

SQL Server 2008 R2 Express DBx Setup

Before You Begin

Planning for an SQL installation is the critical part of a successful and maintainable deployment. Where you locate your SQL server, what type of hardware, operating system and the operating system features installed will determine what you can, and cannot do, in your SQL environment.

Operating System Requirements

SQL Server 2008 R2 Express edition can be installed on practically any Microsoft Operating System starting with Windows XP. Vista, Windows 7 and all the Windows Server Operating Systems starting with Server 2003 support SQL Server 2008 R2. Both 32 and 64 bit versions are available starting with Vista forward. 64 Bit versions are not available for Windows XP.

Windows 2000 is NOT supported by SQL Server 2008 R2.

Minimum Hardware Requirements

These minimum requirements are for the machine hosting the SQL Server 2008 R2 database engine. You may choose to use separate machines to host other services such as Reporting Services.

The CPU, speed, memory, and minimum requirements will change depending on the amount of data you choose to import, the number of users you will be supporting, and the optional services you plan on implementing. These are strictly the minimum requirements.

- Pentium 4 CPU, 2.0 GHz or faster, 3.0 recommended
- 1 GB ram, 2 GB recommended
- 10 GB minimum hard drive, 80 GB recommended
- Internet Browser Software
- VGA or higher resolution, minimum 1024x768
- Mouse
- CD/DVD drive recommended

What are Your Business Goals for SQL Server?

Your business goals and reasoning for converting DB2 to DBx will determine how you should deploy SQL Server. Below are some of the many possible reasons for moving to SQL Server:

- Data storage - Huge sales history database (up to 10 GB in Express R2 up from 2GB in 2008)
- Unlimited, multi-user access to your DBx data internally
- Internet access to your DBx data for customers and employees
- Report Server access for 10 internal users or less
- Unlimited Report Server access for internal users
- Report Server access through the Internet for customers and employees

Data Storage

No doubt that SQL can house large amounts of data efficiently. The Express version's big brother "Enterprise" boasts the capability to support 100 terabytes in a single database. This makes SQL the perfect long-term solution to your sales data storage needs. It can and will be there to grow with you as your needs increase.

So if efficient storage of large sales history files is your primary goal, SQL is the right choice. It is also the simplest type of installation. With the SQL Express database size limit move up to 10 GB in 2008 R2, it can now easily support DBx sales history databases containing over FOUR MILLION (4,000,000) sales history detail rows!

Unlimited Access

Microsoft Access has limits when it comes to multiple users accessing the same data at the same time. Access was never intended to be multi-user, even though it can be to some extent. SQL Server was designed to be multi-user and does not impose any hard limits to the number of users. There are limits to the Express version such as only one processor can be used and SQL will not address more than 1 GB of memory (you can have more memory installed in the machine, SQL just won't use it), but there is no maximum number of user limits.

Obviously you cannot support thousands of users with one processor and only 1 GB of memory, but the Express version let's you try! If you do have thousands of users requiring access to your data, I would suggest one of the other and more powerful versions of SQL Server instead of SQL Express.

Internet Access to Your DBx Data

If you need access to your DBx data over the Internet, then SQL Express will serve the need. You have the same unlimited number of users, but of course the speed will be limited to your Internet connection.

Report Server Access for 10 or Less Internal Users

The Report Server that ships with SQL Express does not have a user limit, but the different versions of Microsoft Operating Systems do. You can host Report Server on a Windows XP machine, but you are limited to 10 concurrent users. Windows XP will work well as a report server for a relatively small internal Intranet where no Internet access is allowed and no more than 10 concurrent users would be expected.

Unlimited Report Server Access for Internal Users

The Windows Server operating systems typically have no limits to the number of concurrently connected clients VIA Internet Information Services (IIS). I would suggest using a Server operating system if you routinely expect more than 10 concurrent users on your internal Report Server.

You can also expand your Reporting Services installation by adding nodes. A Report Server node is nothing more than a computer hosting the Reporting Services portion of SQL Express alone and using the SQL database engine located on another machine. For example, you could install SQL Express complete install on your XP machine. This would allow for 10 concurrent Report Server users. You could then install just the Reporting Services portion of SQL Express on a different XP computer and set it up

to use the SQL database engine on the first XP computer. This would double your concurrent Report Server users to 20. This allows you to go over the ten concurrent users imposed by XP.

Report Server Access through the Internet for Customers and Employees

Although the desktop operating systems will work for both internal and external (Internet) access to your Report Server, the desktop operating systems lack the depth of security provided by the server operating systems. I would strongly recommend that you use one of the server operating systems if you are going to expose your Reporting Services or database services installation to the Internet.

Reporting Services Pre-Requisites

If you plan on installing Reporting Services, you must first make sure that Internet Information Services (IIS) is installed on the computer to host the Reporting Services. This could be the same computer hosting the database engine or a standalone computer.

The installation of IIS is different depending on the operating system you are using. Refer to your operating system instructions to install IIS.

SQL Server 2008 R2 Installation Options

There are four different installation options with SQL Server 2008 R2 Express. Selecting which of the four installation options is best for your environment depends on your business goals we went over earlier.

Database Only

This is the minimal installation version required to run DBx. This version installs the database engine only and no management tools. You may need management tools to perform certain tasks such as starting, stopping, or adding other databases to your SQL installation. I would only suggest this version be installed as a backup installation or as a server installation with the management tools installed on another workstation.

Management Tools

This is the management tools only. No database engine is installed. You can install the management tools on any qualifying PC in your network to manage your SQL environment.

