

Data Package Usage Guide

Background

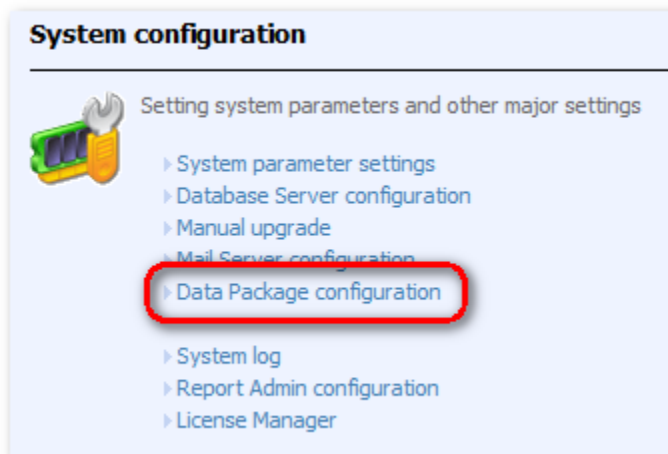
User with Report Designer (Power User) privilege can use Data Package feature to automatically generate personal cubes by uploading an Excel or Access file or by connecting to a relational database source like SQL Server, Oracle, or MySQL through SQL Commands.

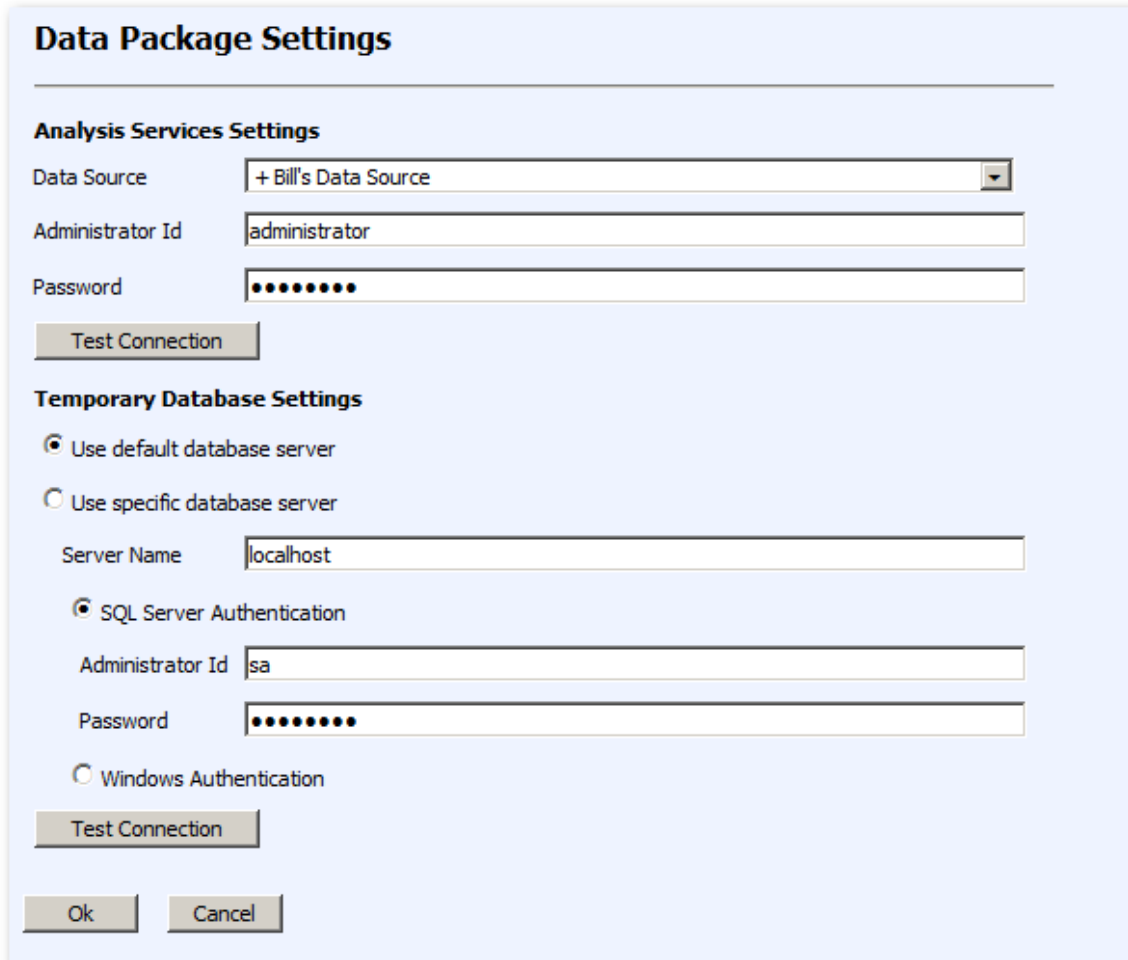
The advantages of the Data Package are as follow:

- User can build cube without the helps from the DBA
- User doesn't need to know how to use BI Development Studio to build cubes

Data Package Configuration

Before creating a Data Package, please go to **System Administration Page > Data Package configuration** to configure various settings needed for Data Package to function properly.





Data Package Settings

Analysis Services Settings

Data Source: + Bill's Data Source

Administrator Id: administrator

Password: ●●●●●●

Test Connection

Temporary Database Settings

Use default database server

Use specific database server

Server Name: localhost

SQL Server Authentication

Administrator Id: sa

Password: ●●●●●●

Windows Authentication

Test Connection

Ok Cancel

Analysis Services Setting

The final product produced by the Data Package is a SQL Server Analysis Services (SSAS) cube that stores in the SSAS database, therefore please specify the location of the SSAS server that to be used to stored the cubes along with a valid credential to access the database.

Temporary Database Settings

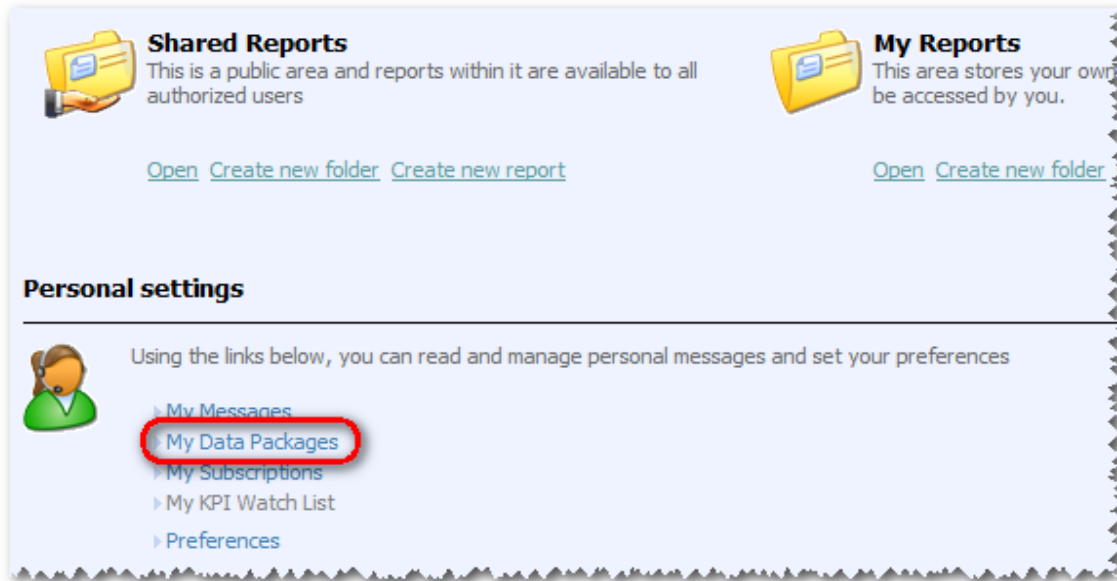
During the processing of the Data Package, it requires a temporary database storage location on a SQL Server (this is the regular relational database, not the SSAS) so please specify the location here.

- **Use default database server** – This uses the same SQL Server as Analyzer's system database.
- **Use specific database server** – Use this to specify other SQL Server database location
-

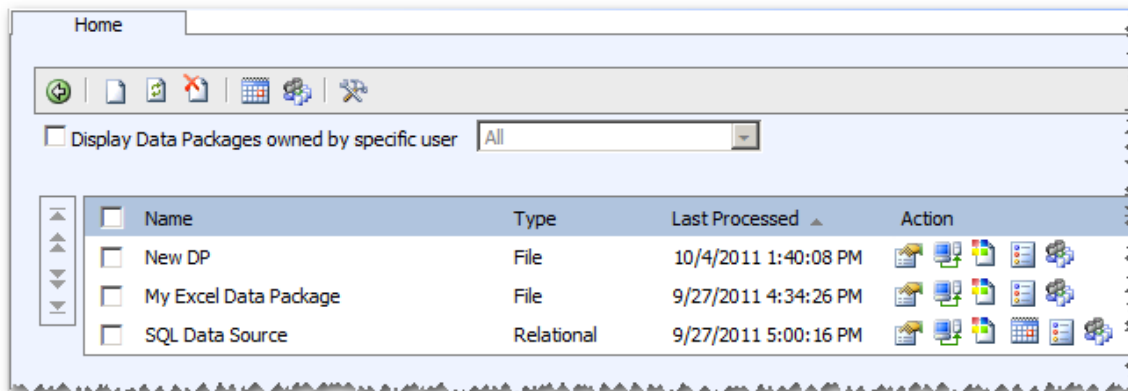
Use the **Test Connection** buttons to verify all settings. Click on **OK** button to accept all changes.

