



Getting Started with DB2 Installation and Administration on Linux and Windows



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Note

Before using this information and the product it supports, read the general information under Appendix F, "Notices," on page 77.

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Part 1. Installation prerequisites

Chapter 1. Disk and memory requirements

Disk requirements

The disk space required for your product depends on the type of installation you choose and the type of file system you have. The DB2[®] Setup wizard provides dynamic size estimates based on the components selected during a typical, compact, or custom installation.

Remember to include disk space for required databases, software and communication products.

On Linux[®] operating systems, 2 GB of free space in the /tmp directory is recommended.

Memory requirements

At a minimum, a DB2 database system requires 256 MB of RAM. For a system running just a DB2 product and the DB2 GUI tools, a minimum of 512 MB of RAM is required. However, 1 GB of RAM is recommended for improved performance. These requirements do not include any additional memory requirements for other software that is running on your system.

When determining memory requirements, be aware of the following:

- For IBM[®] data server client support, these memory requirements are for a base of five concurrent client connections. You will need an additional 16 MB of RAM per five client connections.
- Memory requirements are affected by the size and complexity of your database system, and the extent of database activity and the number of clients accessing your system.

For DB2 server products, the self-tuning memory feature simplifies the task of memory configuration by automatically setting values for several memory configuration parameters. When enabled, the memory tuner dynamically distributes available memory resources among several memory consumers including sort, the package cache, the lock list and buffer pools.

- On Linux operating systems, SWAP space at least twice as large as RAM is recommended.

Chapter 2. Windows installation prerequisites

Installation requirements for DB2 servers and IBM data server clients (Windows)

Before you install a DB2 database product on Windows® operating systems, ensure that the system you choose meets the necessary operating system, hardware, and software requirements.

Table 1. Windows workstation platforms

Operating System	Prerequisites	Hardware
Windows XP Professional (32-bit and 64-bit)	Windows XP Service Pack 2 or later	All Intel® and AMD processors capable of running the supported Windows operating systems (32-bit and 64-bit based systems)
Windows Vista Business (32-bit and 64-bit)	IBM Data Server Provider for .NET client applications and CLR server-side procedures require .NET 2.0 framework runtime. 64-bit IBM data server provider for .NET applications are supported. All Windows Vista service packs are supported.	
Windows Vista Enterprise (32-bit and 64-bit)		
Windows Vista Ultimate (32-bit and 64-bit)		

Table 2. Windows server platforms

Operating System	Prerequisites	Hardware
Windows 2003 Datacenter Edition (32-bit and 64-bit)	Service Pack 2 or later. R2 is also supported	All Intel and AMD processors capable of running the supported Windows operating systems (32-bit and 64-bit based systems).
Windows 2003 Enterprise Edition (32-bit and 64-bit)	IBM data server provider for .NET client applications and CLR server-side procedures require .NET 2.0 framework runtime.	
Windows 2003 Standard Edition (32-bit and 64-bit)	64-bit IBM data server provider for .NET applications are supported.	
Windows Server 2008 Datacenter Edition (32-bit and 64-bit)	IBM data server provider for .NET client applications and CLR server-side procedures require .NET 2.0 framework runtime.	
Windows Server 2008 Enterprise Edition (32-bit and 64-bit)	64-bit IBM data server provider for .NET applications are supported.	
Windows Server 2008 Standard Edition (32-bit and 64-bit)	All Windows Server 2008 service packs are supported.	

Note: DB2 database products support the hardware-enforced Data Execution Prevention (DEP) feature that is built into some Windows operating systems.

Additional software considerations

- Windows Installer 3.0 is required. It will be installed by the installer if it is not detected.
- IBM Data Server Provider for .NET client applications and CLR server-side procedures require .NET 2.0 framework runtime. In an x64 environment, 32-bit IBM data server provider for .NET applications will run in the WOW64 emulation mode.
- MDAC 2.8 is required. The DB2 Setup wizard will install MDAC 2.8 if it is not already installed.

Note: If a previous version of MDAC (for example, 2.7) is already installed, DB2 install will upgrade MDAC to 2.8. For a typical install, MDAC 2.8 is installed. For a custom install, MDAC 2.8 is installed but only if you have not deselected the default which is to install it. If you deselect MDAC as part of a custom install, it will not be installed.

- If you plan to use LDAP (Lightweight Directory Access Protocol), you should use either a Microsoft® LDAP client or the IBM Tivoli® Directory Server v6 client (also known as the IBM LDAP client which is included with DB2 database products). Before installation of the Microsoft Active Directory, you will need to extend your directory schema using the db2schex utility, which can be found on the installation media under the db2\Windows\utilities directory.

The Microsoft LDAP client is included with Windows operating systems.

- One of the following browsers is required to view online help, run the DB2 install launchpad (setup.exe), and to run First Steps (db2fs):

- Firefox 2.0 and later
- Internet Explorer 6.0 and later
- Mozilla-based browsers 1.7 and later
- Safari 3.0 and later

Setting up Windows elevated privileges before installing a DB2 product (Windows)

The usual method to install a DB2 product on Windows is to use an Administrator user account. However, DB2 products can be installed using a non-administrator account. To do so, a Windows Administrator must configure the elevated privileges feature in Windows.

This task explains how a Windows Administrator can set up a computer with elevated privileges to allow installation using a non-Administrator user account. The related task of granting DB2 administration authorities to non-Administrator users is also covered.

Typically a Windows Administrator would perform this task to enable another person who does not have an Administrator account to install a DB2 product. The role of this person might be only to install DB2 products or to also administer DB2 products once installed.

Before initiating this procedure, note the following restrictions on non-Administrator installation using elevated privileges:

- Non-Administrator users can only install fix packs, add-on products, or upgrade DB2 products if prior installations or upgrades were also performed by the same non-Administrator user.
- Non-Administrator users cannot uninstall a DB2 product. Those non-Administrator users on a Windows Vista (and later) operating system **can** uninstall a DB2 product.

This procedure uses the Windows Group Policy Editor.

1. Click **Start -> Run** and type `gpedit.msc`. The **Group Policy** window opens.
2. Click on **Computer Configuration -> Administrative Templates -> Windows Components -> Windows Installer**.
3. Enable the following Group Policy settings:
 - **Always install with elevated privileges (mandatory)**
 - **Enable user control over installs (mandatory)**
 - **Disable Windows Installer**. Then set it to *Never*.
 - **Enable user to patch elevated products (optional)**
 - **Enable user to use media source while elevated (optional)**
 - **Enable user to browse for source while elevated (optional for new installations, mandatory for fix pack upgrades)**
4. Enable elevated privileges for the user account that will be performing the installation.
 - a. Click **User Configuration -> Administrative Templates -> Windows Components -> Windows Installer**.
 - b. Enable the **Always install with elevated privileges (mandatory)** Group Policy setting.

5. Perform setup related to the user account that will install the DB2 product.
 - Identify the user account that will install the DB2 product. If necessary, create that account.
 - Give that account write permission for the drive on which an installation is planned.
6. Optional: Complete additional steps applicable to installing fix packs:
 - Provide *read* access to the `sqllib\cfg` directory.
 - Ensure that *allowlockdownpatch* is enabled (as described in the Windows Installer SDK documentation) because fix pack installations are considered minor upgrades to the product.
7. Refresh the computer's security policy in any one of the following ways:
 - Reboot the PC.
 - At the command line, enter `gpupdate.exe`.

By following this procedure you will have set up the computer with elevated privileges and set up a user account that will be able to install DB2 server products, clients and fix packs.

After DB2 installation is complete:

- Any user in the system administrative (SYSADM) or system control (SYSCTRL) authority group defined in the database manager configuration for the instance can create and use DB2 databases within the DB2 instance.
- Only a user with local Administrator authority can run DB2 instance utilities, such as `db2icrt`, `db2idrop`, `db2iupdt`, or `db2iupgrade`.
- The authorization requirements for running the `db2start` or `db2stop` command is defined in the topics `START DATABASE MANAGER` command, and `STOP DATABASE MANAGER` command.

Using regedit instead of the Windows Group Policy Editor

An alternative to using the Windows Group Policy Editor is to use `regedit`.

1. In the registry branch `HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows`, add the key `installer`
2. Edit the key `installer` with the following values:
 - For `AlwaysInstallElevated`, enter `REG_DWORD=1`
 - For `AllowLockdownBrowse`, enter `REG_DWORD=1`
 - For `AllowLockdownMedia`, enter `REG_DWORD=1`
 - For `AllowLockdownPatch`, enter `REG_DWORD=1`
 - For `DisableMSI`, enter `REG_DWORD=0`
 - For `EnableUserControl`, enter `REG_DWORD=1`
3. In the registry branch `HKEY_CURRENT_USER\SOFTWARE\Policies\Microsoft\Windows`, add the key `installer`
4. Edit the key `installer` with the following values:
 - For `AlwaysInstallElevated`, enter `REG_DWORD=1`

Removing elevated privileges

After you have given elevated privileges, you can reverse this action. To do so, remove the registry key `Installer` under `HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows`.

Granting a non-administrator user DB2 administration authorities

At this point, only members of the Windows Administrators group will have DB2 administration authorities. The Windows Administrator has the option to grant one or more DB2 authorities, such as SYSADM, SYSMAINT, or SYSCTRL to the non-Administrator user who installed the DB2 product.

Granting user rights (Windows)

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

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

1. Click **Start** -> **Run** and type `secpol.msc`. On Windows 2008 and Windows Vista (or higher), click **Start** and type `secpol.msc` in the search bar. Click **OK**.
2. Select **Local Security Policy**.
3. In the left window pane, expand the **Local Policies** object, then select **User Rights Assignment**.
4. In the right window pane, select the user right that you want to assign.
5. From the menu, select **Action** —> **Security...**
6. Click **Add**, then select a user or group to assign the right to, and click **Add**.
7. Click **OK**.

If your computer belongs to a Windows domain, the domain user rights can override your local settings. In this case, your Network Administrator must make the changes to the user rights.

DB2 system administrator group considerations (Windows)

By default, system administrative (SYSADM) authority is granted to any valid DB2 user account that belongs to the Administrators group on the computer where the account is defined. If the account is a local account, then it must belong to the local Administrators group. If the account is a domain account, then it must belong to the Administrators group at the domain controller or the local Administrators group. You can force the DB2 database server to always perform group lookup on the local computer by setting the registry variable `DB2_GRP_LOOKUP=local` and adding the domain accounts (or global groups) to the local group.

For example, if a user logs on to a domain account and tries to access a DB2 database, the DB2 database server goes to a domain controller to enumerate groups (including the Administrators group).

For a domain user to have SYSADM authority, they must belong to the local Administrators group or the Administrators group at the domain controller. Since the DB2 database server always performs authorization at the machine where the account is defined, adding a domain user to the local Administrators group on the server does not grant the domain user SYSADM authority to this group, unless `DB2_GRP_LOOKUP=local` is set.

