description          = To MVS from NYX1
Network ID           = SPIFNET
LU name              = NYM2DB2
Remote Network ID    = SPIFNET
Remote Control Point = NYX
Uninterpreted Name   = NYM2DB2

Defining Mode:

Name             = IBMRDB
Description      = IBMRDB
Class of service = #CONNECT

Defining Symbolic Destination Info:

Name        = DB2CPIC
Description = To MVS from NYX1
Partner LU  = SPIFNET.NYM2DB2
Mode        = IBMRDB
Local LU    = NYX1GW01
Partner TP  = DB2DRDA
```

4. After you have configured these SNA parameters, you must stop and start the SNA server. To stop and start the SNA server, perform the following:
   a. Log on to the system as a user with root authority.
   b. Make sure your PATH contains the $express/bin (/usr/lpp/express/bin)entry.
   c. Check for active users before stopping the server by entering the following command:
      ```
      express_adm shutdown
      ```
   d. Stop all EXPRESS activity by entering the following command:
      ```
      express_adm stop
      ```
   e. Start EXPRESS by entering the following command:
      ```
      express_adm start
      ```

For more information on Bull SNA for AIX, see the *Bull DPX/20 SNA/20 Server Configuration Guide*.

Your next step is to catalog the APPC or APPN node.

Related tasks:

- "Configuring APPC communications on the DB2 client" on page 51

Configuring SNAPlus2 for HP-UX

This task is part of the main task of *Configuring APPC communications on the host for DB2 Connect* and *Updating APPC profiles on the DB2 client*.

Prerequisites:

Before you begin, ensure that:

- The basic installation of the SNAPlus2 for HP-UX package has already been completed.
- The DB2 client or DB2 Connect has been installed.
- Log on to the system as a user with `root` authority.
- If you need more information to configure your SNA environment, refer to the online help provided with SNAPlus2.

Procedure:

To configure SNAPlus2, use either the **/opt/sna/bin/snapadmin** program or the **/opt/sna/bin/X11/xsnapadmin** program. Information about these programs can be found in the system documentation.

The following steps describe how to use the **xsnapadmin** program to configure SNAplus2.

1. Enter the command **xsnapadmin**. The Servers window opens. Double-click on your node.
2. Define a node by performing the following:
   a. Select **Services —> Configure Node Parameters** from the menu bar. The Node Parameters window opens.
   b. Click on the **APPN support** drop down box and select the **End node** option.
   c. Enter your Network ID and the Local PU Name (**9** and **10**) in the **Control point name** fields.
   d. Enter Local PU Name (**10**) in the **Control point alias** field.
   e. Enter your Node ID (**13** and **14**) in the **Node ID** fields.
   f. Click **OK**.

3. Define a port by performing the following:
   a. Select the **Connectivity and Dependent LUs** window.
   b. Click **Add**. The Add to Node window opens.
   c. Select the **Port using** radio button.
   d. Click on the **Port using** drop down box and select the appropriate port type. For our example, we will select the **Token ring card** option.
   e. Click **OK**. The Port window for the chosen port type opens.
   f. Enter a name for the port in the **SNA port name** field.
   g. Select the **Initially active** check box.
   h. From the **Connection network** box, select the **Define on a connection network** check box.
   i. Enter your Network ID (**9**) in the first part of the **CN name** field.
   j. Enter your local Control Point name (**10**) in the second part of the **CN name** field.
   k. Click **OK**. The **Port** window closes and a new port appears in the **Connectivity and Dependent LUs** window.
4. Define a link station by performing the following:
   a. In the **Connectivity and Dependent LUs** window, select the port that you defined in the previous step.
   b. Click **Add**. The Add to Node window opens.
   c. Select the **Add a link station to port** radio button.
   d. Click **OK**. The Token ring link station window opens.
   e. Enter a name for the link in the **Name** field.
   f. Click on the **Activation** drop down box and select the **On demand** option.
   g. Select the **Independent only** option in the **LU traffic** box.
   h. In the **Independent LU traffic** box:
      1) Enter the Network ID (**3**) and the Partner LU Name (**2**) in the **Remote Node** fields.
      2) Click on the **Remote node type** drop down box and select the type of node that applies to your network.
   i. In the **Contact information** box, enter the SNA Destination Address (**8**) assigned to the DB2 server in the **Mac address** field.
   j. Click **OK**. The Link Station window is closed and a new link station appears as a child of the port in the **Connectivity and Dependent LUs** window.
5. Define a local LU by performing the following:
   a. Select the **Independent local LUs** window.
   b. Click **Add**. The Local LU window opens.

c. Enter your independent local LU Name (**11**) in the **LU name** field.
d. Enter the same name in the **LU alias** field (**12**).
e. Click **OK**. The new LU appears in the **Independent local LUs** window.

6. Define a remote node by performing the following:
   a. Select the **Remote Systems** window.
   b. Click **Add**. The Add to Node window opens.
   c. Select **Define remote node**.
   d. Click **OK**. The Remote Node configuration window appears.
   e. Enter the Network ID (**3**) and the Partner LU Name (**2**) in the **Node's SNA network name** field.
   f. Click **OK**. The remote node appears in the **Remote Systems** window, and a default partner LU is defined for the node and also appears as a child of the remote node.