Database with Management Tools

This option combines the two previous options and installs both the database engine and the management tools. This is the recommended installation option for a standard DBx installation that does not need Reporting Services on the same computer.

Database with Advanced Services

This option includes the other installation options with the addition of Advanced Services. Advanced Services includes Reporting Services and Full Text indexing. This is the recommended option for a standard DBx installation where a single computer is to be used to host the DBx database and Reporting Services.

Best Choices

If you are evaluating DBx, your best choice is to select the Database with Advanced Services installation option. This gives you the most flexibility to evaluate DBx on a single computer with all the possibilities. Be sure to install IIS before installing SQL Server 2008 R2 Express!

You can always add features to an existing SQL Server 2008 R2 Express installation, or install advanced services on other computers in your network at a later time.

Installing SQL Server 2008 R2 Express

SQL Server 2008 R2 Express is a free download from Microsoft. Below is a link that will take you directly to the SQL Server 2008 R2 Express installation option page:

http://www.microsoft.com/express/Database/default.aspx#Installation_Options

Click the Purple Button under the installation option of your choice. Be sure to select the correct Bit version to match your target operating system, 32 or 64 bit. Remember that SQL Server 2008 R2 Express will not work on Windows XP 64 bit.

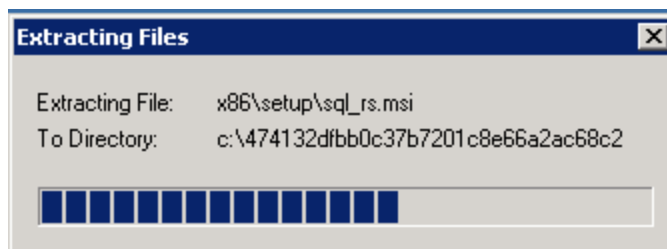
Save the download to your computer or network.

Critical Installation Requirements

1. **You must be logged on as Administrator when you install SQL Server 2008 R2 Express!**
2. **Being a member of the administrators group is NOT enough!**
3. **You must be logged on as the one and only computer Administrator account before installing SQL Server 2008 R2 Express!**
4. **Running 'As Administrator' is not enough!**
5. **If you do not log on as Administrator when installing SQL Server 2008 R2 Express, the installation will fail and you will need to uninstall and reinstall SQL Server 2008 R2 Express before you can use DBx.**

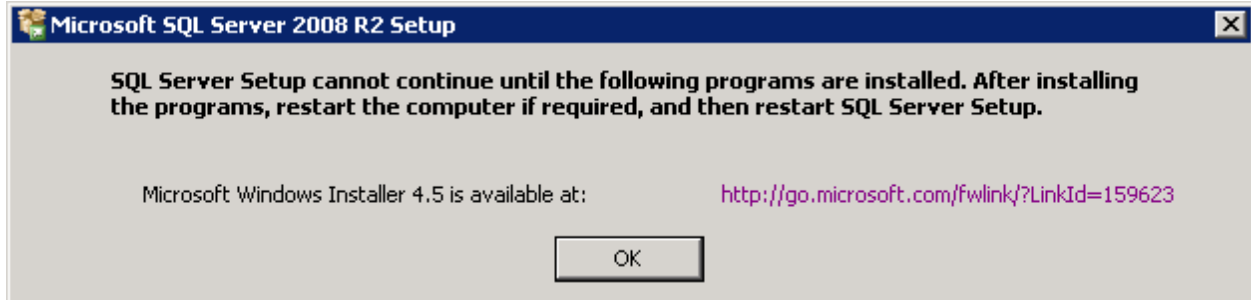
Starting Setup

Double-click the downloaded version of SQL Server 2008 R2 Express. The Setup Package will extract itself to a temporary folder before the installation can begin.



Microsoft Windows Installer 4.5 Requirement

SQL Server 2008 R2 Express requires Windows Installer 4.5 be installed on the target computer. If you receive the following message when starting the install, click the link and then choose the Run option to install the required program.