To avoid adding a domain user to the Administrators group at the domain controller, create a global group and add the domain users to which you want to grant SYSADM authority to it. Then update the DB2 configuration parameter `SYSADM_GROUP` with the name of the global group.

To update the DB2 configuration parameter, enter the following commands:

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

Chapter 3. Linux installation prerequisites

Installation requirements for DB2 servers and IBM data server clients (Linux)

Before you install DB2 database products on Linux operating systems, ensure that the system you choose meets the necessary operating system, hardware, software, and communications requirements.

DB2 database products are supported on the following hardware:

- x86 (Intel Pentium[®], Intel Xeon[®], and AMD) 32-bit Intel and AMD processors
- x64 (64-bit AMD64 and Intel EM64T processors)
- POWER[®] (IBM eServer[™] OpenPower[®], iSeries[®], pSeries[®], System i[®], System p[®], and POWER Systems that support Linux)
- eServer System z[®] or System z9[®]

The minimum supported operating systems for Linux include:

- Red Hat Enterprise Linux (RHEL) 5 Update 2
- SUSE Linux Enterprise Server (SLES) 10 Service Pack 2
- SUSE Linux Enterprise Server (SLES) 11
- Ubuntu 8.0.4.1

For the latest information about supported Linux distributions, point your browser to <http://www.ibm.com/software/data/db2/linux/validate/>.

Multithreaded architecture limitations

If you are installing a DB2 32-bit database product on a Linux operating system, consider upgrading to a 64-bit operating system and installing the DB2 64-bit database product instead. The multithreaded architecture generally simplifies memory configuration. However, this could affect the memory configuration of 32-bit DB2 database servers. For example:

- Private memory for agent threads is allocated within a single process. The aggregate of all private memory allocations for database agents might not fit in a single process memory space.
- Support for multiple databases is limited because all database shared memory segments for all databases are allocated in a single process. You might need to reduce the memory usage for some databases in order to activate all databases successfully at the same time. However, the database manager performance might be impacted. Another alternative is to create multiple instances and catalog the databases across the instances. However, sufficient system resources is required to support this configuration.

Distribution Requirements

You should update your kernel configuration parameters before installing a DB2 database product. The default values for particular kernel parameters might not be sufficient when running a DB2 database system.

You might also have other products or applications that require Linux system resources. You should modify the kernel configuration parameters based on the needs of your Linux system working environment.

The kernel configuration parameters are set in `/etc/sysctl.conf`.

Refer to your operating system manual for information about setting and activating these parameters using the `sysctl` command.

Package requirements

The following tables list the package requirements for SLES and RHEL distributions:

- `libaio.so.1` is required for DB2 database servers using asynchronous `i/o`.
- `libstdc++so.6` is required for DB2 database servers and clients. However, if IBM Tivoli System Automation for Multiplatforms, or, IBM Tivoli Monitoring for Databases: DB2 Agent is used, `libstdc++so.5` is needed.

Package requirements for SLES and RHEL

Package name	Description
<code>libaio</code>	Contains the asynchronous library required for DB2 database servers.
<code>compat-libstdc++</code>	Contains <code>libstdc++so.6</code> (not required for Linux on POWER)

The following tables list the package requirements for SUSE Linux and Red Hat distributions for DB2 partitioned database servers.

- The `ksh93` Korn shell is required for SUSE10 and RHEL5 systems. The `pdcksh` Korn Shell package is required for all other DB2 database systems.
- A remote shell utility is required for partitioned database systems. DB2 database systems support the following remote shell utilities:
 - `rsh`
 - `ssh`

By default, DB2 database systems use `rsh` when executing commands on remote DB2 nodes, for example, when starting a remote DB2 database partition. To use the DB2 database system default, the `rsh-server` package must be installed (see table below). More information about `rsh` and `ssh` is available in the DB2 Information Center.

If you choose to use the `rsh` remote shell utility, `inetd` (or `xinetd`) must be installed and running as well. If you choose to use the `ssh` remote shell utility, you need to set the `DB2RSHCMD` communication variable immediately after the DB2 installation is complete. If this registry variable is not set, `rsh` is used.

- The `nfs-utils` Network File System support package is required for partitioned database systems.

All required packages should be installed and configured before continuing with the DB2 database system setup. For general Linux information, see your Linux distribution documentation.

Package requirements for SUSE Linux

Package name	Description
<code>pdcksh</code> or <code>ksh93</code>	Korn Shell. This package is required for partitioned database environments.

Package requirements for SUSE Linux

Package name	Description
openssh	This package contains a set of server programs which allow users to run commands on (and from) remote computers via a secure shell. This package is not required if you use the default configuration of DB2 database systems with rsh.
rsh-server	This package contains a set of server programs which allow users to run commands on remote computers, login in to other computers, and copy files between computers (rsh, rexec, rlogin, and rcp). This package is not required if you configure DB2 database systems to use ssh.
nfs-utils	Network File System support package. It allows access to local files from remote computers.

Package requirements for Red Hat

Directory	Package name	Description
/System Environment/Shell	pdksh or ksh93	Korn Shell. This package is required for partitioned database environments.
/Applications/Internet	openssh	This package contains a set of client programs which allow users to run commands on a remote computer via a secure shell. This package is not required if you use the default configuration of DB2 database systems with rsh.
/System Environment/Daemons	openssh-server	This package contains a set of server programs which allow users to run commands from a remote computer via a secure shell. This package is not required if you use the default configuration of DB2 database systems with rsh.
/System Environment/Daemons	rsh-server	This package contains a set of programs which allow users to run commands on a remote computer. Required for partitioned database environments. This package is not required if you configure DB2 database systems to use ssh.
/System Environment/Daemons	nfs-utils	Network File System support package. It allows access to local files from remote computers.

Software considerations

- (Clients only) If you plan to use Kerberos Authentication, you require IBM Network Authentication Service client v1.4 or later. The NAS client can be downloaded from <https://www6.software.ibm.com/dl/dm/dm-nas-p>.
- One of the following browsers is required to view online help and to run First Steps (db2fs):
 - Firefox 2.0 and later
 - Mozilla-based browsers 1.7 and later
- An X Window System software capable of rendering a graphical user interface is required if:

- you want to use the DB2 Setup wizard to install a DB2 database product on Linux operating systems, or
- you want to use any DB2 graphical tools on Linux for x86 and Linux on AMD 64/EM64T.
- Micro Focus does not offer support for any of its COBOL compiler products on SLES 11.

Security-enhanced Linux considerations

On RHEL 5 systems, if Security-enhanced Linux (SELinux) is enabled and in enforcing mode, the installer might fail due to SELinux restrictions.

To determine if SELinux is installed and in enforcing mode, you can do one of the following:

- check the `/etc/sysconfig/selinux` file
- run the `sestatus` command
- check the `/var/log/messages` file for SELinux notices.

To disable SELinux, you can do one of the following:

- set it in permissive mode and run the `setenforce 0` command as a superuser
- modify `/etc/sysconfig/selinux` and reboot the machine.

If your DB2 database product installs successfully on a RHEL 5 system, DB2 processes will run in the unconfined domain. To assign DB2 processes to their own domains, modify the policy. A sample SELinux policy is provided in the `sqllib/samples` directory.

Centralized user-management considerations (Linux)

In environments that include security software, there are some installation considerations.

Note: The DB2 installation cannot update or create users and groups if they are controlled outside of the operating system. For example, LDAP can be used to control users and groups outside of the operating system.

Note: Network Information Services (NIS) and Network Information Services Plus (NIS+) features are deprecated starting with DB2 Version 9.1 Fix Pack 2. Support for these features might be removed in a future release. Lightweight Directory Access Protocol (LDAP) is the recommended solution for centralized user-management services.

At instance creation, without a security component present, the instance owner's group list is modified to include that of the database administrative server (DAS) user's primary group, if the DAS is created. If the instance creation program is unable to modify these properties, it reports that it could not. The warning message provides the necessary information to manually make the changes.

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

Part 2. Installing your DB2 product

Chapter 4. Installing DB2 servers (Windows)

This task describes how to start the DB2 Setup wizard on Windows. You will use the DB2 Setup wizard to define your installation and install your DB2 database product on your system.

Before you begin

Before you start the DB2 Setup wizard:

- Ensure that your system meets installation, memory, and disk requirements.
- If you are planning to use LDAP on Windows to register the DB2 server in Active Directory, you should extend the directory schema before you install.
- If you are planning to use the IBM Tivoli Monitoring for Databases: DB2 Agent, before installing your DB2 product see topic “Installing IBM Tivoli Monitoring for Databases: DB2 Agent with the DB2 installer” for details, limitations and restrictions.
- You must have a local Administrator user account with the recommended user rights to perform the installation. In DB2 database servers where LocalSystem can be used as the DAS and DB2 instance user and you are not using the database partitioning feature, a non-administrator user with elevated privileges can perform the installation.

Note: If a non-Administrator user account is going to do the product installation, then the VS2005 runtime library must be installed before attempting to install a DB2 database product. The VS2005 runtime library is needed on the operating system before the DB2 database product can be installed. The VS2005 runtime library is available from the Microsoft runtime library download web site. There are two choices: choose `vcredist_x86.exe` for 32-bit systems or `vcredist_x64.exe` for 64-bit systems.

- Although not mandatory, it is recommended that you close all programs so that the installation program can update any files on the computer without requiring a reboot.
- Installing DB2 products from a virtual drive or an unmapped network drive (such as `\\hostname\sharename` in Windows Explorer) is not supported. Before attempting to install DB2 products, you must map the network drive to a Windows drive letter (for example, Z:).

Restrictions

- You cannot have more than one instance of the DB2 Setup wizard running in any user account.
- The DB2 copy name and the instance name cannot start with a numeric value. The DB2 copy name is limited to 64 English characters consisting of the characters A-Z, a-z and 0-9.
- The DB2 copy name and the instance name must be unique among all DB2 copies.
- The use of XML features is restricted to a database that has only one database partition.
- No other DB2 database product can be installed in the same path if one of the following is already installed:
 - IBM Data Server Runtime Client

- IBM Data Server Driver Package
- *DB2 Information Center*
- The DB2 Setup wizard fields do not accept non-English characters.
- If you enable extended security on Windows Vista or Windows 2008, or higher, users must belong to the DB2ADMNS or DB2USERS group to run local DB2 commands and applications because of an extra security feature (User Access Control) that limits the privileges that local administrators have by default. If users do not belong to one of these groups, they will not have read access to local DB2 configuration or application data.

