

Print Audit 6

Database Documentation

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Moving Print Audit 6 and an SQL Database to a New Server

Below are steps to move Print Audit 6 and a SQL Server (or SQL Server Express, through the rest of this guide for simplicity we'll refer to SQL Server) database to a new server.

Basic Steps

1. Install SQL Server on the new server.
2. Install Print Audit 6 on the new server without creating a new database.
3. Move the SQL Server database from the old server to the new server.
4. Reconfigure the Client workstations to point to the new server.

N.B.: In some cases, for example where SQL is not installed on the same server as Print Audit, and that server will continue to host the database after migration, there is no need to move the SQL database, simply point the new Database Communicator to that location. However, you will still want to read the information in that step as it contains important information to avoid orphaning client seat licenses.

Step #1 – Install SQL Server on the new server

Follow the link below to access our installation guides for various versions of SQL Server Express
[Print Audit 6 Database Documentation](#)

Step #2 – Install Print Audit 6 on the new server without creating a new database

Refer to the instructions included in the document above to complete the installation.

The only difference when you are installing Print Audit 6 on the new server is that you do not want to create a new database in Step #14.

NOTE: Ensure that you download the most recent version of Print Audit 6 from the link below:
[Print Audit 6 Installer Download](#)

Step #3 – Move the SQL Server database from the old server to the new server

Use the following instructions to detach the database from the old server, move the files to the new server and then attach the database on the new server.

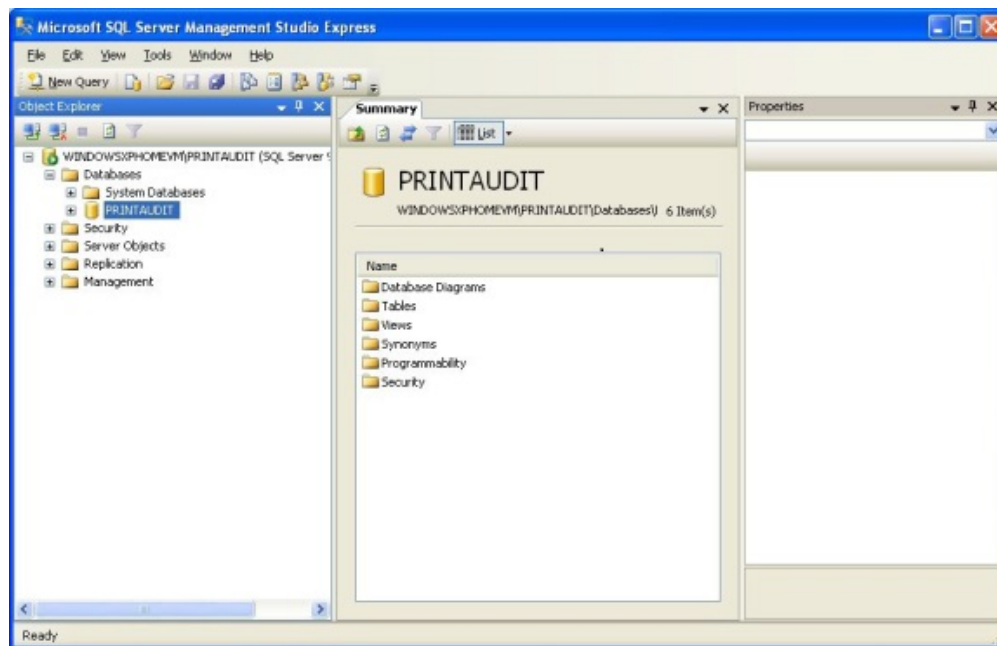
N.B.: If the SQL server software is not on the same server as the Print Audit distribution, and that SQL server is not being decommissioned and will continue to run SQL and can continue to host the database, it is not required to move the database. Instead you can simply point the new installation to the database. Once you've reconfigured the clients, ensure that the Database Communicator on the original Print Audit server is gracefully shutdown, then disabled, per the note at the end of this step to prevent seat licenses from becoming orphaned.

1. **Stop the Database Communicator on this computer by going to the services or by right clicking the icon in the system tray.**

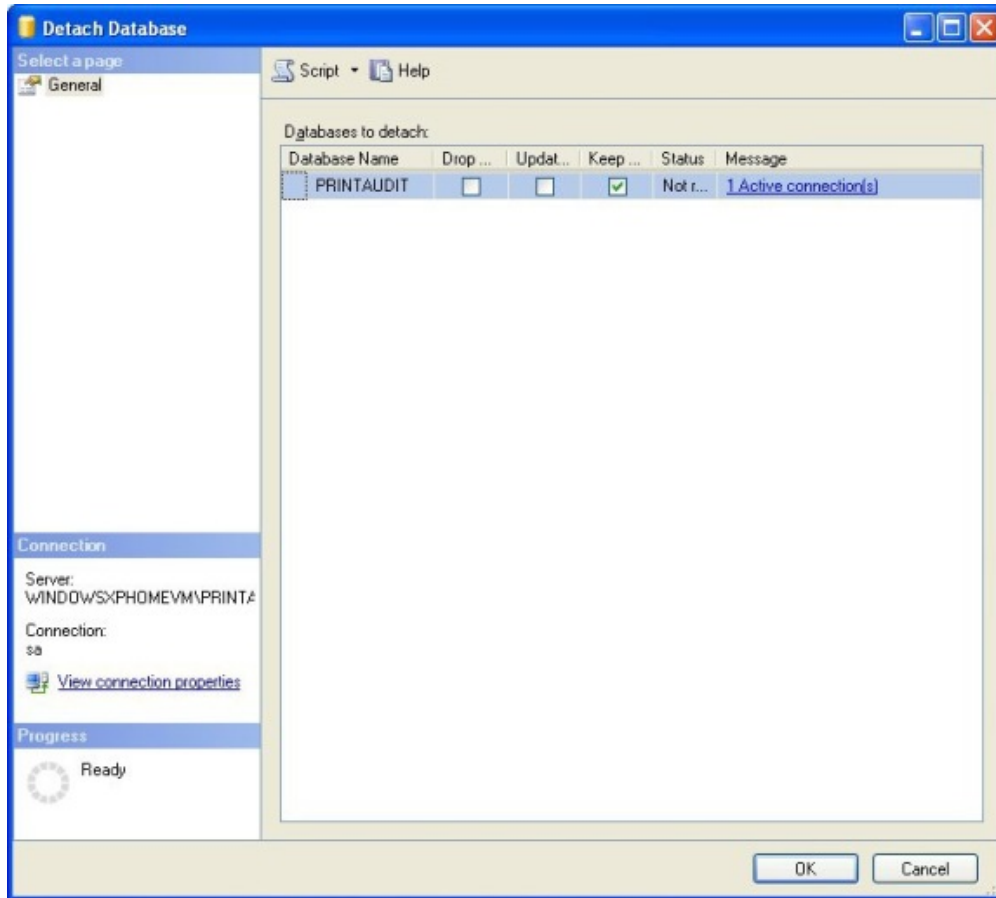
This important step is often overlooked. Failure to stop the Database Communicator prior to moving the database will result in orphaned seat licenses, while these seat licenses can be reclaimed, it's better to avoid the situation entirely by simply ensuring the Database Communicator is stopped prior to moving the database.

2. To detach a database from SQL Server:

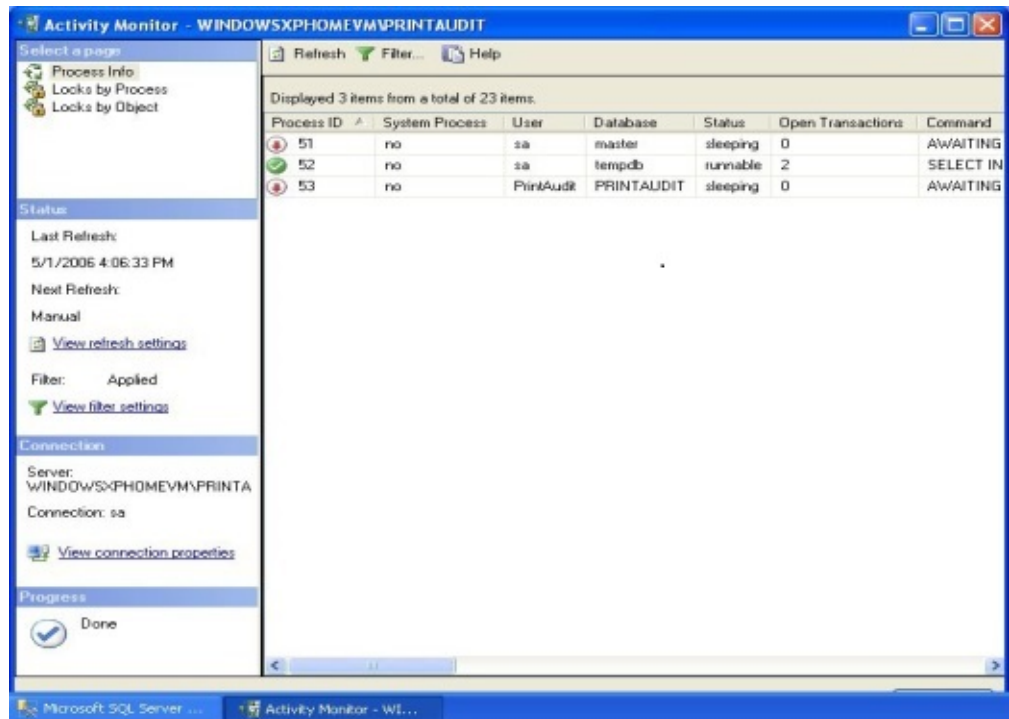
- a. Open the Microsoft SQL Server Management Studio program (the link to install this program is included in the SQL Server Installation instructions above)
- b. Click the plus sign on Databases on the left side and locate the database. The database (on Express versions) is 'SQLEXPRESS' by default, the database in the example below is 'PRINTAUDIT'.



- c. Right click on the appropriate database and then choose Tasks, Detach. You will see the following window:



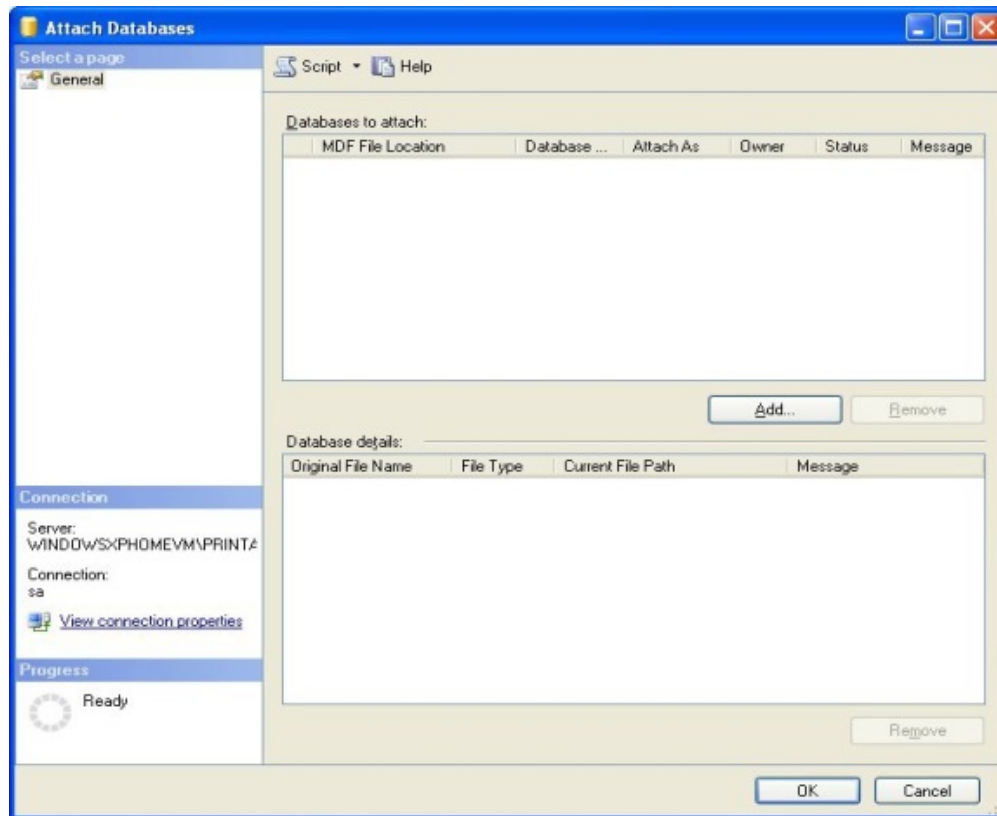
- d. If there are open connections, you may have to close them before you can continue. Follow the instructions below to do this:
 - i. Cancel the Detach Database screen.
 - ii. Click the plus sign beside Management.
 - iii. Double click the Activity Monitor and you will see the screen below:
 - iv. Locate the entries listed for the applicable database, PRINTAUDIT in this example.
 - v. Right click the line and choose 'Kill Process'
 - vi. Once there are no connections open for the database, close this window and repeat Step C above
 - vii. Click the OK button when you are ready to proceed.



3. There are two files created when you detach the database. By default, the database file will be named 'SQLExpress.mdf' and the log file is 'SQLExpress.log.ldf'. In our example it would be 'PRINTAUDIT.mdf' and 'PRINTAUDIT_log.ldf'. These files will be located in the following location: C:\Program Files\Microsoft SQL Server\MSSQL.2\MSSQL\Data (Please note this location may differ on your computer.) Move the files to the same folder on the new server

4. To attach a database on the new computer:

- a. Open the Microsoft SQL Server Management Studio program (the link to install this program is included in the SQL Server Installation instructions above)
- b. Right click on 'Databases' and choose 'Attach' from the menu. You will see the screen below:
- c. Click the Add button and browse the following location to find the 'SQLEXPRESS.mdf', ('PRINTAUDIT.mdf') file and then click OK: C:\Program Files\Microsoft SQL Server\MSSQL.2\MSSQL\Data
- d. Click the OK button to attach the database and associated log file.



5. Start the Database Communicator on the new server. You will have to enter the correct database information for the new server.

N.B.: If you are in an environment where it will be problematic to complete step 4 within a business day, or in an environment where application downtime must be strictly minimized, once you've migrated the database to the new location, you can reconfigure the Database Communicator on the original server to point to the new database location. This will make the original communicator available to the installed clients while you go through the process of reconfiguring them to use the

new server. After all the clients have been reconfigured, gracefully shutdown the Database Communicator on the original server, then use the Microsoft Services Control applet (services.msc) to set the startup option to disabled. This will prevent orphaned seat licenses and ensure that the service doesn't start before the machine is decommissioned or the application removed.

Step #4 - Reconfigure the Client workstations to point to the new server

There are a few different options to reconfigure the Client workstations to point to the new server.

1. The best method would be the same method used to initially deploy the Client. You will have to create a new Network Installation package and then deploy it. Please see the following document for more information on creating a Network Installation: [Print Audit 6 Network Installation Guide](#)
2. The alternative is to update each Client manually.
 - a. Go to a Client workstation.
 - b. Open My Computer
 - c. Browse to C:\Program Files\Print Audit Inc\Print Audit 6\Client and double click the 'PA6CCUTL.EXE' file.
 - d. Enter the computer name or IP address of the new server and then choose OK.
 - e. Either reboot the workstation or have the user logoff and log back in for the change to take effect.

Moving Print Audit 6 with Access to a New Server

The following are steps to move Print Audit 6 and a Microsoft Access database to a new server.

Basic Steps

1. Install Print Audit 6 on the new server without creating a new database.
2. Move the Access database from the old server to the new server.
3. Reconfigure the Client workstations to point to the new server.

N.B.: If your access database is not on the Print Audit server, but shared from another server, or on NAS, or similar, and that server/appliance will continue to house and host the database, there is no need to move the database to the new server, simply point the Database Communicator on that server to the database location. You will still want to read step #3 as it contains important information that will help you to prevent your client seat licenses from becoming orphaned.

Step #1 – Install Print Audit 6 on the new server (without a new database)

Refer to the [Step by Step Walkthrough](#) installation instructions to complete the installation. The only difference when you are installing Print Audit 6 on the new server is that you do not want to create a new database in Step #6.

NOTE: Ensure that you download the most recent version of Print Audit 6 from the [Print Audit website](#).

Step #2 – Move the database to the new server

Use the following instructions to move the database files from the old server to the new server.

1. **On both the old and the new servers, stop the Database Communicators by going to Windows services or by right clicking the icon in the system tray.**

This important step is often overlooked. Failure to stop the Database Communicator on the original server prior to moving the database will result in orphaned seat licenses, while these seat licenses can be reclaimed, it's better to avoid the situation entirely by simply ensuring the Database Communicator is stopped prior to moving the database.

2. There are two files created when you install a Microsoft Access database. By default, the database files will be named 'PA6DB.MDB' and 'PA6DB.MDW' and are located in the My Documents folder of the user who did the install. Move the files from the old server to the same folder on the new server (you may need to create a folder if the files are located in a different location than listed above).

3. On the new server, start the Database Communicator. You will have to browse and locate the 'PA6DB.MDB' file.


N.B.: If you are in an environment where it will be problematic to complete step 4 within a business day, or in an environment where application downtime must be strictly minimized, once you've migrated the database to the new location, you can reconfigure the Database Communicator on the original server to point to the new database location. This will make the original communicator available to the installed clients while you go through the process of reconfiguring them to use the new server. After all the clients have been reconfigured, gracefully shutdown the Database Communicator on the original server, then use the Microsoft Services Control applet (services.msc) to set the startup option to disabled. This will prevent orphaned seat licenses and ensure that the service doesn't start before the machine is decommissioned or the application removed.

Step #3 - Point the Client workstations to the new server

There are a few different options to reconfigure the Client workstations to point to the new server.

1. The best method would be the same method used to initially deploy the Client. You will have to create a new Network Installation package and then deploy it. Please see the [Print Audit 6 Network Installation](#) instruction for more information on creating a Network Installation.
2. The last option is to update each Client manually.
 - a. Go to a Client workstation.
 - b. Open My Computer
 - c. Browse to C:\Program Files\Print Audit Inc\Print Audit 6\Client and double click the 'PA6CCUTL.EXE' file.
 - d. Enter the computer name or IP address of the new server and then choose OK.
 - e. Either reboot the workstation or have the user log off and log back in for the change to take effect.

