Working with Measure Items

Stratum.Viewer 6

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Definitions

- Calculated and Distinct Calculated Measure Item
- Caption
- Measure
- Regular Measure Item
- Time Hierarchy
- Time Range

Access to Measure Items

Your user profile level controls what you can do with measure items.

User Profile Level	Insert	Edit	Hide	Show	Remove	Rearrange Order in Views	Apply New Sorts/Filters on Them	Edit Existing Sorts/Filters for Them
Casual								x*
Advanced	x	x	x	x	x	x	x	x
View Administrator	x	x	x	x	x	x	x	x
Security Administrator	x	x	x	x	x	x	x	x

***Note:** Casual users can click an existing sort or filter icon to change the sort or filter. They will not see a Sort or Filter option when they right-click in the grid to access the grid pop-up menu.

Introduction to Measure Items

Measure items control the kind of data you see in your views -- sales, accounts receivable, budget, forecast, inventory, etc. Several types of measure items can be created for views, giving you flexibility to pull in data from specific time ranges, from rolling periods of time, or from calculations between multiple pieces of data. The types of measure items you can create are regular measure items with or without time ranges and calculated measure items. You can set up conditional formats, hyperlinks, and pop-up labels on regular and calculated measure items. And you can set up calculated measure items that display images in the grid. In views that have been set up to be planning enabled, you can perform planning on regular measure items.

Examples follow.

Regular Measure Items with Time Ranges

Time ranges can be assigned to regular measure items when the Time Range property for a view is set to Yes. Time ranges can be a single day, weeks, months, or years. Time ranges can be absolute or based. An example of an absolute time range is January 2014 through March 2014. An example of a based time range is the current week of last year through the current week of the current year.

This view has two Daily Sales measure items with time ranges. The time range is the last 90 days, from the current date of September 15 back through June 17.

View Name: *Daily Sales Product Sum Last 90 Days*

View Filter: Product ABC Class

	Region >>	330		331		Gra
	Rgn Long Description	East		West		
Product	Prod Long Description	Daily Sales Daily Sales Amount Jun 17 2014 to Sep 15 2014	Daily Sales Daily Sales Units Jun 17 2014 to Sep 15 2014	Daily Sales Daily Sales Amount Jun 17 2014 to Sep 15 2014	Daily Sales Daily Sales Units Jun 17 2014 to Sep 15 2014	Daily Sal A Jun 17 2
624B954019	Meatloaf, Frozen 4B	$101,085	1,473	$27,082	380	
624J954019	Meatloaf, Frozen 4J	$90,977	1,326	$24,374	342	
624I954019	Meatloaf, Frozen 4I	$85,922	1,252	$23,019	323	
624B954024	Orange Juice Conc. 4B	$42,478	772	$22,913	444	
624H954019	Meatloaf, Frozen 4H	$80,868	1,178	$21,665	304	
624J954024	Orange Juice Conc. 4J	$38,230	694	$20,621	399	
624G954019	Meatloaf, Frozen 4G	$75,814	1,105	$20,311	285	
624I954024	Orange Juice Conc. 4I	$36,106	656	$19,476	377	
624B954018	Frozen Lasagna Dinner 4B	$112,284	1,552	$19,300	267	
624F954019	Meatloaf, Frozen 4F	$70,760	1,031	$18,957	266	
624H954024	Orange Juice Conc. 4H	$33,982	617	$18,330	355	
624E954019	Meatloaf, Frozen 4E	$65,705	958	$17,603	247	
624J954018	Frozen Lasagna Dinner 4J	$101,056	1,396	$17,370	240	
624G954024	Orange Juice Conc. 4G	$31,859	579	$17,185	333	
624I954018	Frozen Lasagna Dinner 4I	$95,442	1,319	$16,405	227	
624D954019	Meatloaf, Frozen 4D	$60,651	884	$16,249	228	

Regular Measure Items without Time Ranges

Regular measure items without time ranges can be created when the Time Range property for a view is set to No. You can optionally use time hierarchies in these views to group data by absolute or based periods of time, such as the first quarter of each year or a rolling number of periods in time. This view shows Actual Sales data by base year. The view was filtered to focus on the current year.

View Name: *Year Based Product Sales*
View Filter

	Year Based >>	Current Year		All Others		Gra
	Year Based Months Based-Year Based -Abs Year	2014				
Product	Prod Long Description	Actual Sales Sales Units	Actual Sales Sales Amount	Actual Sales Sales Units	Actual Sales Sales Amount	Actual
625G924622	Apple Filling 12oz PL* 5G	78,790	$2,290,753	214,237	$7,363,200	
625G954622	Apple Filling 106oz BR* 5G	35,346	$2,176,620	96,764	$7,032,344	
625G974622	Apple Filling 106oz PL* 5G	105,282	$5,331,421	286,145	$17,139,708	
625H914622	Apple Filling 12oz BR* 5H	29,118	$1,014,616	78,678	$3,246,687	
625H924622	Apple Filling 12oz PL* 5H	84,043	$2,443,470	228,519	$7,854,080	
625H954622	Apple Filling 106oz BR* 5H	37,702	$2,321,728	103,215	$7,501,166	
625H974622	Apple Filling 106oz PL* 5H	112,300	$5,686,849	305,221	$18,282,355	
625I914622	Apple Filling 12oz BR* 5I	30,938	$1,078,030	83,595	$3,449,604	
625I924622	Apple Filling 12oz PL* 5I	89,296	$2,596,187	242,802	$8,344,960	
625I954622	Apple Filling 106oz BR* 5I	40,058	$2,466,836	109,666	$7,969,989	
625I974622	Apple Filling 106oz PL* 5I	119,319	$6,042,277	324,298	$19,425,003	
625J914622	Apple Filling 12oz BR* 5J	32,758	$1,141,443	88,513	$3,652,522	
625J924622	Apple Filling 12oz PL* 5J	94,548	$2,748,904	257,084	$8,835,841	
625J954622	Apple Filling 106oz BR* 5J	42,415	$2,611,944	116,117	$8,438,812	
625J974622	Apple Filling 106oz PL* 5J	126,338	$6,397,705	343,374	$20,567,650	
625K914622	Apple Filling 12oz BR* 5K	18,199	$634,135	49,174	$2,029,179	
625K924622	Apple Filling 12oz PL* 5K	52,527	$1,527,169	142,825	$4,908,800	
625K954622	Apple Filling 106oz BR* 5K	23,564	$1,451,080	64,510	$4,688,229	
625K974622	Apple Filling 106oz PL* 5K	70,188	$3,554,281	190,763	$11,426,472	
Grand Total		2,735,804	$118,871,291	7,403,410	$380,831,906	

Calculated Measure Items

Calculated measure items can be set up in all types of views regardless of the Time Range property. Expressions can be built with level members, other measure items, and a wide range of functions such as percent of total or cumulative percent of total. Calculated data items can be set up as distinct if you only want the calculation to be performed once for each level versus for every level member. The view shown in the prior example is shown below with the addition of a percent of total calculation. A conditional format has been applied to the measure item to indicate which products contribute over 5% to the total Sales Amount.

View Name: *Year Based Product Sales*
View Filter

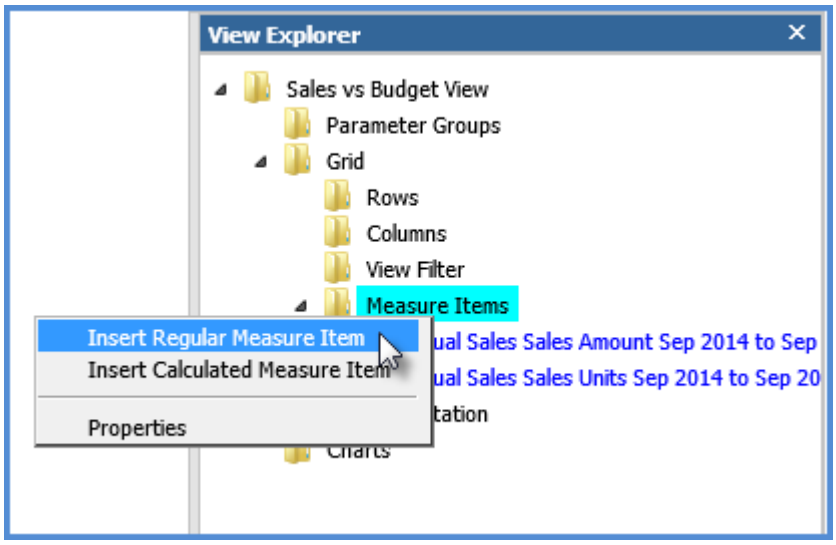
	Year Based >>	Current Year			All Others			Gr
	Year Based Months Based-Year Based-Abs Year	2014						
Product	Prod Long Description	Actual Sales Sales Units	Actual Sales Sales Amount	Sales Amount % of Total	Actual Sales Sales Units	Actual Sales Sales Amount	Sales Amount % of Total	Ac Sa
625G924622	Apple Filling 12oz PL* 5G	78,790	$2,290,753	1.93%	214,237	$7,363,200	1.93%	
625G954622	Apple Filling 106oz BR* 5G	35,346	$2,176,620	1.83%	96,764	$7,032,344	1.85%	
625G974622	Apple Filling 106oz PL* 5G	105,282	$5,331,421	4.49%	286,145	$17,139,708	4.50%	
625H914622	Apple Filling 12oz BR* 5H	29,118	$1,014,616	.85%	78,678	$3,246,687	.85%	
625H924622	Apple Filling 12oz PL* 5H	84,043	$2,443,470	2.06%	228,519	$7,854,080	2.06%	
625H954622	Apple Filling 106oz BR* 5H	37,702	$2,321,728	1.95%	103,215	$7,501,166	1.97%	
625H974622	Apple Filling 106oz PL* 5H	112,300	$5,686,849	4.78%	305,221	$18,282,355	4.80%	
625I914622	Apple Filling 12oz BR* 5I	30,938	$1,078,030	.91%	83,595	$3,449,604	.91%	
625I924622	Apple Filling 12oz PL* 5I	89,296	$2,596,187	2.18%	242,802	$8,344,960	2.19%	
625I954622	Apple Filling 106oz BR* 5I	40,058	$2,466,836	2.08%	109,666	$7,969,989	2.09%	
625I974622	Apple Filling 106oz PL* 5I	119,319	$6,042,277	5.08%	324,298	$19,425,003	5.10%	
625J914622	Apple Filling 12oz BR* 5J	32,758	$1,141,443	.96%	88,513	$3,652,522	.96%	
625J924622	Apple Filling 12oz PL* 5J	94,548	$2,748,904	2.31%	257,084	$8,835,841	2.32%	
625J954622	Apple Filling 106oz BR* 5J	42,415	$2,611,944	2.20%	116,117	$8,438,812	2.22%	
625J974622	Apple Filling 106oz PL* 5J	126,338	$6,397,705	5.38%	343,374	$20,567,650	5.40%	
625K914622	Apple Filling 12oz BR* 5K	18,199	$634,135	.53%	49,174	$2,029,179	.53%	
625K924622	Apple Filling 12oz PL* 5K	52,527	$1,527,169	1.28%	142,825	$4,908,800	1.29%	
625K954622	Apple Filling 106oz BR* 5K	23,564	$1,451,080	1.22%	64,510	$4,688,229	1.23%	
625K974622	Apple Filling 106oz PL* 5K	70,188	$3,554,281	2.99%	190,763	$11,426,472	3.00%	
Grand Total		2,735,804	$118,871,291		7,403,410	$380,831,906		

Quick Start - Insert Regular Measure Items

Here is a typical path taken to set up new regular measure items.

1 Right-click the Measure Items folder in viewer explorer, and select Insert Regular Measure Item.

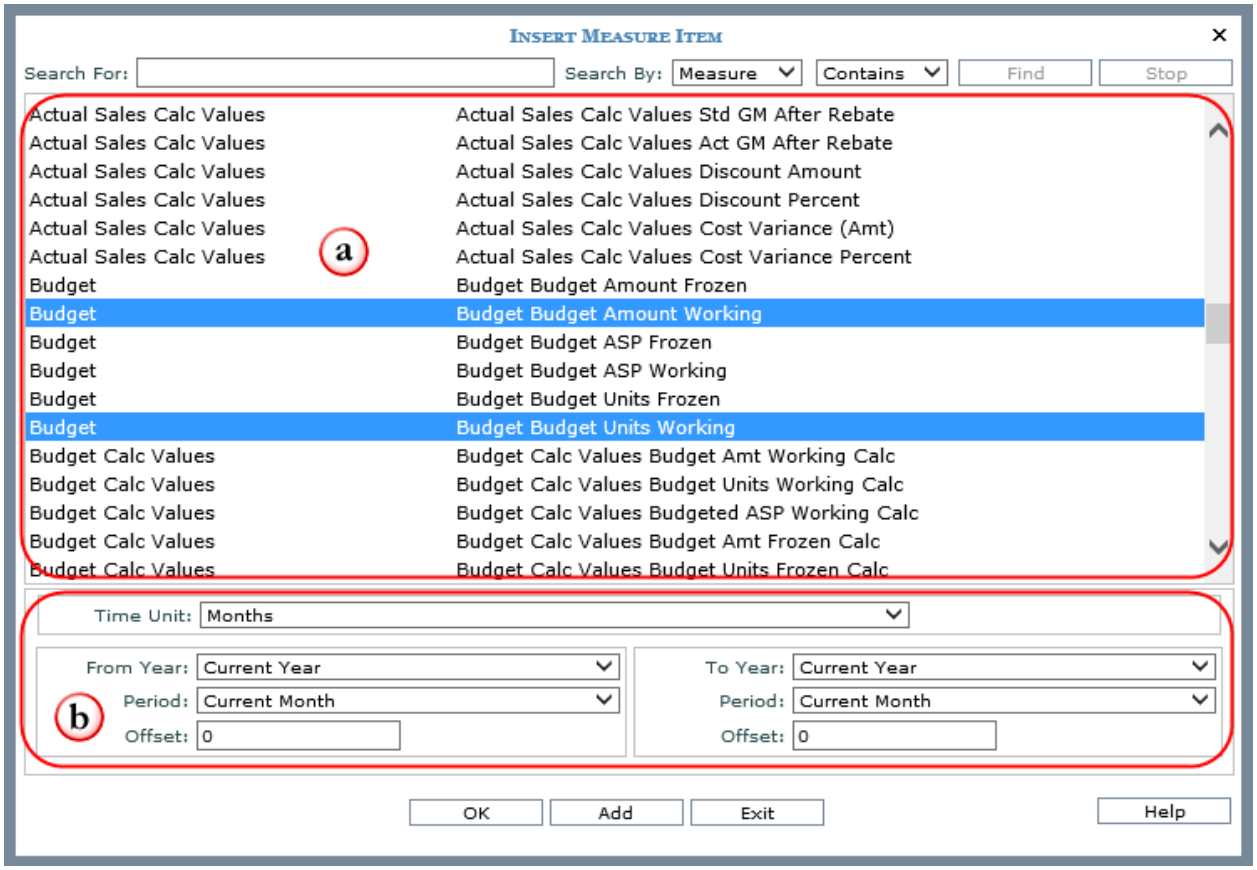
Note: Another option is to right-click the caption for any measure item in the view, and select Insert then select Regular Measure Item.



2

a Select measure and b specify time range.

Note: You can select multiple measures at a time to insert into the view. Specifying a time range is only applicable when the Time Ranges property for the Measure Items axis is Yes.

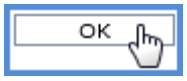


3

Click Add to insert the measure item(s) while leaving the window open to setup additional items.

OR

Click OK to insert the measure item(s) and close the window.



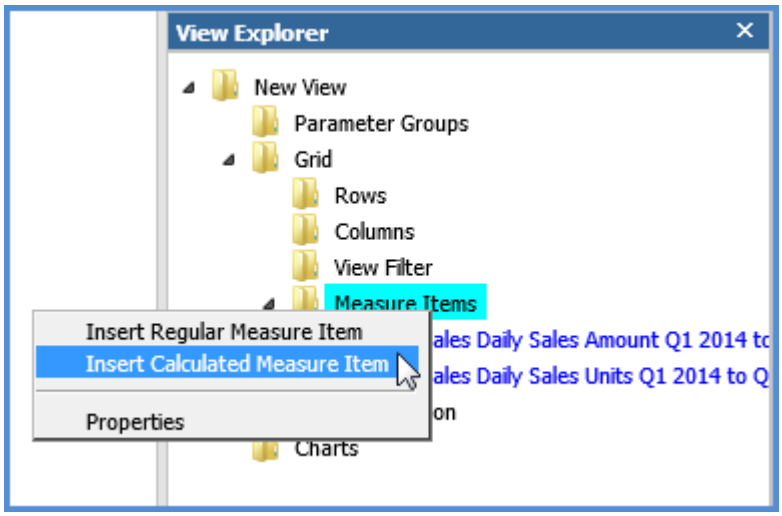
Note: You can optionally customize properties of each inserted measure item. See Edit a Caption and Edit Basic Measure Item Properties.

Quick Start - Insert Calculated Measure Items

Here is a typical path taken to set up new calculated measure items.

1 Right-click the Measure Items folder in viewer explorer, and select Insert Calculated Measure Item.

Note: Another option is to right-click the caption for any measure item in the view, and select Insert then select Calculated Measure Item.

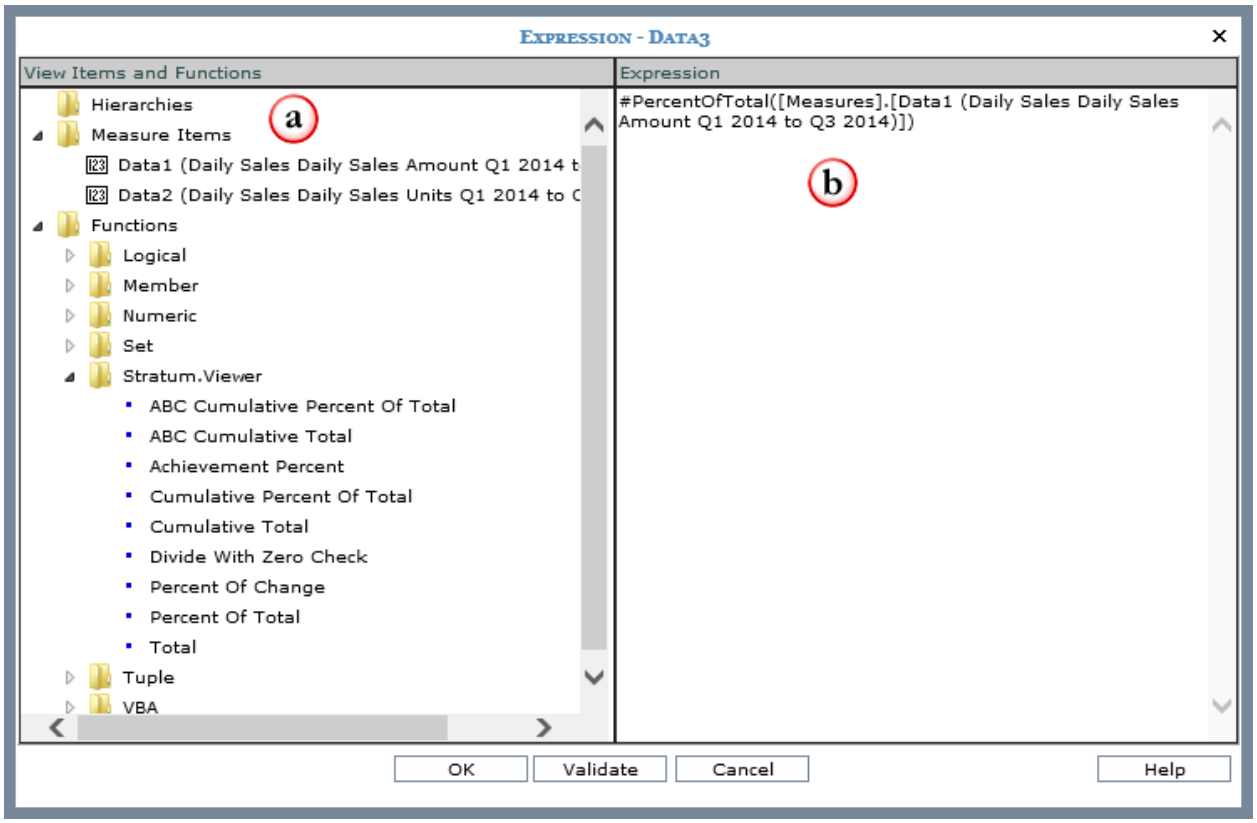


2 Set up the expression for the measure item using objects in the view or Analysis Services database and the functions provided.

a Click objects in the View Items and Functions side of the window or drag and drop them into the expression.

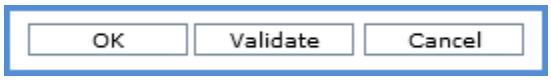
b Manually add objects and make adjustments by typing directly into the Expression side of the window.

Note: See also Creating Expressions for Calculated Measure Items.



3 Click Validate to check the expression then click OK to insert the measure item.

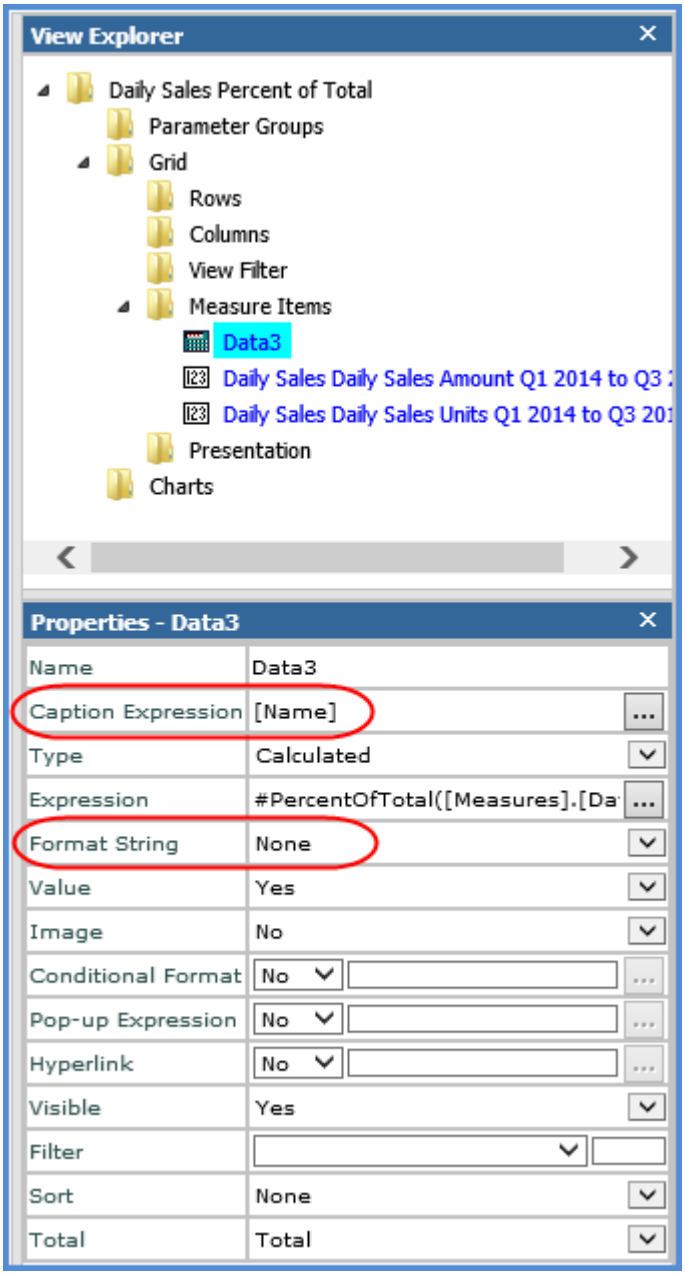
Note: If you skip clicking Validate, the expression will be checked when you click OK.



4

Customize properties for the measure item. At a minimum, customize the caption and select a Format String. You can also drag and drop the measure item in view explorer to reposition it within other measure items.

Note: If you want to make this a distinct calculated measure item, select Distinct for the Type.



Tasks - Inserting

Calculated Measure Items

1. Right-click anywhere in the view or right-click the Measure Items folder in view explorer, and select Insert Calculated Measure Item.

2. In the Expression window, set up the expression by:

    - Clicking or dragging and dropping objects from the View Items and Functions section to the Expression section.
    - Or, by manually entering text in the Expression section.

3. Use the Validate button as needed to check for any errors as you set up the expression.

4. Click OK.

5. {Optional} Customize properties for the measure item:

    - Edit the caption expression
    - Edit basic properties (name, format string, totals, etc.)
    - Make a measure item "Distinct"

Note: See also When to Use the “Sum” Total Setting for Measure Items.

Regular Measure Items

1. Right-click anywhere in the view or right-click the Measure Items folder in view explorer, and select Insert Regular Measure Item.

2. In the Insert Measure Item window, select the measure that will serve as the basis for your measure item.

    - If needed, use the search fields at the top of the window to narrow down the measures to choose from.
    - To set up multiple measure items at the same time, select multiple measures. You can use Ctrl+Click and Shift+Click to select more than one measure.

3. If there isn't a section for time in the window, go to Step 4.

    OR

3. If there is a section for time, use it to set up the time range for the measure item(s). Then go to Step 4. You can leave the properties set to their defaults if that is your desired time range.

    - Use Time Unit to specify the type of time for the range (weeks, months, periods, etc.).
    - Use the From Year, Period, and Offset to specify the starting point for the time range.
    - Use the To Year, Period, and Offset to specify the ending point for the time range.

4. Click Add if you want to insert the measure item(s) while leaving the window open to set up additional measure items.

    OR

4. Click OK to insert the measure item(s) and close the window, or click Cancel to cancel the insert.

5. {Optional} Customize other properties for the measure item(s):

   - Edit the caption expression
   - Edit basic properties (name, format string, totals, etc.)

Tasks - Editing

Edit a Measure Item Caption

If the Properties window for a measure item is open already, skip to Step 2.

1. Right-click the existing caption for the measure item in the view or view explorer, and select Properties.

2. Click the Browse button  next to the Caption Expression field in the Properties window.

3. Use the Caption Expression window to edit the caption expression.

   - Type static text into the Expression section.
   - Click variables from the Variables folder to use them in the expression.
   - Use the Enter key to insert a new line into the caption. Text or variables entered after the line break will begin on a new line in the rendered caption.
   - Click Evaluate at any time to check the caption that will result from the expression, such as to see how variables used in the expression will look in the rendered caption.

4. Click OK.

See also Creating Expressions for Captions.

Edit Basic Measure Item Properties (name, format string, totals, etc.)

To edit basic properties for individual measure items including the name, format string, hyperlink, pop-up expression, and totals:

1. Right-click the caption for the measure item in the view or view explorer, and select Properties.

2. Change the desired property using the applicable section of the Properties window.

Note: See also When to Use the "Sum" Total Setting for Measure Items.

Edit Expressions for Calculated Measure Items

1. Double-click the caption for the calculated measure item in the view.

   OR

1. If the Properties window for the measure item is open, click the Browse button  next to the Expression field.

2. In the Expression window, make changes by:

- Clicking or dragging and dropping objects from the View Items and Functions section to the Expression section.
- Or, by manually entering the changes in the Expression section.

3. Use the Validate button as needed to check for any errors in the edited expression.

4. Click OK.

Edit Measures for Regular Measure Items

See the steps for editing:

- Measure Items with Time Ranges
- Measure Items without Time Ranges

See also: Why isn't there a Section for Time in the Insert/Edit Measure Item Window?

Measure Items with Time Ranges

1. Double-click the caption for the measure item in the view.

   OR

1. If the Properties window for the measure item is open, click the Browse button  next to the Measure field.

2. In the Edit Measure Item window, select one or multiple measure items to edit.

3. Use the Measures drop-down list to select a new measure for the measure item(s).

   If needed, use the search button  to open the Select Measures window. Use the window to search for particular types of measures, make your selections, and then click OK or Cancel when you are done to return to the Edit Measure Item window.

4. Click Update to update the selected item(s) and leave the window open to change additional measure items.

   OR

4. Click OK to proceed with the edits and close the window.

Measure Items without Time Ranges

1. Double-click the caption for the measure item in the view.

2. In the Edit Measure Item window, select the first measure that you need to edit.

3. Use the Measures drop-down list to select a new measure for the measure item.

   If needed, use the search button  to open the Select Measures window. Use the window to search for particular types of measures, make your selection, and then click OK or Cancel when you are done to return to the Edit Measure Item window.

4. Click Update to update the selected item and leave the window open to change additional measure items.

   OR

4. Click OK to proceed with the edits and close the window.

Edit the Order of Measure Items

1. In the grid or view explorer, click the caption of the measure item that you want to move and continue holding down the mouse button to display this symbol  followed by the caption.

2. Drag the measure item to the new location and release the mouse button to drop it in that location.

    - If you drop it on the caption of another measure item, it will be positioned ***after*** that other measure item.
    - If you are working in the grid and want to position the measure item ***first*** on the measure items axis:

        - If measure items are on columns, drop it on the last header cell on rows
        - If measure items are on rows, drop it on the last header cell on columns.

    OR

    - If you are working in view explorer and want to position the measure item ***first*** on the measure items axis, drop it on the Measure Items folder.

Note: If you are working with distinct calculated measure items, you will be permitted to only drop the items before or after all regular or calculated measure items.

Edit Time Ranges for Regular Measure Items

1. Double-click the caption for the measure item in the view.

    OR

1. If the Properties window for the measure item is open, click the Browse button  next to the Measure field.

2. In the Edit Measure Item window, select one or multiple measure items to edit.

3. Use the time properties that remain enabled to change the time range for the selected measure item(s).

4. Click Update to update the selected item(s) and leave the window open to change additional measure items.

    OR

4. Click OK to proceed with the edits and close the window, or click Cancel to cancel the edits.

Hide or Show Measure Items

Hide

Use one of these options:

- Right-click the caption for the measure item in the view or view explorer, and select Hide.
- In the properties window for the measure item, change the Visible property to No.

Show

Use one of these options:

- Drag the measure item from view explorer and drop it in the desired location in the grid.
- Right-click the caption for the measure item in view explorer, and select Show.
- In the properties window for the measure item, change the Visible property to Yes.

Remove Measure Items

1. Right-click the caption for the measure item in the view or view explorer, and select Remove.

2. When prompted to confirm the deletion, click OK. Or click Cancel to cancel the change.

See also: What Happened to a Measure Item that Used to be in my View?

Examples

Creating Expressions for Calculated Measure Items

These tables have example expressions that can be used as models when you are setting up expressions for calculated measure items.

Note: If you want to set up views that return YTD data, comparisons of current vs past periods, rolling N periods, previous N periods, etc., do so using regular measure items with time ranges. Examples are in Using Time Ranges vs. Time Hierarchies in Views. If you want to set up a calculated measure item that displays an image, see Display Images for Measure Items.