Procedure

To start the DB2 Setup wizard:

1. Log on to the system with the local Administrator account that you have defined for the DB2 installation.
2. If you have the DB2 database product DVD, insert it into the drive. If enabled, the autorun feature automatically starts the DB2 Setup Launchpad. If the autorun does not work, use Windows Explorer to browse the DB2 database product DVD and double-click on the setup icon to start the DB2 Setup Launchpad.
3. If you downloaded the DB2 database product from passport advantage, run the executable file to extract the DB2 database product installation files. Use Windows Explorer to browse the DB2 installation files and double-click on the setup icon to start the DB2 Setup Launchpad.
4. From the DB2 Setup launchpad, you can view installation prerequisites and the release notes, or you can proceed directly to the installation. You may want to review the installation prerequisites and release notes for late-breaking information.
5. Click **Install a Product** and the Install a Product window will display the products available for installation.

If you have no existing DB2 database products installed on your computer, launch the installation by clicking **Install New**. Proceed through the installation following the DB2 Setup wizard's prompts.

If you have at least one existing DB2 database product installed on your computer, you can:

- Click **Install New** to create a new DB2 copy.
 - Click **Work with Existing** to update an existing DB2 copy, to add function to an existing DB2 copy, upgrade an existing DB2 Version 8, Version 9.1, or Version 9.5 copy, or to install an add-on product.
6. The DB2 Setup wizard will determine the system language, and launch the setup program for that language. Online help is available to guide you through the remaining steps. To invoke the online help, click **Help** or press **F1**. You can click **Cancel** at any time to end the installation.

Results

Your DB2 database product will be installed, by default, in the *Program_Files\IBM\sqlib* directory, where *Program_Files* represents the location of the Program Files directory.

If you are installing on a system where this directory is already being used, the DB2 database product installation path will have *_xx* added to it, where *xx* are digits, starting at 01 and increasing depending on how many DB2 copies you have installed.

You can also specify your own DB2 database product installation path.

What to do next

- Verify your installation.
- Perform the necessary post-installation tasks.

For information on errors encountered during installation, review the installation log file located in the My Documents\DB2LOG\ directory. The log file uses the following format: *DB2-ProductAbbrev-DateTime.log*, for example, *DB2-ESE-Tue Apr 04 17_04_45 2008.log*.

If this is a new DB2 product installation on Vista 64-bit, and you will use a 32-bit OLE DB provider, you must manually register the IBMDADB2 DLL. To register this DLL, run the following command:

```
c:\windows\SysWOW64\regsvr32 /s c:\Program_Files\IBM\SQLLIB\bin\ibmdadb2.dll
```

where *Program_Files* represents the location of the Program Files directory.

If you want your DB2 database product to have access to DB2 documentation either on your local computer or on another computer on your network, then you must install the *DB2 Information Center*. The *DB2 Information Center* contains documentation for the DB2 database system and DB2 related products. By default, DB2 information will be accessed from the web if the *DB2 Information Center* is not locally installed.

DB2 Express Edition and DB2 Workgroup Server Edition memory limits

If you are installing DB2 Express Edition, the maximum allowed memory for the instance is 4 GB.

If you are installing DB2 Workgroup Server Edition, the maximum allowed memory for the instance is 16 GB.

The amount of memory allocated to the instance is determined by the **INSTANCE_MEMORY** database manager configuration parameter.

Important notes when upgrading from Versions 9.1 or 9.5:

- If the memory configuration for your Version 9.1 DB2 database product exceeds the allowed limit, the DB2 database product might not start after upgrading to the current version.
- The self tuning memory manager will not increase your overall instance memory limit beyond the license limits.

Chapter 5. Installing DB2 servers using the DB2 Setup wizard (Linux)

This task describes how to start the DB2 Setup wizard on Linux operating systems. The DB2 Setup wizard is used to define your installation preferences and to install your DB2 database product on your system.

Before you begin

Before you start the DB2 Setup wizard:

- Ensure that your system meets installation, memory, and disk requirements.
- Ensure you have a supported browser installed (Firefox 2.0+, Mozilla 1.7+, or SeaMonkey 1.1.4).
- You can install a DB2 server using either root or non-root authority. For more information on non-root installation, see the related links.
- The DB2 database product image must be available. You can obtain a DB2 installation image either by purchasing a physical DB2 database product DVD, or by downloading an installation image from Passport Advantage®.
- If you are installing a non-English version of a DB2 database product, you must have the appropriate National Language Packages.
- The DB2 Setup wizard is a graphical installer. You must have X windows software capable of rendering a graphical user interface for the DB2 Setup wizard to run on your machine. Ensure that the X windows server is running. Ensure that you have properly exported your display. For example, export `DISPLAY=9.26.163.144:0`.
- If you are using security software in your environment, you must manually create required DB2 users before you start the DB2 Setup wizard.
- If you are planning to use the IBM Tivoli Monitoring for Databases: DB2 Agent, before installing your DB2 product see topic “Installing IBM Tivoli Monitoring for Databases: DB2 Agent with the DB2 installer” for details, limitations and restrictions.

Restrictions

- You cannot have more than one instance of the DB2 Setup wizard running in any user account.
- The use of XML features is restricted to a database that is defined with the code set UTF-8 and has only one database partition.
- The DB2 Setup wizard fields do not accept non-English characters.

Procedure

To start the DB2 Setup wizard:

1. If you have a physical DB2 database product DVD, change to the directory where the DB2 database product DVD is mounted by entering the following command:

```
cd /dvdrom
```

where */dvdrom* represents the mount point of the DB2 database product DVD.

2. If you downloaded the DB2 database product image, you must extract and untar the product file.

- a. Extract the product file:

```
gzip -d product.tar.gz
```

where *product* is the name of the product that you downloaded.

- b. Untar the product file:

On Linux operating systems

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

where *product* is the name of the product that you downloaded.

- c. Change directory:

```
cd ./product
```

where *product* is the name of the product that you downloaded.

Note: If you downloaded a National Language Package, untar it into the same directory. This will create the subdirectories (for example *./nlpack*) in the same directory, and allows the installer to automatically find the installation images without prompting.

3. Enter the *./db2setup* command from the directory where the database product image resides to start the DB2 Setup wizard.
4. The IBM DB2 Setup Launchpad opens. From this window, you can view installation prerequisites and the release notes, or you can proceed directly to the installation. You can also review the installation prerequisites and release notes for late-breaking information.
5. Click **Install a Product** and the **Install a Product** window will display the products available for installation.

Launch the installation by clicking **Install New**. Proceed through the installation following the DB2 Setup wizard's prompts.

Once you have initiated the installation, proceed through the DB2 Setup wizard installation panels and make your selections. Installation help is available to guide you through the remaining steps. To invoke the installation help, click **Help** or press F1. You can click **Cancel** at any time to end the installation.

Results

For non-root installations, DB2 database products are always installed in the *\$HOME/sqllib* directory, where *\$HOME* represents the non-root user's home directory.

For root installations, DB2 database products are installed, by default, in :

Linux */opt/ibm/db2/V9.7*

If you are installing on a system where this directory is already being used, the DB2 database product installation path will have *_xx* added to it, where *_xx* are digits, starting at 01 and increasing depending on how many DB2 copies you have installed.

You can also specify your own DB2 database product installation path.

DB2 installation paths have the following rules:

- Can include lowercase letters (a–z), uppercase letters (A–Z), and the underscore character (_)
- Cannot exceed 128 characters
- Cannot contain spaces
- Cannot contain non-English characters

The installation log files are:

- The DB2 setup log file. This file captures all DB2 installation information including errors.
 - For root installations, the DB2 setup log file name is `db2setup.log`.
 - For non-root installations, the DB2 setup log file name is `db2setup_username.log`, where *username* is the non-root user ID under which the installation was performed.
- The DB2 error log file. This file captures any error output that is returned by Java™ (for example, exceptions and trap information).
 - For root installations, the DB2 error log file name is `db2setup.err`.
 - For non-root installations, the DB2 error log file name is `db2setup_username.err`, where *username* is the non-root user ID under which the installation was performed.

By default, these log files are located in the `/tmp` directory. You can specify the location of the log files.

There is no longer a `db2setup.his` file. Instead, the DB2 installer saves a copy of the DB2 setup log file in the `DB2_DIR/install/logs/` directory, and renames it `db2install.history`. If the name already exists, then the DB2 installer renames it `db2install.history.xxxx`, where *xxxx* is 0000-9999, depending on the number of installations you have on that machine.

Each installation copy has a separate list of history files. If an installation copy is removed, the history files under this install path will be removed as well. This copying action is done near the end of the installation and if the program is stopped or aborted before completion, then the history file will not be created.

What to do next

- Verify your installation.
- Perform the necessary post-installation tasks.

National Language Packs can also be installed by running the `./db2setup` command from the directory where the National Language Pack resides, after a DB2 database product has been installed.

On Linux x86, if you want your DB2 database product to have access to DB2 documentation either on your local computer or on another computer on your network, then you must install the *DB2 Information Center*. The *DB2 Information Center* contains documentation for the DB2 database system and DB2 related products.

DB2 Express Edition and DB2 Workgroup Server Edition memory limits

If you are installing DB2 Express Edition, the maximum allowed memory for the instance is 4 GB.

If you are installing DB2 Workgroup Server Edition, the maximum allowed memory for the instance is 16 GB.

The amount of memory allocated to the instance is determined by the `INSTANCE_MEMORY` database manager configuration parameter.

Important notes when upgrading from Versions 9.1 or 9.5:

- If the memory configuration for your Versions 9.1 or 9.5 DB2 database product exceeds the allowed limit, the DB2 database product might not start after upgrading to the current version.
- The self tuning memory manager will not increase your overall instance memory limit beyond the license limits.

Part 3. Verifying your installation

Chapter 6. Verifying the installation of DB2 servers using First Steps (Linux and Windows)

You can verify that the DB2 server installation has completed successfully by accessing data from the SAMPLE database.

You must have the Control Center and the First Steps component installed to perform this task.

First Steps is listed as a getting started component in the feature selection window in the DB2 Setup wizard. It is installed as part of a Typical installation or can be selected when performing a Custom installation.

The Control Center component is only available on Linux (x86 and AMD64/EM64T only) and Windows (x86 and AMD64/EM64T only).

1. On Linux, log on to the system as the instance owner.
2. Start First Steps:
 - On Windows operating systems, click **Start** and, select **Programs -> IBM DB2 -> [DB2 Copy Name] -> Set-up Tools > First Steps**
 - On Linux and Windows operating systems, you can start First Steps by typing the **db2fs** command.
3. You have the options to choose the type of database objects to create and the database location. You can choose the drive on which to create the SAMPLE database on Windows, and the directory in which to create the SAMPLE database on Linux.
4. This command can take a few minutes to process. When the SAMPLE database has been created, you will receive a completion message. Click **OK**.
5. Start the Control Center. On Windows, click **Start** and, select **Programs -> IBM DB2 -> [DB2 Copy Name] -> General Administration Tools -> Control Center**. On Linux systems, type the **db2cc** command.
6. In the left pane of the Control Center screen, expand the object tree to view the SAMPLE database and SAMPLE database objects. Select the Tables object to view the SAMPLE database tables in the right pane of the Control Center screen. Right-click the table name staff and select Query. In the command editor window, click the run button to run the query and see the result set.