Print Audit and Microsoft SQL Server

 This document is meant to address basic questions and terminology for the integration of Print Audit software and Microsoft's SQL Server. It is not meant as a replacement for a qualified SQL Server Administrator in complex environments.

Microsoft SQL Server and Windows Operating Systems

Different versions of Microsoft SQL Server may not meet the requirements or be supported on different Windows Operating System platforms. It is recommended that you verify that the version of SQL Server you install is compatible or supported under the Windows OS that you are installing on.

<https://support.microsoft.com/en-us/help/2681562/using-sql-server-in-windows-8-and-later-versions-of-windows-operating>

Terminology

Authentication Mode – refers to the method(s) that SQL Server allows for users to connect to the SQL Server. There are two types of Authentication Modes in SQL Server:

- Windows Authentication – uses the username/password combination of the user logged into the Windows machine to authenticate.
- Mixed Mode Authentication – allows the use of Windows Authentication and SQL Server Authentication.

Database – name for a collection of tables in SQL Server. This is separate from the SQL Server name or instance name. The default database name in Print Audit 6 is **PRINTAUDIT**.

Instance – an instance is a complete SQL Server. Multiple instances can run on a single computer. Each instance has its own copy of server files, databases and security credentials.

Instance Name – refers to the name of the SQL Server in a setup where it is possible to create multiple servers on a single computer. The instance name is used to identify each running copy of the SQL Server. Depending on the version of SQL Server Express, the default instance name can be **SQLEXPRESS** or **MSSQLSERVER**.

NT authentication – interchangeable with Windows Authentication.

Network Provider – Microsoft OLE DB Provider for SQL Server which allow ADO access to SQL Server.

SA user - when SQL Server is installed in Mixed Mode Authentication, it creates a SQL login user called SA. This user has FULL control over all SQL Server functions and functions as the System Account for SQL Server.

SQL Server Authentication – user name and password are created and stored in SQL Server. These accounts are not based on Windows user accounts. Print Audit 6 will create a SQL Server user name on installation. The default user for this account is **PrintAudit** and the password is set at installation.

SQL Server Browser – a listener service in SQL Server that allows instances to listen on different ports. Used mainly when more than one instance is installed under SQL Server.

SQL Server Configuration Manager – SQL Server utility for configuring various SQL Server services and managing network protocols.

SQL Server Management Studio – provides a graphical interface for managing SQL Server instances. Available as a separate installation from Microsoft or as part of the SQL Installation download.

Windows Authentication – uses the username/password combination of the user logged into the Windows machine to authenticate.

Print Audit 6 Microsoft SQL Server Login

The following Print Audit 6 components directly communicate with SQL Server:

- Database Communicator (Communicator Configuration)
- Administrator
- Reporting Tools

(Please note that the Print Audit Client does not communicate directly with the SQL Server. The Client connects to the Database Communicator service. Please refer to [Client Only Installation](#) for more information on configuring the Client).

When one of these components is run for the first time, you will be prompted for the necessary login information to connect to SQL Server. After the first successful connection, you should not be prompted for this information again unless there is an issue with connecting to the database on SQL Server.

You can find the information after the installation by opening any of the above Print Audit components and going to "Tools --> Set Database". The connection information will be displayed except for the password which is masked.



The image shows a Windows-style dialog box titled "Print Audit Microsoft SQL Server Login". It contains four input fields: "Server:", "Database:", "User:", and "Password:". To the right of these fields are four buttons: "Login", "Cancel", "Help", and "<<Basic". Below these fields is a section titled "Advanced Settings" which contains two checkboxes: "Use NT authentication" and "Remember password". Below the checkboxes are three more input fields: "Network provider:", "Connection timeout:" (with the value "5"), and "Query timeout:" (with the value "300").

Server - refers to the hostname of the computer running SQL Server and (if applicable) the instance name of the SQL Server. SQL Server Express will usually have an instance name associated with it.

Database - the name of the Print Audit database. By default, the database name is PRINTAUDIT

User/Password – this is a SQL Server Authentication account set up on the initial installation of the Print Audit software. It requires that Mixed Mode Authentication be set and that a user/password combination exist in SQL Server. The default user name in Print Audit 6 is **PrintAudit**.

Use NT authentication – this box is checked if connection to the SQL Server will use the Windows login name and password to connect to the SQL Server rather than a SQL Login. The Windows user must have authority in SQL Server to access the SQL Server.

Remember Password - deprecated field. Password is stored as in a single hash encrypted format and this option is no longer required except on older Windows operating systems (Windows 2000 or lower).

Network provider - deprecated field. Rarely required unless using older Windows operating systems (Windows 2000 or lower).

Connection timeout - defaults to 5 seconds. This field is used by the Print Audit components to determine the time the component will try to connect before reporting an error connecting to the SQL Server.

Query timeout - defaults to 300 seconds. This field is used by the Print Audit components to determine the time the component will wait for a response from the SQL Server after submitting a query.

Frequently Asked Questions

What is the “backdoor” or default user\password to access the Print Audit database in SQL Server.

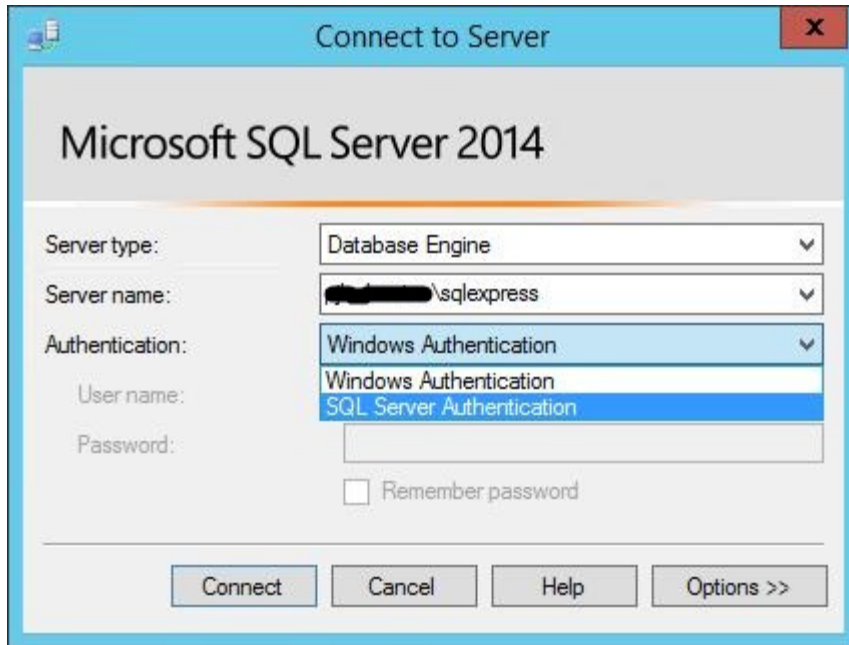
The Print Audit installation does not create a backdoor user and password for security purposes. When Print Audit 6 is first installed, you are prompted for a User Name and password to allow Print Audit to access the database. The default user name is **PrintAudit**. The password is set on installation by the user installing the software. This password can be change using the Database Maintenance tool or the SQL Server Management Studio but it cannot be recovered by Print Audit if forgotten.

If I don't have the SA or Print Audit password, what can I do?

When SQL Server is installed and set to Mixed Mode Authentication, it creates a SQL login called "sa" and prompts the user installing for the SA password. Print Audit does not set this password and cannot tell you what that password is. The same applies to the PRINTAUDIT user password when Print Audit 6 is installed.

If password is forgotten or not available, there are a couple of options to reset it.

1. SQL Server installs with the Windows credentials of the user logged in. Connecting to the SQL Server using Windows Authentication as that user will allow you to go into SQL Server and reset passwords if the Windows user is in SQL Server as a DB Admin.



- a. Connect with the Windows Authentication.
 - b. Under Security --> Logins, locate the user PrintAudit.
 - c. Right click "Properties" and reset the password.
2. Print Audit 6 has a Database Maintenance utility that can be used to reset either the PrintAudit user password or the SA password. This utility is found under Print Audit 6 --> Advanced Tools.
 - a. If you know the SA password and wish to reset the PrintAudit user password, enter the SA user password and click next.
 - b. If you do not know the SA user password AND are connecting to SQL Server as with Windows Authentication, that Windows user MUST be the user in SQL Server (the installer's credentials are added automatically when SQL Server is installed). Please note that Domain Administrators are not automatically added as SQL Server administrators). Click Next.

- c. Option to reset the Print Audit user or the system administrator password are presented.



- d. You will be presented with a field to enter the new password. Enter it and click Change



- e. This password is stored internally by SQL Server and CANNOT be retrieved. It can only be reset.
PLEASE NOTE: Resetting the SA password sets the System Administrator password for all databases within SQL Server.

3. The third option requires that SQL Server be placed in Single User Mode. Any application attempting to access SQL Server's databases will fail will SQL Server is in Single User mode. This should only be attempted by users familiar with the process. **WARNING:** This is a Microsoft "backdoor" into SQL, if you damage your database while logged in in this mode your data may not be recoverable. Only do this if you have exhausted all other options for accessing SQL!!!

Are the fields in the Print Audit Microsoft SQL Login screens case-sensitive?

The only field in the login screen that is case-sensitive is the Password field. Server, Database, and User are not case-sensitive.

How do I set Mixed Mode Authentication in SQL Server?

In newer versions of SQL Server, Mixed Mode Authentication can be set through the SQL Server Management Studio (SSMS). To do this:

- 1) Login to SQL Server Management Studio.
- 2) In the Object Explorer, the very first item is the details string on the SQL Server instance. Right click and select "Properties"
- 3) Select "Security"
- 4) Under "Server authentication", set "SQL Server and Windows Authentication mode"
- 5) A dialog box will warn the SQL Server needs to be restarted to for the change to take effect.

Advanced Troubleshooting

Restarting the SQL Server

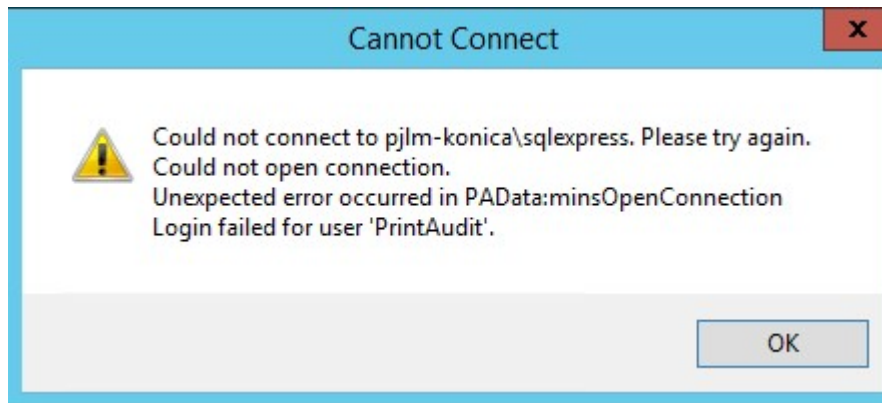
PLEASE NOTE: Restarting a SQL Server affects ALL databases connected to the SQL Server instance. Other applications using that SQL Server instance WILL BE affected by the restart and should be taken into account before restarting SQL Server.

There are three ways to restart a SQL Server instance usually available. In order of recommended usage, they are:

1. SQL Server Configuration Manager:
From the SQL Server Configuration Manager, click on the SQL Server Services. From the details area in the right, right-click on the SQL Server (<instance name>) service for the configured SQL Server instance and choose Restart.
2. SQL Server Management Studio
In the SQL Server Management Studio, right click on the SQL Server instance name found at the top of the Object Explorer window. Select "Restart". This option is not available in all version of SQL Server.

3. Windows Services

Cannot Connect Error



This is a generic SQL Server generated error indicating a problem connecting to the Print Audit database with the user's account. Microsoft does not provide specific details about the login error in this dialog box as a security precaution. However, by default, SQL Server will log all failed login attempts with an error code specifying the error.

The SQL Server error logs can be accessed through

- Microsoft SQL Server Management Studio – under Management --> SQL Server Logs
- The plain text files are located in <SQL SERVER installation>\MSSQL\Log

There are two entries with a failed login attempt:

2017-10-19 12:08:07.38 Logon Error: 18456, Severity: 14, State: 8.

2017-10-19 12:08:07.38 Logon Login failed for user 'PrintAudit'. Reason: Password did not match that for the login provided. [CLIENT: 192.168.0.17]

The Error code, Severity and State can be used to look in Google or other search engine to obtain more details about the nature of the error.

When to Enable the SQL Server Browser

The SQL Server Browser is a listening service used primarily when there are multiple instances of SQL Server running on the same machine. Because instances can have different ports, different network configuration (Named Pipes, TCP/IP), the Browser is used by the SQL server to listen for these and redirect requests appropriately.

Normally the SQL Server Browser is not required with Print Audit 6 in the majority of installations. However, if need, it can be started and configured to run automatically through the SQL Server Configuration Manager.

1. Open the SQL Server Configuration Manager.

2. Double click on the SQL Server Browser.
3. Click on the Service tab.
4. Change the “Start Mode” to Automatic
5. Click Apply
6. Click on the Log On tab.
7. Click Start.

Allowing Remote Access

By default, Remote Access is enabled in SQL Server/Server Express. However, if Remote Access is disabled, it can be enabled by:

1. Open the SQL Server Management Studio.
2. Highlight and right click the Instance at the top of the Object Explorer.
3. Select Properties.
4. Select Connections.
5. Check “All remote connections to this server.

Connecting to SQL Server using a different port number.

SQL Server uses port 1433 by default. The Server setting in the Print Audit SQL Login screen can be set to use a different port if SQL Server is not set to use port 1433

To specify a port for Print Audit to use, separate add a comma after the “SERVER/INSTANCE” and add the port.

For example, **MYSERVER\SQLEXPRESS,1433** would connect on port 1433 on the server MYSERVER for the instance SQLEXPRESS.

SQL Server Network Configuration

SQL Server Network Configuration options are found in the SQL Server Configuration Manager utility provided with SQL Server. This is used to enable\disable the different network protocols that can be used for client applications such as the Print Audit components to talk with SQL Server.

There are three protocols available:

1. Share Memory
2. Named Pipes
3. TCP/IP

Because of the variety of network configurations, operating systems and SQL Server configurations that may exist, we recommend that all three of these protocols be enabled. To enable these protocols:

1. Open the SQL Server Configuration Manager.
2. Expand the SQL Server Network Configuration.
3. Select the Protocols for <instance name>
4. Highlight the any protocols with a status of “Disabled”, right click and select Enable.
5. Changing the status of the protocols requires a restart of the SQL Server instance for the change to take effect. This can be in the same console. Click on the SQL Server Services. From the details on the right, right-click on the SQL Server instance name and choose “Restart”.

SQL Server 2005 Express Installation

This is a step-by-step guide to install SQL Server 2005 Express Edition.

Pre-Requisites

There are a few pre-requisites for installing SQL Server 2005 Express Edition. You can view more information and the system requirements for SQL Server 2005 Express Edition by going to www.microsoft.com and enter SQL Server 2005 Express Requirements.

Please note that the MS .Net Framework 2.0 must be installed prior to installing SQL Server 2005 Express Edition. The link to download this program is available from Microsoft in the System Requirements documentation above.

We also recommend ensuring that all Windows Updates have been performed prior to installing SQL Server 2005 Express Edition.

Step by Step Instructions

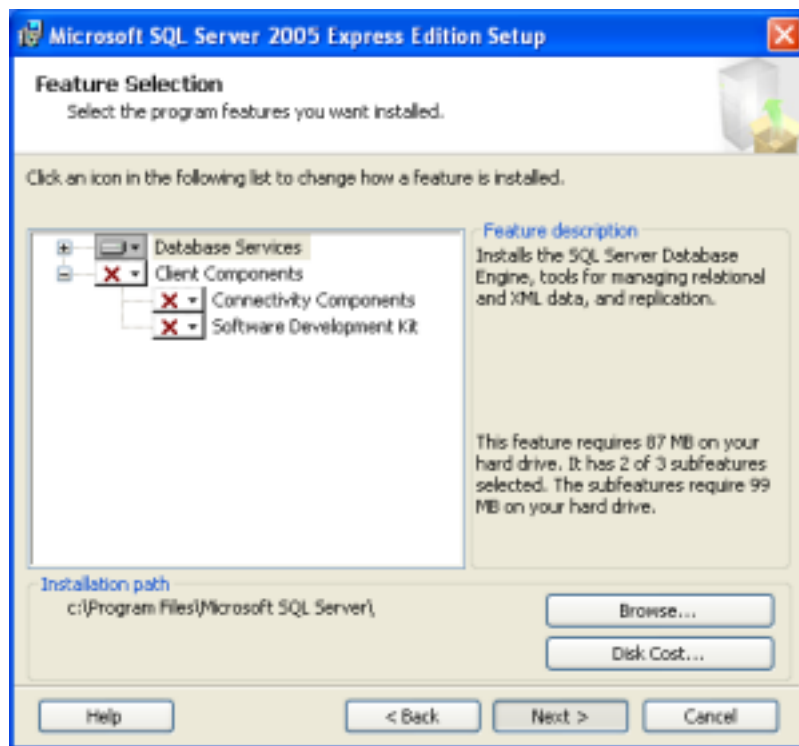
1. Download SQL Server 2005 Express Edition from Microsoft:

- a. Go to Microsoft's website (www.microsoft.com).
- b. Enter 'SQL Server 2005 Express Edition download' in the Search field and click the Search button.
- c. You will see a screen of results that match the search. Select a result that includes the download and proceed to download the file 'SQLEXPRESS.EXE'.