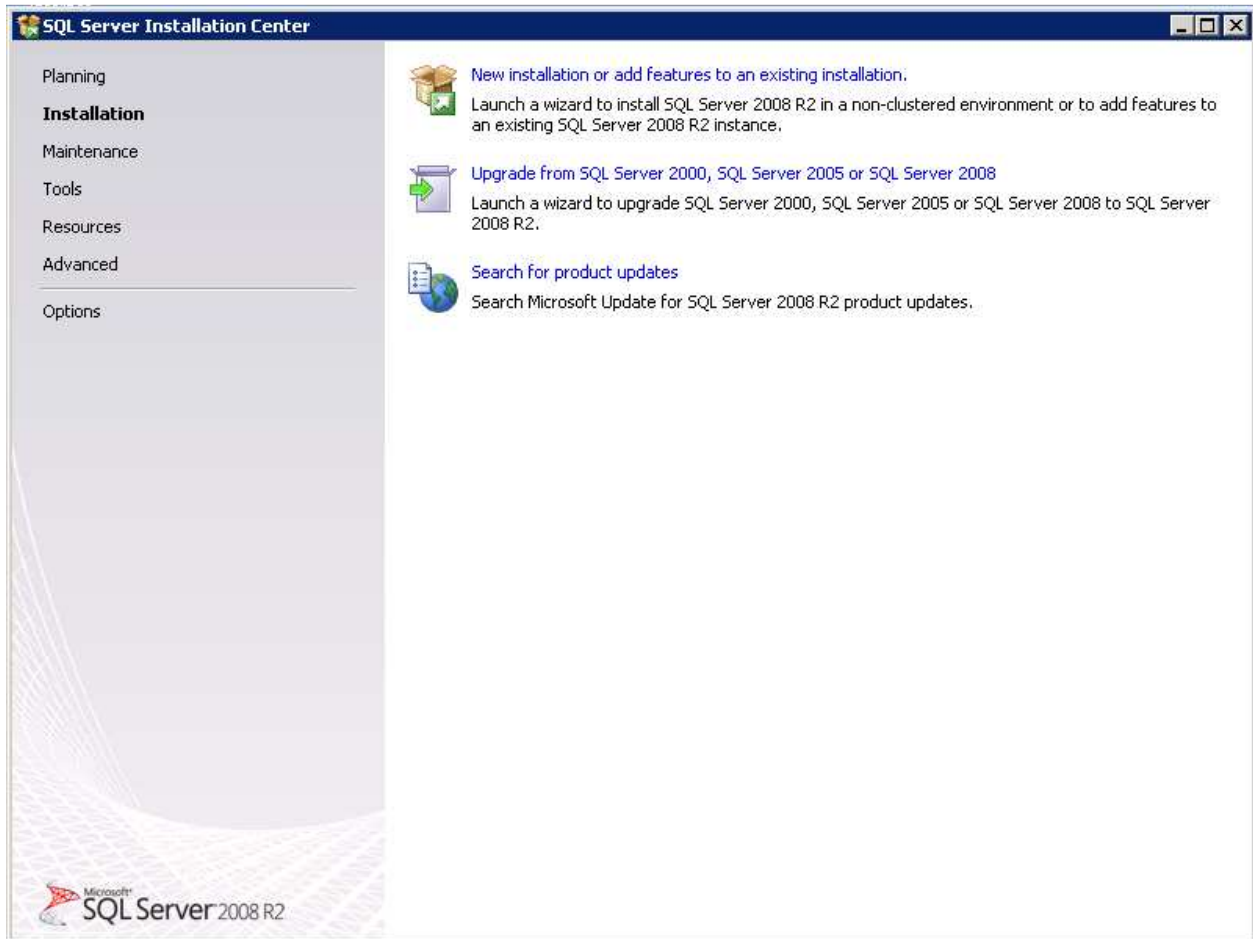
You may need to restart your computer after the installation of this program. Go ahead and restart the computer if requested and then restart the downloaded SQL Server 2008 R2 Express setup.

Installation Center Page



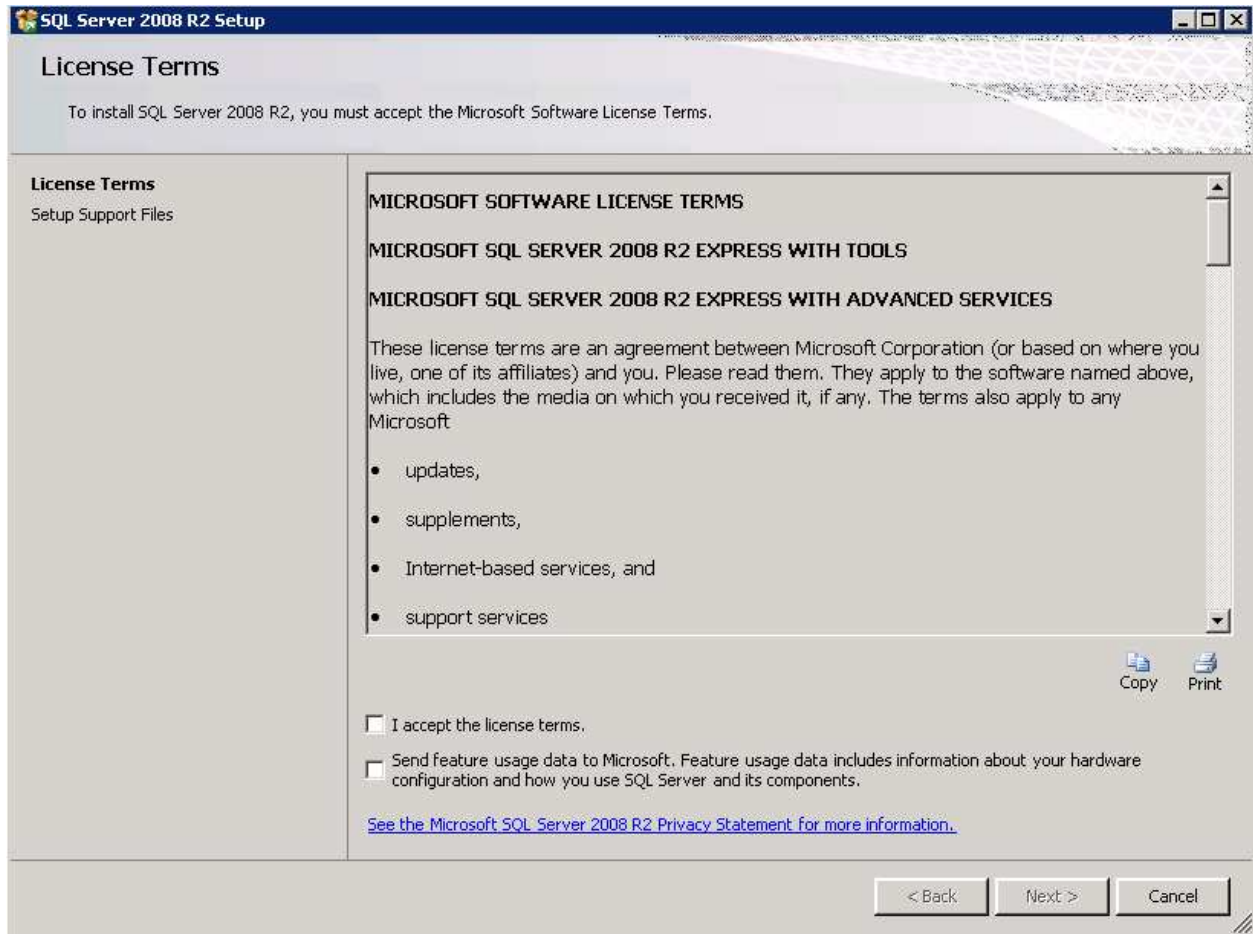
Investigate the Planning information contained in the Planning Link in the left pane of this page and When ready, click the Installation Link in the left pane of this page.