After you have verified the installation, you can remove the SAMPLE database to free up disk space. However, keep the SAMPLE database if you plan to make use of the sample applications.

Enter the **db2 drop database sample** command to drop the SAMPLE database.

You can also use First Steps to check for product updates to ensure that you are aware of the available product updates and enhancements for DB2 products.

Chapter 7. Verifying the installation using the command line processor (CLP)

You can verify the installation by creating the SAMPLE database and running SQL commands to retrieve sample data.

Prerequisites

- The SAMPLE database component, found in the features selection, must be installed on your system and is included in a typical installation.
- You require a user with SYSADM authority.

To verify the installation:

1. Log on to the system as a user with SYSADM authority.
2. Start the database manager by entering the db2start command.
3. Enter the db2sampl command to create the SAMPLE database.

This command can take a few minutes to process. There is no completion message; when the command prompt returns, the process is complete.

The SAMPLE database is automatically cataloged with the database alias SAMPLE when it is created.

4. Connect to the SAMPLE database, retrieve a list of all the employees that work in department 20, and reset the database connection. Enter the following commands from the command line processor (CLP):

```
connect to sample
"select * from staff where dept = 20"
connect reset
```

The output should be similar to the following:

ID	NAME	DEPT	JOB	YEARS	SALARY	COMM
10	Sanders	20	Mgr	7	98357.50	-
20	Pernal	20	Sales	8	78171.25	612.45
80	James	20	Clerk	-	43504.60	128.20
190	Sneider	20	Clerk	8	34252.75	126.50

4 record(s) selected.

After you have verified the installation, you can remove the SAMPLE database to free up disk space. Enter the db2 drop database sample command to drop the SAMPLE database.

Chapter 8. Creating your own database using the Create Database with the Automatic Maintenance wizard

The Create Database with Automatic Maintenance wizard is the quickest way to set up your own database. Based on basic information that you provide, the wizard:

- creates a new database on the disk or directory of your choice
- assigns disk space for your data
- configures the new database for optimal performance
- turns on automatic maintenance
- configures notification by e-mail or pager if the database needs attention

The Create Database with Automatic Maintenance wizard can be started from First Steps or directly from within the Control Center.

Prerequisites

- If you want to start the wizard from First Steps, you must also have the First Steps component installed. First Steps is part of the Getting started component grouping in the DB2 Setup wizard. It is installed as part of a Typical installation or can be selected when performing a Custom installation.
 - You must have SYSADM or SYSCTRL authority to perform this task.
 - For Linux, you must have Xwindow software capable of rendering a graphical user interface for First Steps and the Control Center to run on your machine. Ensure that you have properly exported your display. For example, export `DISPLAY=9.26.163.144:0`.
 - On Linux, ensure that you are logged on as the instance owner, `db2inst1` by default. An instance is a logical database manager environment where you catalog databases and set configuration parameters.
1. Log on to the system with the user account that you want to use to create the database.
 2. Start the Create Database with Automatic Maintenance in the one of the following ways:
 - From First Steps: Click **Create Your Own Database**.
 - From the Control Center: Click the **All Databases** folder. Click **Create New Database** in the **All Databases** pane.
 3. Follow the steps of the wizard. Provide some details and preferences about your new database, including its name and the contacts who can be notified under various conditions.

If you created your own database from First Steps, you will now want to start the Control Center to begin exploring and working with your database. To do this, click **Work With Databases** in First Steps.

Chapter 9. Main menu entries for DB2 tools (Linux)

After installation, you can add several DB2 tools to the Main menu.

On Linux operating systems, the following DB2 tools can be added to the Main menu:

- Check for DB2 Updates
- Command Line Processor (CLP)
- Command Line Processor Plus (CLPPlus)
- Configuration Assistant
- Control Center
- First Steps
- Query Patroller.

These DB2 tools can be added to the main menu automatically or manually. Main menu entries are created automatically when any of the following DB2 commands are run:

- db2icrt
- db2iupdt
- db2nrcfg
- db2nrupdt.

The db2icrt and db2iupdt commands must be run by root. The db2nrcfg and db2nrupdt are for non-root install and are run by the instance owner.

To see the menu entries you might need to restart the desktop.

The main menu entries are automatically removed when either of the following commands are run:

- db2_deinstall (only removes the menu entries for the DB2 non-root instance when the non-root installation is removed)
- db2idrop.

In addition, you can manually create or remove main menu entries by running the following commands:

- db2addicons – to add menu entries
- db2rmicons – to remove menu entries.

Before running the db2addicons command, the DB2 instance environment must be set for the current user. The instance environment can be setup with:

Instance_HOME/sql1lib/db2profile (for Bourne shell and Korn shell users), or
Instance_HOME/sql1lib/db2chsrc (for C shell users), where *Instance_HOME* is the instance owner's home directory.

Part 4. DB2 product licensing

Chapter 10. DB2 license files

There are two types of license files associated with DB2 database products: *base license keys* and *full license keys*. These license keys are stored in plaintext files, which are generally referred to as *license files* or *license entitlement certificates*.

A “base” license does not confer any usage rights. It is included in the DB2 database product installation media and is applied automatically during the installation process. For example, `db2ese.lic` is a base license file for DB2 Enterprise Server Edition .

License keys are required for all DB2 database products (including DB2[®] Connect[™]) and for each optional database feature. The license key is found in the `/db2/license` directory of the Activation CD, which is supplied as a part of the product installation media. For example, `db2ese_u.lic` is a license key and can be found on the *DB2 Enterprise Server Edition for Linux, UNIX, and Windows - Authorized User Option Activation* CD. By default, license keys are not applied during the DB2 database product installation. However, the following products do not have an Activation CD, therefore their license is automatically applied during the installation process: DB2 Express-C and DB2 Connect Personal Edition. In addition, DB2 Personal Edition is also a special case. Although DB2 Personal Edition has an Activation CD, its license is also automatically applied during installation.

For a list of license files, refer to Table 3 on page 38.

In general, licenses for DB2 database products can be purchased either per processor (priced by processor value unit (PVU)) or by authorized user. DB2 Express Edition can be purchased per server. IBM Database Enterprise Developer Edition is licensed per developer. The DB2 Storage Optimization feature is an exception. Since it can only be purchased by PVU (and only if the underlying database system is also licensed by PVU).

If you purchased a DB2 database product as well as separately priced features, you will need to apply more than one license key. Each DB2 database product and DB2 feature has its own license key. All of the features must be acquired under the same charge metric as the underlying DB2 database product. For example, if you purchase DB2 Enterprise Server Edition with a per processor license, you would need to purchase the DB2 Performance Optimization Feature by processor as well.

If you downloaded a DB2 database product or feature from one of the following Web sites and you do not have an Activation CD, you can obtain license keys as follows:

- **Passport Advantage:** You can obtain an Activation CD image from the Passport Advantage Web site: <http://www.ibm.com/software/lotus/passportadvantage/>. When using Passport Advantage, you must download the Activation CD image for each product and feature separately.
- **PartnerWorld[®]:** Contact PartnerWorld for the appropriate license key. Refer to the PartnerWorld Web site: http://www.ibm.com/partnerworld/pwhome.nsf/weblook/index_pub.html
- **The DB2 support or fix central Web sites:** If you have not purchased a license key, contact an IBM Sales representative.

Once you have obtained the appropriate license keys, you should apply them before you use the DB2 database product. This is also referred to as registering the license key or adding a license. As a mechanism for you to keep track of, and differentiate, the DB2 database products and features you have installed on your system, it is recommended that you register the license key for your DB2 database products. You can find the DB2 database product license terms at: <http://www.ibm.com/software/sla>.

The management of licenses for DB2 database products or features is done through either:

- the db2licm license management tool command, or,
- the License Center within the Control Center.

Table 3. DB2 license files

License file name	DB2 database product or feature
db2aac.lic	DB2 Advanced Access Control feature
db2conpe.lic	DB2 Connect Personal Edition
db2consv.lic	DB2 Connect Server (Unlicensed base)
db2consv_as.lic	DB2 Connect Application Server Edition
db2consv_ee.lic	DB2 Connect Enterprise Edition
db2consv_is.lic	DB2 Connect Unlimited Edition for System i
db2consv_zs.lic	DB2 Connect Unlimited Edition for System z
db2dede.lic	IBM Database Enterprise Developer Edition
db2dpf.lic	DB2 Database Partitioning feature
db2ese.lic	DB2 Enterprise Server Edition (Unlicensed base)
db2ese_c.lic	DB2 Enterprise Server Edition (CPU option)
db2ese_u.lic	DB2 Enterprise Server Edition (Authorized User option)
db2exp.lic	DB2 Express Edition (Unlicensed base)
db2exp_c.lic	DB2 Express Edition (CPU option)
db2exp_s.lic	DB2 Express Edition (Server option)
db2exp_sftl.lic	DB2 Express Edition (Server option Fixed Term License)
db2exp_u.lic	DB2 Express Edition (Authorized User option)
db2exp_uftl.lic	DB2 Express Edition (Authorized User Option Fixed Term License)
db2expc_uw.lic	DB2 Express-C (Unwarranted)
db2geo.lic	DB2 Geodetic Data Management Feature
db2hrese.lic	Homogeneous Replication Feature for DB2 Enterprise Server Edition
db2haexp.lic	DB2 High Availability feature for DB2 Express Edition
db2pe.lic	DB2 Personal Edition
db2poese.lic	DB2 Performance Optimization Feature for DB2 Enterprise Server Edition

Table 3. DB2 license files (continued)

License file name	DB2 database product or feature
db2so.lic	DB2 Storage Optimization feature
db2wse.lic	DB2 Workgroup Server Edition (Unlicensed base)
db2wse_c.lic	DB2 Workgroup Server Edition (CPU option)
db2wse_u.lic	DB2 Workgroup Server Edition (Authorized User option)
bwdb2.lic	Base Warehouse Feature for DB2
ewdb2.lic	Enterprise Warehouse Feature for DB2
iwebe.lic	InfoSphere™ Warehouse Enterprise Base Edition
iwde.lic	InfoSphere Warehouse Developer Edition
iwdpb_c.lic	InfoSphere Warehouse Departmental Base Edition – CPU Option
iwdpb_u.lic	InfoSphere Warehouse Departmental Base Edition – Authorized User Option
iwdp_c.lic	InfoSphere Warehouse Departmental Edition – CPU Option
iwdp_u.lic	InfoSphere Warehouse Departmental Edition – Authorized User Option
iwee.lic	InfoSphere Warehouse Enterprise Edition
sam31.lic	IBM Tivoli System Automation for Multiplatforms (SA MP)

If you have license files that end in `_t.lic`, they are trial licenses.

