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MSBI Beginner's Guide

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1). Software and Hardware requirements.

1. Framework

To set up SQL Server the following software components are required as pre-requisites

- .NET Framework 3.5
- SQL Server Native Client
- SQL Server Setup support files

2. Software

SQL Server Setup requires Microsoft Windows Installer 4.5 or a later version.

3. Internet Software

Microsoft Internet Explorer 6 or a later version is required for all installations of SQL Server 2008.

1. Web server

A Web server installed and started (IIS 5.1 or upper version)

Installing SQL Server 2008 Enterprise Edition

1. Processor:

Processor type: Pentium III-compatible processor or faster

Processor speed: Minimum: 1.0 GHz, Recommended: 2.0 GHz or faster

2. Operating System:

Windows XP Professional SP2

Windows Server 2003 Small Business Server R2 Standard

Windows Server 2003 Small Business Server R2 Premium

Windows Server 2003 SP2 Standard

Windows Server 2003 SP2 Enterprise

Windows Server 2003 SP2 Data Center

Windows Server 2003 SP2 64-bit x64 Standard

Windows Server 2003 SP2 64-bit x64 Data Center

Windows Server 2003 SP2 64-bit x64 Enterprise

Windows Vista

Windows Server 2008 Standard

Windows Server 2008 Web

Windows Server 2008 Data Center

Windows Server 2008 Enterprise

Windows Server 2008 x64 Standard
Windows Server 2008 x64 Data Center
Windows Server 2008 x64 Enterprise

2. Memory:

RAM: Minimum 512 MB.

Recommended: 2.5GB or more

3. Features and Disk Space Requirement:

Disk requirement will depend on your feature selection as I have given some example in below

Database Engine and data files, Replication, and Full-Text Search	: 280 MB
Analysis Services and data files	: 90 MB
Reporting Services and Report Manager	: 120 MB
Integration Services	: 120 MB
Client Components	: 850 MB
SQL Server Books Online and SQL Server Compact Books Online	: 240 MB

Install Microsoft Windows installer

From the below link you can download windows installer.

http://www.toggle.com/lv/group/view/kl39621/Microsoft_Windows_Installer.htm

Download all free programs at once from your browser

Download Microsoft Windows Installer free

Program information | Frequently Asked Questions | Comments

Download Microsoft Windows Installer free

Rated: ★★★★★

This utility does small updates over Windows to give the capacity to execute .msi files (Microsoft Installer).

This is the standard installation format for Windows and it is the one used almost all the time by the software developers.

Download Now!!!

Install .Net Framework 3.5

.Net 3.5 Framework is one more prerequisite for installation of MSBI.

From the below link you can download .net framework 3.5.

<http://www.microsoft.com/downloads/details.aspx?FamilyId=333325FD-AE52-4E35-B531-508D977D32A6&displaylang=en>

Microsoft Download Center

Search: Microsoft .NET Framework 3.5

Brief Description
Microsoft .NET Framework 3.5 contains many new features building incrementally upon .NET Framework 2.0 and 3.0, and includes .NET Framework 2.0 service pack 1 and .NET Framework 3.0 service pack 1.

On This Page

- Quick Details
- System Requirements
- Related Resources
- Overview
- Instructions
- What Others Are Downloading

Download

Quick Details

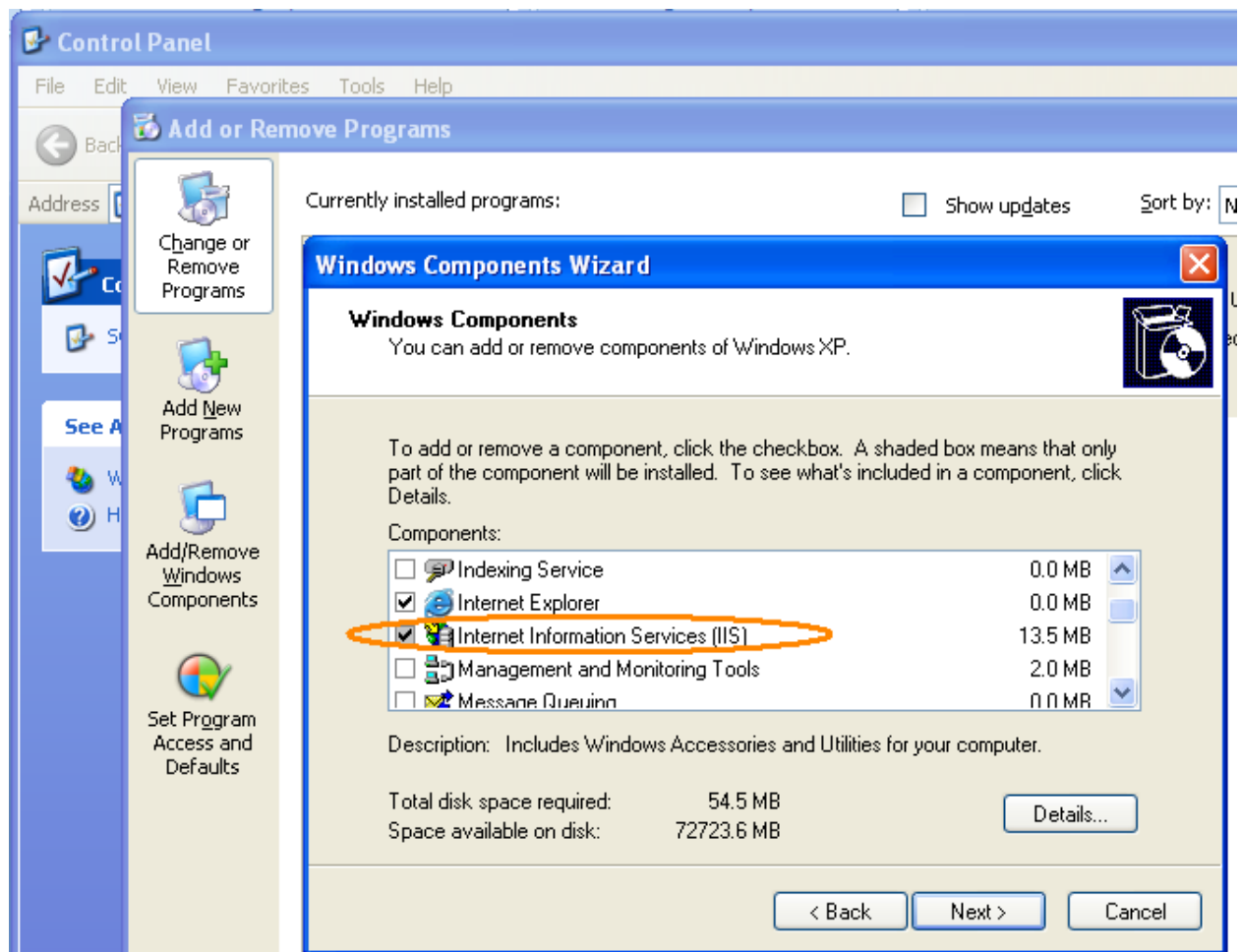
File Name:	dotNetFx35setup.exe
Version:	3.5
Date Published:	11/20/2007
Language:	English
Download Size:	2.7 MB
Estimated Download Time:	7 min 56K

Change Language: English

Install .Net Framework 3.5 for in your system.

IIS (Internet Information Services)

Verify that the IIS server is installed in your system. If Not, then Start→Control Panel→Add/Remove Windows Components. You will get a new wizard if check box enables then it means installed properly. You can install IIS in your computer system from Microsoft Operating System CD.

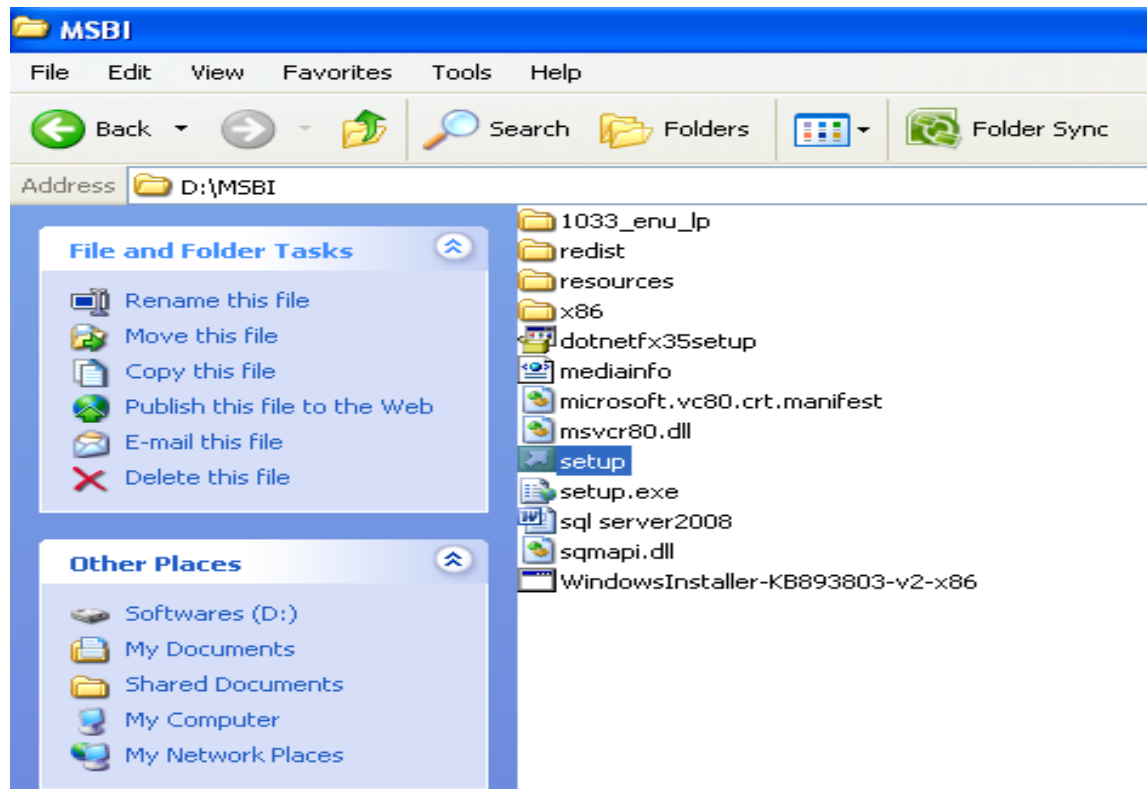


You can also check that is IIS working or not?

Type <http://localhost/> in internet explorer press enter. If it shows default .asp page then it is working properly.

Installation of MSBI

You can install MSBI by running setup file shown below in following image.



IF you don't have software setup file then you need to download it from internet.

SQL Server 2008 Enterprise Evaluation is available as an image file that contains X86, X64 and IA64 installable versions. You can use this image to burn your own DVD.

http://switch.atdmt.com/action/mrtity_FY09SQL08RTMEnterpriseTrialExperienceIT_9

Download image file and burn DVD. Run *Setup.exe* file from there it installation.

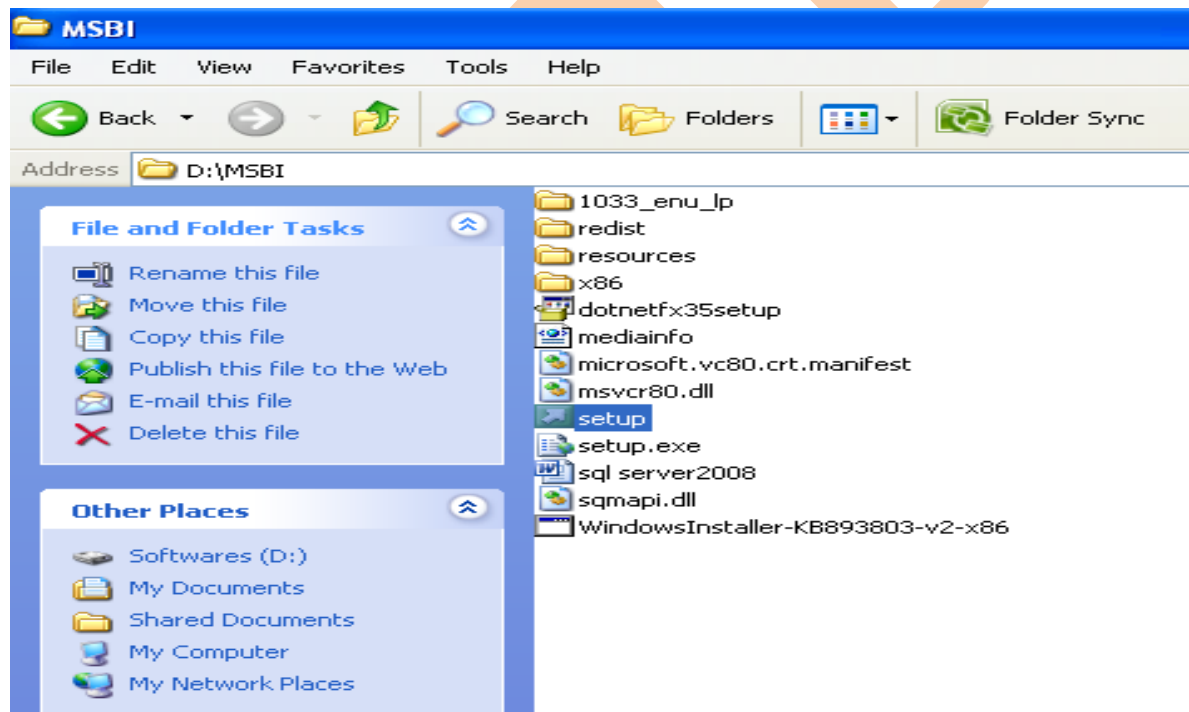
Installation Steps→

STEP 1: Copy the installation files

It is Recommend that you copy the entire directory structure from the SQL Server 2008 installation disc to the any (D:\) drive of the machine.

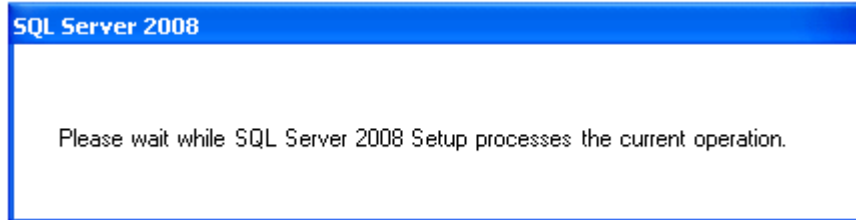
- It makes the installation process much faster than running it from CD/DVD once it gets started.
- It allows you to easily add or remove components later, without having to hunt around for the CD/DVD.
- If your media is damaged and a file won't copy, you get to find out now, rather than halfway through the installation.

Below image shows "setup.exe" file double click on it.



If you have DVD/CD of SQL 2008 then run it and go ahead ...

First dialog box appears



This will disappear from the screen and then the main installation page appears.

STEP 2: This is first wizard which is showing planning before installation.



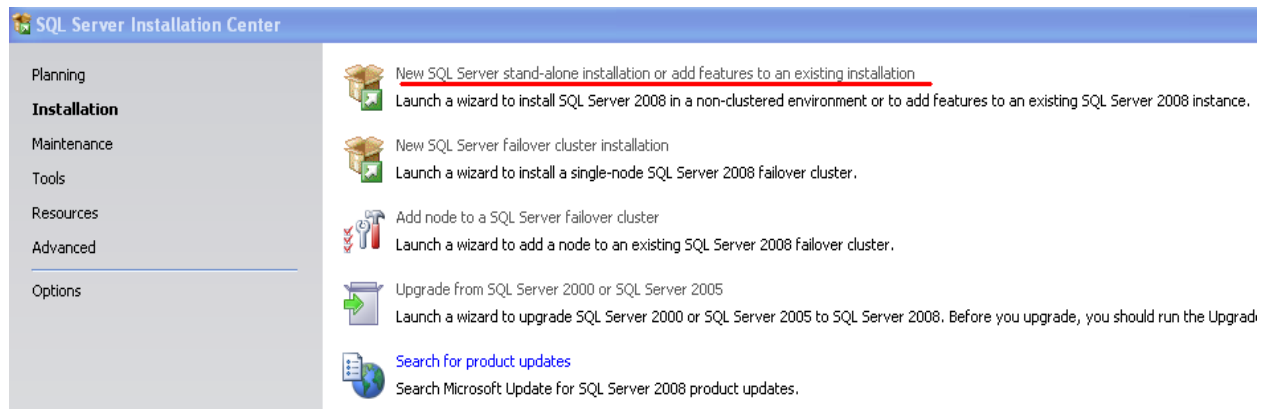
STEP 3: Go to second option Installation

Click on the Installation hyperlink

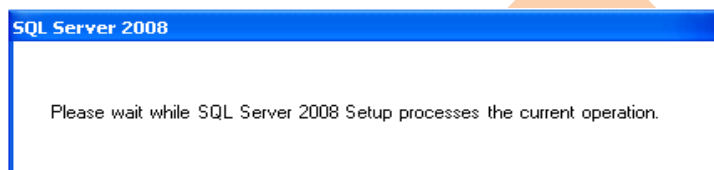


STEP 4: SQL Server Installation Center

Click on the "New Server stand-alone installation" link

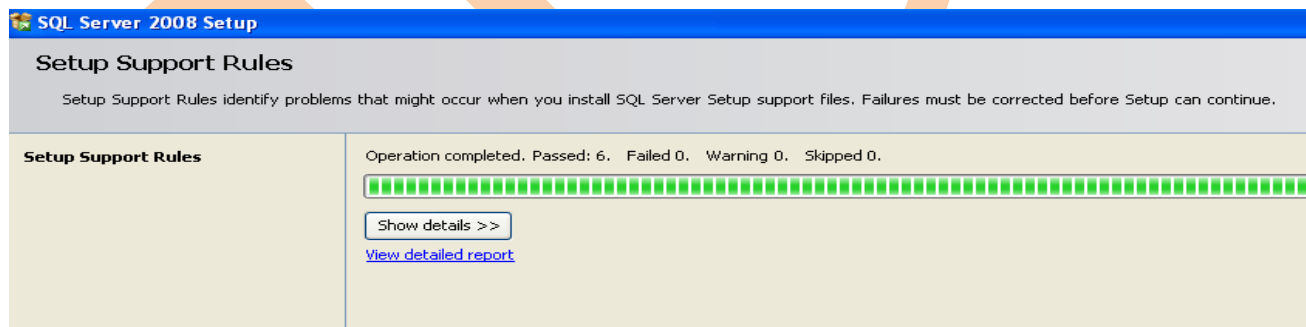


The following dialog box appears on the screen while the installation program preparing itself.....

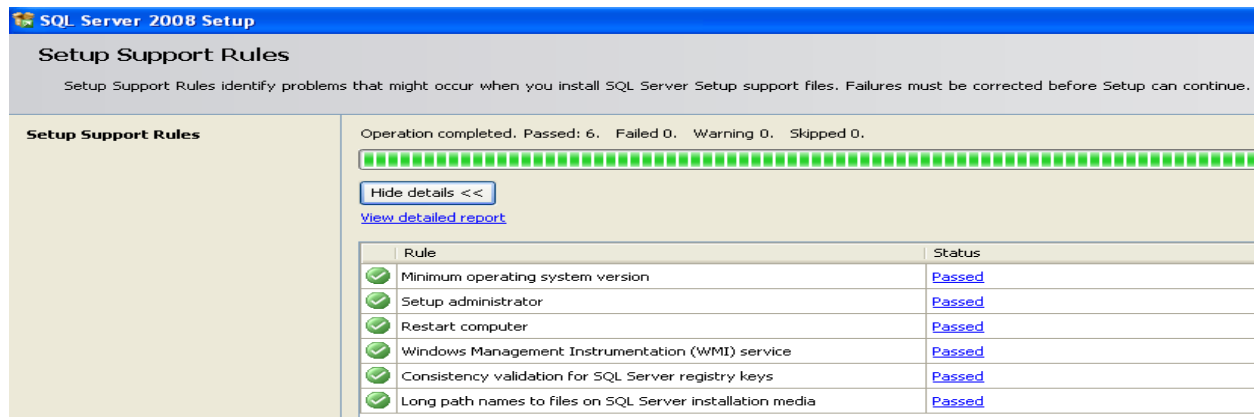


The next screen will appear in few minutes that will be...

STEP 5: Setup Support Rules



In case the checking goes failed. You need to check status by "Show details" button. You will get status of Setup Support Rules or "View detailed report link" to find out the cause, correct it, and then click on the Re-run button to perform the checks again.



All rules for installation have passed.

The below dialog box appears on the screen while the installation program preparing itself.....

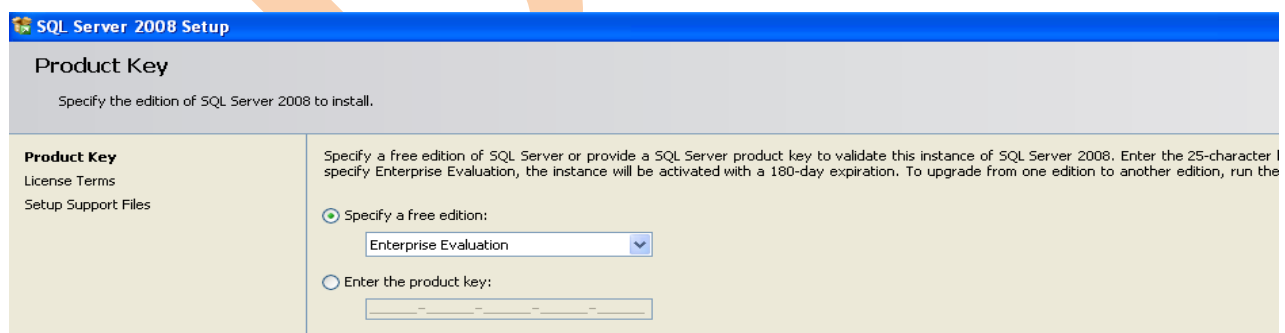


STEP 6: Product key

When all checks have passed, click on the OK button. After a while, the option to select edition and to enter the license key (or "product key") will appear.

Note: - Don't enter unregistered product key. We can't go further till you enter right product key.

For learning purpose select Enterprise Evaluation Option.

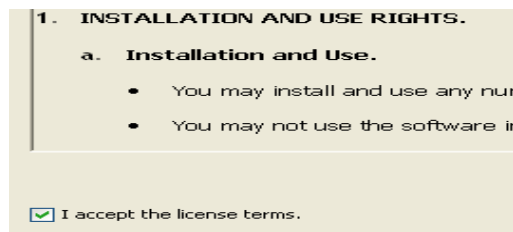


STEP 7: License Terms

Enter the product key into the box if you have, or choose the free edition.

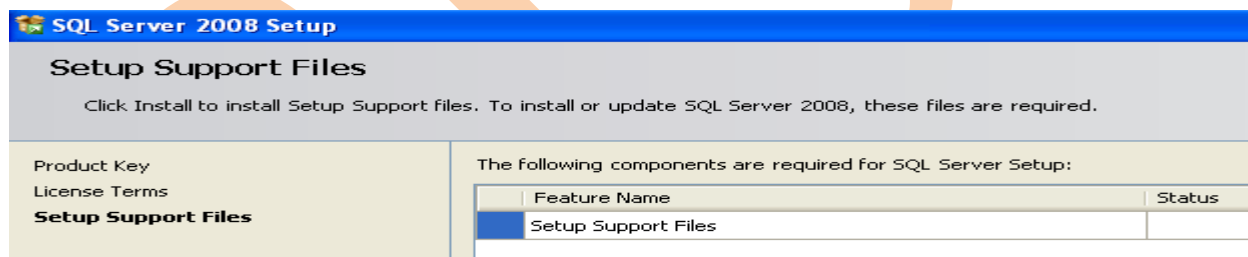


Make true check box of “**I accept the license terms**”, then click on the **Next** button ...

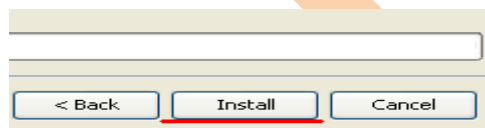


STEP 8: Setup Support Files

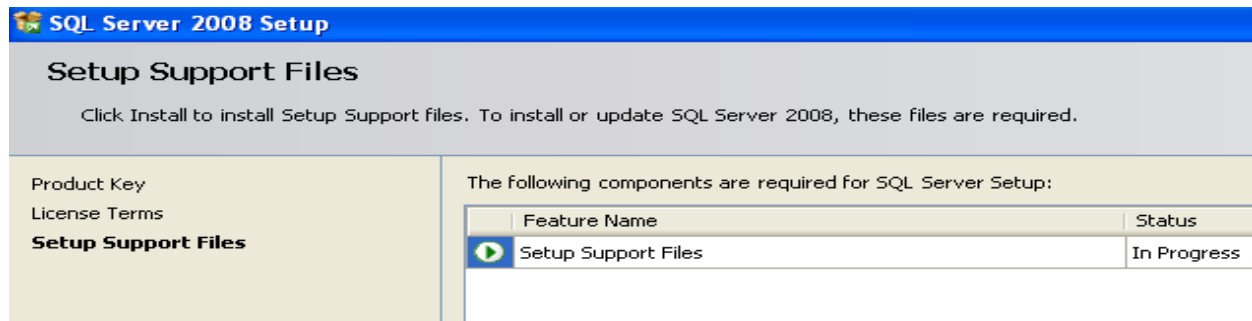
The below wizard appears



Click on the Install button...