2. Double-click the SQLEXPRESS.exe file to install it:

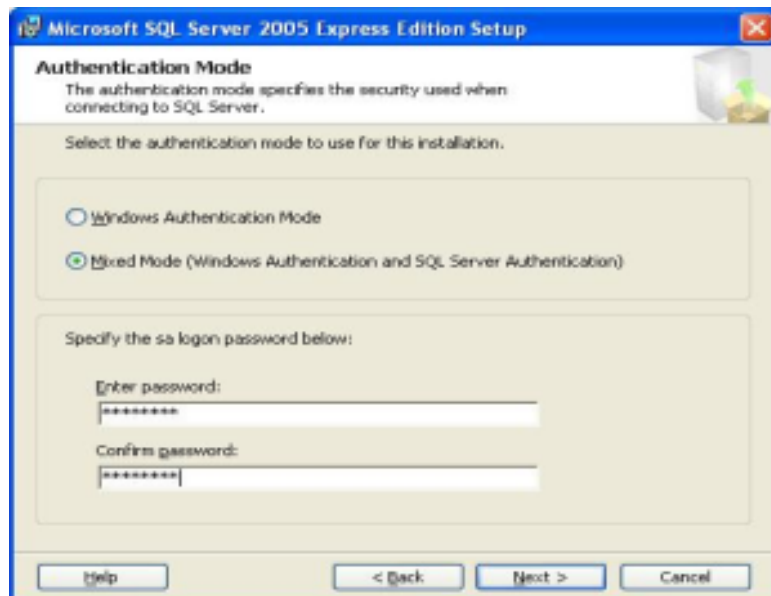
- a. Use the default settings for the first few screens until you get to the Authentication Mode screen.

Note: You can change the location that you are installing SQL Server 2005 Express to on the Feature Selection screen below by clicking the Browse button in the lower part of the screen.

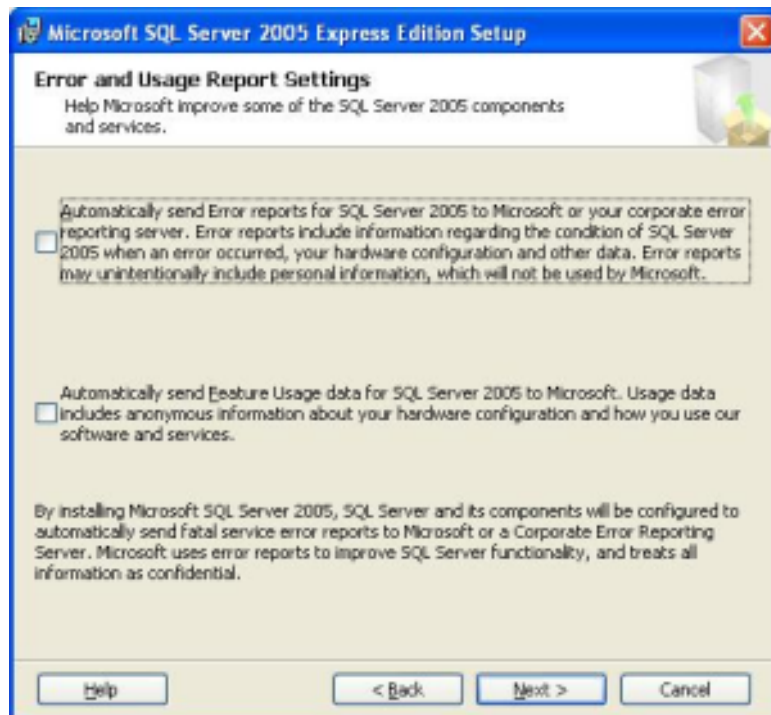


b. When you get to the Authentication Mode screen, use "Mixed Mode" Authentication, as shown below:

Note: The 'sa' password must pass Microsoft's complexity requirements and cannot contain illegal characters (use letters and numbers, ie. Password1234).



3. Click "Next" and continue the installation using default selections.

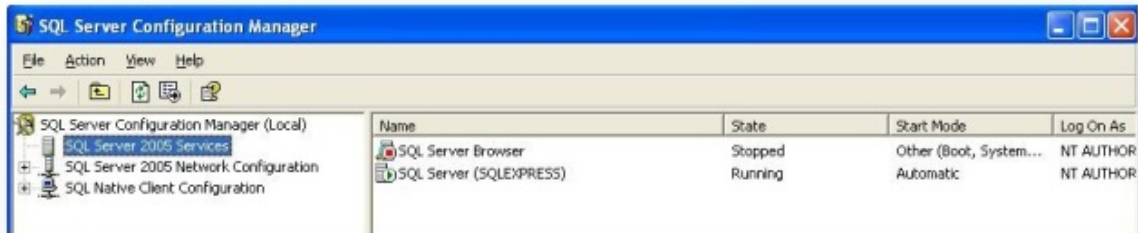


4. Click Install.

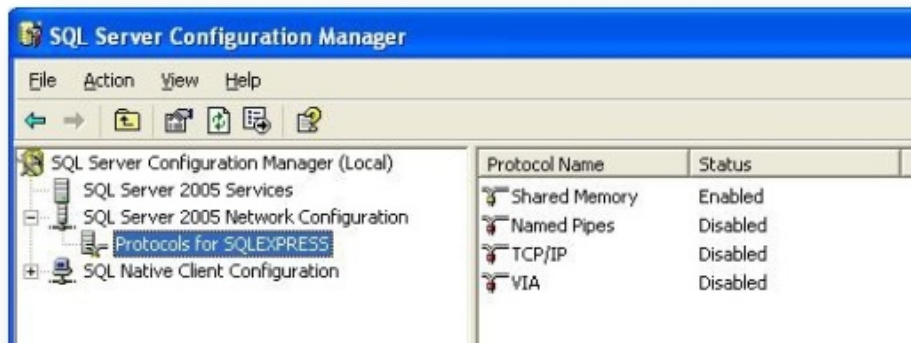


5. Once the SQLEXPRESS installation is complete, open the SQL Server Configuration Manager: (Start -> Programs -> Microsoft SQL Server 2005 -> Configuration Tools -> SQL Server Configuration Manager).

6. Your default server name (under SQL Server 2005 Services) is SQLEXPRESS and it should be running as shown below. If it is stopped, right click on it and click Start.

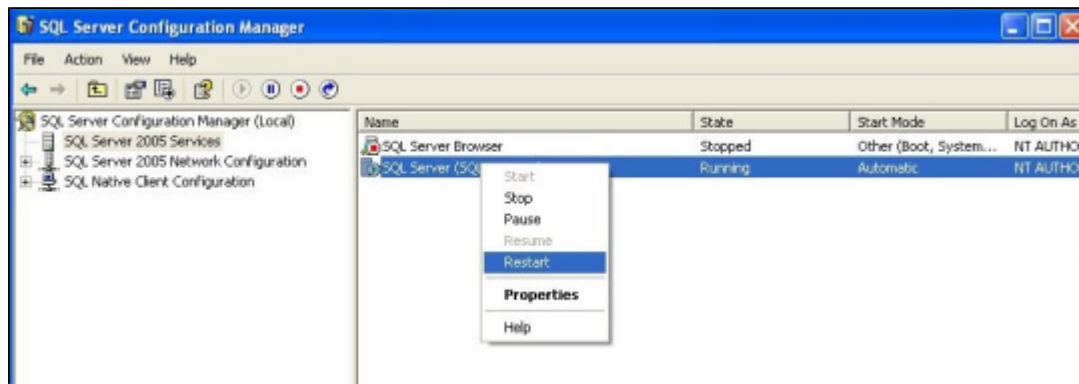


7. Click on the plus sign beside SQL Server 2005 Network Configuration and click on Protocols for



SQLEXPRESS.

- a. Double-click on Named Pipes and Enable it.
- b. Click OK. Double-click on TCP/IP and Enable it.



Microsoft SQL Server Management Studio Express

Microsoft SQL Server Management Studio Express (SSMSE) provides a graphical management tool for SQL Server 2005 Express Edition. Installing this application is not required, but may be beneficial to maintain SQL Server 2005 Express. For more information or to download this application, go Microsoft's website (www.microsoft.com) and perform a search for 'SQL Server Management Studio Express'. The download file is 'SQLServer2005_SSMSEE.MSI'.

SQL Server 2008 Installation

Step 1: Download SQL

Download SQL Server from <http://www.microsoft.com/express/sql/download/>

Step 2: Confirm Minimum Requirements

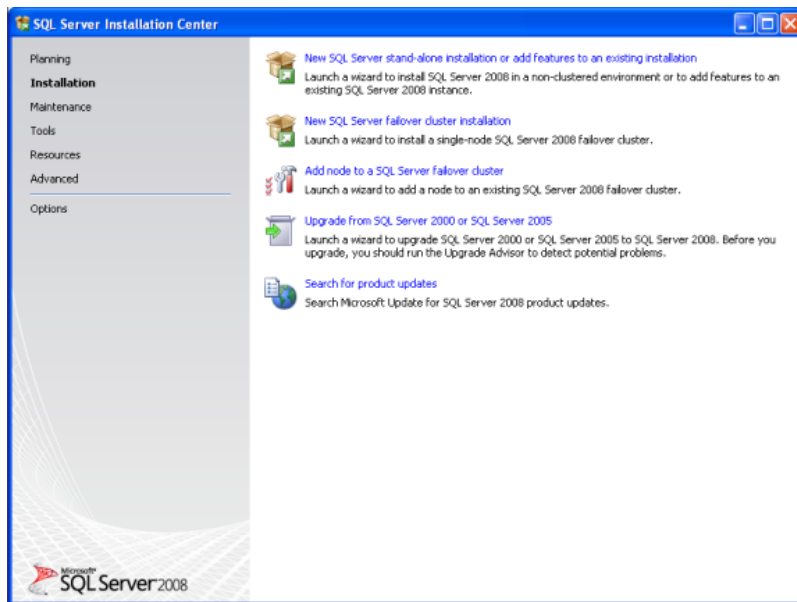
1. Download and install Windows Installer 4.5
2. Download and install Microsoft .Net Framework 3.5 SP1.
3. Download and install Windows PowerShell 1.0.

Step 3: Install SQL

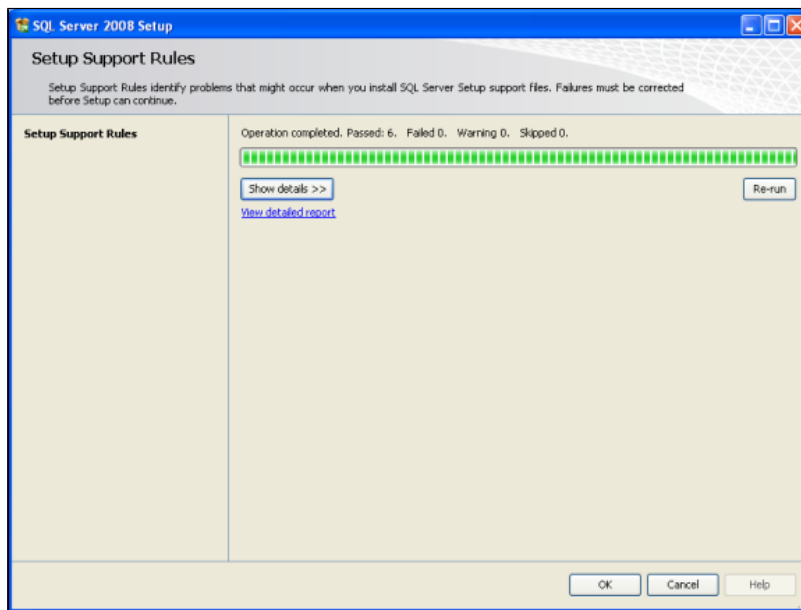
1. Choose from:
 - a. SQL Server with tools
 - b. SQL Server with Advanced Services
 - c. SQL Server Runtime only
 - d. SQL Server Express 2008 with Tools



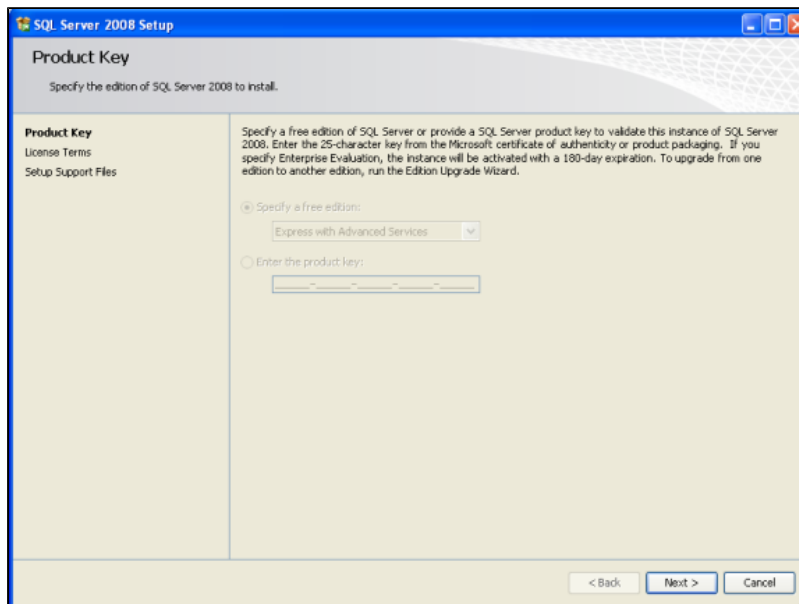
2. Click on Installation



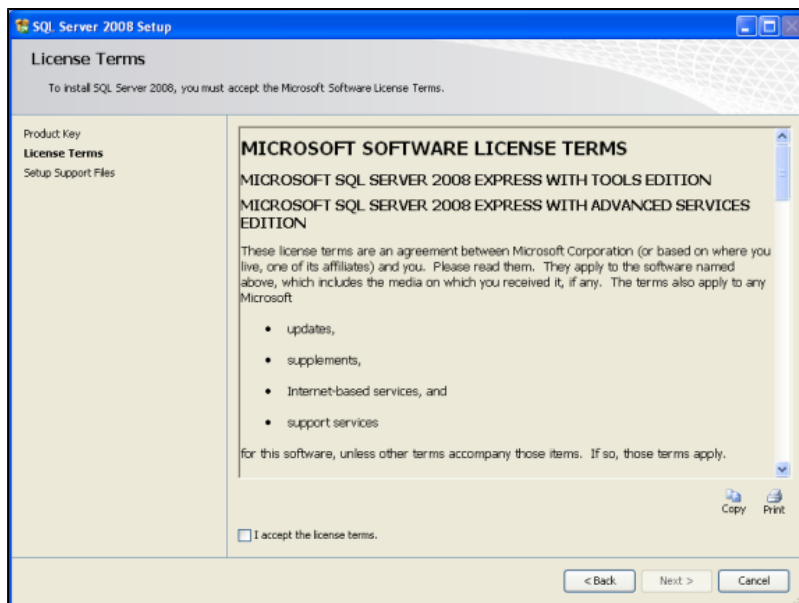
3. Select New SQL Server stand-alone installation or add features to an existing installation