Data Package Interface

To create a Data Package, the user must have Report Designer privilege in order to see the **My Data Packages** option.



Click **My Data Packages** enters the setting screen.



1.1.1 Data Package Management Toolbar Buttons



Back to Personal Home Page



Create New Data Package



Refresh



Delete Data Package



Data Package Scheduling. Define data package processing schedule.



Data Package Security. Define which roles can use this data package.



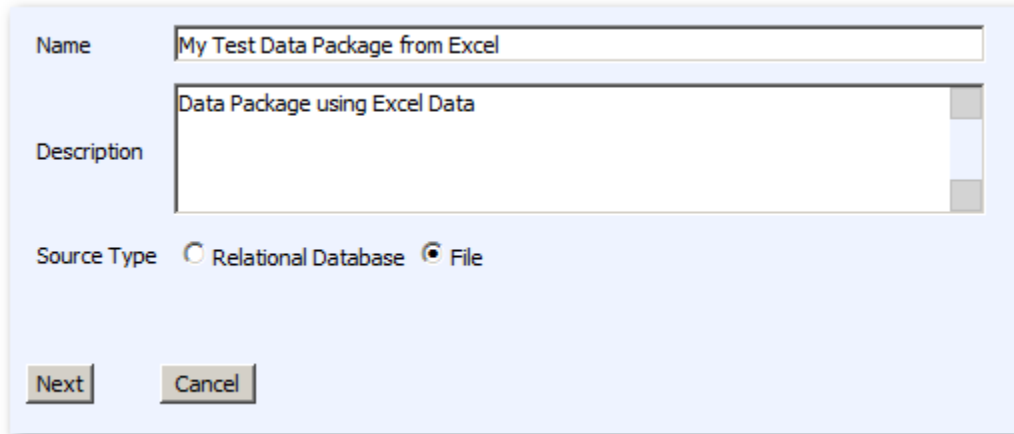
Data Package Settings. Modify data package settings.

Create New Data Package

To create a new Data Package, click on the Create New Data Package button on the toolbar.



1.1.2 Data Package Name



Name – Data Package name. This will also become the name of the cube.

Description – Enter any additional description to describe this Data Package.

Source Type – Obtain the data from relational database or from a file.

- Relational Database – SQL Server, Oracle or MySQL
- File – Excel or Access

Click **Next** to continue.

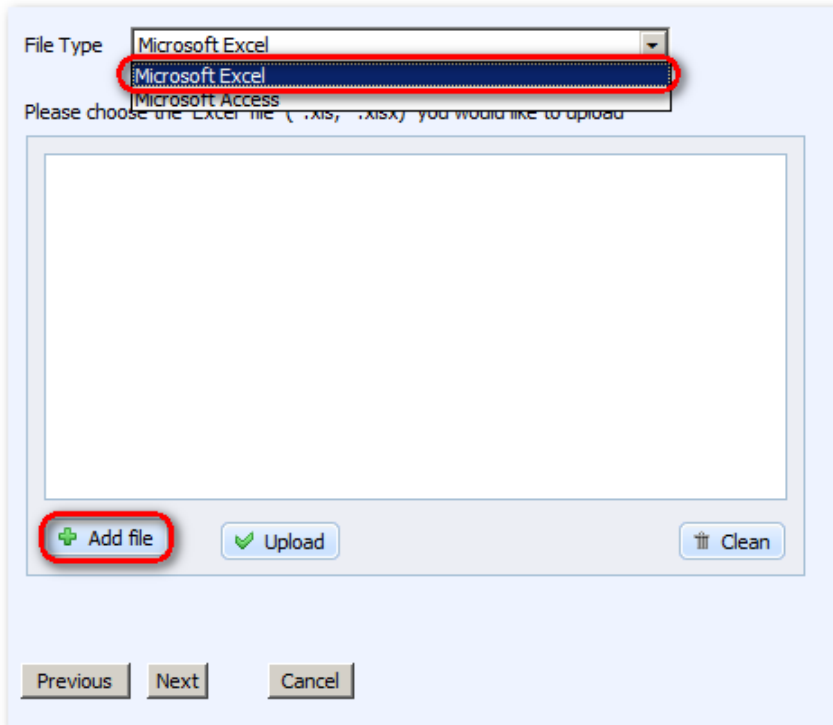
1.1.3 Data Package Type – File

Data source for a *file* type Data Package can come from Microsoft Excel or Access.

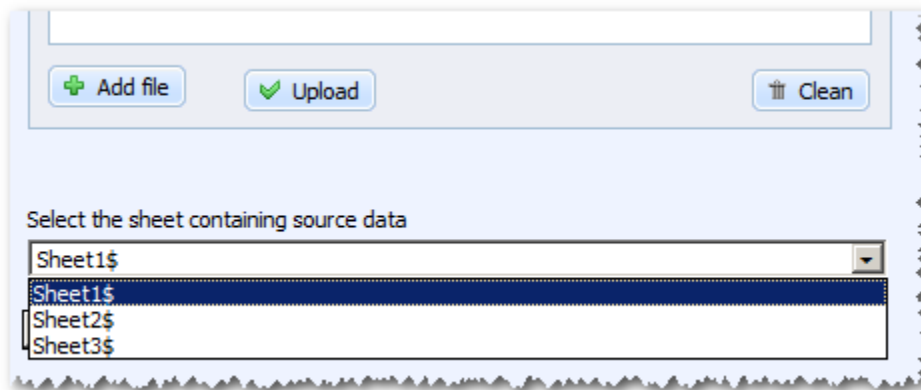
The Excel file should have the following format. The first row should be the title for each column.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Product	Color	StandardCI	ListPrice	Size	ProductLii	Class	Style	ModelNar	Category	Promotio	Subcategc	BusinessT	ResellerN	Territory C
2	Road-250 Red, 58	Red	1554.9479	2443.35	58	R	H	U	Road-250	Bikes	No Discou	Road Bike	Value Adc	Mountain	North Am
3	LL Road Frame - Black, 52	Black	204.6251	337.22	52	R	L	U	LL Road Fr	Compone	No Discou	Road Fran	Value Adc	Mountain	North Am
4	Road-250 Black, 58	Black	1554.9479	2443.35	58	R	H	U	Road-250	Bikes	No Discou	Road Bike	Value Adc	Mountain	North Am
5	Road-550-W Yellow, 48	Yellow	713.0798	1120.49	48	R	M	W	Road-550-	Bikes	No Discou	Road Bike	Value Adc	Mountain	North Am
6	LL Mountain Frame - Silver, 44	Silver	144.5938	264.05	44	M	L	U	LL Mounta	Compone	No Discou	Mountain	Warehous	Unified Sp	North Am
7	Mountain-500 Black, 48	Black	294.5797	539.99	48	M	L	U	Mountain	Bikes	No Discou	Mountain	Warehous	Unified Sp	North Am
8	ML Mountain Frame-W - Silver, 38	Silver	199.3757	364.09	38	M	M	W	ML Mount	Compone	No Discou	Mountain	Warehous	Unified Sp	North Am
9	Mountain-200 Black, 42	Black	1251.9813	2294.99	42	M	H	U	Mountain	Bikes	No Discou	Mountain	Value Adc	Up-To-Dat	North Am
10	Mountain-500 Black, 44	Black	294.5797	539.99	44	M	L	U	Mountain	Bikes	No Discou	Mountain	Value Adc	Up-To-Dat	North Am
11	ML Mountain Seat/Saddle	NA	17.3782	39.14	NULL	M	M	NULL	ML Mount	Compone	No Discou	Saddles	Value Adc	Up-To-Dat	North Am
12	ML Mountain Frame-W - Silver, 46	Silver	199.3757	364.09	46	M	M	W	ML Mount	Compone	No Discou	Mountain	Value Adc	Up-To-Dat	North Am
13	Mountain-200 Black, 38	Black	1251.9813	2294.99	38	M	H	U	Mountain	Bikes	No Discou	Mountain	Value Adc	Up-To-Dat	North Am
14	LL Mountain Frame - Silver, 40	Silver	144.5938	264.05	40	M	L	U	LL Mounta	Compone	No Discou	Mountain	Value Adc	Up-To-Dat	North Am

Select the file to upload using the Add File button. Only one file can be uploaded to the server at a time.