Chapter 11. Registering a DB2 product or feature license key using the db2licm command

Use the db2licm command to apply the license entitlement certificate (also referred to as registering a license key).

To complete this task, you must have the appropriate license file (*.lic). Refer to Chapter 10, “DB2 license files,” on page 37.

On Windows operating systems, you must belong to the local Administrators or Power Users group to use the db2licm command with the **-a** command parameter.

- On Windows operating systems, register a DB2 license key by entering the following command:

```
db2instance_path\bin\db2licm -a filename
```

where *db2instance_path* is where the DB2 instance was created and *filename* is the full path name and file name for the license file that corresponds to the product or feature you have purchased.

- On Linux operating systems, register a DB2 license key by entering the following command:

```
INSTHOME/sql1lib/adm/db2licm -a filename
```

where *INSTHOME* represents the home directory of the instance owner and *filename* is the full path name and file name for the license file that corresponds to the product or feature you have purchased. The db2licm command can also be found in the path where the DB2 database product is installed. For example, /opt/ibm/db2/V9.7/adm on Linux operating systems, if you use the default installation directory.


Chapter 12. Registering a DB2 product or feature license key using the License Center

From the License Center, use the Add License window to add new licenses on Linux or Windows operating systems. This action is also referred to as applying license entitlement certificates or adding a license.

Important: The License Center has been deprecated in Version 9.7 and might be removed in a future release. For more information, see the “Control Center tools and DB2 administration server (DAS) have been deprecated” topic in the *What’s New for DB2 Version 9.7* book.

To complete this task, you must have the appropriate license file (*.lic). Refer to Chapter 10, “DB2 license files,” on page 37. On Linux operating systems, the instance owner must have read and execute privileges on the directory where the license files are located.

To register a DB2 license key:

1. Click  in the Control Center to open the License Center. Select the system for which you want to add a new license.
2. Select an instance.
3. The **Installed Products** field will display the name of the products that you have installed. Select a product.
4. Select **Add** from the **License** menu. The Add License dialog opens.
5. Select the license key (*.lic) that you want to add.
6. Click **OK** to add the license key.

The license information is refreshed immediately in the License Center.

Chapter 13. Checking DB2 license compliance

Each DB2 database product and feature has a license key associated with it. The license key should be registered before using the DB2 database product or feature. To verify license compliance, run the `db2licm` command and generate a compliance report.

Note: If you installed a DB2 database product trial image, the image includes access to all features available in the edition you are using.

1. Verify that you have registered the license keys for your DB2 database products.
 - a. Open the License Center or issue the command `db2licm -l`.
 - b. Examine the License Type information.
 - If you see License Type: "Developer", it means that your DB2 database product was obtained as part of Database Enterprise Developer Edition for Linux, UNIX®, and Windows. In this case, the IBM Database Enterprise Developer Edition license terms take precedence over the typical DB2 product license terms.
 - If you see License Type: "Restricted use", it means that your DB2 database product was obtained as part of another IBM product. In this case, the license terms of the bundling product take precedence over the typical DB2 product license terms.
 - If you see License Type: "License not registered", it means that only a base license key has been registered. You should register the appropriate full license key for the DB2 database product.
2. Verify that you have registered the license keys for your DB2 features.
 - a. Generate a compliance report using the `db2licm` command or the License Center or query the `ENV_FEATURE_INFO` administrative view.
 - To generate compliance report using the `db2licm` command, issue the command:

```
db2licm -g filename
```

where *filename* is the path and file name where output is to be stored.
 - To generate the compliance report from the License Center, select **License** → **Generate Compliance Report**.
 - To see the compliance information in the `ENV_FEATURE_INFO` administrative view, connect to a database and issue the following query:

```
SELECT * FROM SYSIBMADM.ENV_FEATURE_INFO
```
 - b. Analyze the compliance report. If you have not registered the license key for a used DB2 feature, the compliance report will list the feature as a "In Violation".
3. Resolve the compliance issues by registering the appropriate license keys or by removing the sources of the violation.

Chapter 14. Updating a Trial license

If you installed a DB2 product with a trial license and now want to update to a full license, you must update the product license key.

You cannot use this method to update from one DB2 product to another.

If a previously licensed copy of a DB2 server product does not already exist, a single server fix pack image can be used to install any of the DB2 database server products. In this case, the license installed is a trial license.

To update your DB2 license:

1. Get the license key. The license key is available from either:
 - the activation key that you downloaded from Passport Advantage, or
 - the Activation CD that you received in the physical media pack from IBM.
2. Register the license key using the License Center or the `db2licm` command.

Note: The trial license for DB2 Enterprise Server Edition on 32-bit Linux cannot be updated to a production license.

Part 5. Appendixes

Appendix A. Installing DB2 products using response files

Response file install basics

Unlike the DB2 Setup wizard, a DB2 response file installation lets you install DB2 products without any user interaction.

A *response file* is an English-only text file that contains setup and configuration information. A response file specifies configuration and setup parameters and the products and components to install.

This method is useful not only for large-scale deployments of DB2 products, but also for embedding the DB2 installation process transparently inside your customized installation and configuration procedure.

You can create a response file by any of the following methods:

- Modifying one of the sample response files that are provided. Sample response files are located in the DB2 product DVD under the directory:
`db2/platform/samples`

where *platform* refers to the appropriate hardware platform.

- Using the DB2 Setup wizard to save the setup and configuration data according to the input you provided. If you choose the option to create a response file in the DB2 Setup wizard, the response files (one for the server, and one for the partition, if you are setting up a multi-partitioned environment) will be saved by default at this location. By default, response files are save to: My Documents on Windows operating systems, and /tmp on Linux operating systems.
- Using the response file generator to create a response file from an existing installed and configured DB2 product.

A response file installation can also be referred to as a silent installation or an unattended installation.

Response file considerations

You should understand the following considerations before proceeding with a response file installation:

- Although response files created in Version 8 and response files created in Version 9 have similar formats, there are version limitations as to where response files can be used. For example, any response file generated in DB2 Version 9 can only be used to install a DB2 Version 9 product (for example Version 9.5 or higher); the response file cannot be used to install DB2 Version 8. The opposite is also true, where response files generated in DB2 Version 8 cannot be used to install DB2 Version 9. This is primarily caused by mandatory keywords that are new in Version 9.
- On Linux platforms, a response file created for a root installation might not be usable for a non-root installation. Some response file keywords are valid for root installation only. For details, see the response file keywords.
- If you are using the DB2 Setup wizard:
 - You can save your settings in a response file during the installation in the **Select the installation action** panel of the DB2 Setup wizard.

- You are creating a response file based on just the installation you are performing. This method is recommended if you have either a fairly simple configuration or if you want to create a response file that you plan to later customize.
- A response file is only generated if you allow the installation process to complete, and it completes successfully. If you cancel the installation, or if the installation fails, the response file is not created.
- Response files created with this method cannot be used in the db2setup command **-r** parameter without modification. A response file created using the setup wizard, and used in the db2setup command must be modified to meet the following conditions:
 - must contain the keyword FILE
 - must not contain the keywords: PROD, LIC_AGREEMENT, or INSTALL_TYPE.
- You can use a response file to install an identical configuration across every workstation on your network or to install multiple configurations of a DB2 product. You can then distribute this file to every workstation where you want this product to be installed.
- If you use the response file generator, you are creating the response file based on an existing installation. This method is recommended when you have a more complex configuration, one that you manually configured. If you are using the response file generated by the response file generator, you might need to input user names and passwords.

Creating a response file using the DB2 Setup wizard

You can create a response file using the DB2 Setup wizard based on the installation you are performing. This response file will be generated based on your DB2 Setup wizard selections. You can then use the response file to perform an unattended installation using the same settings.

To create a response file using the DB2 Setup wizard:

1. From the DB2 Setup launchpad, select **Install New** for the product you want to install, or, select **Work with Existing** to select the DB2 copy you want to work with.
2. Select the product or DB2 copy you want to install and click **Next** to start the DB2 Setup wizard.
3. Click **Next** on the Welcome page and accept the license agreement terms.
4. In the **Select the installation type** window, select from Typical, Compact or Custom installation.
5. In the **Select the installation, response file creation, or both** window, select either the **Save my installation setting in a response file** option or the **Install product on this computer and save my settings in a response file** option. Then, in the **Response file name** field type the path where you want the DB2 Setup wizard to place the generated response file. By default, the response file name is *Prod_<abbrev>.rsp*, and is saved in *directory1*.

Note:

- a. If you select the **Save my installation setting in a response file** option, no software is installed on the computer, only the response file is created with the name specified in the **Response file name** field.
- b. If you select a partitioned database installation, two response files will be generated, one for the instance-owning computer and one for the

participating computers. The participating computer response file name is generated based on the name of the instance-owning computer. By default, the partition response file name is *Prod_<abbrev>_addpart.rsp*, and is saved in *directory2*.

6. Proceed through the rest of the installation panels selecting the options you want.
7. In the **Start copying files and create response file** window, review the settings you selected.
8. To install the product, click **Finish**.
9. When the installation has completed, the DB2 Setup wizard will have placed the generated response file in the path you specified. When the DB2 Setup wizard is used to create the response file, a special keyword ENCRYPTED is added to the response file. For example:

```
DAS_PASSWORD = 07774020164457377565346654170244883126985535505156353  
ENCRYPTED = DAS_PASSWORD
```

The keyword ENCRYPTED indicates the actual value of the password is not the sequence of numbers shown.

Appendix B. Checking for DB2 product updates

Checking for DB2 updates

Check for product updates to ensure that you are aware of the available product updates and enhancements for DB2 products.

About this task

During DB2 product installation, the update service is enabled by default. The update service allows you to stay informed of product updates such as:

- Messages about releases and updates of the DB2 products.
- Availability of technical materials such as tutorials, Web cast, and white papers.
- IBM Marketing activities pertinent to your area of interest.

You can access product updates in any of the following ways:

- Using the command line
- Using First Steps
- On Linux operating systems, using the Main Menu.
- On Windows operating systems, if the DB2 product was installed without elevated privileges, the update service is disabled.

Restrictions

- This update service requires an Internet connection.
- On Windows operating systems, using the shortcuts in the Start menu.

Procedure

Access DB2 product updates and enhancements using one of the following ways:

- Using the command line, enter:
`db2updserv`
- Using First Steps:
 - You can start First Steps by typing the **db2fs** command.
 - On Windows operating systems, click **Start** and, select **Programs -> IBM DB2 -> [DB2 Copy Name] -> Set-up Tools -> First Steps**

Click the **Start Check for Product Updates** button.