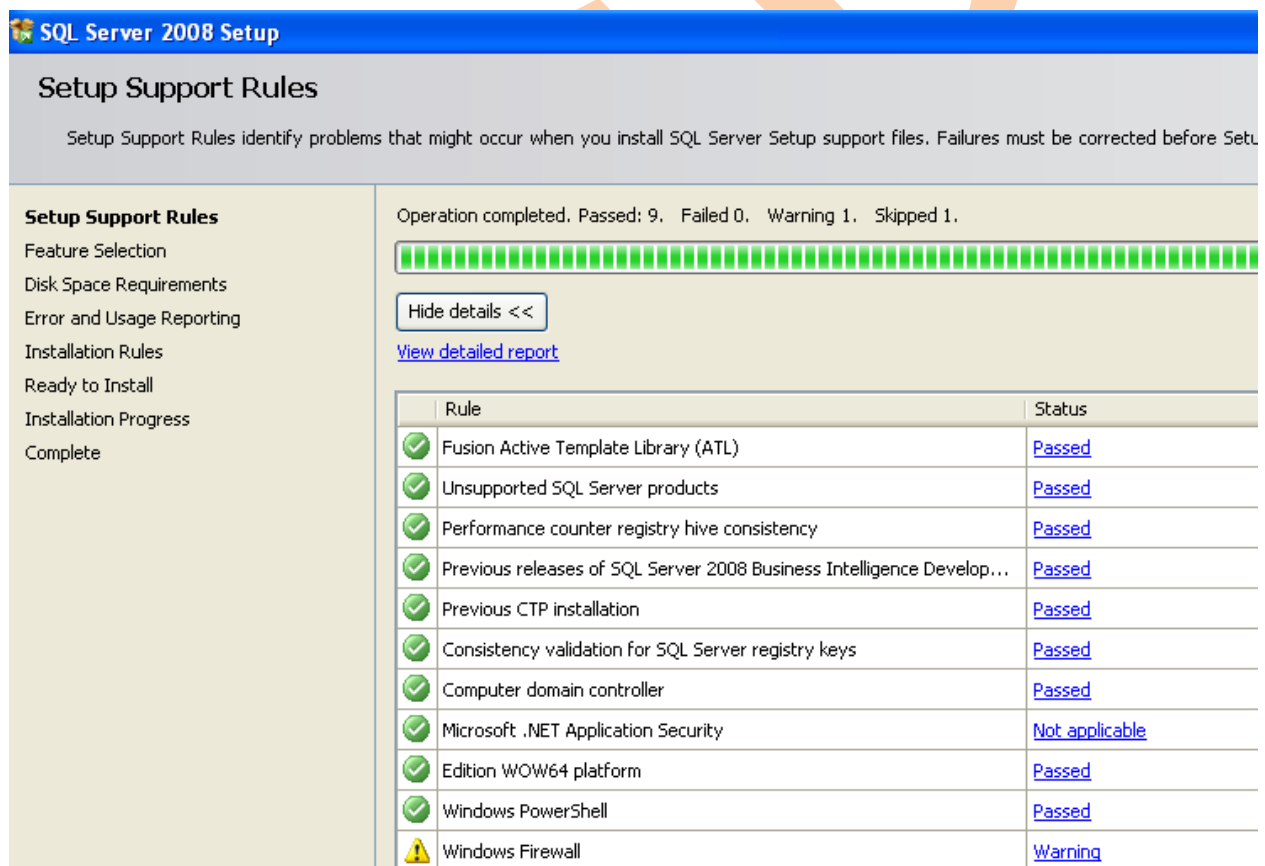


The below wizard will appear it shows setup support files in progress



STEP 9: Setup Support Rules

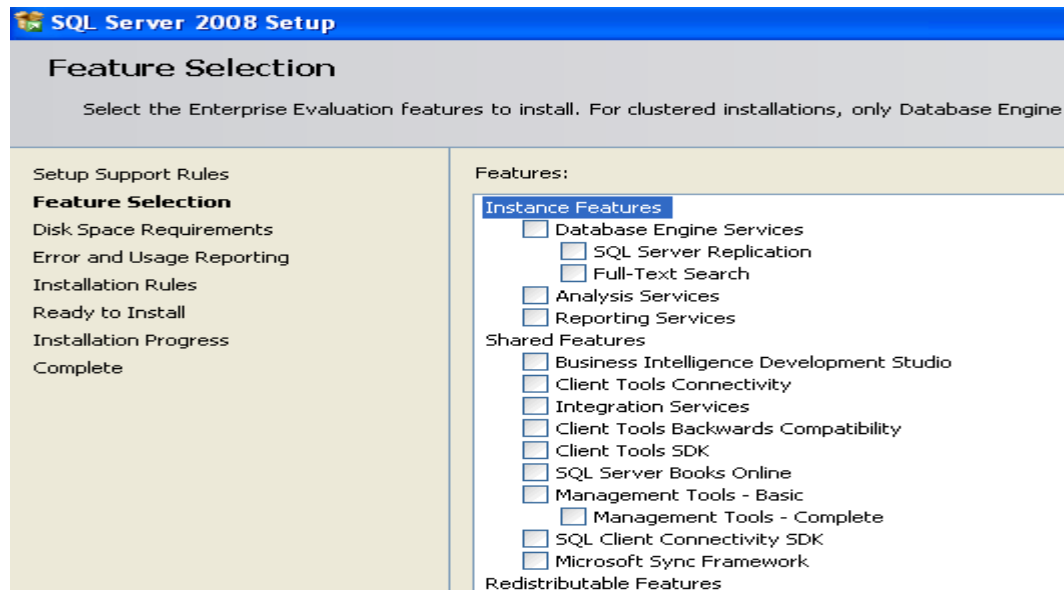
The next wizard is showing rules and their status.



Click on the **Next** button again.

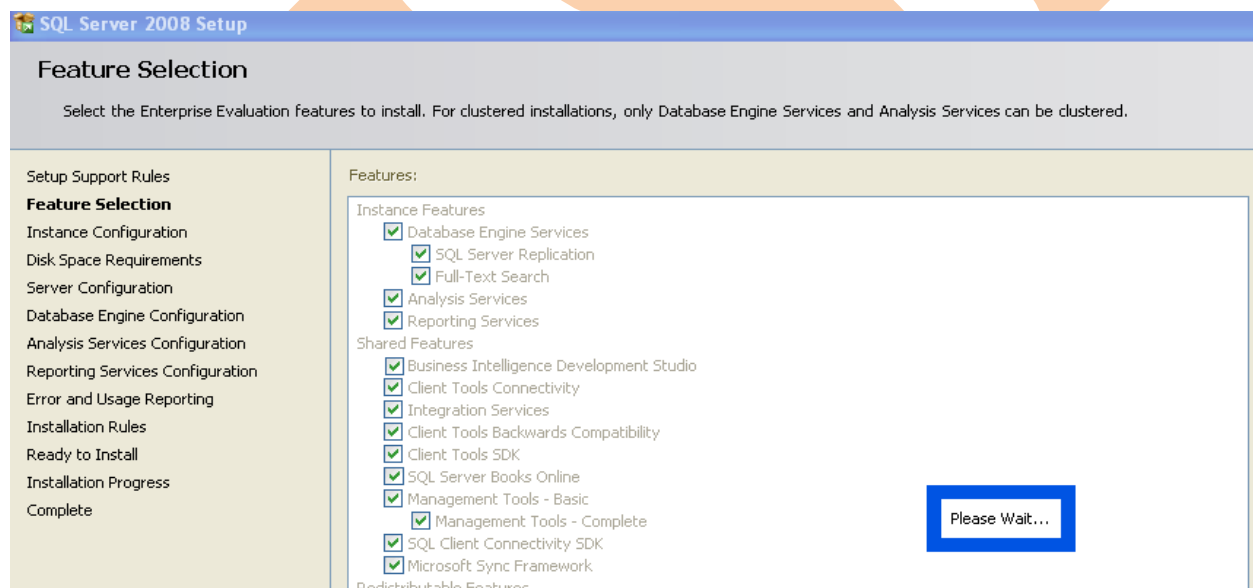
STEP 10: Feature Selection

Select the features you want to install as needed.



Click on the **Next** button.

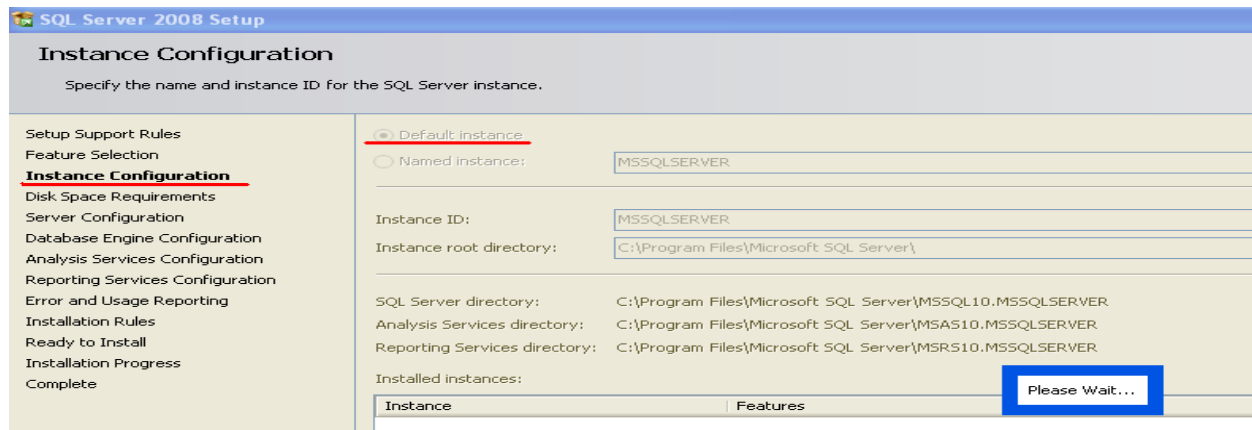
Now all selected features are checked wait till process is going on.....



STEP 11: Instance Configuration

After a short while the following screen appears:

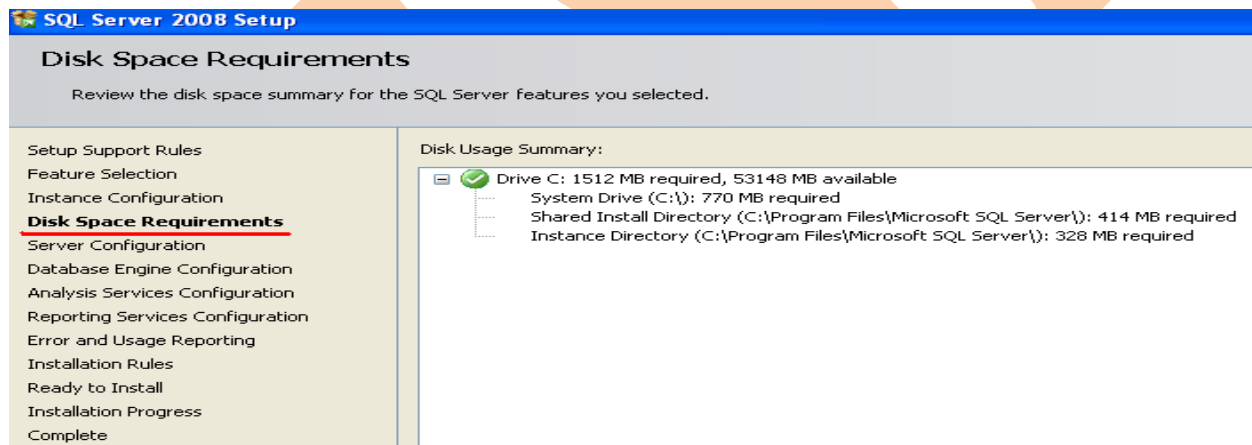
Go for default instance



Leave default settings.
Click on the **Next** button.

STEP 12: Disk Space Requirements

This wizard shows disk summary which is used in installation of SQL Server 2008.



Click on **Next**.

STEP 13: Server Configuration

This step allows you to set up the service accounts that will be used to run SQL Server. If you have Windows NT or Active Directory accounts. You can use them. You can also use the built-in Network Service account for all three services listed (this account does not require a password).

This allows SQL Server to start up after installation. However, it can be easily changed later to another account through the Services applet (Control Panel → Administrator Tools → Services):

Service	Account Name
SQL Server Agent	
SQL Server Database Engine	
SQL Server Analysis Services	
SQL Server Reporting Services	

Startup Type
Manual
Automatic
Automatic
Automatic

Use the same account for all SQL Server services

Remember to change the *Startup Type* of services from automatic to manual, for all three services. When you re-boot computer system it will not start services automatically.

Specify a user name and password for all SQL Server service accounts.

Account Name: NT AUTHORITY\SYSTEM Browse...

Password: OK Cancel

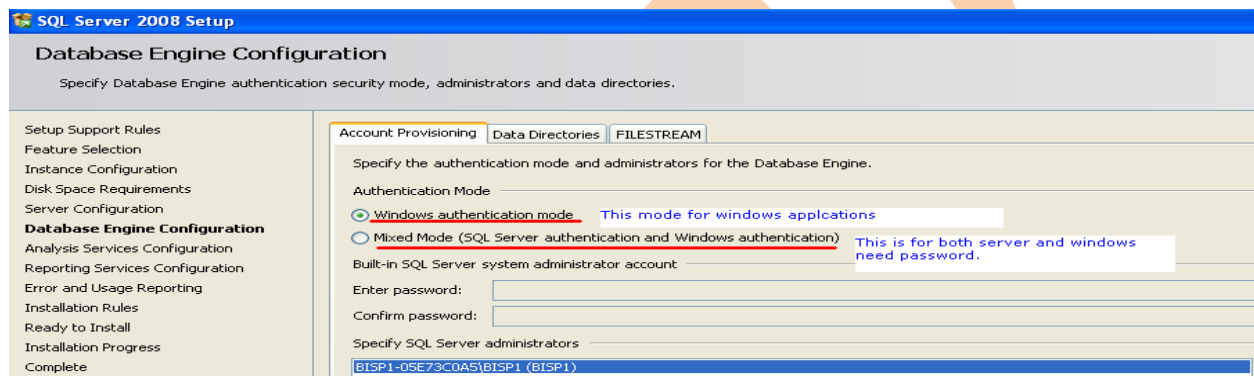
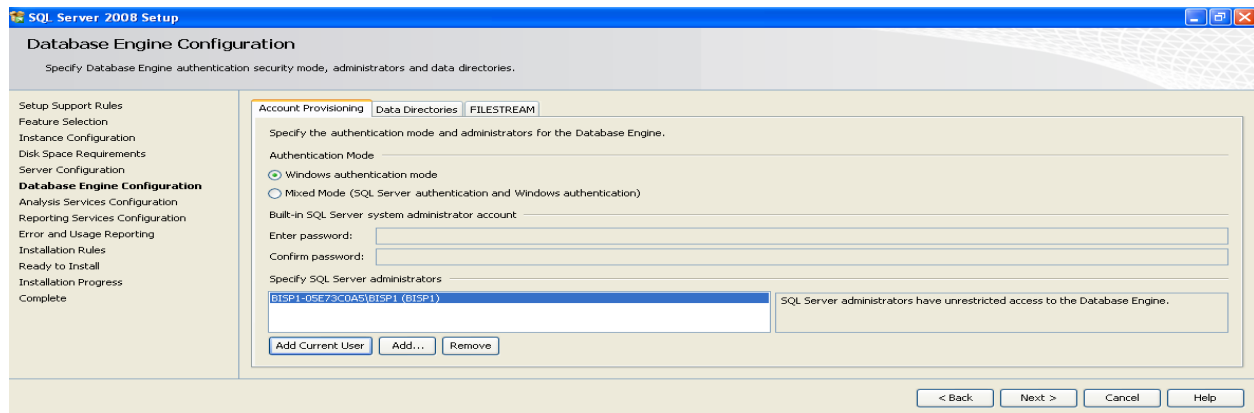
If services are manual so sql server will not effect to your system speed.

Click on **Next**.

STEP 14: Database Engine Configuration

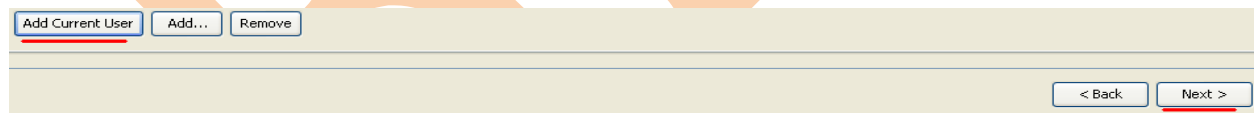
Account Provision

Below wizard allows you set up database engine security.



Windows authentication Mode – In this mode you require windows credential to connect with SQL server.

Mixed Mode- In this mode you can use both windows and SQL server authentication mode. If you choose Mixed Mode security then you must require system admin account.



For now you can use "Add Current User" as you logged in with windows administrator account.

STEP 15: Database Engine Configuration –

Data Directories

Change the directories to specify which drives in your system will be used for the various types of database files.

Generally it's advisable to put the User database directory and User log directory on separate physical drives for performance. But it depends on how Windows has been configured and how many disk drives you have in your computer system.

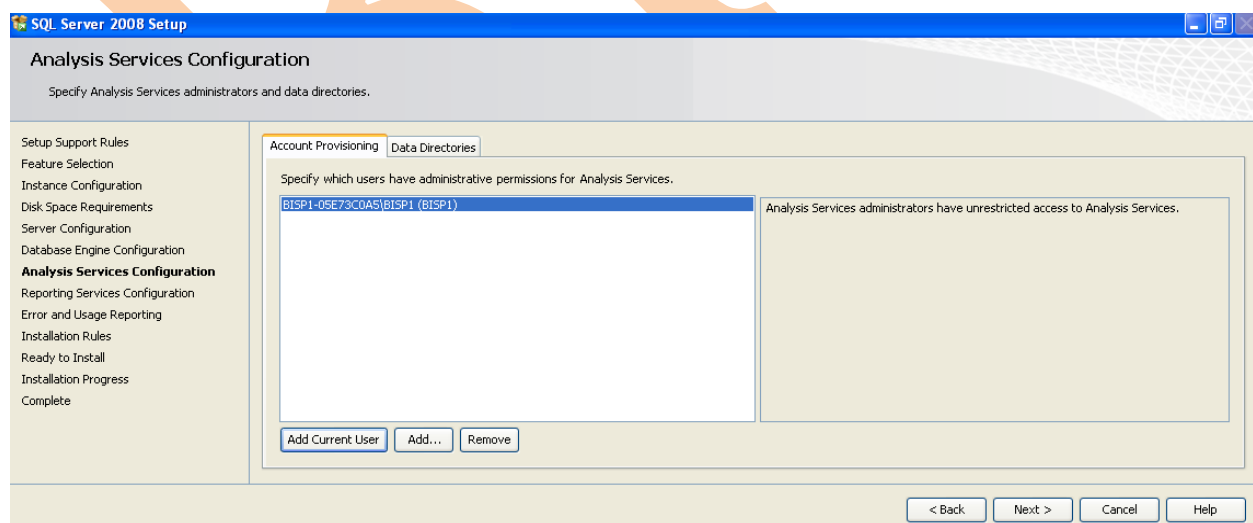
If you are installing on a single drive laptop or desktop, then simply specify:

Data root directory	C:\Program Files\Microsoft SQL Server
User database directory	C:\Data
User log directory	C:\Logs
Temp DB directory	C:\TempDB
Temp Log directory	C:\TempDB
Backup directory	C:\Backups

Do not click on the **FILESTREAM** tab unless you know how to change these options, as it is not generally required for most installations. It can easily be changed by using `sp_configure 'filestream_access_level', 'after SQL Server has been installed. Click on Next.`

STEP 16: Analysis Services Configuration

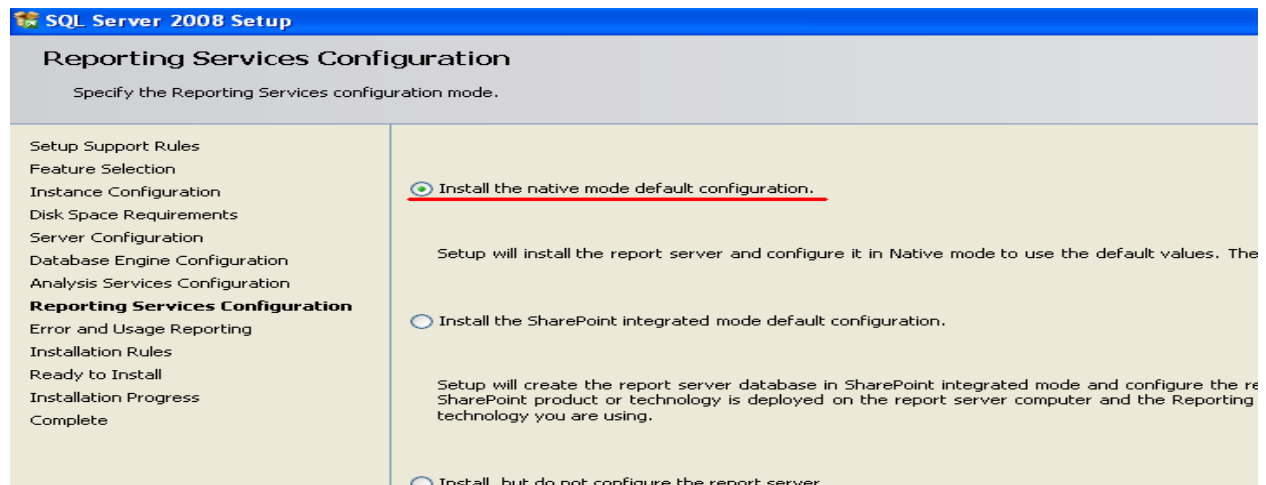
Click on Add Current user if you login as Administrator.



Click on Next.

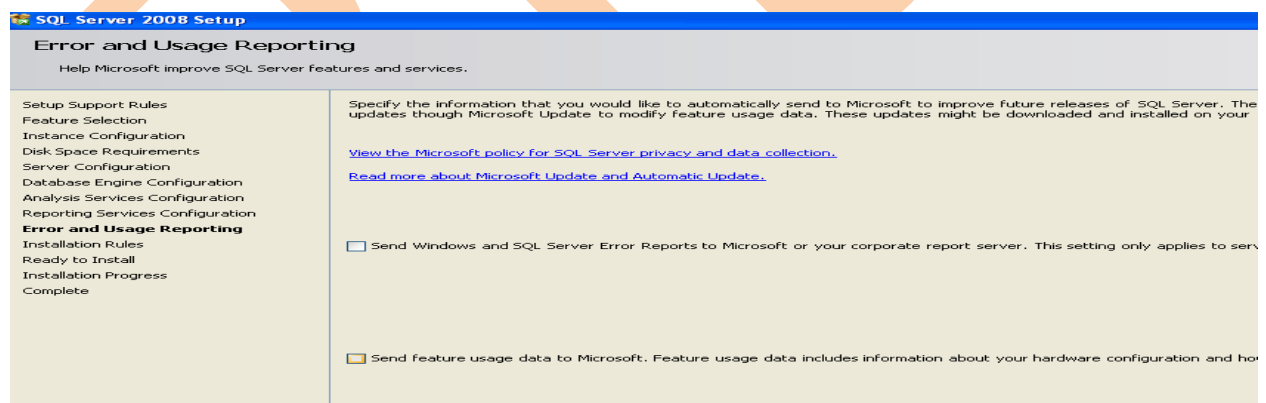
STEP 17: Reporting Services Configuration

Leave below setting as default.



STEP 18: Error Usage Reporting

Do you want to send error information to Microsoft? Then make check box true. You can safely skip if you do not want to share any information.

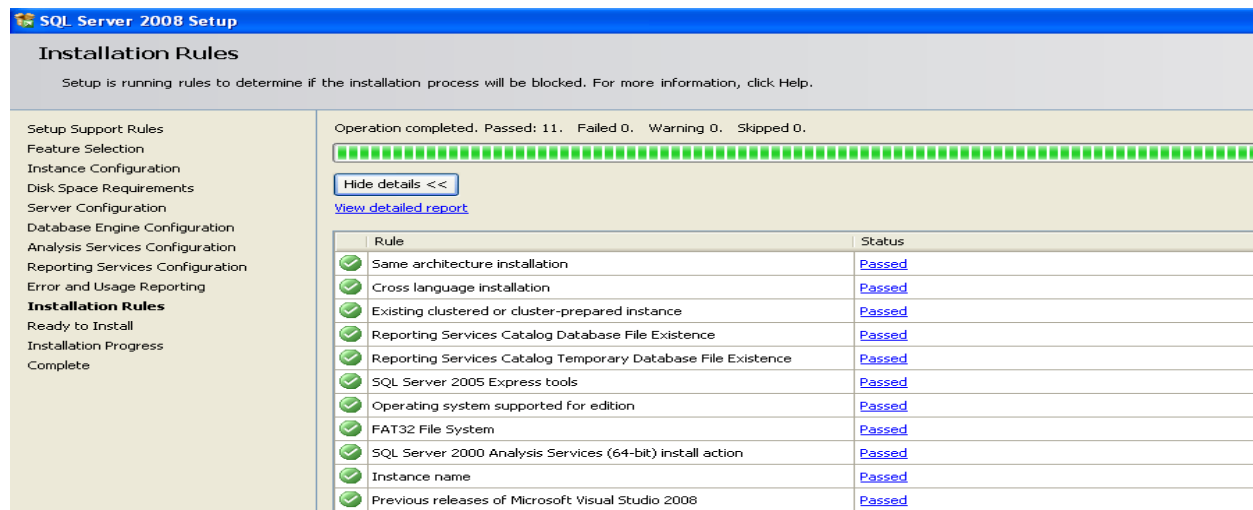


Click boxes if you want to help Microsoft.

Click on **Next** again...

STEP 19: Installation Rules

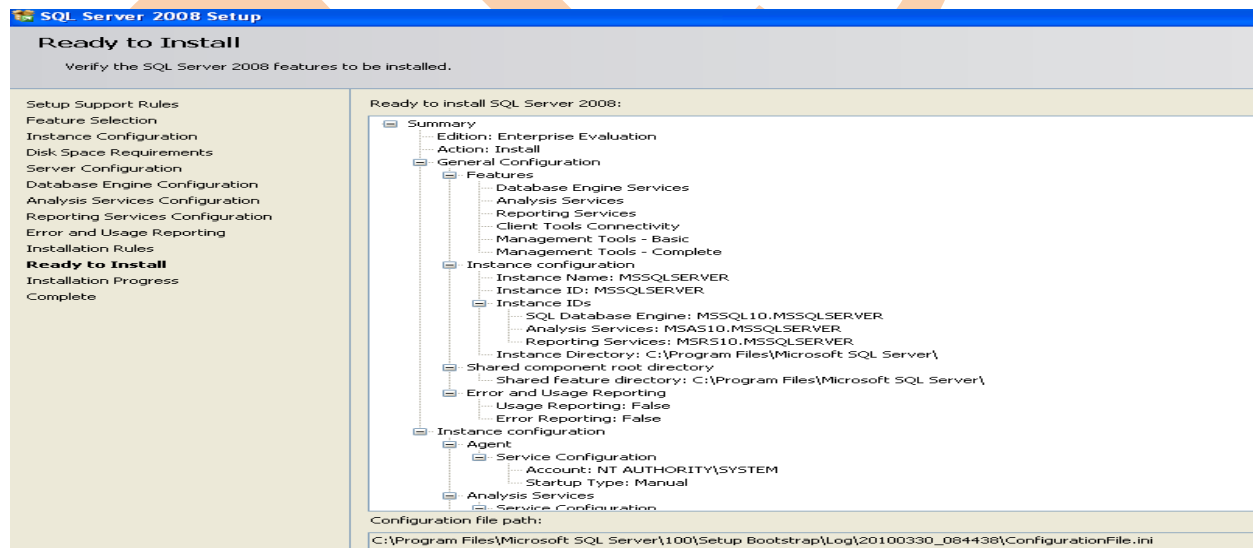
This screen simply checks if there are any processes or other installations running which will stop the installation of SQL Server 2008.



Click on **Next** again – you're almost ready to install.....