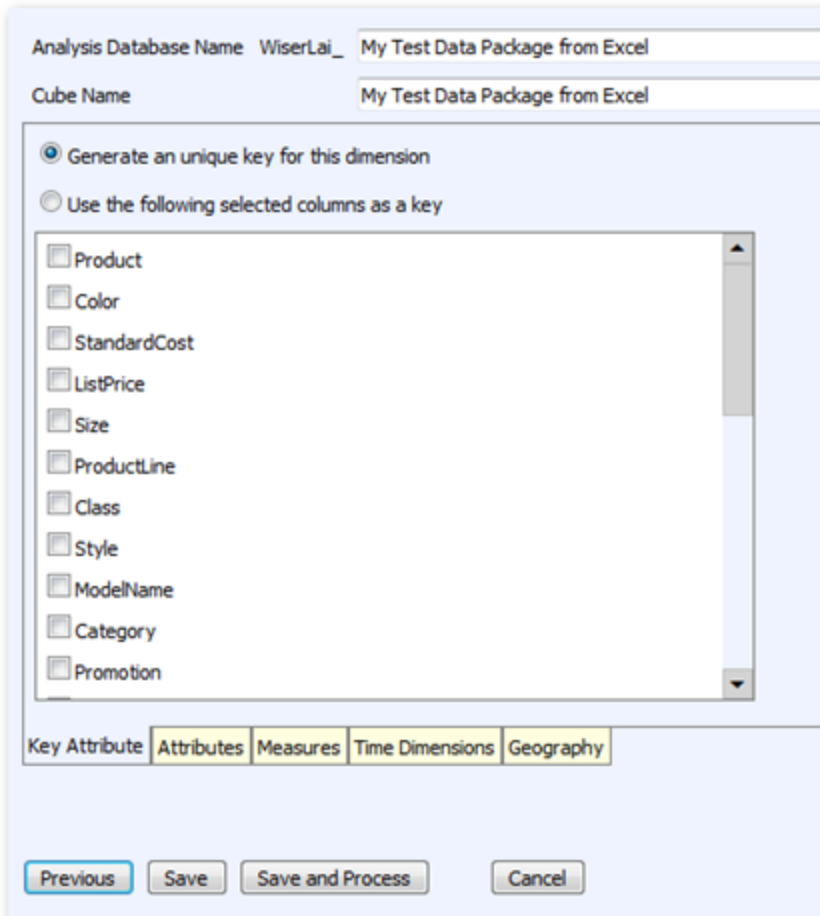
Click **Upload** to upload the file. After upload is completed, a Sheet selection drop down menu should appear. Select the worksheet that contains the data.



Click **Next** to continue.

1.1.3.1 Cube Properties

Analyzer automatically generates the cube structure based on the information found in the Excel file. The basic cube structure is then divided into five categories



Analysis Database Name WiserLai_ My Test Data Package from Excel

Cube Name My Test Data Package from Excel

Generate an unique key for this dimension

Use the following selected columns as a key

- Product
- Color
- StandardCost
- ListPrice
- Size
- ProductLine
- Class
- Style
- ModelName
- Category
- Promotion

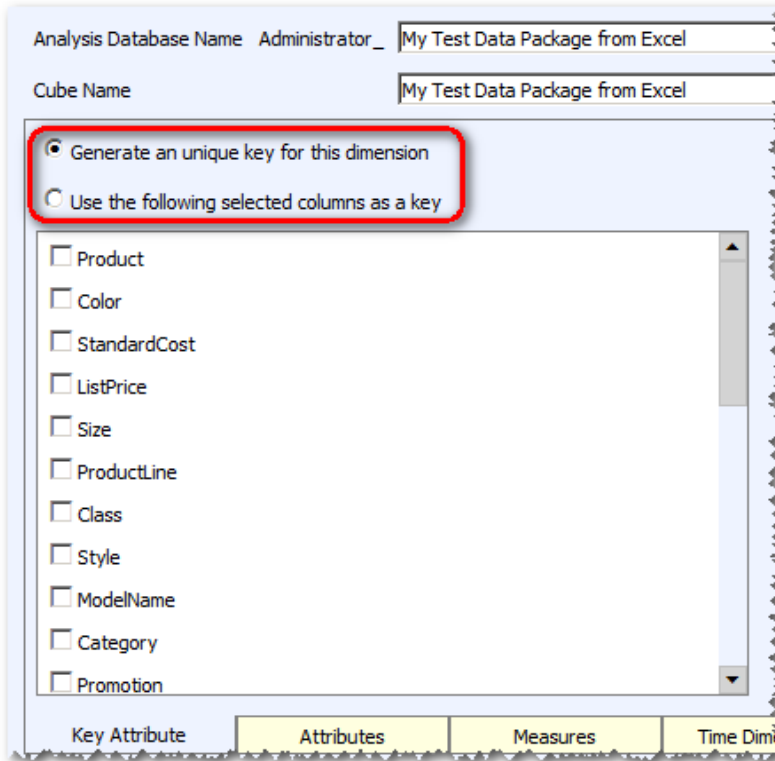
Key Attribute | Attributes | Measures | Time Dimensions | Geography

Previous Save Save and Process Cancel

- Key Attribute - By default the key is generated by Analyzer, however if the user knows which field is the key then the user can also define it manually.
- Attributes - All non-value fields becomes attributes
- Measures – All value fields becomes measure.
- Time Dimension – The system will automatically generate Time Dimension with hierarchy.
- Geography – Allows user to manually define geographic hierarchy (for use in Intelligent Map or PivotTable)

1.1.3.2 Key Attribute

By default the key is generated by Analyzer, however if the user knows which field is the key then the user can also define it manually.



Analysis Database Name Administrator_ My Test Data Package from Excel

Cube Name My Test Data Package from Excel

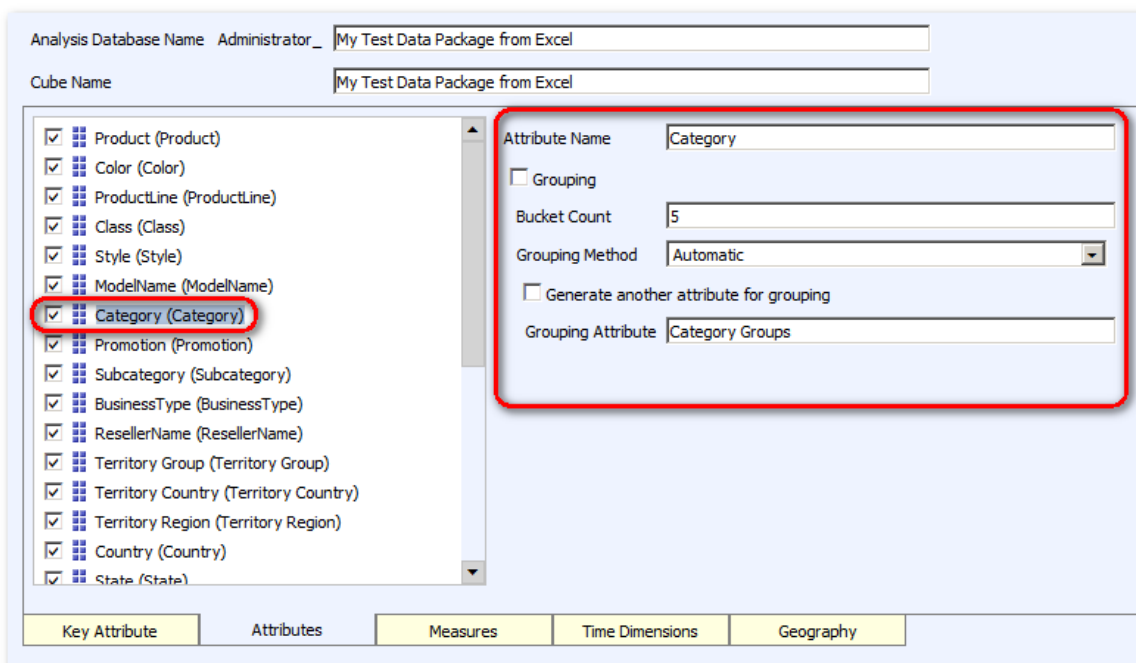
Generate an unique key for this dimension
 Use the following selected columns as a key

- Product
- Color
- StandardCost
- ListPrice
- Size
- ProductLine
- Class
- Style
- ModelName
- Category
- Promotion

Key Attribute | Attributes | Measures | Time Dim

1.1.3.3 Attribute

Select which fields to become the attributes in the cube. By default all non-value fields become the attributes. User should uncheck any fields that shouldn't become an attribute. The user can also modify an attribute's name or to set grouping or bucket counts.



Analysis Database Name Administrator_ My Test Data Package from Excel

Cube Name My Test Data Package from Excel

- Product (Product)
- Color (Color)
- ProductLine (ProductLine)
- Class (Class)
- Style (Style)
- ModelName (ModelName)
- Category (Category)
- Promotion (Promotion)
- Subcategory (Subcategory)
- BusinessType (BusinessType)
- ResellerName (ResellerName)
- Territory Group (Territory Group)
- Territory Country (Territory Country)
- Territory Region (Territory Region)
- Country (Country)
- State (State)