New Installation or Add Features Page



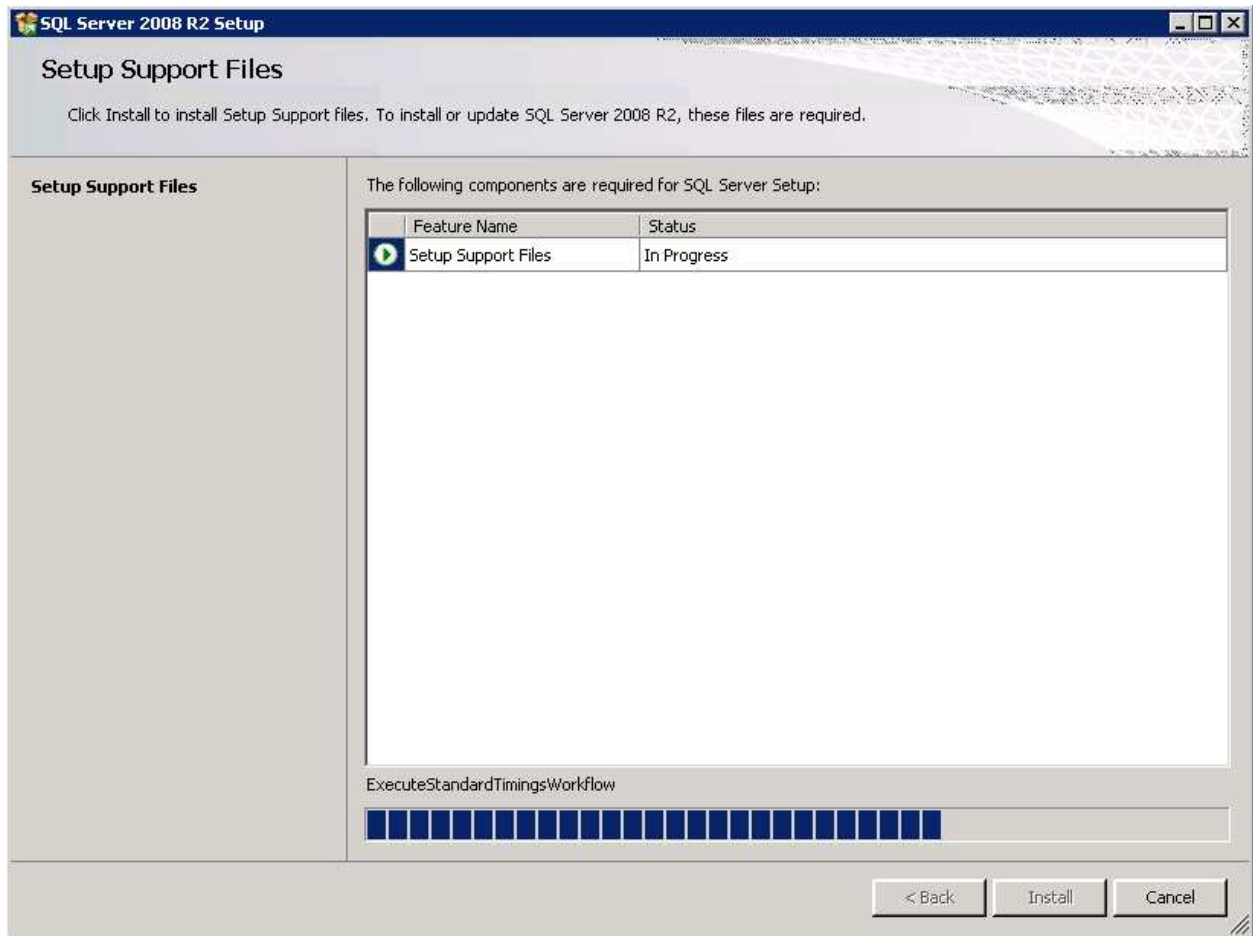
Click the New installation or add features link and wait for setup to complete its operations and checks.