Calculations with Stratum.Viewer Functions

Type of Calculation & Function	Example
Achievement Percent *Has a built-in divide by zero check to avoid divide by zero errors.*	#AchievementPercent([Measures].[Data1 (Actual Sales Sales Amount Q1 2014 to Q3 2014)], [Measures].[Data2 (Budget Budget Amount Frozen Q1 2014 to Q3 2014)])

- *Returns the achievement percentage between two measure items -- in this case, the percent of sales achieved in comparison to the budgeted sales.*
- *The expression for this function is Measure Item 1 / Measure Item 2 with a divide by zero check. The divide by zero check will return null if Measure Item 2, the divisor, is zero or null.*
- *The expression syntax includes the names (Data1 and Data2) and captions of the specified measure items.*
- *Recommendations: select a percentage Format String and set Total property to None.*

View Name: *Achievement Percentage*
View Filter

Ship-To Territory >>	1103		
STerr Long Description	Midlantic		
Product	Actual Sales Amount Q1 2014 to Q3 2014	Budget Amount Q1 2014 to Q3 2014	Achievement Percentage
Peach 6oz LnchPk BR* 5B	$1,112,705	$1,362,841	82%
Peach 6oz LnchPk BR* 5J	$1,001,435	$1,226,557	82%
Peach 6oz LnchPk BR* 5I	$945,799	$1,158,415	82%
Pear 6oz LnchPk LS 5B	$963,526	$1,164,594	83%
Applesauce 12oz PL* 5B	$801,970	$952,817	84%
Peach 6oz LnchPk BR* 5H	$890,164	$1,090,273	82%
Peach 6oz LnchPk BR* 5G	$834,529	$1,022,131	82%
Pear 6oz LnchPk LS 5J	$867,173	$1,048,134	83%
Pnappl Slcs 12 oz BR* 5B	$815,069	$963,263	85%
Applesauce 12oz PL* 5J	$721,773	$857,535	84%
Peach Slcs LS 12oz BR* 5B	$792,978	$935,409	85%
Pear 6oz LnchPk LS 5I	$818,997	$989,905	83%
Peach 6oz LnchPk BR* 5F	$778,894	$953,989	82%
Applesauce 106oz PL* 5B	$966,960	$1,150,830	84%

Divide with Zero Check *Has a built-in divide by zero check to avoid divide by zero errors.*	#DivideWithZeroCheck([Measures].[Data1 (Daily Sales Amount Wk 38 2014 to Wk 38 2014)], [Measures].[Data2 (Daily Sales Units Wk 38 2014 to Wk 38 2014)]) • *Divides two numbers with a divide by zero check.* • *The expression for this function is Measure Item 1 / Measure Item 2 with a divide by zero check. The divide by zero check will return null if Numeric Expression 2, the divisor, is zero or null.* • *The expression syntax includes the names (Data1 and Data2) and captions of the specified measure items.*

View Name: ***Product Current Wk Amount & Units***

View Filter

Product	Daily Sales Amount Wk 38 2014 to Wk 38 2014	▼ Daily Sales Units Wk 38 2014 to Wk 38 2014	Amount / Units
Meatloaf, Frozen 4B	$837	97	$8.59
Frozen Lasagna Dinner 4B	$859	96	$8.98
Apples Red Delicious 4B	$342	94	$3.64
Meatloaf, Frozen 4J	$753	88	$8.59
Frozen Lasagna Dinner 4J	$773	86	$8.98
Peach Slcs LS 12oz BR* 5B	$365	85	$4.28
Apples Red Delicious 4J	$307	84	$3.64
Meatloaf, Frozen 4I	$711	83	$8.59
Frozen Lasagna Dinner 4I	$730	81	$8.98
Apples Red Delicious 4I	$290	80	$3.64
Meatloaf, Frozen 4H	$670	78	$8.59
Peach Slcs LS 12oz BR* 5J	$329	77	$4.28

Percent of Change *Has a built-in divide by zero check to avoid divide by zero errors.*	#PercentOfChange([Measures].[Data1 (Actual Sales Amount Q1 2013 to Q3 2013)], [Measures].[Data2 (Actual Sales Sales Amount Q1 2012 to Q3 2012)]) • *Returns the percent of change, also known as the variance percentage, between two measure items or expressions -- in this case, the change between YTD sales for two different years.* • *The expression for this function is (Measure Item 1 - Measure Item 2) / Measure Item 2 with a divide by zero check. The divide by zero check will return null if Measure Item 2, the divisor, is zero or null.* • *The expression syntax includes the names (Data1 and Data2) and captions of the specified measure items.* • *Recommendations: select a percentage Format String and set Total property to None.*

View Name: *Percent of Change*

View Filter

Ship-To Territory >>	1103		
STerr Long Description	Midlantic		
Product	Actual Sales Amount Q1 2013 to Q3 2013	Actual Sales Sales Amount Q1 2012 to Q3 2012	% Change
Peach Slcs LS 12oz BR* 5J	$1,214,396	$572,234	112.22%
Romaine Specialty Salad 4J	$1,211,404	$543,006	123.09%
Apples Red Delicious 4H	$1,205,496	$543,806	121.68%
Sirloin Tips - USDA Grade A 4H	$1,195,714	$555,370	115.30%
FrtCktail LS 106oz PL* 5B	$1,187,521	$559,469	112.26%
Sweet Onions, Chopped 4I	$1,177,928	$642,091	83.45%
Pear 6oz LnchPk LS 5F	$1,177,798	$539,147	118.46%
Applesauce 12oz PL* 5I	$1,176,717	$544,615	116.06%
Peach 6oz LnchPk BR* 5D	$1,170,853	$534,267	119.15%
Meatloaf, Frozen 4K	$1,166,373	$554,390	110.39%

Percent Of Total	#PercentOfTotal([Measures].[Data1 (Daily Sales Amount Jan 2014 to Sep 2014)])

- *Returns percent of total for the designated measure item, in this case Daily Sales Daily Sales Amount Jan 2014 to Sep 2014 (this caption and the measure item name Data1 are part of the MDX syntax in the expression).*
- *Recommendations: select a percentage Format String.*

View Name: ***Percent of Total Daily Sales***

View Filter

Ship-To Territory	STerr Long Description	Daily Sales Amount Jan 2014 to Sep 2014	Daily Sales Units Jan 2014 to Sep 2014	Percent of Total Daily Sales Amount
1100	Southwest	$1,475,940	57,377	6.03%
1101	South Central	$3,318,927	149,759	13.57%
1102	Gulf Coast	$1,971,477	84,578	8.06%
1103	Midlantic	$2,124,654	94,953	8.69%
1104	New England	$4,289,629	191,734	17.53%
1105	Great Lakes	$609,922	24,598	2.49%
1106	Great Plains	$2,136,138	94,971	8.73%
1107	Northwest	$1,394,581	58,028	5.70%
1108	Western Provinces	$1,590,058	72,057	6.50%
1109	Central Provinces	$2,072,094	85,806	8.47%
1111	Eastern Atlantic Provinces	$3,480,049	154,395	14.23%
Grand Total		$24,463,468	1,068,254	

Cumulative Percent Of Total and ABC Cumulative Percent Of Total	#CumulativePercentOfTotal([Measures].[Data1 (Daily Sales Amount Jan 2014 to Sep 2014)]) • *Returns cumulative percent of total for the designated measure item, in this case* Daily Sales Amount Jan 2014 to Sep 2014 *(this caption and the measure item name Data1 are part of the MDX syntax in the expression).* • *Recommendations: select a percentage Format String and set Total property to None.* **and** #ABCCumulativePercent([Measures].[Data1 (Daily Sales Amount Jan 2014 to Sep 2014)],".65;.25") • *Assigns specified ranking values to results of the cumulative percent of total calculation, based on ranges specified in the expression. This expression assigns the following ranks: A for values >= 65%. B for values < 65% and >= 25%, and C for values < 25%.* • *Recommendations: leave Format String set to None and set Total property to None.*

View Name: *Cumulative Percent of Total Daily Sales*

View Filter

Ship-To Territory	STerr Long Description	Daily Sales Amount Jan 2014 to Sep 2014	Daily Sales Units Jan 2014 to Sep 2014	Cum % of Total Daily Sales Amount	ABC Cum % of Total Daily Sales Amount
1100	Southwest	$1,475,940	57,377	6.03%	C
1101	South Central	$3,318,927	149,759	19.60%	C
1102	Gulf Coast	$1,971,477	84,578	27.66%	B
1103	Midlantic	$2,124,654	94,953	36.34%	B
1104	New England	$4,289,629	191,734	53.88%	B
1105	Great Lakes	$609,922	24,598	56.37%	B
1106	Great Plains	$2,136,138	94,971	65.10%	A
1107	Northwest	$1,394,581	58,028	70.80%	A
1108	Western Provinces	$1,590,058	72,057	77.30%	A
1109	Central Provinces	$2,072,094	85,806	85.77%	A
1111	Eastern Atlantic Provinces	$3,480,049	154,395	100.00%	A
Grand Total		$24,463,468	1,068,254		

Cumulative Total and ABC Cumulative Total	#CumulativeTotal([Measures].[Data2 (Budgeted Units Jan 14 to Sep 14)]) • *Returns cumulative total for the designated measure item, in this case Budgeted Units Jan 14 to Sep 14 (this caption and the measure item name Data2 are part of the MDX syntax in the expression).* • *Recommendations: set Format String to the same Format String for the measure item referenced in the expression and set Total property to None.* **and** #ABCCumulative([Measures].[Data2 (Budgeted Units Jan 14 to Sep 14)],"75000000.00;35000000.00;10000000.00") • *Assigns specified ranking values to results of the cumulative total calculation, based on ranges specified in the expression. This expression assigns the following ranks: A for values >= 75,000,000; B for values < 75,000,000 and >= 35,0000,000; C for values < 35,000,000 and >= 10,000,000; and D for values < 10,000,000.* • *Recommendations: leave Format set to None and set Total property to None.*

View Name: *Cumulative Budgeted Sales*

View Filter

Product Brand	Budgeted Amount Jan 14 to Sep 14	▲ Budgeted Units Jan 14 to Sep 14	Cum Total Budgeted Units	ABC Cum Total Budgeted Units
SugarDrop	$90,840,770	1,112,247	1,112,247	D
SuperSweet	$50,730,874	1,115,860	2,228,108	D
Idaho Delight	$50,152,177	1,118,837	3,346,945	D
Bing-a-ling	$109,263,002	1,329,456	4,676,400	D
Tip Top	$132,056,215	1,598,924	6,275,324	D
Farm Crisp	$72,923,921	1,653,881	7,929,205	D
Dew Drop	$127,939,999	2,245,740	10,174,945	C
Southern Sweet	$196,365,995	3,252,169	13,427,114	C
Home Cookin'	$348,986,060	3,324,122	16,751,236	C
Private Label	$166,332,633	3,374,703	20,125,940	C
Prime Grown	$364,300,319	4,853,256	24,979,195	C
First Choice	$984,084,320	18,275,230	43,254,426	B
Farm Fresh	$1,508,040,376	23,135,432	66,389,858	B
Grand Total	$4,202,016,662	66,389,858		

Other Types of Calculations

Type of Calculation & Function	Example Expression
Average *Uses Average numeric function.*	Avg({[Time].[Year Months].[Year].members},[Measures].[Actual Sales Sales Units]) • *Returns average sales units for all years. Expression references the Year level from the Year Months hierarchy and Actual Sales Sales Units measure.* • *Recommendations: set Type to Distinct Calculated.* **and** Avg({[Time].[Year Months].[Year].[2013], [Time].[Year Months].[Year].[2014]},[Measures].[Actual Sales Sales Units]) • *Returns average sales units for 2013 and 2014. Expression references the 2013 and 2014 members of the Year level from the Year Months hierarchy and Actual Sales Sales Units measure.* • *Recommendations: set Type to Distinct Calculated.*

View Name: *Avg Ship-To Sales All Years*
View Filter

	Distribution Center Warehouse >>	19		21		Grand Total			
Customer Ship-To	ShpTo Long Description	Sales Units Jan 2013 to Dec 2013	Sales Units Jan 2014 to Dec 2014	Sales Units Jan 2013 to Dec 2013	Sales Units Jan 2014 to Dec 2014	Sales Units Jan 2013 to Dec 2013	Sales Units Jan 2014 to Dec 2014	Avg Units All Yrs	Avg Units 2013 & 2014
101100	Wilder Foods -- Quebec QC	142,571	88,217	142,958	89,817	285,529	178,034	204,824	231,781
101100AATQ	Wilder Foods -- Quebec QC TQA	28,459	17,488	26,663	16,674	55,122	34,162	39,486	44,642
101100ACTH	Wilder Foods -- Quebec QC THA	6,589	4,228	6,891	3,859	13,480	8,087	9,391	10,784
101100ADMC	Wilder Foods -- Quebec QC MCA	20,608	12,051	21,686	13,000	42,295	25,052	30,069	33,673
101100AEWQ	Wilder Foods -- Quebec QC WOA	81,698	50,795	81,036	50,837	162,735	101,632	116,764	132,184
101100ALAB	Wilder Foods -- Quebec QC ABA	5,216	3,654	6,681	5,447	11,897	9,101	9,115	10,499
101100BATQ	Wilder Foods -- Quebec QC TQB	56,918	34,976	53,326	33,348	110,243	68,324	78,972	89,284
101100BCTH	Wilder Foods -- Quebec QC THB	13,178	8,456	13,781	7,719	26,960	16,175	18,781	21,567
101100BDMC	Wilder Foods -- Quebec QC MCB	41,217	24,103	43,373	26,000	84,590	50,103	60,137	67,346
101100BEWQ	Wilder Foods -- Quebec QC WOB	163,397	101,591	162,073	101,674	325,470	203,265	233,528	264,367
101100BLAB	Wilder Foods -- Quebec QC ABB	10,432	7,308	13,363	10,893	23,795	18,201	18,230	20,998
101100CATQ	Wilder Foods -- Quebec QC TQC	31,305	19,237	29,329	18,341	60,634	37,578	43,435	49,106
101100CCTH	Wilder Foods -- Quebec QC THC	7,248	4,651	7,580	4,245	14,828	8,896	10,330	11,862
101100CDMC	Wilder Foods -- Quebec QC MCC	22,669	13,256	23,855	14,300	46,524	27,557	33,075	37,040

<table>
<tr>
<td>Difference</td>
<td>[Measures].[Data22 (Act Gross Margin After Rebate)]-[Measures].[Data21 (Std Gross Margin After Rebate)]

Returns difference between the Act Gross Margin After Rebate and Std Gross Margin After Rebate measure items (their captions and the measure item names Data22 and Data21 are part of the MDX syntax in the expression).

View Name: Difference Calculation
View Filter ABC Classification Code

<table>
<tr><th>Product Family</th><th>Sales Amount</th><th>Sales Units</th><th>Ext Actual Cost</th><th>Act Gross Margin After Rebate</th><th>Std Gross Margin After Rebate</th><th>Diff Act vs Std GM After Rebate</th></tr>
<tr><td>30</td><td>$1,047,061,857</td><td>10,644,352</td><td>$397,612,729</td><td>$649,449,128</td><td>$352,379,316</td><td>$297,069,812</td></tr>
<tr><td>50</td><td>$911,609,310</td><td>19,525,308</td><td>$343,509,085</td><td>$568,100,226</td><td>$303,120,487</td><td>$264,979,739</td></tr>
<tr><td>51</td><td>$255,813,630</td><td>6,369,663</td><td>$105,673,718</td><td>$150,139,912</td><td>$64,669,805</td><td>$85,470,108</td></tr>
<tr><td>60</td><td>$1,202,363,944</td><td>25,632,435</td><td>$584,951,197</td><td>$617,412,747</td><td>$256,532,600</td><td>$360,880,147</td></tr>
<tr><td>61</td><td>$1,382,140,145</td><td>26,888,897</td><td>$663,687,793</td><td>$718,452,352</td><td>$260,100,673</td><td>$458,351,679</td></tr>
<tr><td>64</td><td>$559,306,175</td><td>9,098,403</td><td>$236,047,666</td><td>$323,258,509</td><td>$134,351,661</td><td>$188,906,848</td></tr>
<tr><td>66</td><td>$292,676,296</td><td>6,550,271</td><td>$125,564,771</td><td>$167,111,526</td><td>$73,577,903</td><td>$93,533,623</td></tr>
<tr><td>67</td><td>$491,888,017</td><td>8,764,761</td><td></td><td>$491,888,017</td><td>$103,537,934</td><td>$388,350,083</td></tr>
<tr><td>68</td><td>$201,889,143</td><td>4,780,456</td><td>$91,180,618</td><td>$110,708,525</td><td>$41,814,497</td><td>$68,894,027</td></tr>
<tr><td>71</td><td>$500,039,185</td><td>5,982,155</td><td>$122,697,110</td><td>$377,342,075</td><td>$215,013,493</td><td>$162,328,582</td></tr>
<tr><td>Grand Total</td><td>$6,844,787,703</td><td>124,236,701</td><td>$2,670,924,687</td><td>$4,173,863,016</td><td>$1,805,098,369</td><td>$2,368,764,647</td></tr>
</table>
</td>
</tr>
<tr>
<td>Extended List Price

Uses attribute relationship.</td>
<td>IIF([Product].[Product].CurrentMember.Level.Name="Product",[Product].[Product].Properties("Prod Current List Price") * [Measures].[Data5 (Daily Sales Units Jan 2014 to Sep 2014)], null)

If the Product level is visible, then the following calculation is performed: [Product].[Product].Properties("Prod Current List Price") * [Measures].[Data5 (Daily Sales Units Jan 2014 to Sep 2014)]. This returns the extended list price by multiplying the Prod Current List Price attribute relationship from the Product level by the Daily Sales Units Jan 2014 to Sep 2014 measure. If the Product level is not visible in the view, the calculation will not be performed and a null value (empty cell) will be returned.
The IIF and [Product].[Product].CurrentMember.Level.Name="Product" syntax check for the visibility of the level to which the attribute relationship belongs. The syntax for the measure item used in the expression includes its name (Data5) and caption. The name of the Product level and its hierarchy are included in the syntax.
Recommendation: select a monetary Format String.

Related views are shown on the next page.</td>
</tr>
</table>

Here is the view when the Product level is visible. The calculation is performed.

View Name: *Product Extended List Price*

View Filter

Product	Prod Current List Price	Daily Sales Amount Jan 2014 to Sep 2014	Daily Sales Units Jan 2014 to Sep 2014	Ext List Price
Applesauce 12oz BR* 0A	47	$581	31	$1,438.94
Pear Slcs LS 12 oz BR* 0A	47	$117	7	$333.15
Peach Hlvs LS 12 oz BR* 0A	47	$210	11	$510.55
Peach Slcs LS 16 oz BR* 0A	58	$70	3	$146.00
Peach Slcs HS 12 oz BR* 0A	47	$463	25	$1,173.75
Sw Cherries Pittd 12oz BR* 0A	53	$74	3	$165.59
Peach Slcs LS 12oz BR* 0A	47	$145	8	$353.67
Tropical Mix LS 12oz BR* 0A	55	$91	4	$221.91
Pnappl Slcs 12 oz BR* 0A	48	$436	26	$1,267.77
Pnappl Bites 12oz BR* 0A	48	$30	1	$55.27
FrtCktail 6oz LnchPk BR* 0A	95	$281	8	$751.60
Cherry Filling 12 oz BR* 0A	44	$30	1	$57.37
Blueberries 12oz BR* 0A	53	$62	3	$133.41
Apple Filling 12oz BR* 0A	44	$91	5	$230.86

Here is the view after it has been rearranged. Ship-to Territory is now visible and Product is no longer visible. Null values are returned.

View Name: *Product Extended List Price*

View Filter

Ship-To Territory	STerr Long Description	Daily Sales Amount Jan 2014 to Sep 2014	Daily Sales Units Jan 2014 to Sep 2014	Ext List Price
1100	Southwest	$1,475,940	57,377	
1101	South Central	$3,318,927	149,759	
1102	Gulf Coast	$1,971,477	84,578	
1103	Midlantic	$2,124,654	94,953	
1104	New England	$4,289,629	191,734	
1105	Great Lakes	$609,922	24,598	
1106	Great Plains	$2,136,138	94,971	
1107	Northwest	$1,394,581	58,028	
1108	Western Provinces	$1,590,058	72,057	
1109	Central Provinces	$2,072,094	85,806	
1111	Eastern Atlantic Provinces	$3,480,049	154,395	
Grand Total		$24,463,468	1,068,254	

Number of Products Sold and Total Number of Products *Uses Count numeric function and CrossJoin function.*	Count(CrossJoin({[UPC Global Number].[UPC Global Number].[UPC Global Number].members},{[Measures].[Data2 (Sales Amount Q3 2014 to Q3 2014)]}),EXCLUDEEMPTY) **and** Count(CrossJoin({[UPC Global Number].[UPC Global Number].[UPC Global Number].members},{[Measures].[Data2 (Sales Amount Q3 2014 to Q3 2014)]}),INCLUDEEMPTY) • *The first calculation counts the number of UPC's that have sales. The EXCLUDEEMPTY text is the part of the expression that will exclude UPC members without any sales from the count.* • *The second calculation counts the total number of UPC's that exist including those with and without sales. The INCLUDEEMPTY text is the part of the expression that will include UPC members without any sales in the count.* • *The MDX for the UPC Global Number level includes the level name and names of its dimension and hierarchy. The level is analyzed against sales amount values for the third quarter 2014, and the syntax for that part of the expression includes the measure item name (Data2) and caption.* • *Recommendation: leave the Format String set to None and set Total property to None.*

View Name: *Total Number Products Sold*
View Filter

	Region >>	330				331			
	Rgn Long Description	East				West			
Customer Sold-To	SldTo Long Description	Sales Return Amount Q3 2014 to Q3 2014	Sales Amount Q3 2014 to Q3 2014	Number of Products Sold	Total Number of Products	Sales Return Amount Q3 2014 to Q3 2014	Sales Amount Q3 2014 to Q3 2014	Number of Products Sold	Total Number of Products
150100	Wilder Foods -- Eastern Americ	($2,200,308)	$263,125,866	63	103			0	103
150110	Wilder Foods -- Western Americ	($1,631,641)	$237,288,461	60	103			0	103
150120	Sumpter Dist'n -- Eastern Divi	($1,491,242)	$76,888,027	29	103			0	103
150130	Sumpter Dist'n -- Western Divi	($1,936,442)	$62,717,618	29	103			0	103
150140	Midwest Providers	($994,156)	$33,422,359	28	103			0	103
150150	Harrington's -- Eastern	($1,532,438)	$149,995,675	31	103			0	103
150160	Harrington's -- Western	($1,126,493)	$68,068,139	31	103			0	103
150170	GoodFoods -- Eastern	($993,011)	$74,438,780	37	103			0	103
150180	GoodFoods -- Western	($1,597,023)	$111,033,275	37	103			0	103
150230	Penn Brands			0	103	($1,220,553)	$40,508,950	31	103
150240	Olivieri Distributors	($1,369,175)	$59,182,376	46	103			0	103
150250	Prestwick Brothers	($632,400)	$33,726,233	47	103			0	103
150260	Dallas Food Services			0	103	($394,790)	$15,445,517	27	103
150270	Smith Distributors			0	103	($519,143)	$17,542,538	30	103

Profit (Sales after Costs) and Sales after Returns *Uses Absolute value of a measure item.*	[Measures].[Data2 (Actual Sales Sales Amount)]-[Measures].[Data1 (Actual Sales Ext Standard Cost)] **and** [Measures].[Data2 (Actual Sales Sales Amount)]-abs([Measures].[Data4 (Actual Sales Sales Return Amount)]) • *The first expression returns the profit, the total sales after costs. The syntax for the two measure items used in the calculation includes their captions and names (Data2 and Data1).* • *The second expression returns the sales after returns. The syntax for the two measure items used in the calculation includes their names (Data2 and Data4) and captions. That part of the expression also uses the Abs function to use the absolute value of returns in the calculation.*

View Name: *Profit and Sales after Returns*

View Filter

Customer Ship-To	ShpTo Long Description	Customer Ship-To Country >> CAN Actual Sales Sales Amount	Budget Budget Amount Working	Actual Sales Sales Return Amount	Actual Sales Ext Standard Cost	Profit	Sales after Returns
101100	Wilder Foods -- Quebec QC	$40,134,306	$66,038,441	($380,205)	$30,608,537	$9,525,769	$39,754,101
101100AATQ	Wilder Foods -- Quebec QC TQA	$6,880,048	$11,346,438	($52,558)	$5,368,090	$1,511,958	$6,827,490
101100ACTH	Wilder Foods -- Quebec QC THA	$2,353,759	$3,753,036	($107,413)	$1,687,980	$665,779	$2,246,345
101100ADMC	Wilder Foods -- Quebec QC MCA	$5,153,774	$8,507,334	($39,687)	$3,915,196	$1,238,578	$5,114,087
101100AEWO	Wilder Foods -- Quebec QC WOA	$23,284,955	$38,236,559	($165,588)	$17,875,573	$5,409,382	$23,119,368
101100ALAB	Wilder Foods -- Quebec QC ABA	$2,593,098	$4,195,073	($15,225)	$1,860,068	$733,030	$2,577,873
101100BATQ	Wilder Foods -- Quebec QC TQB	$13,773,496	$22,692,877	($105,116)	$10,747,851	$3,025,645	$13,668,379
101100BCTH	Wilder Foods -- Quebec QC THB	$4,707,517	$7,506,073	($214,826)	$3,375,959	$1,331,558	$4,492,691
101100BDMC	Wilder Foods -- Quebec QC MCB	$10,307,549	$17,014,668	($79,374)	$7,830,392	$2,477,156	$10,228,175
101100BEWO	Wilder Foods -- Quebec QC WOB	$46,656,342	$76,473,119	($331,176)	$35,818,736	$10,837,606	$46,325,166
101100BLAB	Wilder Foods -- Quebec QC ABB	$5,186,196	$8,390,146	($30,449)	$3,720,136	$1,466,059	$5,155,746
101100CATQ	Wilder Foods -- Quebec QC TQC	$7,582,902	$12,481,082	($57,814)	$5,917,712	$1,665,190	$7,525,088
101100CCTH	Wilder Foods -- Quebec QC THC	$2,589,134	$4,128,340	($118,154)	$1,856,778	$732,357	$2,470,980
101100CDMC	Wilder Foods -- Quebec QC MCC	$5,669,152	$9,358,067	($43,656)	$4,306,716	$1,362,436	$5,625,496
101100CEWO	Wilder Foods -- Quebec QC WOC	$25,737,166	$42,060,215	($182,147)	$19,761,808	$5,975,358	$25,555,079

Return Text Value if Condition is Met *Uses IIF function to check for conditions and determine which results to return.*	IIF([Measures].[Data22 (Actual Sales Sales Units Jan to Dec)]>[Measures].[Data2 (Budget Budget Units Frozen Jan to Dec)],"y",null) • *Uses the IIF function to set up an If/Then/Else scenario. If the specified condition is true, then the first specified value will be returned. Otherwise (else), a null value will be returned. In this case, the condition checked for is whether or not Actual Sales Sales Units are greater than Budget Budget Units Frozen. The calculation returns a "y" (for Yes) if the condition is true. If the condition is not true, the calculation returns a null value (empty cell).* • *The syntax for the two measure items in both examples includes their names (Data22 and Data2) and captions.* • *Recommendations: leave Format String set to None. You can use a variety of values for the returned text, such as a letter or word, based on what best suits your view needs. In this case, null is recommended as the second (Else) value to prevent otherwise empty rows or columns from displaying. For example, if a row is hidden by relationship and empty filter because it has no sales or budget data, it would display if you set the second value in the expression to a 0 or "n" because those results would be considered a value by the relationship and empty filter. Using null as we did keeps results in an empty cell for such rows and therefore the rows will remain hidden.*
Standard Cost *Uses Val function and attribute relationship. IIF function checks for presence of the level to which attribute relationship belongs.*	IIF([Product].[Product].CurrentMember.Level.Name="Product",Val([Product].[Product].Properties("Prod Std Cost Last Year"))*[Measures].[Data2 (Actual Sales Units)], null) • *If the Product level is visible in the view, then the following calculation is performed: Val([Product].[Product].Properties("Prod Std Cost Last Year"))*[Measures].[Data2 (Actual Sales Units)]. This returns the standard cost for last year and uses the Prod Std Cost Last Year attribute relationship multiplied by the Actual Sales Units to determine the results. If the Product level is not visible in the view, the calculation will not be performed and a null value (empty cell) will be returned.* • *The IIF and [Product].[Product].CurrentMember.Level.Name="Product" syntax check for the visibility of the level to which the attribute relationship belongs. The syntax for the measure item used in the expression includes its name (Data2) and caption.* • *Recommendation: select a monetary Format String.* The next page shows the view when the Product level is visible. The calculation is performed.

View Name: *IIF Calculation Sales vs Budget*

View Filter

Product ABC Class	Product Family	Actual Sales Sales Units Jan to Dec	Budget Budget Units Frozen Jan to Dec	Sales Exceed Budget? (Y else Null)
A	Frozen Entrée	2,449,028	2,234,416	y
	Tender Vegetables	1,432,567	1,399,763	y
	Hardy Vegetables	3,485,127	3,408,420	y
	Fruit Fillings	3,179,597	3,077,678	y
	Applesauce	666,606	720,463	
	Specialty Canned Fruit	1,924,138	2,052,709	
	Fruit Cocktail	2,159,144	2,251,187	
	Peaches	1,526,073	1,488,429	y
	Pears	2,512,063	2,590,593	
	Pineapple	2,574,947	2,573,869	y
	Fresh Pork	1,936,827	1,771,135	y
	Fresh Beef	1,937,690	1,766,485	y
	Tender Fruits	767,838	795,113	
	Hardy Fruits	2,437,461	2,222,463	y
Grand Total		28,989,105	28,352,722	

View Name: *Ship-To Market Standard Cost*

View Filter: Product Family

		Year Based >>	2013		
Ship-To Market	Product	Prod Std Cost Last Year	Actual Sales Amount	Actual Sales Units	Standard Cost Last Year
Chicago	Pear Hlvs LS 12 oz BR* 0A	31.0209	$219	5	$151.61
	Applesauce 12oz BR* 0A	33.1923	$4,440	103	$3,425.24
	Pear Slcs LS 12 oz BR* 0A	37.1205	$14,720	334	$12,414.49
	Peach Hlvs LS 12 oz BR* 0A	31.3517	$9,033	205	$6,425.33
	Peach Slcs LS 16 oz BR* 0A	39.9241	$5,802	105	$4,204.76
	Pear 6oz LnchPk LS 0A	65.8812	$18,578	210	$13,845.76
	Peach Slcs HS 12 oz BR* 0A	32.8256	$25,954	594	$19,492.87
	Peach Slcs LS 12oz BR* 0A	31.0008	$13,225	301	$9,318.26
	Pnappl Slcs 12 oz BR* 0A	33.0349	$2,311	51	$1,695.31
	Pnappl Bites 12oz BR* 0A	33.0349	$4,613	103	$3,398.05
	FrtCktail LS 12 oz BR* 0A	31.3517	$18,505	420	$13,178.10
	FrtCktail 6oz LnchPk BR* 0A	65.8812	$9,974	112	$7,405.87
	Cherry Filling 12 oz BR* 0A	27.6948	$1,713	42	$1,150.55
	Apple Filling 12oz BR* 0A	27.6948	$819	20	$541.43
	Pear Hlvs LS 12oz PL* 0A	31.0209	$14,836	398	$12,356.59

Here is the view when Ship-to Market has been drilled up to and Product is no longer visible. Null values are returned.

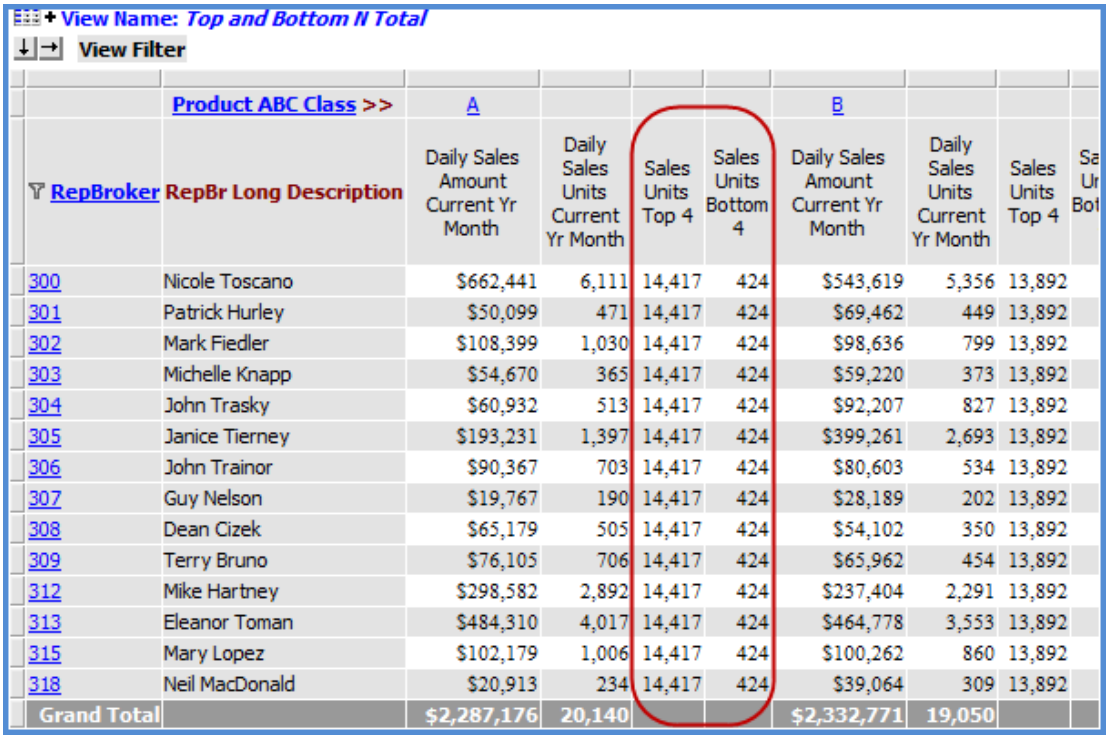
View Name: *Ship-To Market Standard Cost*

View Filter: Product Family

Year Based >>	2013		
Ship-To Market	Actual Sales Amount	Actual Sales Units	Standard Cost Last Year
Chicago	$327,960,286	6,744,032	
Buffalo	$470,992,928	9,736,835	
Dallas	$207,451,820	3,703,247	
St Louis	$830,691,749	16,769,133	
Phoenix	$227,429,203	3,829,340	
Seattle	$234,437,930	3,935,456	
Raleigh-Durham	$377,438,879	7,543,576	
Philadelphia	$349,033,723	7,134,022	
Pittsburgh	$71,536,939	1,165,909	
Quebec QC	$422,119,655	7,951,004	
Calgary AB	$317,358,865	6,262,077	
Winnipeg MB	$309,739,098	5,081,622	
St. John NB	$70,055,415	1,265,624	
Grand Total	$4,216,246,491	81,121,876	

<table>
<tr>
<td>Top N Total
and
Bottom N Total
Use Sum function.</td>
<td>
Sum({TopCount([RepBroker].[RepBroker].[RepBroker].members, 4, [Measures].[Data2 (Daily Sales Units Current Yr Month)])}, [Measures].[Data2 (Daily Sales Units Current Yr Month)])
and
Sum({BottomCount([RepBroker].[RepBroker].[RepBroker].members, 4, [Measures].[Data2 (Daily Sales Units Current Yr Month)])}, [Measures].[Data2 (Daily Sales Units Current Yr Month)])

The first calculation returns the total sales of the four RepBrokers with the highest sales. The portion of the expression enclosed in curly brackets { } and beginning with TopCount is what tells Stratum.Viewer to look for the four RepBroker members with the highest values for the specified measure item of Daily Sales Units Current Yr Month. The sum part of the expression is what totals the four values. The expression syntax includes the name of the RepBroker level, hierarchy, and dimension and includes the name (Data2) and caption of the measure item.
The second calculation returns the total sales of the four RepBrokers with the lowest sales. The calculation is set up the same as the first calculation except it uses the BottomCount function.
Recommendation: set Format String to the same Format String for the measure item referenced in the expression and set Total property to None.