7. Define a partner LU by performing the following:
   a. In the **Remote Systems** window, double-click the default partner LU that was created when you defined a remote node in the previous step. The Partner LU window opens.
   b. Enter the same Partner LU name (**2**) in the **Alias** and **Uninterpreted name** fields.
   c. Select **Supports parallel sessions**.
   d. Click **OK**.
8. Define a mode by performing the following:
   a. Select **Services —> APPC —> Modes** from the menu bar. The Modes window opens.
   b. Click **New**. The Mode window opens.
   c. Enter a mode name (**15**) in the **Name** field.
   d. The configuration values below are suggested for the following fields:
      1) **Initial Session limits**: 20
      2) **Maximum Session limits**: 32767
      3) **Min con. winner sessions**: 10
      4) **Min con. loser sessions**: 10
      5) **Auto-activated session**: 4
      6) **Receive pacing window**: 8

      These values are suggested because they are known to work. You will need to tailor these values so that they are optimized for your particular application environment.
   e. Click **OK**. The new mode appears in the Modes window.
   f. Click **Done**.

9. Define the CPI-C destination name by performing the following:
   a. Select **Services —> APPC —> CPI-C** from the menu bar. The CPI-C destination names window opens.
   b. Click **New**. The CPI-C destination window opens.
   c. Enter the Symbolic Destination Name (**16**) you want to associate with the DB2 server database in the **Name** field.
   d. In the **Partner TP** box:
      1) Select **Service TP (hex)**, and enter the hexadecimal TP number (**17**), or
      2) Select **Application TP**, and enter the application TP name. (**17**).
   e. In the **Partner LU and mode** box:
      1) Select the **Use PLU Alias** radio button, and enter the Partner LU Alias (**2**) that you created in a previous step.
      2) Enter the Mode name (**15**) for the mode that you created in a previous step in the **Mode** field.
   f. In the **Security** box, select the radio button that corresponds to the type of security level that you want to run on your network.
   g. Click **OK**. The new destination name appears in the Destination names window.
   h. Click **Done**.
10. Test the APPC connection by performing the following:
   a. Start the SNA subsystem by entering the **/opt/sna/bin/sna start** command. You can enter the **/opt/sna/bin/sna stop** command to stop the SNA subsystem first, if required.
   b. Start the SNA administration program. You can enter either the **/opt/sna/bin/snaadmin** command, the **/opt/sna/bin/X11/xsnaadmin** command.
   c. Start the subsystem node. Select the appropriate node icon in the button bar, and click the **Start** button.
   d. Start the link station. Select the link station you defined previously in the **Connectivity and Dependant LUs** window, and click **Start**.
   e. Start the session. Select the LU you defined previously in the **Independent Local LUs** window, and click **Start**. A session activation window opens. Select or enter the Partner LU and Mode desired.
   f. Click **OK**.

Related tasks:

- "Configuring APPC communications manually between DB2 Connect and a host or 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 51

Configure SNAP-IX for SPARC Solaris

This task is part of the main task of *Configuring APPC communications on the host for DB2 Connect* and *Updating APPC profiles on the DB2 client*.

Prerequisites:

Before configuring SNAP-IX for SPARC Solaris, ensure that:

- Your workstation has DCL SNAP-IX V6.1.0 for SPARC Solaris installed.
- You have installed DB2 Connect.

Restrictions:

The following restrictions apply to configuring SNAP-IX for SPARC Solaris:

- You must have root authority.
- You must use either the **/opt/sna/bin/snaadmin** or the **/opt/sna/bin/X11/xsnaadmin** program. For more information about these programs, refer to the system documentation.

Procedure:

To configure DCL SNAP-IX V6.1.0 for SPARC Solaris using the **xsnaadmin** program, complete the following:

1. Enter the **xsnaadmin** command. The Node window for the server opens.
2. Define a node by performing the following:
   a. Select **Services —> Configure Node Parameters**. The Node Parameters window opens.
   b. Select **End node** from the **APPN support** drop-down menu.
   c. Enter your network ID and the local PU name (**9** and **10**) in the **Control point name** fields.
   d. Enter the local PU name (**10**) in the **Control point alias** field.
   e. Enter your Node ID (**13** and **14**) in the **Node ID** fields.
   f. Click **OK**.
3. Define a port by performing the following:
   a. Select the Connectivity and Dependent LUs window.
   b. Click **Add**. The Add to Node window opens.
   c. Select the **Port using** radio button.
   d. Click on the **Port Using** drop down box and select the appropriate port. For the purpose of our example, we will select the **SunTRI/P Adapter** option.

e. Click **OK**. The Port window for the chosen port type opens.
f. Enter a name for the port in the **SNA port name** field.
g. Select the **Initially active** check box.
h. Click **OK**. The Port window closes, and a new port appears in the Connectivity and Dependent LUs window.

4. Define a link station by performing the following:
   a. In the Connectivity and Dependent LUs window, select the port that you defined in the previous step.
   b. Click **Add**. The Add to Node window opens.
   c. Select the **Add a Link Station to Port** radio button.
   d. Click **OK**. The Token Ring Link Station window opens.
   e. Enter a name for the link in the **Name** field.
   f. Select the **Independent Only** option in the LU traffic box.
   g. In the Independent LU traffic box:
      1) Enter the Network ID (**3**) and the Partner PU Name (**2**) in the Remote Node fields.