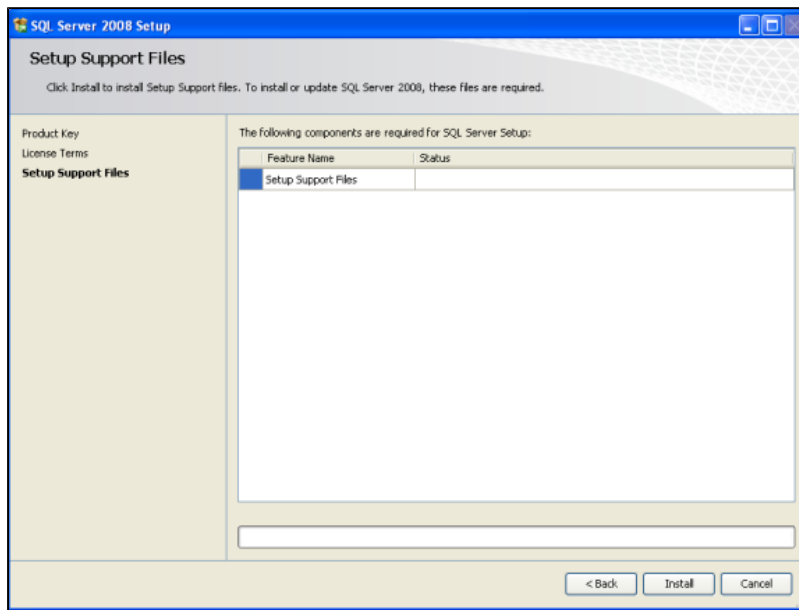
4. Click OK



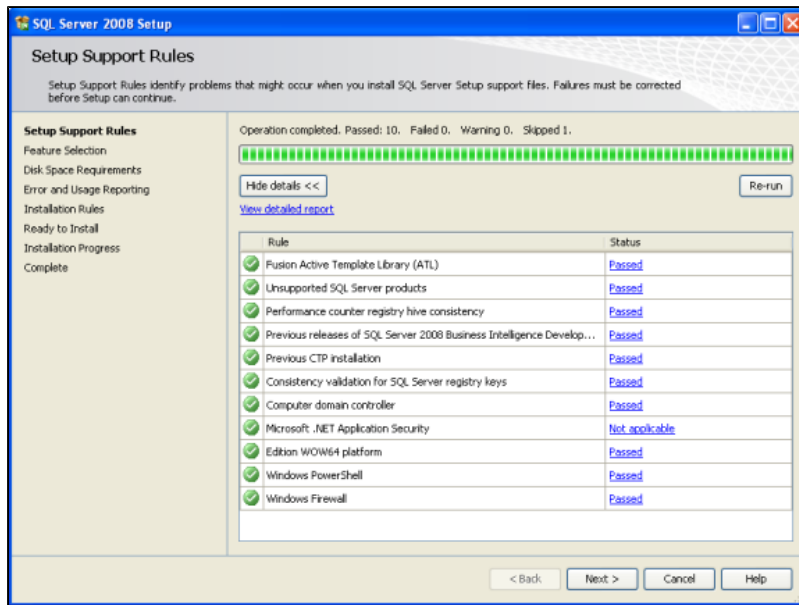
5. Click Next



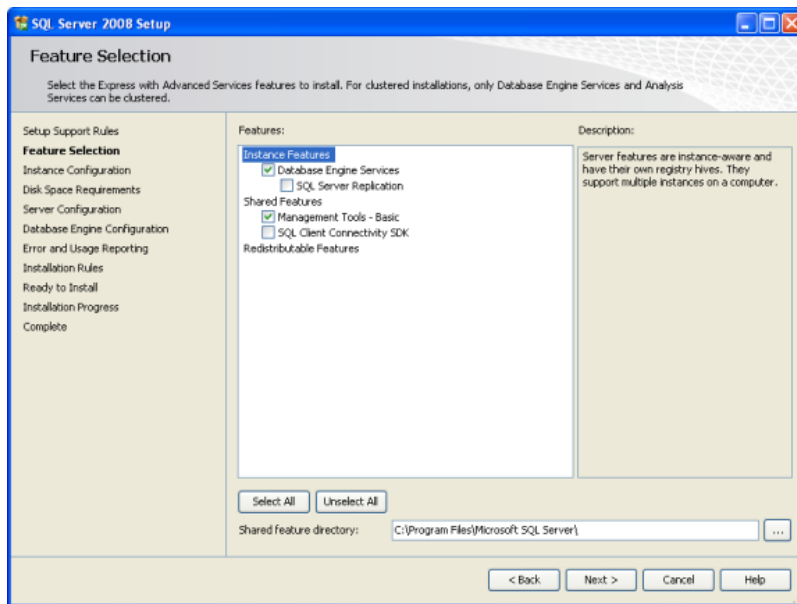
6. Accept License Terms and Click Next



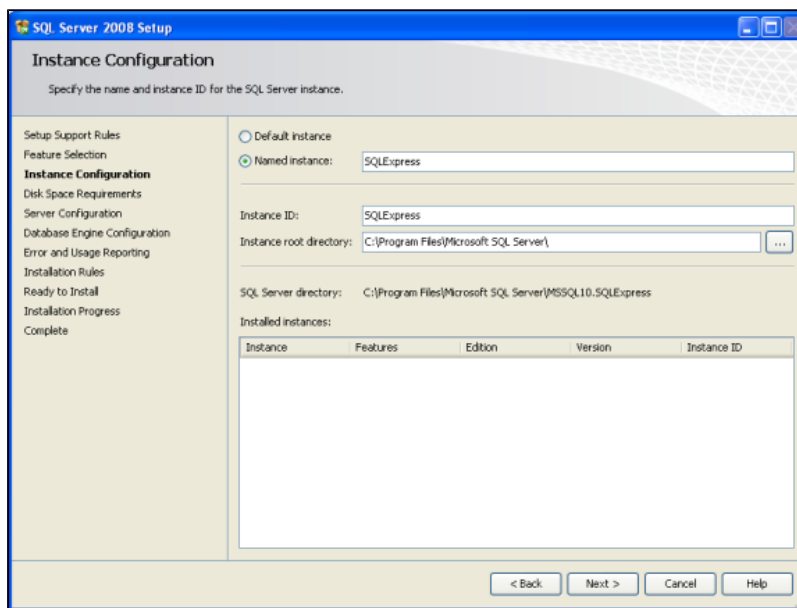
7. Click Install



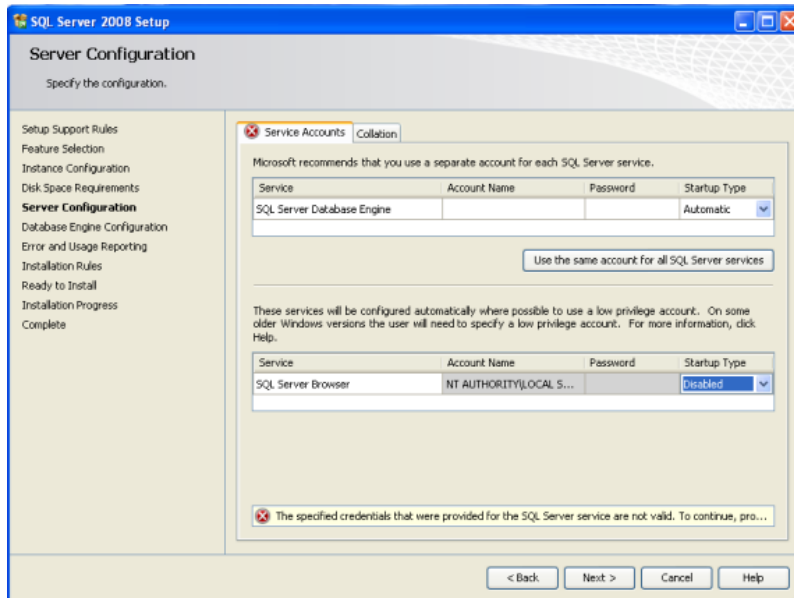
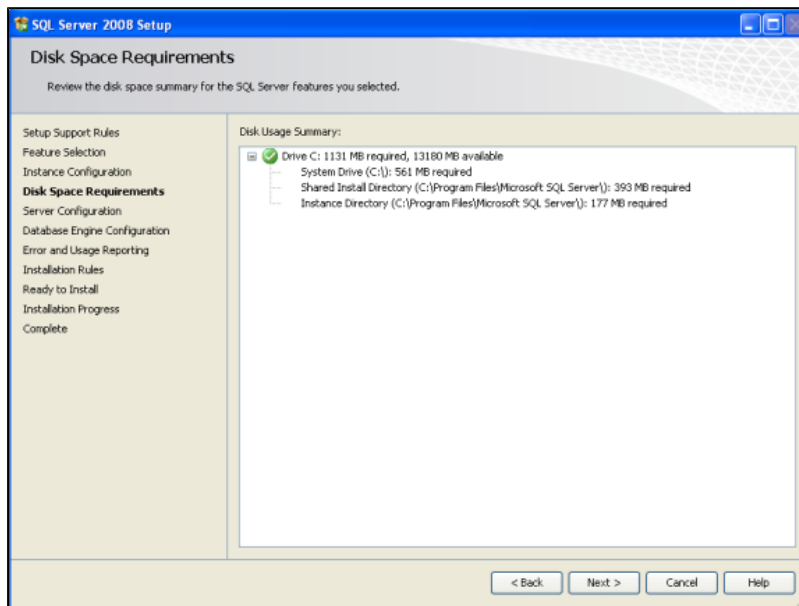
8. Make sure all tests have passed. Click Next



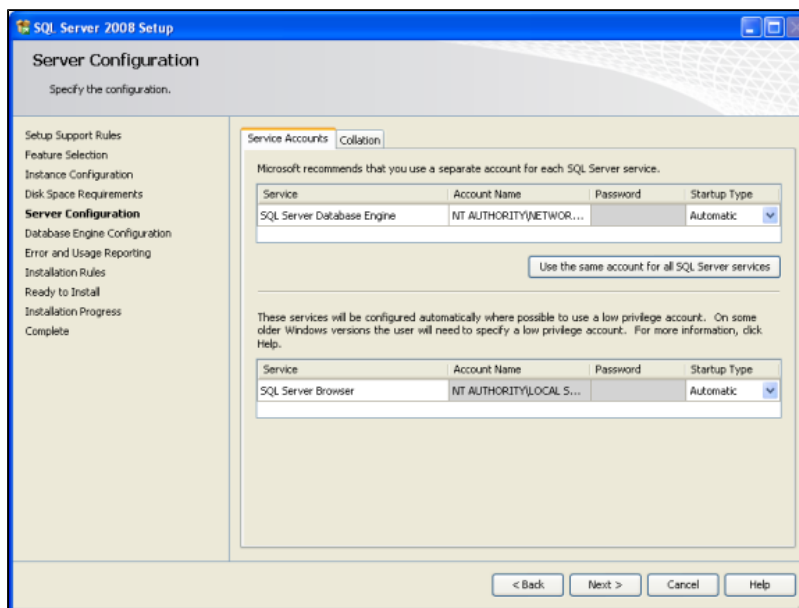
9. Select Database Engine Service and Management Tools



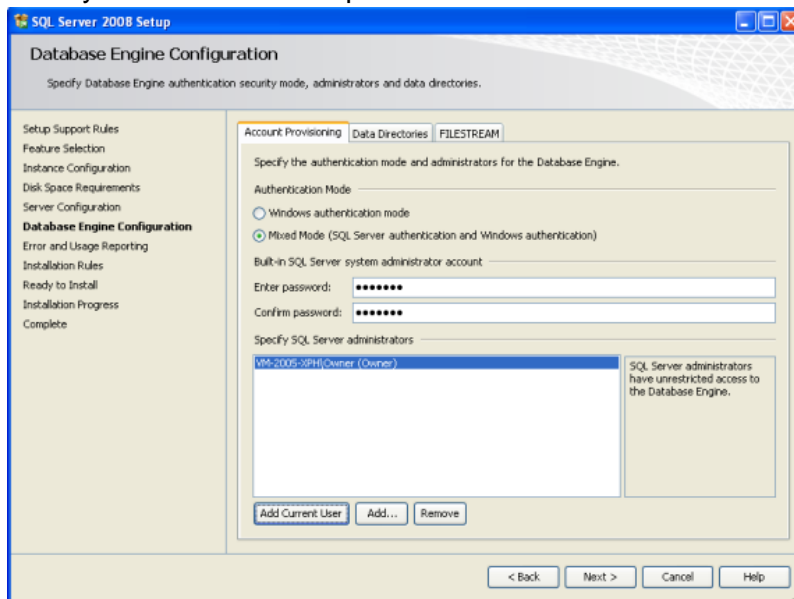
10. Click Next



11. Click Next

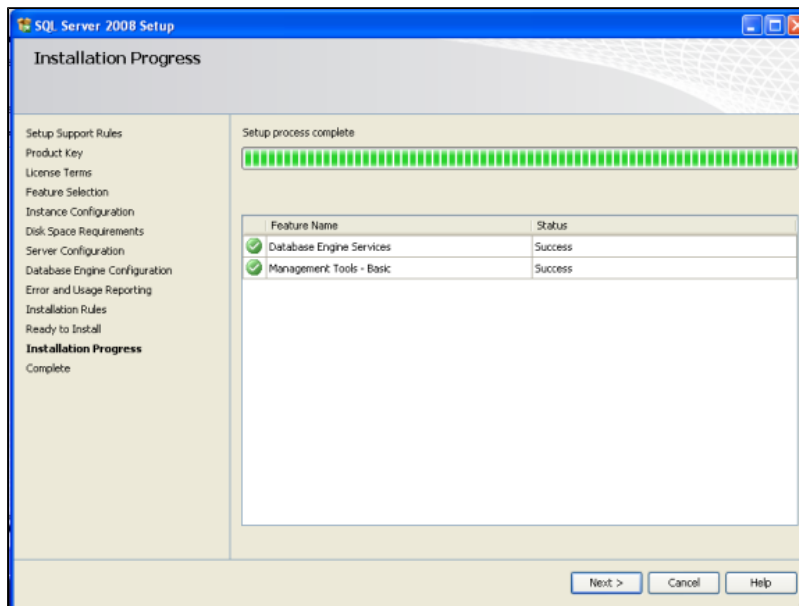


12. Add system administrator password. Click Next

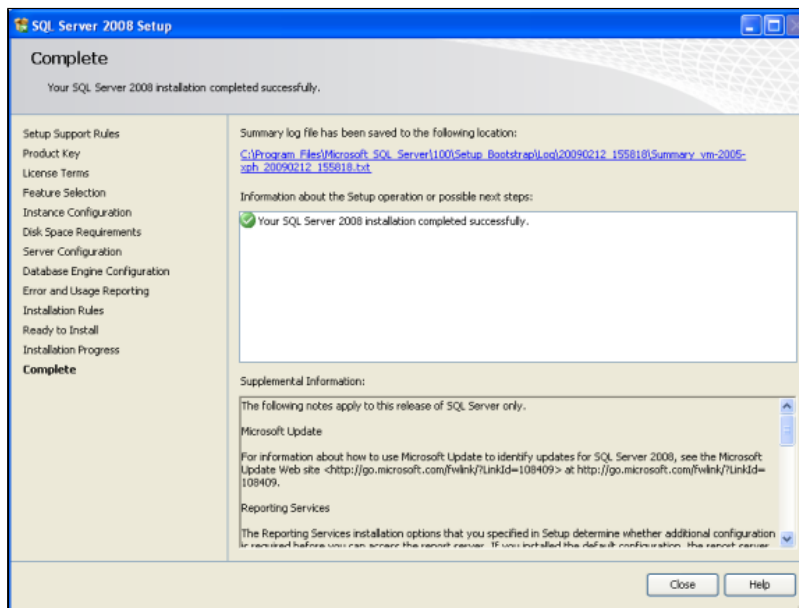


Mixed Mode Authentication

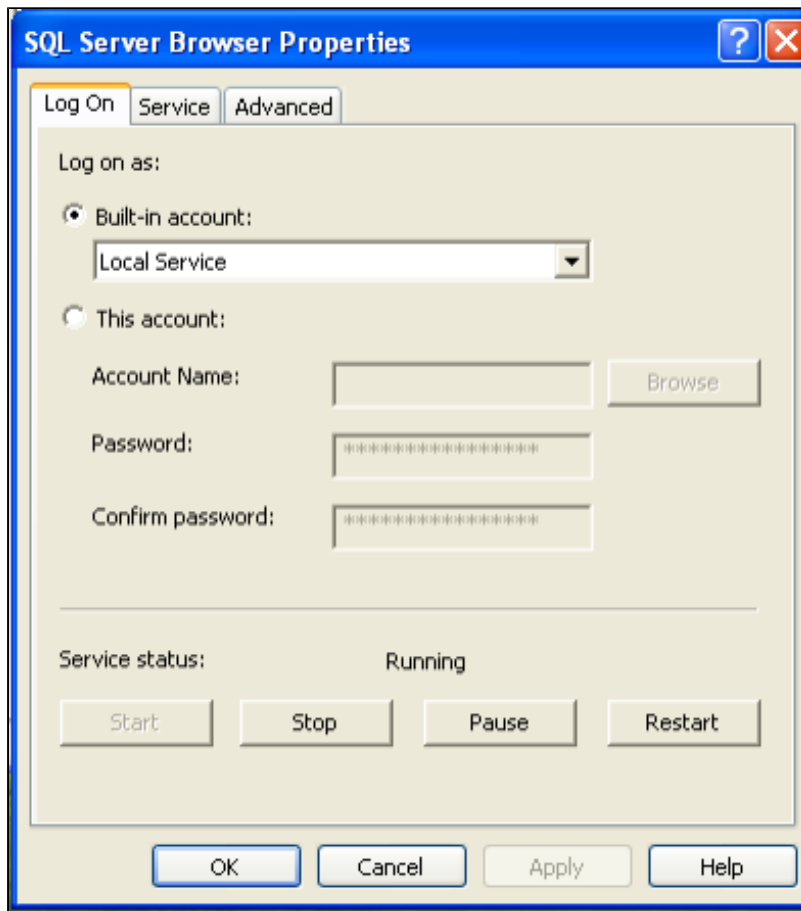
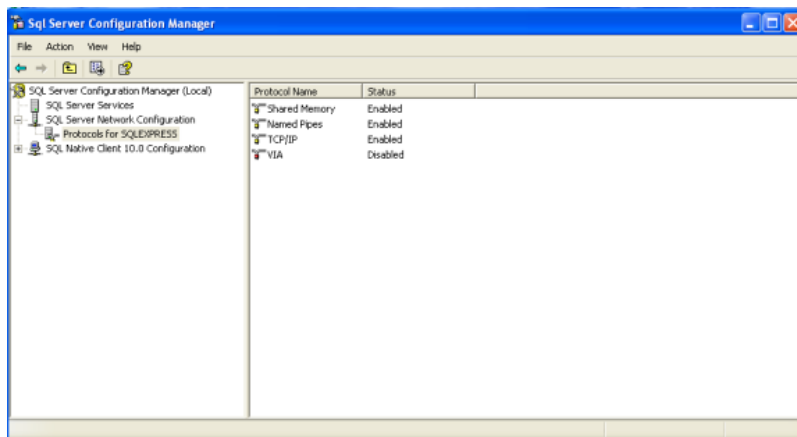
1. Add at least one user for System Administration. Click Next



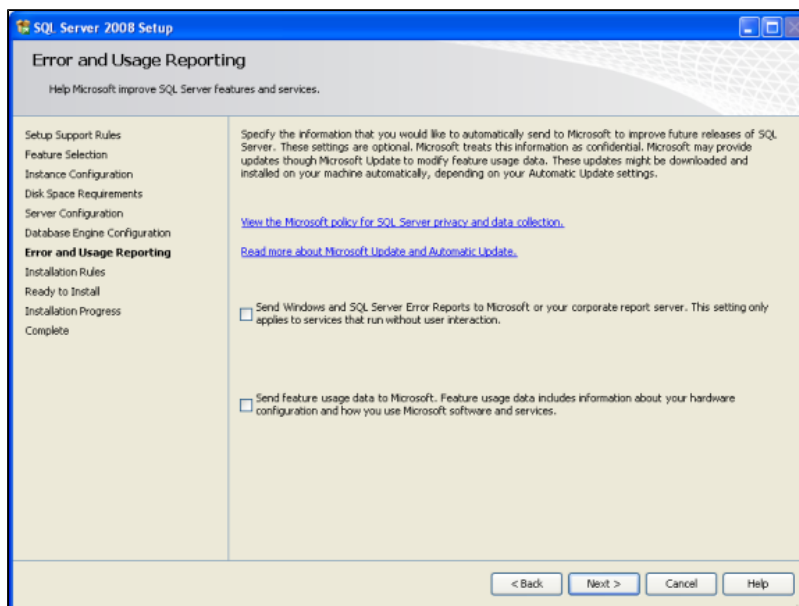
2. Click Next



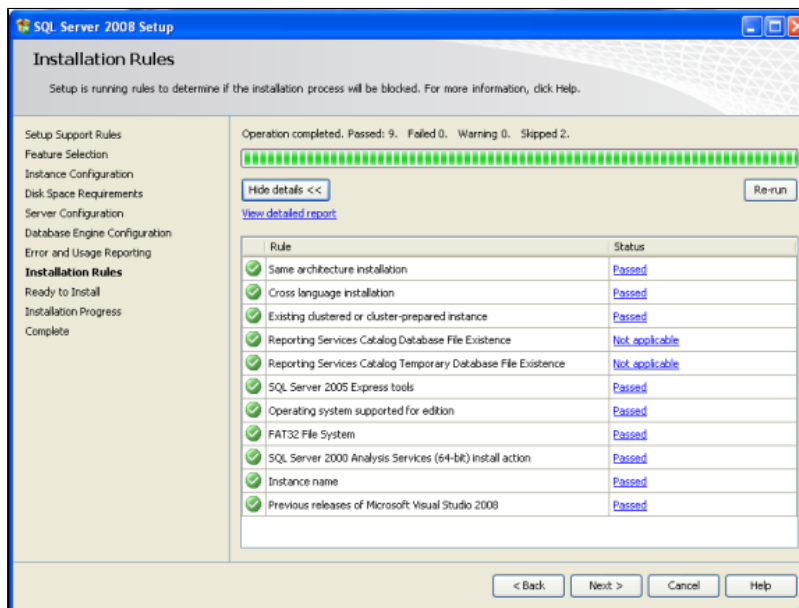
3. Click Close. Launch SQL Server Configuration Manager and change Shared Memory, Named Pipes and TCP/IP to Enabled.