Attribute Name Category

Grouping

Bucket Count 5

Grouping Method Automatic

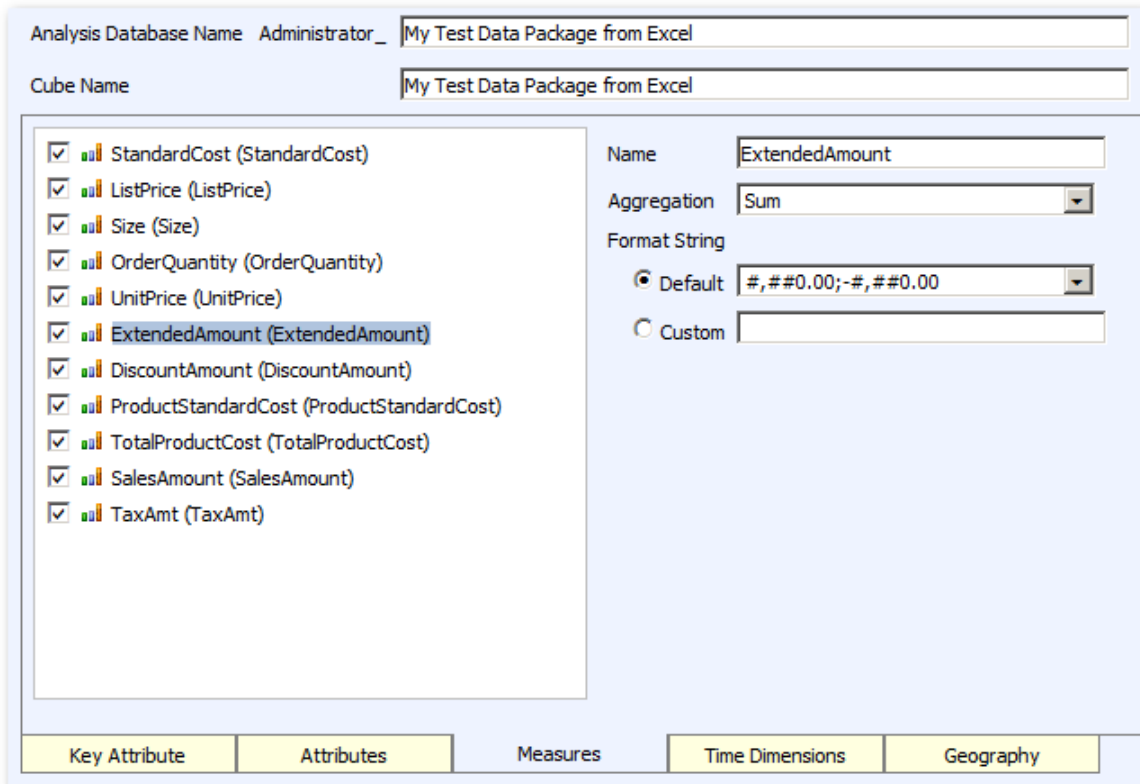
Generate another attribute for grouping

Grouping Attribute Category Groups

Key Attribute | Attributes | Measures | Time Dimensions | Geography

1.1.3.4 Measures

Select which fields to become measures in the cube. By default all values fields are automatically selected by the Analyzer to become the measures in the cube, user should uncheck anything they do not wish to be a measure (for example, an index field). At this time the user can also define a new name for the measure, specify aggregation type and formatting string.



Analysis Database Name Administrator_ My Test Data Package from Excel

Cube Name My Test Data Package from Excel

- StandardCost (StandardCost)
- ListPrice (ListPrice)
- Size (Size)
- OrderQuantity (OrderQuantity)
- UnitPrice (UnitPrice)
- ExtendedAmount (ExtendedAmount)
- DiscountAmount (DiscountAmount)
- ProductStandardCost (ProductStandardCost)
- TotalProductCost (TotalProductCost)
- SalesAmount (SalesAmount)
- TaxAmt (TaxAmt)

Name: ExtendedAmount

Aggregation: Sum

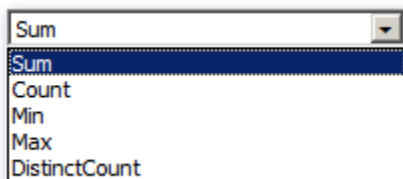
Format String:

Default: #,##0.00;-#,##0.00

Custom:

Key Attribute | Attributes | Measures | Time Dimensions | Geography

Aggregation



Sum

Sum

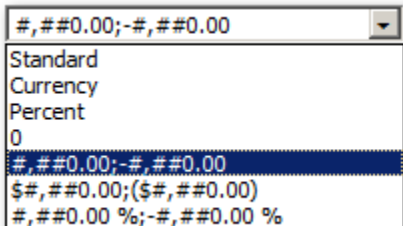
Count

Min

Max

DistinctCount

Format String



#,##0.00;-#,##0.00

Standard

Currency

Percent

0

#,##0.00;-#,##0.00

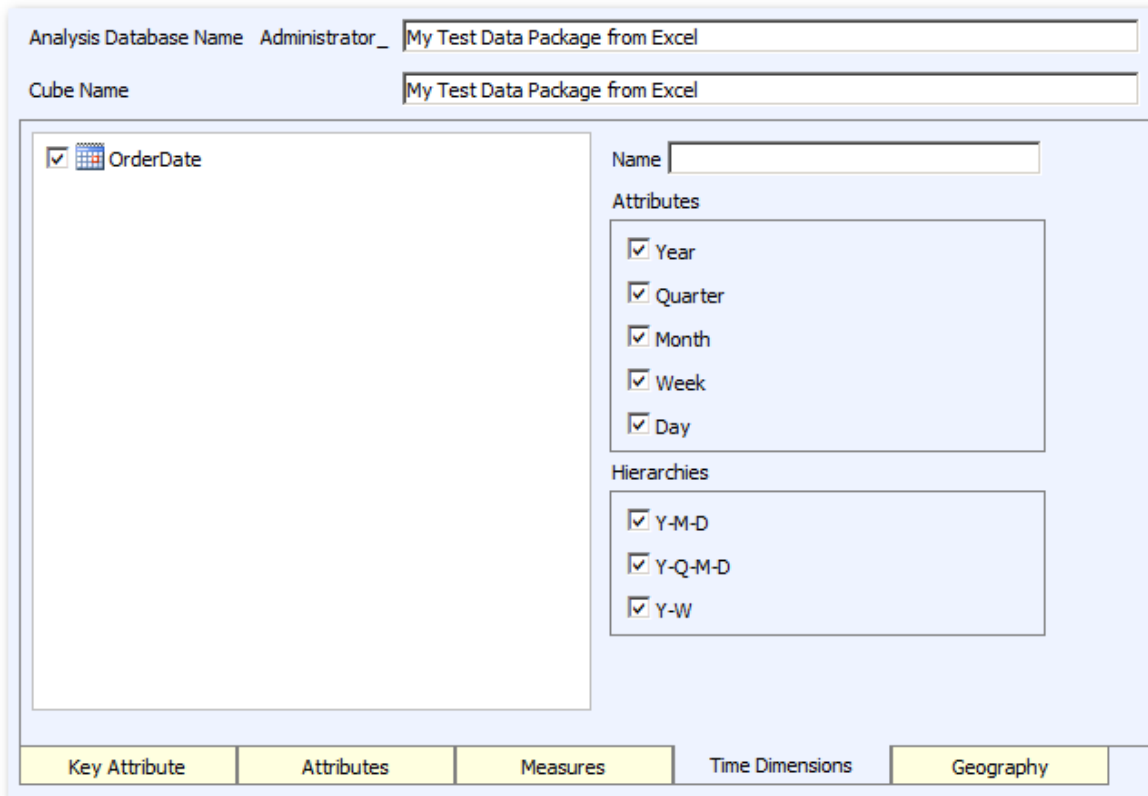
\$#,##0.00;(\$#,##0.00)

#,##0.00 %;-#,##0.00 %

1.1.3.5 Time Dimensions

Analyzer will automatically construct Time Dimension based on the date time fields in the data and auto built time attributes like Year, Quarter, Month, Week, and Day plus hierarchies. Time hierarchies can be used for time-related functions like YTD, MTD, Period Growth Rate.

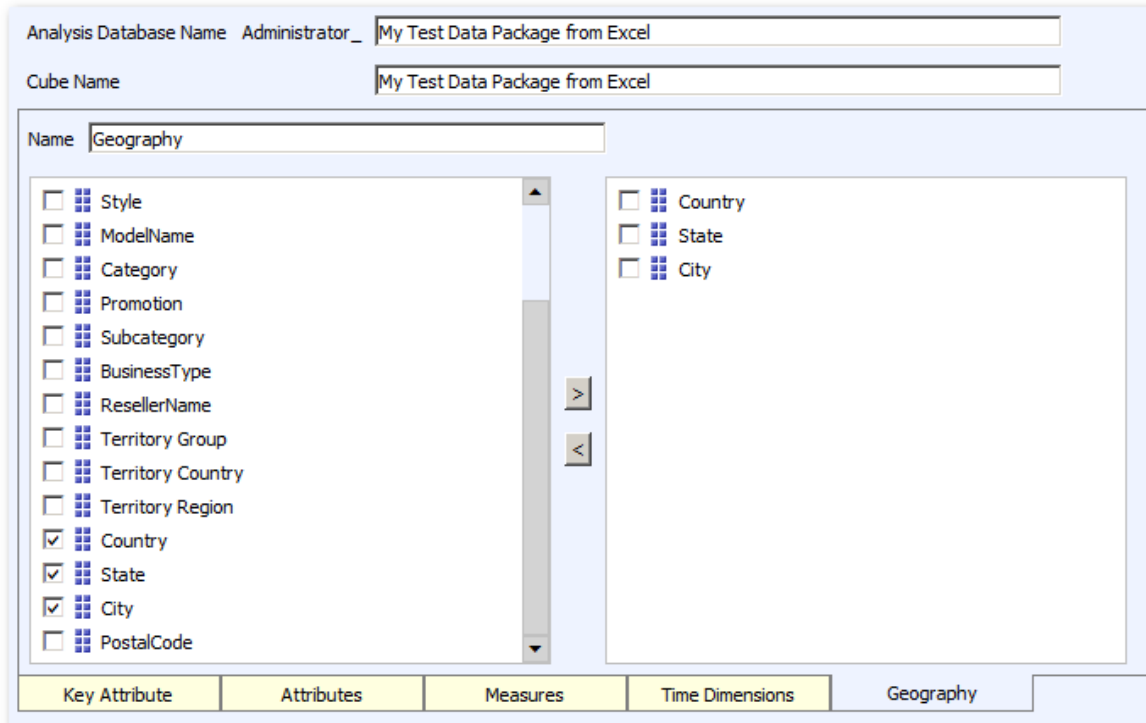
The name of the time dimension can also be changed at this time.