View Name: Top and Bottom N Total
View Filter
<table>
<tr><td></td><td>Product ABC Class >></td><td>A</td><td></td><td></td><td></td><td>B</td><td></td><td></td><td></td></tr>
<tr><td>RepBroker</td><td>RepBr Long Description</td><td>Daily Sales Amount Current Yr Month</td><td>Daily Sales Units Current Yr Month</td><td>Sales Units Top 4</td><td>Sales Units Bottom 4</td><td>Daily Sales Amount Current Yr Month</td><td>Daily Sales Units Current Yr Month</td><td>Sales Units Top 4</td><td>Sa Ur Bot</td></tr>
<tr><td>300</td><td>Nicole Toscano</td><td>$662,441</td><td>6,111</td><td>14,417</td><td>424</td><td>$543,619</td><td>5,356</td><td>13,892</td><td></td></tr>
<tr><td>301</td><td>Patrick Hurley</td><td>$50,099</td><td>471</td><td>14,417</td><td>424</td><td>$69,462</td><td>449</td><td>13,892</td><td></td></tr>
<tr><td>302</td><td>Mark Fiedler</td><td>$108,399</td><td>1,030</td><td>14,417</td><td>424</td><td>$98,636</td><td>799</td><td>13,892</td><td></td></tr>
<tr><td>303</td><td>Michelle Knapp</td><td>$54,670</td><td>365</td><td>14,417</td><td>424</td><td>$59,220</td><td>373</td><td>13,892</td><td></td></tr>
<tr><td>304</td><td>John Trasky</td><td>$60,932</td><td>513</td><td>14,417</td><td>424</td><td>$92,207</td><td>827</td><td>13,892</td><td></td></tr>
<tr><td>305</td><td>Janice Tierney</td><td>$193,231</td><td>1,397</td><td>14,417</td><td>424</td><td>$399,261</td><td>2,693</td><td>13,892</td><td></td></tr>
<tr><td>306</td><td>John Trainor</td><td>$90,367</td><td>703</td><td>14,417</td><td>424</td><td>$80,603</td><td>534</td><td>13,892</td><td></td></tr>
<tr><td>307</td><td>Guy Nelson</td><td>$19,767</td><td>190</td><td>14,417</td><td>424</td><td>$28,189</td><td>202</td><td>13,892</td><td></td></tr>
<tr><td>308</td><td>Dean Cizek</td><td>$65,179</td><td>505</td><td>14,417</td><td>424</td><td>$54,102</td><td>350</td><td>13,892</td><td></td></tr>
<tr><td>309</td><td>Terry Bruno</td><td>$76,105</td><td>706</td><td>14,417</td><td>424</td><td>$65,962</td><td>454</td><td>13,892</td><td></td></tr>
<tr><td>312</td><td>Mike Hartney</td><td>$298,582</td><td>2,892</td><td>14,417</td><td>424</td><td>$237,404</td><td>2,291</td><td>13,892</td><td></td></tr>
<tr><td>313</td><td>Eleanor Toman</td><td>$484,310</td><td>4,017</td><td>14,417</td><td>424</td><td>$464,778</td><td>3,553</td><td>13,892</td><td></td></tr>
<tr><td>315</td><td>Mary Lopez</td><td>$102,179</td><td>1,006</td><td>14,417</td><td>424</td><td>$100,262</td><td>860</td><td>13,892</td><td></td></tr>
<tr><td>318</td><td>Neil MacDonald</td><td>$20,913</td><td>234</td><td>14,417</td><td>424</td><td>$39,064</td><td>309</td><td>13,892</td><td></td></tr>
<tr><td>Grand Total</td><td></td><td>$2,287,176</td><td>20,140</td><td></td><td></td><td>$2,332,771</td><td>19,050</td><td></td><td></td></tr>
</table>
</td>
</tr>
<tr>
<td>Variance Percentage</td>
<td>Use the Percent of Change function when you want to include a variance percentage calculation in your view. That function is a Stratum.Viewer function that automatically includes a divide by zero check in the calculation to avoid divide by zero errors. See the first table in this topic for an example.</td>
</tr>
</table>

Days Until Expiration *Uses the Date Difference function in combination with the Today date function and an attribute relationship.*	DateDiff("d", Now(), [Lot].[Lot].Properties("Lot Expiration Date")) • *Returns the days until items expire, in this case, Lots. This calculation was built by selecting the Date Difference function, specifying "d" to calculate the difference in days, then selecting the Today function (which returned the Now() syntax), and finally selecting the Lot Expiration Date attribute relationship from the Lot level. The Date Difference and Today functions are in the VBA folder of the Expression window.* • *The current date in this case was August 15, 2014. The difference between that date and the Lot Expiration Date gives us the results in the Days Until Expiration date column in the example that follows.* • *Recommendations: leave the Format String set to None and set the Total property to None.* **Notes:** Results returned with negative numbers mean the expiration date has already been passed and it occurred the specified number of days ago. This example happens to calculate the "days" until expiration; therefore, it uses the parameter of "d" in the Date Difference function. Here are other parameters that can be used for calculations that involve other intervals of time: yyyy for year, q for quarter, m for month, y for day of year, d for day, w for weekday, ww for week, h for hour, m for minute, and s for second.

View Name: *Days Until Expiration for Lot*

View Filter

Lot	Lot Long Description	Lot Expiration Date	Days Until Expiration	Today	Actual Sales Amount YTD	Actual Sales Units YTD
19991412914401	19991412914401	03/19/2015	215	8/15/2014 10:50:32 AM	$4,416,262	99,268
19991513914401	19991513914401	03/26/2015	222	8/15/2014 10:50:32 AM	$4,835,520	108,885
19992118914401	19992118914401	04/29/2015	256	8/15/2014 10:50:32 AM	$3,908,731	108,216
19992622974003	19992622974003	05/28/2015	285	8/15/2014 10:50:32 AM	$4,966,264	109,334
19993428974003	19993428974003	07/09/2015	327	8/15/2014 10:50:32 AM	$5,372,340	122,634
19993529974003	19993529974003	07/16/2015	334	8/15/2014 10:50:32 AM	$4,650,454	105,682
19993731974003	19993731974003	07/30/2015	348	8/15/2014 10:50:32 AM	$5,245,784	127,459
19993832914304	19993832914304	08/06/2015	355	8/15/2014 10:50:32 AM	$3,297,018	111,187
19994034914401	19994034914401	08/20/2015	369	8/15/2014 10:50:32 AM	$4,570,409	151,505
19994135914304	19994135914304	08/27/2015	376	8/15/2014 10:50:32 AM	$2,232,792	67,239
19994437914304	19994437914304	09/10/2015	390	8/15/2014 10:50:32 AM	$2,453,023	74,236
19994437924003	19994437924003	09/10/2015	390	8/15/2014 10:50:32 AM	$2,118,381	75,920
19994639914304	19994639914304	09/24/2015	404	8/15/2014 10:50:32 AM	$2,399,836	72,593
19994639924003	19994639924003	09/24/2015	404	8/15/2014 10:50:32 AM	$1,746,230	62,553
Grand Total					$52,213,044	1,396,711

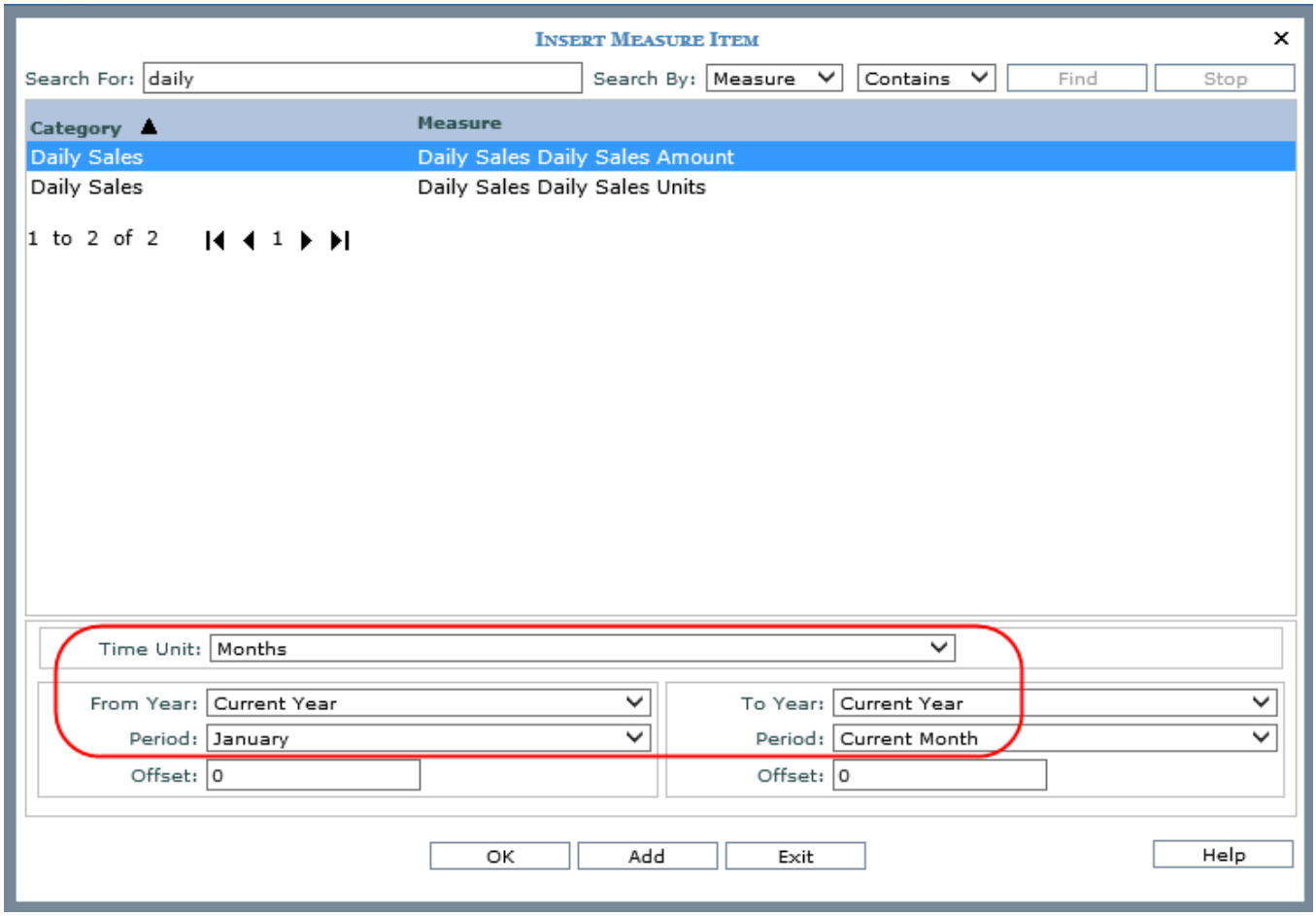
Creating Expressions for Captions

Examples of caption expressions that use different combinations of variables and static text are shown on the following pages. Examples are shown for all types of measure items -- regular with time ranges, regular without time ranges, and calculated. Caption expressions can include a combination of the following elements or just one of these elements, whatever your preference:

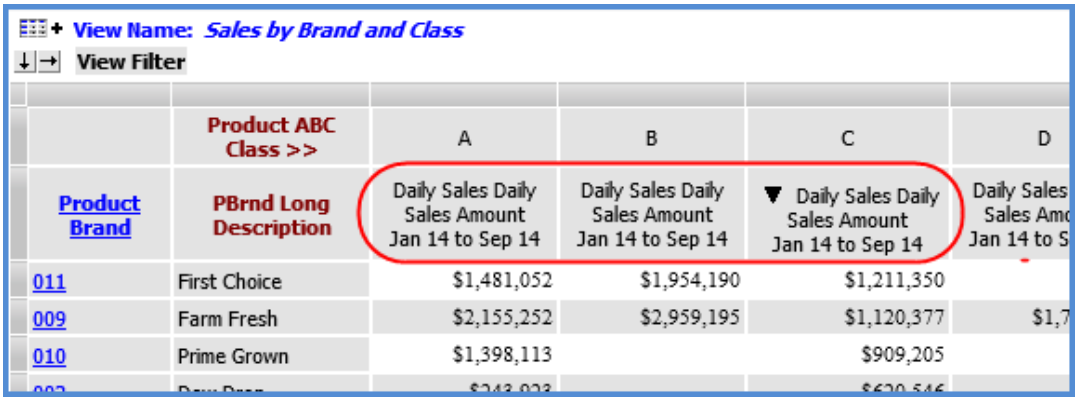
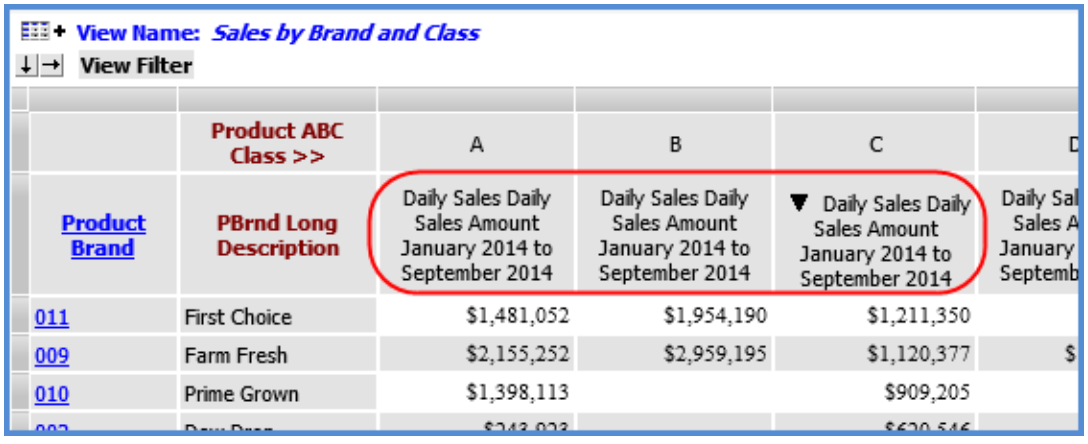
- Variables that specify the type of data to return such as the name of the underlying measure, the long description of the From and To periods for time ranges, or the name and description of conditional formats applied to the measure items. Stratum.Viewer evaluates the variables when you run a view and pulls in the proper data from the most current data in Analysis Services database on which the view was built.
- Static text that remains the same each time the view is executed.
- Line breaks that place different parts of the caption on separate lines. If you don't use line breaks, only text wrapping will control the caption display. Line wrapping updates automatically as the size of the grid area or browser changes.

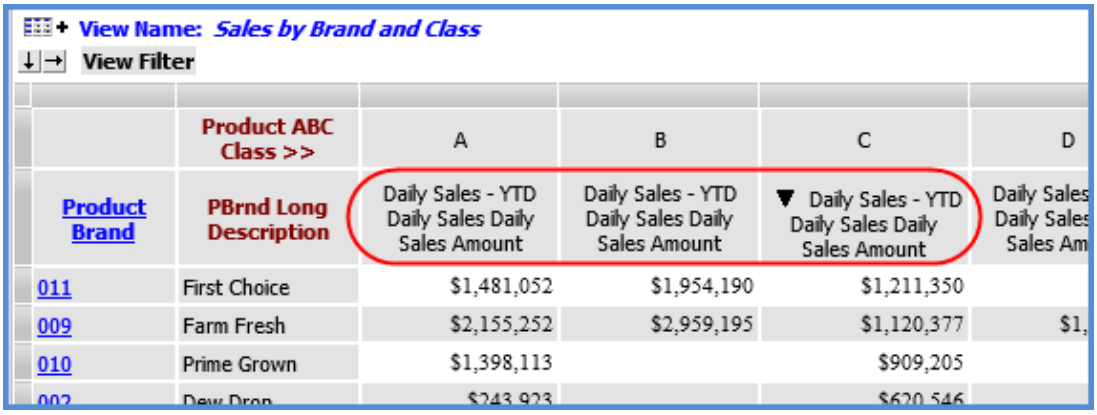
Measure Items with Time Ranges

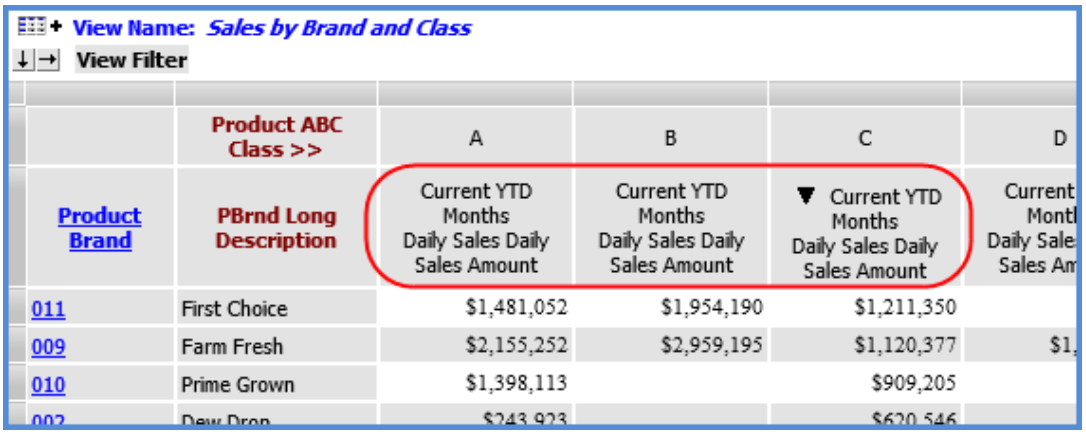
Here are the properties for a measure item with a time range. The measure item is based on the Daily Sales Daily Sales Amount measure from the Daily Sales category.



Here are some examples of caption expressions that were set up for the measure item and what each executed caption looked like in the view. In these examples, the current year is 2014 and the current month is September. The time elements in the evaluated captions reflect that current state of the data. Variables are the parts of the expressions that have brackets [ ] around them.

<table>
<tr><th>Builds Caption with...</th><th>Example Expression & Caption</th></tr>
<tr><td>Variables for measure, short description of periods, and short format for year (separated by spaces and static text)</td><td>Expression
[Measure] [From Period Short Desc] [From Year YY] to [To Period Short Desc] [To Year YY]
Caption in View
 
</td></tr>
<tr><td>Variables for measure, long description of periods, and long format for years (separated by spaces and static text)</td><td>Expression
[Measure] [From Period Long Desc] [From Year YYYY] to [To Period Long Desc] [To Year YYYY]
Caption in View
 
</td></tr>
</table>

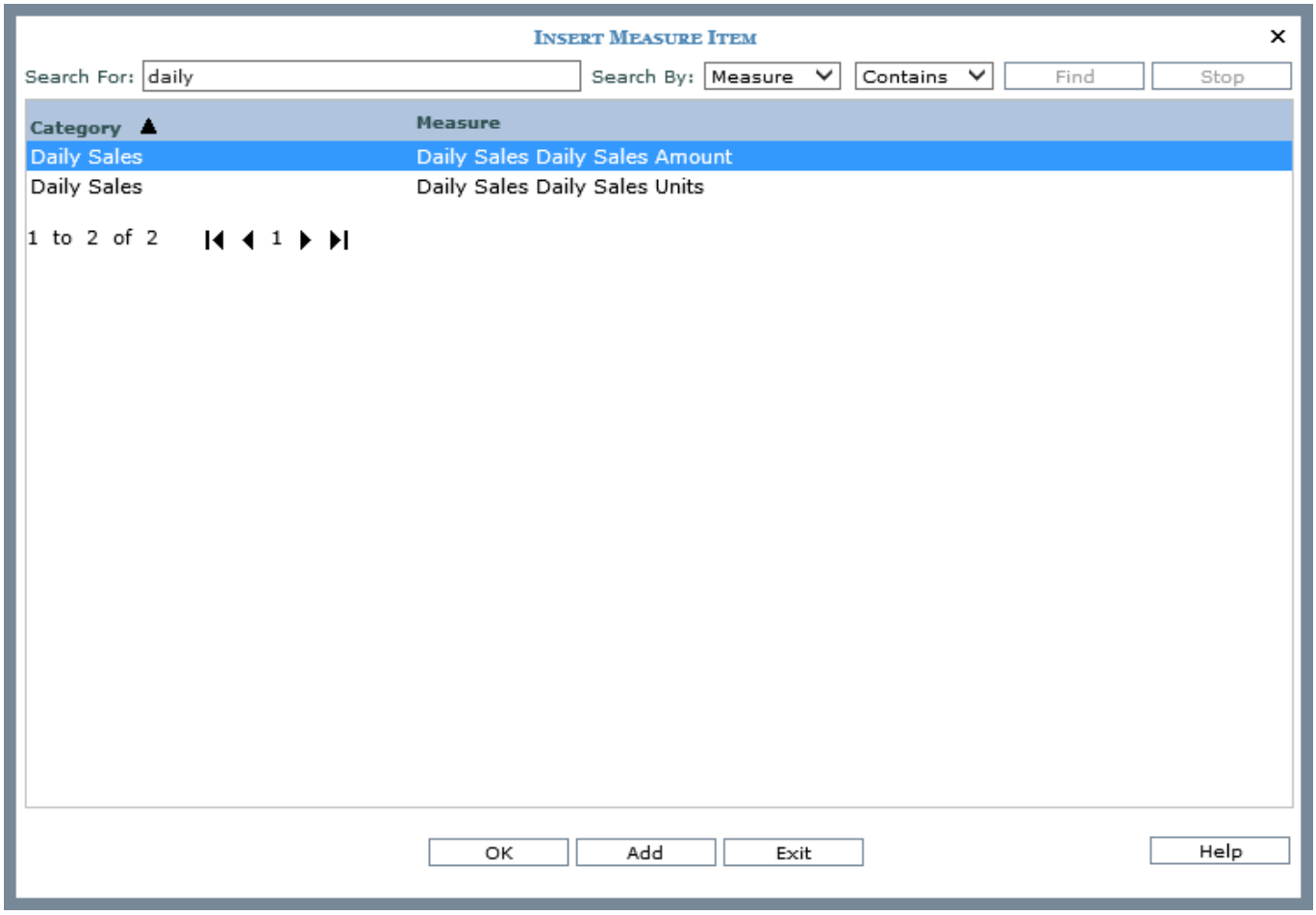
<table>
<tr>
<td>Variable for category and measures (separated by spaces and static text)</td>
<td>
Expression
[Category] - YTD [Measure]
Caption in View


</td>
</tr>
<tr>
<td>Static text, line breaks, and variable for measure</td>
<td>
Expression
Current YTD
Months
[Measure]
Caption in View


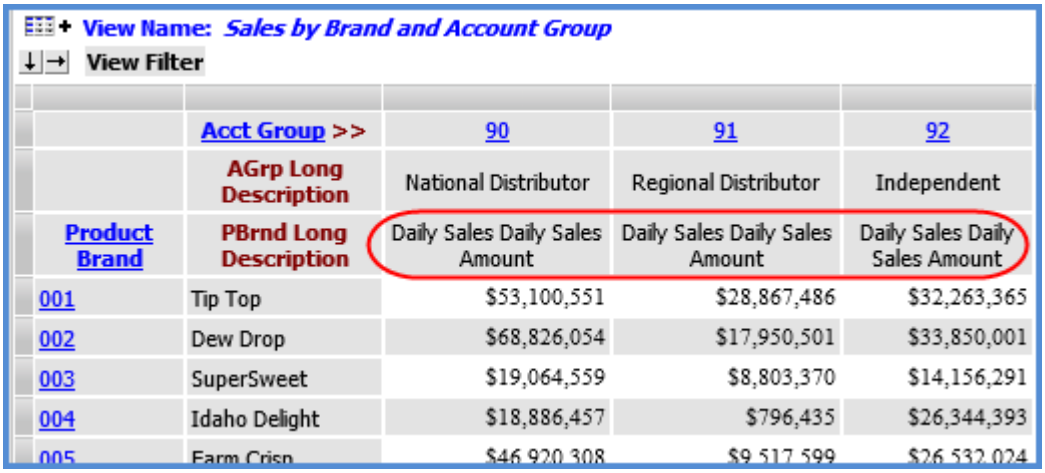
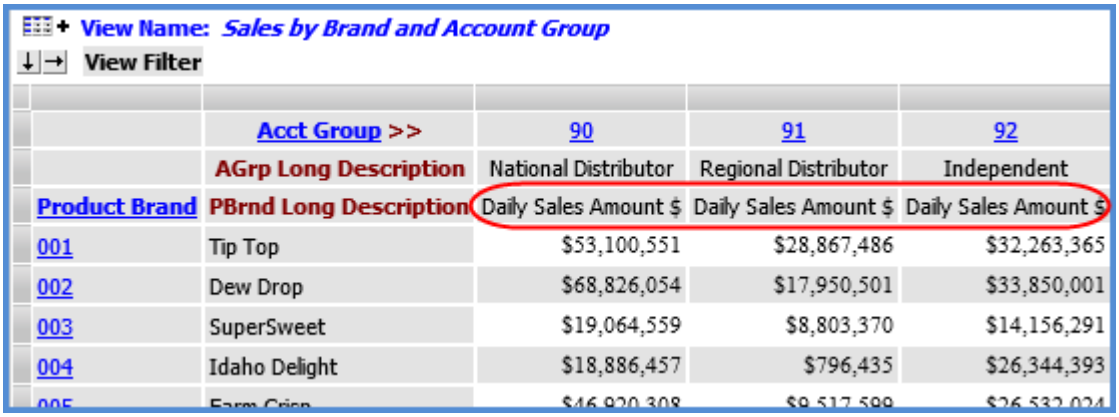
</td>
</tr>
</table>

Measure Items without Time Ranges

Here are the properties for a measure item without time ranges. This measure item also is based on the Daily Sales Daily Sales Amount measure from the Daily Sales category.



Here are some examples of caption expressions that were set up for the measure item and what each executed caption looked like in the view. Variables are the parts of the expressions that have brackets [ ] around them.

Builds Caption with...	Example Expression & Caption
Variable for measure	**Expression** [Measure] **Caption in View** 
Variable for category and static text	**Expression** [Category] Amount $ **Caption in View** 

View Name: *Sales by Brand and Account Group*

View Filter

	Acct Group >>	90	91	92
	AGrp Long Description	National Distributor	Regional Distributor	Independent
Product Brand	PBrnd Long Description	Daily Sales Daily Sales Amount	Daily Sales Daily Sales Amount	Daily Sales Daily Sales Amount
001	Tip Top	$53,100,551	$28,867,486	$32,263,365
002	Dew Drop	$68,826,054	$17,950,501	$33,850,001
003	SuperSweet	$19,064,559	$8,803,370	$14,156,291
004	Idaho Delight	$18,886,457	$796,435	$26,344,393
005	Farm Crisp	$46,920,308	$9,517,599	$26,532,024

View Name: *Sales by Brand and Account Group*

View Filter

	Acct Group >>	90	91	92
	AGrp Long Description	National Distributor	Regional Distributor	Independent
Product Brand	PBrnd Long Description	Daily Sales Amount $	Daily Sales Amount $	Daily Sales Amount $
001	Tip Top	$53,100,551	$28,867,486	$32,263,365
002	Dew Drop	$68,826,054	$17,950,501	$33,850,001
003	SuperSweet	$19,064,559	$8,803,370	$14,156,291
004	Idaho Delight	$18,886,457	$796,435	$26,344,393
005	Farm Crisp	$46,920,308	$9,517,599	$26,532,024

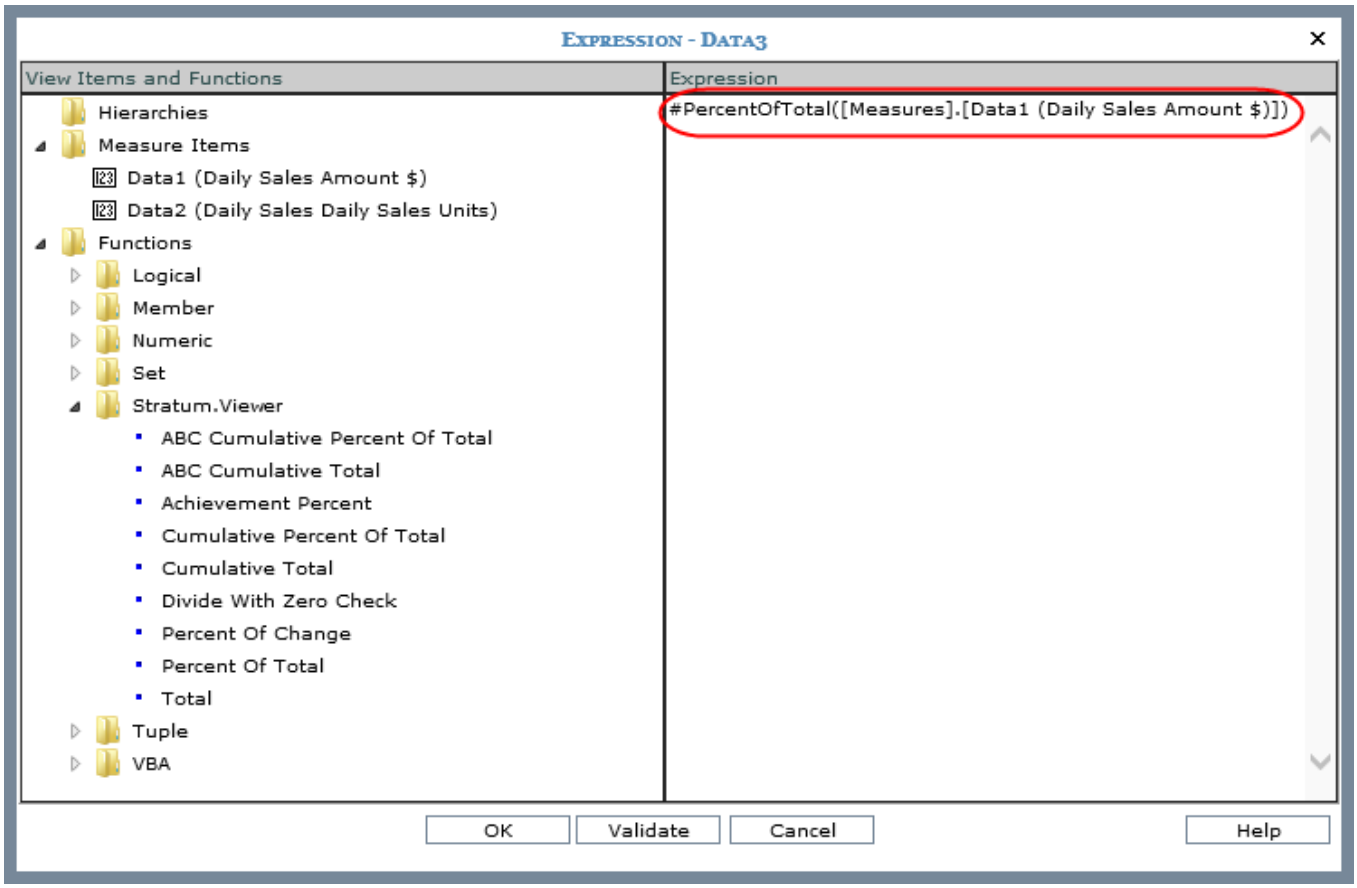
Variable for category, line break, and static text	**Expression** [Category] Amount $ **Caption in View**

View Name: *Sales by Brand and Account Group*
View Filter

	Acct Group >>	90	91	92
	AGrp Long Description	National Distributor	Regional Distributor	Independent
Product Brand	PBrnd Long Description	Daily Sales Amount $	Daily Sales Amount $	Daily Sales Amount $
001	Tip Top	$53,100,551	$28,867,486	$32,263,365
002	Dew Drop	$68,826,054	$17,950,501	$33,850,001
003	SuperSweet	$19,064,559	$8,803,370	$14,156,291
004	Idaho Delight	$18,886,457	$796,435	$26,344,393
005	Farm Crisp	$46,920,308	$9,517,599	$26,532,024

Calculated Measure Items

Here is the expression for a calculated measure item that was added to the view from the prior example and that calculates the percent of total.