License Page



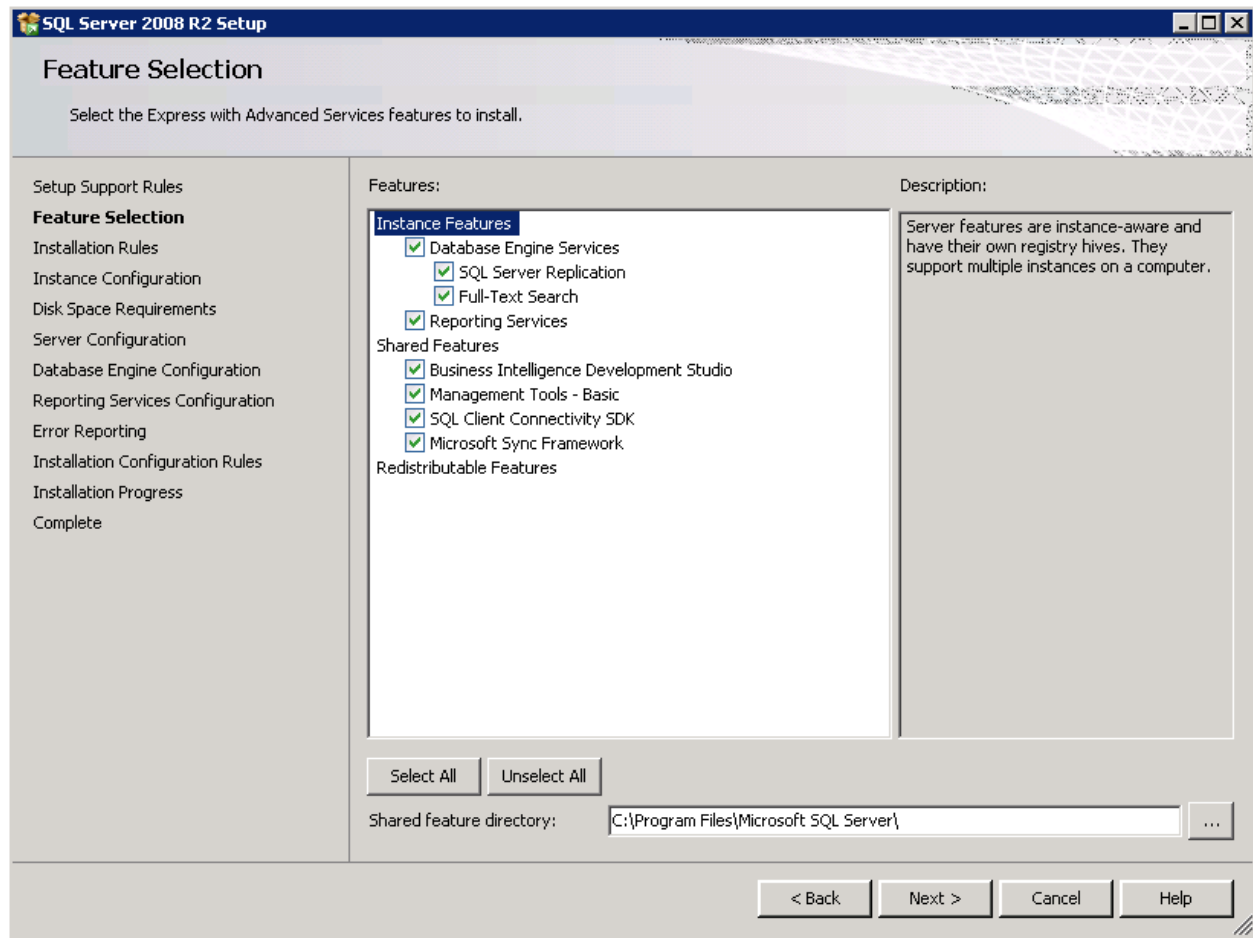
You must accept the license terms. Check the box and then click the Next Button.

Setup Support Files Check



Setup will check that your system contains the necessary support files for the installation. If any errors occur, they must be corrected before setup can continue.

Feature Selection Page



Select the features you want to install. This is the Feature Selection Page for the full Database with Advanced Services option.

Key features and what they do:

Database Engine: You must have at least one instance of this installed on your network

Reporting Services: This is the service that hosts your Web Reports.

Business Intelligence Development Studio: Report designer, Query Designer, and more.

Management Tools – Basic: The management interface.

Instance Configuration

Specify the name and instance ID for the instance of SQL Server. Instance ID becomes part of the installation path.

Setup Support Rules
License Terms
Feature Selection
Installation Rules
Instance Configuration
Disk Space Requirements
Server Configuration
Database Engine Configuration
Reporting Services Configuration
Error Reporting
Installation Configuration Rules
Installation Progress
Complete

Default instance
 Named instance:

Instance ID:

Instance root directory: ...

SQL Server directory: C:\Program Files\Microsoft SQL Server\MSSQL10_50.SQLExpress
Reporting Services directory: C:\Program Files\Microsoft SQL Server\MSRS10_50.SQLExpress

Installed instances:

Instance Name	Instance ID	Features	Edition	Version
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< Back Next > Cancel Help

You should accept the defaults here.

Server Configuration

SQL Server 2008 R2 Setup

Server Configuration

Specify the service accounts and collation configuration.

Setup Support Rules
License Terms
Feature Selection
Installation Rules
Instance Configuration
Disk Space Requirements
Server Configuration
Database Engine Configuration
Reporting Services Configuration
Error Reporting
Installation Configuration Rules
Installation Progress
Complete

Service Accounts | Collation

Microsoft recommends that you use a separate account for each SQL Server service.

Service	Account Name	Password	Startup Type
SQL Server Database Engine			Automatic
SQL Server Reporting Services			Automatic
SQL Full-text Filter Daemon Launcher			Manual
SQL Server Browser	NT AUTHORITY\LOCAL S...		Disabled

Use the same account for all SQL Server services

< Back Next > Cancel Help

You must provide a Windows account to use in starting and running the various services. This account can be a local computer account or a domain account.

Make sure the account has the proper rights to access the folders and system functions.

Use the “Use the same account for all SQL Server services” Button to enter a single account for all the services.

Database Engine Configuration

SQL Server 2008 R2 Setup

Database Engine Configuration

Specify Database Engine authentication security mode, administrators and data directories.