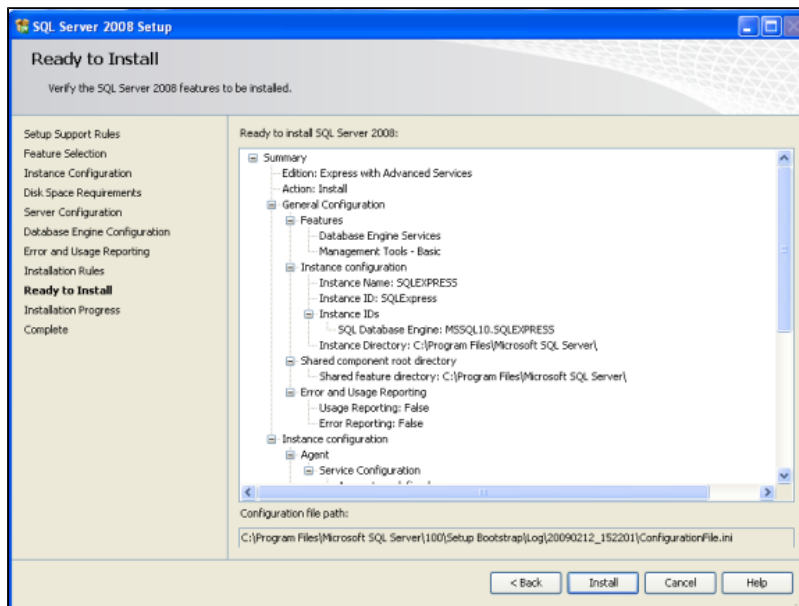
4. Restart SQL Server



5. Click Next



6. Address any issue. Click Next



7. Click Install

SQL Server 2008 R2 Express Installation

This is a step-by-step guide to install SQL Server 2008 R2 Express Edition.

Pre-Requisites

There are a few pre-requisites for installing SQL Server 2008 R2 Express Edition. You can view more information and the system requirements for SQL Server 2008 R2 Express Edition at the following location:

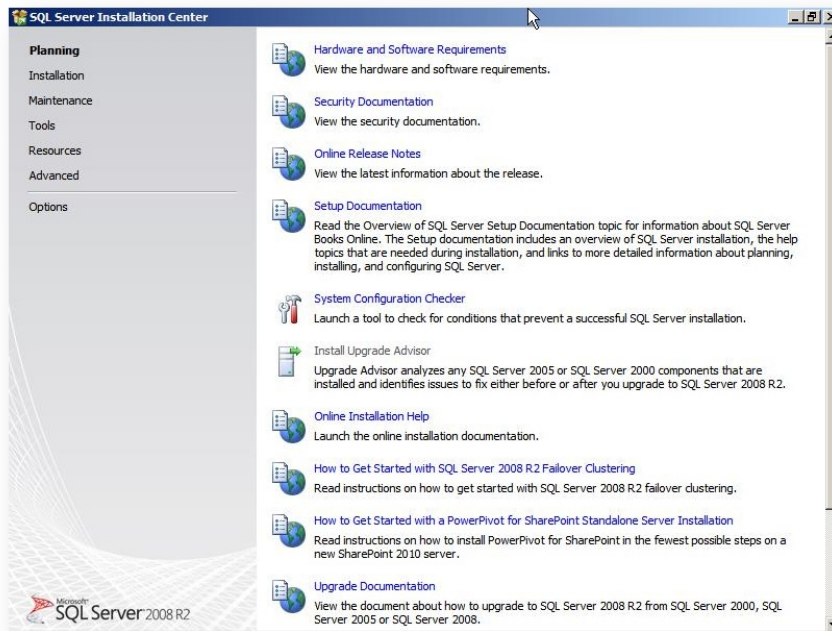
<http://www.microsoft.com/en-ca/download/details.aspx?id=30438#system-requirements>

Please note that Windows Installer 4.5, MS .Net Framework 3.5 SP1, and Windows PowerShell 1.0 must be installed prior to installing SQL Server 2008 R2 Express Edition. The link to download this program is available from Microsoft in the System Requirements documentation above.

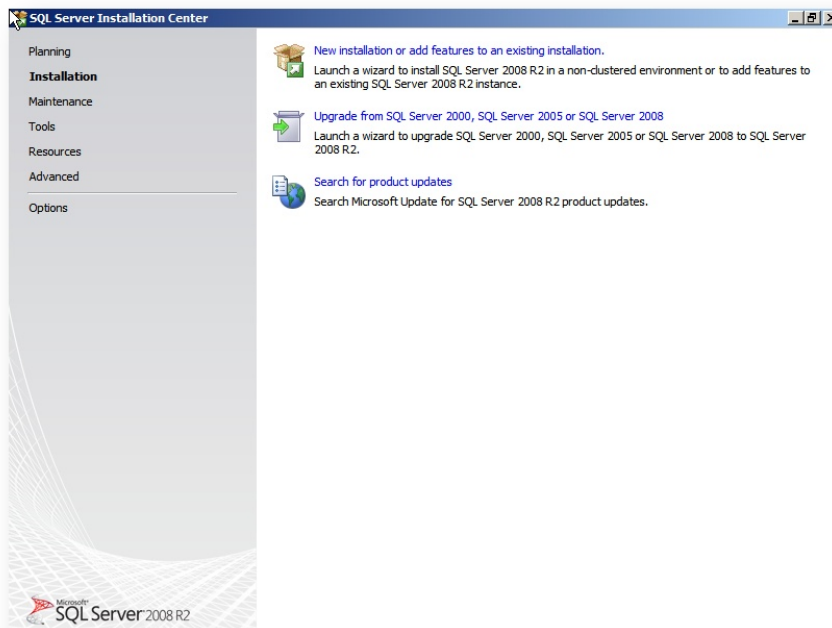
We also recommend ensuring that all Windows Updates have been performed prior to installing SQL Server 2008 R2 Express Edition.

Downloading and Installing SQL Server 2008 R2 Express

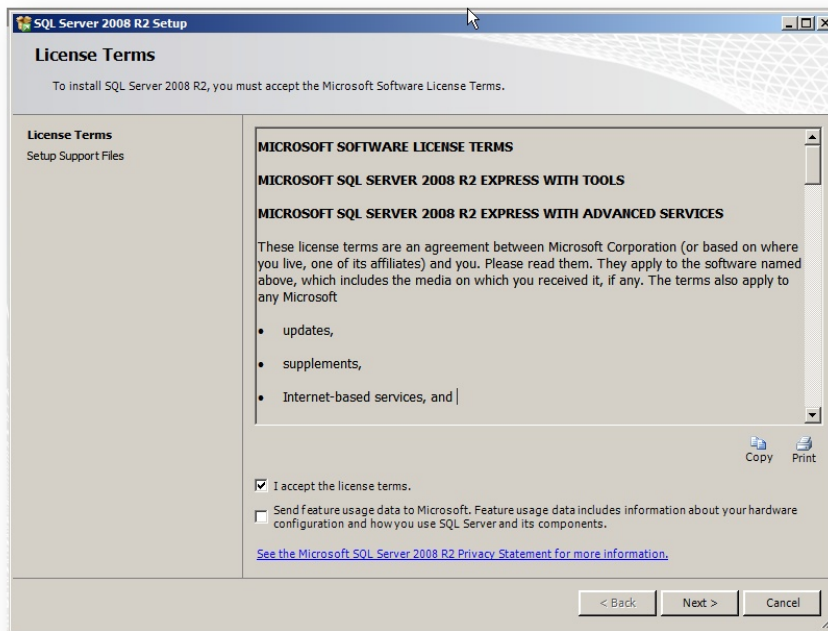
1. Download SQL Server 2008 R2 Express Edition from Microsoft:
 - a. Go to Microsoft's website (www.microsoft.com).
 - b. Enter 'SQL Server 2008 R2 Express with Tools' in the Search field and click the Search button.
 - c. Select a search result that includes the download and proceed to download the 32 bit or 64 bit 'SQLEXPRT_xXX_ENU.EXE' version.
 - d. Double click the SQLEXPRT_xXX_ENU.EXE file to install it.
2. Click on Installation in the left pane.



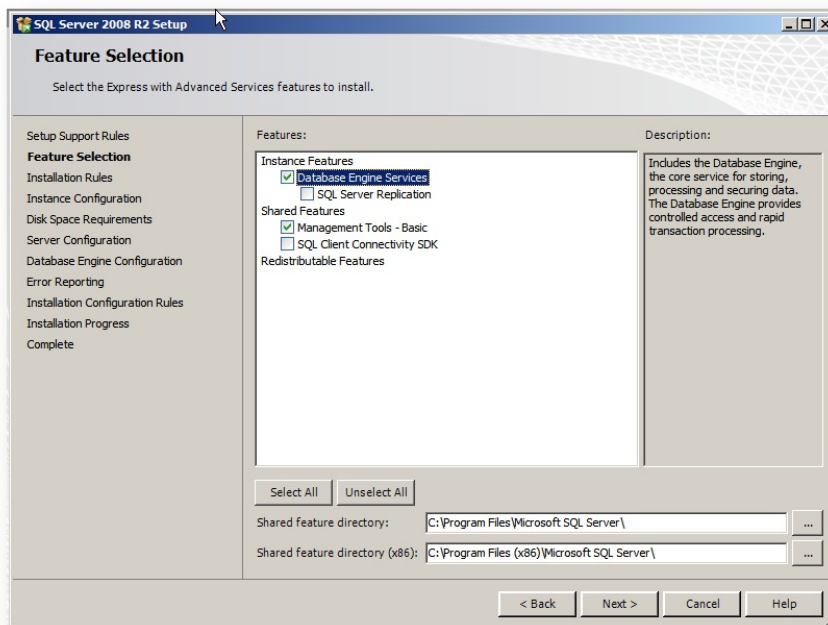
3. Select 'New installation or add features to an existing installation'.



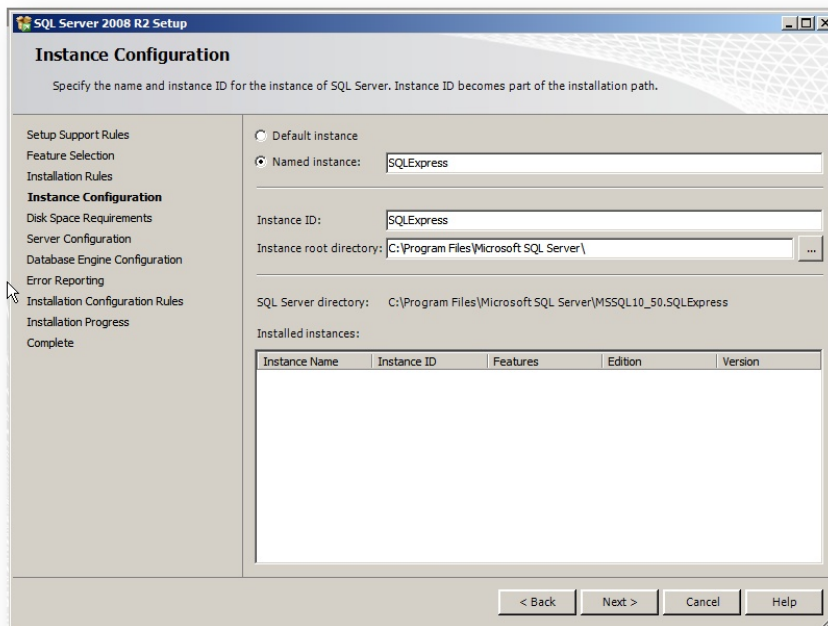
4. Read and accept the license terms, then click "Next".



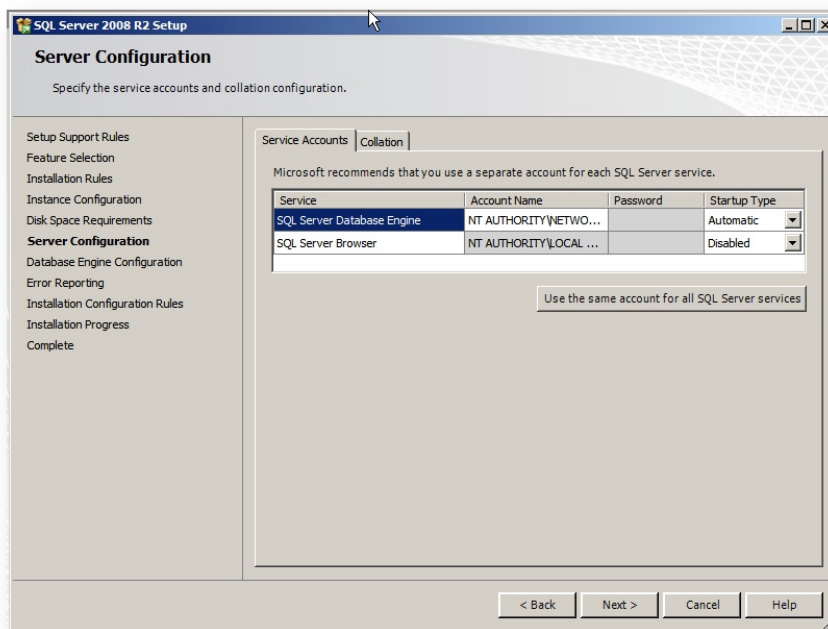
5. Select "Database Engine Services" and "Management Tools – Basic" and then click "Next".



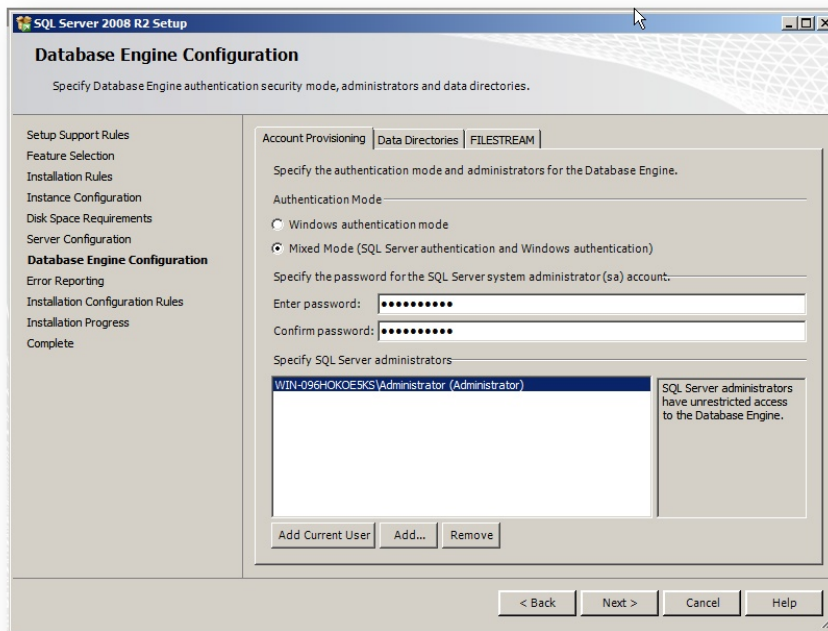
6. Keep the defaults, and then click "Next".



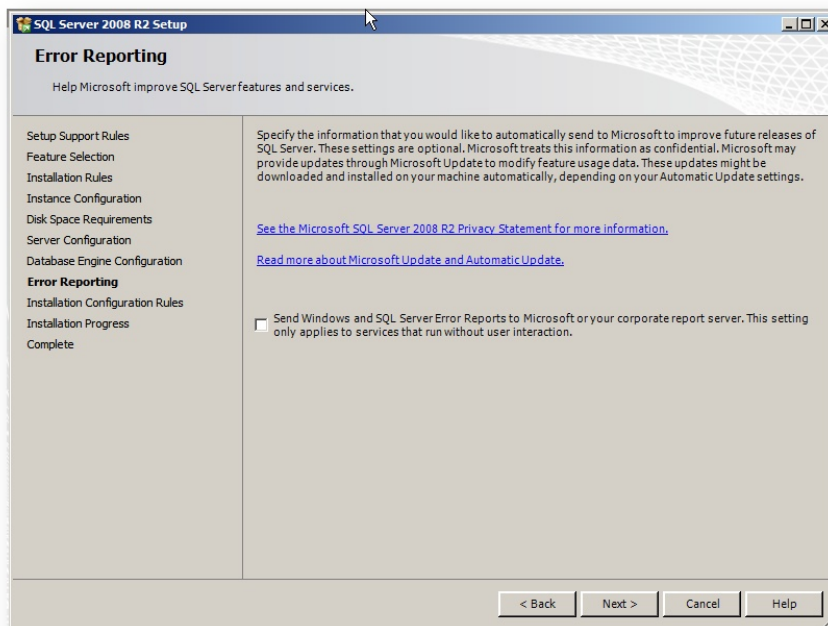
7. Select an Account Name and click "Next".