- On Windows operating systems, using the shortcuts in the Start menu, click **Start** and, select **Programs -> IBM DB2 -> [DB2 Copy Name] -> Information -> Check for DB2 Updates**.
- On Linux operating systems, click **Main Menu** and, select **IBM DB2 -> Check for DB2 Updates**

Results

With this update service you can view a list of available DB2 product updates, and learn details about DB2 product updates.

Appendix C. Applying DB2 fix packs

Applying fix packs

It is recommended that you keep your DB2 database environment running at the latest fix pack level to ensure problem-free operation. To install a fix pack successfully, perform all of the necessary preinstallation and post-installation tasks.

About this task

A DB2 fix pack contains updates and fixes for problems (Authorized Program Analysis Reports, or "APARs") found during testing at IBM, as well as fixes for problems reported by customers. The APARLIST.TXT file describes the fixes contained in each fix pack and it is available for download at <ftp://ftp.software.ibm.com/ps/products/db2/fixes/english-us/aparlist/>.

Fix packs are cumulative. This means that the latest fix pack for any given version of DB2 contains all of the updates from previous fix packs for the same version of DB2.

The fix pack images available are:

- A single server image.

The single server image contains the new and updated code required for all DB2 database server products and the IBM Data Server Client. If more than one DB2 database server product is installed in a single location, the DB2 database server fix pack applies maintenance code updates to all the installed DB2 database server products. The Data Server Client fix pack is contained within the one DB2 database server fix pack (namely the fix pack that can service any one of the following database server products: DB2 Enterprise Server Edition, DB2 Workgroup Server Edition, DB2 Express Edition, DB2 Personal Edition, DB2 Connect Enterprise Edition, DB2 Connect Application Server Edition, DB2 Connect Unlimited Edition for zSeries®, and DB2 Connect Unlimited Edition for i5/OS®). You can use the DB2 database server fix pack to upgrade a Data Server Client.

A single server image can also be used to install any of the DB2 database server products, at a particular fix pack level, with a DB2 try and buy license by default.

- A fix pack for each of the other DB2 database products.

Use this fix pack only if you only have non-server database products or add-on products installed. For example, IBM Data Server Runtime Client or DB2 Query Patroller.

Do not use this type of fix pack if the installed DB2 database products are only DB2 database server products or a Data Server Client. Instead, use the single server image fix pack.

For Windows platforms, if you have more than one DB2 database product (which includes at least one product that is not a Data Server Client or a DB2 database server) installed in a single DB2 copy, you must download and uncompress all of the corresponding product-specific fix packs before starting the fix pack installation process.

- A universal fix pack.

The universal fix pack services installations where more than one DB2 database product has been installed.

The universal fix pack is not needed if the installed DB2 database products are only DB2 database server products or a Data Server Client. In this case, the single server image fix pack should be used.

On Linux operating systems, if national languages have been installed, you also require a separate national language fix pack. The national language fix pack can not be installed alone. A universal or product-specific fix pack must be applied at the same time and they must both be at the same fix pack level. For example, if you are applying a universal fix pack to non-English DB2 database products on Linux, you must apply both the universal fix pack and the national language fix pack to update the DB2 database products.

Restrictions

- A DB2 Version 9.7 fix pack can only be applied to DB2 Version 9.7 general availability (GA) or DB2 Version 9.7 fix pack copies.
- All DB2 instances, DAS, and applications related to the DB2 copy being updated must be stopped before installing a fix pack.
- In a partitioned database environment, prior to installing the fix pack, you must stop the database manager on all database partition servers. You must install the fix pack on the instance-owning database partition server and all other database partition servers. All computers participating in the instance must be updated to the same fix pack level.
- On Linux operating systems:
 - If you have DB2 database products on a Network File System (NFS), you must ensure the following are stopped completely before installing the fix pack: all instances, the DB2 administration server (DAS), interprocess communications (IPC), and applications on other machines using the same NFS mounted installation.
 - If the system commands `fuser` or `lsof` are not available, the `installFixPack` command cannot detect loaded DB2 files. You must ensure no DB2 files are loaded and provide an override option to install the fix pack. On Linux, either the `fuser` command or `lsof` command is required.For details on the override option, see the `installFixPack` command.
- On client applications, after a fix pack has been applied, to perform autobind of applications, the user must have bind authority.
- Installation of a DB2 fix pack will not service IBM Data Studio Administration Console or IBM Data Studio.

Procedure

To install a fix pack:

1. Check fix pack prerequisites.
2. Perform the necessary tasks prior to installing a fix pack.
3. Choose a fix pack installation method and install the fix pack.
4. Perform the necessary tasks after installing the fix pack.
5. Apply the appropriate DB2 database product license.

If a previously licensed copy of a DB2 server product does not already exist on the machine, a single server fix pack image can be used to install any of the DB2 database server products. In this case, the DB2 database product installed

is treated as a try and buy license, and will stop working after a 90 day trial period unless you upgrade the try and buy license.

What to do next

Check the log file for any post-installation steps, or error messages and recommended actions.

For non-root installations on Linux, root-based features (such as High Availability and operating system-based authentication) can be enabled using the `db2rfe` command. If root-based features were enabled after installing your DB2 database product, you must rerun the `db2rfe` command each time a fix pack is applied in order to re-enable those features. For details, see the non-root related links below.

If you have multiple DB2 copies on the same system, those copies can be at different version and fix pack levels. If you want to apply a fix pack to one or more DB2 copies, you must install the fix pack on those DB2 copies one by one.

Appendix D. Uninstalling your DB2 product

Uninstalling your DB2 product (Windows)

This task provides steps for completely removing your DB2 product from your Windows operating system. Only perform this task if you no longer require your existing DB2 instances and databases.

If you are uninstalling the default DB2 copy, and you have other DB2 copies on your system, use the `db2swtch` command to choose a new default copy before you proceed with the uninstallation. Also, if your DB2 Administration Server (DAS) is running under the copy being removed, move your DAS to a copy that is not being removed. Otherwise, re-create the DAS using the `db2admin create` command after the uninstall, and you reconfigure the DAS for some function to work.

To remove your DB2 product from Windows:

1. (Optional) Drop all databases using the Control Center or drop database command. Be sure that you no longer need these databases. If you drop your databases, all of your data will be gone.
2. Stop all DB2 processes and services. This can be done through the Windows Services panel or by issuing the `db2stop` command. If DB2 services and processes are not stopped before attempting to remove your DB2 product, you will receive a warning containing a list of processes and services that are holding DB2 DLLs in memory. If you will use Add/Remove Programs to remove your DB2 product, this step is optional.
3. You have two options for removing your DB2 product:

Add/Remove Programs

Accessible through the Windows Control Panel, use the Add/Remove Programs window to remove your DB2 product. Refer to your operating system's help for more information about removing software products from your Windows operating system.

db2unins command

You can run the `db2unins` command from the `DB2DIR\bin` directory to remove your DB2 products, features, or languages. Using this command, you can uninstall multiple DB2 products at the same time using the `/p` parameter. You can use a response file to uninstall DB2 products, features, or languages using `/u` parameter. For more information, see the `db2unins` command topic.

Unfortunately, your DB2 product cannot always be removed by using the Control Panel - Add/Remove Programs facility or using the `db2unins /p` command or the `db2unins /u` command. The following uninstallation option must ONLY be attempted if the previous method fails.

To forcefully remove all DB2 copies from your Windows system, run the `db2unins /f` command. This command will perform a brute force uninstallation of ALL DB2 copies on the system. Everything except user data, such as DB2 databases, will be forcefully deleted. Before running this command with the `/f` parameter, see the `db2unins` command for details.

Uninstalling your DB2 product (Linux)

This task provides steps for removing a DB2 product from your Linux operating system.

This task is not required to install a new version of a DB2 product. Each version of a DB2 product on Linux has a different installation path and can therefore coexist on the same computer.

Note: This task applies to DB2 products that were installed with root authority. A separate topic explains how to uninstall DB2 products that were installed as a non-root user.

To remove your DB2 product:

1. Optional: Drop all databases. You can drop databases using the Control Center or the drop database command. Database files remain intact on your file systems when you drop an instance without dropping databases first.
2. Stop the DB2 Administration Server. Refer to the *Installing DB2 Servers* manual.
3. Remove the DB2 Administration Server, or run the `dasupdt` command to update the DB2 Administration Server to another installation path. To remove the DB2 Administration Server, refer to the *Installing DB2 Servers* manual.
4. Stop all DB2 instances. Refer to the *Installing DB2 Servers* manual.
5. Remove the DB2 instances, or run the `db2iupdt` command to update the instances another installation path. To remove the DB2 instances, refer to the *Installing DB2 Servers* manual.
6. Remove the DB2 products. Refer to the *Installing DB2 Servers* manual.

Stopping the DB2 administration server (Linux)

You must stop the DB2 administration server (DAS) before you remove your DB2 product.

When uninstalling a DB2 product, you must drop the DAS if you are removing your last DB2 copy. If you have other DB2 copies, it is recommended that you run the `dasupdt` command to associate the DAS with another DB2 copy. If you decide to drop the DAS, you must stop the DAS first.

Note: This task does not apply to non-root installations of DB2 products.

To stop the DB2 administration server:

1. Log in as the DB2 administration server owner.
2. Stop the DB2 administration server by entering the `db2admin stop` command.

Removing the DB2 administration server (Linux)

If you are removing your last DB2 copy, you must remove the DB2 administration server (DAS) before you remove your DB2 product.

If you removing a DB2 copy, but have other DB2 copies, run the `dasupdt` command from the DB2 copy that you want to have the DB2 DAS associated with.

Note: This task applies only to DB2 products that were installed with root authority.

To remove the DAS:

1. Log in as a user with root authority.
2. Stop the DAS:
`db2admin stop`
3. Remove the DAS by entering the following command:
`DB2DIR/instance/dasdrop`

where *DB2DIR* is the location you specified during the DB2 installation. The default installation path for Linux is */opt/ibm/db2/V9.7*.

Stopping root instances (Linux)

You must stop all DB2 instances associated with the DB2 copy you are uninstalling. Instances associated with other DB2 copies might not be affected by uninstalling the current copy.

To stop a DB2 instance:

1. Log in as a user with root authority.
2. Obtain a list of the names of all DB2 instances associated with your current DB2 copy by entering the following command:
`DB2DIR/bin/db2ilist`

where *DB2DIR* is the location you specified during the DB2 Version 9 installation. The default installation path for Linux is */opt/ibm/db2/V9.7*.