      2) Click on the **Remote node type** drop down box and select the type of node that applies to your network.
   h. In the Contact information box, enter the SNA Destination Address (**8**) assigned for the host or AS/400 system in the Mac address field.
   i. Click **OK**. The Link Station window closes, and a new link station appears in the Connectivity and Dependent LUs pane.
5. Define a local LU by performing the following:
   a. Select the **Independent local LUs** window.
   b. Click **Add**. The Local LU window opens.
   c. Enter your independent local LU Name (**11**) in the **LU name** field.
   d. Enter the same name in the **LU alias** field (**12**).
   e. Click **OK**. The new LU appears in the **Independent local LUs** window.
6. Define a remote node by performing the following:
   a. Select the **Remote Systems** window.
   b. Click **Add**. The Add to Node window opens.
   c. Select **Define remote node**.
   d. Click **OK**. The Remote Node configuration window appears.
   e. Enter the Network ID (**3**) and the Partner LU Name (**2**) in the **Node's SNA network name** field.
   f. Click **OK**. The remote node appears in the **Remote Systems** window, and a default partner LU is defined for the node and also appears as a child of the remote node.
7. Define a partner LU by performing the following:

a. Select **Services —> APPC —> New partner LUs —> Partner LU on Remote Node** from the menu bar. The Partner LU window opens.
b. Enter the Partner LU name in the **Partner LU Name** fields.
c. Enter the same Partner LU name (**2**) in the **Alias and Uninterpreted Name** fields.
d. Select **Supports Parallel Sessions**.
e. Enter the Partner PU name in the **Location** fields.
f. Click **OK**.

8. Define a mode by performing the following:
   a. Select **Services —> APPC —> Modes** from the menu bar. The Modes window opens.
   b. Click **New**. The Mode window opens.
   c. Enter a mode name (**15**) in the **Name** field.
   d. The configuration values below are suggested for the following fields:
      1) **Initial Session limits**: 20
      2) **Maximum Session limits**: 32767
      3) **Min con. winner sessions**: 10
      4) **Min con. loser sessions**: 10
      5) **Auto-activated session**: 4
      6) **Receive pacing window**: 8

      These values are suggested because they are known to work. You will need to tailor these values so that they are optimized for your particular application environment.
   e. Click **OK**. The new mode appears in the Modes window.
   f. Click **Done**.
9. Define the CPI-C destination name by performing the following:
   a. Select **Services —> APPC —>CPI-C** from the menu bar. The CPI-C Destination Names window opens.
   b. Click **New**. The CPI-C Destination window opens.
   c. Enter the Symbolic Destination Name (**16**) you want to associate with the host or AS/400 server database in the **Name** field. This example uses `DB2CPIC`.
   d. In the **Local LU** box:
      - Select the specific Local LU alias radio button and enter the Local LU alias you created previously.
   e. In the **Partner LU and mode** box:
      1) Select the **Use PLU Alias** radio button, and enter the Partner LU Alias (**2**) you created in a previous step.

2) Enter the Mode name (**15**) for the mode that you created in a previous step in the **Mode** field.

f. In the Partner TP Box:

1) For DB2 for MVS/ESA, DB2 for OS/390, and DB2 for AS/400, select the **Service TP (hex)** radio button.

2) Enter the hexadecimal TP number (**17**). (For DB2 Universal Database for OS/390 or DB2/MVS, you can also use the default application TP DB2DRDA. For DB2 for AS/400 you can also use the default application TP QCNTEDDM.)

3) For DB2 for VM or VSE, select the **Application TP** radio button. For DB2 for VM, enter the DB2 for VM database name. For DB2 for VSE, enter the AXE as the application TP. (**17**)

g. In the **Security** box, select the radio button that corresponds to the type of security level that you want to run on your network.

h. Click **OK**. The new destination name appears in the Destination Names window.

i. Click **Done**.

10. Test the APPC connection by performing the following:

a. Start the SNA subsystem by entering the **/opt/sna/bin/sna start** command. You can enter the **/opt/sna/bin/sna stop** command to stop the SNA subsystem first, if required.

b. Start the SNA administration program. You can use either the **/opt/sna/bin/snaadmin** or the **/opt/sna/bin/X11/xsnaadmin** command.

c. Start the subsystem node. Select the node icon in the button bar, and click the **Start** push button.

d. Start the link station. Select the link station that you previously defined in the Connectivity and Dependent LUs window. Click **Start**.

e. Start the session. Select the LU you defined previously in the Independent Local LUs window, then click **Start**. A session activation window opens. Select or enter the Partner LU and Mode desired.

f. Click **OK**.

Related tasks:

• "Configuring APPC communications on the DB2 client" on page 51

Cataloging the APPC node on the DB2 client

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

You must add an entry to the DB2 client's node directory to describe the remote node. This entry specifies the chosen alias (*node_name*), symbolic

destination name (*sym_dest_name*), and the APPC security type (*security_type*) that the client will use for the APPC connection.

Procedure:

To catalog the APPC or APPN node, perform the following steps:

1. Log on to the system with a valid user ID. If you are adding a database to a system that has a DB2 server or DB2 Connect server, you must log on 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-based system, 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.