STEP 20: Ready to Install

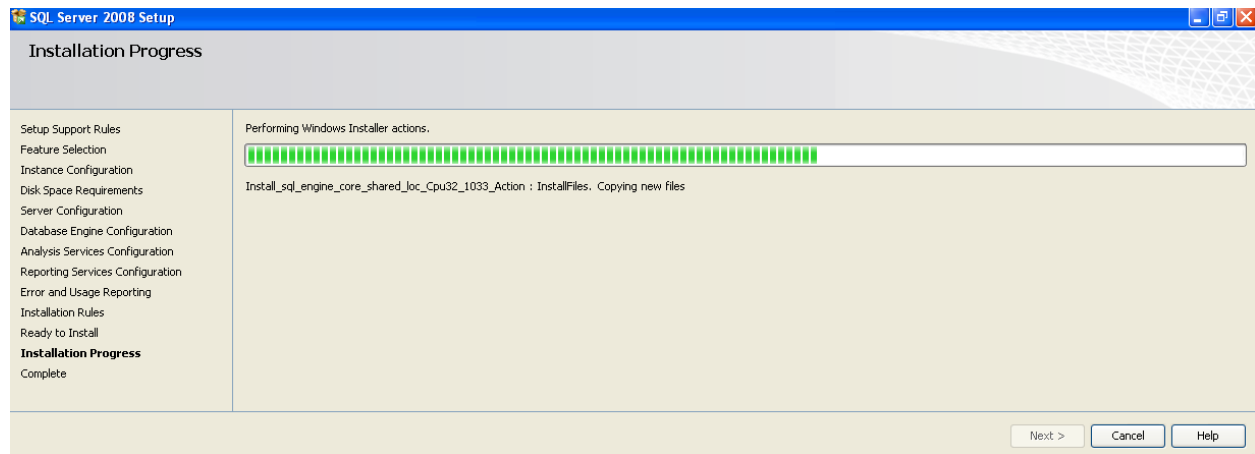
This screen summarizes what you are about to install and gives you a last chance to cancel or change anything that's wrongly configured.



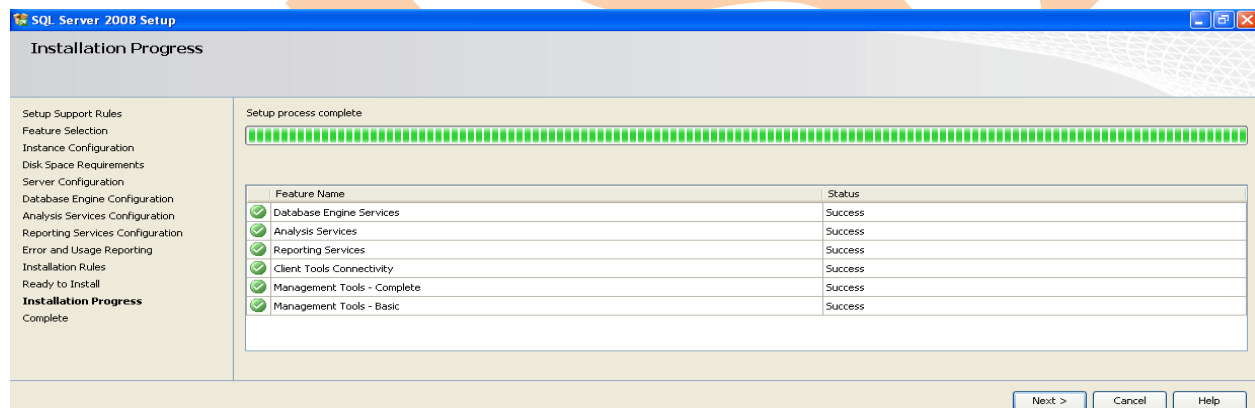
Check that what's being installed is what you want and then click on *Install* when you're sure you want to start the installation process.

Installation Progress

SQL Server 2008 will now install. How long it takes depends on the speed of your machine and what load it's under, the installation media (CD is slower) and what you've chosen to install.



Finally Installation is complete



Click on the Next button again...

STEP 21: Installation Complete



It may be worth clicking on the installation log at the top of the screen to check everything's gone as expected. Not that this is much smaller than the usual SQL Server installation log files of old.

Finally, click on the Close button.

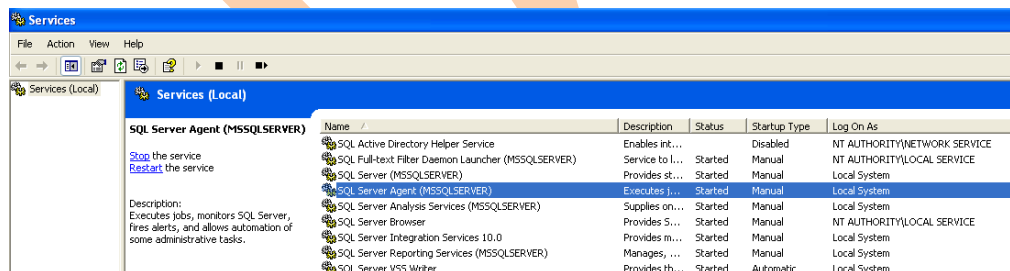
Now you can re-boot your system and start working in SQL Server2008.

How to check that SQL Server 2008 has installed correctly?

You have to check that all contents are working or not.

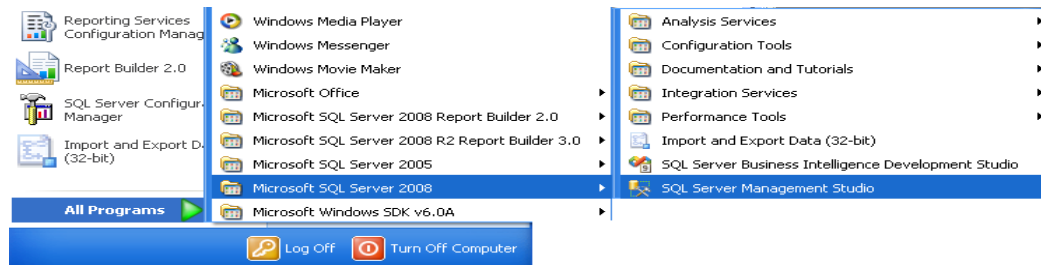
Check 1: Has the SQL Server Service Started?

Check SQL Server 2008 has started.



Check 2: Does Management Studio Work?

Check Management Studio works by firing it up.

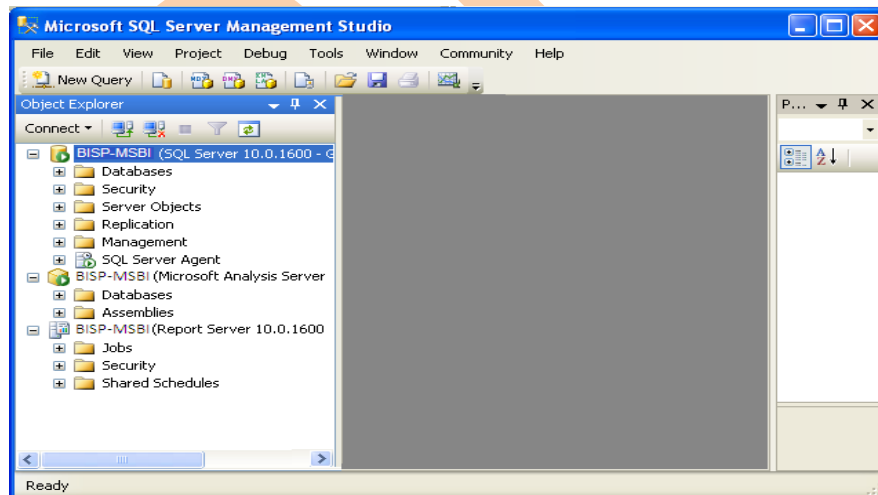


Now you need to connect each service to the server.



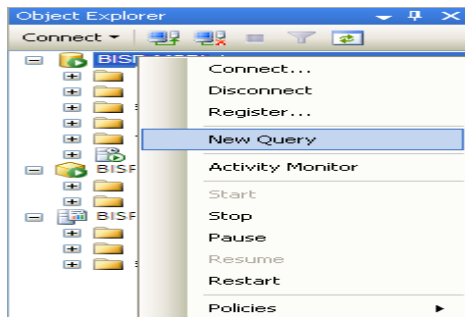
Click on connect.

Below wizard shows that all services are connect to the server.

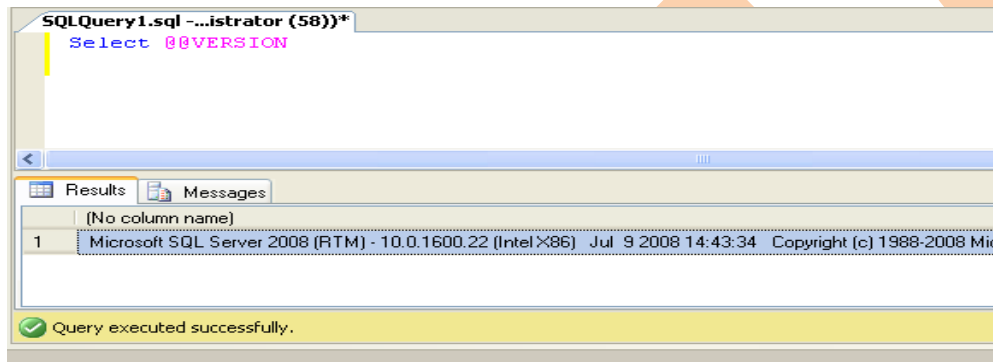


Check 3: Can you run a basic query against the new SQL Server?

Check SQL Server works by running a simple query from Management Studio.

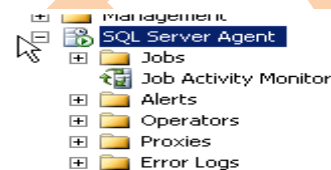


Enter the query shown below and hit F5 to run.



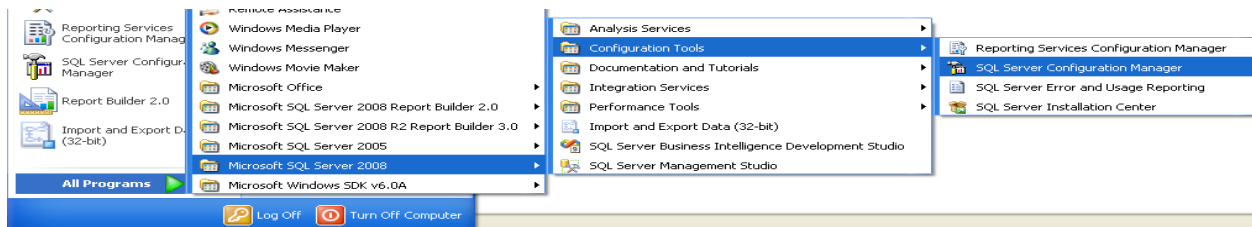
Check 4: Is SQL Server Agent Running?

Check SQL Server Agent is running for scheduled jobs. There should be a green arrow next to the SQL Server Agent database symbol.



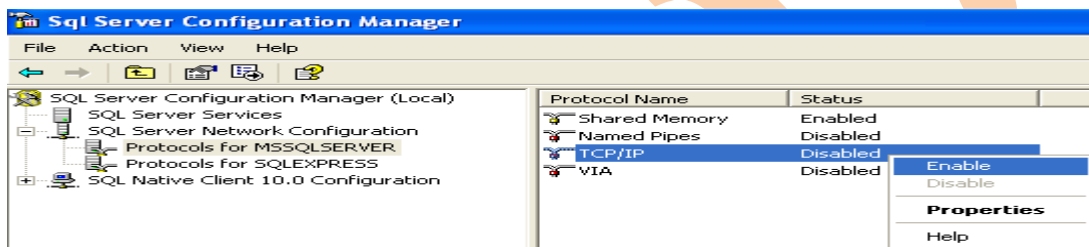
Check 5: Has the TCP/IP network protocol library been enabled on the server?

If the browser service is started but you still cannot connect to the server, click on **Start→Programs→SQL Server 2008→ SQL Server Configuration Manager**



The SQL Server Configuration Manager window opens. Click on the **SQL Server Network Configuration** node and expand it.

Click on "**Protocols for MSSQLSERVER**".

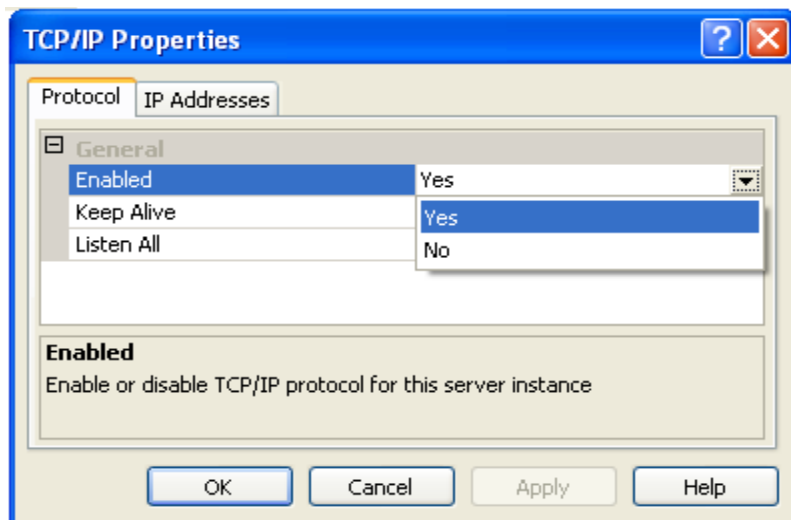


In the above screenshot, the TCP/IP network protocol library is disabled. You need to enable it in order that remote servers can talk to the newly installed SQL Server.

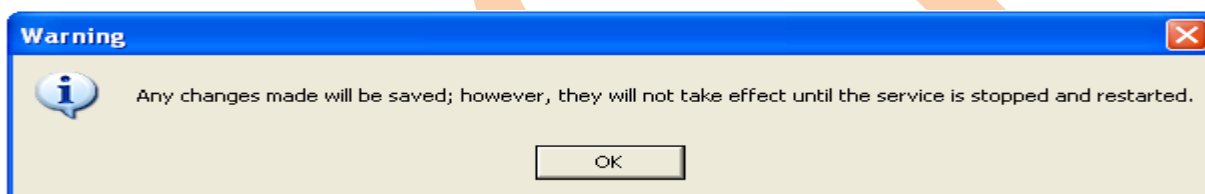
Named Pipes can be ignored, unless there is a requirement for it. In virtually all environments, VIA can also be ignored as this protocol requires a special network card. Shared memory is the "local" protocol that SQL Server uses when talking to a client application on the same server as itself, for example when SQL Server Management Studio connects to it. It is usually best to leave this enabled.

You will need the TCP/IP protocol enabled if you need to connect to your new SQL Server from a remote client or another server via TCP/IP, which is what most networks use.

If it shows as *DISABLED*, double click on the "TCP/IP protocol line", and the following window will appear.

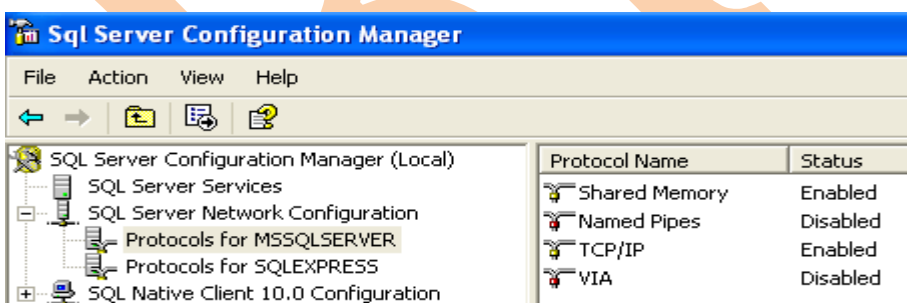


Ensure that Enabled is set to Yes, and click on OK.
The following warning will appear.



Click on OK.

You will be returned to the Configuration Manager window, where TCP/IP will now be shown as enabled.



Now re-start the MSSQLSERVER service so that the TCP/IP protocol can be used to connect to your new SQL Server.

All required components checked it shows that you install and configure SQL server correctly.

MSBI Contents

Basic content of business intelligence are in SQL server are

- Reporting Services
- Analysis Services
- Integration Services

Reporting Services

SQL Server Reporting Services is a report generation environment for data gathered from SQL Server databases. It is administered via a [web interface](#). Reporting services features a [web services](#) interface to support the development of custom reporting applications. Reports are created as [RDL](#) files.

Reports can be designed using recent versions of [Microsoft Visual Studio](#) (Visual Studio.NET 2003, 2005, and 2008) with [Business Intelligence Development Studio](#), installed or with the included Report Builder. Once created, RDL files can be rendered in a variety of formats including Excel, [PDF](#), [CSV](#), [XML](#), [TIFF](#) (and other image formats), and HTML Web Archive.

Report Architecture

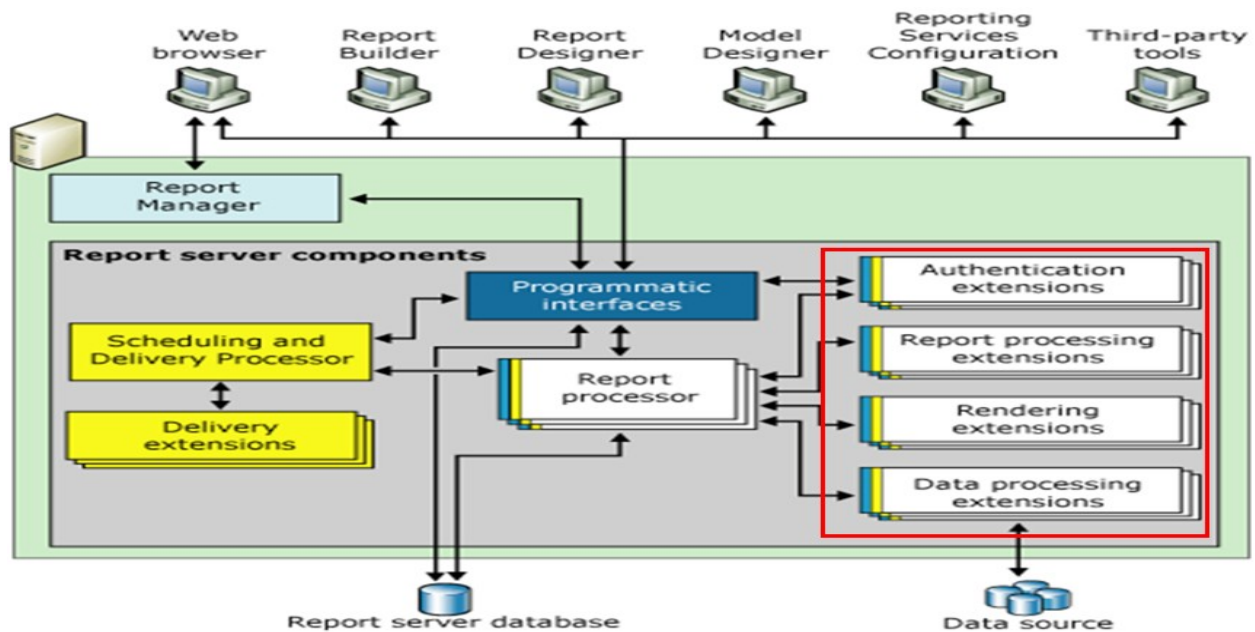
1) SSRS Component Architecture

The three-tier architecture of a Reporting Services

L1- Report server database and data sources in the data tier

L2- The report server components in the middle tier

L3- The client applications and built-in or custom tools in the presentation tier

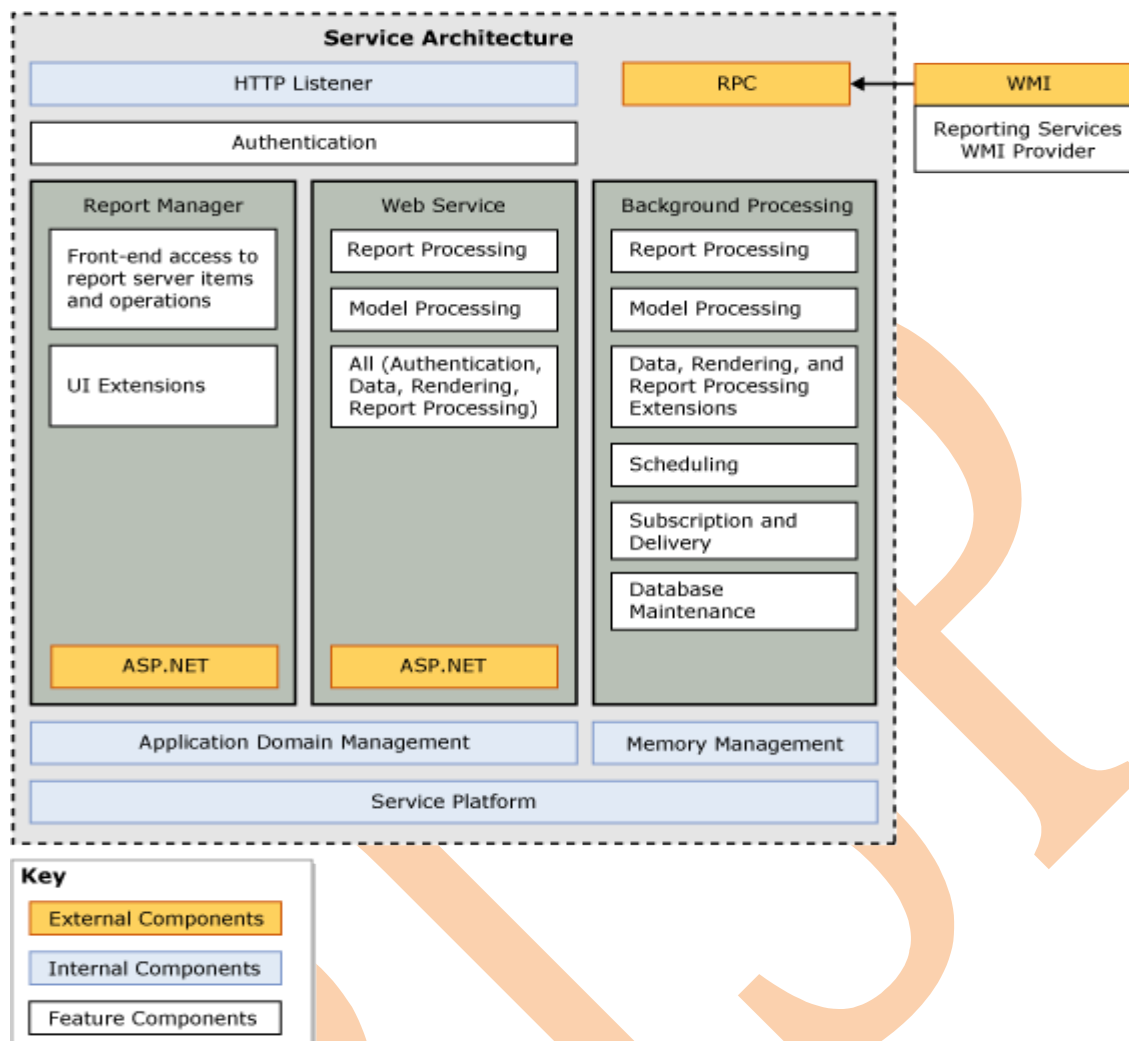


	Windows service components
	Web service components
	Report manager component

Reporting Services, a report server is implemented as a Windows service that consists of distinct feature areas that run in separate application domains.

- Report Manager
- Report Server Web service
- Background processing

2) SSRS Service Architecture



Report Features

Relational, multidimensional, XML, and custom data sources Build reports using data from any data source type that has a Microsoft .NET Framework-managed data provider, OLE DB provider, or ODBC data source.

Report also can by using relational and multidimensional data from SQL Server and Analysis Services, Oracle, Hyperion, and other databases. You can use an XML data processing extension to retrieve data from any XML data source. You can use table-valued functions to design custom data sources.

Tabular, matrix, chart, and free-form report layouts create tabular reports for column-based data, matrix reports for summarized data, chart reports for graphical data, and free-form reports for everything else. A new data region introduced in SQL Server 2008 enables you to create reports

that combine table and matrix layouts. Reports can embed other reports and charts, along with lists, graphics, and controls for dynamic Web-based applications.

Ad hoc reports Create and save reports on the fly and save them locally or publish them directly to a report server or SharePoint site, where they can be managed like other reports. Ad hoc reporting is supported through report models and report templates using a Click Once application called Report Builder.

Drill through reports and interactivity Add interactive features by providing links to sub reports and drill through reports. Use parameters to filter data for customized views. Model-based reports provide infinite click through functionality so users can explore the data that is available to them.

Presentation formats Choose a presentation format when you open the report, or after you open the report. You can choose Web-oriented, page-oriented, and desktop application formats. Formats include HTML, MHTML, PDF, XML, CSV, TIFF, Word, and Excel.

Custom controls and report items You can embed custom controls or report items that you create or purchase from a third-party vendor. A custom control requires a custom report processing extension. You can add scripted expressions in Microsoft Visual Basic.

Navigation You can add bookmarks and document maps to provide navigation options within a large report.

Aggregations You can aggregate and summarize data using controls and expressions.

Graphical elements You can embed or reference images and other resources, including external content.

Report and Model Design Tools

Report Designer Create reports in a full-featured report authoring application. Report Designer is hosted within Business Intelligence Development Studio. With Report Designer, you can create complex reports based on a number of different data source types, define simple to complex layouts, add chart and gauge data presentations, include interactive features

like drill through reports and document maps, preview reports, and save reports to your local computer or publish them to a test or production report server. Report Designer includes query builders and an expression editor.

Model Designer Create models that support ad hoc reporting in Reporting Services. You can generate models automatically based on an existing schema or view, refine the model, and then publish it to a report server.

Report Builder 2005 Create ad hoc reports using templates and pre-organized data and save them directly to a report server. Reports that you create in Report Builder can be accessed, distributed, and managed just as you would any other report.

This topic describes the terminology used to describe the various types of reports and the ways reports get created and used. Reporting Types:

- Parameterized reports
- [Linked reports](#)
- [Snapshot reports](#)
- [Cached reports](#)
- [Ad hoc reports](#)
- [Clickthrough reports](#)
- [Drillthrough reports](#)
- [Subreports](#)

Organizing Report Data on a Page

Reports use a variety of report items to organize data on a report page. Report items are available in the Toolbox. You drag report items to the report design surface and then drag report data from the Report Data pane to the report items on the design surface. The design surface is not WYSIWIG. The report items have an initial layout position that may change when the report is processed. The following list describes typical uses for different report items.

Textbox Use for titles, date stamps, and report names. Placeholder text appears in text boxes where you have linked data and layout items. The placeholder text is display text for an underlying report expression. During report processing, report data is substituted for the report expressions and the calculated values replace the placeholder text.

Table, Matrix Use to display tabular or crosstab data from a report dataset. Table and Matrix are templates of a Tablix data region and provide a starting grid layout for data from a report dataset.

Chart Use to graphically display data from a report dataset. You can also nest a chart inside a Tablix data region.

Gauge Use to present a visual image for a single value within a range of values.

List Use to create a free-form layout like forms on a Web page. A List is a template of a Tablix data region and provides a starting layout for data from a report dataset.

Image Use to add existing images to a report.

Sub report Use as a placeholder another report. A sub report must be designed separately and published to the report server to be included in a parent report.

Line, Rectangle Use lines and rectangles as graphical elements. A rectangle can also be used as a container for other report items. Use a rectangle to help control how report items like data regions appear on a report page when the report is rendered.