Next are two examples of caption expressions that were set up for the measure item and what each executed caption looked like in the view.

<table>
<tr><th>Builds Caption with...</th><th>Example Expression & Caption</th></tr>
<tr><td>Static text without line break</td><td>
Expression
% of Total Daily Sales
Caption in View
View Name: Sales by Brand and Account Group
View Filter
<table>
<tr><td></td><td>Acct Group >></td><td>90</td><td></td><td>91</td><td></td><td>92</td></tr>
<tr><td></td><td>AGrp Long Description</td><td>National Distributor</td><td></td><td>Regional Distributor</td><td></td><td>Independe</td></tr>
<tr><td>Product Brand</td><td>PBrnd Long Description</td><td>Daily Sales Amount $</td><td>% of Total Daily Sales</td><td>Daily Sales Amount $</td><td>% of Total Daily Sales</td><td>Daily Sal Amount</td></tr>
<tr><td>001</td><td>Tip Top</td><td>$53,100,551</td><td>2.18%</td><td>$28,867,486</td><td>10.80%</td><td>$32,263,</td></tr>
<tr><td>002</td><td>Dew Drop</td><td>$68,826,054</td><td>2.83%</td><td>$17,950,501</td><td>6.72%</td><td>$33,850,</td></tr>
<tr><td>003</td><td>SuperSweet</td><td>$19,064,559</td><td>.78%</td><td>$8,803,370</td><td>3.29%</td><td>$14,156,</td></tr>
<tr><td>004</td><td>Idaho Delight</td><td>$18,886,457</td><td>.78%</td><td>$796,435</td><td>.30%</td><td>$26,344,</td></tr>
<tr><td>005</td><td>Farm Crisp</td><td>$46,920,308</td><td>1.93%</td><td>$9,517,599</td><td>3.56%</td><td>$26,532,</td></tr>
<tr><td>006</td><td>Southern Sweet</td><td>$104,110,765</td><td>4.27%</td><td>$24,028,999</td><td>8.99%</td><td>$64,416</td></tr>
</table>
</td></tr>
<tr><td>Static text with line breaks</td><td>
Expression
%
of Total
Daily Sales
Caption in View
View Name: Sales by Brand and Account Group
View Filter
<table>
<tr><td></td><td>Acct Group >></td><td>90</td><td></td><td>91</td><td></td><td>92</td></tr>
<tr><td></td><td>AGrp Long Description</td><td>National Distributor</td><td></td><td>Regional Distributor</td><td></td><td>Independ</td></tr>
<tr><td>Product Brand</td><td>PBrnd Long Description</td><td>Daily Sales Amount $</td><td>% of Total Daily Sales</td><td>Daily Sales Amount $</td><td>% of Total Daily Sales</td><td>Daily Sa Amoun</td></tr>
<tr><td>001</td><td>Tip Top</td><td>$53,100,551</td><td>2.18%</td><td>$28,867,486</td><td>10.80%</td><td>$32,263</td></tr>
<tr><td>002</td><td>Dew Drop</td><td>$68,826,054</td><td>2.83%</td><td>$17,950,501</td><td>6.72%</td><td>$33,850</td></tr>
<tr><td>003</td><td>SuperSweet</td><td>$19,064,559</td><td>.78%</td><td>$8,803,370</td><td>3.29%</td><td>$14,156</td></tr>
<tr><td>004</td><td>Idaho Delight</td><td>$18,886,457</td><td>.78%</td><td>$796,435</td><td>.30%</td><td>$26,344</td></tr>
<tr><td>005</td><td>Farm Crisp</td><td>$46,920,308</td><td>1.93%</td><td>$9,517,599</td><td>3.56%</td><td>$26,532</td></tr>
<tr><td>006</td><td>Southern Sweet</td><td>$104,110,765</td><td>4.27%</td><td>$24,028,999</td><td>8.99%</td><td>$64,416</td></tr>
</table>
</td></tr>
</table>

Here is the same calculated measure item with a conditional format applied to it. The conditional format is named Track Below 5% and it displays a yellow arrow when percent of total is below 5%. The next example shows the grid after edits were made to the caption expression, including using the Conditional Format Name variable in the expression.

Builds Caption with...	Example Expression & Caption
Variable for conditional format name	**Expression** % Total - [Conditional Format Name] **Caption in View**

View Name: *Sales by Brand and Account Group*

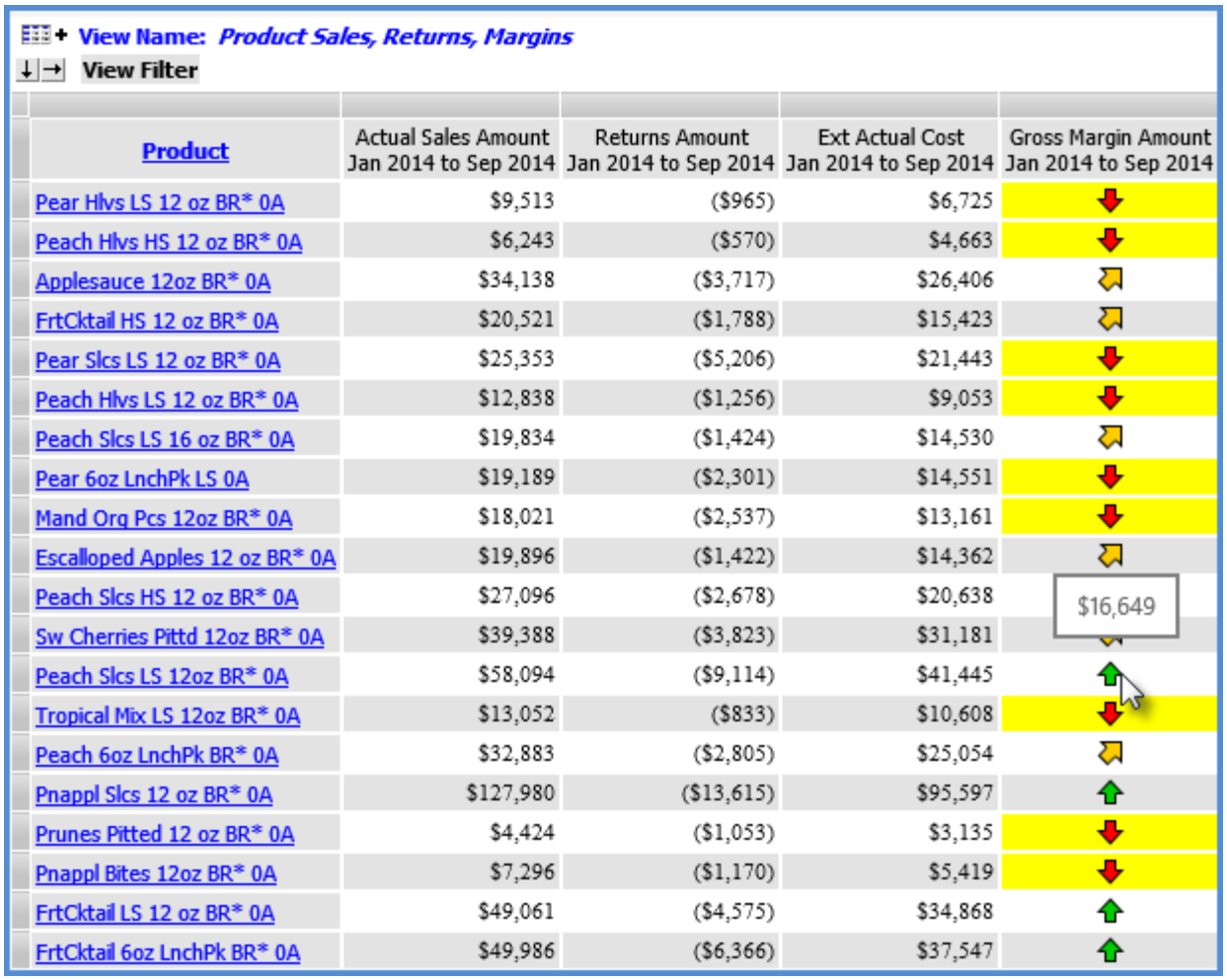
View Filter

	Acct Group >>	90		91		92
	AGrp Long Description	National Distributor		Regional Distributor		Indepen
Product Brand	PBrnd Long Description	Daily Sales Amount $	% Total - Track Below 5%	Daily Sales Amount $	% Total - Track Below 5%	Daily S Amour
001	Tip Top	$53,100,551	2.18%	$28,867,486	10.80%	$32,26
002	Dew Drop	$68,826,054	2.83%	$17,950,501	6.72%	$33,85
003	SuperSweet	$19,064,559	.78%	$8,803,370	3.29%	$14,15
004	Idaho Delight	$18,886,457	.78%	$796,435	.30%	$26,34
005	Farm Crisp	$46,920,308	1.93%	$9,517,599	3.56%	$26,53
006	Southern Sweet	$104,110,765	4.27%	$24,028,999	8.99%	$64,41

Displaying Indicators in Views

You can apply conditional formats to measure items. They provide the ability to visually represent and highlight data in the Viewer grid using indicators that are based on a predefined set of criteria. Conditional formats are applied by setting the Conditional Format property for a measure item to Yes and then using the Select Conditional Format window.

This view has a conditional format applied to highlight ranges of gross margin values. A green, yellow, or red indicator arrow will display depending on the measure item value. Additionally, values that fall into the red conditions are highlighted with a yellow background. The value is hidden but displayed in the measure item pop-up label.



Product	Actual Sales Amount Jan 2014 to Sep 2014	Returns Amount Jan 2014 to Sep 2014	Ext Actual Cost Jan 2014 to Sep 2014	Gross Margin Amount Jan 2014 to Sep 2014
Pear Hlvs LS 12 oz BR* 0A	$9,513	($965)	$6,725	
Peach Hlvs HS 12 oz BR* 0A	$6,243	($570)	$4,663	
Applesauce 12oz BR* 0A	$34,138	($3,717)	$26,406	
FrtCktail HS 12 oz BR* 0A	$20,521	($1,788)	$15,423	
Pear Slcs LS 12 oz BR* 0A	$25,353	($5,206)	$21,443	
Peach Hlvs LS 12 oz BR* 0A	$12,838	($1,256)	$9,053	
Peach Slcs LS 16 oz BR* 0A	$19,834	($1,424)	$14,530	
Pear 6oz LnchPk LS 0A	$19,189	($2,301)	$14,551	
Mand Org Pcs 12oz BR* 0A	$18,021	($2,537)	$13,161	
Escalloped Apples 12 oz BR* 0A	$19,896	($1,422)	$14,362	
Peach Slcs HS 12 oz BR* 0A	$27,096	($2,678)	$20,638	
Sw Cherries Pittd 12oz BR* 0A	$39,388	($3,823)	$31,181	
Peach Slcs LS 12oz BR* 0A	$58,094	($9,114)	$41,445	
Tropical Mix LS 12oz BR* 0A	$13,052	($833)	$10,608	
Peach 6oz LnchPk BR* 0A	$32,883	($2,805)	$25,054	
Pnappl Slcs 12 oz BR* 0A	$127,980	($13,615)	$95,597	
Prunes Pitted 12 oz BR* 0A	$4,424	($1,053)	$3,135	
Pnappl Bites 12oz BR* 0A	$7,296	($1,170)	$5,419	
FrtCktail LS 12 oz BR* 0A	$49,061	($4,575)	$34,868	
FrtCktail 6oz LnchPk BR* 0A	$49,986	($6,366)	$37,547	

Using Time Ranges vs. Time Hierarchies in Views

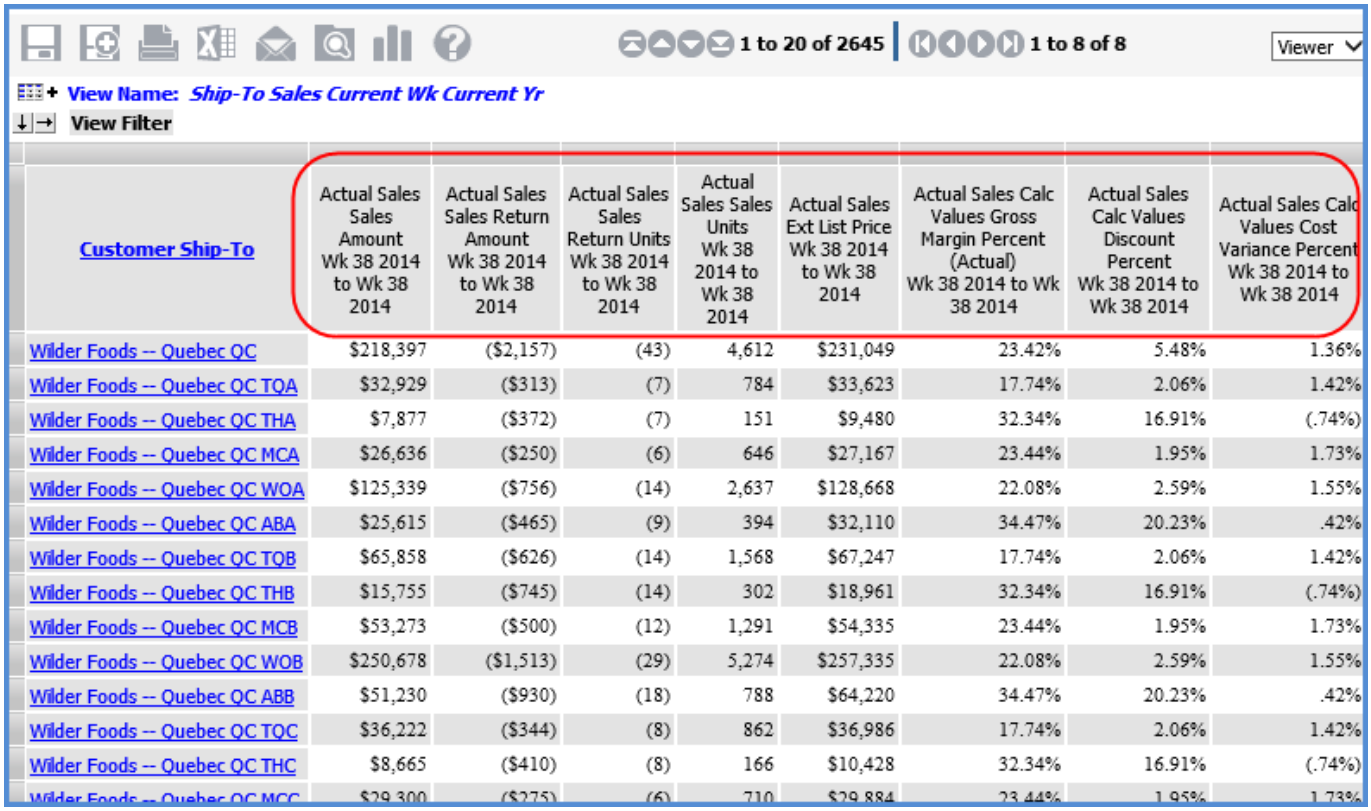
The following table lists examples of when to use time ranges and when to use time hierarchies to achieve various types of time analysis in views. In most cases, you can achieve the desired analysis using time ranges. Views showing these examples are on the next few pages.

Time Ranges used to…	Time Hierarchies used to…
• **Compare Different Measures at the Same Point in Time –** Current Week/Current Year, Weeks YTD, and Previous 3 Months views. • **Compare the Same Measure at Different Points in Time –** Current Week, Current Month, and YTD view; Variance Current Month and YTD Last Year/Current Year view; and Period 26 – 33 in 2012, 2013, 2014 view. • **Display Trending Data –** Rolling 12 Weeks and Current Year by Month views.	• **Display Trending Data –** Last Year/Current Year by Month and All Years by Month views.

Compare Different Measures at the Same Point in Time

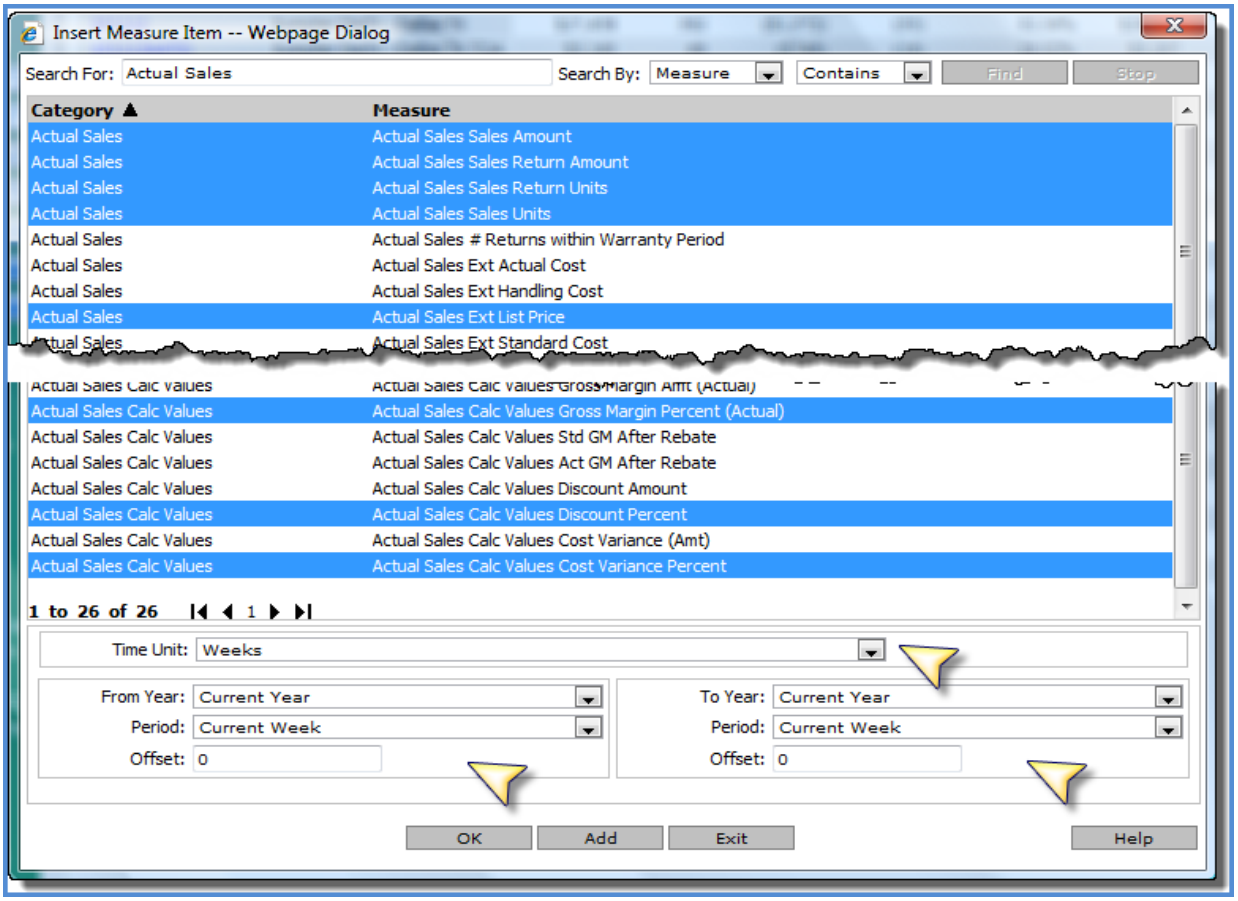
Example 1 – Current Week/Current Year

This view displays measure items based on different Actual Sales measures, and all are for the same point in time – the current week of the current year (in this case, Week 38 of 2014).



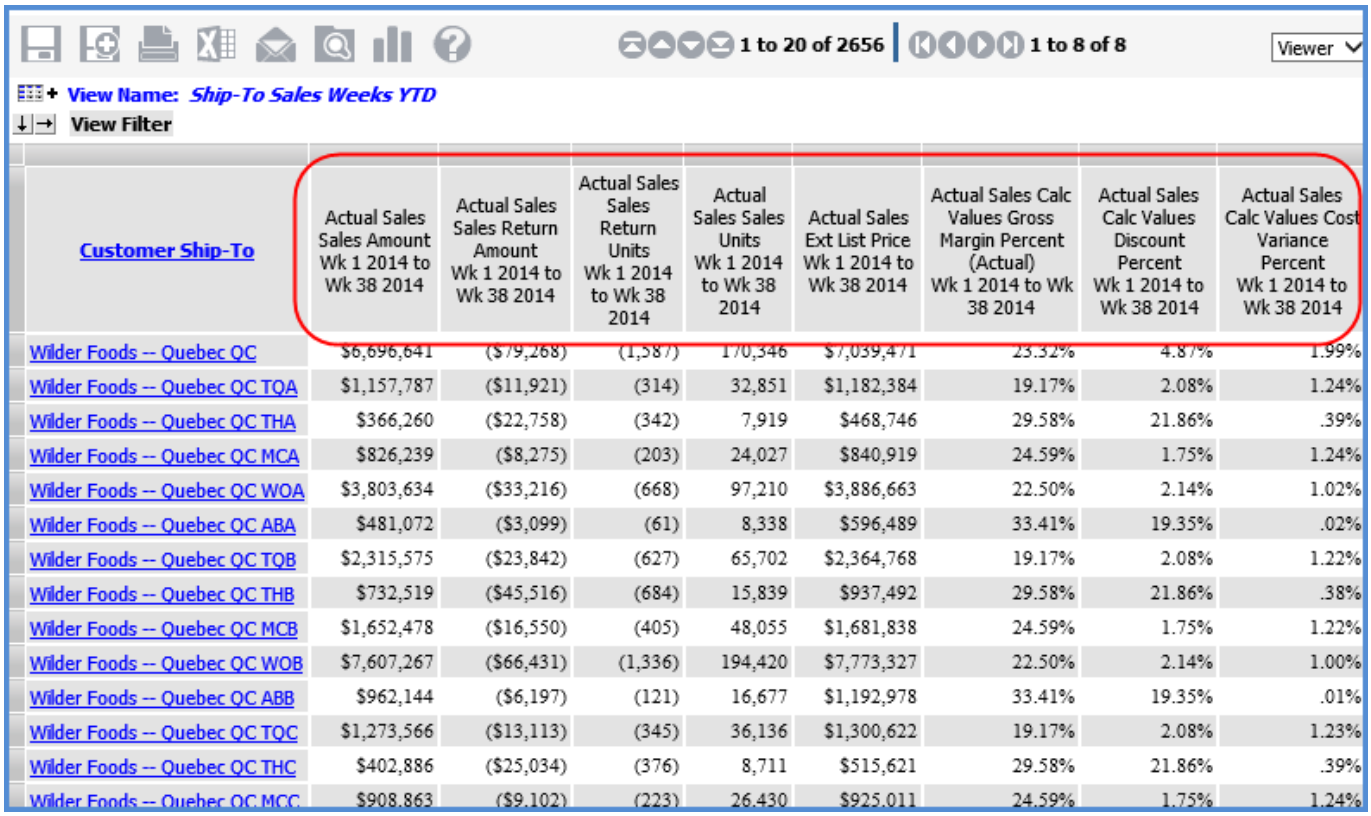
Customer Ship-To	Actual Sales Sales Amount Wk 38 2014 to Wk 38 2014	Actual Sales Sales Return Amount Wk 38 2014 to Wk 38 2014	Actual Sales Sales Return Units Wk 38 2014 to Wk 38 2014	Actual Sales Sales Units Wk 38 2014 to Wk 38 2014	Actual Sales Ext List Price Wk 38 2014 to Wk 38 2014	Actual Sales Calc Values Gross Margin Percent (Actual) Wk 38 2014 to Wk 38 2014	Actual Sales Calc Values Discount Percent Wk 38 2014 to Wk 38 2014	Actual Sales Calc Values Cost Variance Percent Wk 38 2014 to Wk 38 2014
Wilder Foods -- Quebec QC	$218,397	($2,157)	(43)	4,612	$231,049	23.42%	5.48%	1.36%
Wilder Foods -- Quebec QC TQA	$32,929	($313)	(7)	784	$33,623	17.74%	2.06%	1.42%
Wilder Foods -- Quebec QC THA	$7,877	($372)	(7)	151	$9,480	32.34%	16.91%	(.74%)
Wilder Foods -- Quebec QC MCA	$26,636	($250)	(6)	646	$27,167	23.44%	1.95%	1.73%
Wilder Foods -- Quebec QC WOA	$125,339	($756)	(14)	2,637	$128,668	22.08%	2.59%	1.55%
Wilder Foods -- Quebec QC ABA	$25,615	($465)	(9)	394	$32,110	34.47%	20.23%	.42%
Wilder Foods -- Quebec QC TQB	$65,858	($626)	(14)	1,568	$67,247	17.74%	2.06%	1.42%
Wilder Foods -- Quebec QC THB	$15,755	($745)	(14)	302	$18,961	32.34%	16.91%	(.74%)
Wilder Foods -- Quebec QC MCB	$53,273	($500)	(12)	1,291	$54,335	23.44%	1.95%	1.73%
Wilder Foods -- Quebec QC WOB	$250,678	($1,513)	(29)	5,274	$257,335	22.08%	2.59%	1.55%
Wilder Foods -- Quebec QC ABB	$51,230	($930)	(18)	788	$64,220	34.47%	20.23%	.42%
Wilder Foods -- Quebec QC TQC	$36,222	($344)	(8)	862	$36,986	17.74%	2.06%	1.42%
Wilder Foods -- Quebec QC THC	$8,665	($410)	(8)	166	$10,428	32.34%	16.91%	(.74%)
Wilder Foods -- Quebec QC MCC	$29,300	($275)	(6)	710	$29,884	23.44%	1.95%	1.73%

Time range properties selected for the measure items were:



Example 2 – Weeks YTD

This view displays measure items based on different Actual Sales measures, and all are for the same point in time – the weeks YTD for the current year (in this case, Week 1 through Week 38 of 2014).



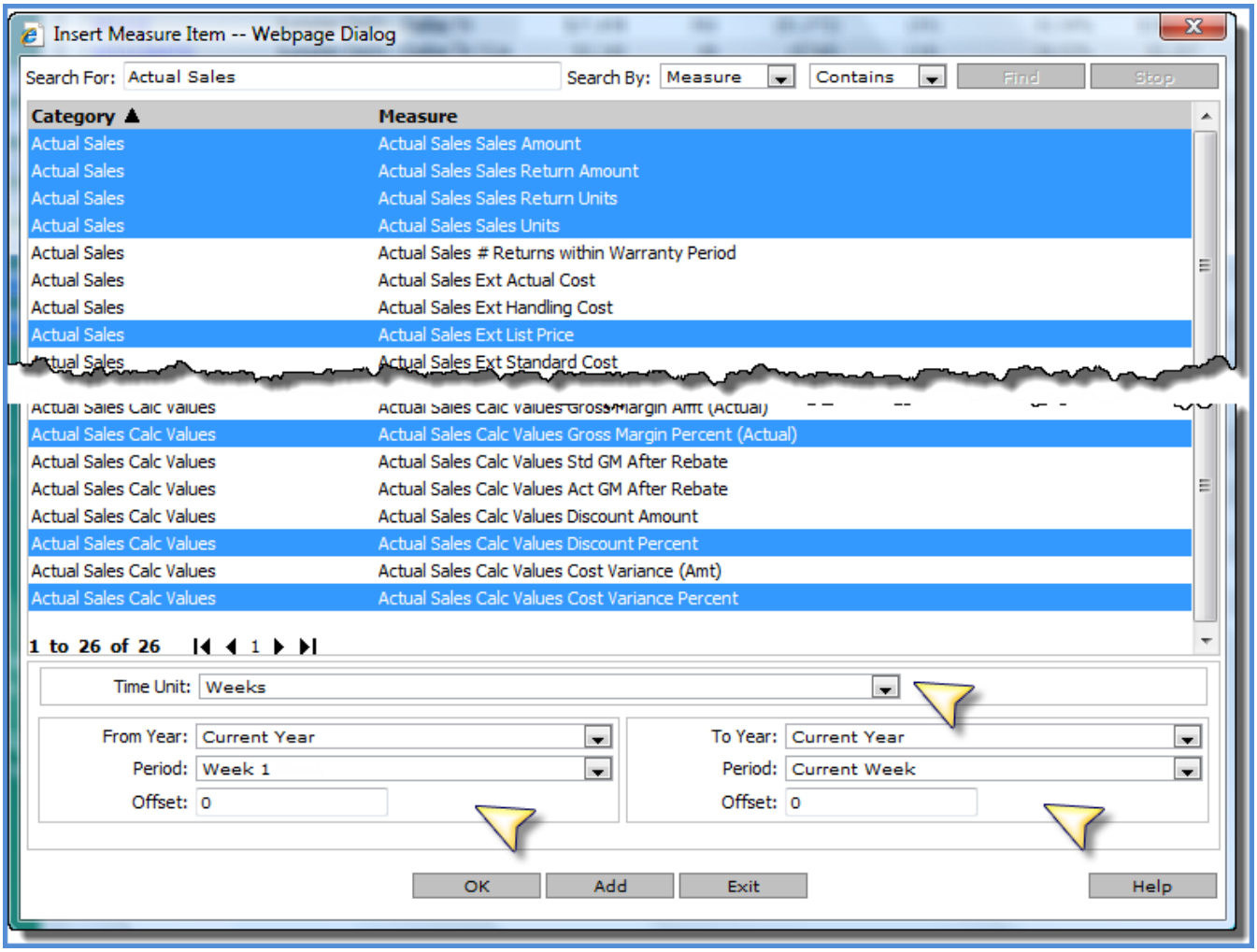
1 to 20 of 2656 | 1 to 8 of 8 | Viewer

View Name: *Ship-To Sales Weeks YTD*

View Filter

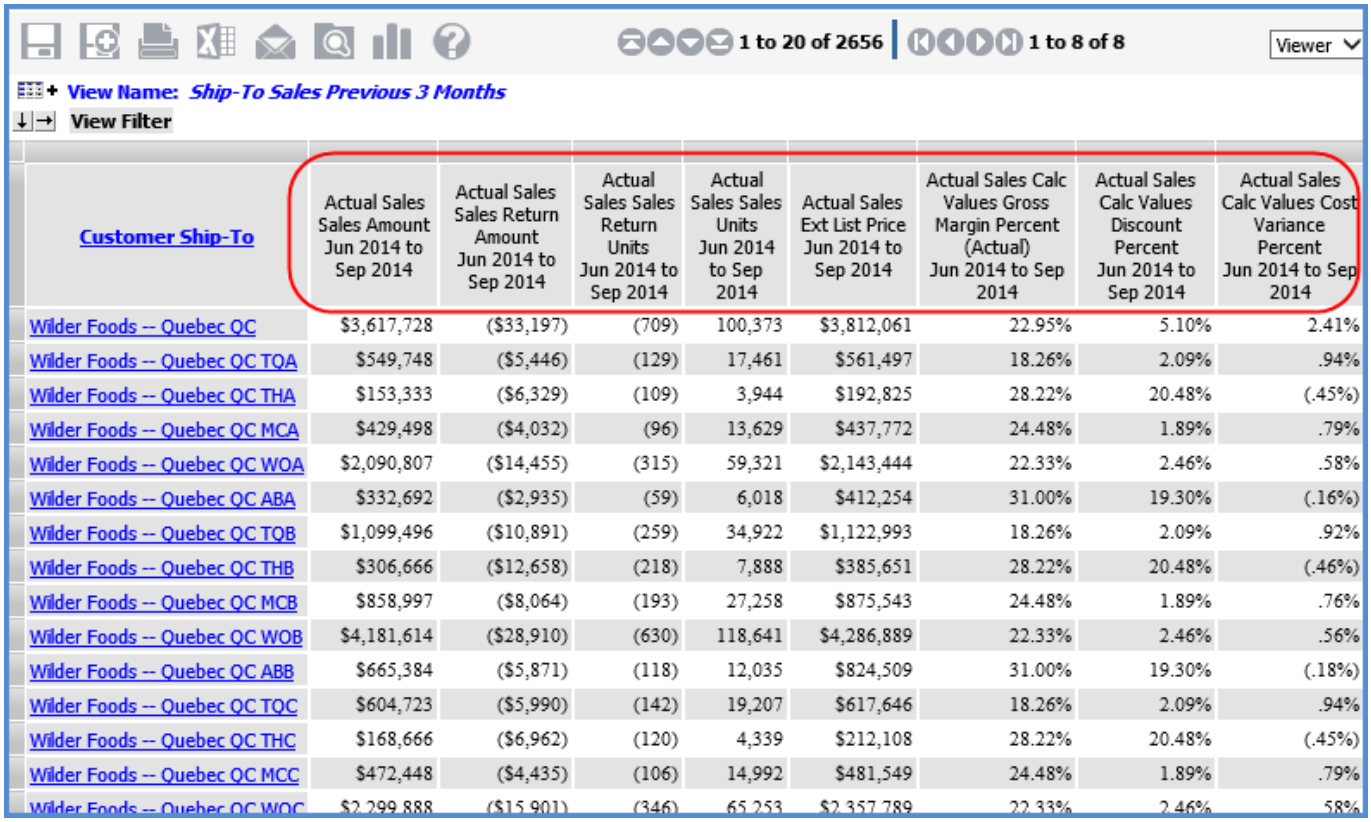
Customer Ship-To	Actual Sales Sales Amount Wk 1 2014 to Wk 38 2014	Actual Sales Sales Return Amount Wk 1 2014 to Wk 38 2014	Actual Sales Sales Return Units Wk 1 2014 to Wk 38 2014	Actual Sales Sales Units Wk 1 2014 to Wk 38 2014	Actual Sales Ext List Price Wk 1 2014 to Wk 38 2014	Actual Sales Calc Values Gross Margin Percent (Actual) Wk 1 2014 to Wk 38 2014	Actual Sales Calc Values Discount Percent Wk 1 2014 to Wk 38 2014	Actual Sales Calc Values Cost Variance Percent Wk 1 2014 to Wk 38 2014
Wilder Foods -- Quebec QC	$6,696,641	($79,268)	(1,587)	170,346	$7,039,471	23.32%	4.87%	1.99%
Wilder Foods -- Quebec QC TQA	$1,157,787	($11,921)	(314)	32,851	$1,182,384	19.17%	2.08%	1.24%
Wilder Foods -- Quebec QC THA	$366,260	($22,758)	(342)	7,919	$468,746	29.58%	21.86%	.39%
Wilder Foods -- Quebec QC MCA	$826,239	($8,275)	(203)	24,027	$840,919	24.59%	1.75%	1.24%
Wilder Foods -- Quebec QC WOA	$3,803,634	($33,216)	(668)	97,210	$3,886,663	22.50%	2.14%	1.02%
Wilder Foods -- Quebec QC ABA	$481,072	($3,099)	(61)	8,338	$596,489	33.41%	19.35%	.02%
Wilder Foods -- Quebec QC TQB	$2,315,575	($23,842)	(627)	65,702	$2,364,768	19.17%	2.08%	1.22%
Wilder Foods -- Quebec QC THB	$732,519	($45,516)	(684)	15,839	$937,492	29.58%	21.86%	.38%
Wilder Foods -- Quebec QC MCB	$1,652,478	($16,550)	(405)	48,055	$1,681,838	24.59%	1.75%	1.22%
Wilder Foods -- Quebec QC WOB	$7,607,267	($66,431)	(1,336)	194,420	$7,773,327	22.50%	2.14%	1.00%
Wilder Foods -- Quebec QC ABB	$962,144	($6,197)	(121)	16,677	$1,192,978	33.41%	19.35%	.01%
Wilder Foods -- Quebec QC TQC	$1,273,566	($13,113)	(345)	36,136	$1,300,622	19.17%	2.08%	1.23%
Wilder Foods -- Quebec QC THC	$402,886	($25,034)	(376)	8,711	$515,621	29.58%	21.86%	.39%
Wilder Foods -- Quebec QC MCC	$908,863	($9,102)	(223)	26,430	$925,011	24.59%	1.75%	1.24%