   - To catalog an APPC node, specify the chosen alias (node_name), Symbolic destination name (sym_dest_name), and the APPC security type (security_type) that the client will use for the APPC connection. Enter the following commands in the command line processor:

     ```
     catalog "appc node node_name remote sym_dest_name \
     security security_type";
     terminate
     ```

     For example, to catalog a remote database server with the Symbolic destination name DB2CPIC on the node called db2node, using APPC Security type NONE, enter the following commands:

     ```
     catalog appc node db2node remote DB2CPIC security NONE
     terminate
     ```

   - To catalog an APPN node, specify the chosen alias (node_name), the network ID, the remote partner LU, the transaction program name, the mode, and the security type. Enter the following commands, substituting your own values:

     ```
     catalog "appn node db2node network SPIFNET remote NYX1GW0A
            tpname DB2DRDA mode IBMRDB security NONE"
     terminate
     ```

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

Related tasks:

- "Configuring APPC communications on the DB2 client" on page 51
- "Cataloging a database using the CLP" on page 36

Related reference:

- "CATALOG APPC NODE" in the *Command Reference*

Configuring IBM eNetwork Personal Communications for Windows

This task describes how to configure IBM Personal Communications for the Windows 32–bit operating systems on your DB2 client workstation to connect to a DB2 Connect or DB2 Universal Database server using APPC.

Prerequisites:

Before you begin, ensure that the IBM Personal Communications for Windows 32–bit operating systems that you installed meets the following requirements:

- It is Version 4.2 or higher (For Windows XP it is Version 5.5).
- The IBM Personal Communications IEEE 802.2 LAN interface or LLC2 driver is installed. The LLC2 driver is installed from the IBM Communications Server installation directory.
- The basic installation of the IBM Personal Communication package has already been completed. The requirements listed above must be met.
- The DB2 client has been installed.

Procedure:

To start IBM Personal Communications, complete the following:

1. Click **Start** and select **Programs —> IBM Communications Server —> SNA Node Configuration**. The IBM Personal Communications SNA Node Configuration window opens.
2. Select **File —> New** from the menu bar. The Define the Node window opens. Subsequent steps will begin from this window.

To configure APPC communications, complete the following:

1. Configure the node by performing the following:
   a. In the **Configuration options** box, select the **Configure Node** option and click **New**. The Define the Node window opens.
   b. In the **Fully qualified CP name** fields, type in the network name (**9**) and the local control point name (**10**)
   c. Optionally, in the **CP alias** field, type in a CP alias. If you leave this blank the local control point name will be used.
   d. In the **Local Node ID** fields, type in the block ID (**13**) and the physical unit ID (**14**).
   e. Click **OK**.
2. Configure the device by performing the following:

a. In the **Configuration options** box, select the **Configure devices** option and click **New**.
b. Select the appropriate DLC from **DLCs** field. These instructions in this section use the **LAN** DLC.
c. Click **New**. The appropriate window opens with default values displayed. In our example, the Define a LAN device window opens.
d. Click **OK** to accept the default values.

3. Configure connections by performing the following:
   a. In the **Configuration options** box, the select **Configure connections** option.
   b. Ensure that the **LAN** option is selected in the **DLCs** field.
   c. Click **New**. The Define a LAN connection window opens.
   d. On the Basic tab:
      1) In the **Link station name** field, type in the link name (**7**).
      2) In the **Destination address** field, type in the remote LAN address (**8**).
   e. On the Adjacent Node tab:
      1) In the **Adjacent CP name** fields, type in the network ID (**3**) and the Partner node name (**4**).
      2) In the **Adjacent CP type** field, select **Back-level LEN**.
      3) Ensure that **TG number** is set to `0` (the default).
      4) Click **OK**.
4. Configure Partner LU 6.2 by performing the following:
   a. In the **Configuration options** box, select the **Configure partner LU** option and click **New**. The Define a partner LU 6.2 window opens.
   b. In the **Partner LU name** fields, type in the network ID (**3**) and the partner LU name (**2**).
   c. In the **Partner LU alias** field, type in the partner LU name (**2**).
   d. In the **Fully-qualified CP name** fields, type in the network ID (**3**) and the control point name (**4**).

      Accept the defaults in the Advanced tab.
   e. Click **OK**.
5. Configure the modes by performing the following:
   a. In the **Configuration options** box, select the **Configure modes** option and click **New**. The Define a mode window opens.
   b. Enter your Mode name (**15**) in the **Mode name** field of the Basic tab.
   c. Select the **Advanced** tab.
   d. Select the **#CONNECT** option from the **Class of Service Name** field.
   e. Click **OK**.

6. Configure Local LU 6.2 by performing the following:
   a. In the **Configuration options** box, select the **Configure local LU 6.2** option and click on the **New** push button. The Define a local LU 6.2 window opens.
   b. Enter your Local LU name (**11**) in the **Local LU name** field.
   c. Type in a value for the **LU session limit** field. The default, `0`, specifies the maximum allowed value. Accept the defaults for the other fields.
   d. Click **OK**.
7. Configure CPI-C Side information by performing the following:
   a. In the **Configuration options** box, select the **Configure CPI-C side information** option and click **New**. The Define CPI-C side information window opens.
   b. In the **Symbolic destination name** field, type in the symbolic destination name (**16**).
   c. In the **Mode name** field, type in the mode name (**15**).
   d. In the **Partner LU Name** fields, type the Network ID (**3**) in the first field, and the Partner LU Name (**2**) in the second field.
   e. Specify the TP name. In the **TP name** field:
      - To specify a application TP, in the **TP name** field, type in the name of the application TP (**17**), and ensure that the **Service TP** check box *is not* selected.