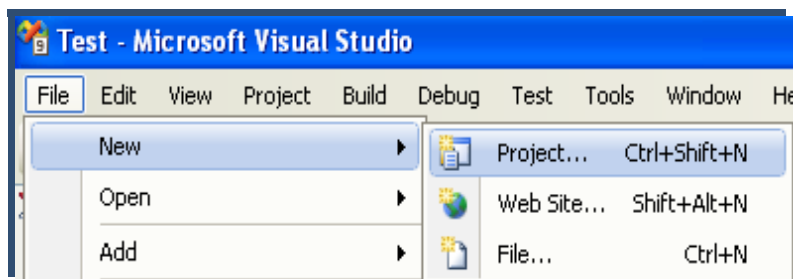
How to create sample report?

For creating sample report you can take one Business requirement for report.

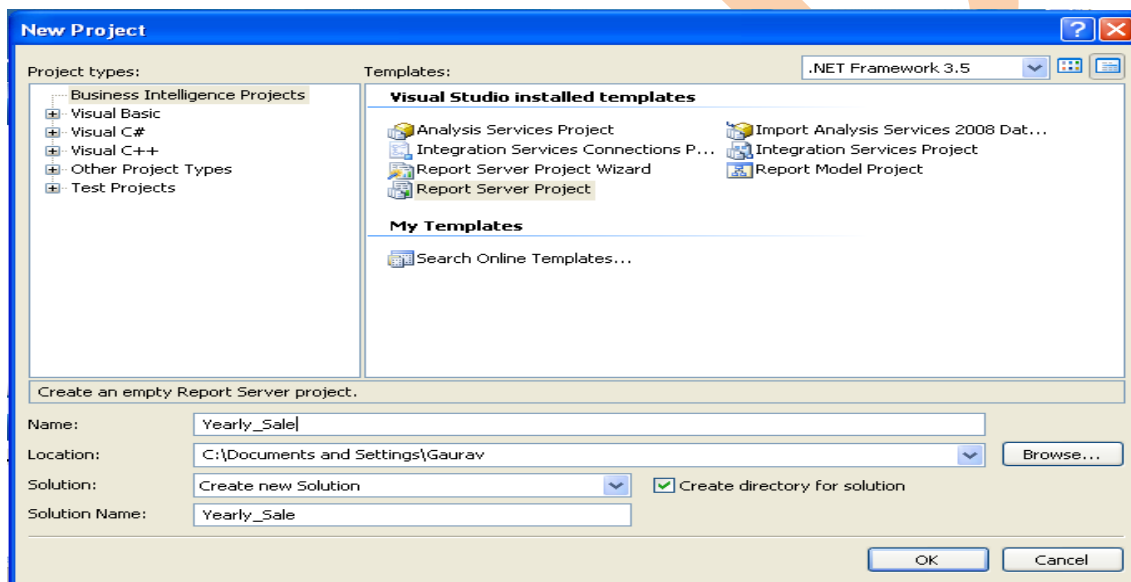
Problem→ Business user wants to see his sales of each region of every month, quarter and yearly bases.

Solution→ You need to create a report which is a stepped process. Here I am showing how to create report by using report wizard.

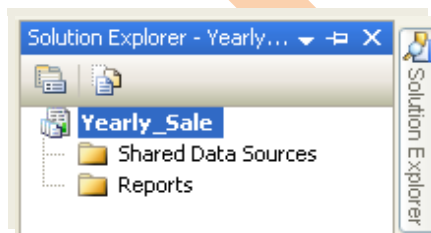
1. Open a new project you can give name



In the categories or project type just select Business Intelligence Project and the template should be the Report Server Project. Give a report name

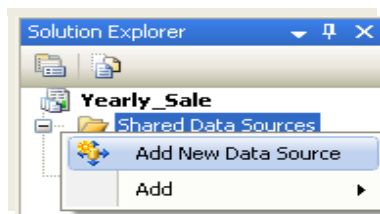


In solution explorer you will get your project

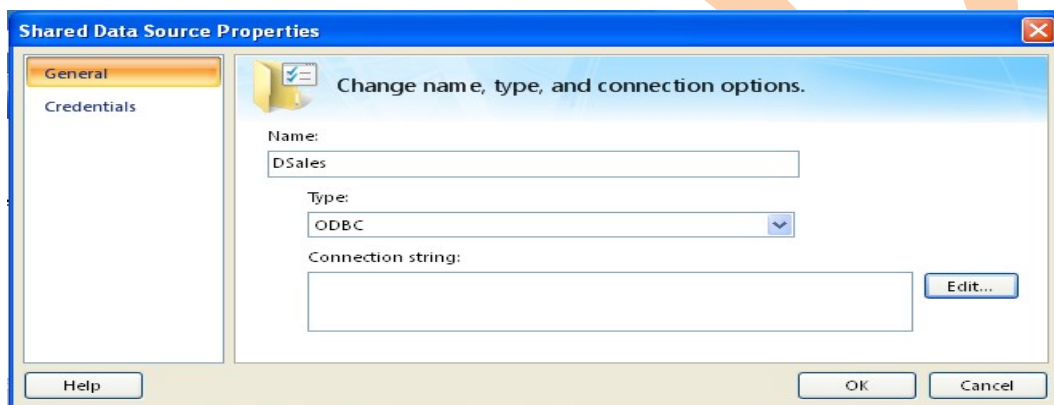


Now the next step to create report is to add data source we can use different data base to create report.

Right click on data sources and the first option will be *Add New Data Source*

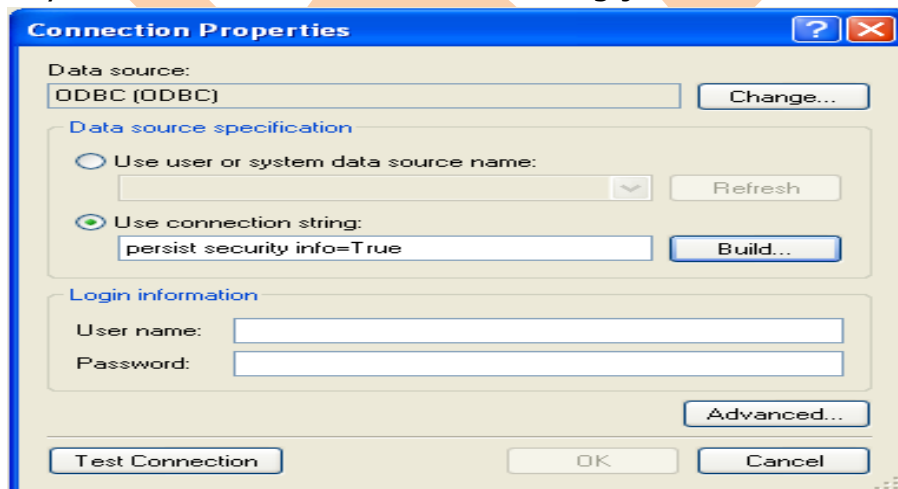


Give the name of the data source. In this example *Dsales* is datasource. Now select a database type, and then type the connection string for the datasource. To build connection string click **Edit**.

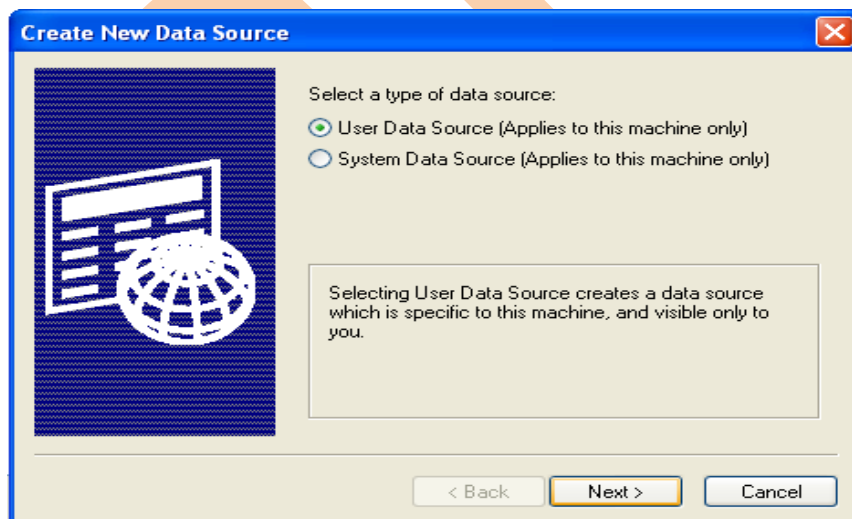
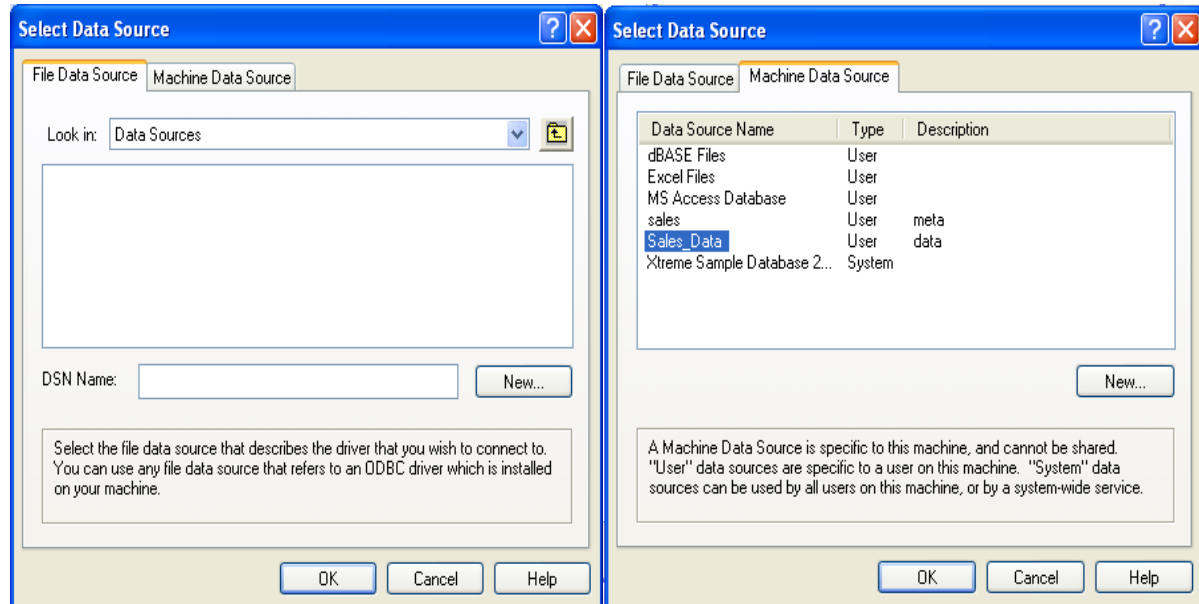


Now connection Properties window will come. There are many options for datasource type. You previously select datasource type so it come automatically else you have option to change it.

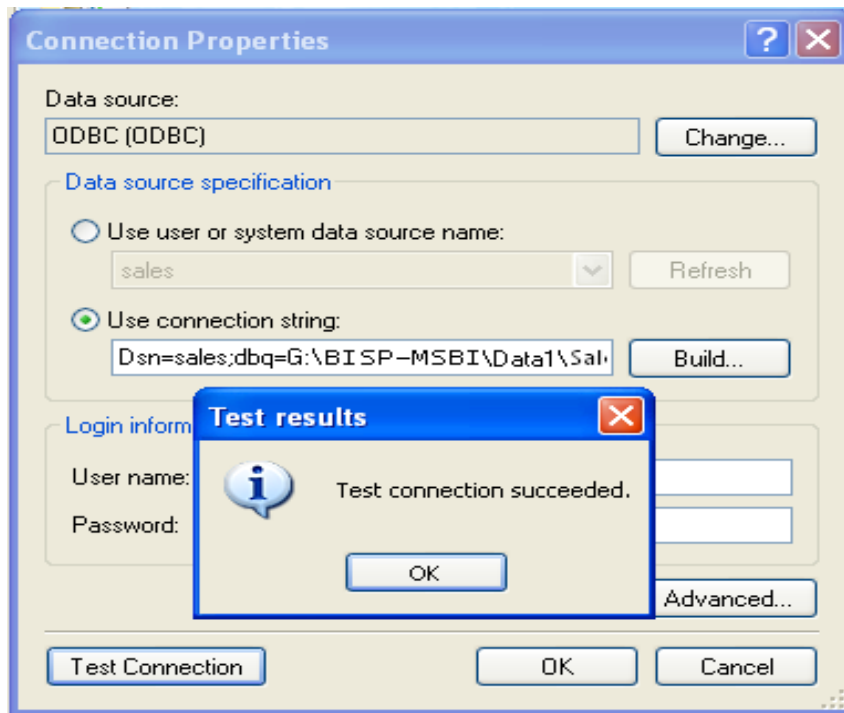
If you want to build connection string just click Build



When you click on build one select data source wizard will come. In that you have two tabs one for file data source and other is for machine data source by the use of 'New' button you can create new data source.



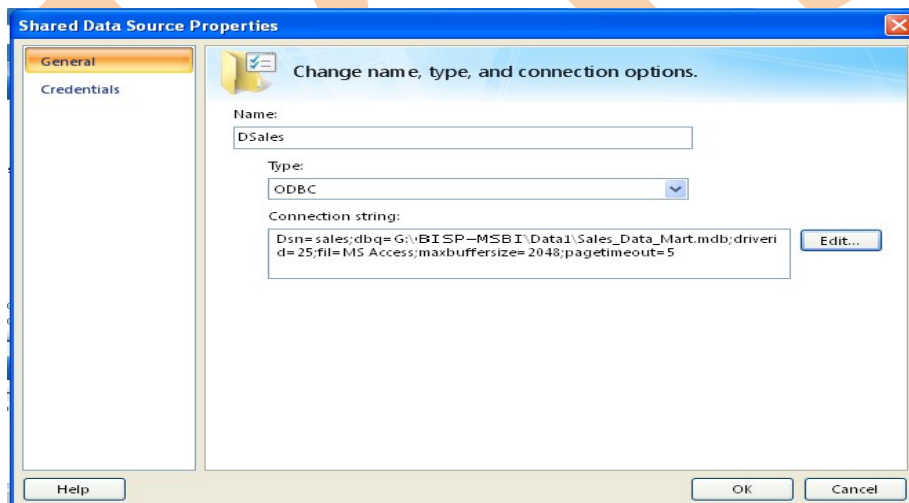
When you click on next you will get connection string. Now you should test the connection if you get success message click ok.



After these processes you will get connection string in your connection string box.

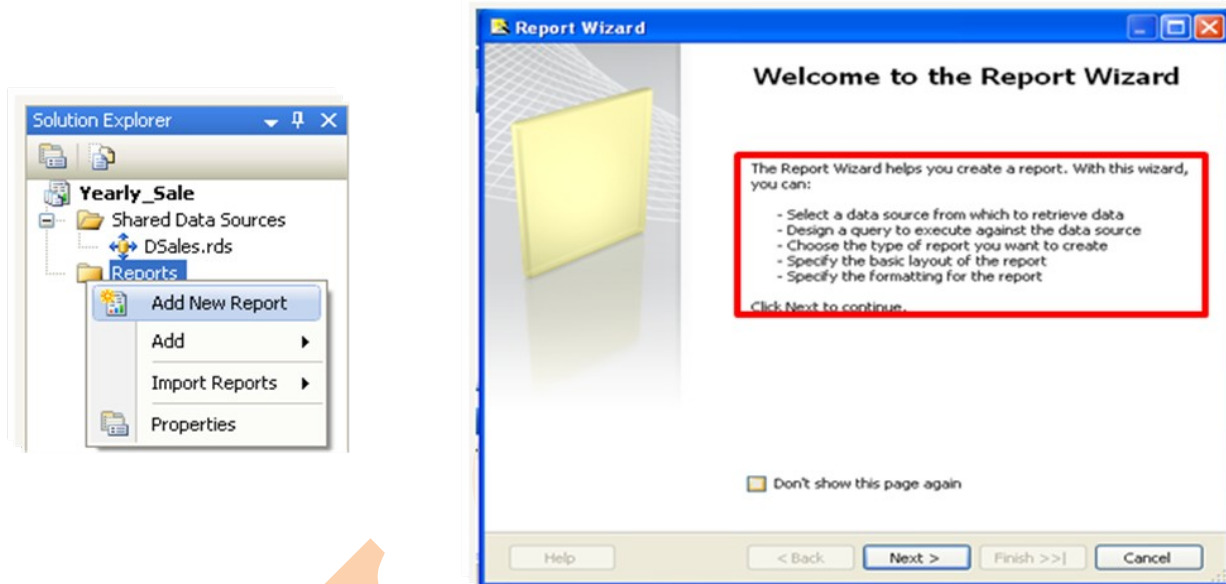
Click **OK**.

Connection string comes, click ok.



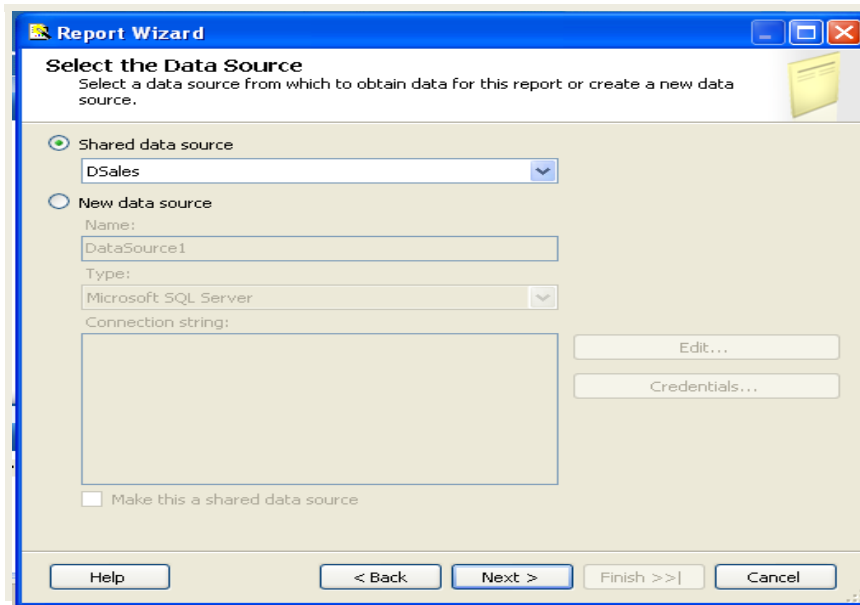
Report Designing

Now you are ready to create report. Go to solution explorer there is one Reports folder just Right click on that and click on **Add New Report**.



Now you have Report wizard which shows all the stepped instruction How to create report?

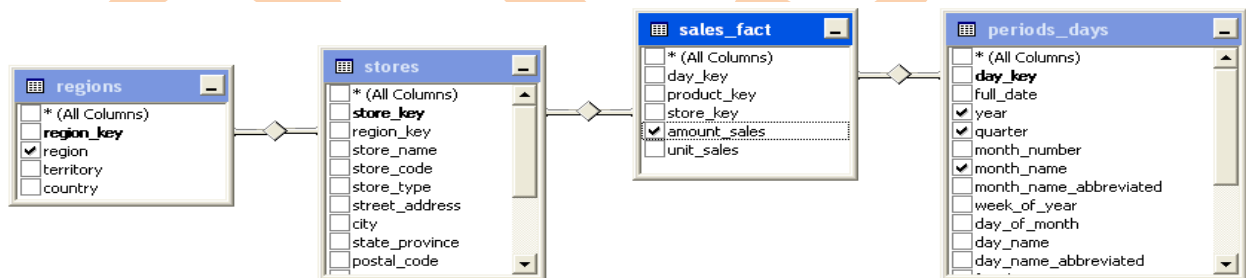
Select datasource in the shared data source dropdown. You will get all data source which is available in your Shared Data Source folder.



To create data model we may have more than one data base. In one database there may be so many tables. So before creating data model first check the required tables then add them to data model.

In this problem you need regions, stores, sales_fact and periods_days table in data model.

Use query builder to create query

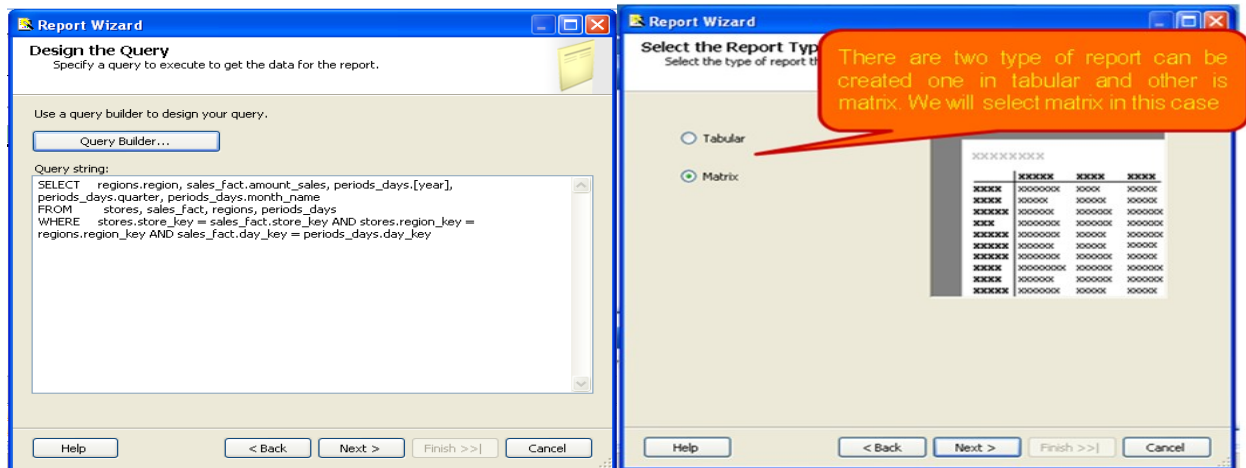


After select your required fields click **OK**

It is generated a query string.

Click on Next

There are two types of reports tabular and matrix for in this problem you can use matrix reporting.



You can Design matrix report there is four options.

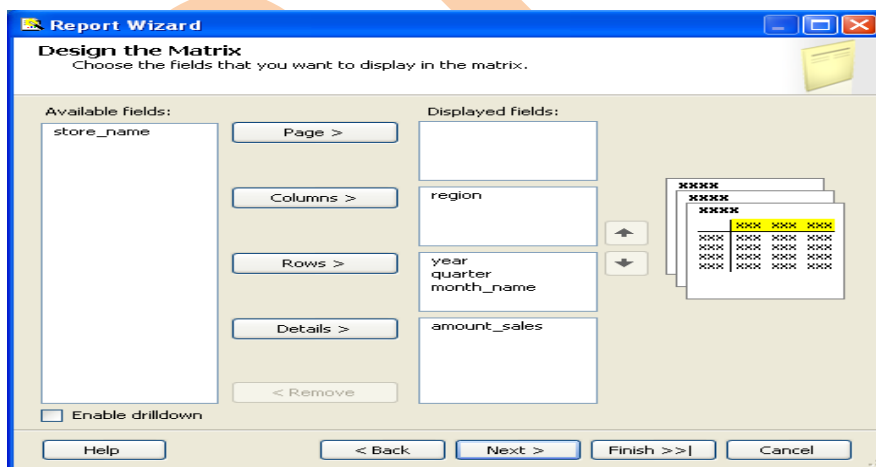
Page→ You can add those fields which you want to come in page header.

Columns→ Add column fields.

Rows→ Add row fields.

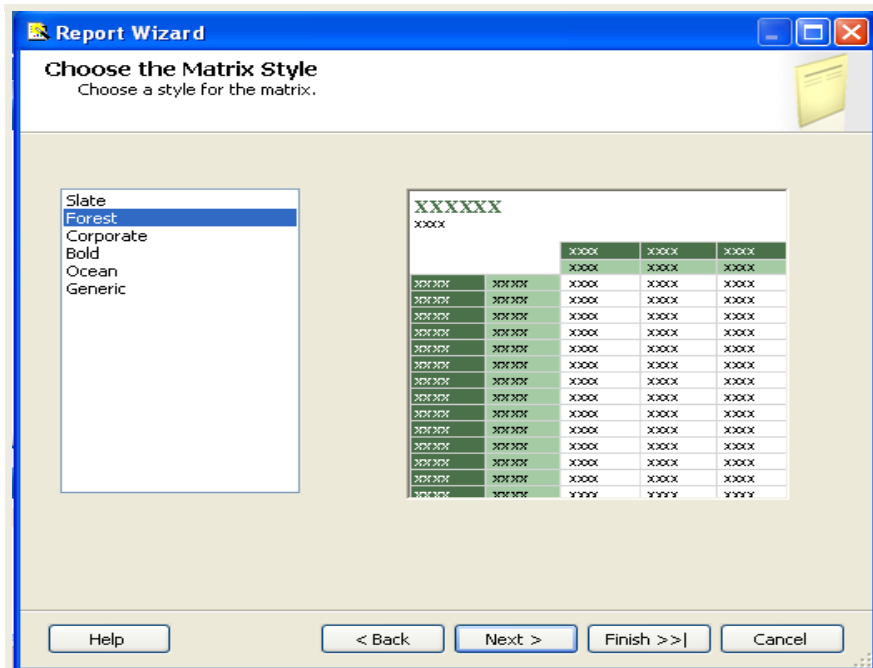
Details→ This keeps measures information from fact table.

When all fields are chosen, click on Next.

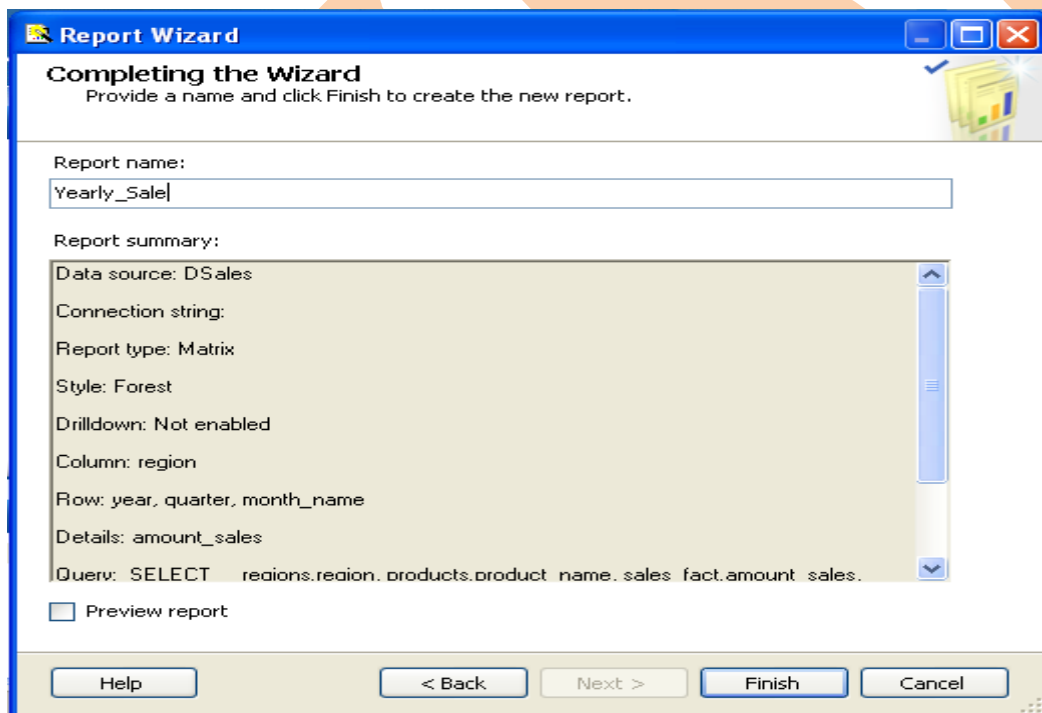


Choose the Table Layout page, select a layout for the table, and then click *Finish*.