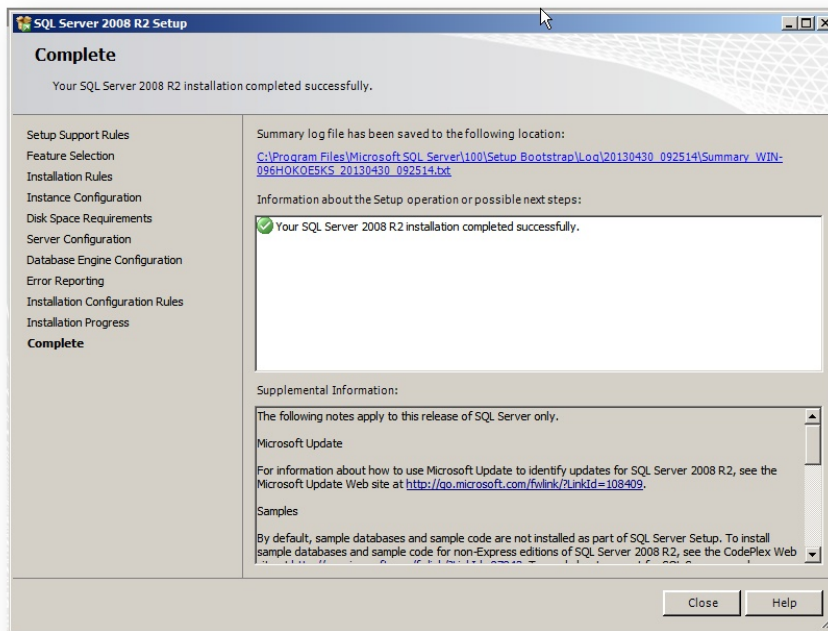
8. Select "Mixed Mode (SQL Server authentication and Windows authentication)", enter a SQL Server system administrator password, specify a SQL Server administrator(s), then click "Next".



9. Click "Next"

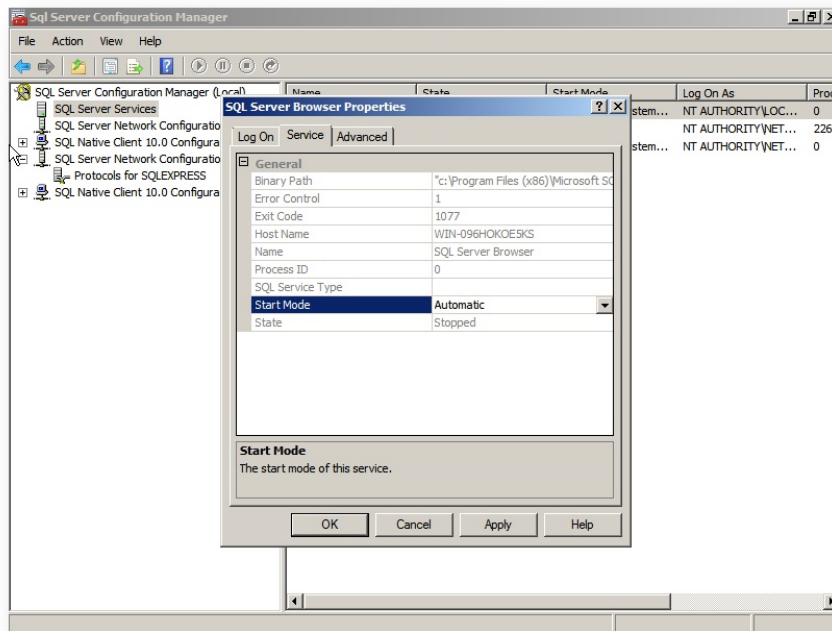


10. Click "Close"



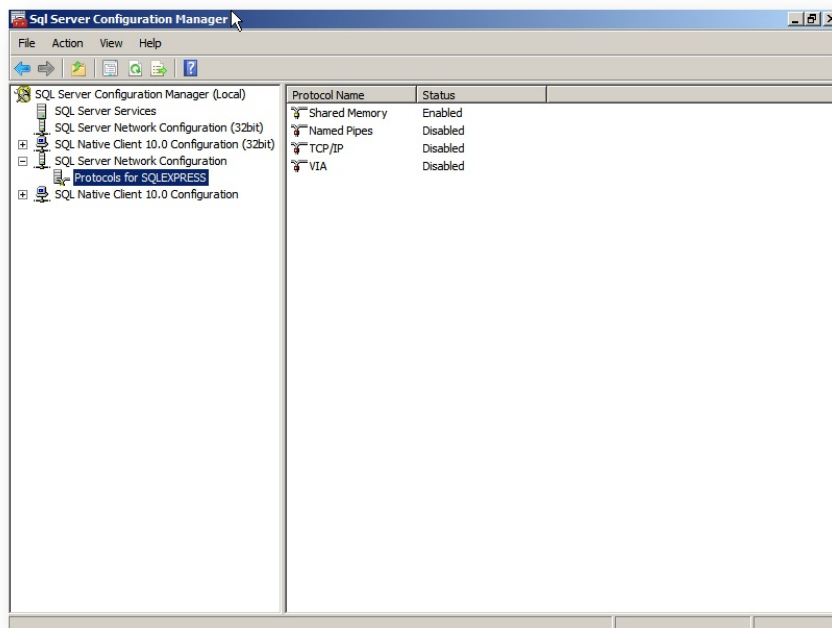
Configuring SQL Server 2008 R2 Express

1. Open the SQL Server Configuration Manager (Start -> Programs -> Microsoft SQL Server 2008 R2 -> Configuration Tools -> SQL Server Configuration Manager).
2. Your default server name (under SQL Server Services) is SQLEXPRESS and should be running. If it is stopped, right click on it and click Start.
3. The SQL Server Browser should be running. If it is stopped, right click on SQL Server Browser, and then choose Properties. Click on the Service tab and ensure the Start Mode is set to Automatic. Click the Apply button then go back to the Log On tab and click the Start button.



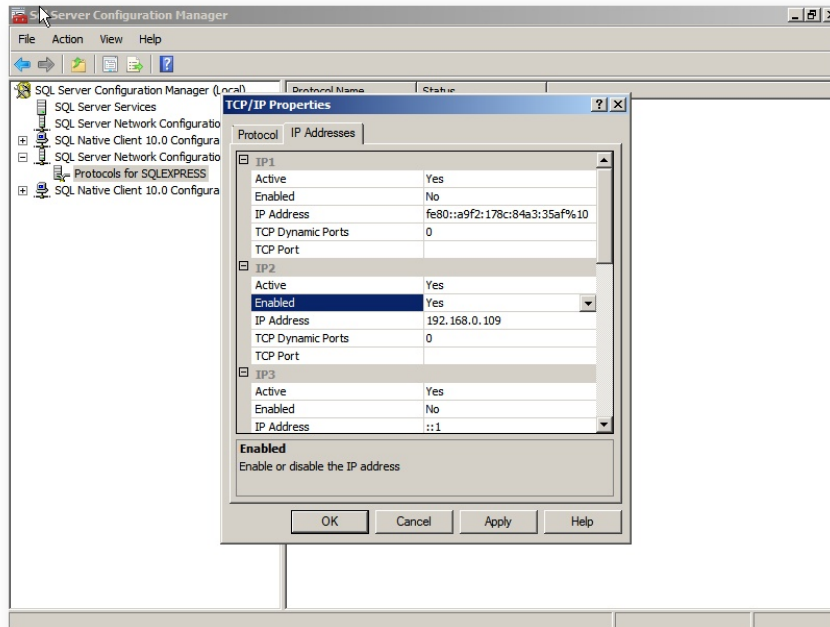
4. Click on the plus sign beside SQL Server Network Configuration and click on Protocols for SQLEXPRESS

Restart the SQL Server by clicking on SQL Server Services, then right clicking on SQL Server (SQLEXPRESS), and selecting Restart.

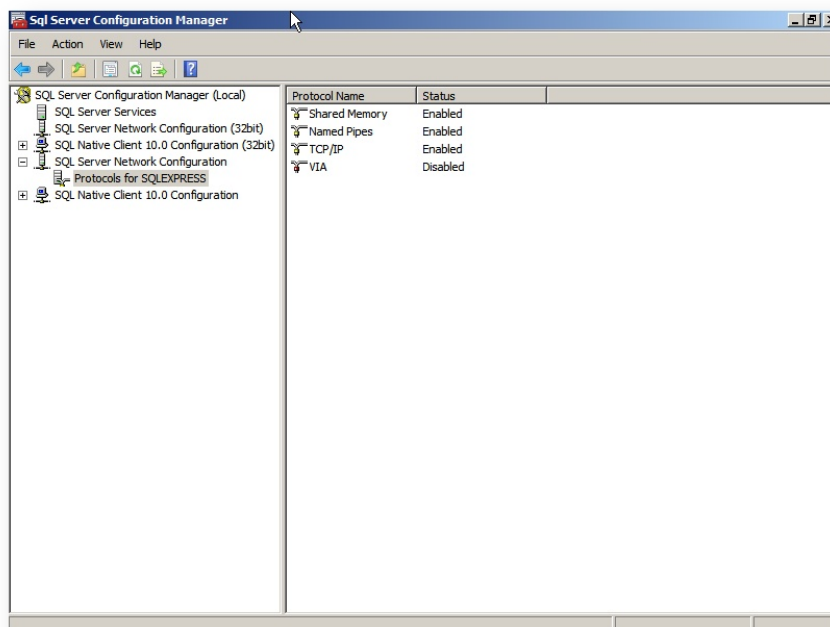


- a. Double click on Named Pipes and Enable it. Click Ok.
- b. Double click on TCP/IP and Enable it.

- c. Go to the IP Addresses tab on the TCP/IP Properties window and ensure that the network adapter that you wish to use is set to Active and Enabled. Click ok.



- d. The Protocols should now look the same as the picture below.



5. Close the SQL Server Configuration Manager.

SQL Server 2012 Express Installation

This is a step-by-step guide to install SQL Server 2012 Express Edition to use as a database.

Pre-Requisites

There are a few pre-requisites for installing SQL Server 2012 Express Edition. You can view more information and the system requirements for SQL Server 2012 Express Edition at the following location:

<http://www.microsoft.com/en-us/download/details.aspx?id=29062#system-requirements>

Please note that Windows Installer 4.5, MS .Net Framework 3.5 SP1, and Windows PowerShell 1.0 must be installed prior to installing SQL Server 2008 Express Edition. The link to download this program is available from Microsoft in the System Requirements documentation above.

We also recommend ensuring that all Windows Updates have been performed prior to installing SQL Server 2012 Express Edition.

Downloading and Installing SQL Server 2012 Express

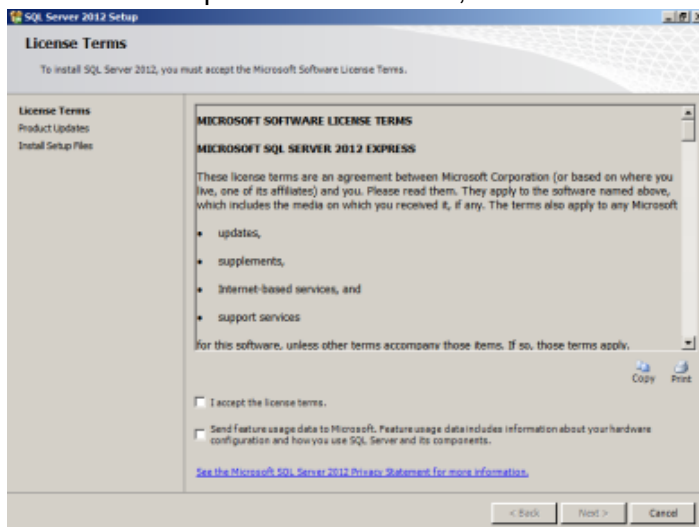
1. Download SQL Server 2008 Express Edition from Microsoft:
 - a. Go to Microsoft's website (www.microsoft.com).
 - b. Enter 'SQL Server 2012 Express with Tools' in the Search field and click the Search button.
 - c. You will see a screen of results that match the search. Select a result that includes the download and proceed to download the 32 bit or 64 bit 'ENU\XXX\SQLEXPRT_xXX_ENU.EXE' version.
2. Double click the SQLEXPRT_xXX_ENU.EXE file to install it.
3. Click on Installation in the left pane



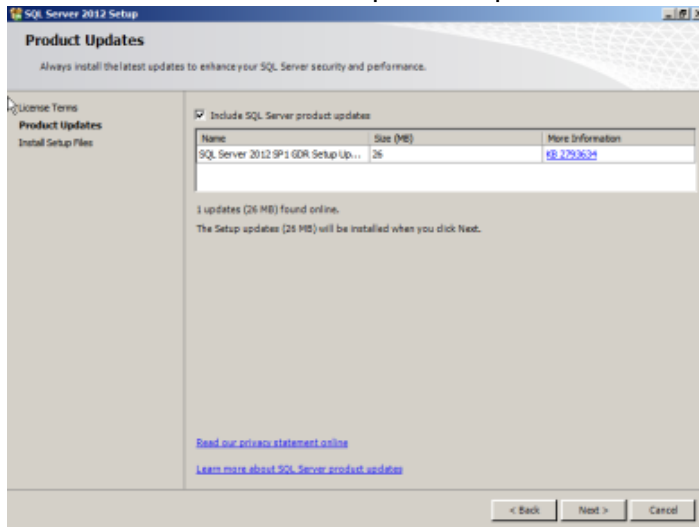
4. Select 'New SQL Server stand-alone installation or add features to an existing installation'.



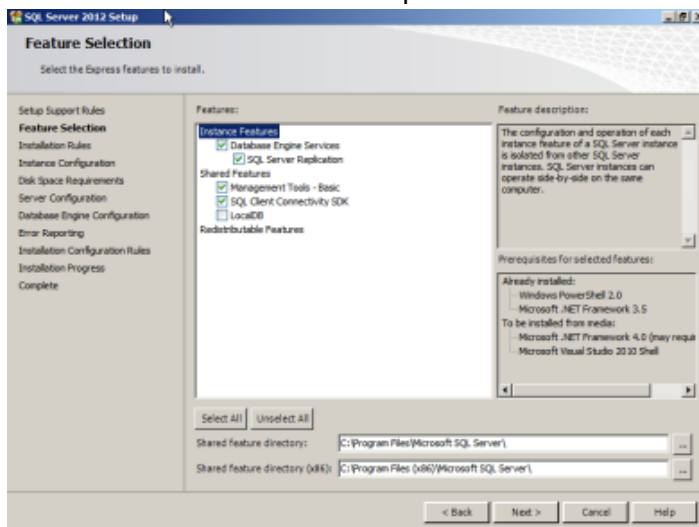
5. Read and accept the license terms, and then click "Next"



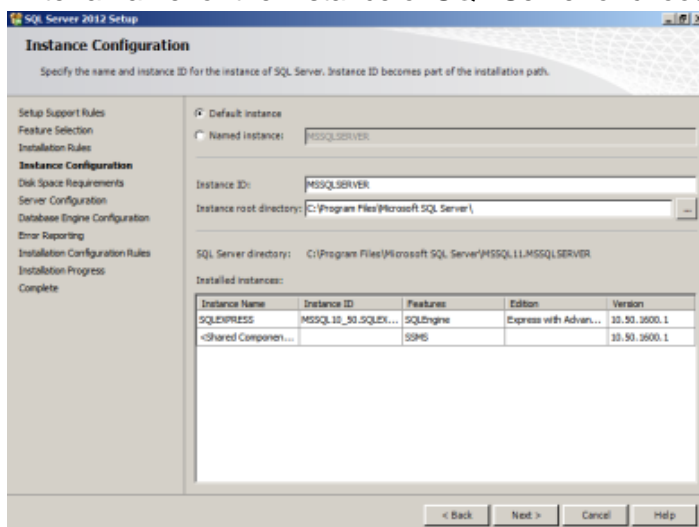
6. Check "Include SQL Server product updates" and then click "Next".



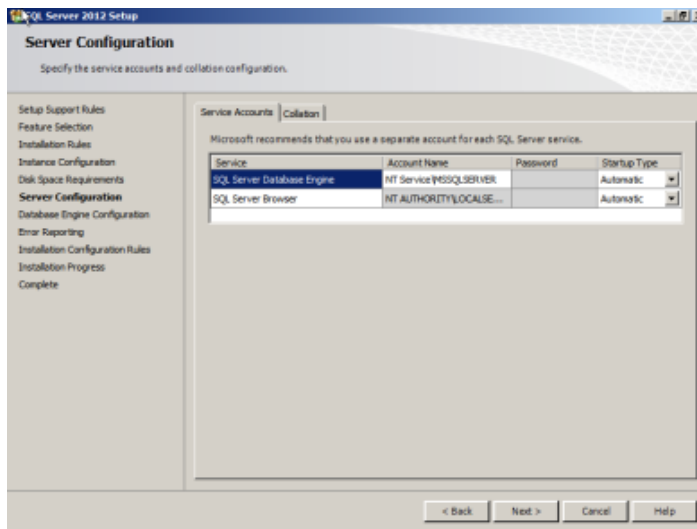
7. On the Features Selection keep the defaults and click "Next".



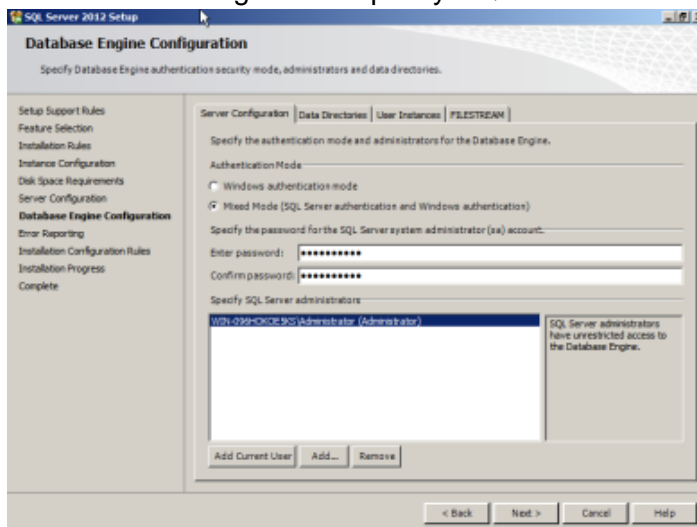
8. Enter a name for the Instance of SQL Server or choose "Default instance". Click "Next".