Time range properties selected for the measure items were:



Example 3 – Previous 3 Months

This view displays measure items based on different Actual Sales measures, and all are for the same point in time – the three months prior to the current month of the current year (in this case, June 2014 up to the current month of September 2014).



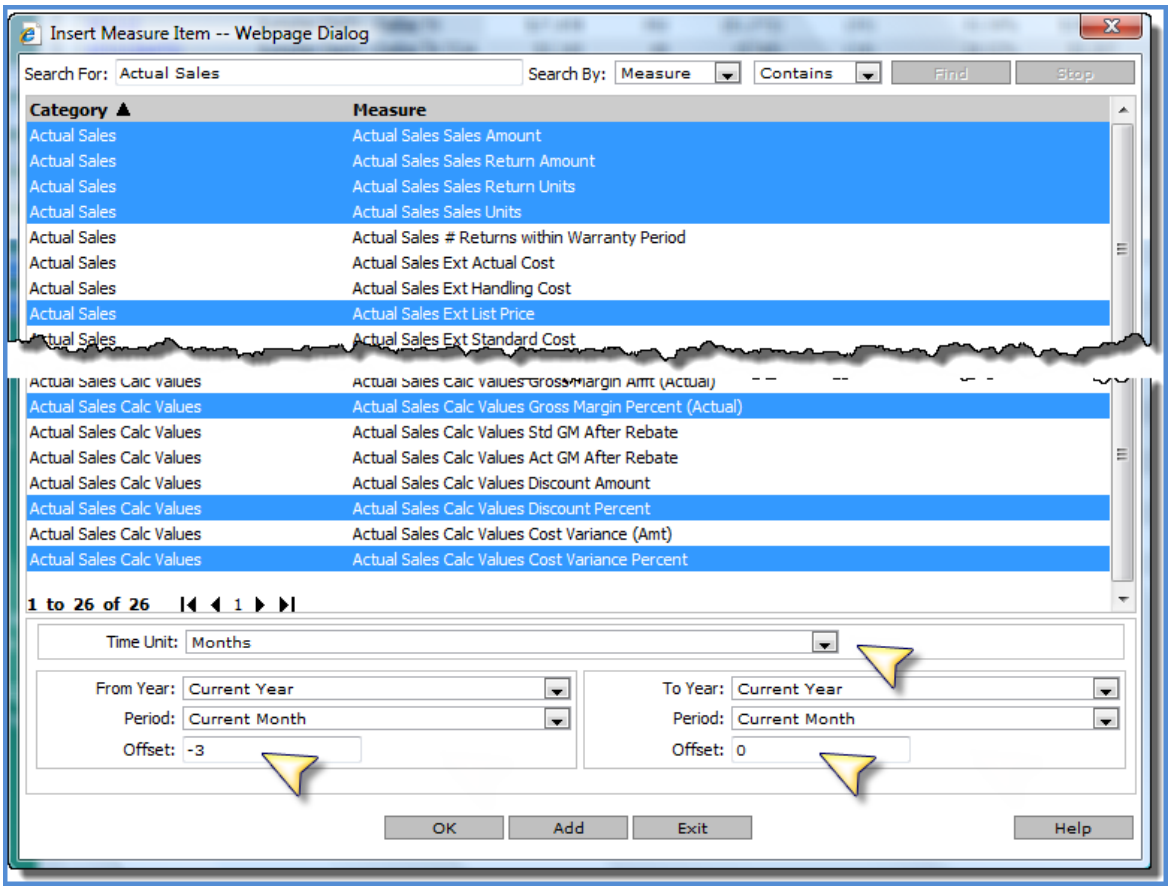
1 to 20 of 2656 | 1 to 8 of 8 | Viewer

View Name: *Ship-To Sales Previous 3 Months*

View Filter

Customer Ship-To	Actual Sales Sales Amount Jun 2014 to Sep 2014	Actual Sales Sales Return Amount Jun 2014 to Sep 2014	Actual Sales Sales Return Units Jun 2014 to Sep 2014	Actual Sales Sales Units Jun 2014 to Sep 2014	Actual Sales Ext List Price Jun 2014 to Sep 2014	Actual Sales Calc Values Gross Margin Percent (Actual) Jun 2014 to Sep 2014	Actual Sales Calc Values Discount Percent Jun 2014 to Sep 2014	Actual Sales Calc Values Cost Variance Percent Jun 2014 to Sep 2014
Wilder Foods -- Quebec QC	$3,617,728	($33,197)	(709)	100,373	$3,812,061	22.95%	5.10%	2.41%
Wilder Foods -- Quebec QC TQA	$549,748	($5,446)	(129)	17,461	$561,497	18.26%	2.09%	.94%
Wilder Foods -- Quebec QC THA	$153,333	($6,329)	(109)	3,944	$192,825	28.22%	20.48%	(.45%)
Wilder Foods -- Quebec QC MCA	$429,498	($4,032)	(96)	13,629	$437,772	24.48%	1.89%	.79%
Wilder Foods -- Quebec QC WOA	$2,090,807	($14,455)	(315)	59,321	$2,143,444	22.33%	2.46%	.58%
Wilder Foods -- Quebec QC ABA	$332,692	($2,935)	(59)	6,018	$412,254	31.00%	19.30%	(.16%)
Wilder Foods -- Quebec QC TQB	$1,099,496	($10,891)	(259)	34,922	$1,122,993	18.26%	2.09%	.92%
Wilder Foods -- Quebec QC THB	$306,666	($12,658)	(218)	7,888	$385,651	28.22%	20.48%	(.46%)
Wilder Foods -- Quebec QC MCB	$858,997	($8,064)	(193)	27,258	$875,543	24.48%	1.89%	.76%
Wilder Foods -- Quebec QC WOB	$4,181,614	($28,910)	(630)	118,641	$4,286,889	22.33%	2.46%	.56%
Wilder Foods -- Quebec QC ABB	$665,384	($5,871)	(118)	12,035	$824,509	31.00%	19.30%	(.18%)
Wilder Foods -- Quebec QC TQC	$604,723	($5,990)	(142)	19,207	$617,646	18.26%	2.09%	.94%
Wilder Foods -- Quebec QC THC	$168,666	($6,962)	(120)	4,339	$212,108	28.22%	20.48%	(.45%)
Wilder Foods -- Quebec QC MCC	$472,448	($4,435)	(106)	14,992	$481,549	24.48%	1.89%	.79%
Wilder Foods -- Quebec QC WOC	$2,299,888	($15,901)	(346)	65,253	$2,357,789	22.33%	2.46%	.58%

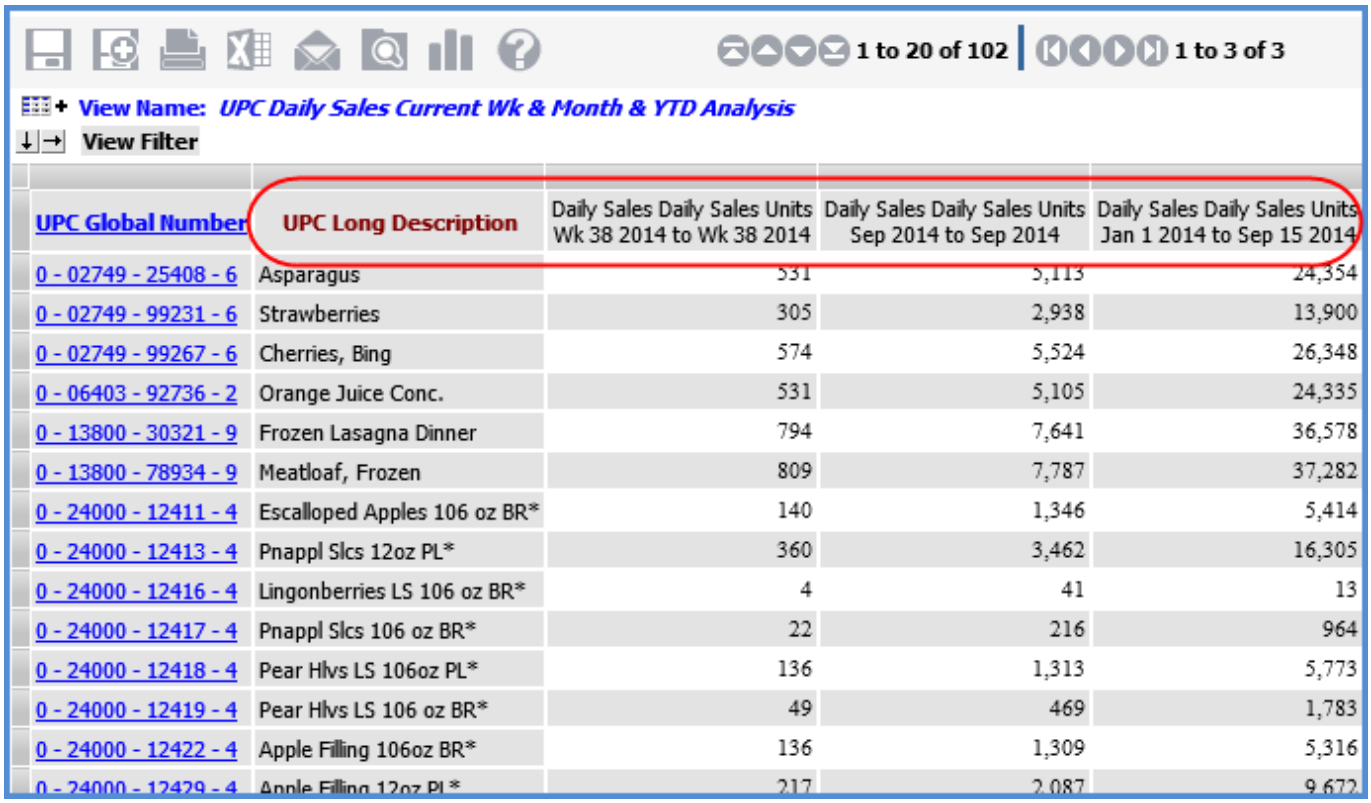
Offsets were used to define part of the time range for the measure items. The “From” point in time was defined by specifying a -3 offset to the Current Month of the Current Year. Here are the rest of the time range properties:



Compare the Same Measure at Different Points in Time

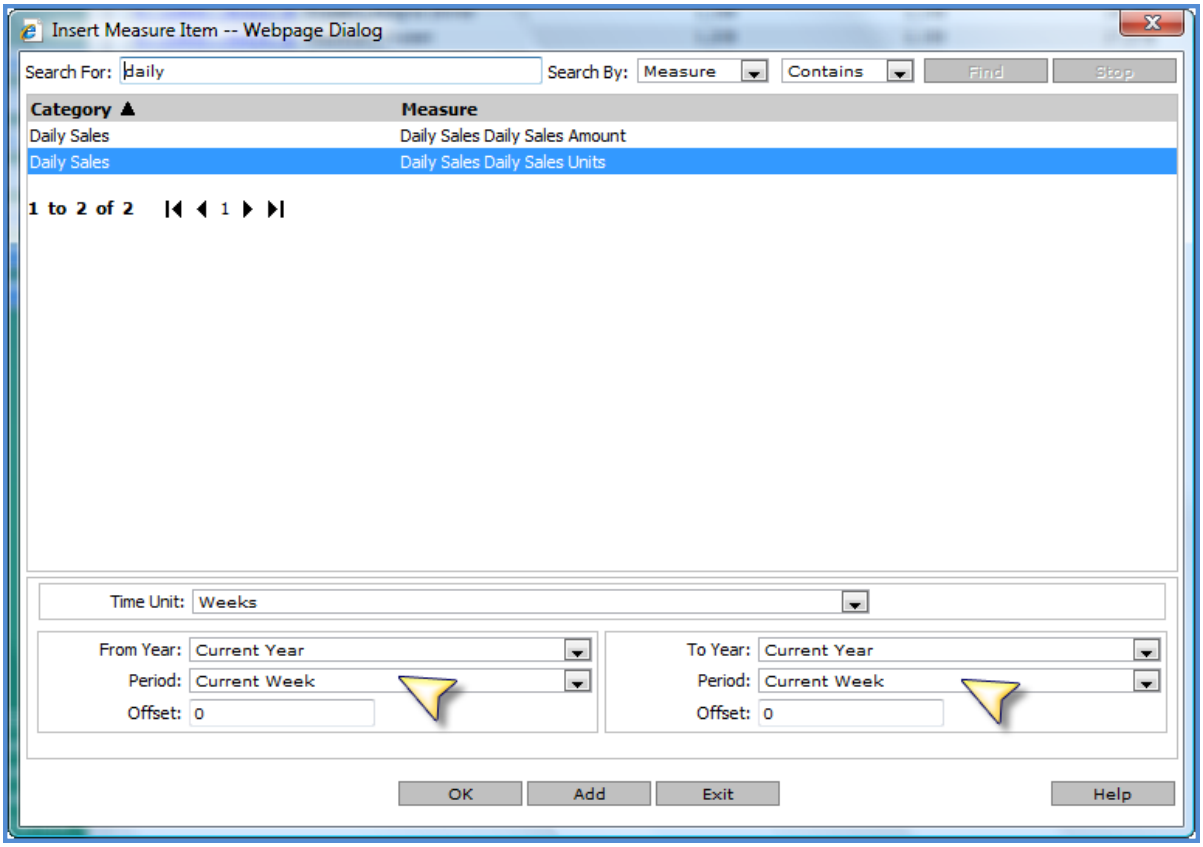
Example 1 – Current Week, Current Month, and YTD

All the measure items in this example are based on the Daily Sales Daily Sales Units measure. The different points in time being analyzed are current week, current month, and YTD – in this case Week 38, September, and January 1 through September 15 of 2014.

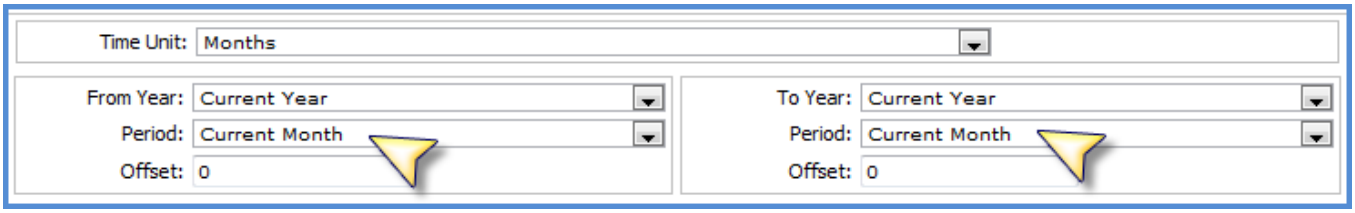


UPC Global Number	UPC Long Description	Daily Sales Daily Sales Units Wk 38 2014 to Wk 38 2014	Daily Sales Daily Sales Units Sep 2014 to Sep 2014	Daily Sales Daily Sales Units Jan 1 2014 to Sep 15 2014
0 - 02749 - 25408 - 6	Asparagus	531	5,113	24,354
0 - 02749 - 99231 - 6	Strawberries	305	2,938	13,900
0 - 02749 - 99267 - 6	Cherries, Bing	574	5,524	26,348
0 - 06403 - 92736 - 2	Orange Juice Conc.	531	5,105	24,335
0 - 13800 - 30321 - 9	Frozen Lasagna Dinner	794	7,641	36,578
0 - 13800 - 78934 - 9	Meatloaf, Frozen	809	7,787	37,282
0 - 24000 - 12411 - 4	Escalloped Apples 106 oz BR*	140	1,346	5,414
0 - 24000 - 12413 - 4	Pnappl Slcs 12oz PL*	360	3,462	16,305
0 - 24000 - 12416 - 4	Lingonberries LS 106 oz BR*	4	41	13
0 - 24000 - 12417 - 4	Pnappl Slcs 106 oz BR*	22	216	964
0 - 24000 - 12418 - 4	Pear Hlvs LS 106oz PL*	136	1,313	5,773
0 - 24000 - 12419 - 4	Pear Hlvs LS 106 oz BR*	49	469	1,783
0 - 24000 - 12422 - 4	Apple Filling 106oz BR*	136	1,309	5,316
0 - 24000 - 12429 - 4	Apple Filling 12oz PL*	217	2,087	9,672

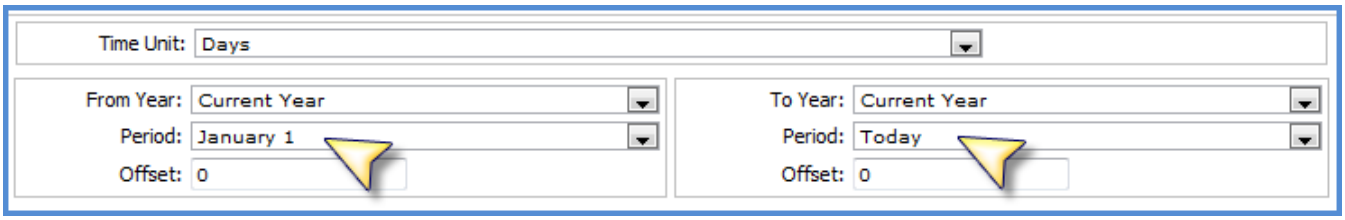
Time range properties for the current week were:



For current month:

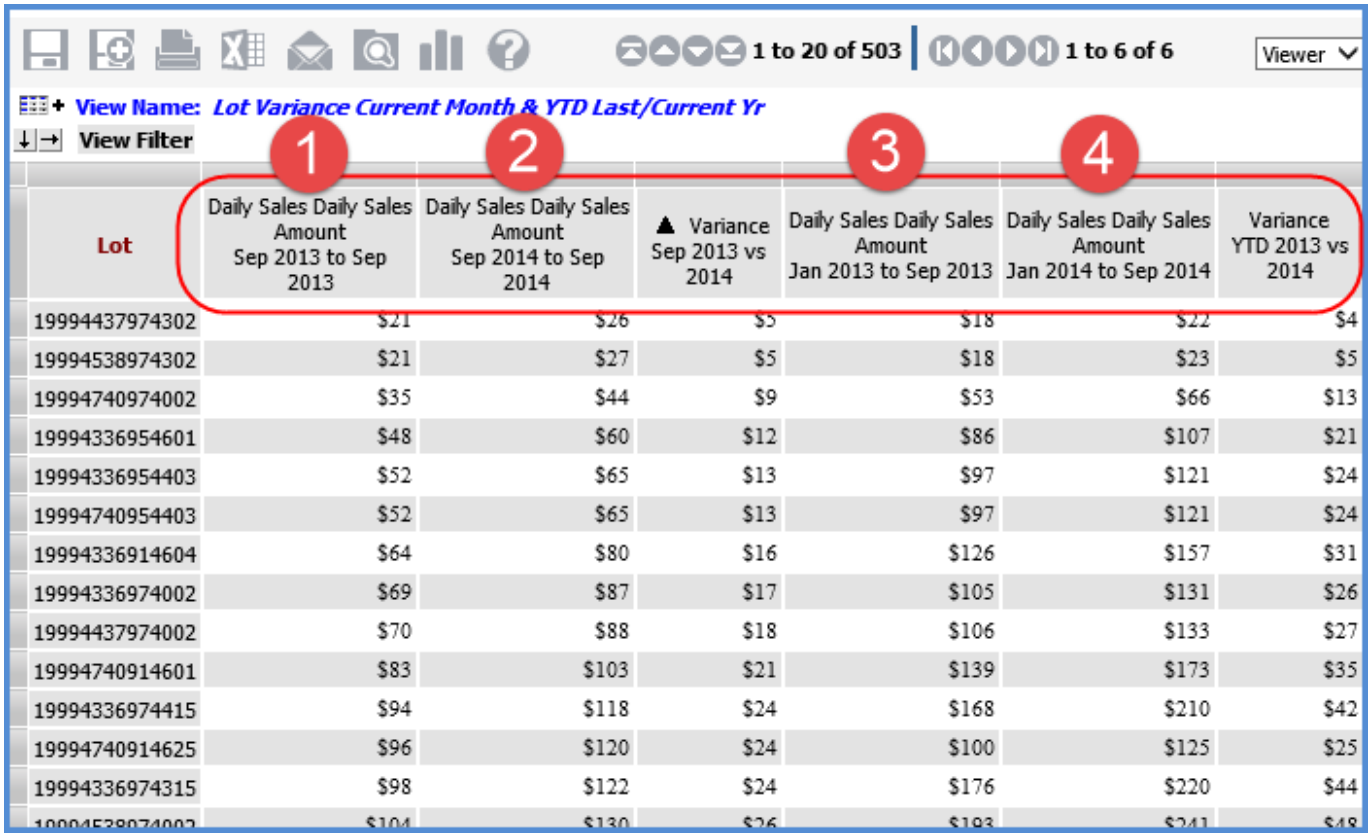


For YTD:



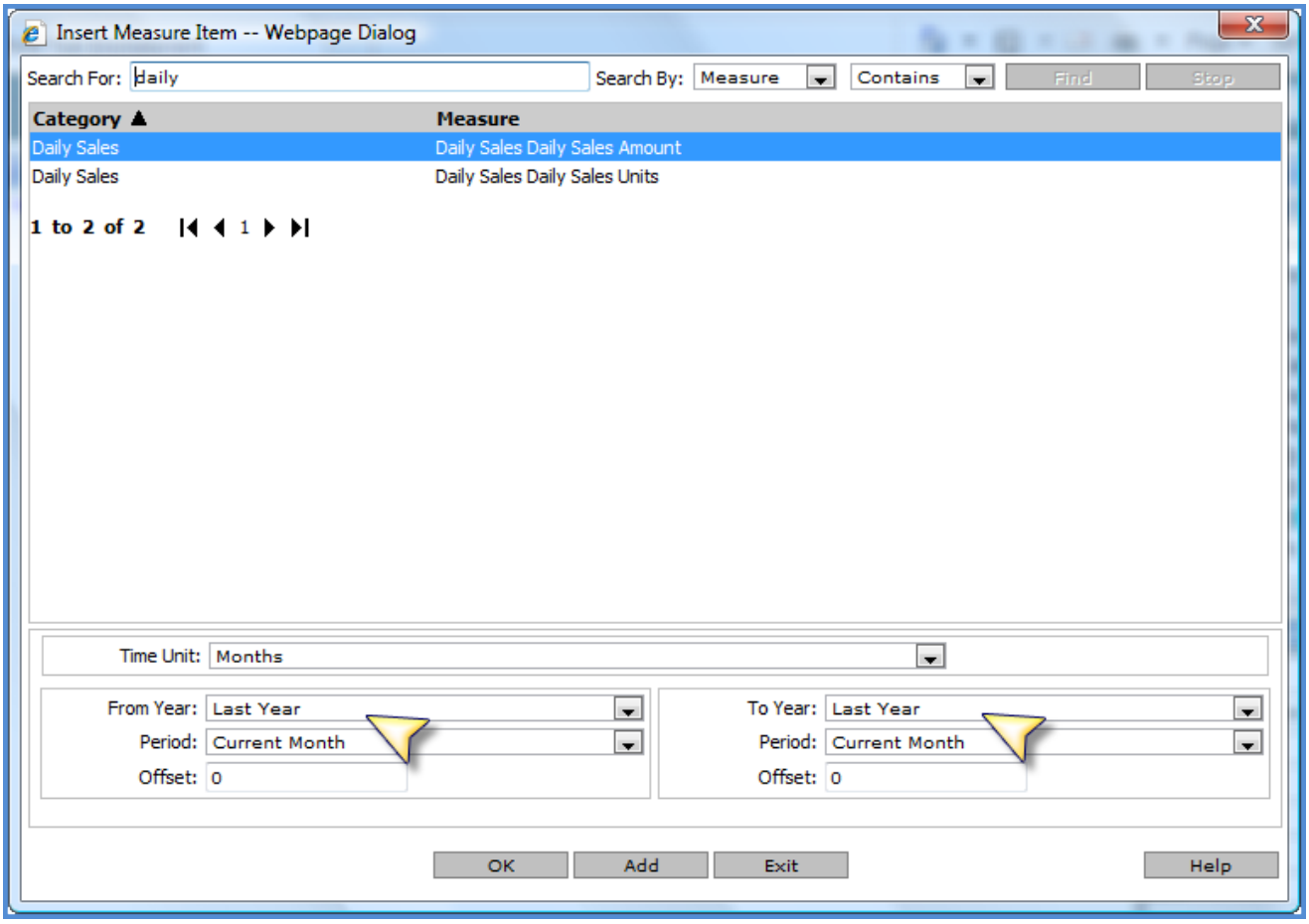
Example 2 – Variance Current Month and YTD Last Year/Current Year

The 4 regular measure items in this example are based on the Daily Sales Daily Sales Amount measure. The different points in time being analyzed are current month of last year and current year, and the YTD for last year and current year (in this case, September of 2013 vs 2014 and YTD 2013 vs 2014). Calculated measure items show the variance amount from last year to current year.