Select report appearance.

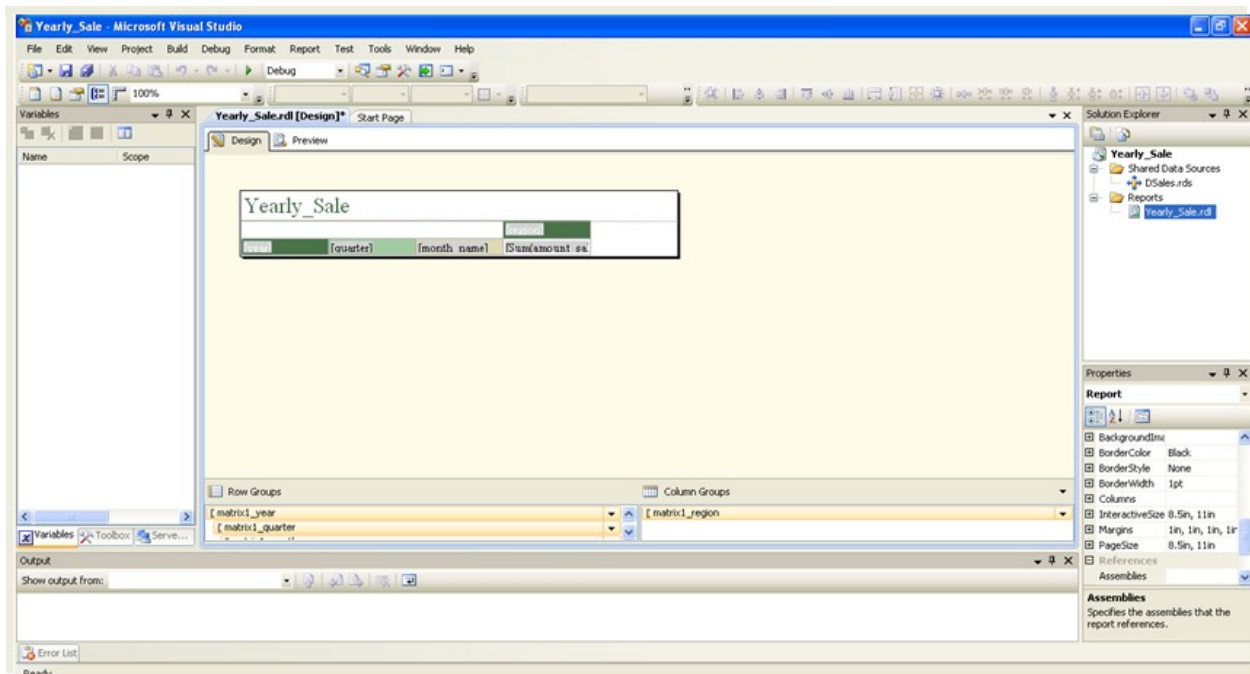


Give the Name to Report.

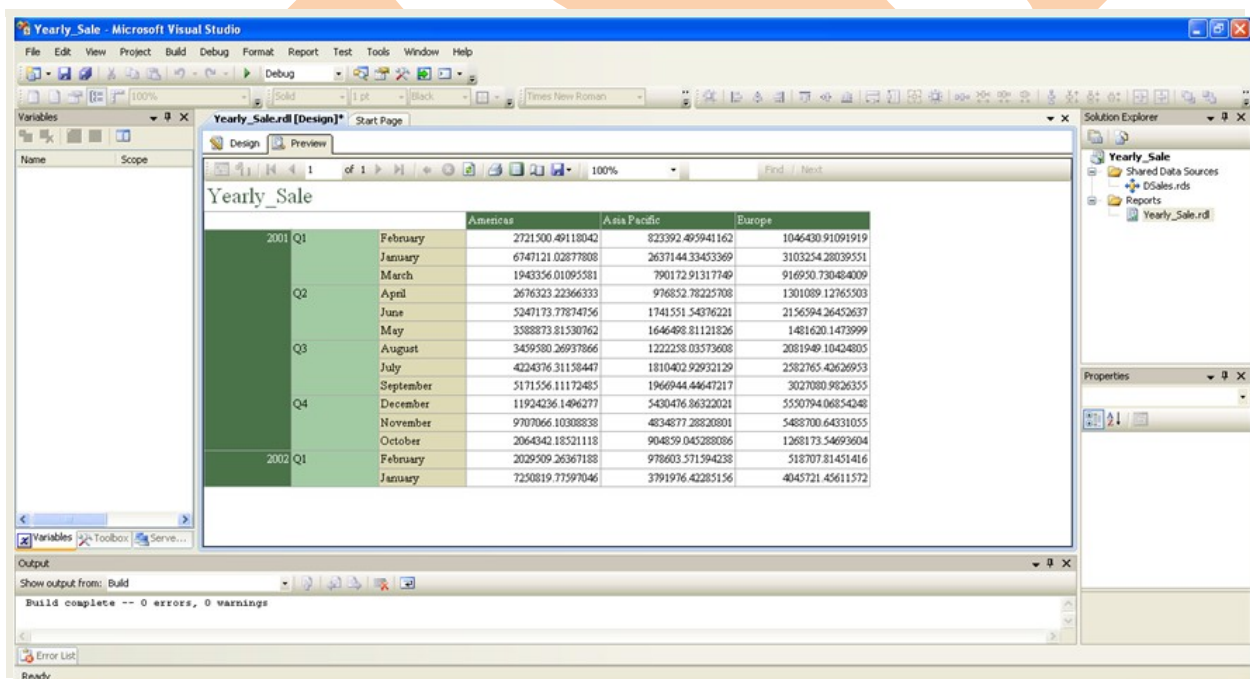


Click On Finish.

This is Design view of report.



Now Click on Preview Tab



Analysis Services

SQL Server Analysis Services adds OLAP and [data mining](#) capabilities for SQL Server databases. The OLAP engine supports [MOLAP](#), [ROLAP](#) and [HOLAP](#)

storage modes for data. An analysis service supports the [XML for Analysis](#) standard as the underlying communication protocol. The cube data can be accessed using [MDX](#) queries. Data mining specific functionality is exposed via the [DMX](#) query language. Analysis Services includes various algorithms - [Decision trees](#), clustering algorithm, [Naive Bayes](#) algorithm, time series analysis, sequence clustering algorithm, linear and logistic [regression](#) analysis, and [neural networks](#) - for use in data mining.

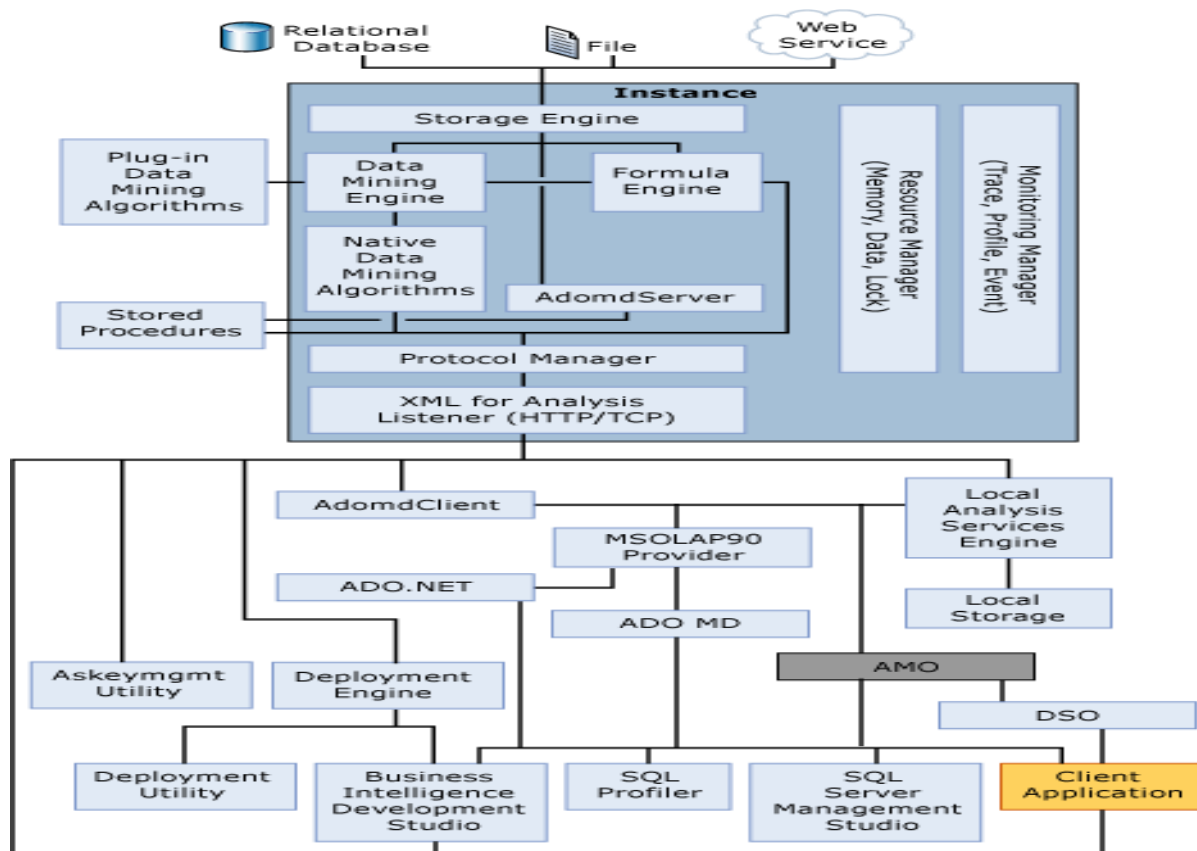
Analysis Services—Multidimensional Data provides fast, intuitive, top-down analysis of large quantities of data built on this unified data model, which can be delivered to users in multiple languages and currencies.

Analysis Services—Multidimensional Data works with data warehouses, data marts, production databases and operational data stores, supporting analysis of both historical and real time data.

Analysis Service Architecture

An Analysis Services instance runs as a stand-alone service and communication with the service occurs through XML for Analysis (XMLA), by using either HTTP or TCP. AMO is a layer between the user application and the Analysis Services instance. This layer provides access to Analysis Services administrative objects. AMO is a class library that takes commands from a client application and converts those commands into XMLA messages for the Analysis Services instance. AMO presents Analysis Services instance objects as classes to the end user application, with method members that run commands and property members that hold the data for the Analysis Services objects.

The following illustration shows the Analysis Services components architecture, including all major elements running within the Analysis Services instance and all user components that interact with the instance. The illustration also shows that the only way to access the instance is by using the XML for Analysis (XMLA) Listener, either by using HTTP or TCP.



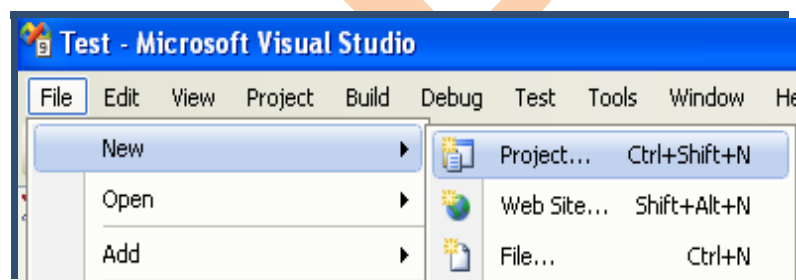
How to create SSAS Cube?

You can take same business query.

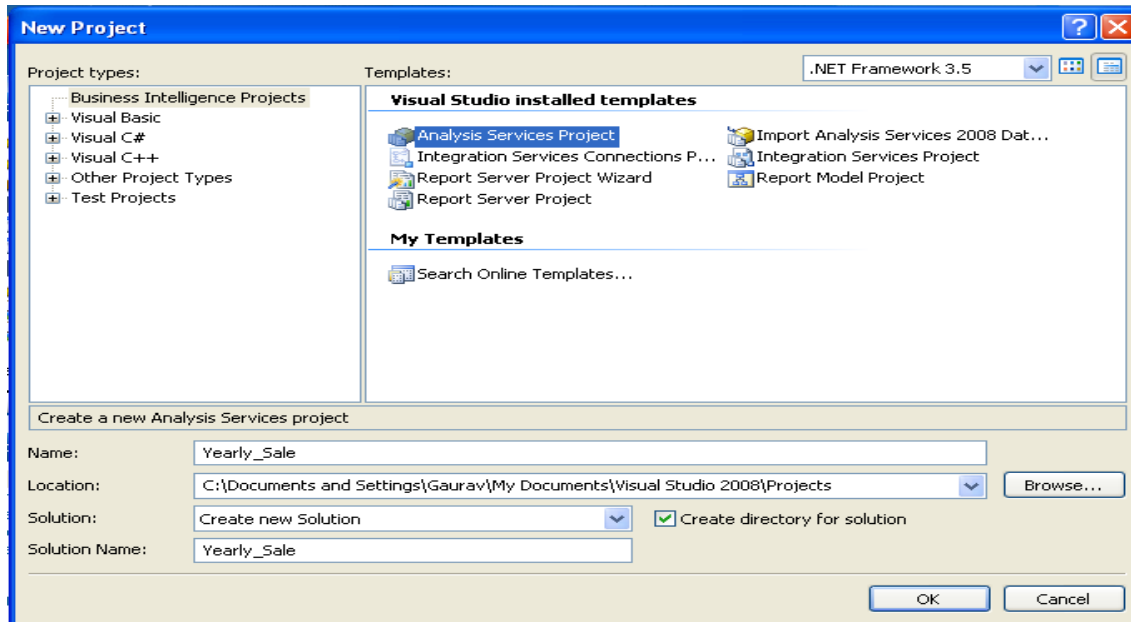
Problem→ In a cube business user want sale of each region of every year , quarter and month.

Solution→ You can create a cube which is a stepped process. Create a cube by using cube building wizard.

1. Open a new project you can give name per project

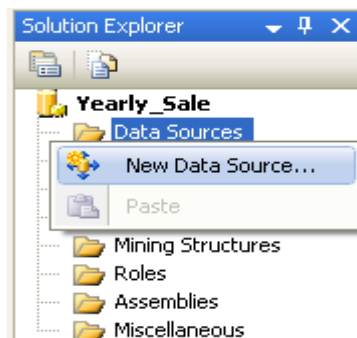


In the categories or project type just select Business Intelligence Project and the template should be the Analysis Service Project. And give a cube name....

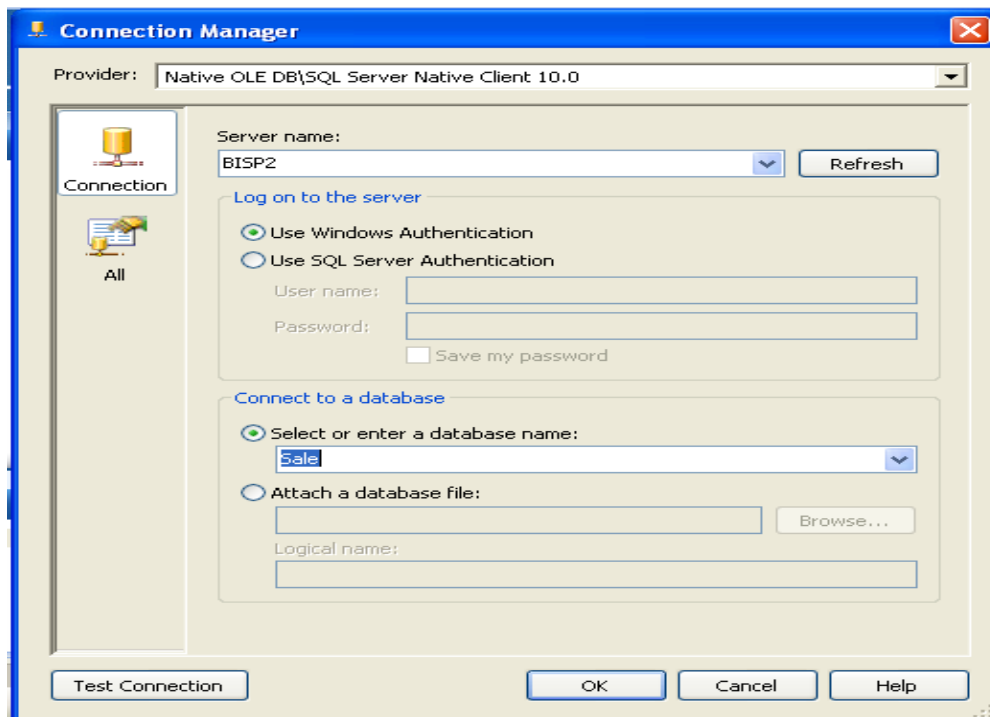


You will get yearly_Sale in solution explorer.

First we will create a data sources from relational data

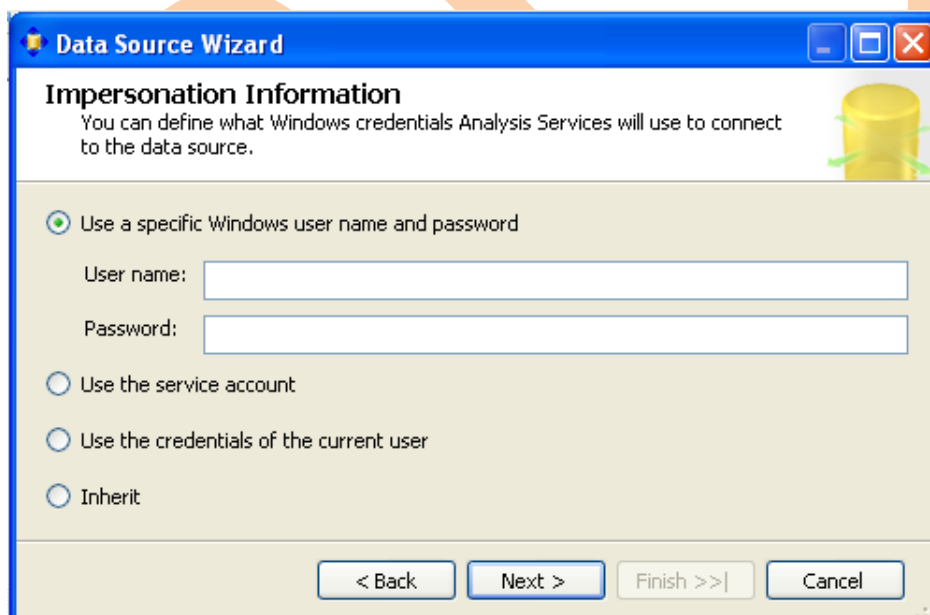


Select server name and Data source

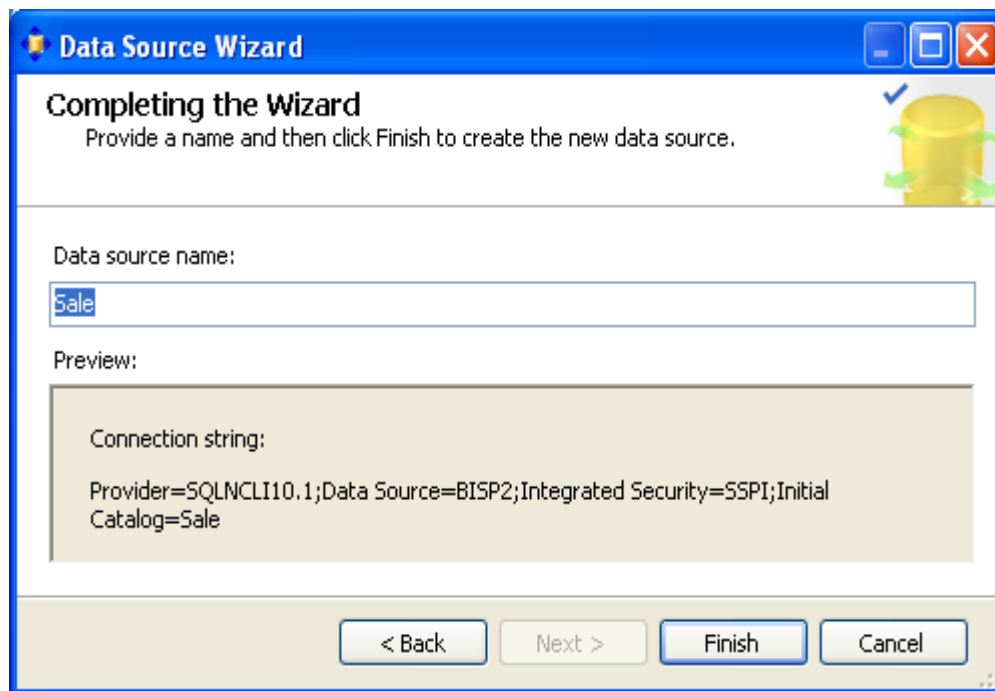


Check the connection and go to next step.

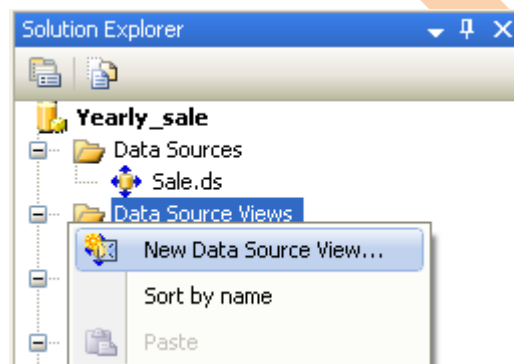
You can specify windows user name and password for getting datasource. You can choose current user option to connect data source.



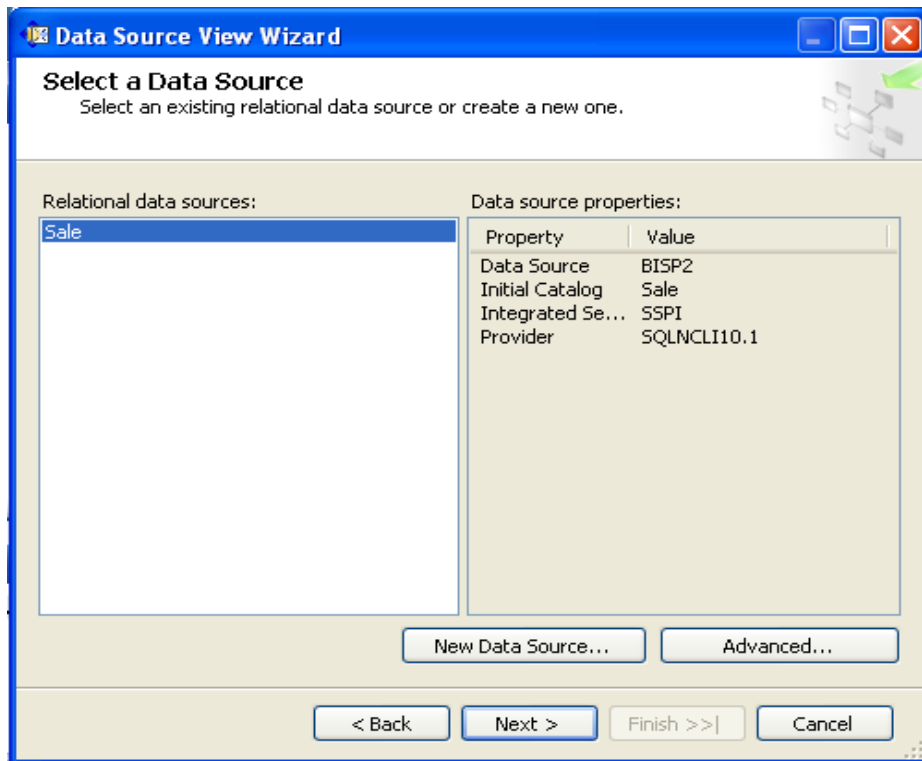
Just give datasource name and click on finish.



The next step is Right click on data source view and click on New Data Source View.

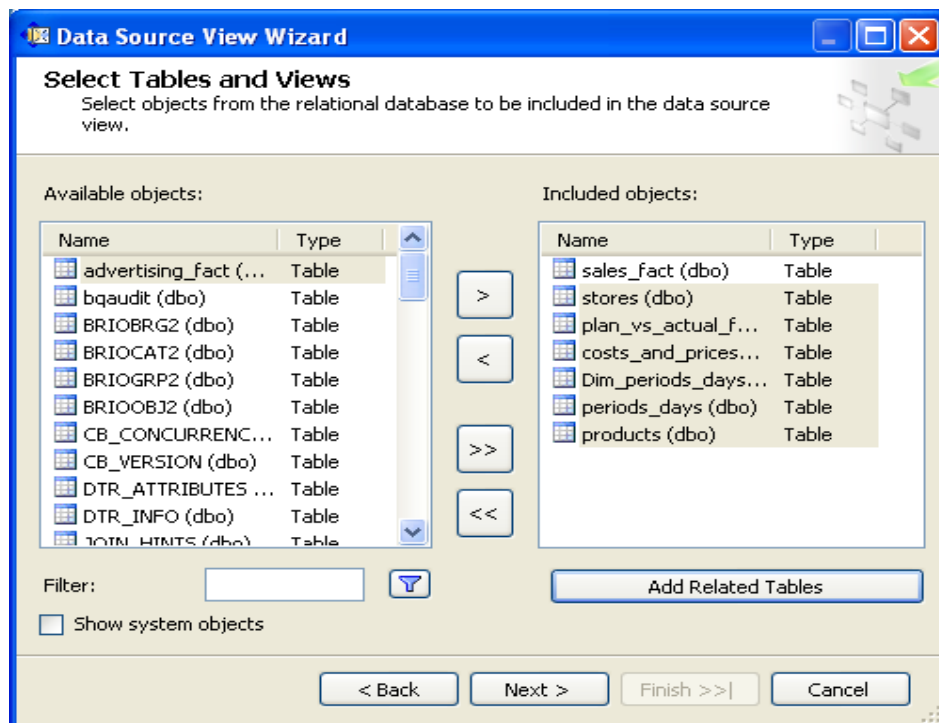


Select Sale relational data sources click on **Next**.

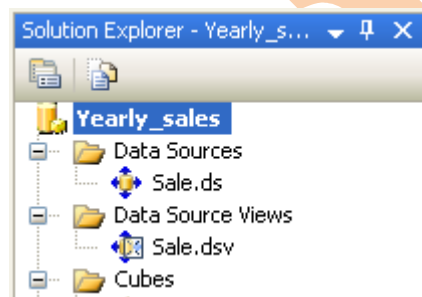


Select your fields those you want to include in analysis cube. There exist so many tables in the database; it is difficult to find the related tables. So with the help of data model you can find fact table easily.