- Setup Support Rules
- License Terms
- Feature Selection
- Installation Rules
- Instance Configuration
- Disk Space Requirements
- Server Configuration
- Database Engine Configuration**
- Reporting Services Configuration
- Error Reporting
- Installation Configuration Rules
- Installation Progress
- Complete

Account Provisioning | Data Directories | FILESTREAM

Specify the authentication mode and administrators for the Database Engine.

Authentication Mode

- Windows authentication mode
- Mixed Mode (SQL Server authentication and Windows authentication)

Specify the password for the SQL Server system administrator (sa) account.

Enter password:

Confirm password:

Specify SQL Server administrators

PROPNET\Administrator (Administrator)	SQL Server administrators have unrestricted access to the Database Engine.
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Add Current User Add... Remove

< Back Next > Cancel Help

Important!

You must select Mixed Mode! The default shown above is Windows authentication mode and cannot be used by DBx!

Must Use Mixed Mode!

The screenshot shows the 'Database Engine Configuration' window in the SQL Server 2008 R2 Setup. The window title is 'SQL Server 2008 R2 Setup' and the subtitle is 'Database Engine Configuration'. Below the subtitle, it says 'Specify Database Engine authentication security mode, administrators and data directories.' On the left side, there is a navigation pane with the following items: Setup Support Rules, License Terms, Feature Selection, Installation Rules, Instance Configuration, Disk Space Requirements, Server Configuration, **Database Engine Configuration**, Reporting Services Configuration, Error Reporting, Installation Configuration Rules, Installation Progress, and Complete. The main area has three tabs: 'Account Provisioning' (selected), 'Data Directories', and 'FILESTREAM'. The 'Account Provisioning' tab contains the following text: 'Specify the authentication mode and administrators for the Database Engine.' Under 'Authentication Mode', there are two radio buttons: 'Windows authentication mode' (unselected) and 'Mixed Mode (SQL Server authentication and Windows authentication)' (selected). Below this, it says 'Specify the password for the SQL Server system administrator (sa) account.' There are two password input fields: 'Enter password:' and 'Confirm password:', both containing masked characters (dots). Below the password fields, it says 'Specify SQL Server administrators' followed by a list box containing 'PROPNET\Administrator (Administrator)'. To the right of the list box, there is a text box that says 'SQL Server administrators have unrestricted access to the Database Engine.' At the bottom of the list box area, there are three buttons: 'Add Current User', 'Add...', and 'Remove'. At the bottom right of the window, there are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'.

Here is the same page with mixed mode selected and the administrator account password entered.

DBx will be set up using this administrator account (sa) and the password you enter here.

Make sure to write down the password! You will not be able to access your SQL installation without this password!

Reporting Services Configuration

The screenshot shows the 'Reporting Services Configuration' window from the SQL Server 2008 R2 Setup. The window title is 'SQL Server 2008 R2 Setup' and the main heading is 'Reporting Services Configuration'. Below the heading, it says 'Specify the Reporting Services configuration mode.' On the left side, there is a navigation pane with the following items: Setup Support Rules, License Terms, Feature Selection, Installation Rules, Instance Configuration, Disk Space Requirements, Server Configuration, Database Engine Configuration, **Reporting Services Configuration** (highlighted), Error Reporting, Installation Configuration Rules, Installation Progress, and Complete. The main area contains three radio button options for configuration modes, each with a descriptive paragraph. The first option, 'Install the native mode default configuration', is selected. At the bottom right, there are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'.

Specify the Reporting Services configuration mode.

Setup Support Rules
License Terms
Feature Selection
Installation Rules
Instance Configuration
Disk Space Requirements
Server Configuration
Database Engine Configuration
Reporting Services Configuration
Error Reporting
Installation Configuration Rules
Installation Progress
Complete

Install the native mode default configuration.

Setup will install the report server and configure it in Native mode to use the default values. The report server is usable as soon as Setup is finished.

Install the SharePoint integrated mode default configuration.

Setup will create the report server database in SharePoint integrated mode and configure the report server to use the default values. However, integrated operations will not be supported until a minimal installation of a SharePoint product or technology is deployed on the report server computer and the Reporting Services Add-in for SharePoint Technologies is installed and configured on the instance of the SharePoint product or technology you are using.