3. Run the script if it is not included in `.profile`.

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

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

4. It is recommended that you save the following files:
 - The database manager configuration file, `$HOME/sqllib/db2system`
 - The node configuration file, `$HOME/sqllib/db2nodes.cfg`
 - User defined functions or fenced stored procedure applications in `$HOME/sqllib/function`
5. Stop the DB2 database manager by entering the `db2stop force` command.
6. Confirm that the instance is stopped by entering the `db2 terminate` command.
7. Repeat these steps for each instance.

Removing DB2 instances (Linux)

This task explains how to remove some or all of the root instances on your system.

Note: This task does not apply to non-root installations. To remove a non-root instance, you must uninstall your DB2 product.

If you are removing your last DB2 Version 9 copy, you can remove the DB2 instances before you remove your DB2 product. If you removing a DB2 Version 9 copy, but have other DB2 Version 9 copies, you can run the `db2iupdt` command from the DB2 copy that you would like to have the DB2 instances associated with.

Once an instance is removed, you can use the DB2 databases owned by the instance if you catalog them under another instance of the same release. Even though you remove the instance, the databases are still intact and can be reused unless the database files are expressly deleted.

Remove DB2 instances only if you are not planning to use your DB2 products, or if you do not want to upgrade existing instances to a later version of the DB2 product. Upgrading requires that both the new and old DB2 versions are still installed. You cannot upgrade an instance if the DB2 copy it is associated with has been removed.

To remove an instance:

1. Log in as a user with root authority.
2. Optional: If you are certain you no longer need the data in the associated databases, you can remove the database files from the systems or drop the databases before dropping the instance.
3. Remove the instance by entering the following command:

```
DB2DIR/instance/db2idrop InstName
```

where *DB2DIR* is the location you specified during the DB2 installation. The default installation path for Linux is */opt/ibm/db2/V9.7*.

The *db2idrop* command removes the instance entry from the list of instances and removes the *INSTHOME*/*sqllib* directory, where *INSTHOME* is the home directory of the instance and where *InstName* is the login name of the instance. If you are storing any files in */sqllib* directory, these files will be removed by this action. If you still need these files, you must make a copy of them before dropping the instance.

4. Optional: As a user with root authority, remove the instance owner's user ID and group (if used only for that instance). Do not remove these if you are planning to re-create the instance.

Note: This step is optional since the instance owner and the instance owner group might be used for other purposes.

Removing DB2 products using the `db2_deinstall` or `doce_deinstall` command (Linux)

This task provides steps for removing DB2 products or DB2 components using the `db2_deinstall` command. The `db2_deinstall` command removes all DB2 products from your system. The `doce_deinstall` command removes the DB2 Information Center that is in the same install path as the `doce_deinstall` tool. This command is only available on the Linux operating systems.

Before you remove DB2 products from your system, ensure that you have performed all steps outlined in "Uninstalling your DB2 product (Linux)" on page 62

Note:

- This task applies to DB2 products that were installed with root authority.
- You cannot remove DB2 products using a native operating system utility, such as `rpm` or `SMIT`.
- The `doce_deinstall` command is available only on Linux x32 and x64.

To remove ALL DB2 products from a specific path:

1. Log in as the root user.
2. Access the path where the DB2 products are located.
3. Run one of the following commands:

- To remove a feature from an installed DB2 product in the current location, run the `db2_deinstall -F` command from the `DB2DIR/install` directory.
- To remove all installed DB2 products in the current location, run the `db2_deinstall -a` command from the `DB2DIR/install` directory.
- To remove a DB2 product using a response file, run the `db2_deinstall -r <response_file>` command from the `DB2DIR/install` directory. You can use a sample response file to uninstall the product. For example, `doce_deinstall -r db2un.rsp`
- To remove the DB2 Information Center in the current location, run the `doce_deinstall -a` from the `DB2DIR/install` directory.
- To remove the DB2 Information Center using a response file, run the `doce_deinstall -r <response_file>` from the `DB2DIR/install` directory. You can use the sample response file to uninstall the Information Center. For example, `doce_deinstall -r doceun.rsp`

where `DB2DIR` is the location that you specified when you installed your DB2 product.

Appendix E. Overview of the DB2 technical information

DB2 technical information is available through the following tools and methods:

- DB2 Information Center
 - Topics (Task, concept and reference topics)
 - Help for DB2 tools
 - Sample programs
 - Tutorials
- DB2 books
 - PDF files (downloadable)
 - PDF files (from the DB2 PDF DVD)
 - printed books
- Command line help
 - Command help
 - Message help

Note: The DB2 Information Center topics are updated more frequently than either the PDF or the hardcopy books. To get the most current information, install the documentation updates as they become available, or refer to the DB2 Information Center at ibm.com.

You can access additional DB2 technical information such as technotes, white papers, and IBM Redbooks® publications online at ibm.com. Access the DB2 Information Management software library site at <http://www.ibm.com/software/data/sw-library/>.

Documentation feedback

We value your feedback on the DB2 documentation. If you have suggestions for how to improve the DB2 documentation, send an e-mail to db2docs@ca.ibm.com. The DB2 documentation team reads all of your feedback, but cannot respond to you directly. Provide specific examples wherever possible so that we can better understand your concerns. If you are providing feedback on a specific topic or help file, include the topic title and URL.

Do not use this e-mail address to contact DB2 Customer Support. If you have a DB2 technical issue that the documentation does not resolve, contact your local IBM service center for assistance.

DB2 technical library in hardcopy or PDF format

The following tables describe the DB2 library available from the IBM Publications Center at www.ibm.com/shop/publications/order. English and translated DB2 Version 9.7 manuals in PDF format can be downloaded from www.ibm.com/support/docview.wss?rs=71&uid=swg2700947.

Although the tables identify books available in print, the books might not be available in your country or region.

The form number increases each time a manual is updated. Ensure that you are reading the most recent version of the manuals, as listed below.

Note: The *DB2 Information Center* is updated more frequently than either the PDF or the hard-copy books.

Table 4. DB2 technical information

Name	Form Number	Available in print	Last updated
<i>Administrative API Reference</i>	SC27-2435-00	Yes	August, 2009
<i>Administrative Routines and Views</i>	SC27-2436-00	No	August, 2009
<i>Call Level Interface Guide and Reference, Volume 1</i>	SC27-2437-00	Yes	August, 2009
<i>Call Level Interface Guide and Reference, Volume 2</i>	SC27-2438-00	Yes	August, 2009
<i>Command Reference</i>	SC27-2439-00	Yes	August, 2009
<i>Data Movement Utilities Guide and Reference</i>	SC27-2440-00	Yes	August, 2009
<i>Data Recovery and High Availability Guide and Reference</i>	SC27-2441-00	Yes	August, 2009
<i>Database Administration Concepts and Configuration Reference</i>	SC27-2442-00	Yes	August, 2009
<i>Database Monitoring Guide and Reference</i>	SC27-2458-00	Yes	August, 2009
<i>Database Security Guide</i>	SC27-2443-00	Yes	August, 2009
<i>DB2 Text Search Guide</i>	SC27-2459-00	Yes	August, 2009
<i>Developing ADO.NET and OLE DB Applications</i>	SC27-2444-00	Yes	August, 2009
<i>Developing Embedded SQL Applications</i>	SC27-2445-00	Yes	August, 2009
<i>Developing Java Applications</i>	SC27-2446-00	Yes	August, 2009
<i>Developing Perl, PHP, Python, and Ruby on Rails Applications</i>	SC27-2447-00	No	August, 2009
<i>Developing User-defined Routines (SQL and External)</i>	SC27-2448-00	Yes	August, 2009
<i>Getting Started with Database Application Development</i>	GI11-9410-00	Yes	August, 2009
<i>Getting Started with DB2 Installation and Administration on Linux and Windows</i>	GI11-9411-00	Yes	August, 2009

Table 4. DB2 technical information (continued)

Name	Form Number	Available in print	Last updated
<i>Globalization Guide</i>	SC27-2449-00	Yes	August, 2009
<i>Installing DB2 Servers</i>	GC27-2455-00	Yes	August, 2009
<i>Installing IBM Data Server Clients</i>	GC27-2454-00	No	August, 2009
<i>Message Reference Volume 1</i>	SC27-2450-00	No	August, 2009
<i>Message Reference Volume 2</i>	SC27-2451-00	No	August, 2009
<i>Net Search Extender Administration and User's Guide</i>	SC27-2469-00	No	August, 2009
<i>Partitioning and Clustering Guide</i>	SC27-2453-00	Yes	August, 2009
<i>pureXML Guide</i>	SC27-2465-00	Yes	August, 2009
<i>Query Patroller Administration and User's Guide</i>	SC27-2467-00	No	August, 2009
<i>Spatial Extender and Geodetic Data Management Feature User's Guide and Reference</i>	SC27-2468-00	No	August, 2009
<i>SQL Procedural Languages: Application Enablement and Support</i>	SC27-2470-00	Yes	August, 2009
<i>SQL Reference, Volume 1</i>	SC27-2456-00	Yes	August, 2009
<i>SQL Reference, Volume 2</i>	SC27-2457-00	Yes	August, 2009
<i>Troubleshooting and Tuning Database Performance</i>	SC27-2461-00	Yes	August, 2009
<i>Upgrading to DB2 Version 9.7</i>	SC27-2452-00	Yes	August, 2009
<i>Visual Explain Tutorial</i>	SC27-2462-00	No	August, 2009
<i>What's New for DB2 Version 9.7</i>	SC27-2463-00	Yes	August, 2009
<i>Workload Manager Guide and Reference</i>	SC27-2464-00	Yes	August, 2009
<i>XQuery Reference</i>	SC27-2466-00	No	August, 2009

Table 5. DB2 Connect-specific technical information

Name	Form Number	Available in print	Last updated
<i>Installing and Configuring DB2 Connect Personal Edition</i>	SC27-2432-00	Yes	August, 2009
<i>Installing and Configuring DB2 Connect Servers</i>	SC27-2433-00	Yes	August, 2009

Table 5. DB2 Connect-specific technical information (continued)

Name	Form Number	Available in print	Last updated
DB2 Connect User's Guide	SC27-2434-00	Yes	August, 2009

Table 6. Information Integration technical information

Name	Form Number	Available in print	Last updated
Information Integration: Administration Guide for Federated Systems	SC19-1020-02	Yes	August, 2009
Information Integration: ASNCLP Program Reference for Replication and Event Publishing	SC19-1018-04	Yes	August, 2009
Information Integration: Configuration Guide for Federated Data Sources	SC19-1034-02	No	August, 2009
Information Integration: SQL Replication Guide and Reference	SC19-1030-02	Yes	August, 2009
Information Integration: Introduction to Replication and Event Publishing	GC19-1028-02	Yes	August, 2009

Ordering printed DB2 books

If you require printed DB2 books, you can buy them online in many but not all countries or regions. You can always order printed DB2 books from your local IBM representative. Keep in mind that some softcopy books on the *DB2 PDF Documentation DVD* are unavailable in print. For example, neither volume of the *DB2 Message Reference* is available as a printed book.