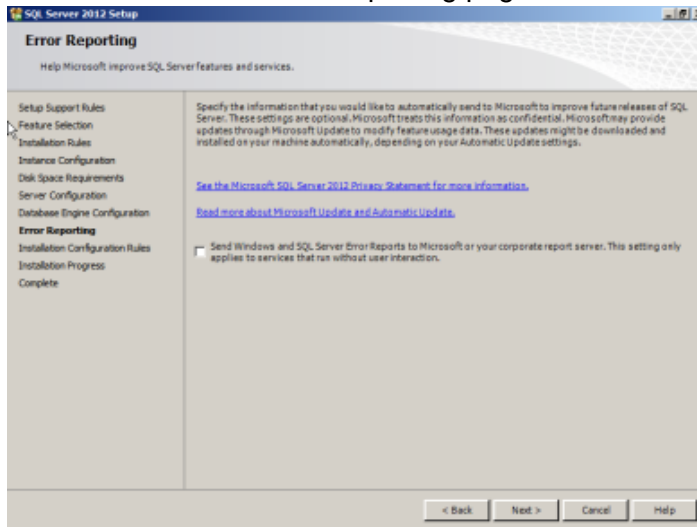
9. Ensure the "Startup Type" is set to Automatic for the SQL Server Database Engine and SQL Server Browser. Click "Next".



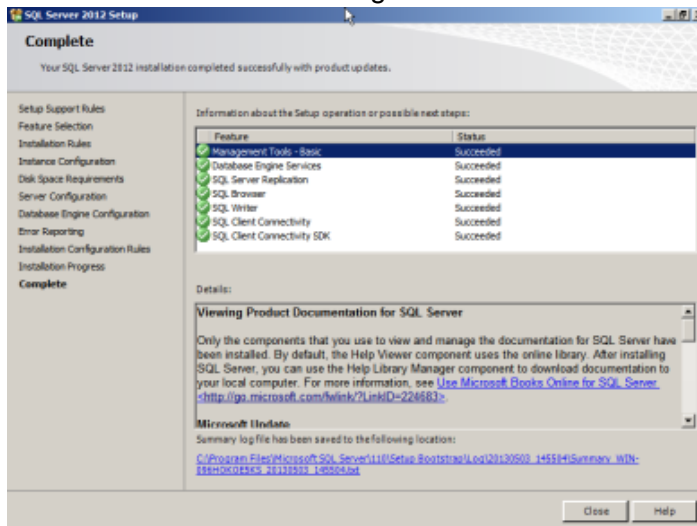
10. Choose "Mixed Mode (SQL Server authentication and Windows authentication)". Enter a password for the SQL System Administrator (SA) account. Click "Add Current User" if there is no user showing under "Specify SQL Server administrators". Click "Next".



- Click "Next" on the Error Reporting page.



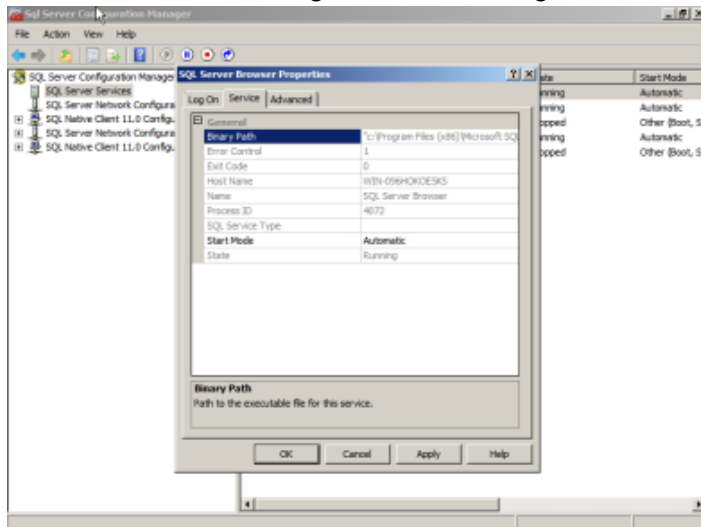
- Once it has finished installing click "Close".



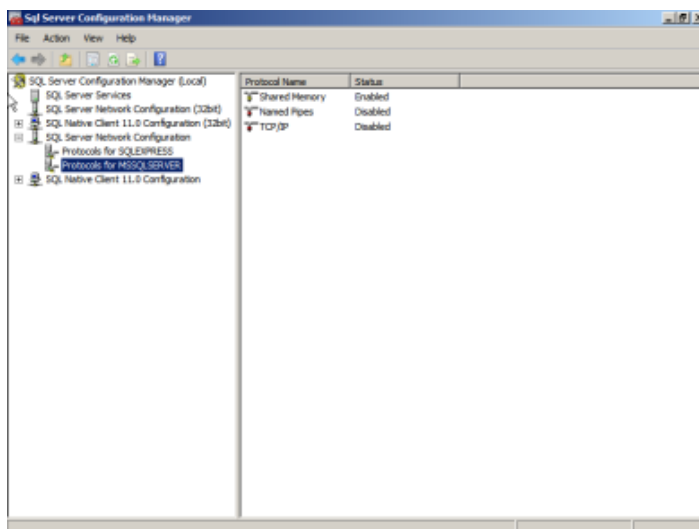
Configuring SQL Server 2008 Express

- Open the SQL Server Configuration Manager (Start -> Programs -> Microsoft SQL Server 2012 -> Configuration Tools -> SQL Server Configuration Manager).
- Your SQL Server (with the instance name you set) should be running. If it is stopped, right click on it and click Start.

3. The SQL Server Browser should be running. If it is stopped, right click on SQL Server Browser, and then choose Properties. Click on the Service tab and ensure the Start Mode is set to Automatic. Then go back to the Log On tab and click the Start button.

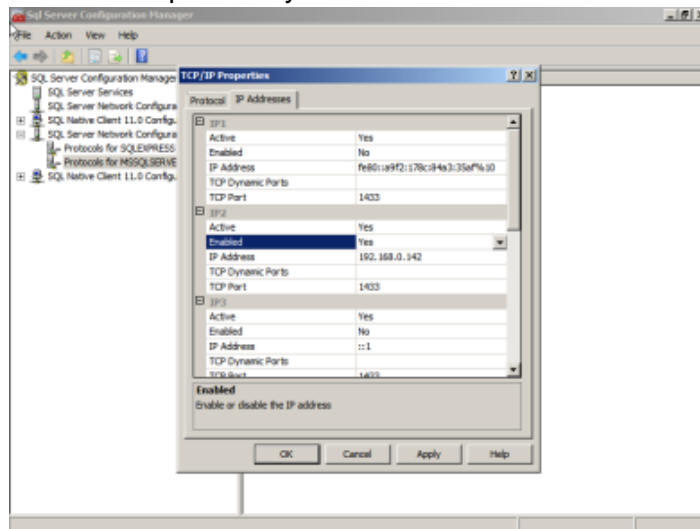


4. Click on the plus sign beside SQL Server Network Configuration and click on Protocols for the name of the Instance.

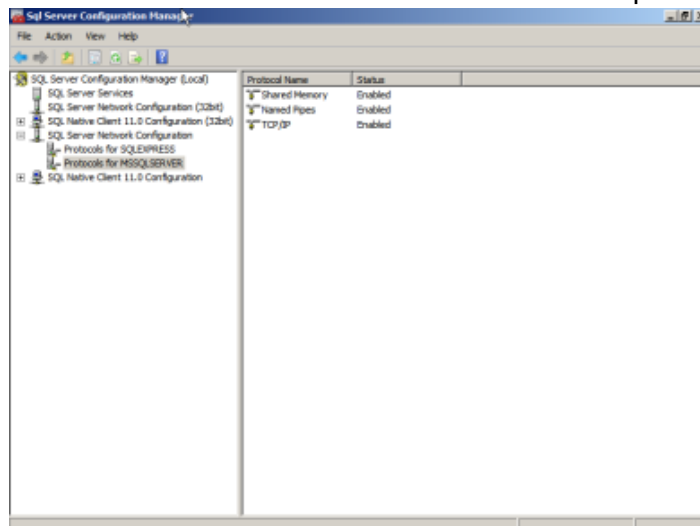


- a. Double click on Named Pipes and Enable it. Click Ok.
- b. Double click on TCP/IP and Enable it.

- c. Go to the IP Addresses tab on the TCP/IP Properties window and ensure that the network adapter that you wish to use is set to Active and Enabled. Click ok.



- d. The Protocols should now look the same as the picture below.



5. Restart the SQL Server by click on SQL Server Services, then right clicking on SQL Server (Instance Name), and selecting Restart.
6. Close the SQL Server Configuration Manager.

SQL Server 2014 Express Installation

This is a step-by-step guide to install SQL Server 2014 Express Edition to use as a database.

Pre-Requisites

There are a few pre-requisites for installing SQL Server 2014 Express Edition. You can view more information and the system requirements for SQL Server 2014 Express Edition at the following location:

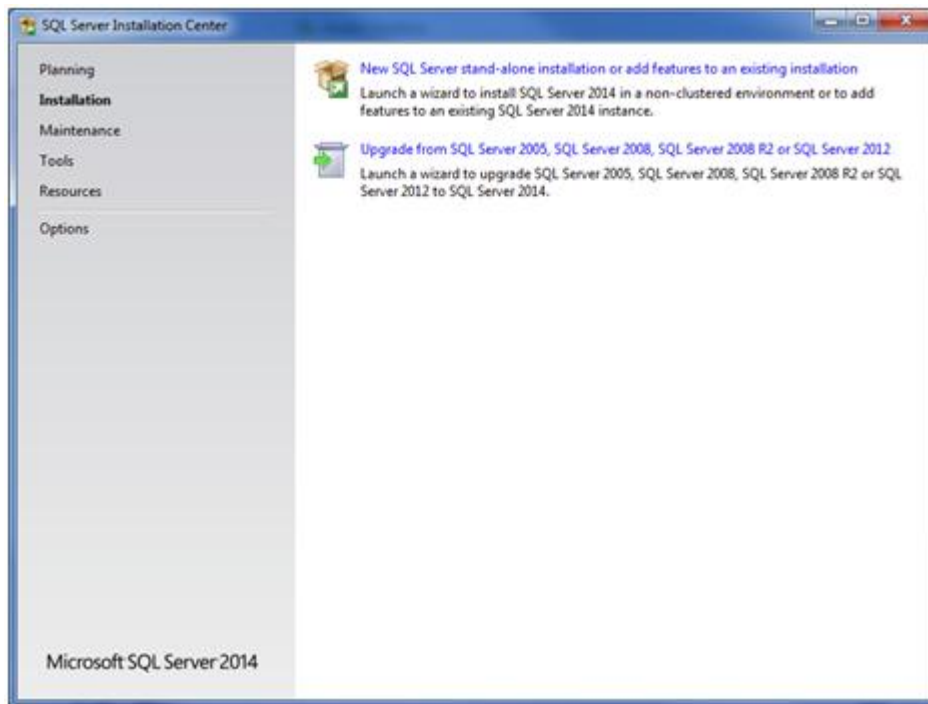
<https://www.microsoft.com/en-ca/download/details.aspx?id=42299>

Please note that Windows Installer 4.5, MS .Net Framework 3.5 SP1, and Windows PowerShell 1.0 must be installed prior to installing SQL Server 2014 Express Edition. The link to download this program is available from Microsoft in the System Requirements documentation above.

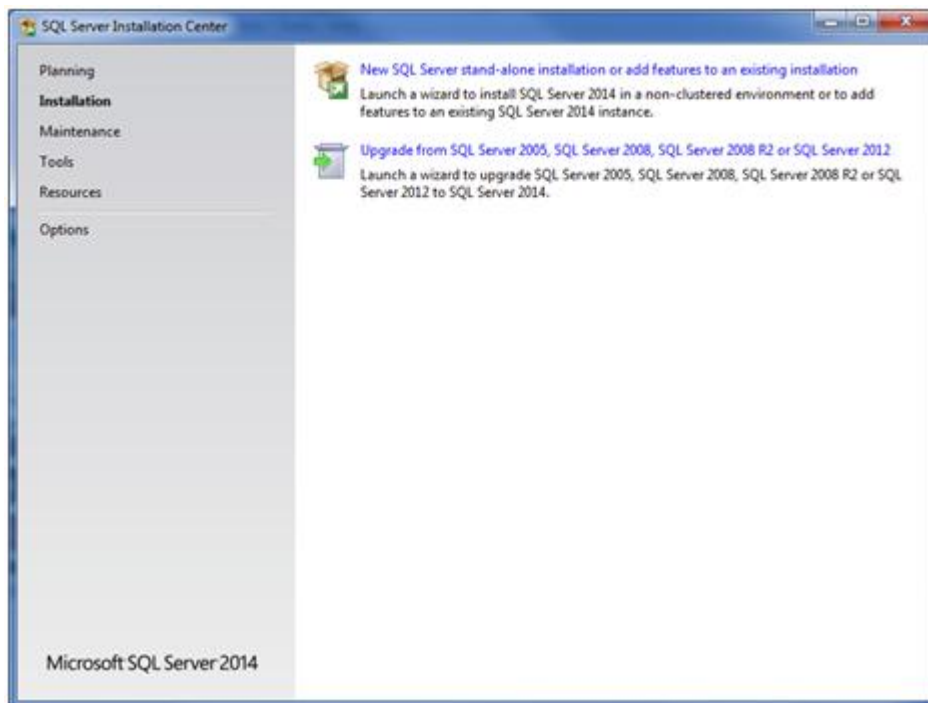
We also recommend ensuring that all Windows Updates have been performed prior to installing SQL Server 2014 Express Edition.

Downloading and Installing SQL Server 2014 Express

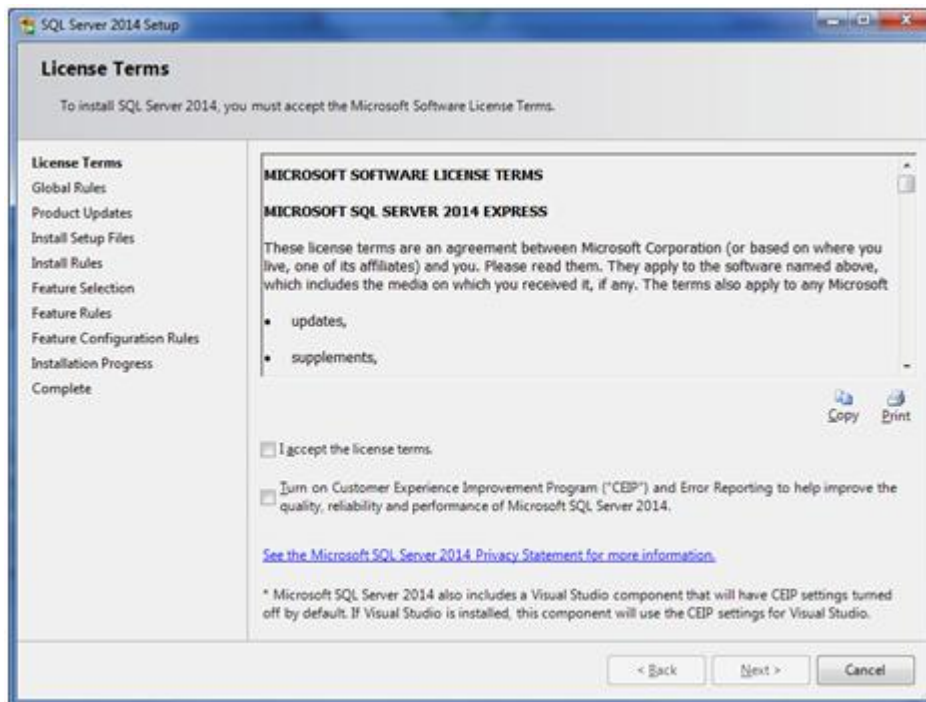
1. Download SQL Server 2014 Express Edition from Microsoft:
 - a. Go to Microsoft's website (www.microsoft.com).
 - b. Enter 'SQL Server 2014 Express with Tools' in the Search field and click the Search button.
 - c. You will see a screen of results that match the search. Select a result that includes the download and proceed to download the 32 bit or 64 bit ExpressAndToolsversion.
2. Double click the SQLEXPRT_xXX_ENU.EXE file to install it.
3. Click on Installation in the left pane.



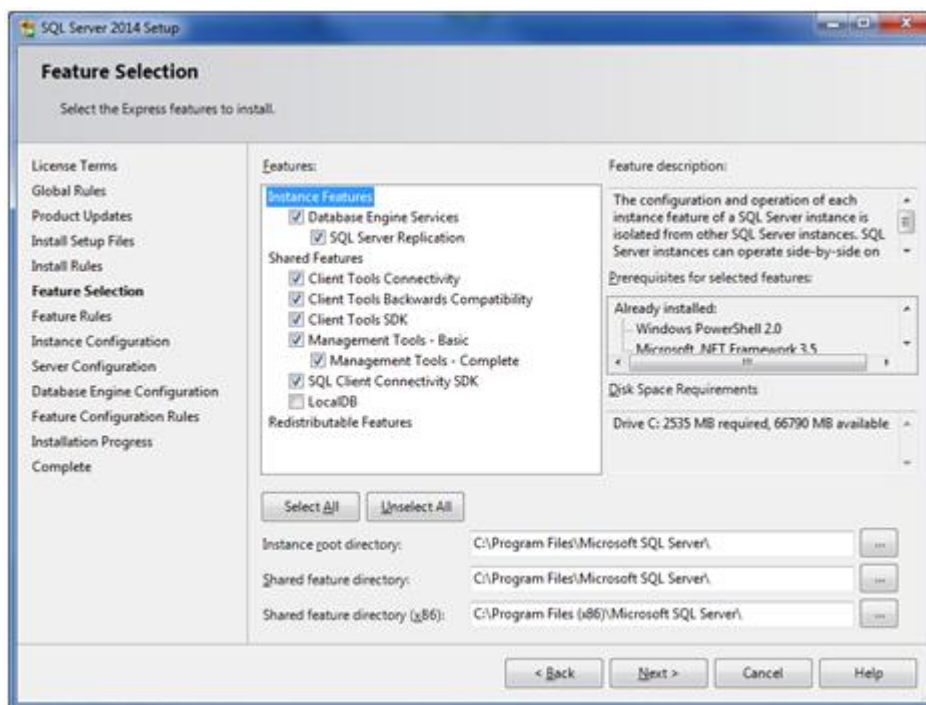
4. Select 'New SQL Server stand-alone installation or add features to an existing installation'.