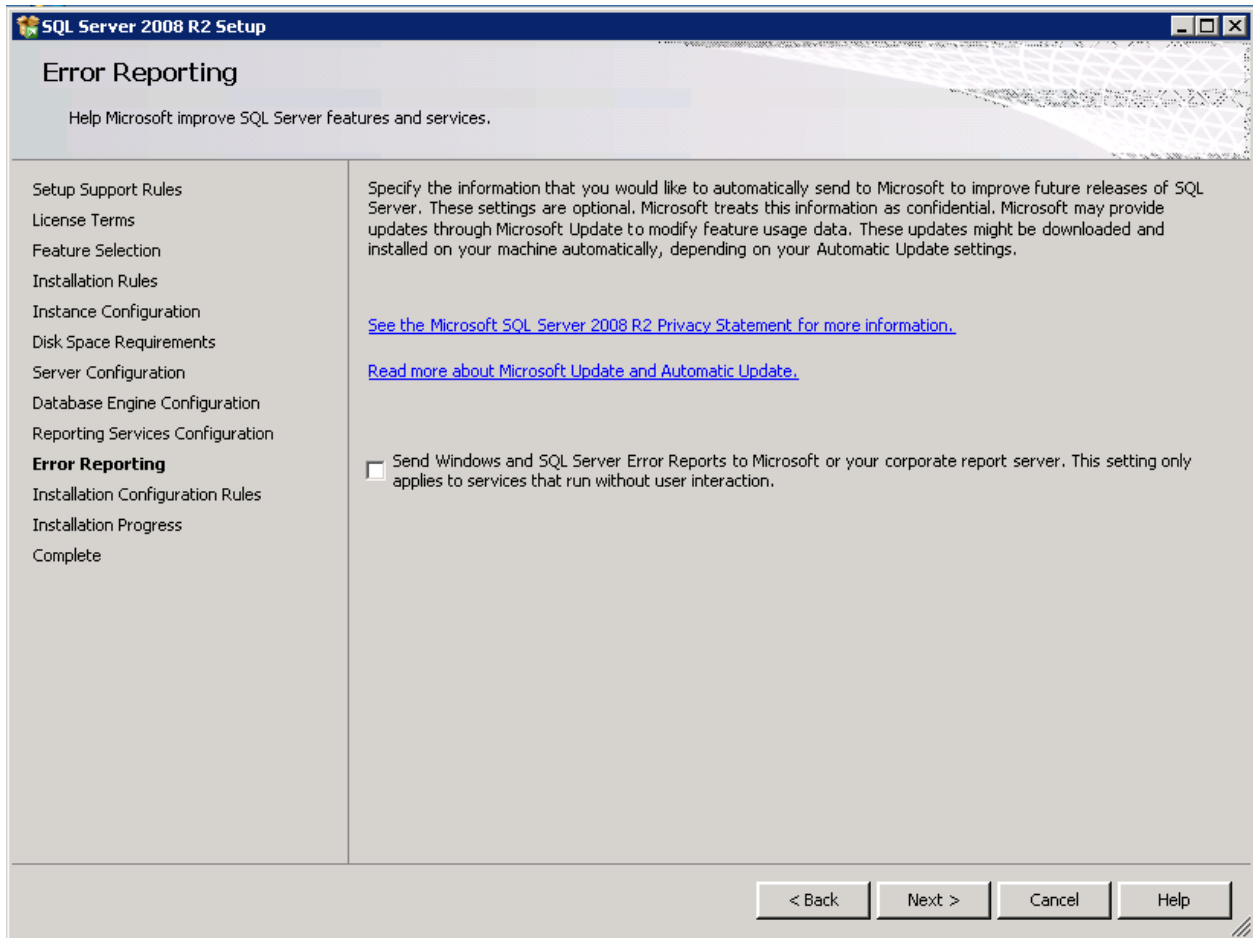
Install, but do not configure the report server.

Setup will install, but will not configure, the report server software. After installation is finished, you can use the Reporting Services Configuration tool to set options that are required to run the report server.

< Back Next > Cancel Help

Select the defaults here, Install the native mode default configuration.