Printed versions of many of the DB2 books available on the *DB2 PDF Documentation DVD* can be ordered for a fee from IBM. Depending on where you are placing your order from, you may be able to order books online, from the IBM Publications Center. If online ordering is not available in your country or region, you can always order printed DB2 books from your local IBM representative. Note that not all books on the *DB2 PDF Documentation DVD* are available in print.

Note: The most up-to-date and complete DB2 documentation is maintained in the DB2 Information Center at <http://publib.boulder.ibm.com/infocenter/db2luw/v9r7>.

To order printed DB2 books:

- To find out whether you can order printed DB2 books online in your country or region, check the IBM Publications Center at <http://www.ibm.com/shop/publications/order>. You must select a country, region, or language to access publication ordering information and then follow the ordering instructions for your location.
- To order printed DB2 books from your local IBM representative:

1. Locate the contact information for your local representative from one of the following Web sites:
 - The IBM directory of world wide contacts at www.ibm.com/planetwide
 - The IBM Publications Web site at <http://www.ibm.com/shop/publications/order>. You will need to select your country, region, or language to the access appropriate publications home page for your location. From this page, follow the "About this site" link.
2. When you call, specify that you want to order a DB2 publication.
3. Provide your representative with the titles and form numbers of the books that you want to order. For titles and form numbers, see "DB2 technical library in hardcopy or PDF format" on page 67.

Displaying SQL state help from the command line processor

DB2 products return an SQLSTATE value for conditions that can be the result of an SQL statement. SQLSTATE help explains the meanings of SQL states and SQL state class codes.

To start SQL state help, open the command line processor and enter:

```
? sqlstate or ? class code
```

where *sqlstate* represents a valid five-digit SQL state and *class code* represents the first two digits of the SQL state.

For example, ? 08003 displays help for the 08003 SQL state, and ? 08 displays help for the 08 class code.

Accessing different versions of the DB2 Information Center

For DB2 Version 9.7 topics, the DB2 Information Center URL is <http://publib.boulder.ibm.com/infocenter/db2luw/v9r7/>

For DB2 Version 9.5 topics, the DB2 Information Center URL is <http://publib.boulder.ibm.com/infocenter/db2luw/v9r5/>

For DB2 Version 9 topics, the DB2 Information Center URL is <http://publib.boulder.ibm.com/infocenter/db2luw/v9/>

For DB2 Version 8 topics, go to the Version 8 Information Center URL at: <http://publib.boulder.ibm.com/infocenter/db2luw/v8/>

Displaying topics in your preferred language in the DB2 Information Center

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

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

Note: Adding a language does not guarantee that the computer has the fonts required to display the topics in the preferred language.

- To move a language to the top of the list, select the language and click the **Move Up** button until the language is first in the list of languages.
- 3. Clear the browser cache and then refresh the page to display the DB2 Information Center in your preferred language.
- To display topics in your preferred language in a Firefox or Mozilla browser:
 1. Select the button in the **Languages** section of the **Tools** —> **Options** —> **Advanced** dialog. The Languages panel is displayed in the Preferences window.
 2. Ensure your preferred language is specified as the first entry in the list of languages.
 - To add a new language to the list, click the **Add...** button to select a language from the Add Languages window.
 - To move a language to the top of the list, select the language and click the **Move Up** button until the language is first in the list of languages.
 3. Clear the browser cache and then refresh the page to display the DB2 Information Center in your preferred language.

On some browser and operating system combinations, you must also change the regional settings of your operating system to the locale and language of your choice.

Updating the DB2 Information Center installed on your computer or intranet server

A locally installed DB2 Information Center must be updated periodically.

Before you begin

A DB2 Version 9.7 Information Center must already be installed. For details, see the “Installing the DB2 Information Center using the DB2 Setup wizard” topic in *Installing DB2 Servers*. All prerequisites and restrictions that applied to installing the Information Center also apply to updating the Information Center.

About this task

An existing DB2 Information Center can be updated automatically or manually:

- Automatic updates - updates existing Information Center features and languages. An additional benefit of automatic updates is that the Information Center is unavailable for a minimal period of time during the update. In addition, automatic updates can be set to run as part of other batch jobs that run periodically.
- Manual updates - should be used when you want to add features or languages during the update process. For example, a local Information Center was originally installed with both English and French languages, and now you want to also install the German language; a manual update will install German, as well as, update the existing Information Center features and languages. However, a manual update requires you to manually stop, update, and restart the Information Center. The Information Center is unavailable during the entire update process.

Procedure

This topic details the process for automatic updates. For manual update instructions, see the “Manually updating the DB2 Information Center installed on your computer or intranet server” topic.

To automatically update the DB2 Information Center installed on your computer or intranet server:

1. On Linux operating systems,
 - a. Navigate to the path where the Information Center is installed. By default, the DB2 Information Center is installed in the /opt/ibm/db2ic/V9.7 directory.
 - b. Navigate from the installation directory to the doc/bin directory.
 - c. Run the ic-update script:

```
ic-update
```
2. On Windows operating systems,
 - a. Open a command window.
 - b. Navigate to the path where the Information Center is installed. By default, the DB2 Information Center is installed in the <Program Files>\IBM\DB2 Information Center\Version 9.7 directory, where <Program Files> represents the location of the Program Files directory.
 - c. Navigate from the installation directory to the doc\bin directory.
 - d. Run the ic-update.bat file:

```
ic-update.bat
```

Results

The DB2 Information Center restarts automatically. If updates were available, the Information Center displays the new and updated topics. If Information Center updates were not available, a message is added to the log. The log file is located in doc\eclipse\configuration directory. The log file name is a randomly generated number. For example, 1239053440785.log.

Manually updating the DB2 Information Center installed on your computer or intranet server

If you have installed the DB2 Information Center locally, you can obtain and install documentation updates from IBM.

Updating your locally-installed DB2 Information Center manually requires that you:

1. Stop the DB2 Information Center on your computer, and restart the Information Center in stand-alone mode. Running the Information Center in stand-alone mode prevents other users on your network from accessing the Information Center, and allows you to apply updates. The Workstation version of the DB2 Information Center always runs in stand-alone mode. .
2. Use the Update feature to see what updates are available. If there are updates that you must install, you can use the Update feature to obtain and install them

Note: If your environment requires installing the DB2 Information Center updates on a machine that is not connected to the internet, mirror the update site to a local file system using a machine that is connected to the internet and has the DB2 Information Center installed. If many users on your network will be installing the documentation updates, you can reduce the time required for

individuals to perform the updates by also mirroring the update site locally and creating a proxy for the update site.

If update packages are available, use the Update feature to get the packages. However, the Update feature is only available in stand-alone mode.

3. Stop the stand-alone Information Center, and restart the DB2 Information Center on your computer.

Note: On Windows 2008, Windows Vista (and higher), the commands listed later in this section must be run as an administrator. To open a command prompt or graphical tool with full administrator privileges, right-click the shortcut and then select **Run as administrator**.

To update the DB2 Information Center installed on your computer or intranet server:

1. Stop the DB2 Information Center.
 - On Windows, click **Start** → **Control Panel** → **Administrative Tools** → **Services**. Then right-click **DB2 Information Center** service and select **Stop**.
 - On Linux, enter the following command:
`/etc/init.d/db2icdv97 stop`

2. Start the Information Center in stand-alone mode.

- On Windows:
 - a. Open a command window.
 - b. Navigate to the path where the Information Center is installed. By default, the DB2 Information Center is installed in the <Program Files>\IBM\DB2 Information Center\Version 9.7 directory, where <Program Files> represents the location of the Program Files directory.
 - c. Navigate from the installation directory to the doc\bin directory.
 - d. Run the help_start.bat file:
`help_start.bat`
- On Linux:
 - a. Navigate to the path where the Information Center is installed. By default, the DB2 Information Center is installed in the /opt/ibm/db2ic/V9.7 directory.
 - b. Navigate from the installation directory to the doc/bin directory.
 - c. Run the help_start script:
`help_start`

The systems default Web browser opens to display the stand-alone Information Center.

3. Click the **Update** button (🔍). (JavaScript™ must be enabled in your browser.) On the right panel of the Information Center, click **Find Updates**. A list of updates for existing documentation displays.
4. To initiate the installation process, check the selections you want to install, then click **Install Updates**.
5. After the installation process has completed, click **Finish**.
6. Stop the stand-alone Information Center:
 - On Windows, navigate to the installation directory's doc\bin directory, and run the help_end.bat file:
`help_end.bat`

Note: The help_end batch file contains the commands required to safely stop the processes that were started with the help_start batch file. Do not use Ctrl-C or any other method to stop help_start.bat.

- On Linux, navigate to the installation directory's doc/bin directory, and run the help_end script:
help_end

Note: The help_end script contains the commands required to safely stop the processes that were started with the help_start script. Do not use any other method to stop the help_start script.

7. Restart the DB2 Information Center.

- On Windows, click **Start** → **Control Panel** → **Administrative Tools** → **Services**. Then right-click **DB2 Information Center** service and select **Start**.
- On Linux, enter the following command:
/etc/init.d/db2icdv97 start

The updated DB2 Information Center displays the new and updated topics.

DB2 tutorials

The DB2 tutorials help you learn about various aspects of DB2 products. Lessons provide step-by-step instructions.

Before you begin

You can view the XHTML version of the tutorial from the Information Center at <http://publib.boulder.ibm.com/infocenter/db2help/>.

Some lessons use sample data or code. See the tutorial for a description of any prerequisites for its specific tasks.

DB2 tutorials

To view the tutorial, click the title.

“pureXML®” in *pureXML Guide*

Set up a DB2 database to store XML data and to perform basic operations with the native XML data store.

“Visual Explain” in *Visual Explain Tutorial*

Analyze, optimize, and tune SQL statements for better performance using Visual Explain.

DB2 troubleshooting information

A wide variety of troubleshooting and problem determination information is available to assist you in using DB2 database products.

DB2 documentation

Troubleshooting information can be found in the *DB2 Troubleshooting Guide* or the Database fundamentals section of the *DB2 Information Center*. There you will find information about how to isolate and identify problems using DB2 diagnostic tools and utilities, solutions to some of the most common problems, and other advice on how to solve problems you might encounter with your DB2 database products.

DB2 Technical Support Web site

Refer to the DB2 Technical Support Web site if you are experiencing problems and want help finding possible causes and solutions. The Technical Support site has links to the latest DB2 publications, TechNotes, Authorized Program Analysis Reports (APARs or bug fixes), fix packs, and other resources. You can search through this knowledge base to find possible solutions to your problems.

Access the DB2 Technical Support Web site at http://www.ibm.com/software/data/db2/support/db2_9/

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