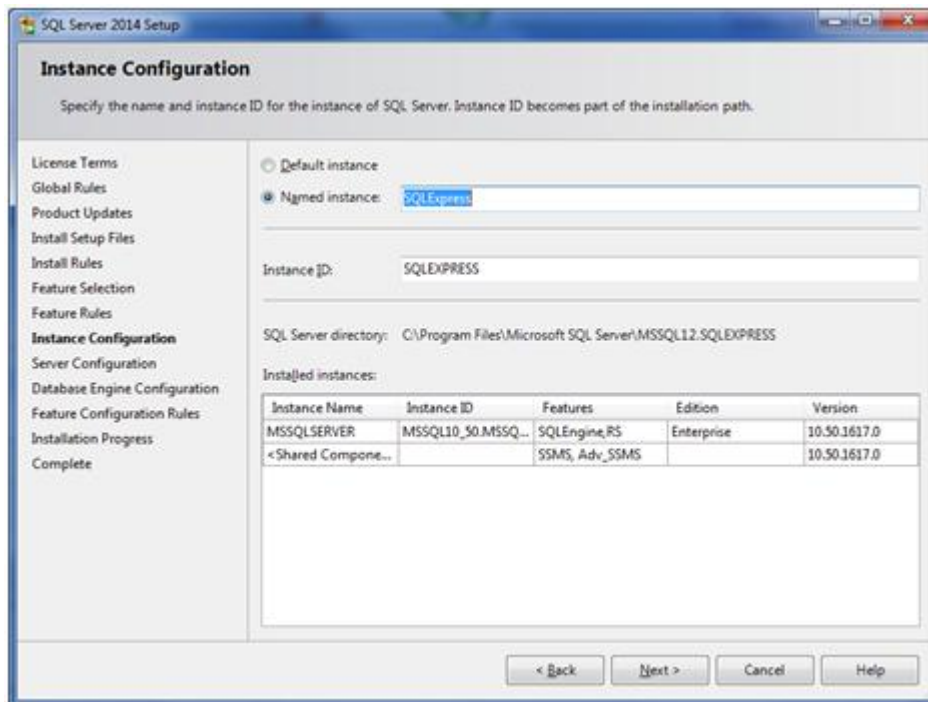
5. Read and accept the license terms, and then click "Next"



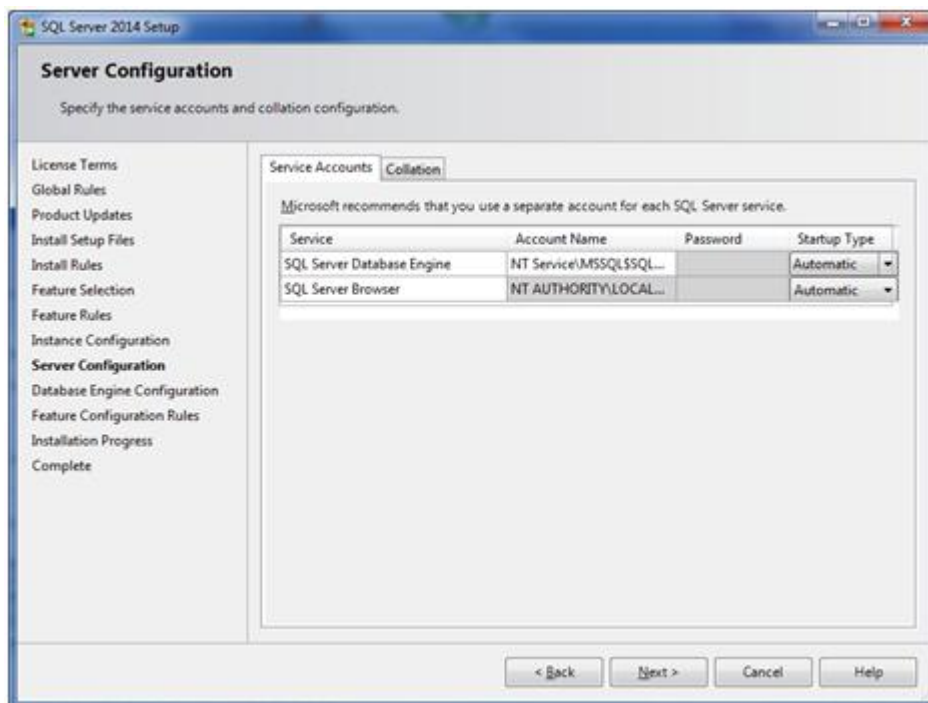
6. On the Features Selection keep the defaults and click "Next".



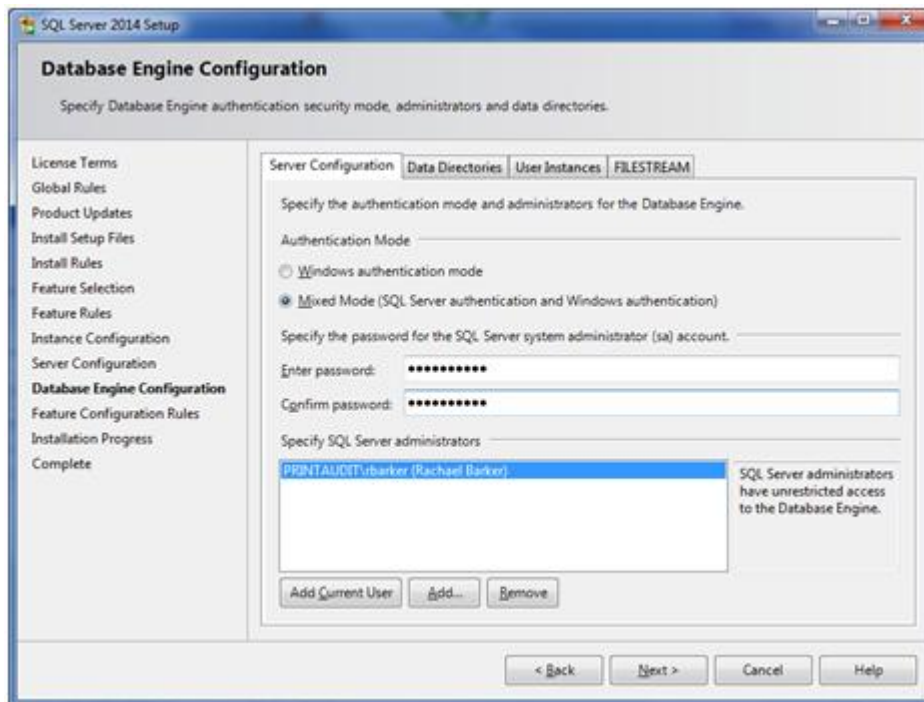
7. Enter a name for the Instance of SQL Server or choose "Default instance". Click "Next".



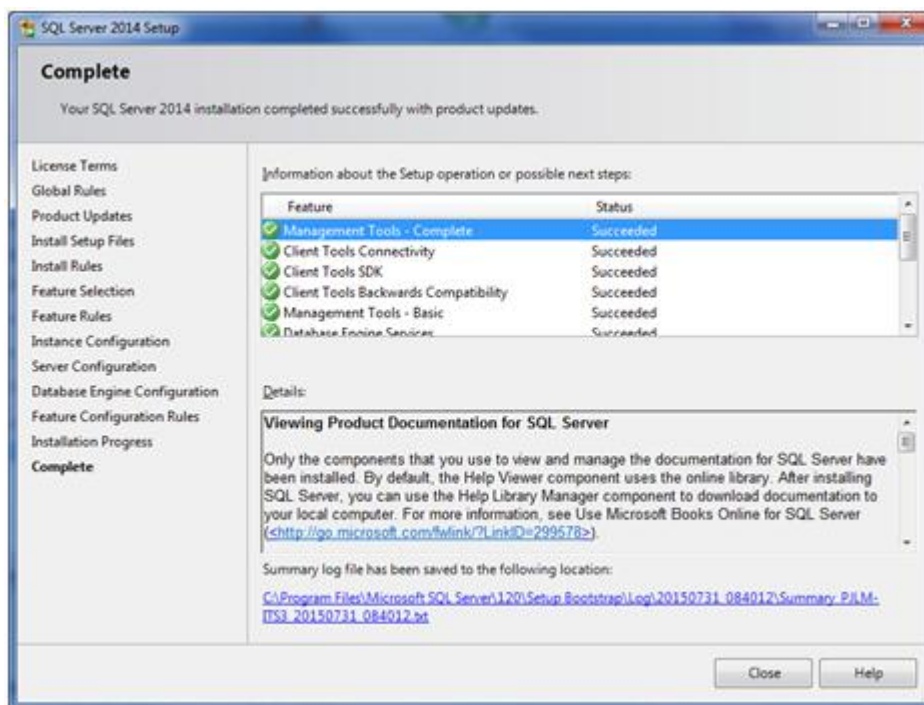
8. Ensure the "Startup Type" is set to Automatic for the SQL Server Database Engine and SQL Server Browser. Click "Next".



9. Choose "Mixed Mode (SQL Server authentication and Windows authentication)". Enter a password for the SQL System Administrator (SA) account. Click "Add Current User" if there is no user showing under "Specify SQL Server administrator". Click "Next".



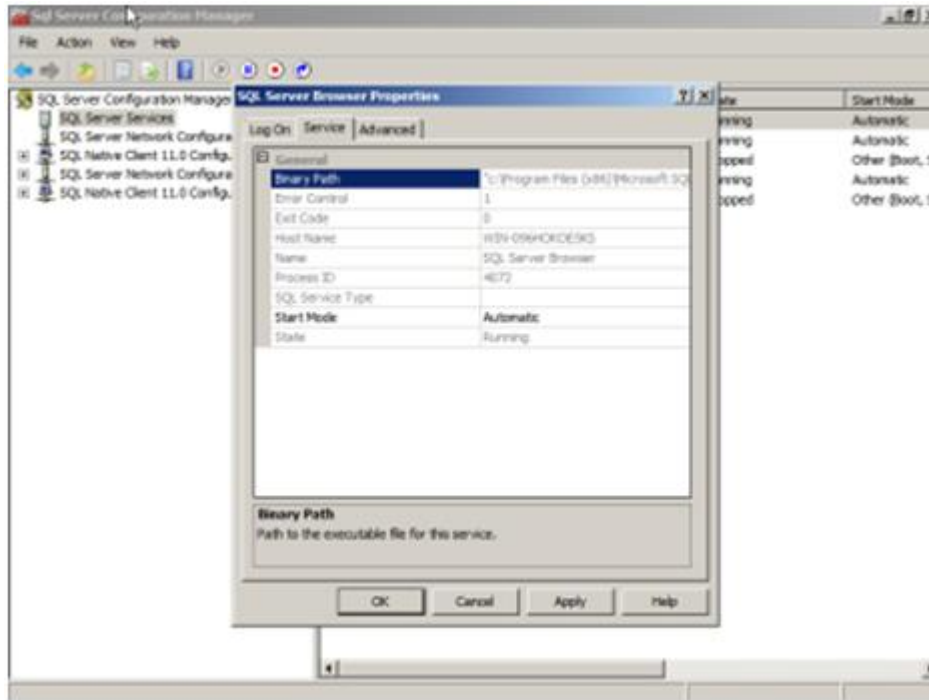
10. Once it has finished installing click "Close"



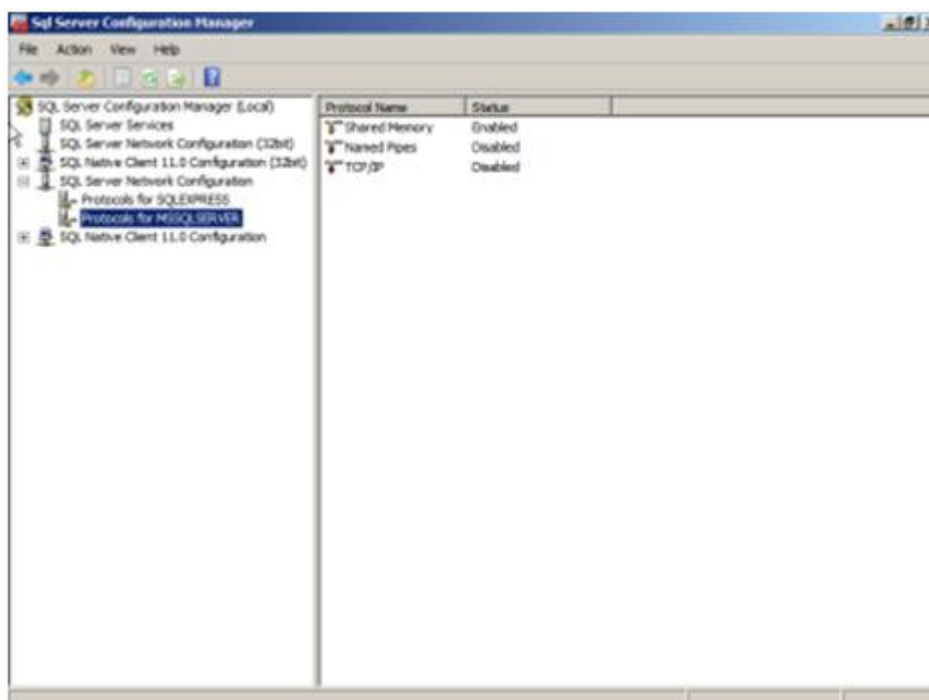
Configuring SQL Server 2014 Express

1. Open the SQL Server Configuration Manager (Start -> Programs -> Microsoft SQL Server 2014 -> Configuration Tools -> SQL Server 2014 Configuration Manager).

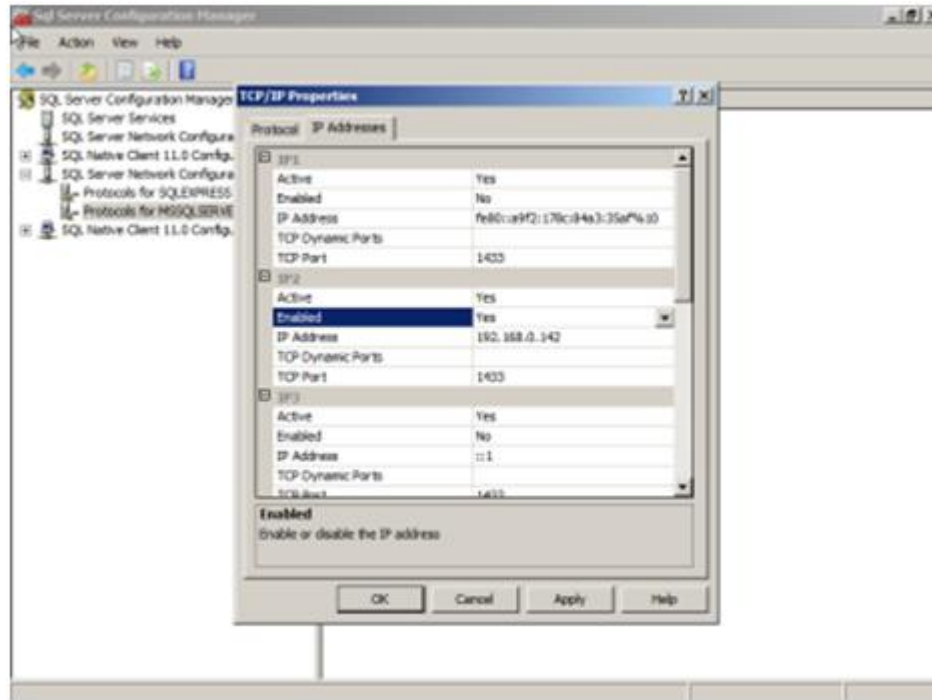
2. Your SQL Server (with the instance name you set) should be running. If it is stopped, right click on it and click Start.
3. The SQL Server Browser should be running. If it is stopped, right click on SQL Server Browser, and then choose Properties. Click on the Service tab and ensure the Start Mode is set to Automatic. Then go back to the Log On tab and click the Start button.



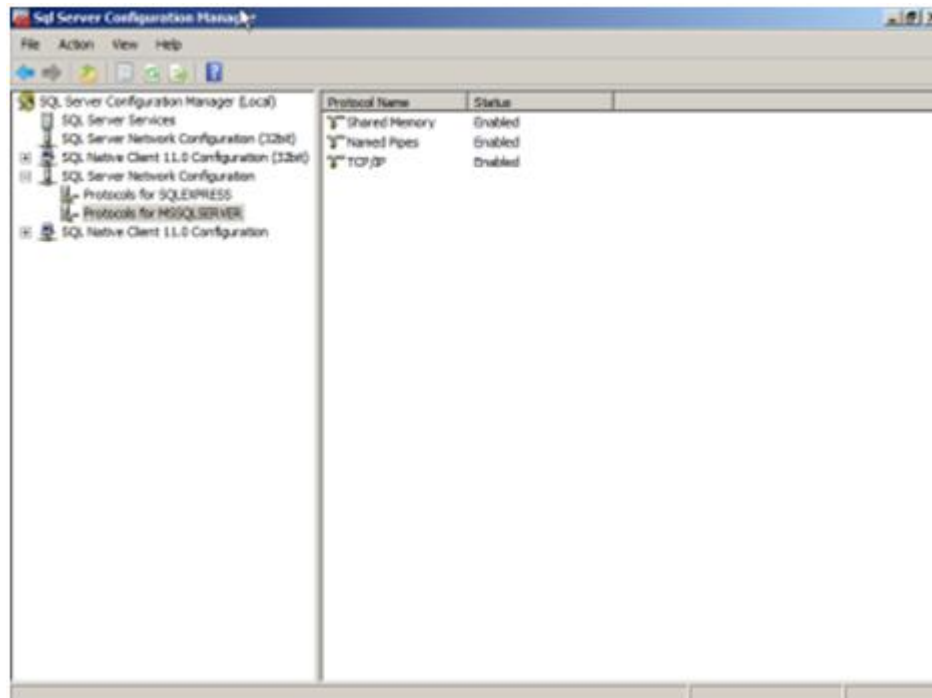
4. Click on the plus sign beside SQL Server Network Configuration and click on Protocols for the name of the Instance.



- a. Double click on Named Pipes and Enable it. Click Ok.
- b. Double click on TCP/IP and Enable it.
- c. Go to the IP Addresses tab on the TCP/IP Properties window and ensure that the network adapter that you wish to use is set to Active and Enabled. Click OK.



- d. The Protocols should now look the same as the picture below.



5. Restart the SQL Server by click on SQL Server Services, then right clicking on SQL Server (Instance Name), and selecting Restart.
6. Close the SQL Server Configuration Manager.