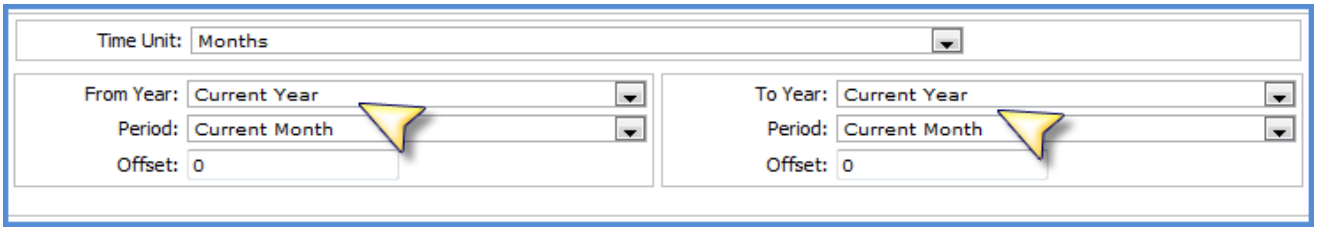


Lot	Daily Sales Daily Sales Amount Sep 2013 to Sep 2013	Daily Sales Daily Sales Amount Sep 2014 to Sep 2014	▲ Variance Sep 2013 vs 2014	Daily Sales Daily Sales Amount Jan 2013 to Sep 2013	Daily Sales Daily Sales Amount Jan 2014 to Sep 2014	Variance YTD 2013 vs 2014
19994437974302	$21	$26	$5	$18	$22	$4
19994538974302	$21	$27	$5	$18	$23	$5
19994740974002	$35	$44	$9	$53	$66	$13
19994336954601	$48	$60	$12	$86	$107	$21
19994336954403	$52	$65	$13	$97	$121	$24
19994740954403	$52	$65	$13	$97	$121	$24
19994336914604	$64	$80	$16	$126	$157	$31
19994336974002	$69	$87	$17	$105	$131	$26
19994437974002	$70	$88	$18	$106	$133	$27
19994740914601	$83	$103	$21	$139	$173	$35
19994336974415	$94	$118	$24	$168	$210	$42
19994740914625	$96	$120	$24	$100	$125	$25
19994336974315	$98	$122	$24	$176	$220	$44
19994538974002	$104	$130	$26	$193	$241	$48

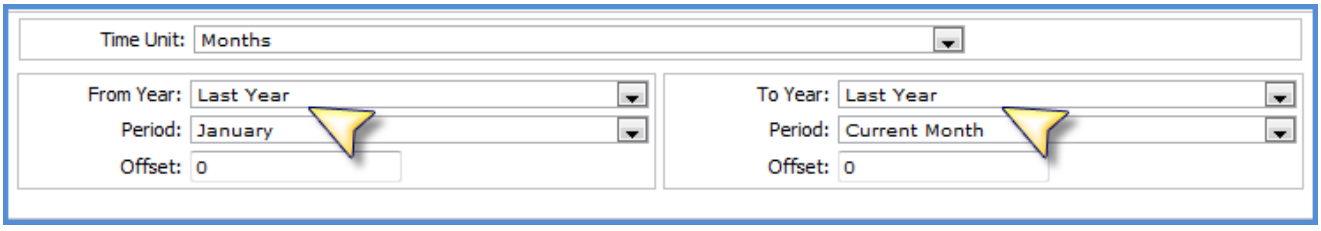
Time range properties for the current month of last year measure item were:



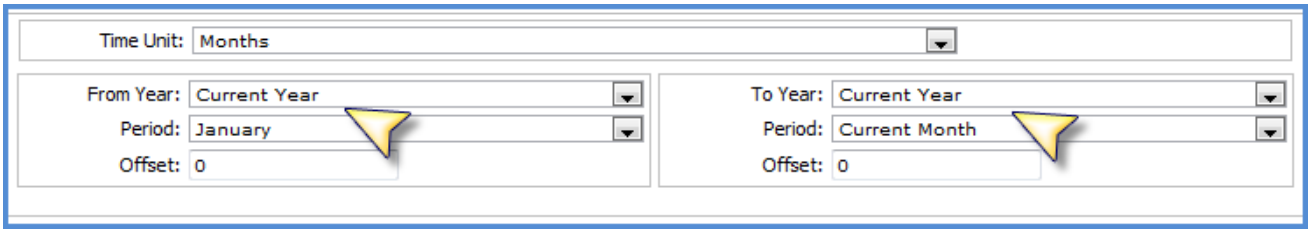
For current month current year:



For YTD last year:

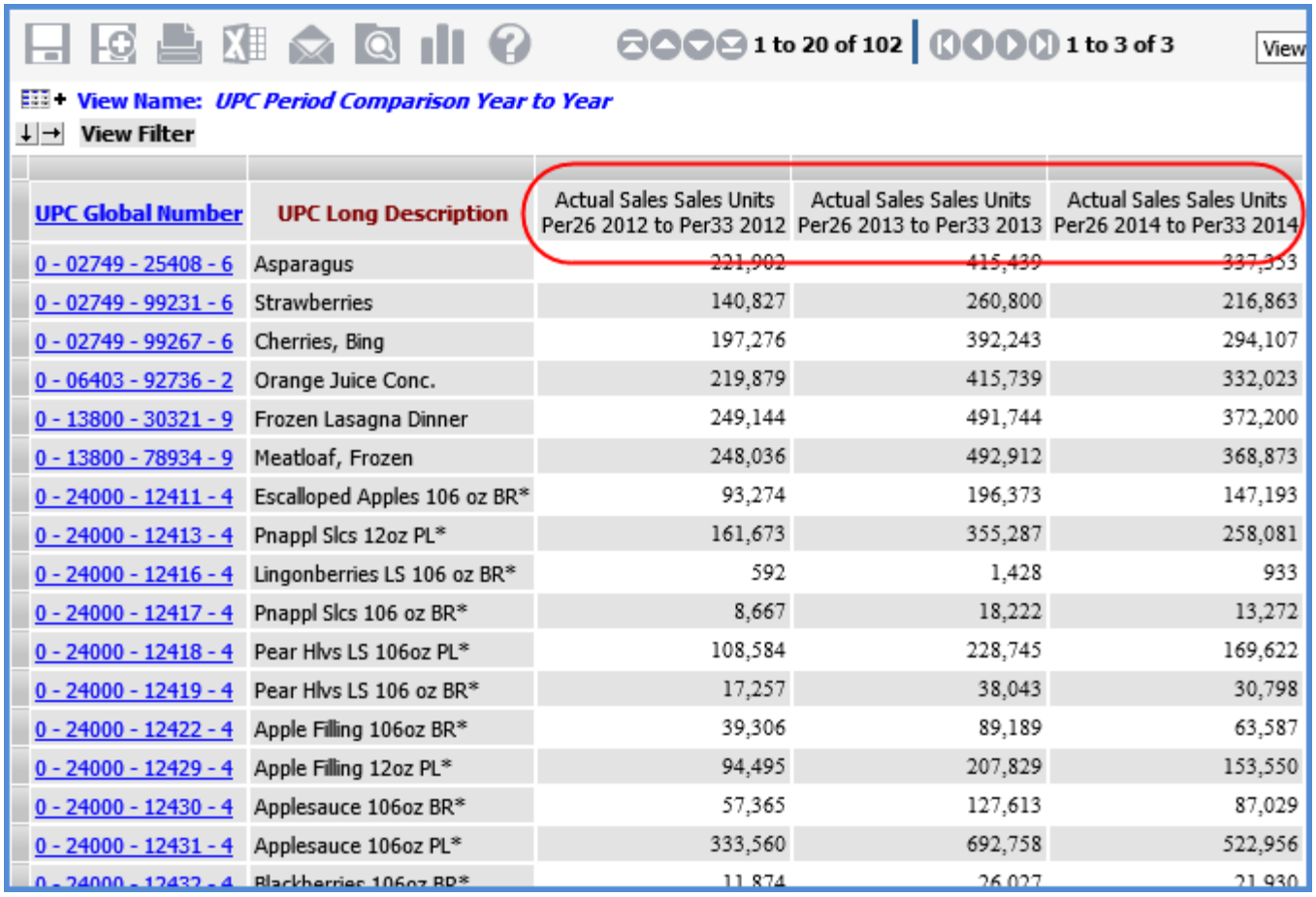


For YTD current year:



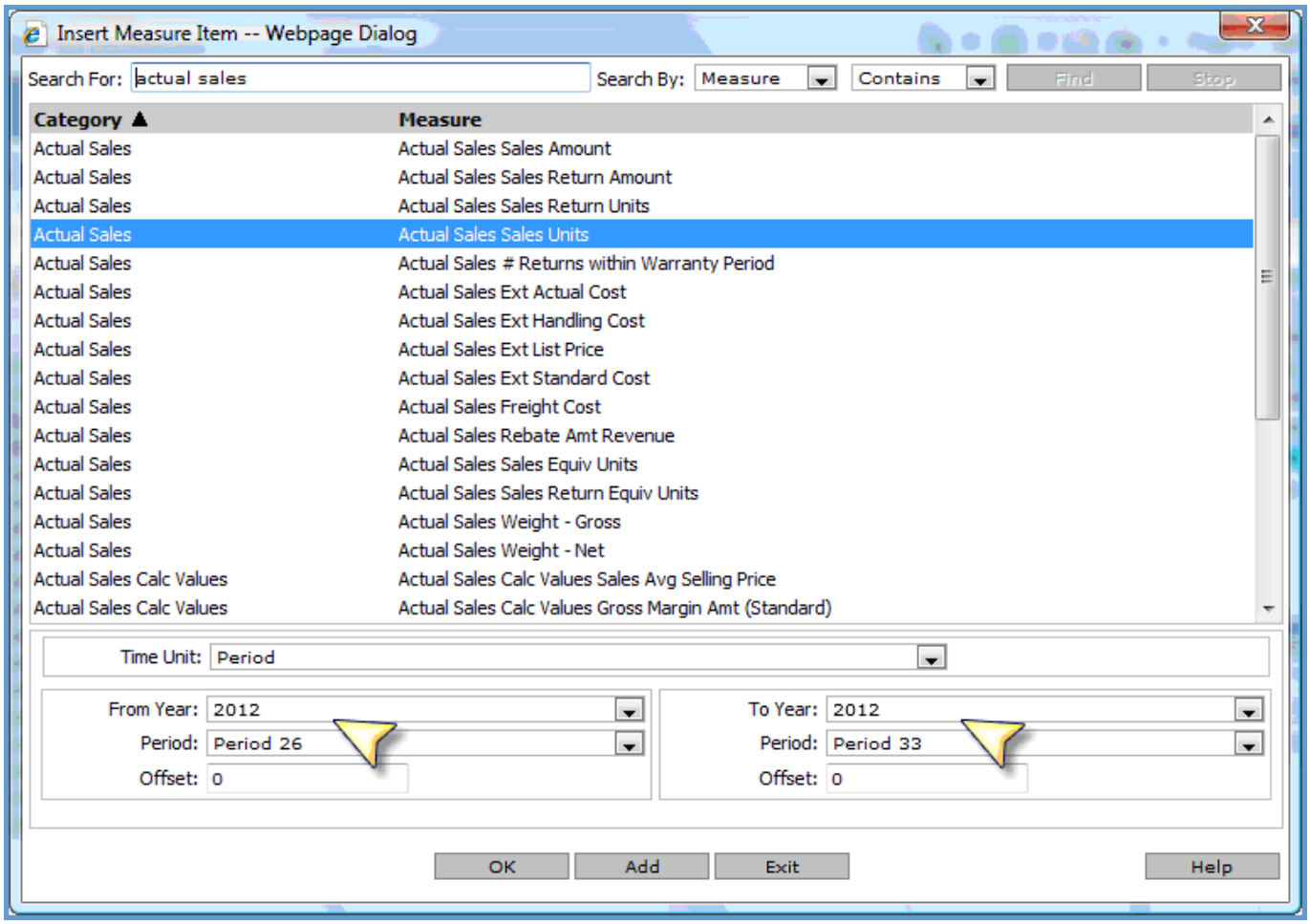
Example 3 – Period 26 – 33 in 2012, 2013, 2014

All measure items in this view are based on the Actual Sales Sales Units measure. The same periods for several different years are being analyzed – Period 26 through 33 in 2012, 2013, and 2014. That type of analysis is helpful for comparing unique periods of time year by year, such as comparing seasonal sales promotions year by year.



UPC Global Number	UPC Long Description	Actual Sales Sales Units Per26 2012 to Per33 2012	Actual Sales Sales Units Per26 2013 to Per33 2013	Actual Sales Sales Units Per26 2014 to Per33 2014
0 - 02749 - 25408 - 6	Asparagus	221,902	415,439	337,353
0 - 02749 - 99231 - 6	Strawberries	140,827	260,800	216,863
0 - 02749 - 99267 - 6	Cherries, Bing	197,276	392,243	294,107
0 - 06403 - 92736 - 2	Orange Juice Conc.	219,879	415,739	332,023
0 - 13800 - 30321 - 9	Frozen Lasagna Dinner	249,144	491,744	372,200
0 - 13800 - 78934 - 9	Meatloaf, Frozen	248,036	492,912	368,873
0 - 24000 - 12411 - 4	Escalloped Apples 106 oz BR*	93,274	196,373	147,193
0 - 24000 - 12413 - 4	Pnappl Slcs 12oz PL*	161,673	355,287	258,081
0 - 24000 - 12416 - 4	Lingonberries LS 106 oz BR*	592	1,428	933
0 - 24000 - 12417 - 4	Pnappl Slcs 106 oz BR*	8,667	18,222	13,272
0 - 24000 - 12418 - 4	Pear Hlvs LS 106oz PL*	108,584	228,745	169,622
0 - 24000 - 12419 - 4	Pear Hlvs LS 106 oz BR*	17,257	38,043	30,798
0 - 24000 - 12422 - 4	Apple Filling 106oz BR*	39,306	89,189	63,587
0 - 24000 - 12429 - 4	Apple Filling 12oz PL*	94,495	207,829	153,550
0 - 24000 - 12430 - 4	Applesauce 106oz BR*	57,365	127,613	87,029
0 - 24000 - 12431 - 4	Applesauce 106oz PL*	333,560	692,758	522,956
0 - 24000 - 12432 - 4	Blackberries 106oz BR*	11,874	26,027	21,930

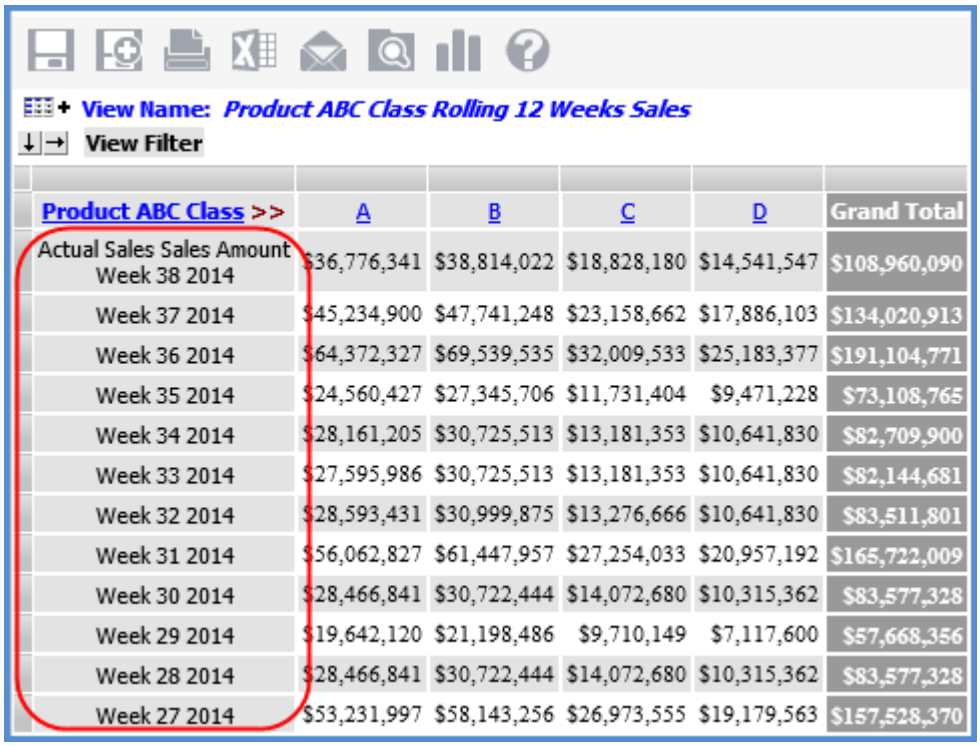
Time range properties for the 2012 measure item were as follows. The other two measure items used the same properties except for 2013 and 2014 as the From Year and To Year.



Display Trending Data – With Time Ranges

Example 1 – Rolling 12 Weeks

This view shows 12 rolling weeks of sales data, for the current week and 11 prior weeks. In this case, that is Week 38 back to Week 27 of 2014.

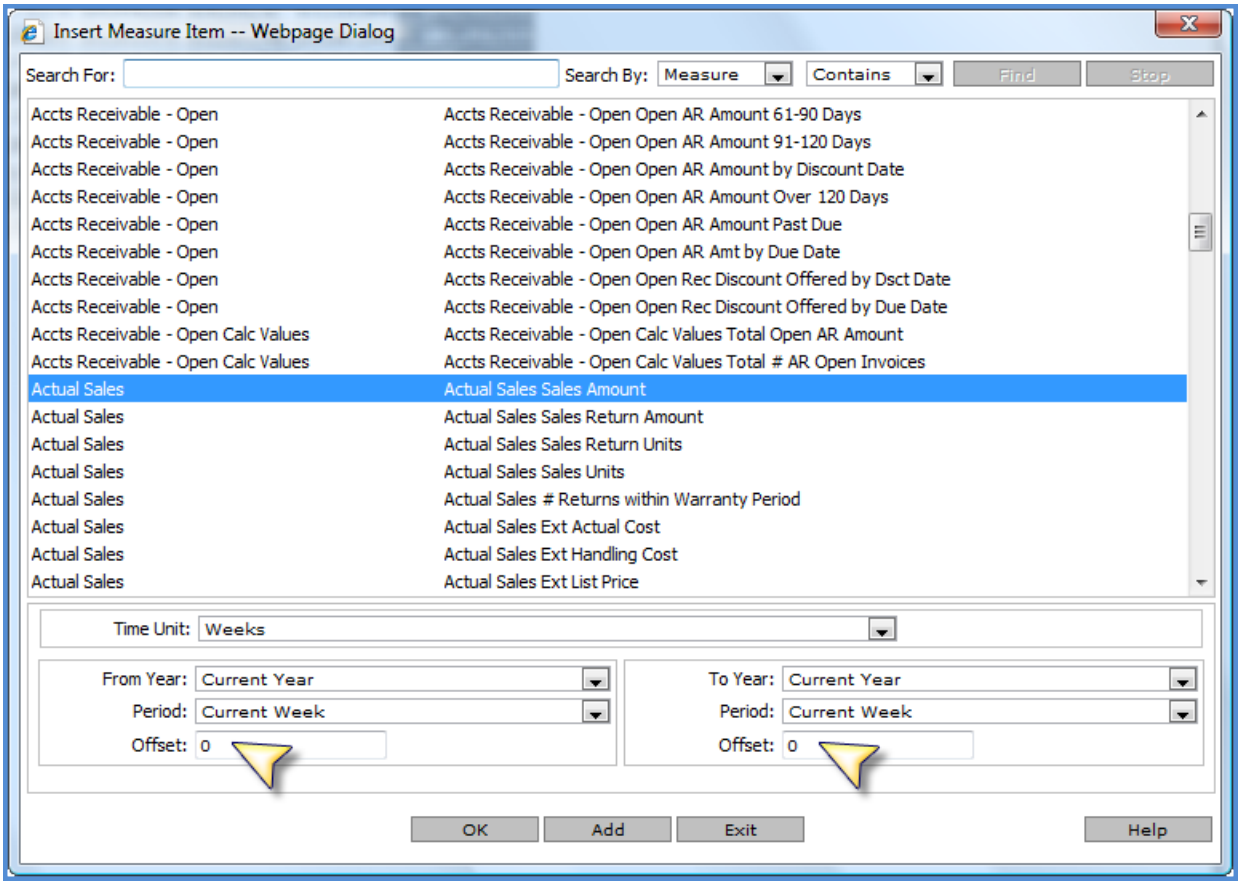


View Name: *Product ABC Class Rolling 12 Weeks Sales*

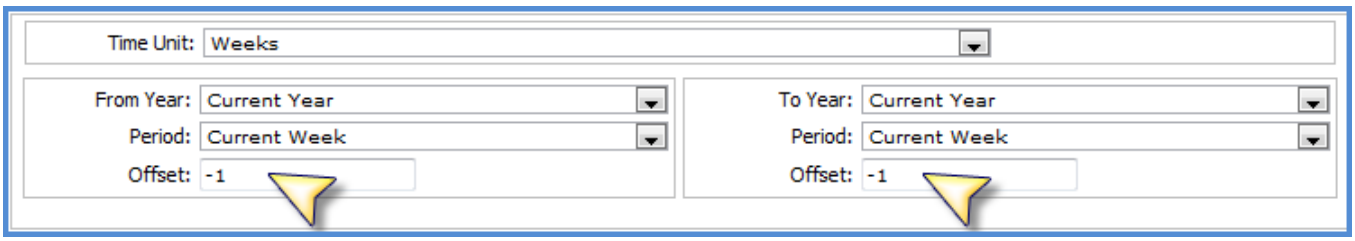
View Filter

Product ABC Class >>	A	B	C	D	Grand Total
Actual Sales Sales Amount Week 38 2014	$36,776,341	$38,814,022	$18,828,180	$14,541,547	$108,960,090
Week 37 2014	$45,234,900	$47,741,248	$23,158,662	$17,886,103	$134,020,913
Week 36 2014	$64,372,327	$69,539,535	$32,009,533	$25,183,377	$191,104,771
Week 35 2014	$24,560,427	$27,345,706	$11,731,404	$9,471,228	$73,108,765
Week 34 2014	$28,161,205	$30,725,513	$13,181,353	$10,641,830	$82,709,900
Week 33 2014	$27,595,986	$30,725,513	$13,181,353	$10,641,830	$82,144,681
Week 32 2014	$28,593,431	$30,999,875	$13,276,666	$10,641,830	$83,511,801
Week 31 2014	$56,062,827	$61,447,957	$27,254,033	$20,957,192	$165,722,009
Week 30 2014	$28,466,841	$30,722,444	$14,072,680	$10,315,362	$83,577,328
Week 29 2014	$19,642,120	$21,198,486	$9,710,149	$7,117,600	$57,668,356
Week 28 2014	$28,466,841	$30,722,444	$14,072,680	$10,315,362	$83,577,328
Week 27 2014	$53,231,997	$58,143,256	$26,973,555	$19,179,563	$157,528,370

Time range properties for the current week were:

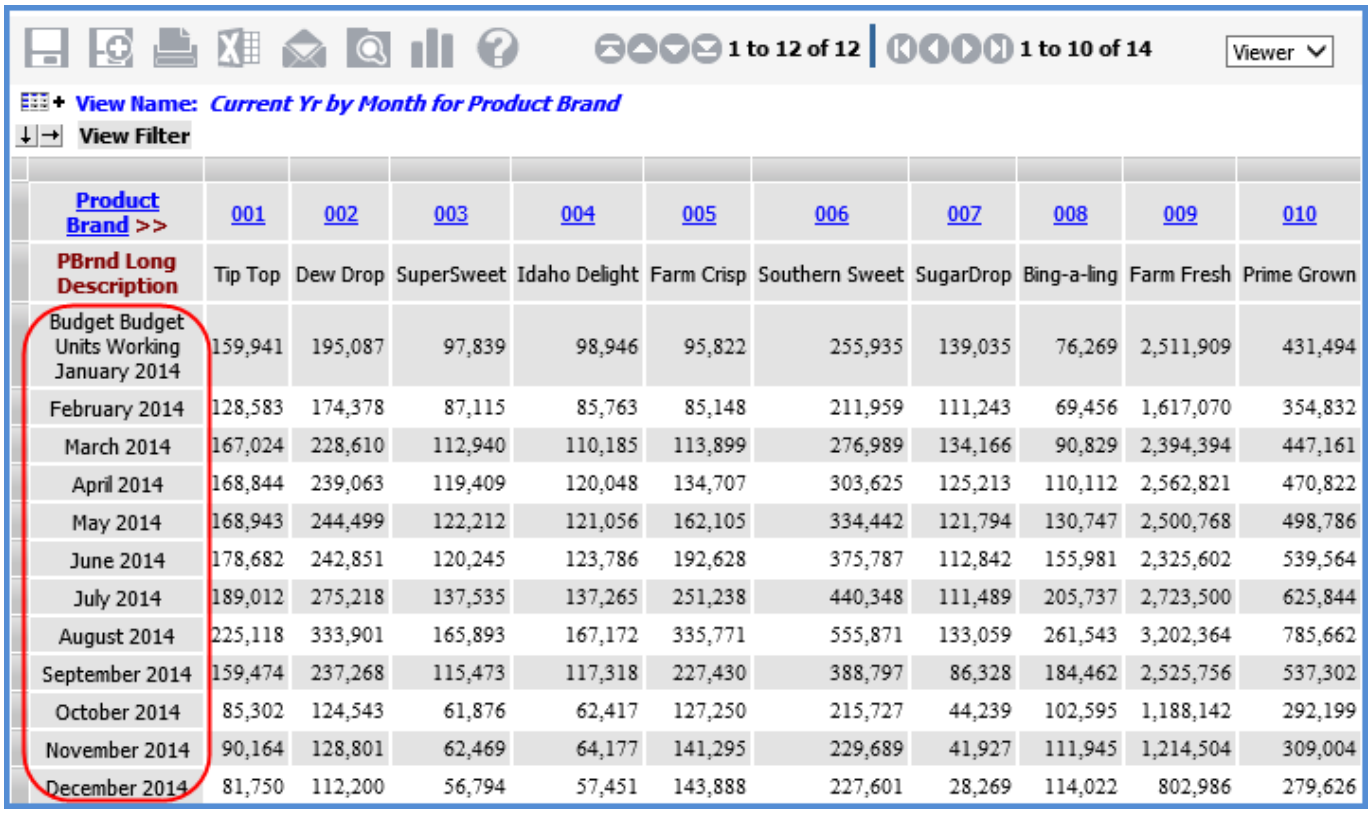


Offsets to the Current Week of the Current Year were used to create the rest of the measure items. For example, the From and To offsets were both set to -1 for the prior week measure item (Week 36), were set to -2 for the 2 weeks ago measure item (Week 35), and so on through using -11 From and To offsets for the 12 weeks ago measure item (Week 26).



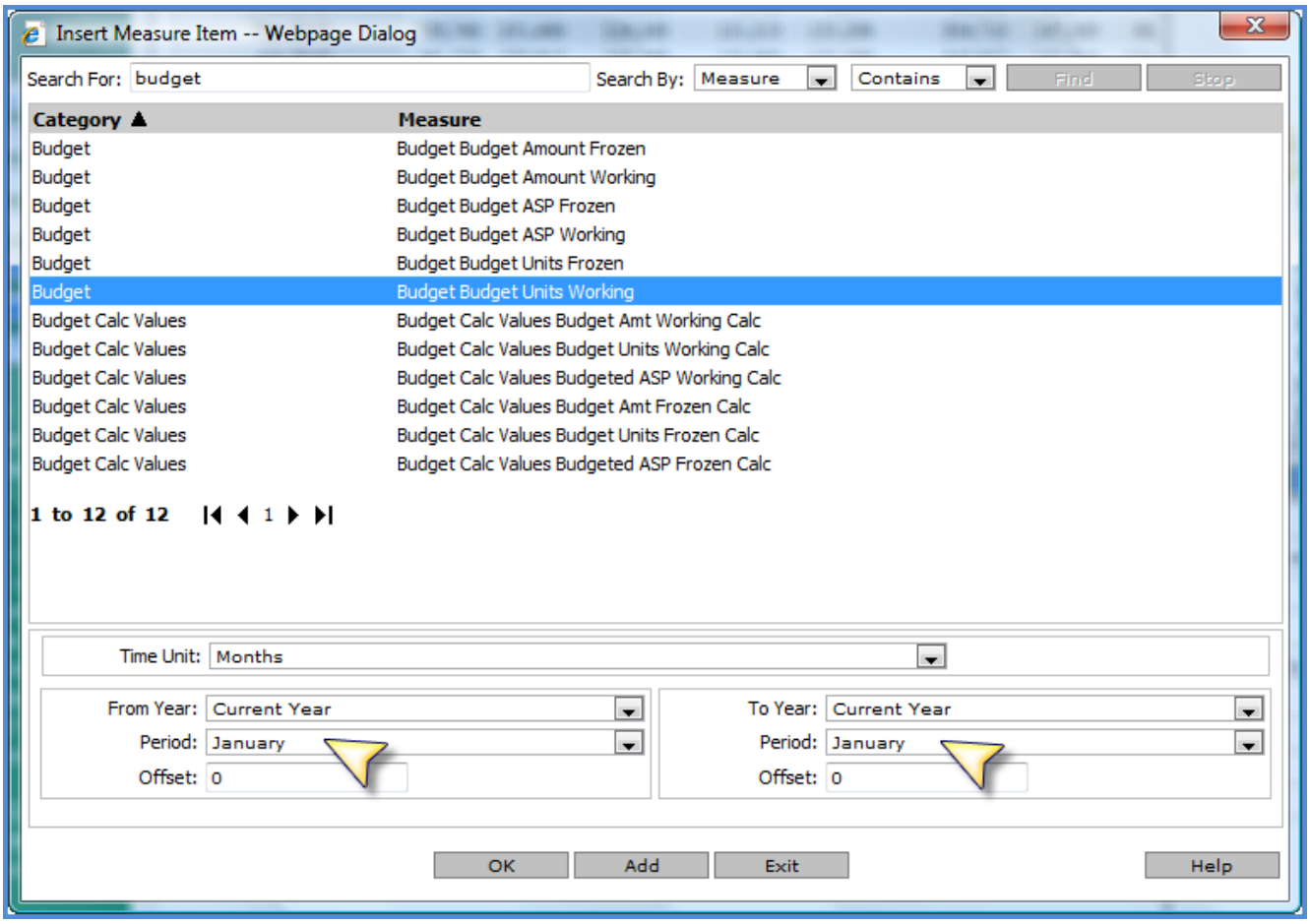
Example 2 – Current Year by Month

This view shows budget data by month for the current year only – January through December of 2014.



Product Brand >>	001	002	003	004	005	006	007	008	009	010
PBrnd Long Description	Tip Top	Dew Drop	SuperSweet	Idaho Delight	Farm Crisp	Southern Sweet	SugarDrop	Bing-a-ling	Farm Fresh	Prime Grown
Budget Budget Units Working January 2014	159,941	195,087	97,839	98,946	95,822	255,935	139,035	76,269	2,511,909	431,494
February 2014	128,583	174,378	87,115	85,763	85,148	211,959	111,243	69,456	1,617,070	354,832
March 2014	167,024	228,610	112,940	110,185	113,899	276,989	134,166	90,829	2,394,394	447,161
April 2014	168,844	239,063	119,409	120,048	134,707	303,625	125,213	110,112	2,562,821	470,822
May 2014	168,943	244,499	122,212	121,056	162,105	334,442	121,794	130,747	2,500,768	498,786
June 2014	178,682	242,851	120,245	123,786	192,628	375,787	112,842	155,981	2,325,602	539,564
July 2014	189,012	275,218	137,535	137,265	251,238	440,348	111,489	205,737	2,723,500	625,844
August 2014	225,118	333,901	165,893	167,172	335,771	555,871	133,059	261,543	3,202,364	785,662
September 2014	159,474	237,268	115,473	117,318	227,430	388,797	86,328	184,462	2,525,756	537,302
October 2014	85,302	124,543	61,876	62,417	127,250	215,727	44,239	102,595	1,188,142	292,199
November 2014	90,164	128,801	62,469	64,177	141,295	229,689	41,927	111,945	1,214,504	309,004
December 2014	81,750	112,200	56,794	57,451	143,888	227,601	28,269	114,022	802,986	279,626

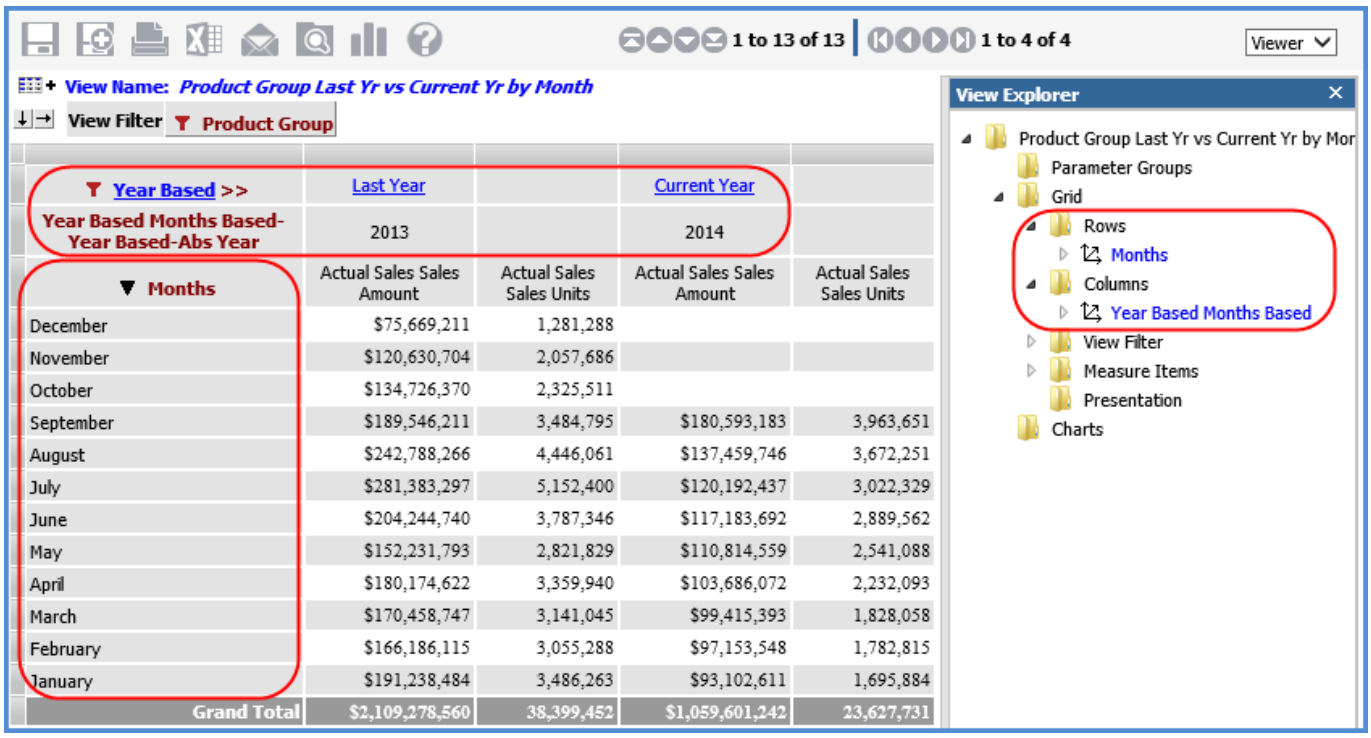
Here are the first measure item's properties. Subsequent ones were created by changing the month to February, March, April, and so on.