      - To specify a service TP, in the **TP name** field, type in the name of the service TP (**17**), and ensure that the **Service TP** check box *is* selected.

      Accept the defaults for the other fields.
   f. Click **OK**.
8. Save the configuration by performing the following:
   a. Select **File —> Save As** from the menu bar. The Save As window opens.
   b. Type in a file name, for example `ny3.acg`.
   c. Click **OK**.
   d. In the dialog box that opens, you are asked if you want this configuration to be the default. Click **Yes**.
9. Update the environment by performing the following:

   IBM Personal Communications uses an environment variable called **appcllu** to set the default Local LU used for APPC communications. You may set this variable on a per-session basis by opening a command window and enter the **set appcllu=***local_lu_name* command, where *local_lu_name* is the name of the local LU you want to use. However, you

will probably find it more convenient to permanently set the variable. To permanently set the variable in Windows NT or Windows 2000, perform the following steps:

a. Click **Start** and select **Settings —> Control Panel**.
b. Double-click on the **System** icon. The System Properties window opens.
c. Select the **Environment** tab.
d. Type `appcllu` in the **Variable** field.
e. Type your local LU name (**11**) in the **Value** field.
f. Click **Set** to accept the changes.
g. Click **OK** to exit the System Properties window.

The environment variable will now remain set for future sessions.

10. Start the SNA Node Operations by performing the following:
    a. Click **Start** and select **Programs —> IBM Personal Communications —> Administrative and PD Aids —>SNA Node Operations**. The Personal Communications SNA Node Operations window opens.
    b. From the menu bar, select **Operations —> Start Node**.
    c. In the window that opens, select the configuration file you saved in the previous step (for example, `ny3.acg`) and click **OK**.

Related tasks:

- "Configuring IBM eNetwork Personal Communications for Windows NT" on page 55
- "Configuring APPC communications on the DB2 client" on page 51

Related reference:

- "APPC parameter values worksheet for the DB2 client" on page 52

Configuring IBM eNetwork Communications Server for Windows

This task describes how to configure IBM eNetwork Communications Server for Windows NT (CS/NT) on a DB2 client workstation to connect to a DB2 Connect or DB2 Universal Database server.

Note: References to Windows NT and CS/NT in this section also apply to Windows 2000, Windows XP, and Windows .NET.

Prerequisites:

Before you begin to configure the IBM eNetwork Communications Server for Windows:

- Ensure that the IBM eNetwork Communications Server for Windows NT (CS/NT) that you installed is Version 5.0 or higher if you are planning to update multiple databases within the same transaction. If you are planning to use 2-phase commit, then Version 5.01 of CS/NT is required.
- Ensure that the IBM Communications Server IEEE 802.2 LAN interface or LLC2 driver was installed. The LLC2 driver was installed from the CS/NT installation directory. During installation CS/NT asks if you want to install LLC2. To check if the LLC2 was installed with your copy of CS/NT, perform the following:
  1. Click on the **Start** push button and select **Settings —> Control Panel**.
  2. Double-click on the **Network** icon.
  3. On the Network window, select the **Protocols** tab. The **IBM LLC2 Protocol** must be one of the protocols listed. If it is not, you need to install this protocol from your IBM Communications Server for Windows NT software media. Refer to documentation supplied with CS/NT for instructions.
- Ensure that the APAR fixes JR11529 and JR11170 were applied. These fixes are required to enable cancelling of queries in progress by using **Ctrl-BREAK** or issuing the **SQLCancel** ODBC/CLI call.

Procedure:

To start IBM eNetwork Communications Server, perform the following steps:

1. Click **Start** and select **Programs —> IBM Communications Server —> SNA Node Configuration**. The IBM Communications Server SNA Node Configuration window opens.
2. Select **File —> New —> Advanced** from the menu bar. The Configuration options window opens. Subsequent steps will begin from this window.

To configure IBM eNetwork Personal Server for APPC communications, perform the following steps:

1. Configure the node by performing the following:
   a. In the **Configuration options** field, select the **Configure Node** option and click on the **New** push button. The Define the Node window opens.
   b. In the **Fully qualified CP name** fields, type in the network name (**9**) and the local control point name (**10**).
   c. Optionally, in the **CP alias** field, type in a CP alias. If you leave this blank the local control point name will be used.
   d. In the **Local Node ID** fields, type in the block ID (**13**) and the physical unit ID (**14**).
   e. Select the appropriate node type. The default is to select the **End Node** radio button.

f. Click on **OK**.

2. Configure the device by performing the following:
   a. In the **Configuration options** box, select the **Configure devices** option and click on the **New** push button. The appropriate window opens with default values displayed.
   b. Select the appropriate DLC from **DLCs** field. The instructions in this section assume that you are using the **LAN** DLC.
   c. Click on **OK** to accept the default values.
3. Configure the connections by performing the following:
   a. In the **Configuration options** box, select the **Configure connections** option and click on the **New** push button.
   b. Ensure that in the **DLCs** field, the **LAN** option is selected.
   c. Click on the **New** button. The Define a LAN connection window opens.
   d. On the Basic tab:
      1) In the **Link station name** field, type in the link name (**7**).