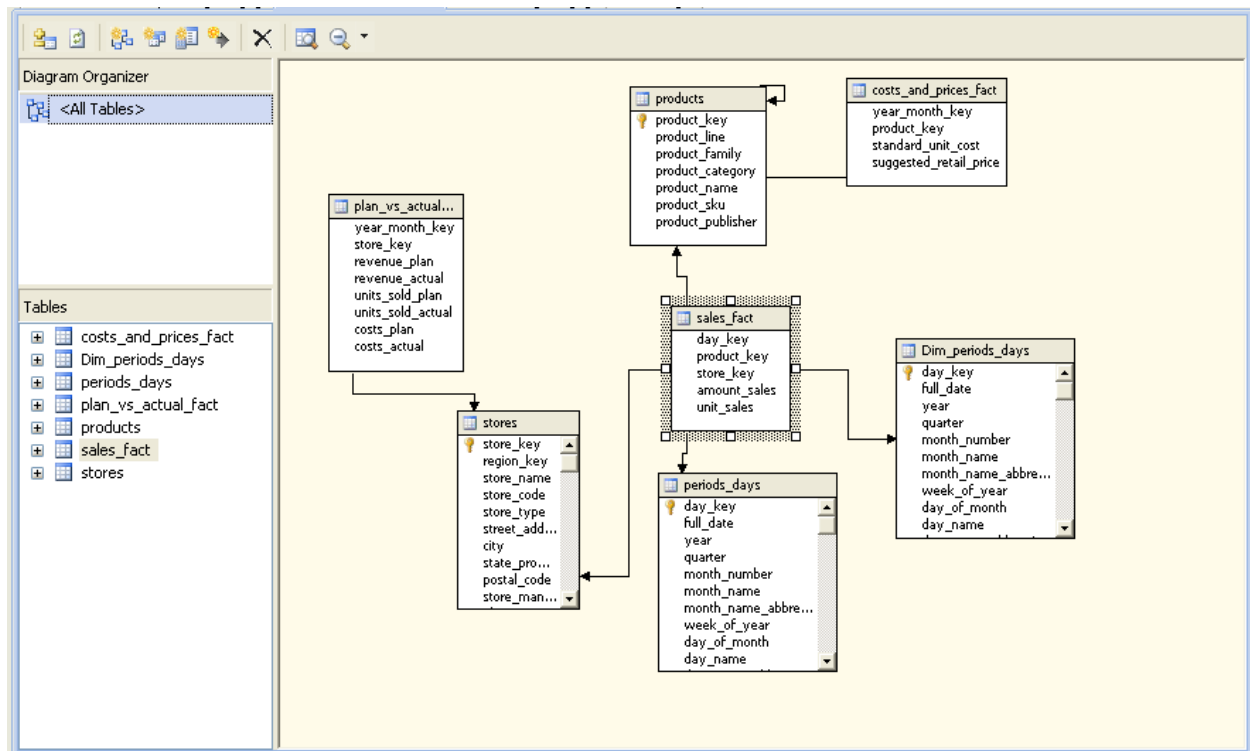
Just select fact table and Click on Add Related Table → then → Click on Next



Data source view will comes in Solution Explorer



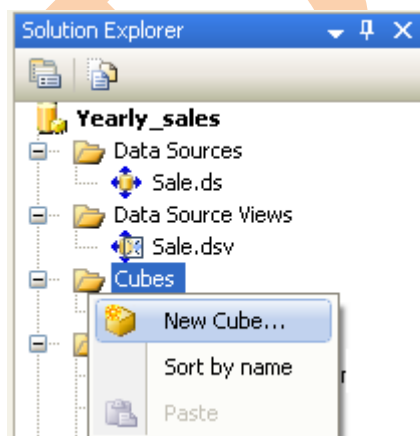
Below image shows data source view.



The relationship between all tables is showing in view.

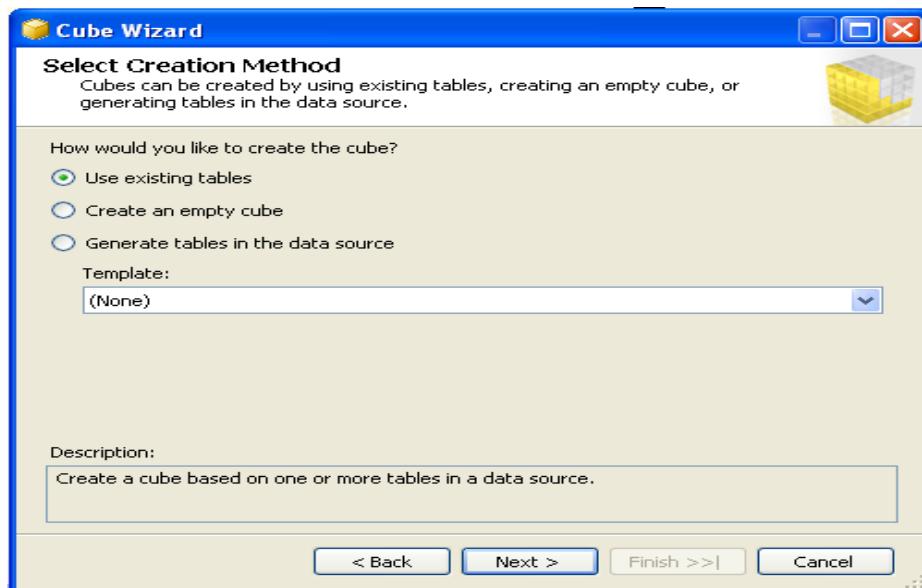
Create Cube

Now for creating new cube **Right Click on Cube Folder Click on New Cube.**



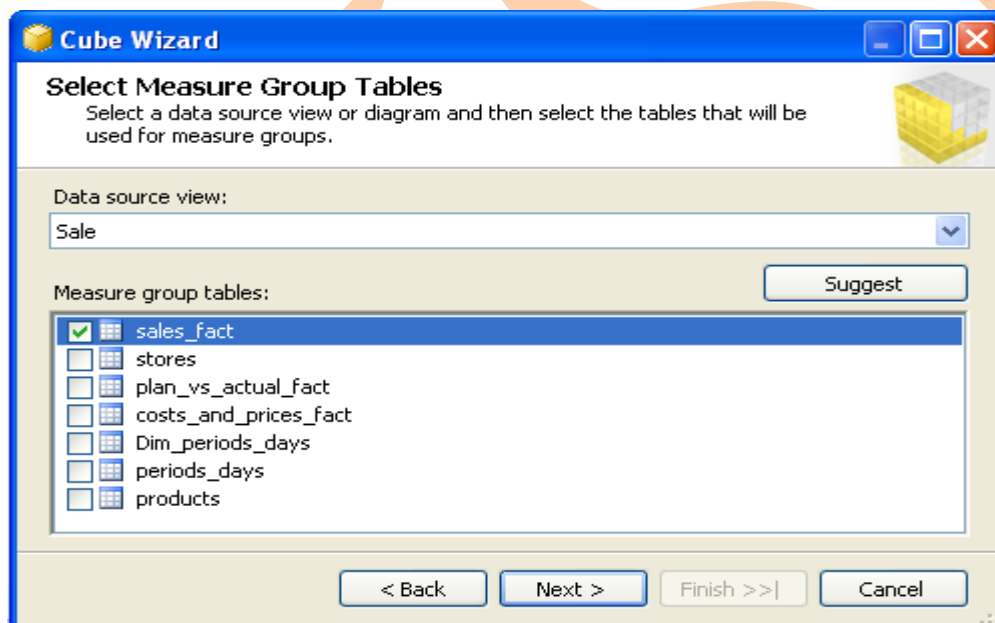
Here is one question. How would you like to create the cube?

You have created data source so I select use existing table.



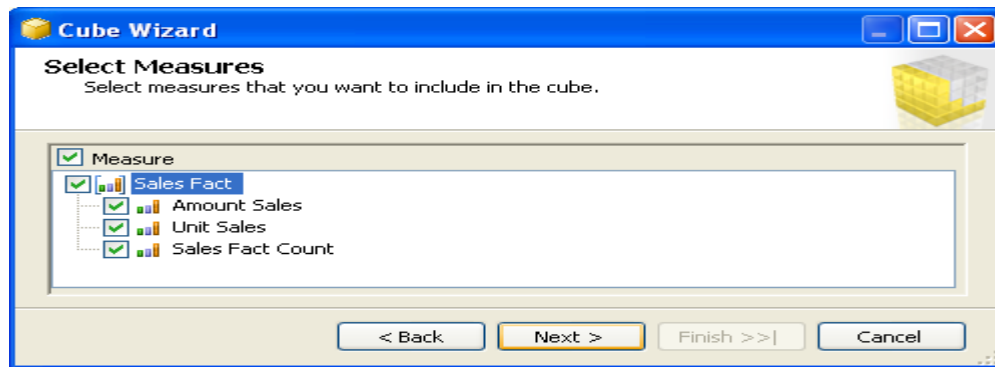
Click On Next.

Now you have all tables in window just select table which has measures.

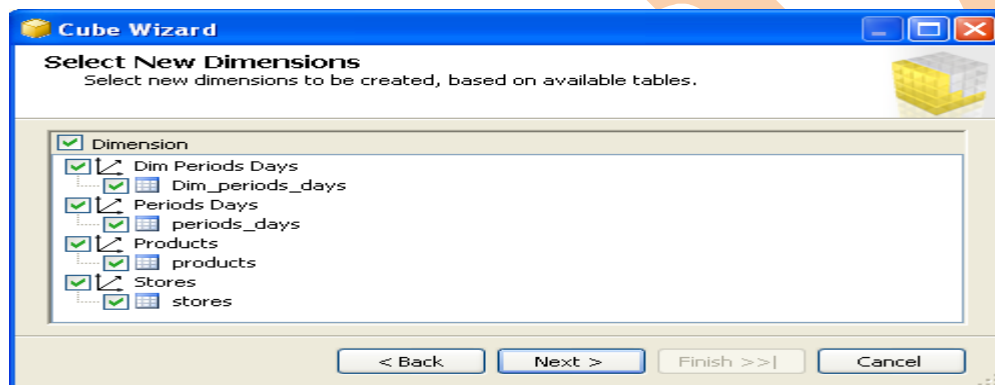


Click On Next.

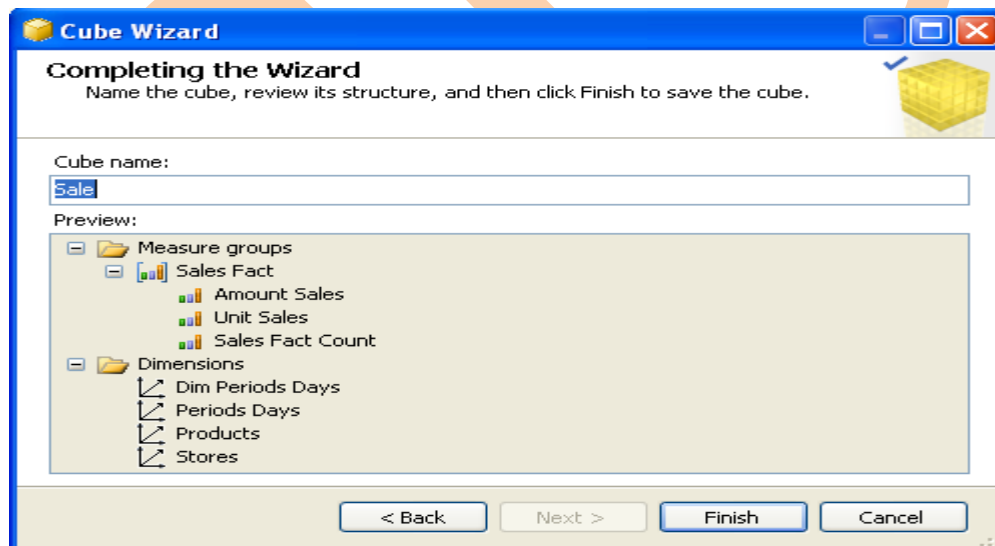
Select Measure Click on Next



Select Dimensions Click on Next.

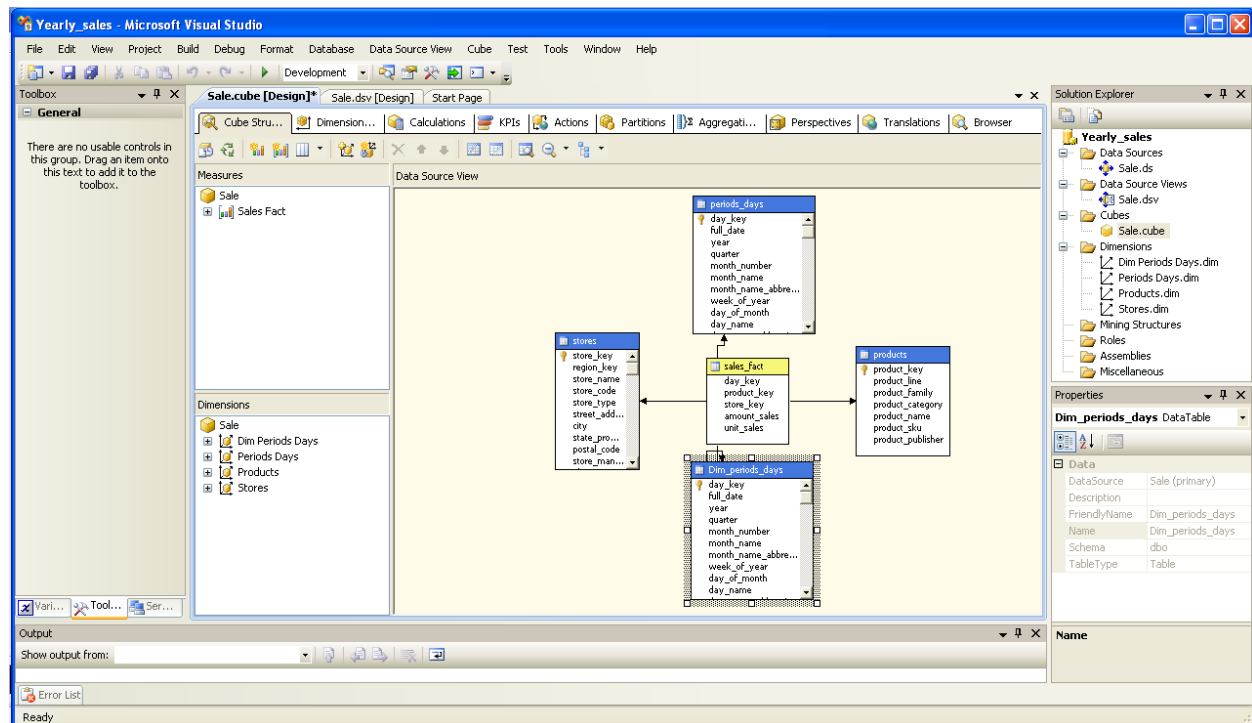


Now Sale Cube is created



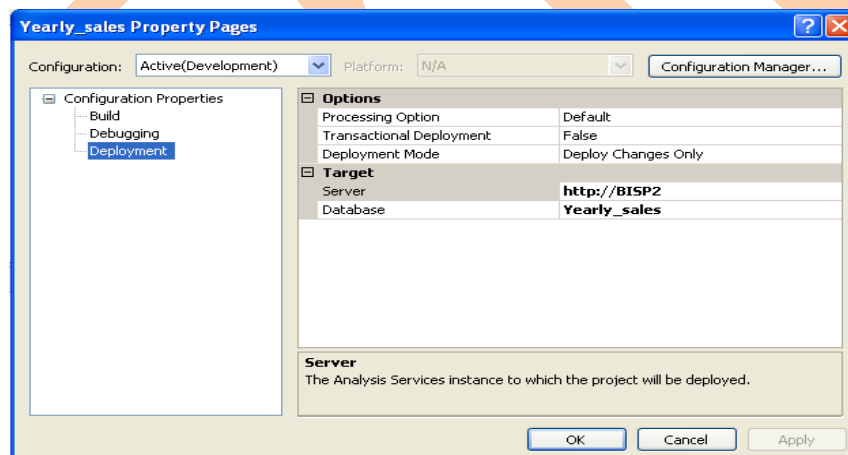
Click on Finish.

Cube is created



You have many options to perform operation in cube as KPI's, Action, and Aggregation etc.

Next step is Build Cube and deploy it just **Right Click on** Project and go to properties. Select deployment then set target server where you want to deploy your Cube.



Integration Services

Integration Services is a platform for building high performance data integration and workflow solutions, including extraction, transformation, and loading (ETL) operations for data warehousing.

Integration Services includes graphical tools and wizards for building and debugging packages; tasks for performing workflow functions such as FTP operations, SQL statement execution, and e-mail messaging; data sources and destinations for extracting and loading data; transformations for cleaning, aggregating, merging, and copying data; a management service, the Integration Services service, for administering Integration Services packages; and application programming interfaces (APIs) for programming the Integration Services object model.

Integration Services provides a rich set of built-in tasks, containers, transformations, and data adapters that support the development of business applications. Without writing a single line of code, you can create SSIS solutions that solve complex business problems using ETL and business intelligence, manage SQL Server databases, and copy SQL Server objects between instances of SQL Server.

SQL Server Integration Services (SSIS) is a set of tools and technologies that enable users and programmers to:

- Import data from a variety of sources into a database
- Export data from a database to a variety of targets
- Perform data mining and warehousing tasks such as:

Extract subsets or samples of database content for further analysis (e.g., Forecasting)

Combine data in multiple databases or tables into a single database or table

Modify existing data using complex rules

SSIS has two broad groups of components

Server-Side

Extensions to the DBMS that enable advanced SSIS tasks (simpler tasks are supported on most DBMSs via standard drivers and SQL commands)

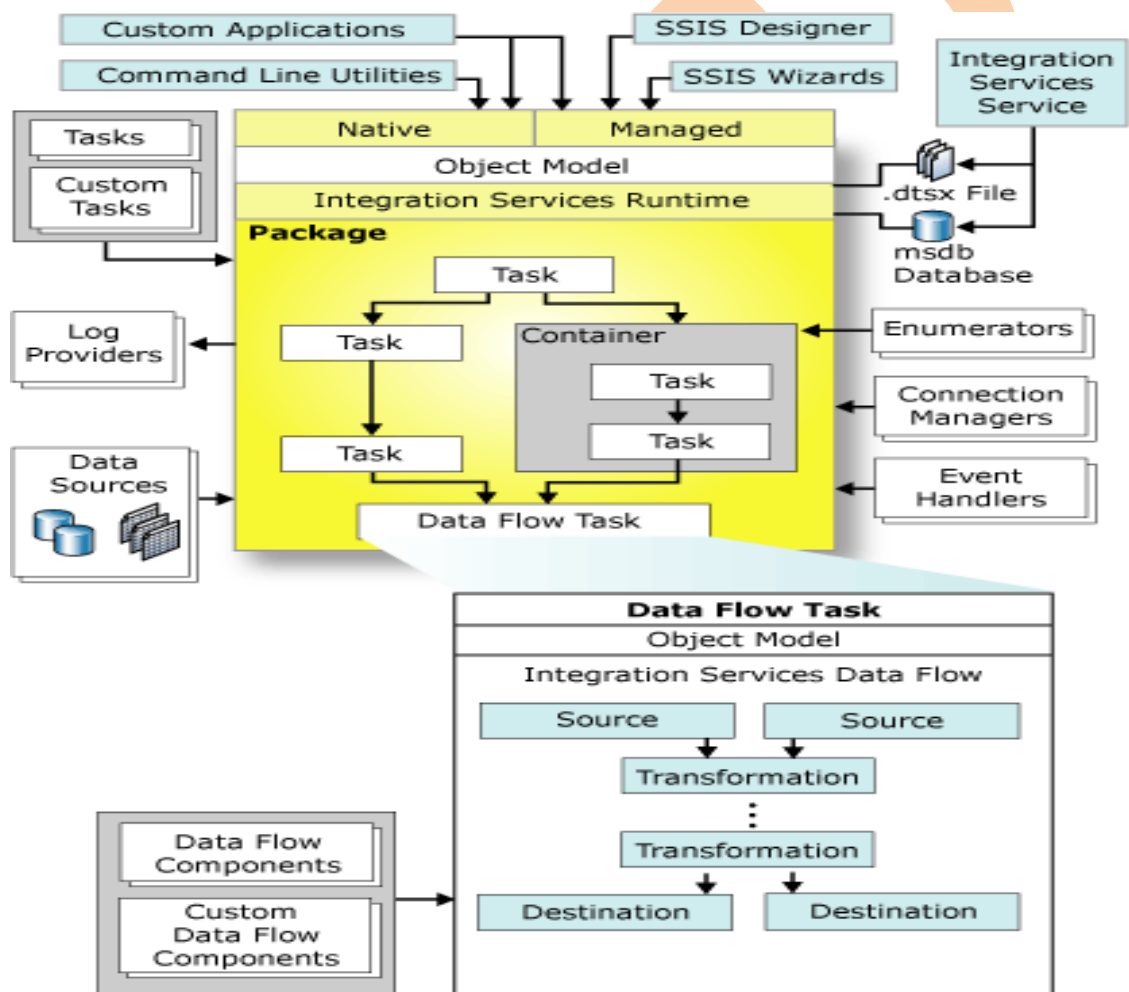
Extensions are “invisible” to the user/programmer unless they’re absent or incorrectly installed

Client-Side

Software components for both low-level and high-level integration tasks

Interfaces to data sources (e.g., spreadsheets, text files, and various DBMSs)

Integrated Service Architecture



The best power full ETL tool is SSIS (SQL Server Integration Services). SSIS is a great tool for managing ETL, but in a complex process it's easy to have a lot of packages all referencing the same data source. Integration service is the basic services for keeping data into a single format. In real time environment always the data base are in different-different format because

may be the application program have different-different type of database and for performing any kind of operation we need to have data into a single format. With the help of SSIS we can perform this task easily

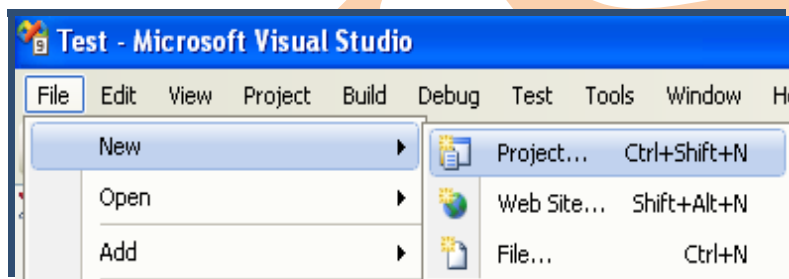
What is ETL?

ETL is the automated and auditable data acquisition process from source system that involves one or more sub processes of data extraction, data transportation, data transformation, data consolidation, data integration, data loading and data cleaning.

Here are the steps by which you can perform conversion of one type of database into required database. We create package to perform this task.

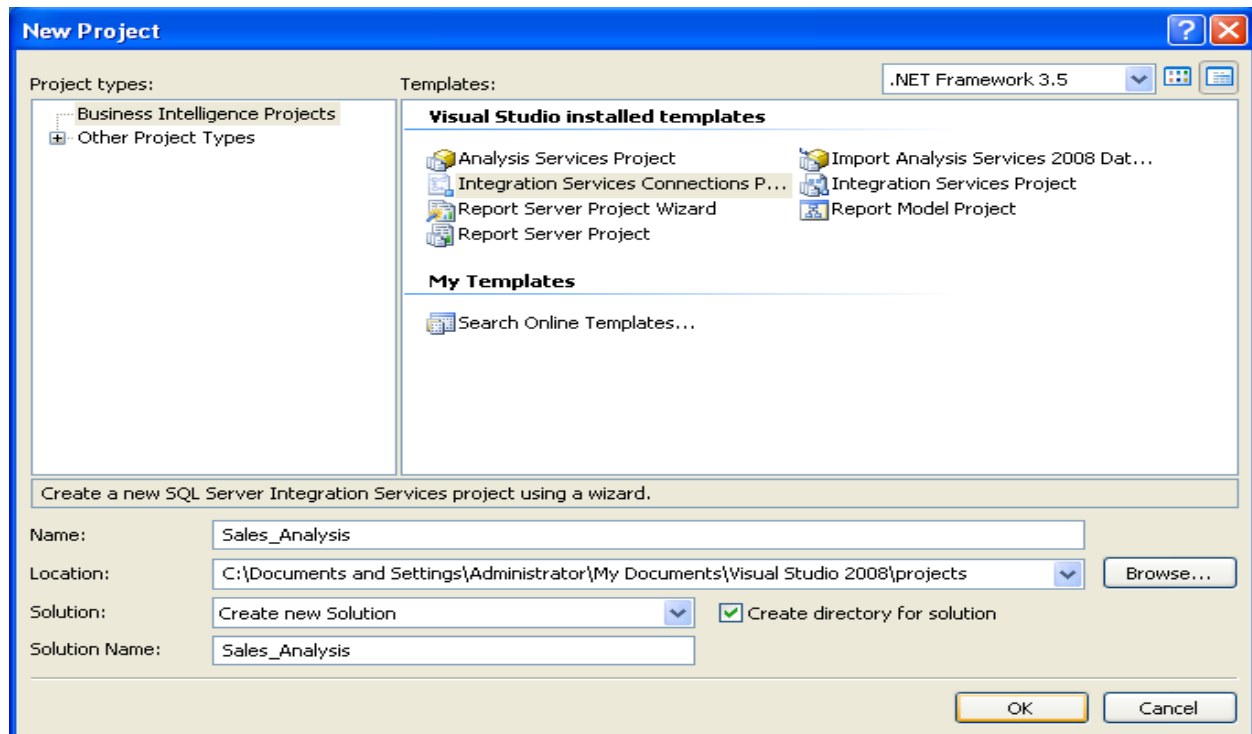
Creating Package in SSIS

1. Open a new project you can give name per project

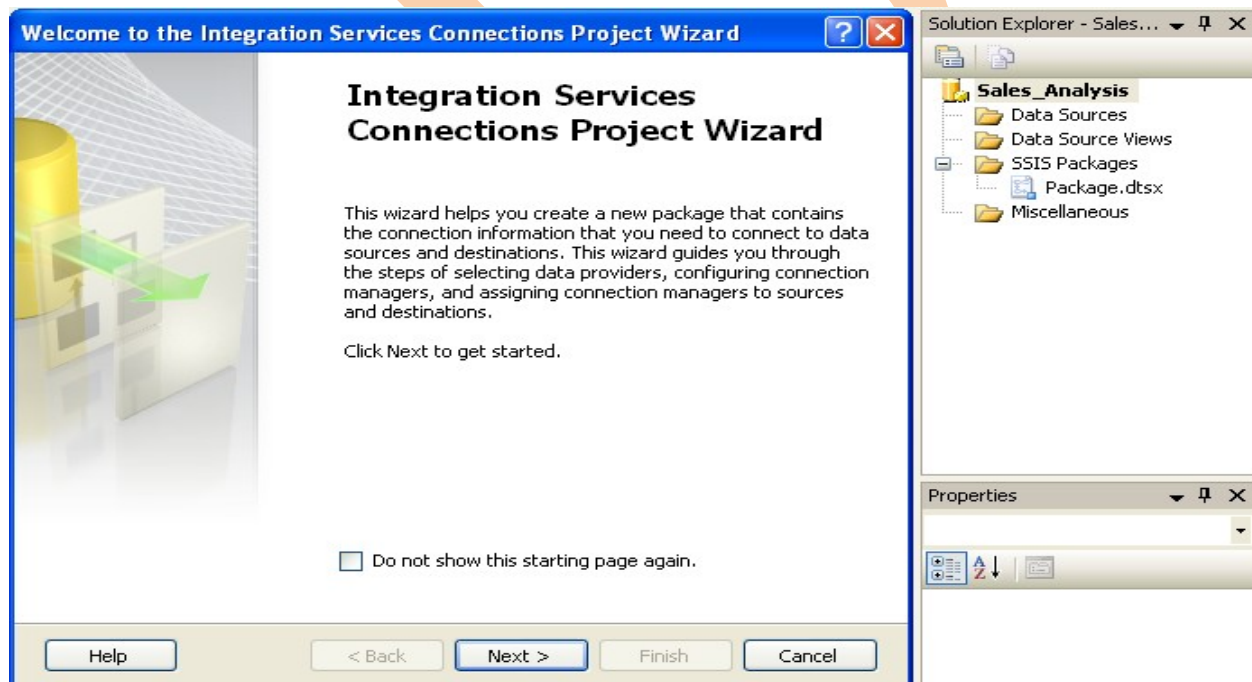


In the categories or project type just select Business Intelligence Project and the template should be the Integration Service Connections Project. Integration Service Project first one is available with wizard and second one doesn't have wizard. Select one and give a name of package.