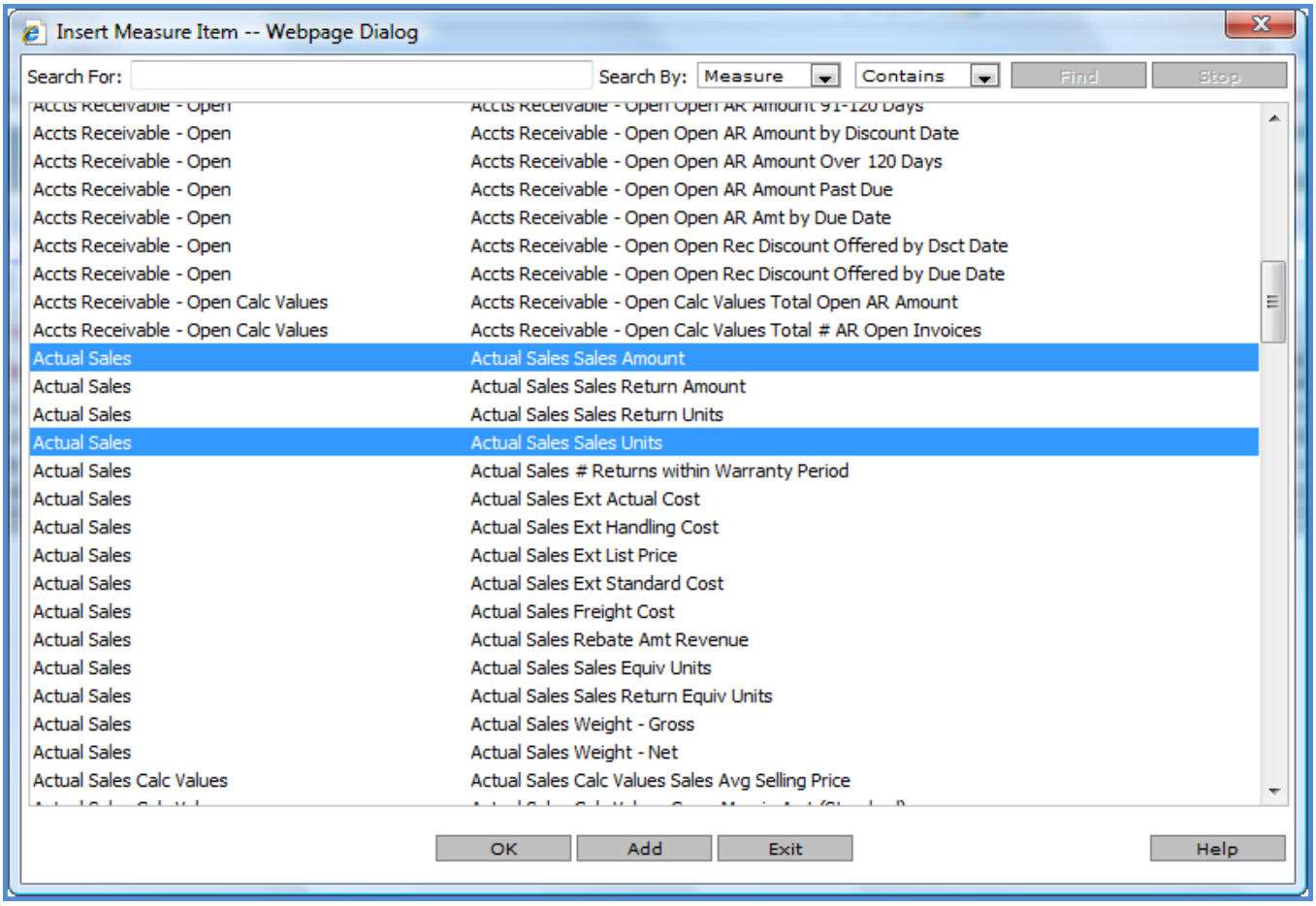
Display Trending Data – With Time Hierarchies

Example 1 – Last Year/Current Year by Month

This trending view shows data for the last year and current year by month. That analysis is achieved using Months from the Months hierarchy on rows and Year Based from the Year Based Months Based hierarchy on columns.

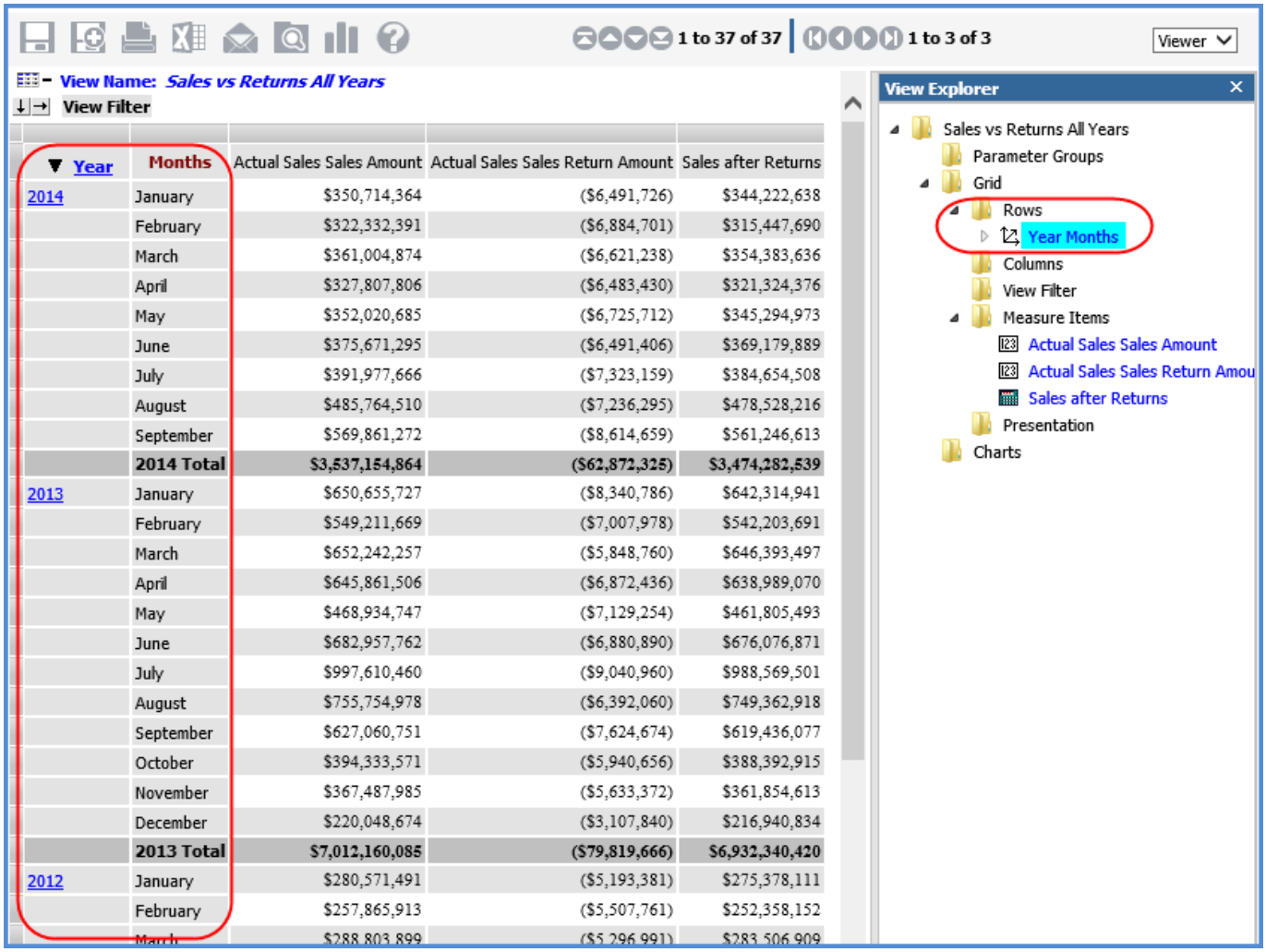


The Time Range property for the view is No, so the measure items don't have any time range properties.



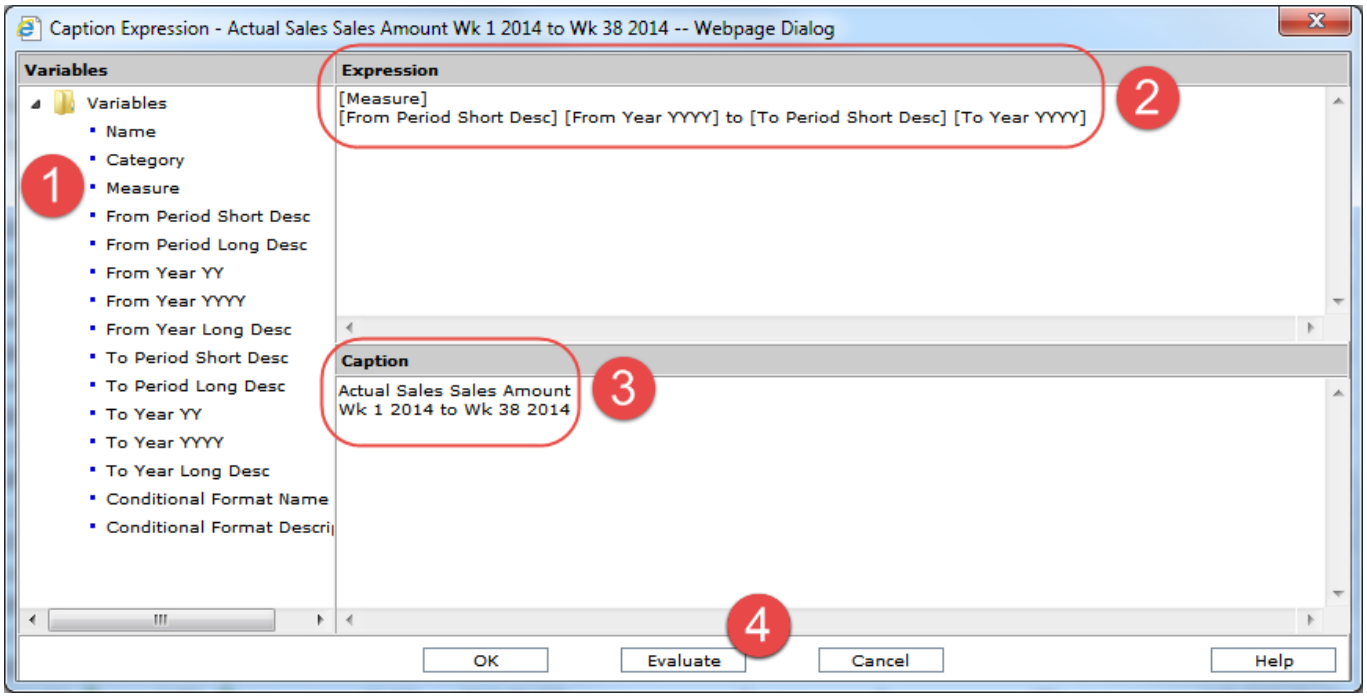
Example 2 – All Years by Month

This trending view shows data for all years by month for sales and returns. That analysis is achieved using the Year Months hierarchy on rows, drilled down to Months. As with the previous example, measure items without time ranges are used in the view. A calculated measure item shows net sales after returns.



Caption Expression Window

This window can be accessed from two different locations. If accessed from the Application window, you can set the default caption expressions that Stratum.Viewer will apply whenever a user adds a new measure item to a view. When accessed from the Measure Item Properties window, you can adjust the caption expression for the selected measure item.



1

Variables – You can click these variables to use them in your expression.

Regular Measure Item with Time Range – Valid variables when Time Range = "Yes."

Variable Name	Description
Name	Resolves to the name of the measure item.
Category	Resolves to the category of the selected measure for the measure item.
Measure	Resolves to the name of the selected measure for the measure item.
From Period Short Desc	Resolves to the Stratum.Planner ViewSetItem short description associated with the From Period of the Measure Item. If the From Period uses a based time hierarchy, then resolves to the ViewSetItem of the associated absolute time hierarchy.
From Period Long Desc	Resolves to the Stratum.Planner ViewSetItem long description associated with the From Period of the Measure Item. If the From Period uses a based time hierarchy, then resolves to the ViewSetItem of the associated absolute time hierarchy.

From Year YY	Resolves to the last 2 positions of “Year” from the ViewSetItem in Stratum.Planner associated with the From Year of the Measure Item. If the From Year uses a based hierarchy, the corresponding absolute time hierarchy, then resolves to the ViewSetItem of the associated absolute time hierarchy.
From Year YYYY	Resolves to the “Year” from the ViewSetItem in Stratum.Planner associated with the From Year of the Measure Item. If the From Year uses a based hierarchy, the corresponding absolute time hierarchy, then resolves to the ViewSetItem of the associated absolute time hierarchy.
From Year Long Desc	Resolves to the Long Description from the Year ViewSetItem in Stratum.Planner associated with the From Year of the Measure Item. If the From Year uses a based hierarchy, the corresponding absolute time hierarchy, then resolves to the ViewSetItem of the associated absolute time hierarchy.
To Period Short Desc	Resolves to the Stratum.Planner ViewSetItem short description associated with the To Period of the Measure Item. If the To Period uses a based time hierarchy, then resolves to the ViewSetItem of the associated absolute time hierarchy.
To Period Long Desc	Resolves to the Stratum.Planner ViewSetItem long description associated with the To Period of the Measure Item. If the To Period uses a based time hierarchy, then resolves to the ViewSetItem of the associated absolute time hierarchy.
To Year YY	Resolves to the last 2 positions of “Year” from the ViewSetItem in Stratum.Planner associated with the To Year of the Measure Item. If the To Year uses a based hierarchy, the corresponding absolute time hierarchy, then resolves to the ViewSetItem of the associated absolute time hierarchy.
To Year YYYY	Resolves to the “Year” from the ViewSetItem in Stratum.Planner associated with the To Year of the Measure Item. If the To Year uses a based hierarchy, the corresponding absolute time hierarchy, then resolves to the ViewSetItem of the associated absolute time hierarchy.
To Year Long Desc	Resolves to the Long Description from the Year ViewSetItem in Stratum.Planner associated with the To Year of the Measure Item. If the To Year uses a based hierarchy, the corresponding absolute time hierarchy, then resolves to the ViewSetItem of the associated absolute time hierarchy.
Conditional Format Name	Resolves to the name of a condition format that has been applied to the measure item. If this variable is used and no conditional format has been applied, a blank space holder will display in the resolved expression for the measure item.
Conditional Format Description	Resolves to the description of a condition format that has been applied to the measure item. If this variable is used and no conditional format has been applied, a blank space holder will display in the resolved expression for the measure item.

Regular Measure Item without Time Range – Valid variables when Time Range = "No."

Name	The name of the measure item.
Category	The category of the selected measure for the measure item.
Measure	The name of the selected measure for the measure item.
Conditional Format Name	Resolves to the name of a condition format that has been applied to the measure item. If this variable is used and no conditional format has been applied, a blank space holder will display in the resolved expression for the measure item.
Conditional Format Description	Resolves to the description of a condition format that has been applied to the measure item. If this variable is used and no conditional format has been applied, a blank space holder will display in the resolved expression for the measure item.

Calculated Measure Item – Valid variable for calculated and distinct calculated measure items.

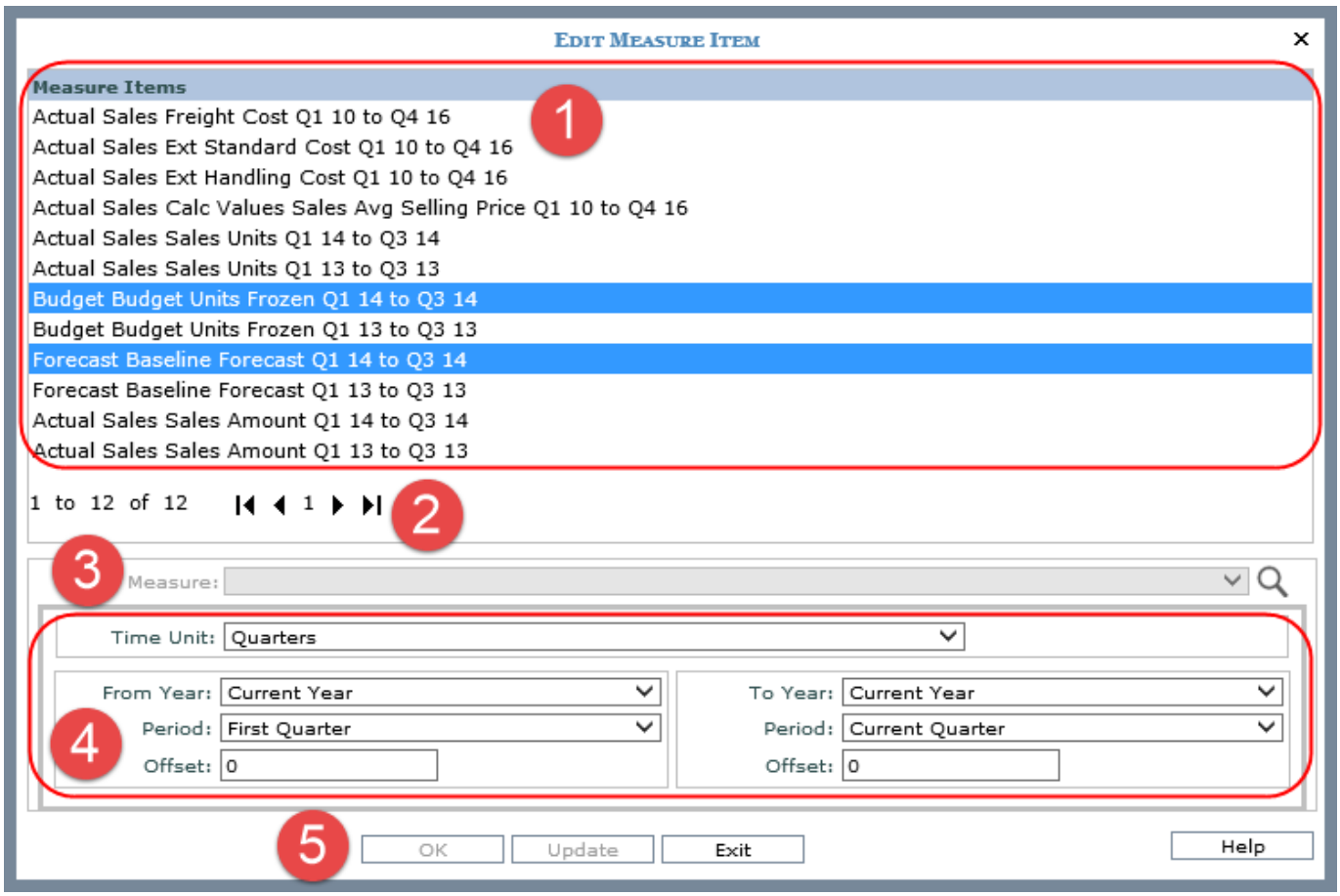
Name	The name of the measure item.
Conditional Format Name	Resolves to the name of a condition format that has been applied to the measure item. If this variable is used and no conditional format has been applied, a blank space holder will display in the resolved expression for the measure item.
Conditional Format Description	Resolves to the description of a condition format that has been applied to the measure item. If this variable is used and no conditional format has been applied, a blank space holder will display in the resolved expression for the measure item.

2 **Expression** – Define or modify the expression by clicking on a variable. The selected variable will display under the Expression on the right side of the window. Also, you can manually enter static text in the Expression portion of the window. The Enter key inserts a new line within the caption. This gives you more control over how the caption will display.

3 **Caption –** Displays the evaluated caption so you can verify what the caption will look like. This area is updated when Evaluate is clicked.

4 **Evaluate –** The caption will display under the Caption area once Evaluate is clicked. You can review the caption before accepting it.

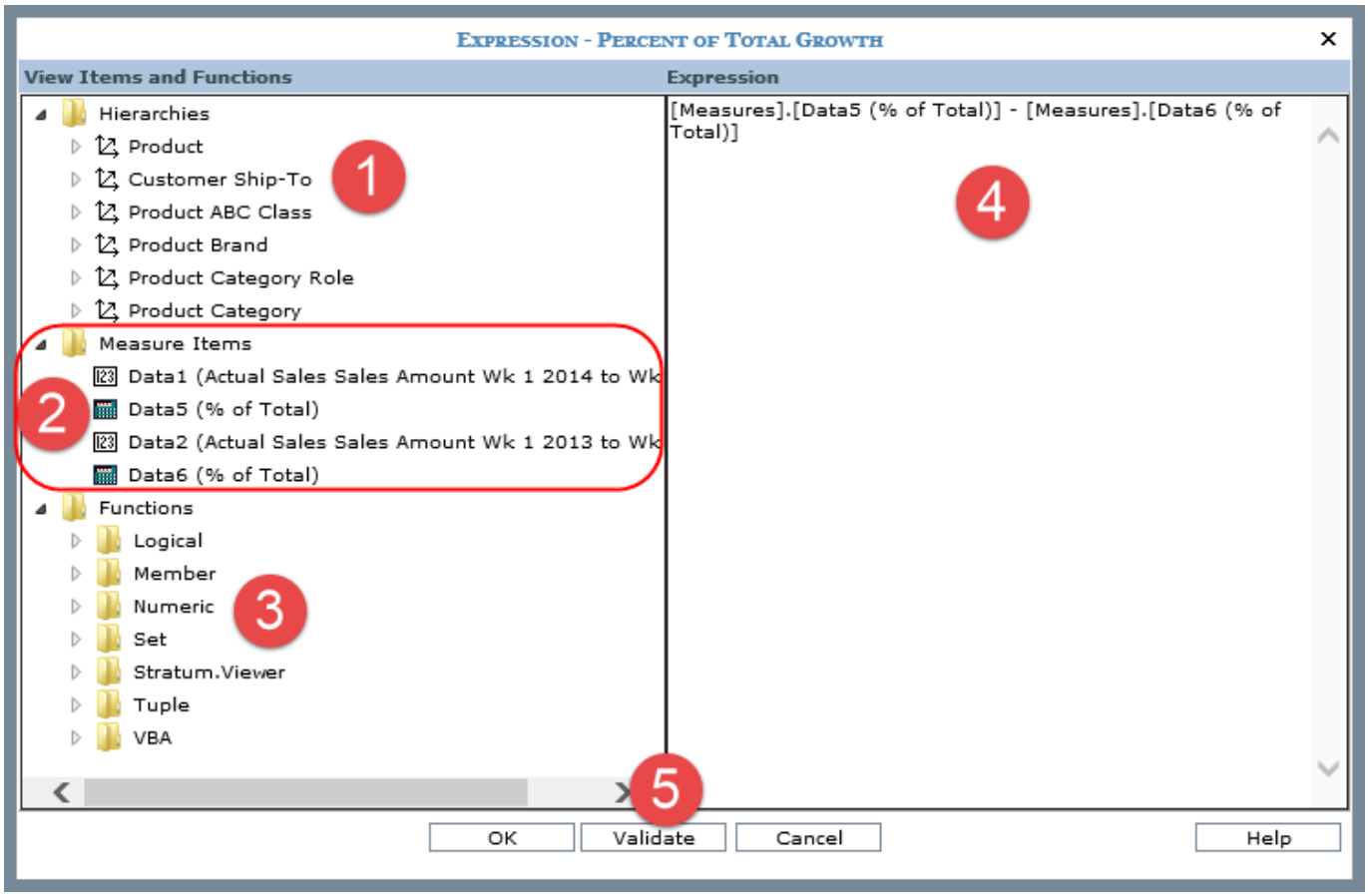
Edit Measure Item Window



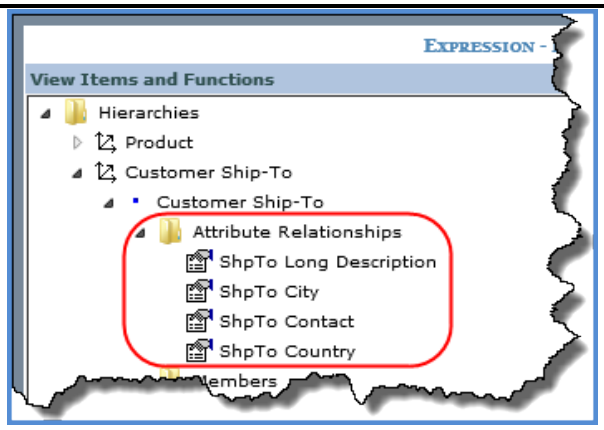
1	**Measure Items** - If you are working with measure items that have time ranges, you can select one or more items at a time to edit. You can use Ctrl+Click and Shift+Click to select more than one item. When multiple measure items are selected, only properties in common are enabled. If you are working with measure items without time ranges, you can select one item at a time for editing.
2	**Paging Controls** - Use the paging arrows and links to move between pages of measure items. Controls are active only when there are multiple pages of measure items.
3	**Measure List and Search Button** - Use the list to choose a different measure for selected measure item(s). Measures are grouped by categories. Or, click the search button and use the Select Measure window. If you have multiple measures selected for editing and the measure items are from different categories, this list will be disabled.
4	**Time Properties** - Use the time properties to edit time ranges for the measure item(s). The properties only display if the view you're working with has its main Time Range property set to Yes. • **Time Unit** - Select the unit of time for the measure item(s). For example, weeks, months, or quarters. • **From Year / Period / Offset** - Use to determine the starting point for the measure item's time range. You can use all absolute, all based, or a combination of absolute and based time properties to define the point in time. Optionally use the Offset property in combination with the year and period to further customize the time range. The property defaults to 0. You can enter a positive offset or negative offset value such as 1 or -1 to define how many period(s) to move forward or backward from the designated year / period. • **To Year / Period / Offset** - Use to determine the ending point for the measure item's time

	range. The To properties behave in the same manner as the From properties described above.
5	**OK / Update / Exit** - OK applies the edits and closes the window. Update applies the edit but leaves the window open so you can edit other measure items. Exit closes the window without making any edits.

Expression Window for Views



1	**Hierarchies** – Hierarchies, levels, and attribute relationships that are part of the view definition will appear in the View Items and Function portion of the Expression window. They appear in the same order as in the view explorer and regardless of whether or not they are visible or actively showing in the grid. Levels can be expanded to see the Attribute Relationships and Members folders. If attribute relationships were selected for the level, they will display when the Attribute Relationships folder is expanded.



- **Levels and Attribute Relationships** - Click a level or attribute relationship to add it to the expression. Objects can also be drag and dropped into the Expression portion of the window.
- **Members** - Another tool for building the expression is the Members folder. Click it to access the Select Filter Method window. From there, you can access the Select or Advanced Select Members window. This allows you to select specific members for the expression. Or, you can access the Named Set window and select a named set for the expression in cases when you are working with a single level time dimension.

When you add objects in this manner to the Expression, they are added in MDX format. That format includes a reference to the object dimension and hierarchy. The standard MDX format for objects commonly used in expressions follows.

- **Level** - [Dimension name].[Hierarchy name].[Level name].members
- **Attribute Relationship** - [Dimension name].[Hierarchy name].Properties("Attribute Relationship name")
- **Member** - [Dimension name].[Hierarchy name].[Level name].[Member value]

You can also add objects to the expression by typing directly in the Expression portion of the window. For example expressions and MDX, see Creating Expressions for Calculated Measure Items.

2

Measure Items – The Measure Items section lists all the measure items associated with the view. Each measure item displays as Name (Caption). The name is the unique identifier associated with the measure item, which can be seen in the Properties window for the measure item. The caption makes it user friendly. They appear in the same order as in the view explorer.

You can include measure items as part of the expression using any of the following methods:

- Select measure items by clicking or drag and drop.
- Key in measure item names directly in the Expression portion of the window in proper MDX format:

  [Measures].[Name(Caption)] or [Measures].[Name]

  where Name is the unique identifier that you can see for the measure item displayed in the measure item folder of the expression window.

You can also key in any measure that is part of the cube associated with the view. The format to use for measures is [Measures],[Name] where Name is the full name for the measure (for example, Actual Sales Sales Units or Budget Budget Amount Frozen). For example expressions and MDX, see Creating Expressions for Calculated Measure Items.

3

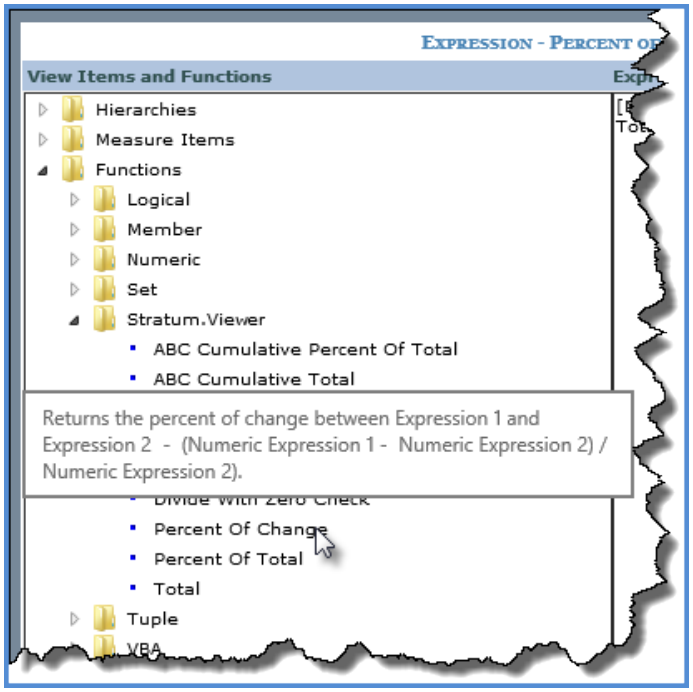
Functions – A Functions folder provides you with logical, member, numeric, set, Stratum.Viewer-specific, tuple, and VBA functions that can be used for building the calculated or distinct calculated measure item expression. You can select a function by clicking, double clicking, or drag and drop. You can also key in a function directly in the Expression portion of the window.

If you select a function for your expression, then the formula for it will display in the Expression section and each parameter will be enclosed in double arrows (<< >>). Function parameters enclosed in double arrows, such as «PARAMETER», are required. Parameters enclosed in brackets and double arrows, such as [«PARAMETER»], are optional. You can highlight each parameter and type over it directly in the Expression section. Or you can click the needed element from the tree structure in the window and it will be inserted into that section of the function.

The Stratum.Viewer folder includes custom functions, such as cumulative and percent of total functions. If you use them in an expression, they will be preceded by a pound sign (#) to distinguish them from standard MDX functions. The Stratum.Viewer specific functions are:

- ABC Cumulative Percent of Total
- ABC Cumulative Total
- Achievement Percent
- Cumulative Percent of Total
- Cumulative Total
- Divide With Zero Check
- Percent of Change
- Percent of Total
- Total

There are pop-up labels for all functions, and they give you a brief description of the functions.