      2) In the **Destination address** field, type in the remote LAN address (**8**).
   e. On the Security tab:
      1) In the **Adjacent CP name** fields, type in the network ID (**3**) and the Control Point name (**4**).
      2) In the **Adjacent CP type** field, select the appropriate CP type (eg. **Back-level LEN**).
      3) Ensure that **TG number** is set to `0` (the default).
      4) Click on **OK**.
4. Configure Partner LU 6.2 by performing the following:
   a. In the **Configuration options** box, select the **Configure partner LU** option and click on the **New** push button. The Define a partner LU 6.2 window opens.
   b. In the **Partner LU name** fields, type in the network ID (**3**) and the partner LU name (**2**).
   c. In the **Partner LU alias** field, type in the partner LU name (**2**).
   d. If you are configuring Communications Server for SNA Clients, in the **Fully-qualified CP name** fields, type in the network ID (**3**) and the adjacent control point name (**4**).

      Leave the other fields blank.
   e. Click on **OK**.
5. Configure the modes by performing the following:

a. In the **Configuration options** box, select the **Configure modes** option and click on the **New** push button. The Define a mode window opens.
b. In the **Mode name** field, type in the mode name (**6**).
c. Select the **Advanced** tab and ensure that the **Class of Service Name** is set to **#CONNECT**.

   Accept the defaults for the other fields.
d. Click on **OK**.

6. Configure Local LU 6.2 by performing the following:
   a. In the **Configuration options** box, select the **Configure local LU 6.2** option and click on the **New** push button. The Define a local LU 6.2 window opens.
   b. In the **Local LU name** field, type in the local LU name (**11**).
   c. Type in a value for the **LU session limit** field. The default, `0`, specifies the maximum allowed value.

      Accept the defaults for the other fields.
   d. Click on **OK**.
7. Configure CPI-C side information by performing the following:
   a. In the **Configuration options** box, select the **Configure CPI-C side information** option and click on the **New** push button. The Define CPI-C side information window opens.
   b. In the **Symbolic destination name** field, type in the symbolic destination name (**16**).
   c. In the **Mode name** field, type in the mode name (**15**).
   d. Select the **Use Partner LU alias** radio button and select a Partner LU alias.
   e. Specify the TP name. In the **TP name** field:
      - To specify a application TP, in the **TP name** field, type in the name of the application TP (**17**), and ensure that the **Service TP** check box *is not* selected.
      - To specify a service TP, in the **TP name** field, type in the name of the service TP (**17**), and ensure that the **Service TP** check box *is* selected

      Accept the defaults for the other fields.
   f. Click on **OK**.
8. Save the configuration by performing the following:
   a. Select **File —> Save as** from the menu bar. The Save As window opens.
   b. Type in a file name, for example `ny3.acg`

c. Click on **OK**.

d. In the window that opens you are asked if you want this configuration to be the default. Click on the **Yes** push button.

9. Update the environment by performing the following:

   CS/NT uses an environment variable called *appcllu* to set the default APPC Local LU. You may set this variable on a per-session basis by opening a command window and typing **set appcllu=***local_lu_name* command, where *local_lu_name* is the Local LU name; however, you will probably find it more convenient to permanently set the variable. In order to permanently set the variable in Windows NT, perform the following steps:

   a. Click the **Start** push button and select **Settings —> Control Panel**.

   b. Double-click on the **System** icon. The System Properties window opens.

   c. Select the **Environment** tab.

   d. Type `appcllu` in the **Variable** field, and type your local LU name (**11**) in the **Value** field.

   e. Click on **Set** push button to accept the changes

   f. Click on **OK**.

   The environment variable will now remain set for future sessions.

10. Start SNA node operations by performing the following:

    a. Click on the **Start** push button and select **Programs —> IBM Communications Server —> SNA Node Operations**. The **SNA Node Operations** window opens.

    b. Select **Operations —> Start Node** from the menu bar. In the dialog box that opens, select the configuration file you saved at the end of Step 2 (in our example, `ny3.acg`).

    c. Click **OK**.

    SNA node operations will now begin running.

11. Register the Communications Server as a Windows NT Service by performing the following:

    To automatically start Communications Server when the machine is started, you can register it as a Windows NT Service.

    To register Communications Server as an NT service execute one of the following commands:

```
csstart -a
(to register Communications Server with default configuration)
```

    or:

```
csstart -a c:\ibmcs\private\your.acg
```

where *c:\ibmcs\private\your.acg* represents the fully qualified name of the non-default Communications Server configuration file you wish to use.

Whenever your machine is booted in the future, Communications Server will be started automatically with the required configuration file.

Related tasks:

- "Configuring APPC communications on the DB2 client" on page 51

Related reference:

- "APPC parameter values worksheet for the DB2 client" on page 52

Testing a connection

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" in the *Command Reference*

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 27

- "Configuring a database connection using the Configuration Assistant (CA)" on page 28
- "Configuring a database connection using a profile" on page 33

Part 3. Thin clients

Chapter 7. Thin clients overview

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 104
- "Thin client environments" on page 101

Related tasks:

- "Setting up a thin-client environment" on page 107

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.