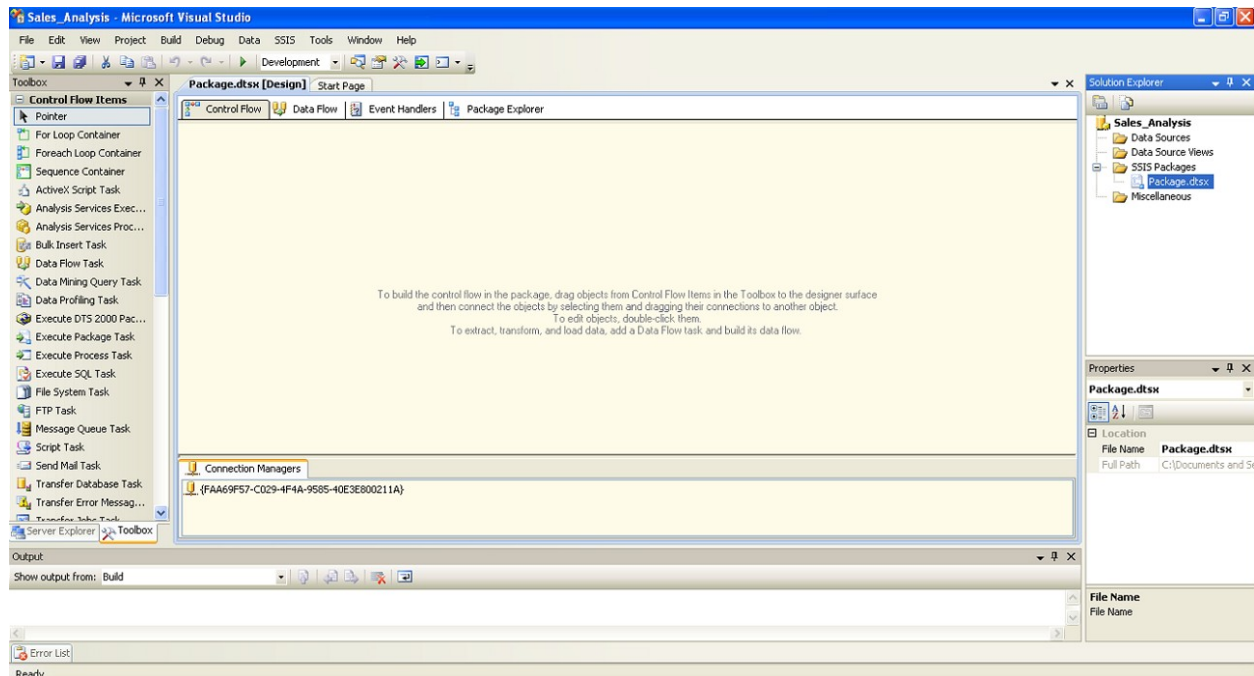
Here a integration Service Project named Sales_Analysis



Click on ok button. You will have next welcome wizard which little information.



Finally you have below wizard for performing task.



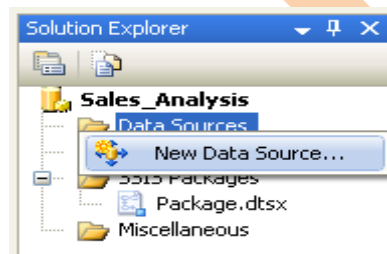
SSIS environment is set.

Problem

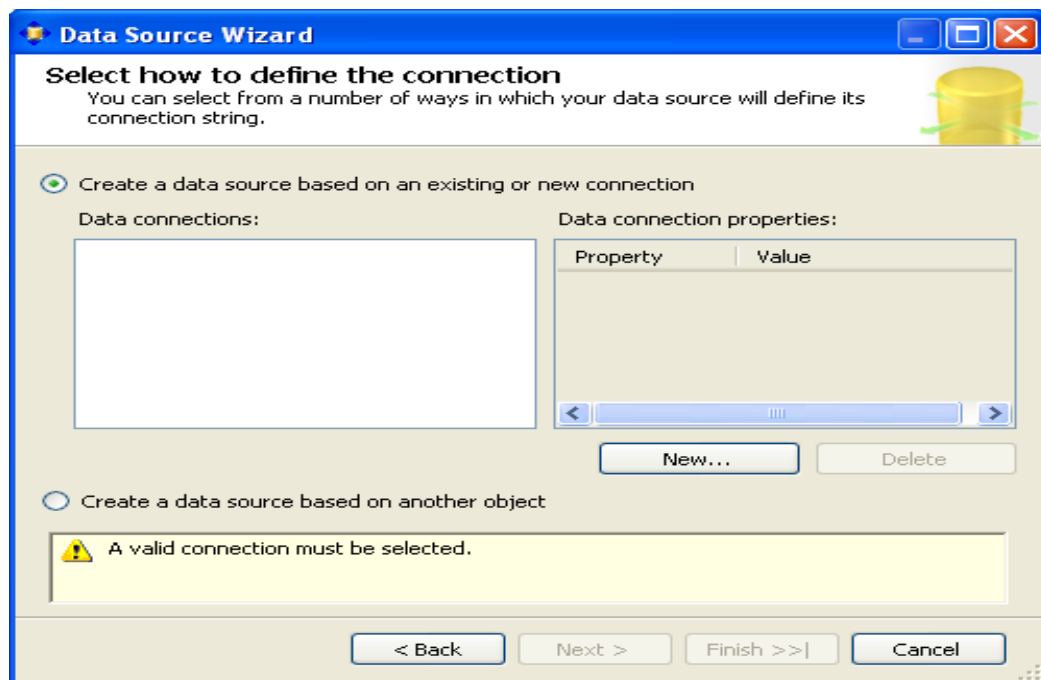
In one XYZ organization there are many stores in different regions. They use different desktop applications some with Access database and other in sql server database. Business user wants to perform some analysis now you need to convert all data base in single format. You need to convert all data base in Sql database format.

Solution

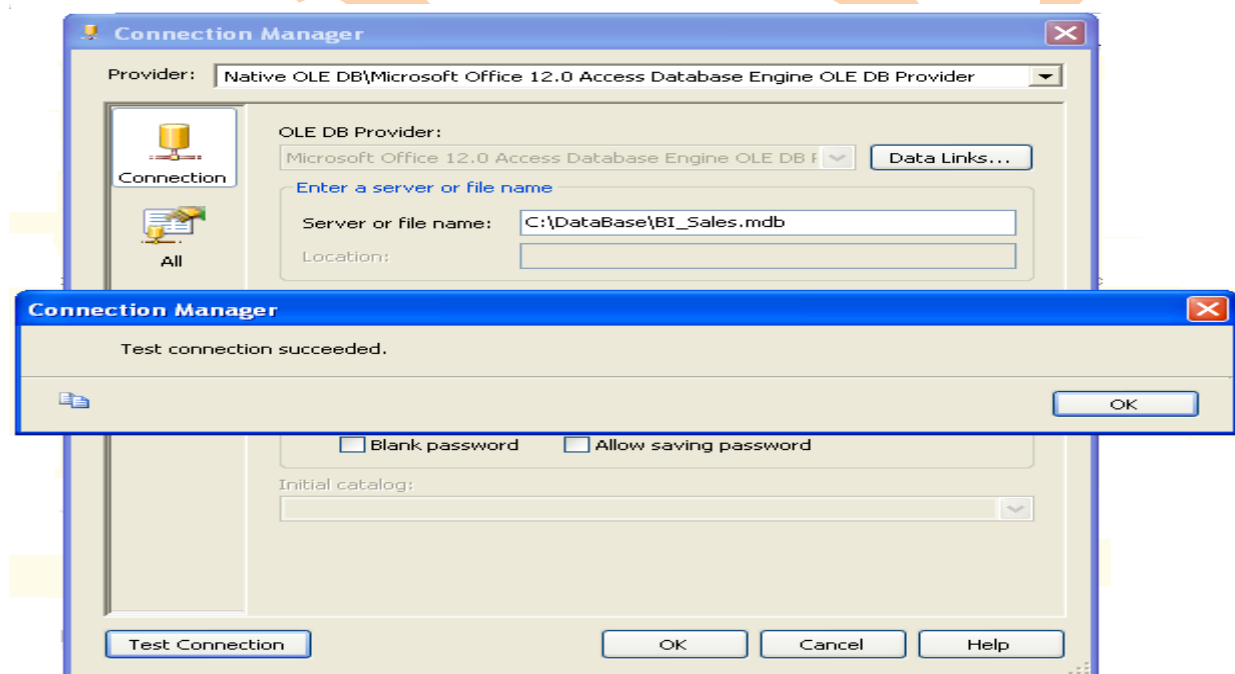
The First step is to create data source. In the solution explorer right click on data source and make new data source.

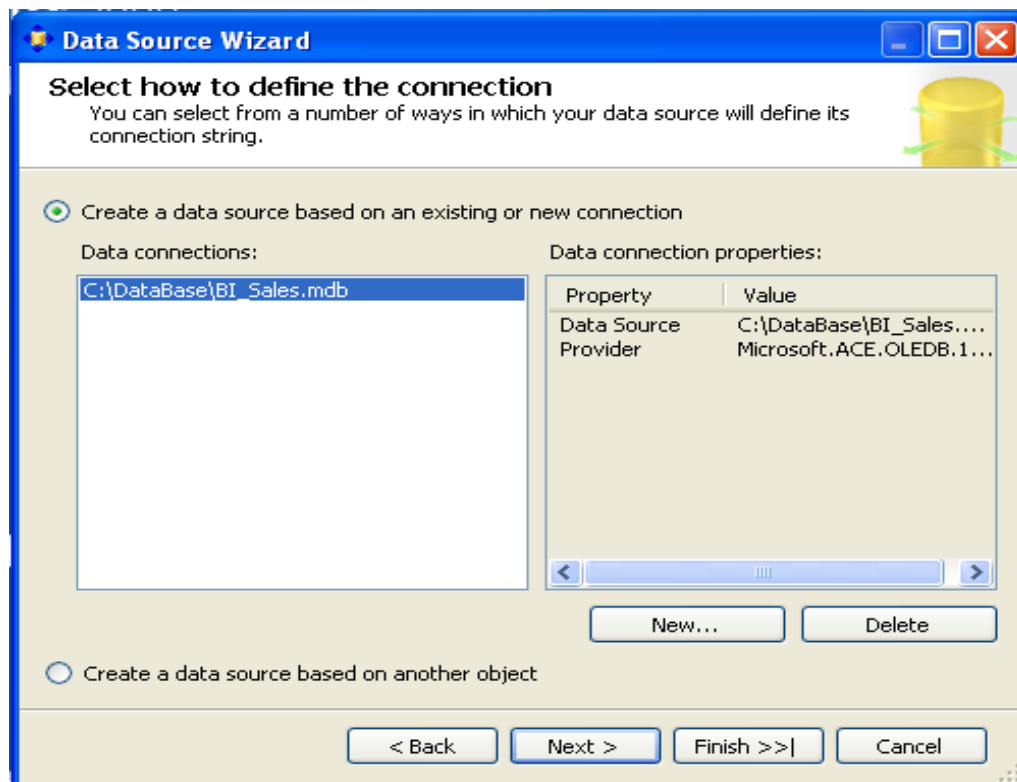


To connect with data source you need to define data connection. Click new button to create database connection.

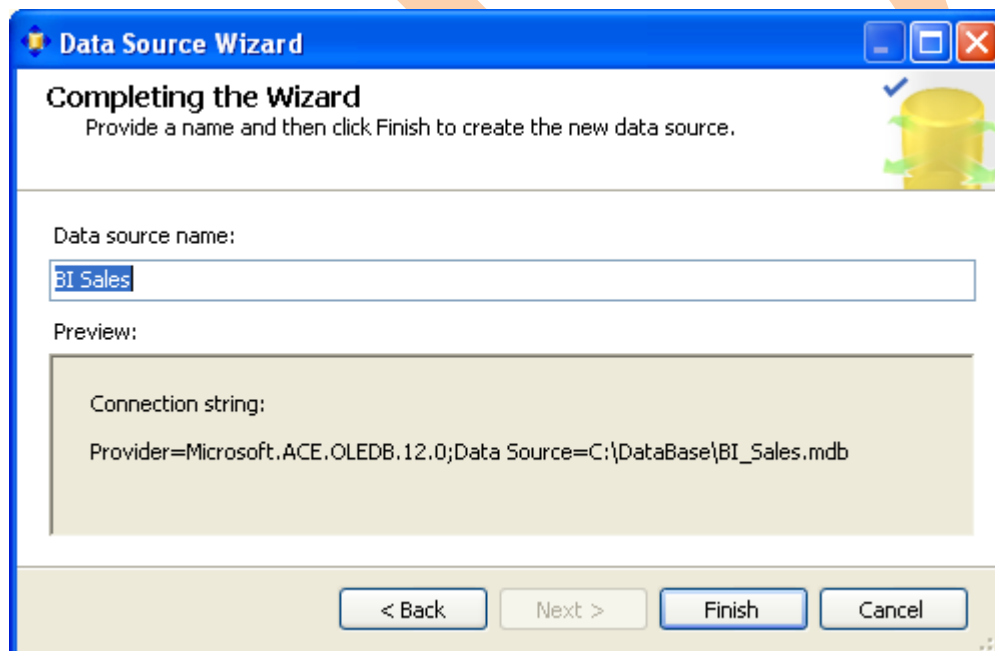


Select provider of respective database and then give absolute path of database file.

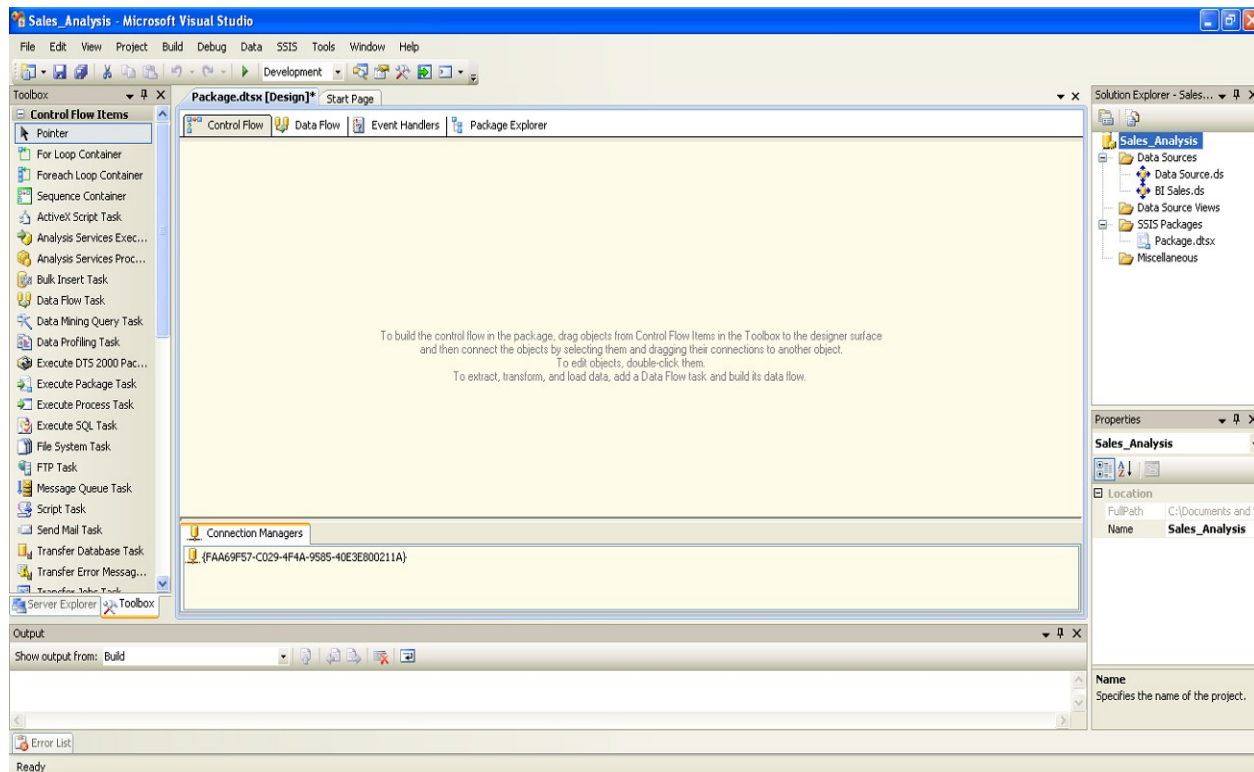




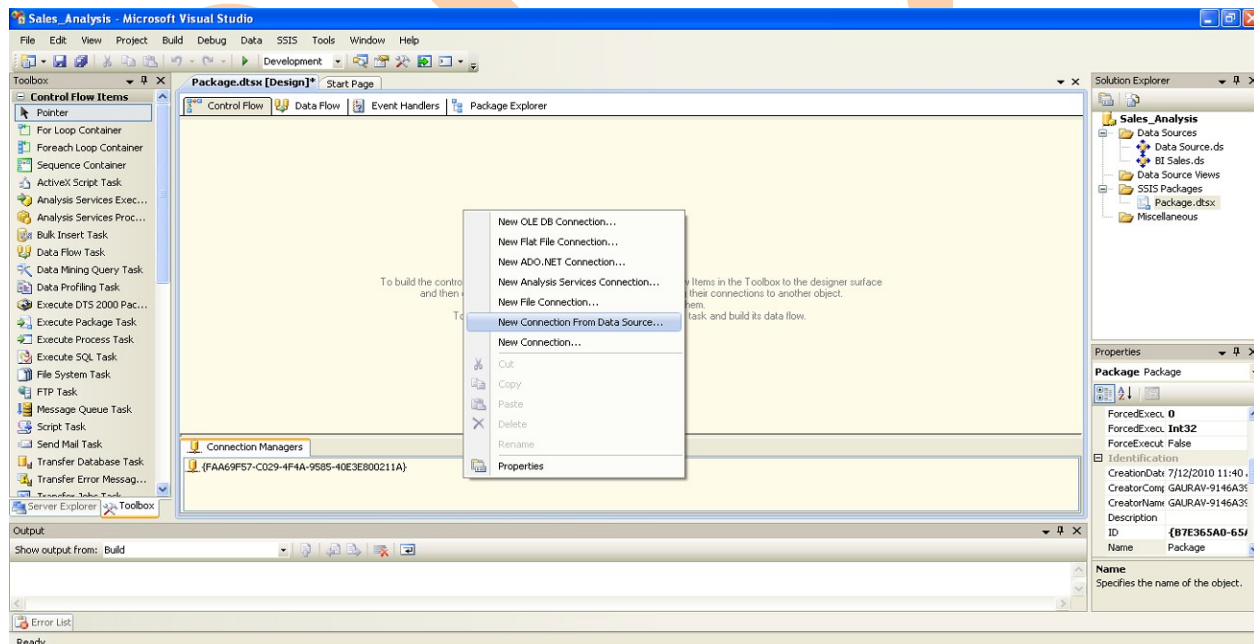
Data source wizard showing data source name. Click on finish....



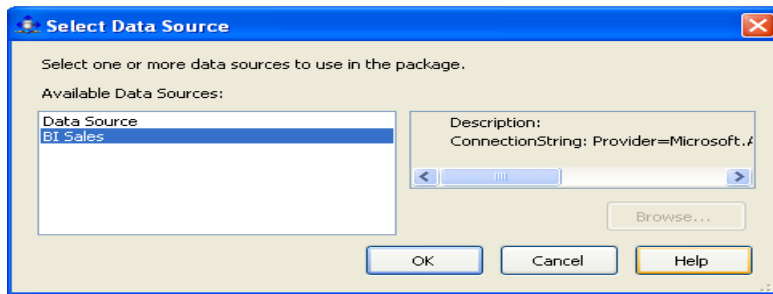
Solution explorer shows "BI_Sales" in data source.



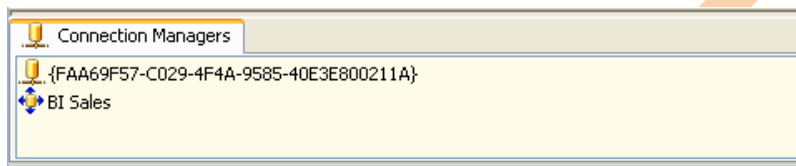
Right Click in connection managers and create new connection for data source.



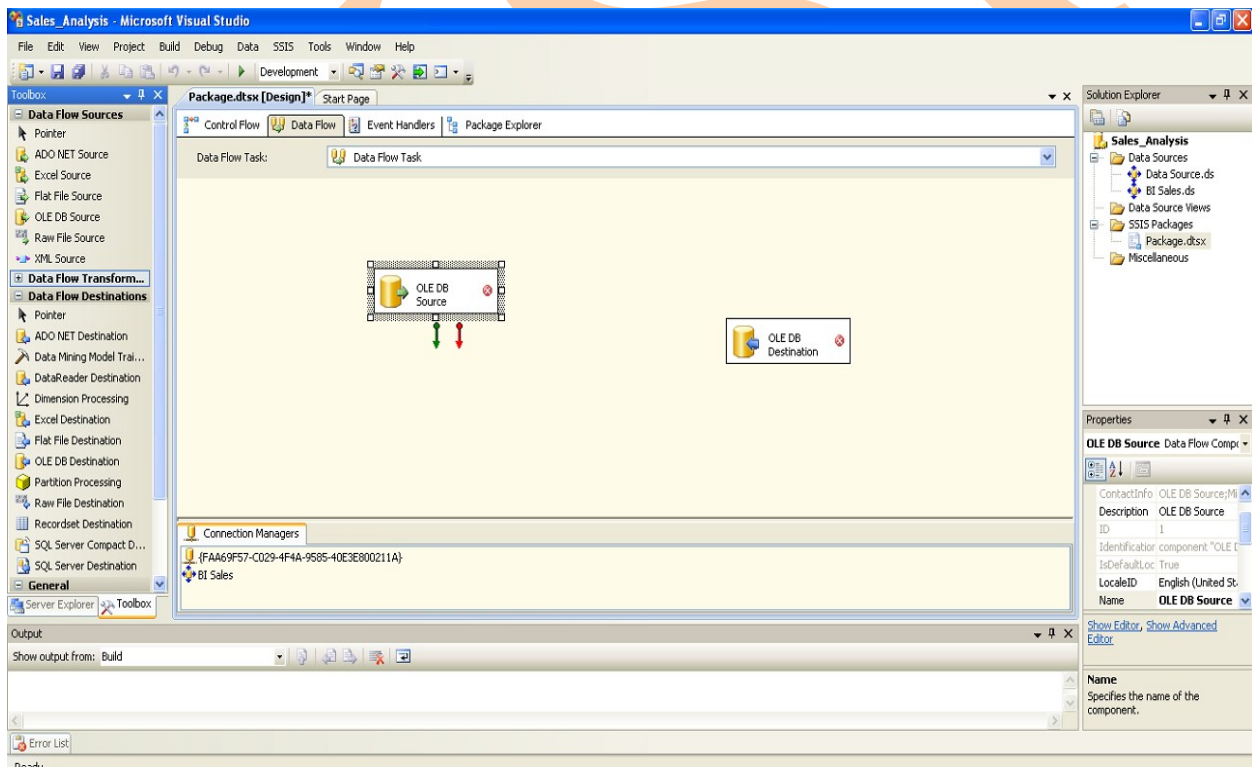
Select data source which will use for making package.



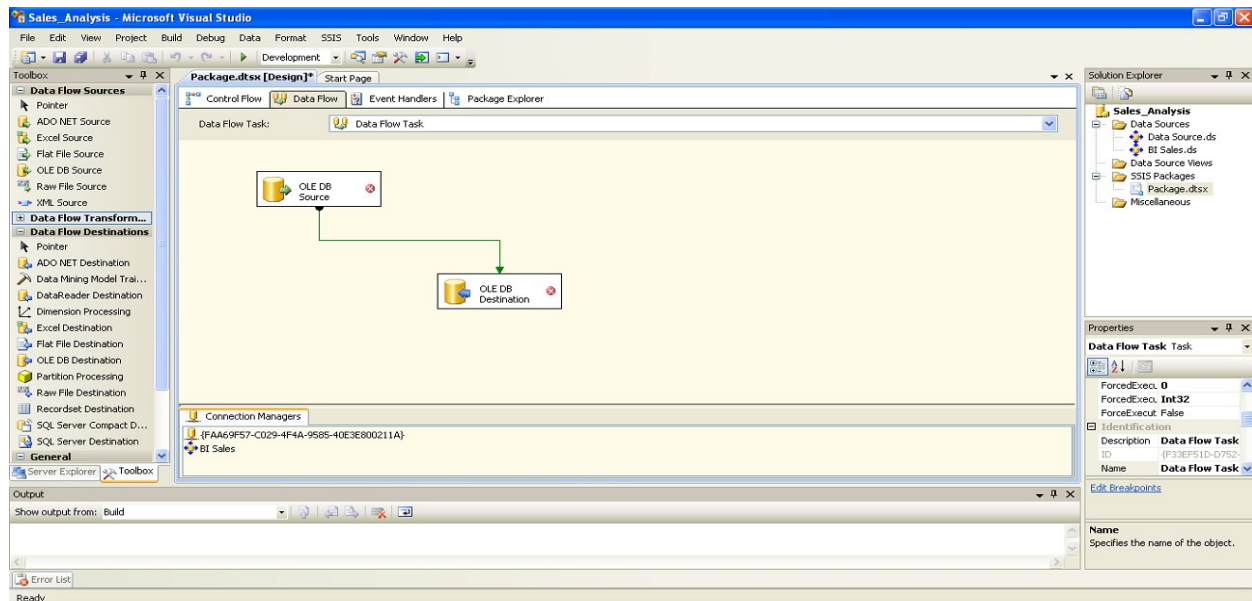
You can check that it comes in connection Managers.