The screenshot shows the 'Time Dimensions' configuration window in Strategy Companion. At the top, there are two text boxes: 'Analysis Database Name Administrator_' containing 'My Test Data Package from Excel' and 'Cube Name' also containing 'My Test Data Package from Excel'. Below these is a large white area with a grid icon and a checked checkbox next to 'OrderDate'. To the right of this area are three sections: 'Name' with an empty text box, 'Attributes' with a list of five checked items: Year, Quarter, Month, Week, and Day, and 'Hierarchies' with a list of three checked items: Y-M-D, Y-Q-M-D, and Y-W. At the bottom of the window is a navigation bar with five tabs: 'Key Attribute', 'Attributes', 'Measures', 'Time Dimensions' (which is currently selected), and 'Geography'.

1.1.3.6 Geography

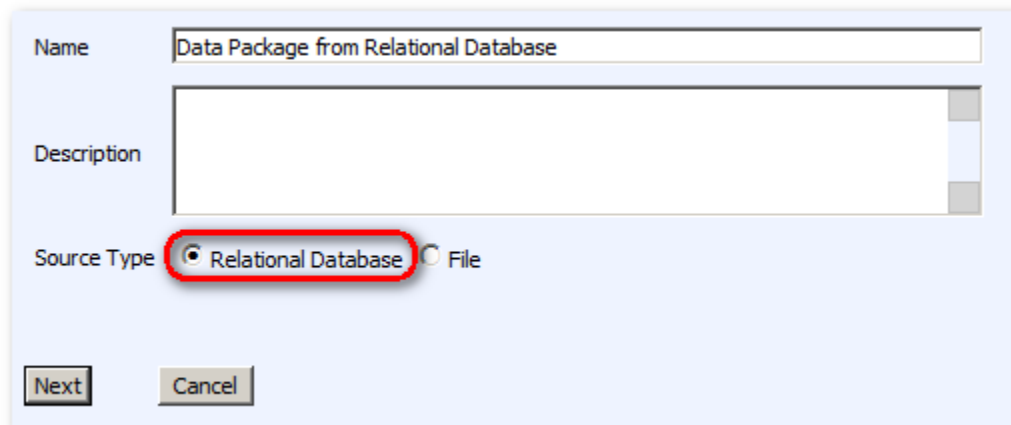
The Geography section offers user a chance to define geography dimension hierarchies. These hierarchies can be used in Pivot Table or Intelligent Maps. To create a geography hierarchy, select the items on the left then move it to the right hand side. Drag item up or down to order the hierarchy.



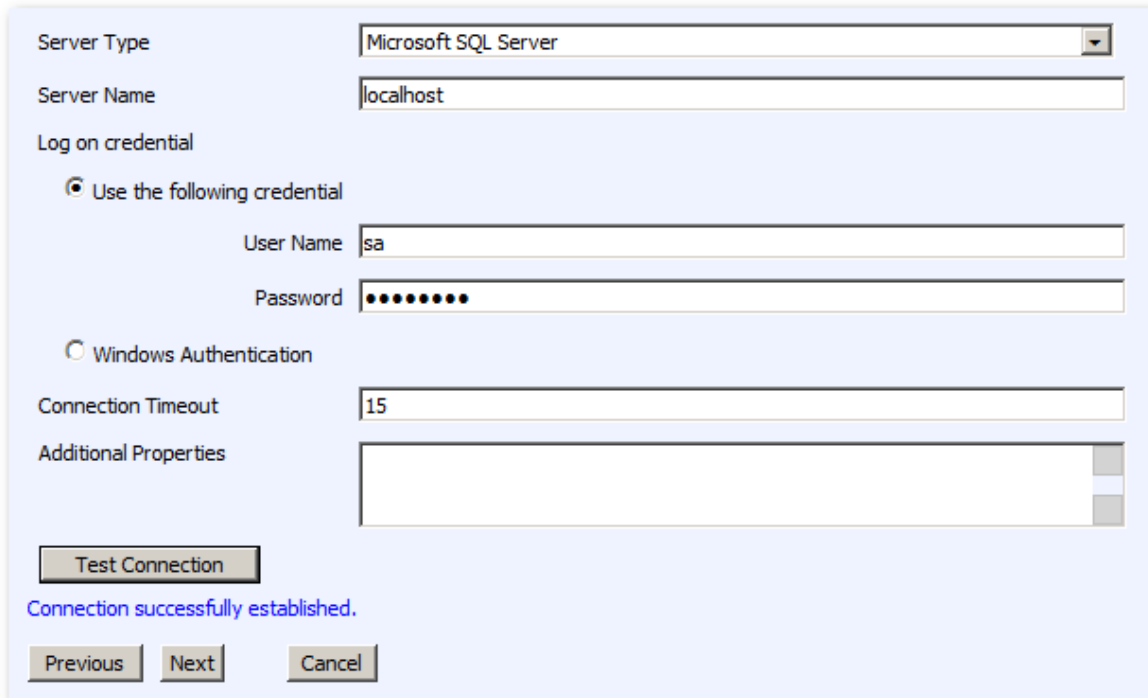
1.1.4 Data Package Type – Relational Database

Data of a data package can also come from a relational database through specifying SQL command to retrieve the data.

To create a Data Package using relational database, select the Source Type as **Relational Database** then click **Next** to continue.



Specify the location (server) of the relational database by specifying server *type*, *name* (IP), and the *credential* to use to logon to that server to fetch the data.



Currently the Data Package support three different relational server types – Microsoft SQL Server, Oracle Database, and MySQL Database.



If additional parameters are needed for the connection string then please specify them in the **Additional Properties**.

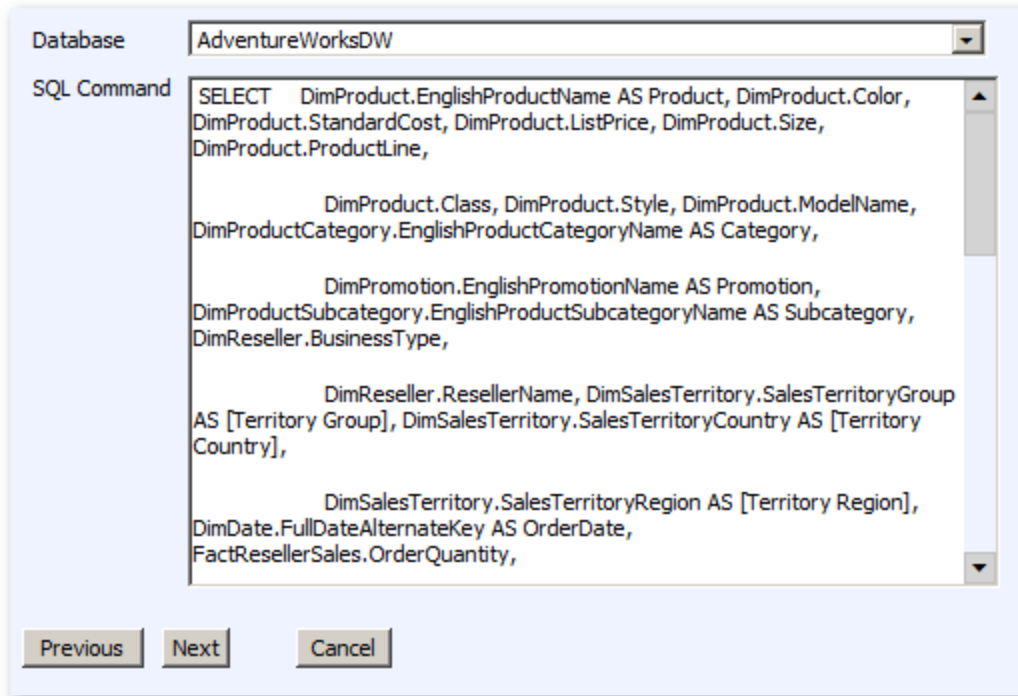
Please use the **Test Connection** button to test the connection first.

Once the connect is tested without problem, click **Next** to continue.

1.1.4.1 Fetching Data – SQL Command

Select the database that contains the data to be fetched from the Database drop down menu.

Enter the SQL command to fetch the data.



Tips: Relational database often include tools that generate SQL command (for example, SQL Management Studio). It is recommended to use tools provided by your database server to test and generate the correct SQL command to fetch the data. Once you have your SQL command, copy and paste it to the windows above.

1.1.4.2 Cube Properties

Analyzer automatically generates the cube structure based on the information found in the fetched data. The basic cube structure is then divided into five categories:

- Key Attribute - By default the key is generated by Analyzer, however if the user knows which field is the key then the user can also define it manually.
- Attributes - All non-value fields becomes attributes
- Measures – All value fields becomes measure.
- Time Dimension – The system will automatically generate Time Dimension with hierarchy.
- Geography – Allows user to manually define geographic hierarchy (for use in Intelligent Map or PivotTable)

For more information on these five area please see 10.3.2.2 to 10.3.2.6.