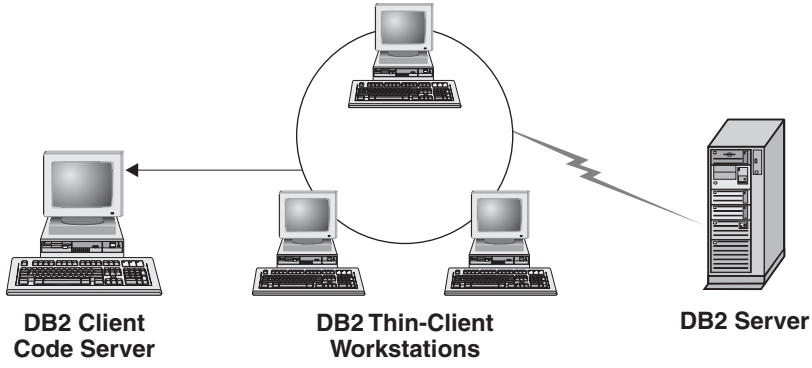


Figure 1. A typical DB2 thin-client environment

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.

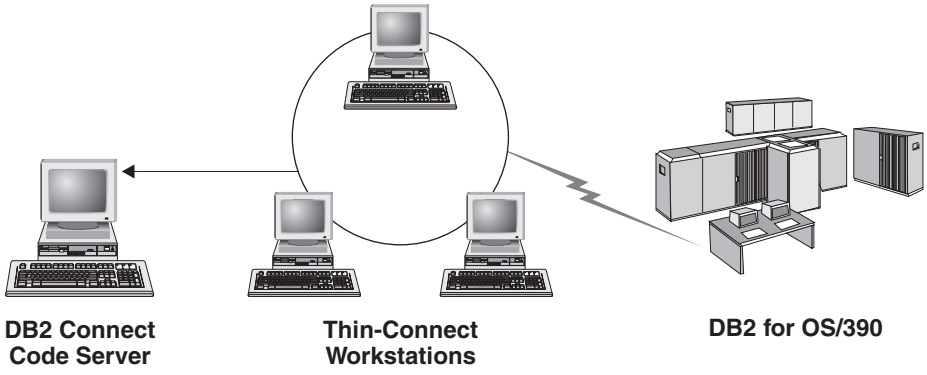


Figure 2. A typical DB2 Connect thin-client environment

Related concepts:

- "Thin client considerations (Windows)" on page 104
- "Thin clients" on page 101

Related tasks:

- "Setting up a thin-client environment" on page 107

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 101
- "Thin client environments" on page 101

Chapter 8. Setting up thin clients

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 104
- "Thin clients" on page 101
- "Thin client environments" on page 101

Related tasks:

- "Installing a DB2 Administration Client or DB2 Connect Personal Edition on the code server" on page 108
- "Setting up cross-platform support on the code server" on page 108
- "Making the code directory available to all thin workstations" on page 110
- "Creating a thin client response file" on page 111
- "Mapping a network drive from the thin client to the code server" on page 113
- "Running the thnsetup command to enable thin clients" on page 114

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 108

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 108
- "Making the code directory available to all thin workstations" on page 110

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 104

Related tasks:

• "Creating a thin client response file" on page 111
• "Setting up cross-platform support on the code server" on page 108

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 110
- "Mapping a network drive from the thin client to the code server" on page 113

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 111
- "Running the thnsetup command to enable thin clients" on page 114

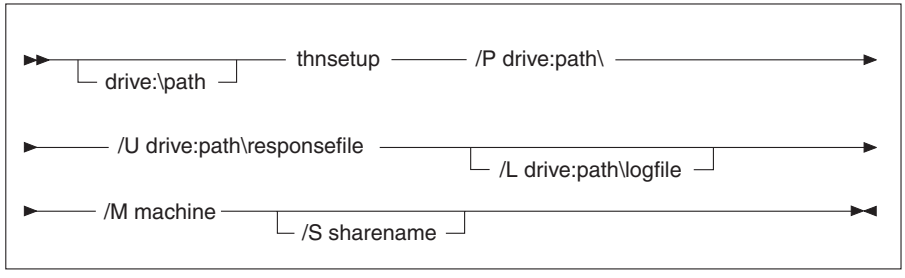
Running the thnsetup command to enable thin clients

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:



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 113

Part 4. Appendixes

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.

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 cover 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 10. 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 11. 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

Table 11. Administration information (continued)

Name	Form number	PDF file name
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 12. 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 13. 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 14. 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 15. Getting started information

Name	Form number	PDF file name
IBM DB2 Universal Database Quick Beginnings for DB2 Clients	GC09-4832	db2itx80
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 16. 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 17. 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

Table 17. Optional component information (continued)

Name	Form number	PDF file name
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 18. Release notes

Name	Form number	PDF file name	HTML directory
DB2 Release Notes	See note.	See note.	doc/prodcd/%L/db2ir where %L is the language identifier.
DB2 Connect Release Notes	See note.	See note.	doc/prodcd/%L/db2cr where %L is the language identifier.
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
- On other platforms, see the `RELEASE.TXT` file. This file is located in the directory where the product is installed.