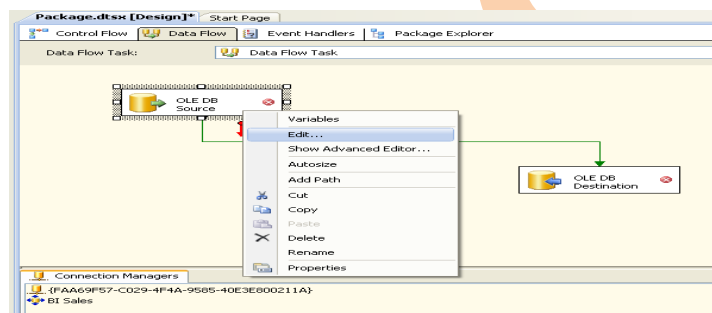
Now go to data flow tab. Drag and drop one "OLEDB Source" database of "data flow sources" category from toolbox. Drag and drop one more "OLEDB Source" database of "data flow destinations" category from toolbox.



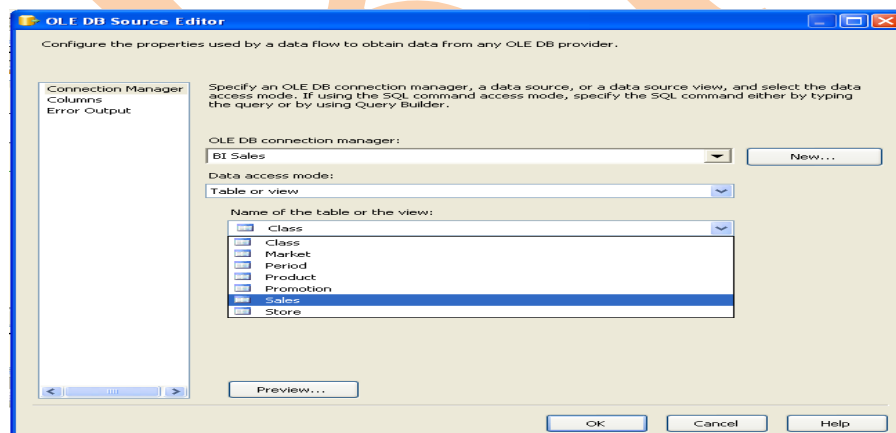
Select green arrow of "OLEDB Source" adds to "OLEDB Destination".



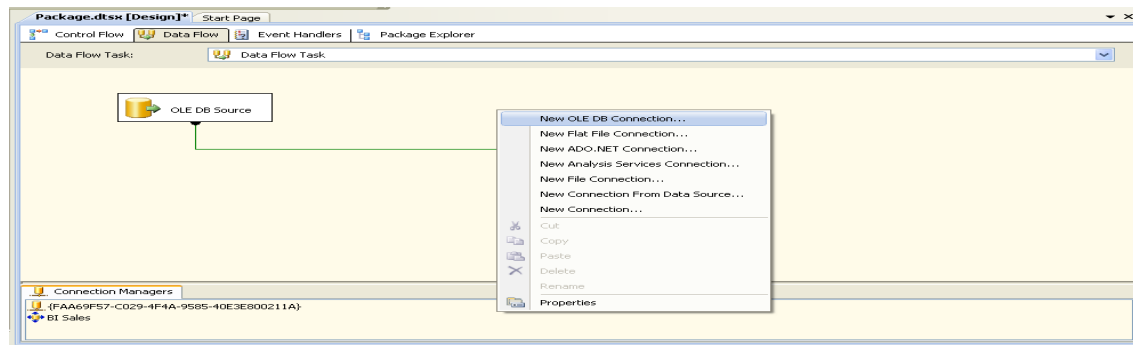
Right click on "OLEDB Source" go to edit.



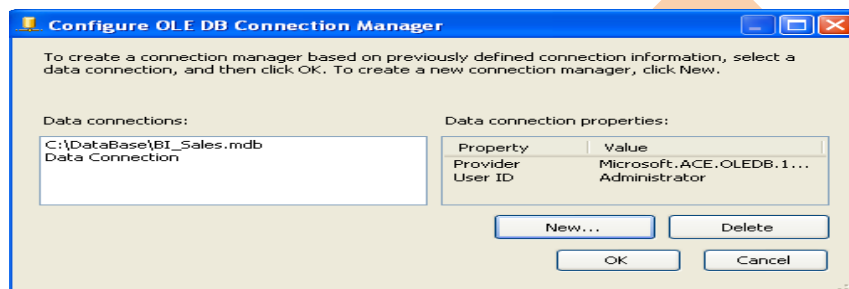
Select table for mapping.



Right click in connection manager select "New OLEDB Connection".

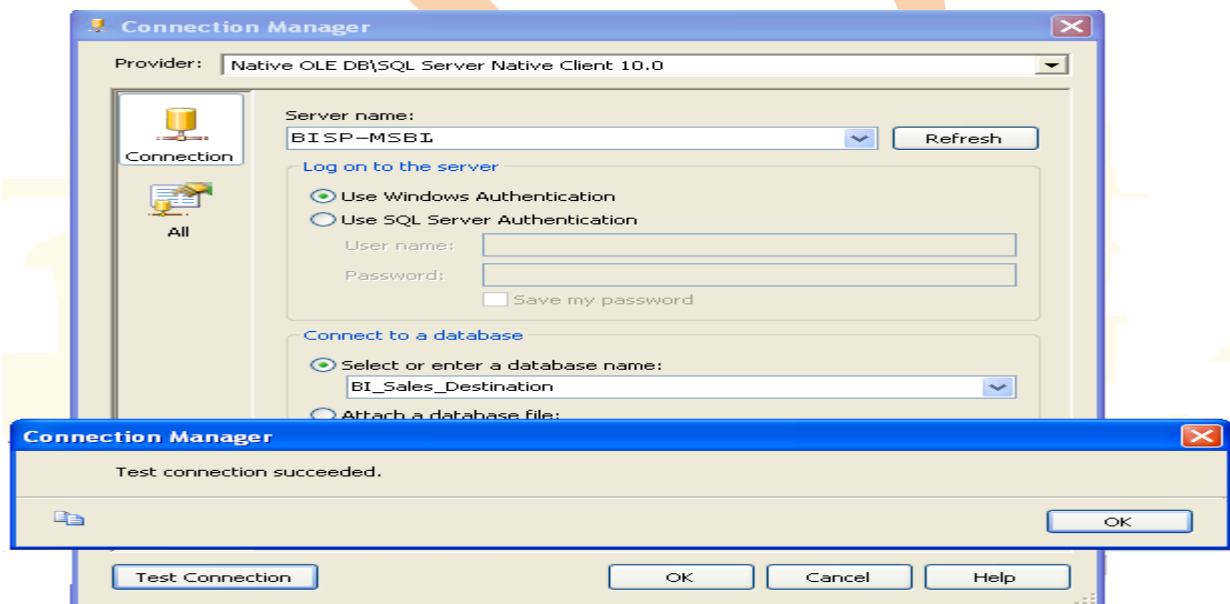


Add new blank database in which you want to get result data.



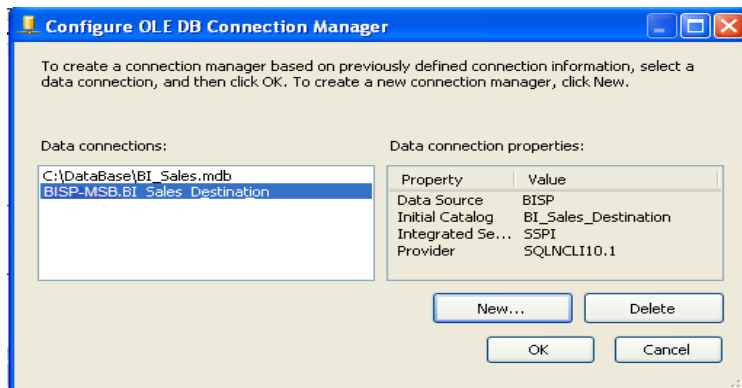
Click on New.

Select server name and destination database ("BI_Sales_Destination").

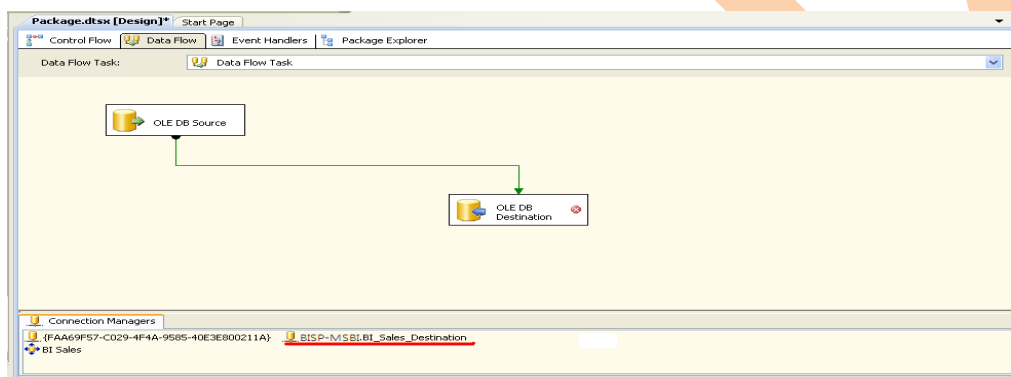


Click OK.

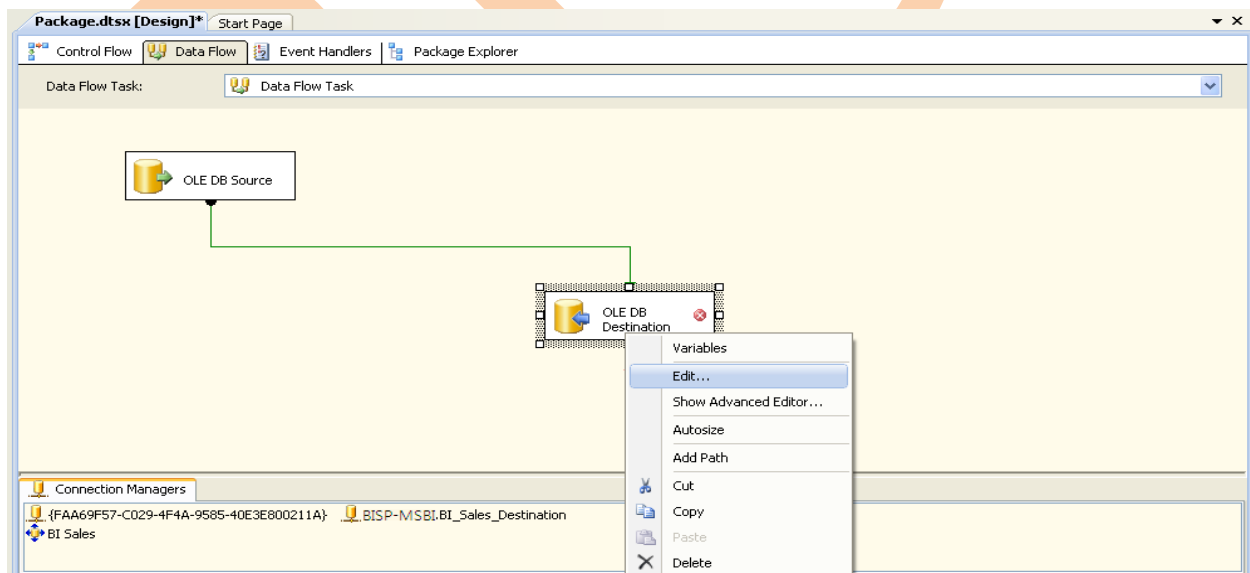
Select destination database and click ok.



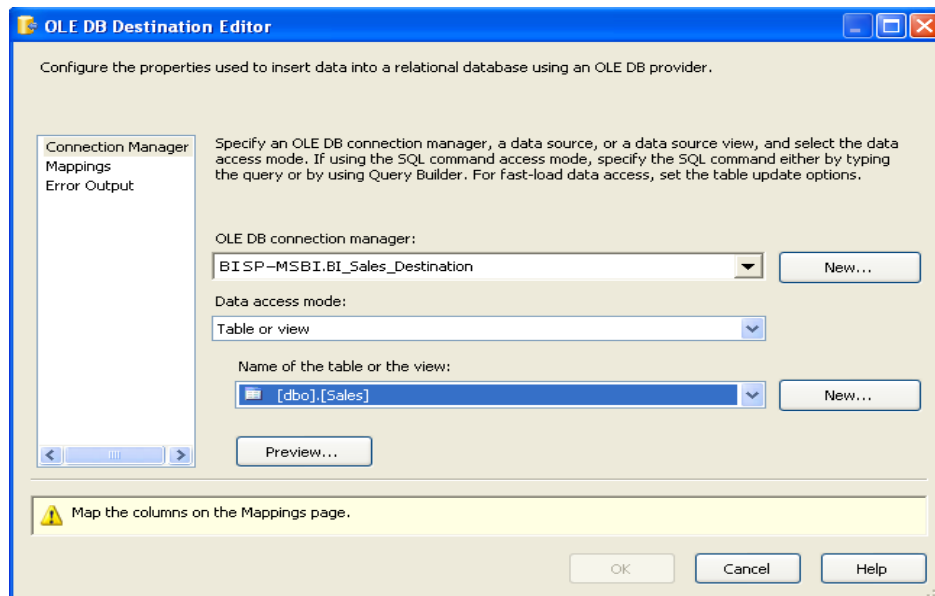
Destination data base comes in connection manager.



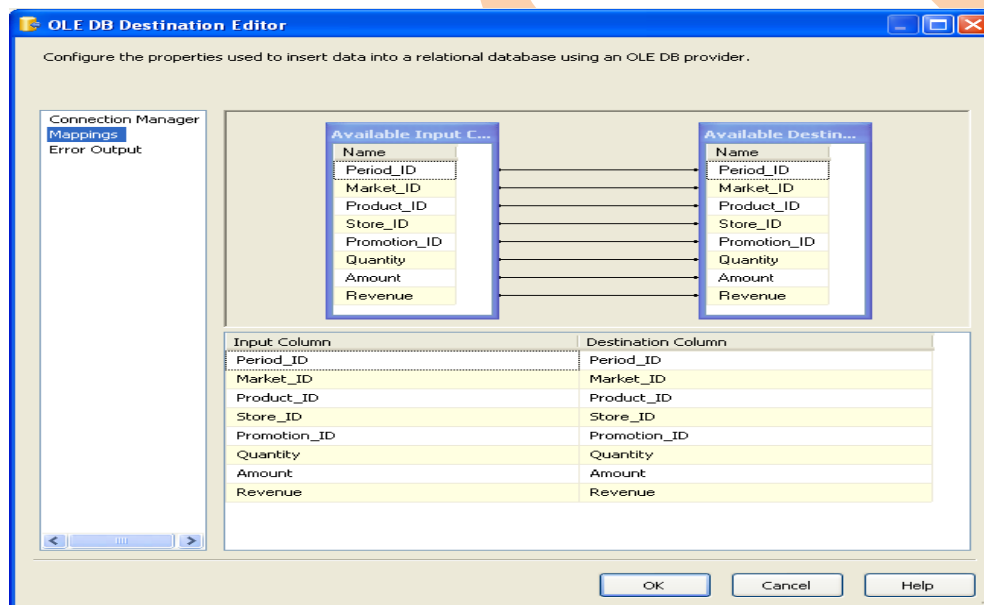
Right click on destination database select edit.



Select table from destination database for mapping.

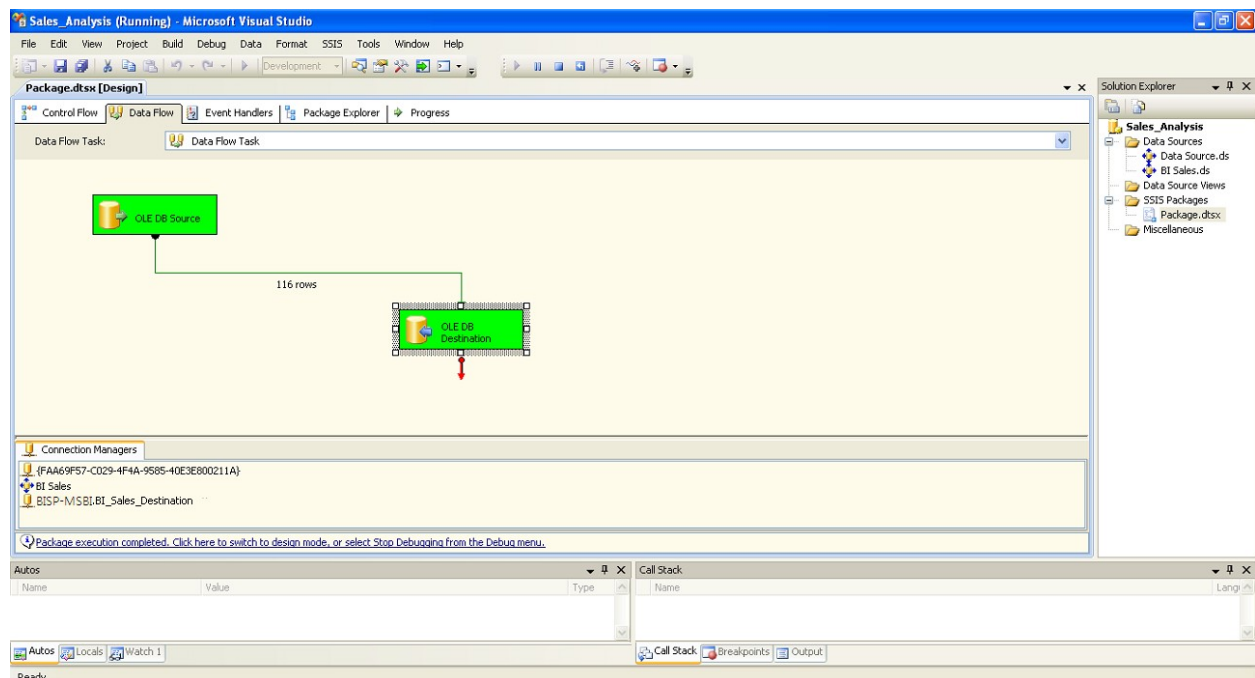


Go to mappings and map both tables.

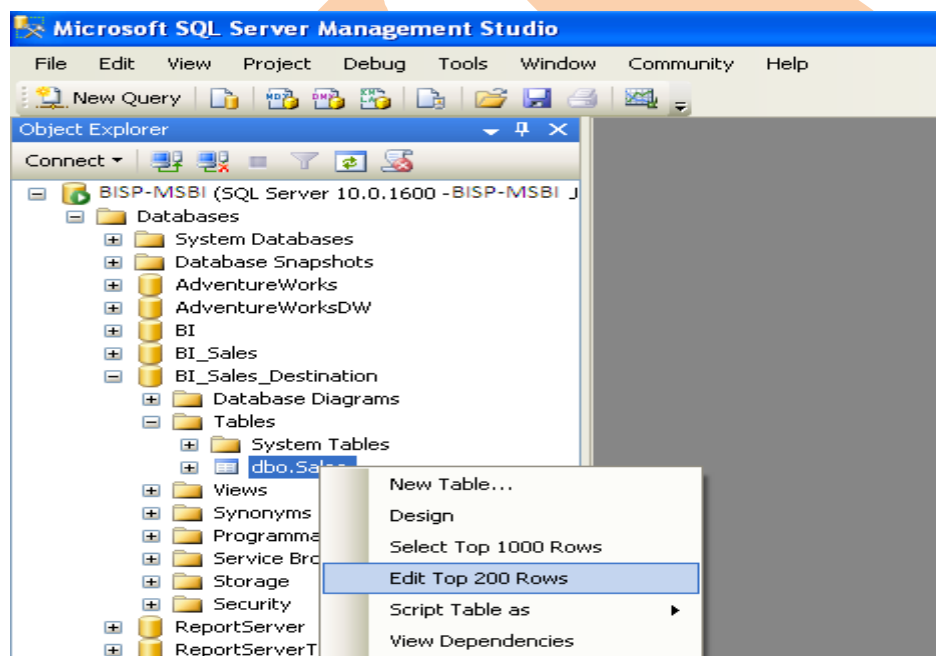


Click ok.

Now run the package. You can see how many rows have converted from source database to destination database.



Open database from management studio.



You can check that converted rows filled in destination database.

Microsoft SQL Server Management Studio

File Edit View Project Debug Query Designer Tools Window Community Help

New Query

Change Type

Object Explorer

Connect

BISP-MSBI (SQL Server 10.0.1600 - BISP-MSBI)

Databases

System Databases

Database Snapshots

AdventureWorks

AdventureWorksDW

BI

BI_Sales

BI_Sales_Destination

Database Diagrams

Tables

System Tables

dbo.Sales

Views

Synonyms

Programmability

Service Broker

Storage

Security

ReportServer

ReportServerTempDB

Sales

Security

Server Objects

Replication

Management

SQL Server Agent

BISP-MSBI(Microsoft Analysis Server 10.0.1600)

Databases

Assemblies

GAURAV-9146A3...n - dbo.Sales

Period_ID	Market_ID	Product_ID	Store_ID	Promotion_ID	Quantity	Amount	Revenue
13	1	1	7	7	5696	989990	45800
13	2	2	8	8	6555	995000	45600
14	3	3	9	9	5666	989400	65680
14	4	4	10	10	6600	544440	89560
14	5	0	1	1	6650	454887	48500
14	6	1	2	2	6560	878998	56500
15	7	2	3	3	8950	789800	46560
15	8	3	4	4	5690	989500	45600
16	1	4	5	5	5850	989450	85600
16	2	0	6	6	5620	569800	96500
17	3	1	7	7	2320	898560	56990
17	4	2	8	8	2323	656580	87900
18	5	3	9	9	4560	565800	98560
18	6	4	10	10	6660	989800	65680
19	7	0	1	1	6565	989400	56500
19	8	1	2	2	9666	798900	56500
20	1	2	3	3	9998	988000	99900
20	2	3	4	4	9866	989890	98960
21	3	4	5	5	8500	989500	65890
21	4	0	6	6	9999	695900	98950
22	5	1	7	7	9950	989366	56590
22	6	2	8	8	6585	965659	98650
23	7	3	9	9	5620	985865	98900
23	8	4	10	10	3569	985600	45680
24	1	0	1	1	9865	995500	98960

Properties

[Qry] Query1.dmq

(Identity)

(Name) Query1.dmq

Database Name BI_Sales_Destination

Server Name gaurav-9146a39e

Query Designer

Destination Table

Distinct Values No

GROUP BY Extension <None>

Output All Column No

Query Parameter No parameters have been

SQL Comment ***** Script for SelectTop

Top Specification Yes

(Identity)

Ready

FAQ's

Question 1: How to migrate SQL Server 2008 Reporting Services to another computer?

Answer:

The migration process for Reporting Services includes manual and automated steps. The following tasks are part of a report server migration:

1. Back up database, application, and configuration files.
2. Back up the encryption key.
3. Install a new instance of SQL Server 2008. If you are using the same hardware, you can install SQL Server 2008 side-by-side your existing SQL Server 2000 or 2005 installation. Be aware that if you do this, you might need to install SQL Server 2008 as a named instance.
4. Move the report server database and other application files from your SQL Server 2000 or 2005 installation to your new SQL Server 2008 installation.
5. Move any custom application files to the new installation.
6. Configure the report server.
7. Edit RSReportServer.config to include any custom settings from your previous installation.
8. Optionally, configure custom Access Control Lists (ACLs) for the new Reporting Services Windows service group.
9. Test your installation.
10. Remove unused applications and tools after you have confirmed that the new instance is fully operational.

If you are reusing an existing report server database that you created in a previous installation, be aware that there are restrictions on the editions of SQL Server you use to host the report server database.

Question 2: How to combine connecting string via parameter?

Answer:

You can include parameter reference in the data source connection string and allow the user to choose a data source for the report. For example, with an expression-based connection string, a user who is running a sales report can select a data source for a particular county before running the report.

The following example illustrates the use of a data source expression in a SQL Server connection string.

```
= "Data Source=" & Parameters! BISP2.Value & "; initial catalog=Sale"
```

Question 3: Error of EXECUTE permission denied on object 'xp_sqlagent_notify'.

Problem:

In some special cases, you may receive the following error when trying to select the option execution from a report:

EXECUTE permission denied on object 'xp_sqlagent_notify', database '#####', schema '####'.

Cause:

Usually, this error is caused by the user missing the "RSExecRole" role in the Master and MSDB system databases.

Solution:

Reporting Services uses a predefined database role called "RSExecRole" to grant report server permissions to the report server database. If you get the error mentioned above, try to create and provision the "RSExecRole" role in Master and MSDB system database.

Question 4: How to enable anonymous access to Report Server, and is there any security consideration?

Answer:

Please note that when using anonymous access, every person accesses the reports under the anonymous user context, and no one will have rights to administer Reporting Services through Report Manager. This is the reason why it is not recommended to use anonymous access in Reporting Services.

In order to differentiate between users, we need to either disable anonymous access or use a custom security extension. We have a sample using Forms Authentication:

[Using Forms Authentication in Reporting Services](#)

In some special situations, it may be necessary to use anonymous access. For security considerations, we can use the steps as below:

1. Add the anonymous user to the System User role
2. Create an Item-level role with all of the tasks you want this user to be able to use, and then assign the anonymous user to that role at the root level.
3. Check permissions for the anonymous user on folders that SRS uses:

For example:

C:\Program Files\Microsoft SQL Server\MSSQL\Reporting Services (and subfolders)

C:\<windows>\Microsoft.NET\Framework\v1.1.4322\Temporary ASP.NET Files

The temp folder for the anonymous user

Question 5: What is Query parameter in SSRS?

Answer:

Query parameter is mentioned in the query of the data sources that are to be included into the SQL Script where clause of the SQL that can accept parameter. Query parameters being with the symbol @. The name should not contain space, numbers and begin with the numbers.

Question 6: What is Matrix in SSRS?

Answer:

Matrix is a data region linked to a report set. Matrix allows us to create Cross steps reports with the report variable displaying on rows & columns. It allows us to drag & drop fields into it.

Question 7: What do we mean by Data Flow in SSIS?

Answer:

Data Flow is nothing but the flow of data from corresponding source to record destination. In this process the data transformation make changes to the data to make it ready for the data warehouse.

Question 8: How do you add Column in Dimension and fact Table?

Answer:

- Add the columns to the source tables (and related views)

- Update the DSV in your cube by hitting the refresh button in the DSV view
- Modify each dimension and add the new columns. Configure or add them to user hierarchies as needed.
- If you process the dimension to check your changes, please note that this will cause the related measure groups to need to be processed.
- For the measure group, add the new measure to the measure group from the Cube Structure view.
- Go to the partitions tab and update all of the partitions for the measure group so that the query contains the new column. This measure group will not process unless you update this.
- Deploy and process your changes