Analysis Database Name Administrator_

Cube Name

Type of analytics

Best performance with minimal impact to the source database (requires more storage for temporary data)

Best performance with less storage required

Real-time analytics (logical primary key required, performance depends on the size of source data and schema design)

Generate an unique key for this dimension

Use the following selected columns as a key

Product

Color

StandardCost

ListPrice

Size

ProductLine

Class

Style

ModelName

Category

Promotion

Key Attribute Attributes Measures Time Dimensions Geography

There are three types of analytics to choose from while creating a Data Package using a relational source:

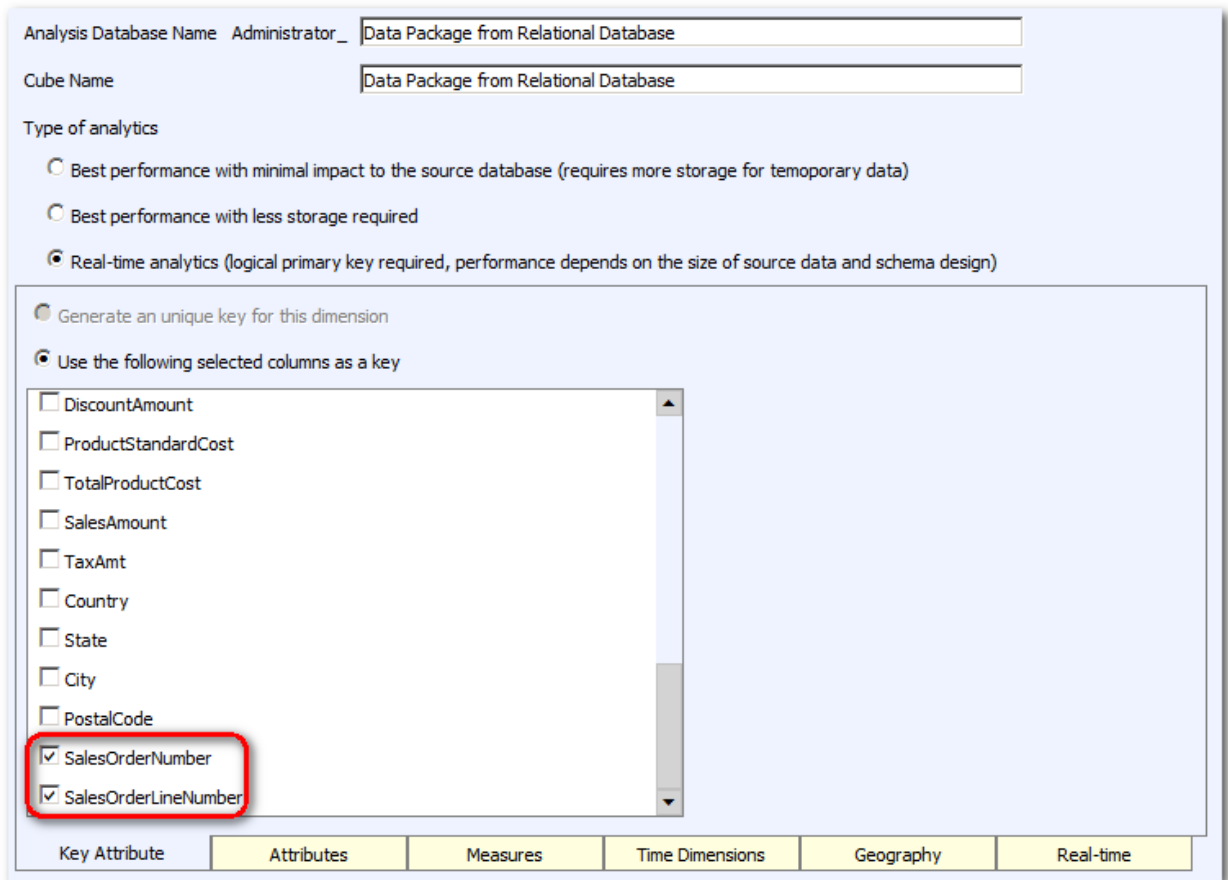
- **Best performance with minimal impact to the source database (requires more storage for temporary data)**

Analyzer will make a copy of the data specified by the query in SQL Command and store them in the Data Package Temporary Database (for setup of the Data Package Temporary Database please see 10.1), this will become the data source for the cube during processing so the source database is not affected.
- **Best performance with less storage required**

During the processing of the cube, the data will be read directly from the relational data source.
- **Real-time analytics (logical primary key required, performance depends on the size of source data and schema design)**

Analyzer does not make a copy of the data nor pre-process of the cube. At the time user accesses the data, the data are aggregated in real-time from the relational data source to create real-time ROLAP cube.

In order to use real-time analytics, the data retrieved by the SQL Command must include key field(s). This is to tell Data Package which column(s) are the key column(s).



Analysis Database Name Administrator_

Cube Name

Type of analytics

Best performance with minimal impact to the source database (requires more storage for temporary data)

Best performance with less storage required

Real-time analytics (logical primary key required, performance depends on the size of source data and schema design)

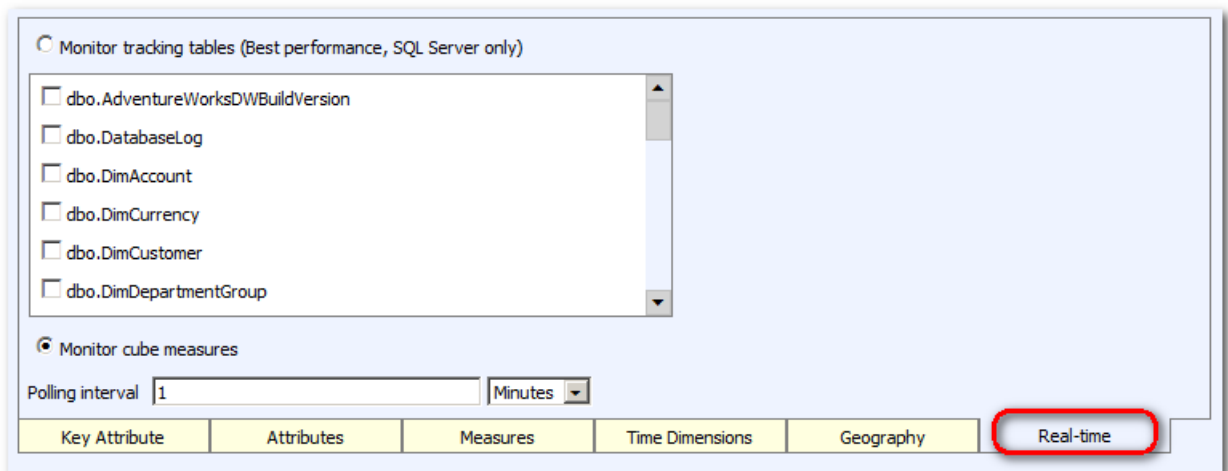
Generate an unique key for this dimension

Use the following selected columns as a key

- DiscountAmount
- ProductStandardCost
- TotalProductCost
- SalesAmount
- TaxAmt
- Country
- State
- City
- PostalCode
- SalesOrderNumber
- SalesOrderLineNumber

Key Attribute Attributes Measures Time Dimensions Geography **Real-time**

To define how data in cache is refreshed, click the **Real-time** tab.



Monitor tracking tables (Best performance, SQL Server only)

- dbo.AdventureWorksDWBldVersion
- dbo.DatabaseLog
- dbo.DimAccount
- dbo.DimCurrency
- dbo.DimCustomer
- dbo.DimDepartmentGroup

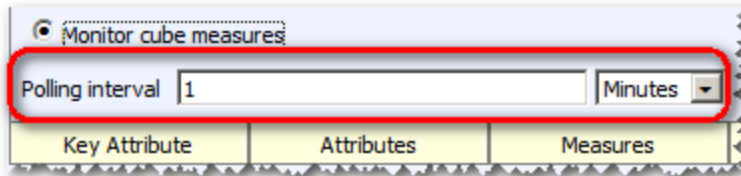
Monitor cube measures

Polling interval

Key Attribute Attributes Measures Time Dimensions Geography **Real-time**

The first option **Monitor Tracking Tables** only works with *SQL Server Enterprise Edition Analysis Services*. Check the checkboxes of all the tables that you wish to monitor.