Related tasks:

- "Printing DB2 books from PDF files" on page 127

- "Ordering printed DB2 books" on page 128
- "Accessing online help" on page 128
- "Finding product information by accessing the DB2 Information Center from the administration tools" on page 132
- "Viewing technical documentation online directly from the DB2 HTML Documentation CD" on page 133

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 128
- "Finding product information by accessing the DB2 Information Center from the administration tools" on page 132
- "Viewing technical documentation online directly from the DB2 HTML Documentation CD" on page 133

Related reference:

- "Overview of DB2 Universal Database technical information" on page 119

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/shop/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

Related tasks:

- "Printing DB2 books from PDF files" on page 127
- "Finding topics by accessing the DB2 Information Center from a browser" on page 130
- "Viewing technical documentation online directly from the DB2 HTML Documentation CD" on page 133

Related reference:

- "Overview of DB2 Universal Database technical information" on page 119

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:
  - For SQL help:

    ```
    ? 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.
  - For SQLSTATE help:

```
help statement
```

where *statement* represents an SQL statement.

For example, `help SELECT` displays help about the SELECT statement.

Related tasks:

- "Finding topics by accessing the DB2 Information Center from a browser" on page 130
- "Viewing technical documentation online directly from the DB2 HTML Documentation CD" on page 133

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, Life Sciences Data Connect, 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 *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 two or more terms related to your area of interest and click **Search**. A list of topics ranked by accuracy displays in the **Results** field.

   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 139
- "DB2 Information Center for topics" on page 141

Related tasks:

- "Finding product information by accessing the DB2 Information Center from the administration tools" on page 132
- "Updating the HTML documentation installed on your machine" on page 134
- "Troubleshooting DB2 documentation search with Netscape 4.x" on page 136
- "Searching the DB2 documentation" on page 137

Related reference:

- "Overview of DB2 Universal Database technical information" on page 119

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 139
- "DB2 Information Center for topics" on page 141

Related tasks:

- "Finding topics by accessing the DB2 Information Center from a browser" on page 130
- "Searching the DB2 documentation" on page 137

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:

Because the following items are installed from the DB2 product CD and not the *DB2 HTML Documentation CD*, you must install the DB2 product to view these items:

- Tools help
- DB2 Quick Tour
- Release notes

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\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/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 130
- "Copying files from the DB2 HTML Documentation CD to a Web Server" on page 136

Related reference:

- "Overview of DB2 Universal Database technical information" on page 119

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 136

Related reference:

- "Overview of DB2 Universal Database technical information" on page 119

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*, so you can install the library on a Web server for easier access. Simply copy to your Web server the documentation for the languages that you want.

Procedure:

To copy files from the *DB2 HTML Documentation CD* to a Web server, use the appropriate path:

- For Windows operating systems:

  E:\Program Files\sqllib\doc\htmlcd*%L**.*

  where *E* represents the CD-ROM drive and *%L* represents the language identifier.
- For UNIX operating systems:

  /*cdrom*:Program Files/sqllib/doc/htmlcd/*%L*/*.*

  where *cdrom* represents the CD-ROM drive and *%L* represents the language identifier.

Related tasks:

- "Searching the DB2 documentation" on page 137

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 119

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\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/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 137

Searching the DB2 documentation

To search DB2's documentation, you need Netscape 6.1 or higher, or Microsoft's Internet Explorer 5 or higher. Ensure that your browser's Java support is enabled.

A pop-up search window opens when you click the search icon in the navigation toolbar of the Information Center accessed from a browser. If you are using the search for the first time it may take a minute or so to load into the search window.

Restrictions:

The following restrictions apply when you use the documentation search:

- Boolean searches are not supported. The boolean search qualifiers *and* and *or* will be ignored in a search. For example, the following searches would produce the same results:
  - servlets *and* beans
  - servlets *or* beans
- Wildcard searches are not supported. A search on *java** will only look for the literal string *java** and would not, for example, find *javadoc*.

In general, you will get better search results if you search for phrases instead of single words.

Procedure:

To search the DB2 documentation:

1. In the navigation toolbar, click **Search**.
2. In the top text entry field of the Search window, enter two or more terms related to your area of interest and click **Search**. A list of topics ranked by accuracy displays in the **Results** field.

   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.

Note: When you perform a search, the first result is automatically loaded into your browser frame. To view the contents of other search results, click on the result in results lists.

Related tasks:

- "Troubleshooting DB2 documentation search with Netscape 4.x" on page 136

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:

- "DB2 Information Center for topics" on page 141

Related tasks:

- "Finding product information by accessing the DB2 Information Center from the administration tools" on page 132

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".
- DB2 enables you customize the size and color of your fonts. See "Accessible Display" on page 140.
- DB2 allows you to receive either visual or audio alert cues. See "Alternative Alert Cues" on page 140.
- DB2 supports accessibility applications that use the Java™ Accessibility API. See "Compatibility with Assistive Technologies" on page 140.
- DB2 comes with documentation that is provided in an accessible format. See "Accessible Documentation" on page 140.

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 for topics

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:

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 in topics and tools help from one 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 130
- "Finding product information by accessing the DB2 Information Center from the administration tools" on page 132
- "Updating the HTML documentation installed on your machine" on page 134

Appendix B. Notices

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