Error Reporting

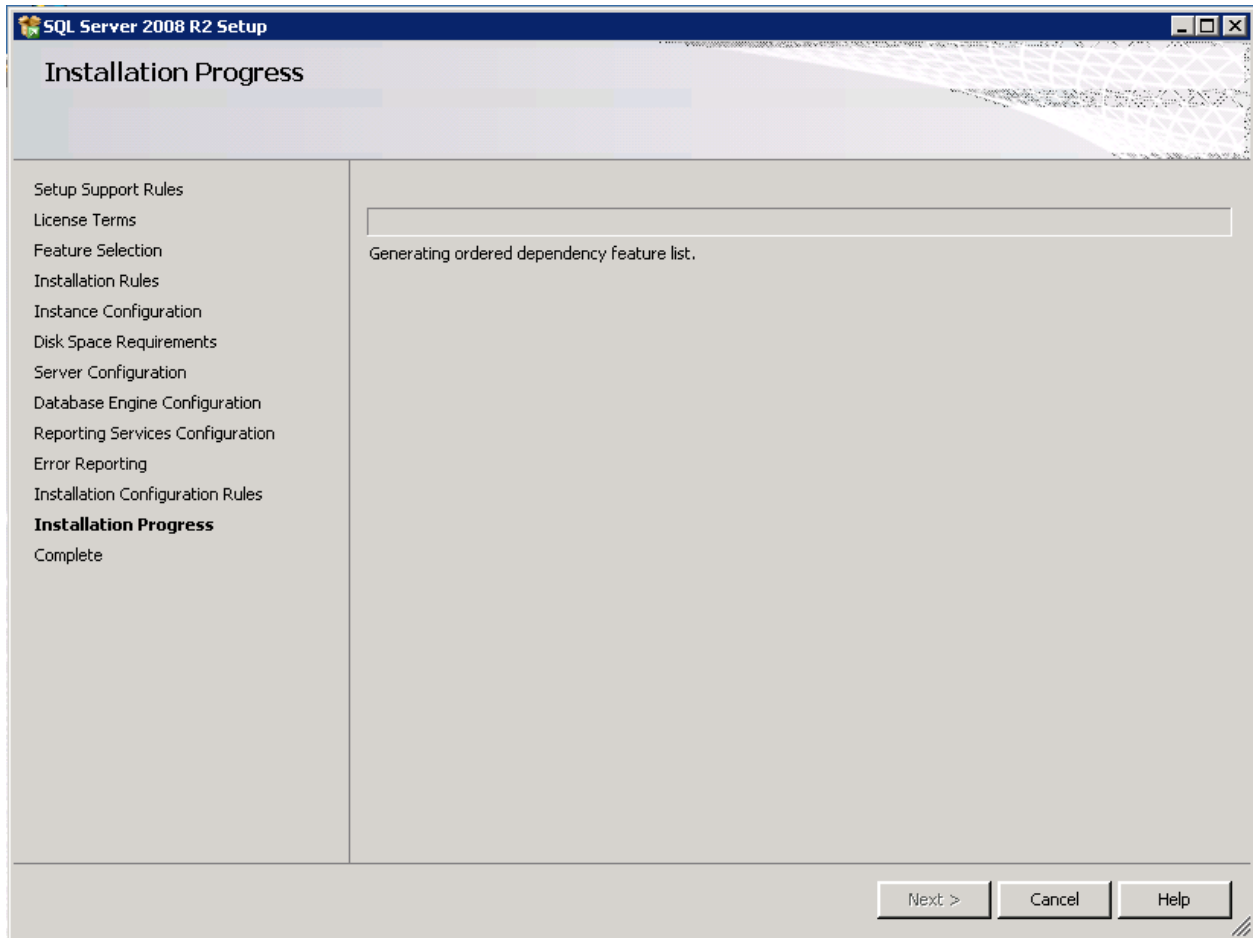


You decide if you want to send error reports to Microsoft.

Assuming your system passes the configuration checks, the installation will begin when you click the Next Button.

Click the Next Button to continue.

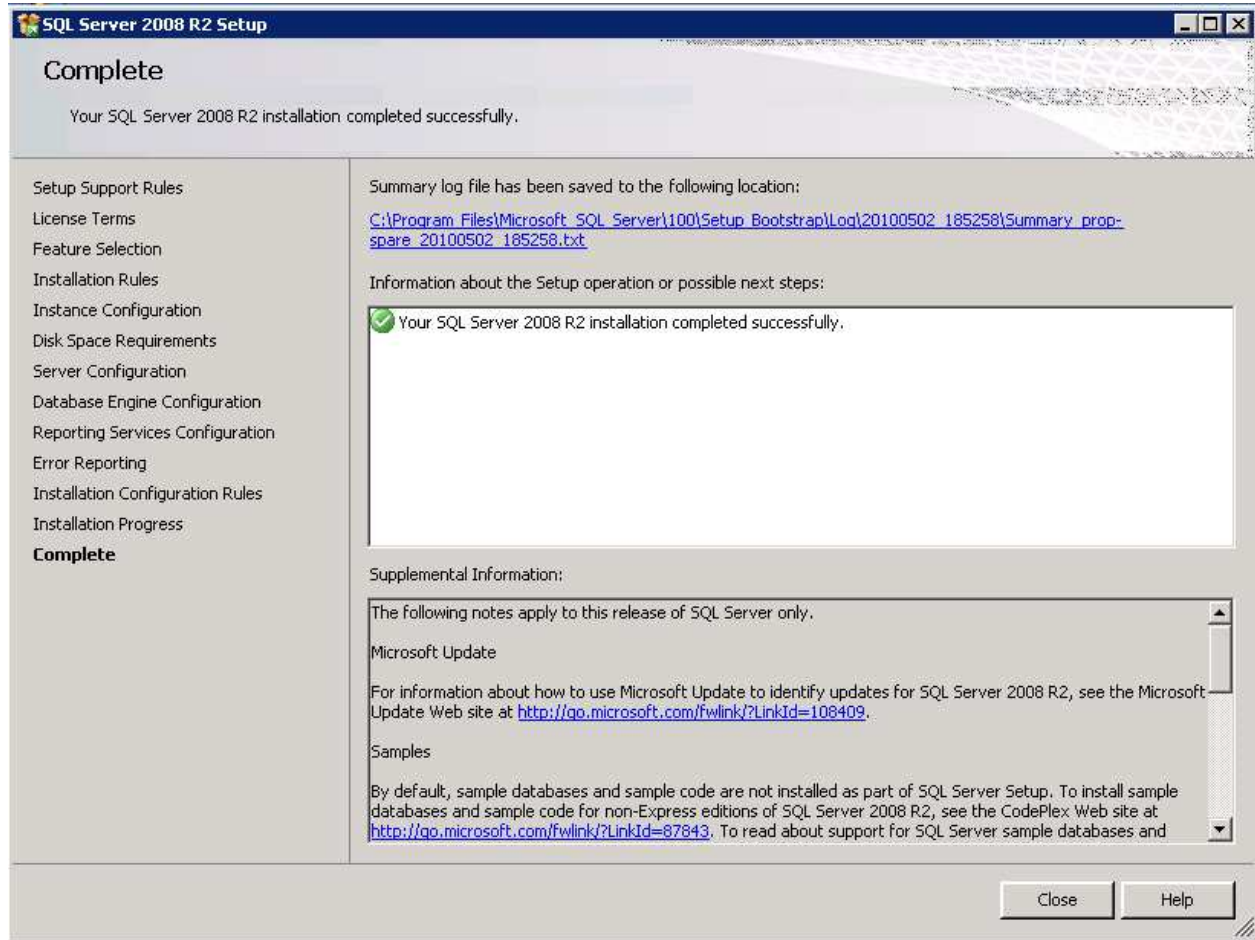
Installation Progress



The installation progress page is shown.

The installation can take several minutes to over an hour depending on your hardware and the options selected.

Installation Completed



Once the installation is complete, you should get this confirmation page. If you do not receive this page, your installation may have failed.

Next Steps

You need to set your DB2 installation to use the new SQL Server you just installed.

See the separate document: Using SQL Databases in DB2 for detailed instructions on how to do this.