The second option **Monitor Cube Measures** is the default selection that uses Polling Query to monitor changes in specific measure value and to decide whether or not to refresh the cache. The time between polling can be defined by Polling Interval field:

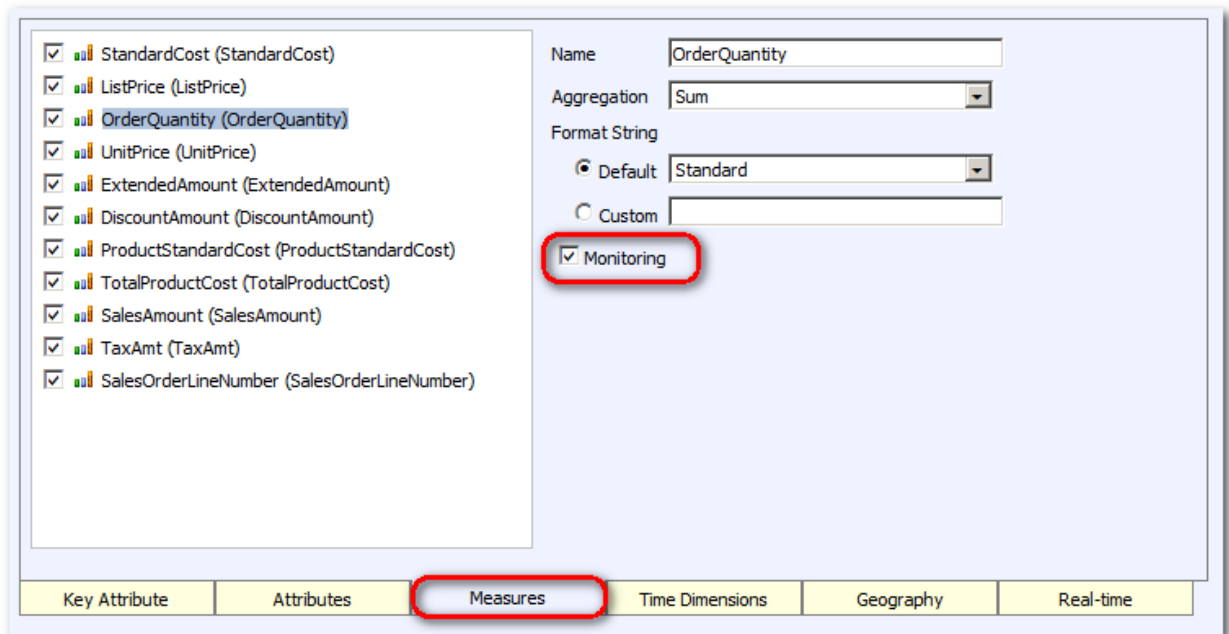


Monitor cube measures

Polling interval: 1 Minutes

Key Attribute | Attributes | Measures

By default all measures are selected to be monitored, you can change it by go to individual measure under the **Measure** tab.



StandardCost (StandardCost)
 ListPrice (ListPrice)
 OrderQuantity (OrderQuantity)
 UnitPrice (UnitPrice)
 ExtendedAmount (ExtendedAmount)
 DiscountAmount (DiscountAmount)
 ProductStandardCost (ProductStandardCost)
 TotalProductCost (TotalProductCost)
 SalesAmount (SalesAmount)
 TaxAmt (TaxAmt)
 SalesOrderLineNumber (SalesOrderLineNumber)

Name: OrderQuantity

Aggregation: Sum

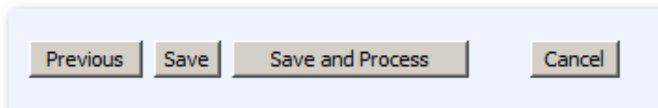
Format String: Default Standard

Monitoring

Key Attribute | Attributes | Measures | Time Dimensions | Geography | Real-time

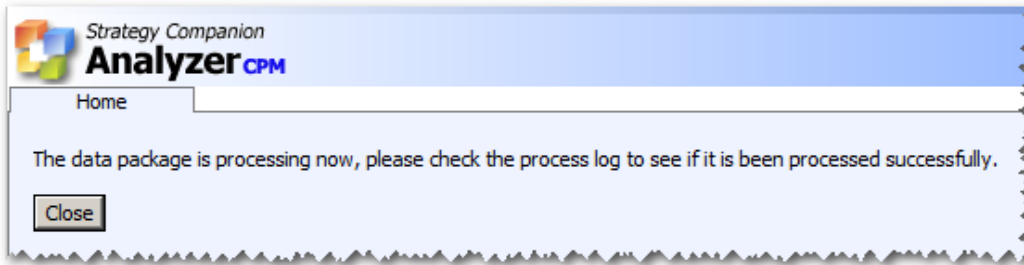
1.1.5 Save and Process

Once all adjustments are made, click **Save** to save the changes or click on **Save and Process** to save the changes and start processing and building the cube from this Data Package.



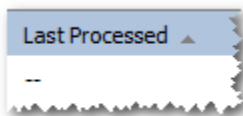
Previous | Save | Save and Process | Cancel

The process will happen in the background once it starts, you can close the dialog and check the process log for status.

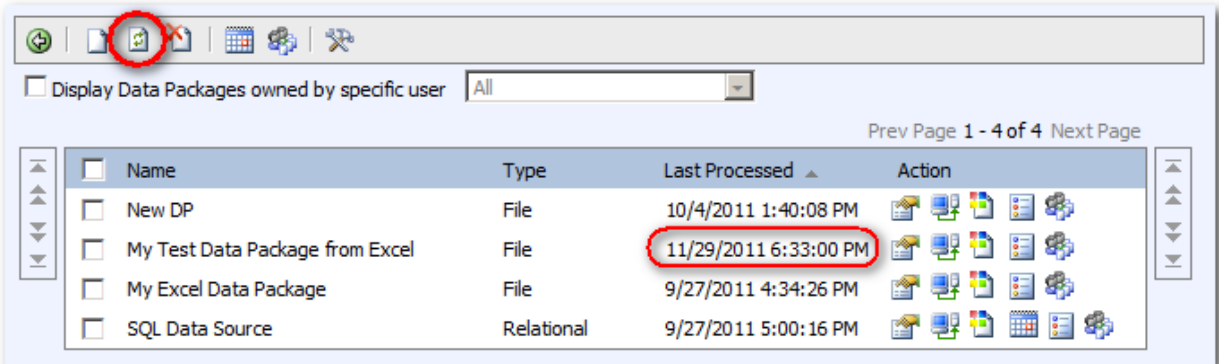


1.1.6 The Process Log

User can verify the Data Package process status from the Process Log. If processing for the first time the Last Processed status will show as dashes.

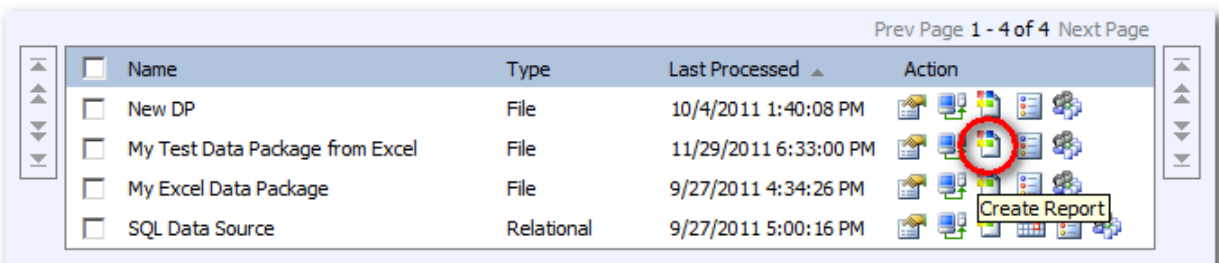


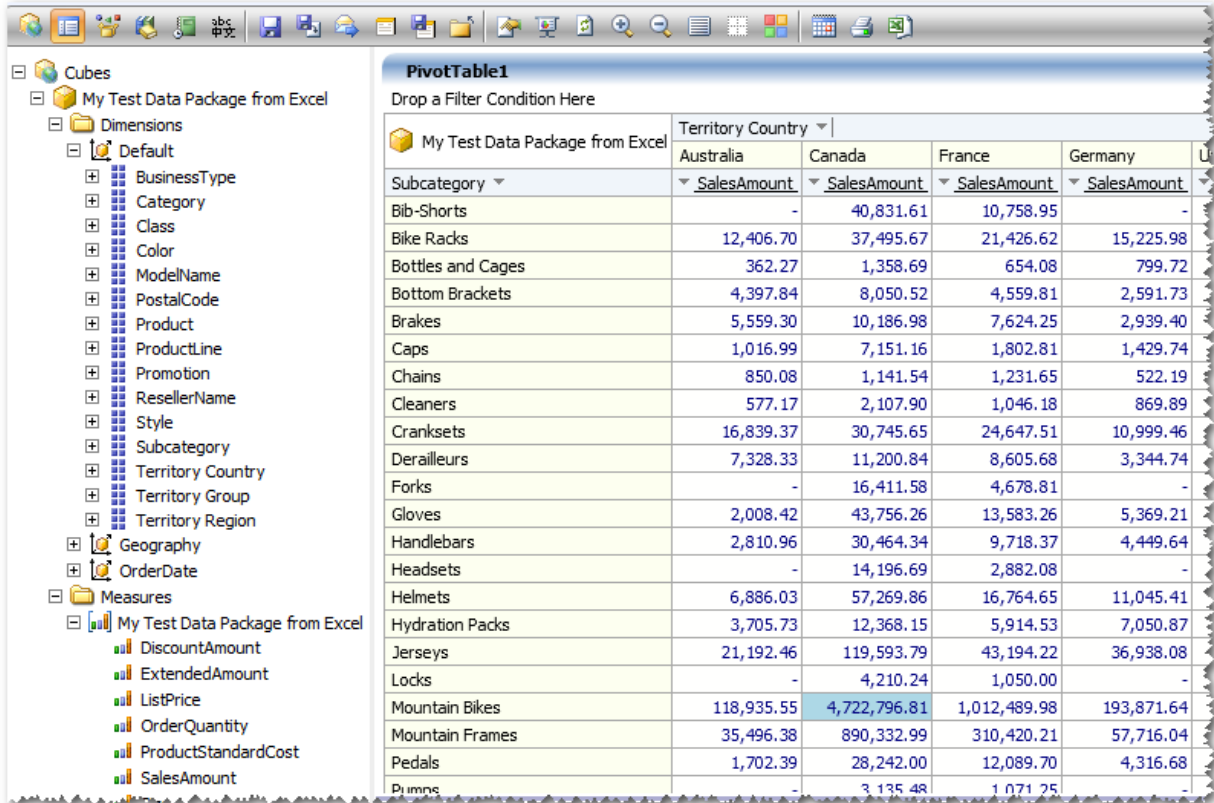
User can hit the refresh button to refresh the status. Once the cube is processed, the Last Process displays the time the Data Package was last processed.



Create Report from Data Package

Once the Data Package is processed, user can click the **Create Report** button to create a new report from the data source.





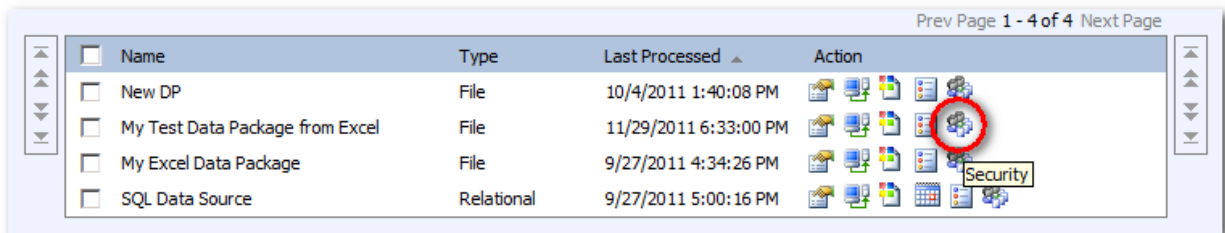
PivotTable1
Drop a Filter Condition Here

My Test Data Package from Excel	Territory Country			
	Australia	Canada	France	Germany
Subcategory	SalesAmount	SalesAmount	SalesAmount	SalesAmount
Bib-Shorts	-	40,831.61	10,758.95	-
Bike Racks	12,406.70	37,495.67	21,426.62	15,225.98
Bottles and Cages	362.27	1,358.69	654.08	799.72
Bottom Brackets	4,397.84	8,050.52	4,559.81	2,591.73
Brakes	5,559.30	10,186.98	7,624.25	2,939.40
Caps	1,016.99	7,151.16	1,802.81	1,429.74
Chains	850.08	1,141.54	1,231.65	522.19
Cleaners	577.17	2,107.90	1,046.18	869.89
Cranksets	16,839.37	30,745.65	24,647.51	10,999.46
Derailleurs	7,328.33	11,200.84	8,605.68	3,344.74
Forks	-	16,411.58	4,678.81	-
Gloves	2,008.42	43,756.26	13,583.26	5,369.21
Handlebars	2,810.96	30,464.34	9,718.37	4,449.64
Headsets	-	14,196.69	2,882.08	-
Helmets	6,886.03	57,269.86	16,764.65	11,045.41
Hydration Packs	3,705.73	12,368.15	5,914.53	7,050.87
Jerseys	21,192.46	119,593.79	43,194.22	36,938.08
Locks	-	4,210.24	1,050.00	-
Mountain Bikes	118,935.55	4,722,796.81	1,012,489.98	193,871.64
Mountain Frames	35,496.38	890,332.99	310,420.21	57,716.04
Pedals	1,702.39	28,242.00	12,089.70	4,316.68
Pumps	-	3,135.48	1,071.25	-

Please note that a report created from the Real-Time Analytics Data Package looks no different from any other reports except that its measure values are calculated in real-time when the report is first generated. All values are stored in SSAS Proactive Cache until Polling Query noticed that the measure value has changed then the cache is cleared and recalculated.

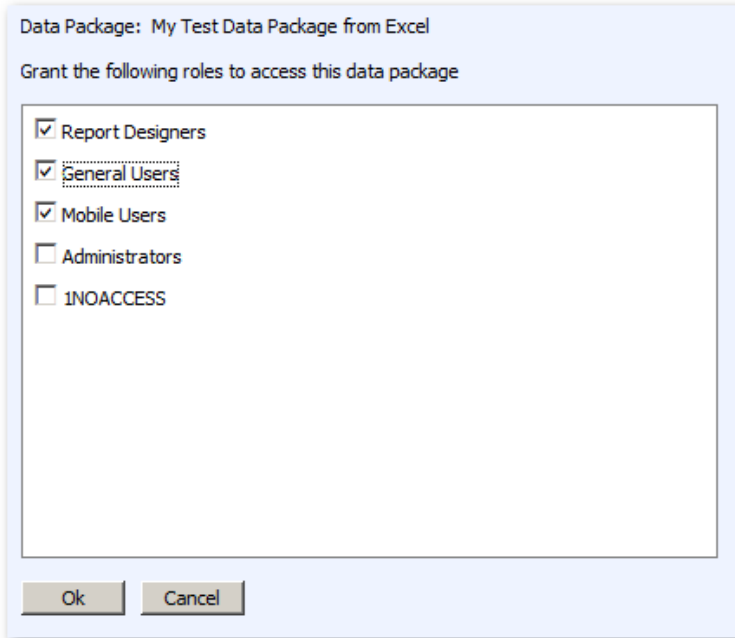
Data Package Data Security

The Data Package Data Security feature allows the sharing of the Data Package through Analyzer roles.



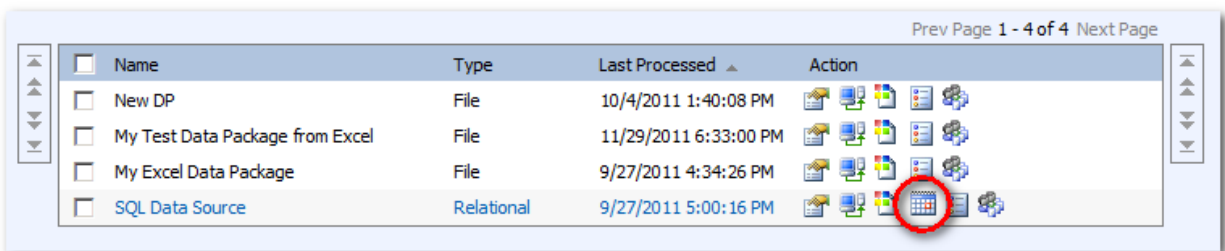
Name	Type	Last Processed	Action
<input type="checkbox"/> New DP	File	10/4/2011 1:40:08 PM	[Icons]
<input type="checkbox"/> My Test Data Package from Excel	File	11/29/2011 6:33:00 PM	[Icons]
<input type="checkbox"/> My Excel Data Package	File	9/27/2011 4:34:26 PM	[Icons]
<input type="checkbox"/> SQL Data Source	Relational	9/27/2011 5:00:16 PM	[Icons]

Check the roles to grant access privilege to the Data Package. Only selected roles can access the Data Package.

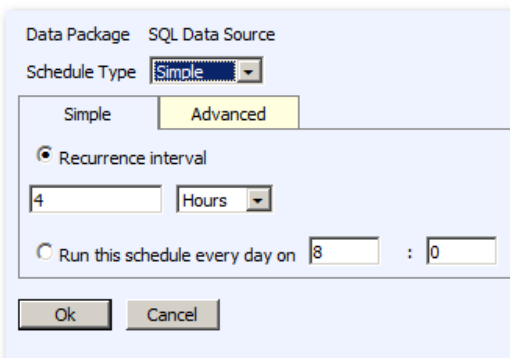


Process Scheduling

Data Package that uses relational data source type can be configured to reprocessed at a scheduled time. Depending on how the Data Package was initially configured, the scheduler will either re-copy the data to the temporary database for re-aggregation or re-aggregate cube measures directly. For real-time Data Package, the scheduled task will refresh attribute members if necessary but there will be no data aggregation since all data are aggregated in real-time.



Various schedule types and intervals can be set through the schedule dialog:



Data Package SQL Data Source

Schedule Type **Advanced**

Simple Advanced

Choose whether to run the report on an hourly, daily, weekly, monthly, or one-time basis.

Hour Day Week Month Once

Monthly Schedule

Months: Jan Apr Jul Oct
 Feb May Aug Nov
 Mar Jun Sep Dec

On week of month: 1st
 On day of week: Sun Mon Tue Wed Thu Fri Sat

On calendar day(s): 1, 3-5

Start time: 16 : 53

Start and end dates
 Specify the date to start and optionally end this schedule.

Begin running this schedule on: 9/27/2011
 Stop this schedule on:

Ok Cancel

Make sure to select a schedule type to enable the scheduler:

Data Package SQL Data Source

Schedule Type Advanced

Simple Advanced

You can review scheduler event log using the Schedule Log:

Prev Page 1 - 4 of 4 Next Page

<input type="checkbox"/>	Name	Type	Last Processed	Action
<input type="checkbox"/>	New DP	File	10/4/2011 1:40:08 PM	
<input type="checkbox"/>	My Test Data Package from Excel	File	11/29/2011 6:33:00 PM	
<input type="checkbox"/>	SQL Data Source	Relational	11/30/2011 1:24:54 PM	
<input type="checkbox"/>	My Excel Data Package	File	9/27/2011 4:34:26 PM	

Prev Page 1 - 3 of 3 Next Page

Date	Duration	Message
11/30/2011 1:37:06 PM	14.1658103	Successed
11/30/2011 1:32:44 PM	11.7296709	Successed
11/30/2011 1:24:54 PM	14.7148416	Successed