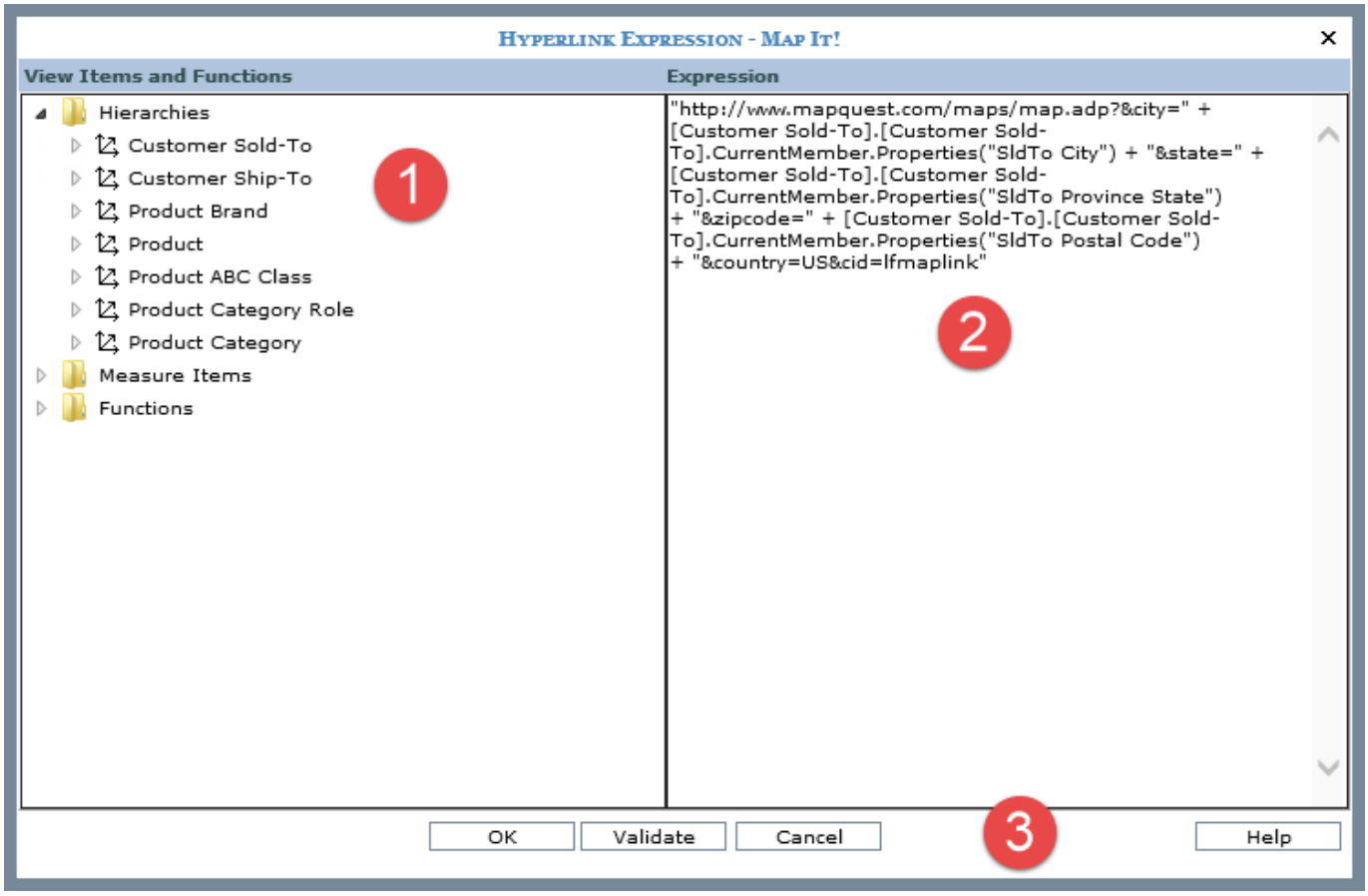
4 **Expression –** MDX expression associated with the measure item.

Note: Objects not visible in a view or not part of a view definition can be used in an expression by manually entering them into the Expression portion of the window. You must refer to them by their valid MDX format and they must exist in the cube associated with the view.

5 **Validate –** Click the Validate button at any point while you are building the expression. Stratum.Viewer will verify whether or not the format of your expression is valid. If you do not click the Validate button while building the expression, then validation will be performed once you click the OK

	button.

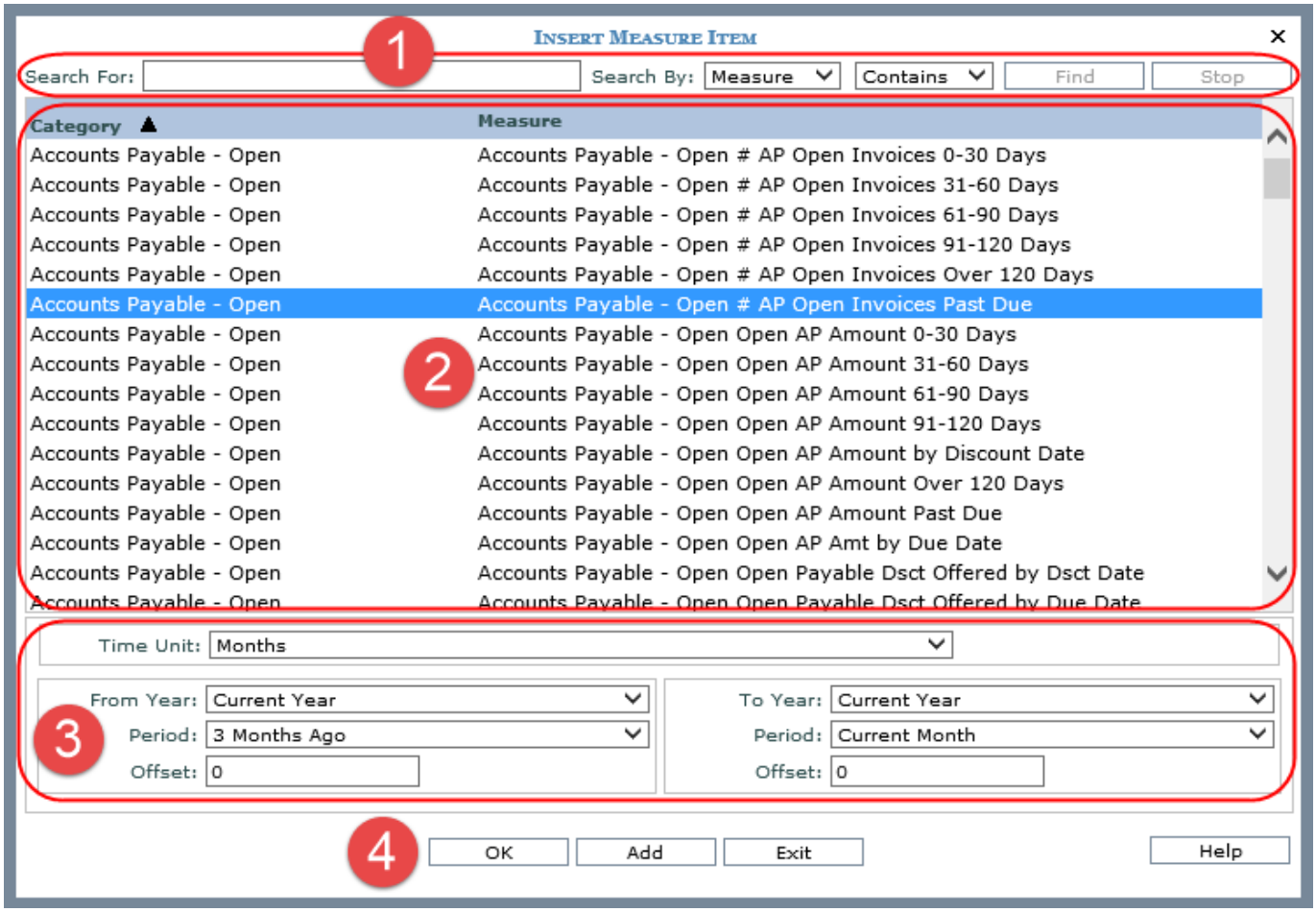
Hyperlink Expression Window



1	**View Items** – The hierarchies, attribute relationships, and measure items associated with the view can be included in the hyperlink expression. Use the view items and functions to define your hyperlink expression by clicking on or dragging and dropping the item into the Expression area. You can also key static text directly into the Expression portion of the window. **Functions -** A Functions folder provides you with numeric, member, date, tuple, and Stratum.Viewer-specific functions that can be used for building the hyperlink expression.
2	**Expression** – The evaluated expression will be an active hyperlink when the measure item is clicked on. The hyperlink can direct users to other applications, websites or views. **Examples follow and are also shown in Use Hyperlinks in a View:** Access a website from a hyperlink. For example: "http://www.mapquest.com" would take the user to the Mapquest home page. Access a website using attribute relationships as parameters. For example: 1. "http://www.mapquest.com/maps/map.adp?&city=" + [Customer Sold-To].[Customer Sold-To].CurrentMember.Properties("SldTo City") + "&state=" + [Customer Sold-To].[Customer Sold-To].CurrentMember.Properties("SldTo Province State") + "&zipcode=" + [Customer Sold-To].[Customer Sold-To].CurrentMember.Properties("SldTo Postal Code") + "&country=US&cid=lfmaplink" 2. Iif([Customer SoldTo].[Customer SoldTo].Properties("SldTo Long Description")=null, null, "http://www.google.com/search?hl=en&q=" + [Customer SoldTo].Properties("SldTo Long

	Description")) Access another Stratum.Viewer view from a hyperlink. For example: http://silvonxyz:55003/ViewWindow.aspx?ViewId=139 Access another StratumViewer view from a hyperlink that passes current member information as a parameter to the view when it runs. For example: "http://silvonxyz:55003/ViewWindow.aspx?ViewId=139&vp:Rep=" +[Salesperson].[Salesperson].CurrentMember.name+ """
3	**OK** – Click to validate your hyperlink expression and close the window. **Validate** – Click at any point while you are building the expression. Stratum.Viewer will verify whether or not the format of your expression is valid. Blank is not a valid expression. **Cancel** – Click to close the window without making any changes. **Help** – Click to open help about this window.

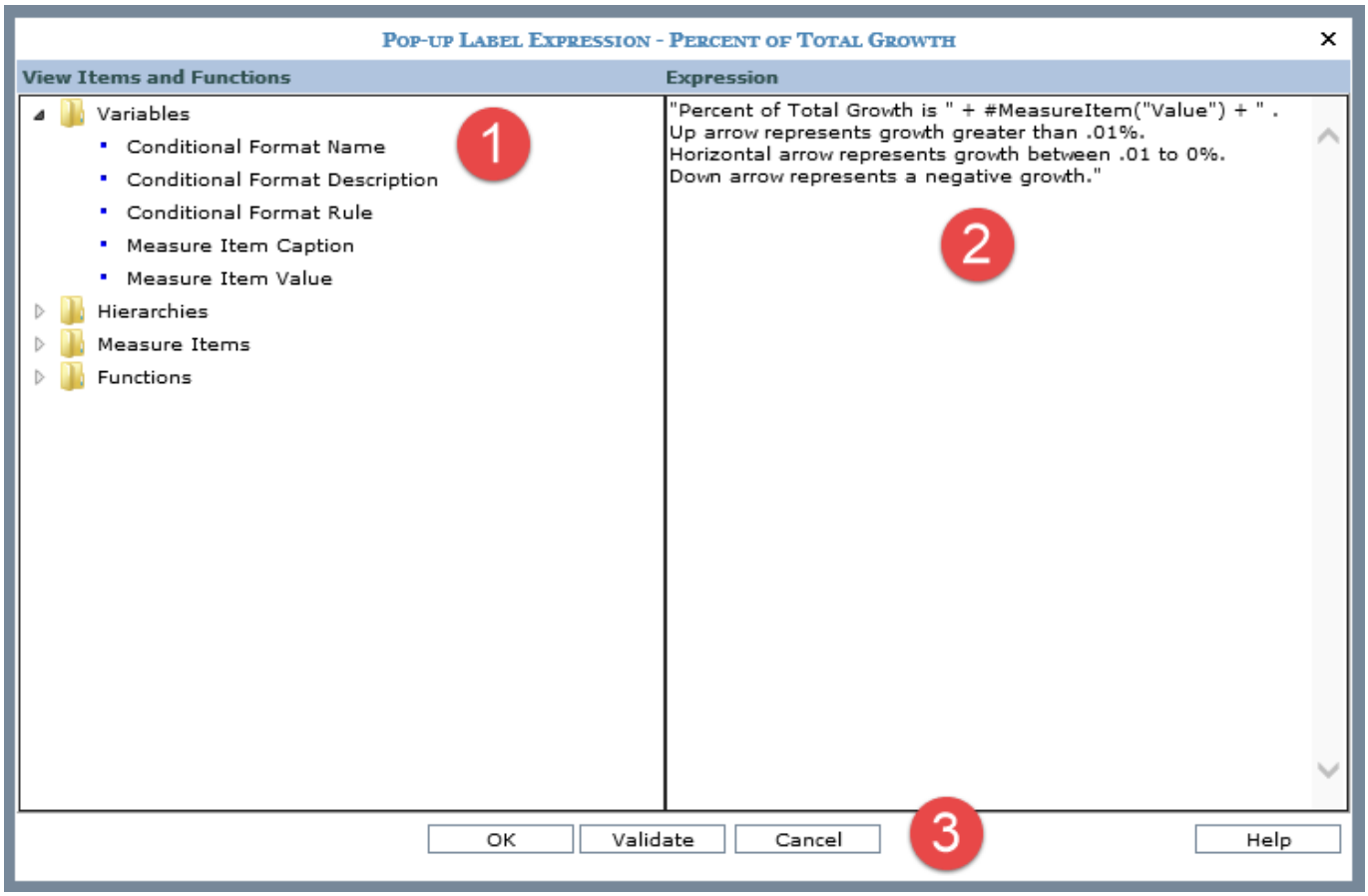
Insert Measure Item Window



1	**Search section** - Use the Search For field and values in the Search By drop-down list to narrow down the measures displayed in the window. Search using one or more criteria separated by semicolons (;) and by the category or measure. Additional search specifications can be associated with the search, for example, Contains, Greater Than, or Not Equal To.
2	**Measure section** - Select one or more measures to serve as the basis for the measure items that you are inserting. You can use Ctrl+Click and Shift+Click to select more than one measure. Measures are

	listed by their category, and the section can be sorted. If a search has been executed, the section is refreshed to display search results. The remainder of the window will be populated with information based on the measures you select.
3	**Time Properties** - Use the time properties to define time ranges for the measure item(s) that you are setting up. The properties only display if the view you're working with has its main Time Range property set to Yes. • **Time Unit** - Select the unit of time for the measure item(s). For example, weeks, months, or quarters. • **From Year / Period / Offset -** Use to determine the starting point for the measure item's time range. You can use all absolute, all based, or a combination of absolute and based time properties to define the point in time. Optionally use the Offset property in combination with the year and period to further customize the time range. The property defaults to 0. You can enter a positive offset or negative offset value such as 1 or -1 to define how many period(s) to move forward or backward from the designated year / period. • **To Year / Period / Offset** - Use to determine the ending point for the measure item's time range. The To properties behave in the same manner as the From properties described above.
4	**OK / Add / Exit** - OK inserts the measure item(s) and closes the window. Add inserts the item(s) and leaves the window open so you can insert more measure items. Exit closes the window without inserting any items.

Pop-up Label Expression Window



1

View Items – Use the view items and functions to define your pop-up label expression by clicking on or dragging and dropping the item into the Expression area. The conditional format name, description, and rule can be included in the pop-up label, as well as the caption and value of the associated measure item. The hierarchies, attribute relationships, and measure items associated with the view can be included in the pop-up label. You can also key static text directly into the Expression portion of the window.

Note: If you use the Conditional Format variables in an expression and no conditional format exists for the measure item, then three blank spaces will display for the variables in the resulting pop-up label. The same is true for Conditional Format Rule variables in use in cases where a rule for the corresponding conditional format would produce a null value for the measure item.

Functions - A Functions folder provides you with numeric, member, date, tuple, and Stratum.Viewer-specific functions that can be used for building the pop-up label expression.

2

Expression – The evaluated expression will be displayed when the cursor is hovered over the measure item value, image, or indicator. Anytime the user hovers over that measure item within the view grid, the pop-up label will display.

- Click an item from the View Items and Functions side of the window to add it to the expression.
- Use double quotes to enclose any static text included in expressions.
- Use a plus sign + to concatenate parts of a multi-part expression.
- Blank expressions are not valid.
- An expression that results in an error will display #ERR in the executed pop-up label.

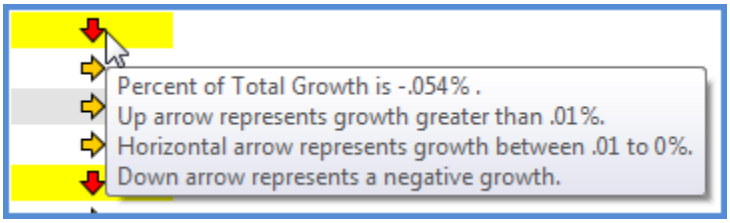
Examples follow. See Define Pop-up Labels for Measure Items for more examples.

A pop-up label can be used to display the measure item value when value is set to “No”. For example: #MeasureItem("Value") will display the measure item value when the user hovers over a conditional format icon.

A pop-up label can be used to display the measure item value and conditional format rules. For example:

"Percent of Total Growth is " + #MeasureItem("Value") + " .
Up arrow represents growth greater than .01%
Horizontal arrow represents growth between .01 to 0%.
Down arrow represents a negative growth."

The above example will display as shown below.



A pop-up label can be static text that tells the user additional information about a measure item. For example: “Percent of Total Growth displayed in this view has not been adjusted for returns.”

3

OK – Click to validate your pop-up label expression and close the window.

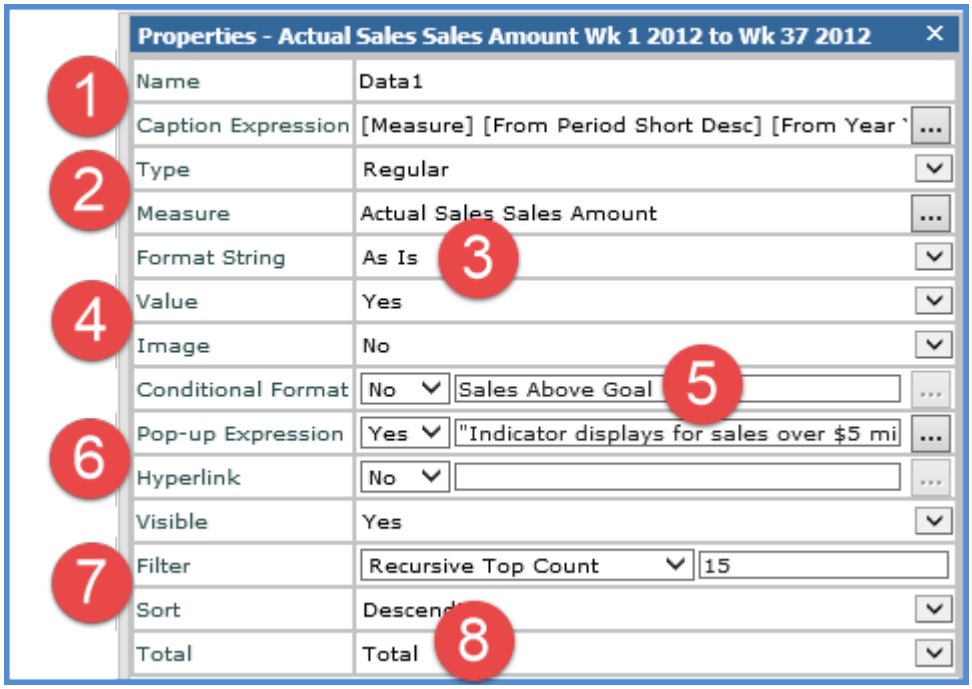
Validate – Click at any point while you are building the expression. Stratum.Viewer will verify whether or not the format of your expression is valid.

Cancel – Click to close the window without making any changes.

Help – Click to access help specific to the Pop-up Label Expression window.

Properties Windows for Individual Measure Items

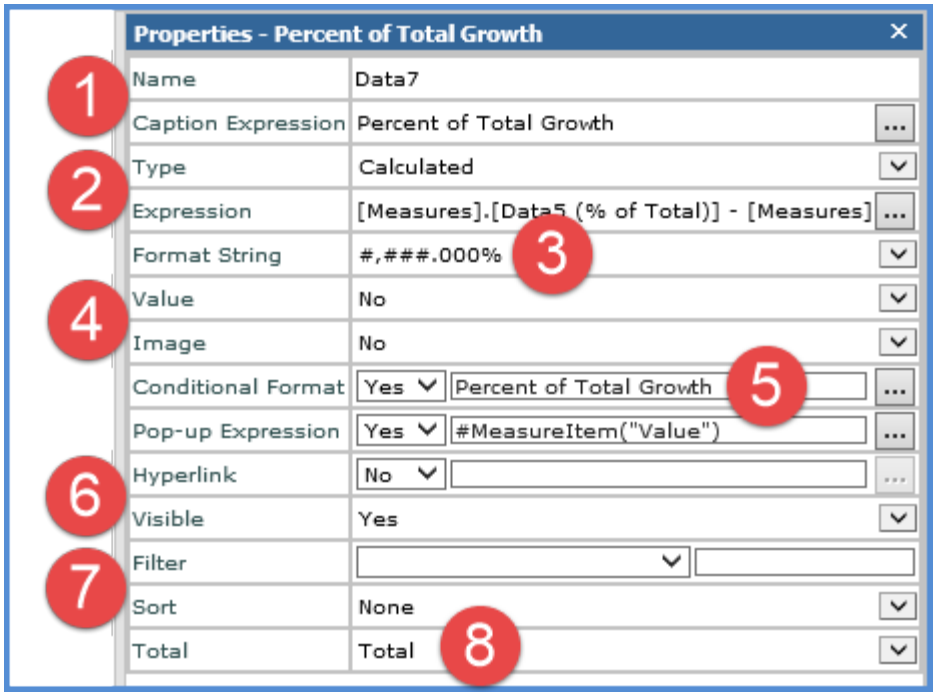
Regular Measure Items



1	**Name** – The text in this field determines the unique name that Stratum.Viewer will use to identify a measure item in the view. You can edit this field as needed. Default names given to new measure items are DataN. The "N" is a sequential number assigned by Stratum.Viewer to create a unique name. You will be prompted to make corrections to the name if you enter a duplicate name, use any spaces in the name, use too many characters (more than 50), or use invalid characters. **Caption Expression** - A read only field that shows the expression behind the caption for a measure item. The resolved text generated by the expression creates the caption, which is the text that displays for the measure item in the view and other areas of the application such as view explorer. The Caption Expression window can be accessed for editing the expression by clicking the Browse button next to the field.
2	**Type** – This property shows the type of measure item you are working with – either regular, calculated, or distinct calculated. The property will be set to "Regular" if you are inserting or editing a regular measure item. **Note:** See the next table for information about calculated and distinct calculated types. **Measure** – This field is a read only field that displays the underlying measure you selected when setting up the regular measure item. • For measure items with time ranges, clicking the Browse Button [...] next to the Measure field opens the Edit Measure Item window. Use that window to edit the measure item's underlying measure or time range. The main Time Range property for a view must be set to Yes for the Properties window to behave in this manner. • For measure items without time ranges, clicking the search button next to the Measure field opens the Select Measure window for editing the underlying measure. The main Time Range property for a view must be set to No for the Properties window to behave in this

	manner.
3	**Format String** – Use this drop-down list to apply a format such as decimal places, monetary symbols, commas, or a combination of formatting.
4	**Value –** Determines if the measure item value displays in the Viewer grid. Set to Yes to display value. Set to No to hide the value, for example, in cases where you want to display only the conditional format icon for a measure item. **Image** – This property is used when setting up calculated measure items that display images. See the next table for information about this property.
5	**Conditional Format** – Controls the display of icons, and cell and text formatting for the measure item by applying the conditional format rules. The Browse button  is only enabled when the Conditional Format field is set to Yes. When enabled, you can click the button to access the Select Conditional Format window to edit the conditional format associated with the measure item or create a new one. The name of the selected conditional format displays in the text box left of the  icon.
6	**Pop-up Expression** – Use this property to specify whether the selected measure item has a pop-up label that will display when you hover over the measure item value, indicator, or image. The Browse button  is only enabled when the Pop-up Expression field is set to Yes. When enabled, you can click the button to access the Pop-up Label Expression window to edit the existing expression or create a new one. The active pop-up expression displays in the text box left of the  icon. **Hyperlink** – Choose Yes if you want a hyperlink defined for the cell of a measure item. The Browse button  is only enabled when the Hyperlink field is set to Yes. When enabled, you can click the button to access the Hyperlink Expression window to edit the expression or create a new one. The hyperlink defined displays in the text box left of the  icon.
7	**Filter and Sort** – Use to add, edit, or remove filters and sorts. For filters, select the operator from the drop-down list and enter the value to filter by in the field next to the list. Pop-up labels showing filter criteria will show for the Filter field after a filter has been applied. If your view has levels on the same axis as measure items, these properties will be disabled until you have applied an initial filter or sort via the grid.
8	**Total** – Use to control the type of total that is performed for a measure item. The default setting for all measure items is Total. • **None** – No total will be displayed. • **Total** – This designation takes into account any underlying calculations for a measure item's definition when generating Grand Totals, sub-totals, and All Others – such as calculations defined in a measure item expression or associated with a Stratum.Planner calculated value. • **Sum** – This designation means that Viewer will generate totals by adding the values displayed in measure item detail cells. That summing will be used to generate the Grand Totals, sub-totals, and All Others. This type of total is intended for special cases where you don't want any of the underlying calculations that Viewer performs to be used when generating total values. You might choose to use a Sum total when a measure item calculation includes an IIF statement, such as a calculation with IF, Then, Else conditions. See also When to Use the "Sum" Total Setting for Measure Items.

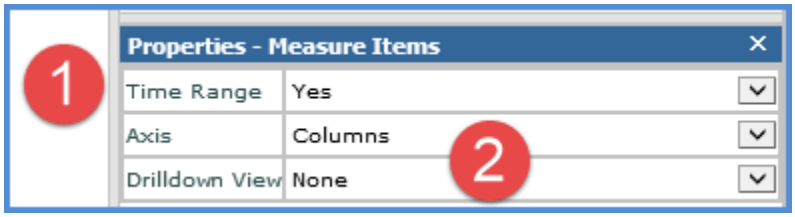
Calculated and Distinct Calculated Measure Items



1	**Name** – The text in this field determines the unique name that Stratum.Viewer will use to identify a measure item in the view. You can edit this field as needed. Default names given to new measure items are DataN. The "N" is a sequential number assigned by Stratum.Viewer to create a unique name. You will be prompted to make corrections to the name if you enter a duplicate name, use any spaces in the name, use too many characters (more than 50), or use invalid characters. **Caption Expression** – A read only field that shows the expression behind the caption for a measure item. The resolved text generated by the expression creates the caption, which is the text that displays for the measure item in the view and other areas of the application such as view explorer. The Caption Expression window can be accessed for editing the expression by clicking the Browse button next to the field.
2	**Type** – This property shows the type of measure item you are working with – either regular, calculated, or distinct calculated. The property will be set to "Calculated" or "Distinct Calculated" if you are inserting or editing that type of measure item. **Note:** See the previous table for information about regular types. **Expression** – When "Calculated" or "Distinct Calculated" is the measure item type, an Expression field shows in this window. It's a read only field that shows the expression for calculating the measure item. The Expression window can be accessed for editing the expression by clicking the Browse button ... next to the field. Note that when you are using a calculated measure item to display images in a view that the expression will determine the location/name of the image file for Stratum.Viewer to display. • The image file must reside in the Stratum.Viewer application folders. It is recommended that all custom images reside in a subfolder of the Images folder of the Stratum.Viewer application. • Supported file types for images are *.jpg, *.jpeg, *.png, *.bmp, *.gif, *.tif, and *.tiff. • The image will display according to its original, default size.

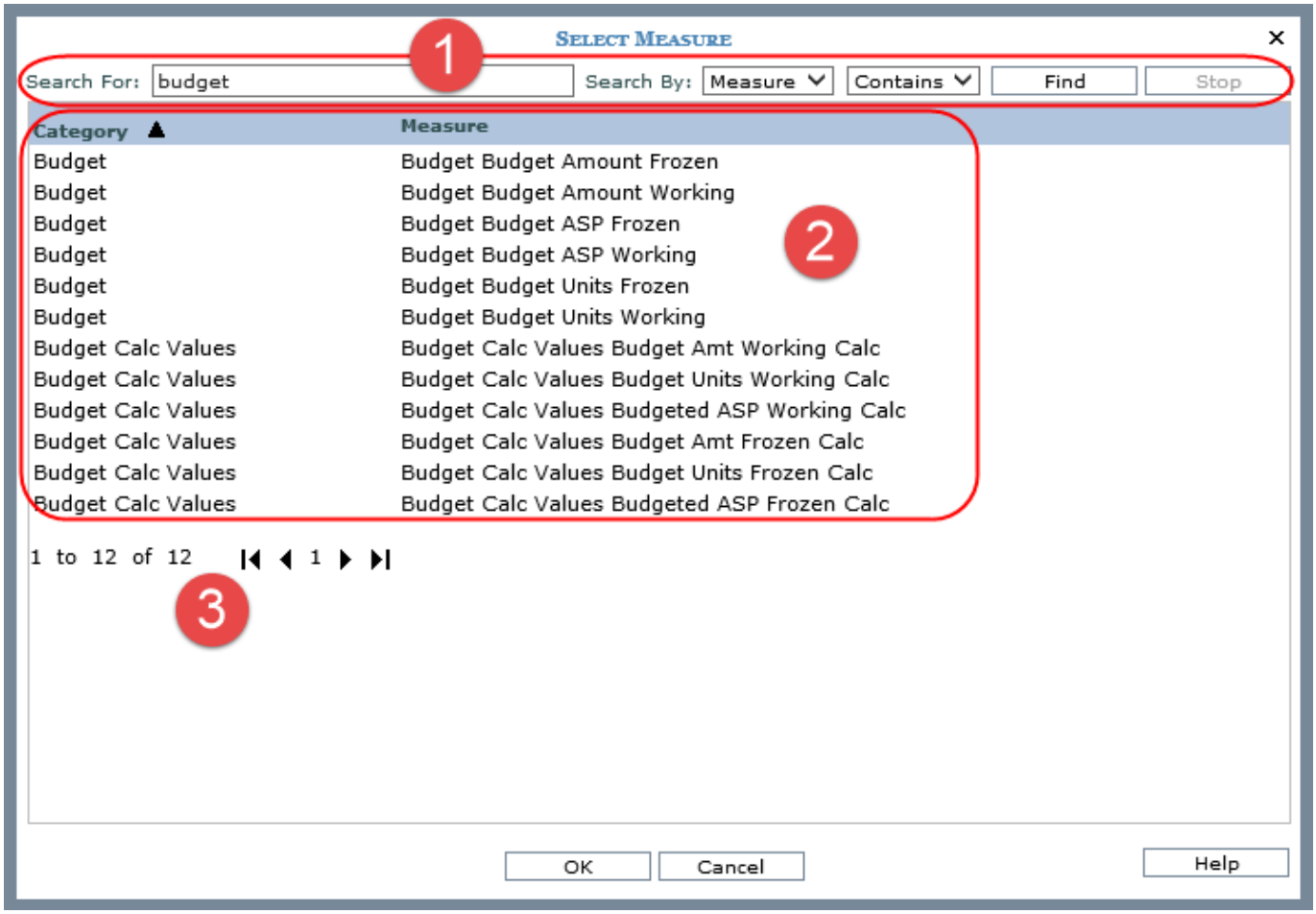
3	**Format String** – Use this drop-down list to apply a format such as decimal places, monetary symbols, commas, or a combination of formatting.
4	**Value –** Determines if the measure item value displays in the Viewer grid. Set to Yes to display value. Set to No to hide the value, for example, in cases where you want to display only the conditional format icon for a measure item. **Image** – This property is used when setting up calculated measure items that display images. You use the Expression window to define the location of the image and then set this property to Yes in order for the defined image to display in the grid. See item 2 above.
5	**Conditional Format** – Controls the display of icons, and cell and text formatting for the measure item by applying the conditional format rules. The Browse button ... is only enabled when the Conditional Format field is set to Yes. When enabled, you can click the button to access the Select Conditional Format window to edit the conditional format associated with the measure item or create a new one. The name of the selected conditional format displays in the text box left of the ... icon.
6	**Pop-up Expression** – Use this property to specify whether the selected measure item has a pop-up label that will display when you hover over the measure item value, indicator, or image. The Browse button ... is only enabled when the Pop-up Expression field is set to Yes. When enabled, you can click the button to access the Pop-up Label Expression window to edit the existing expression or create a new one. The active pop-up expression displays in the text box left of the ... icon. **Hyperlink** – Choose Yes if you want a hyperlink defined for the cell of a measure item. The Browse button ... is only enabled when the Hyperlink field is set to Yes. When enabled, you can click the button to access the Hyperlink Expression window to edit the expression or create a new one. The hyperlink defined displays in the text box left of the ... icon.
7	**Filter and Sort** – Use to add, edit, or remove filters and sorts. For filters, select the operator from the drop-down list and enter the value to filter by in the field next to the list. Pop-up labels showing filter criteria will show for the Filter field after a filter has been applied. If your view has levels on the same axis as measure items, these properties will be disabled until you have applied an initial filter or sort via the grid.
8	**Total** – Use to control the type of total that is performed for a measure item. The default setting for all measure items is Total. • **None** – No total will be displayed. • **Total** – This designation takes into account any underlying calculations for a measure item's definition when generating Grand Totals, sub-totals, and All Others – such as calculations defined in a measure item expression or associated with a Stratum.Planner calculated value. • **Sum** – This designation means that Viewer will generate totals by adding the values displayed in measure item detail cells. That summing will be used to generate the Grand Totals, sub-totals, and All Others. This type of total is intended for special cases where you don't want any of the underlying calculations that Viewer performs to be used when generating total values. You might choose to use a Sum total when a measure item calculation includes an IIF statement, such as a calculation with IF, Then, Else conditions. See also When to Use the "Sum" Total Setting for Measure Items.

Properties Window for Measure Items Axis



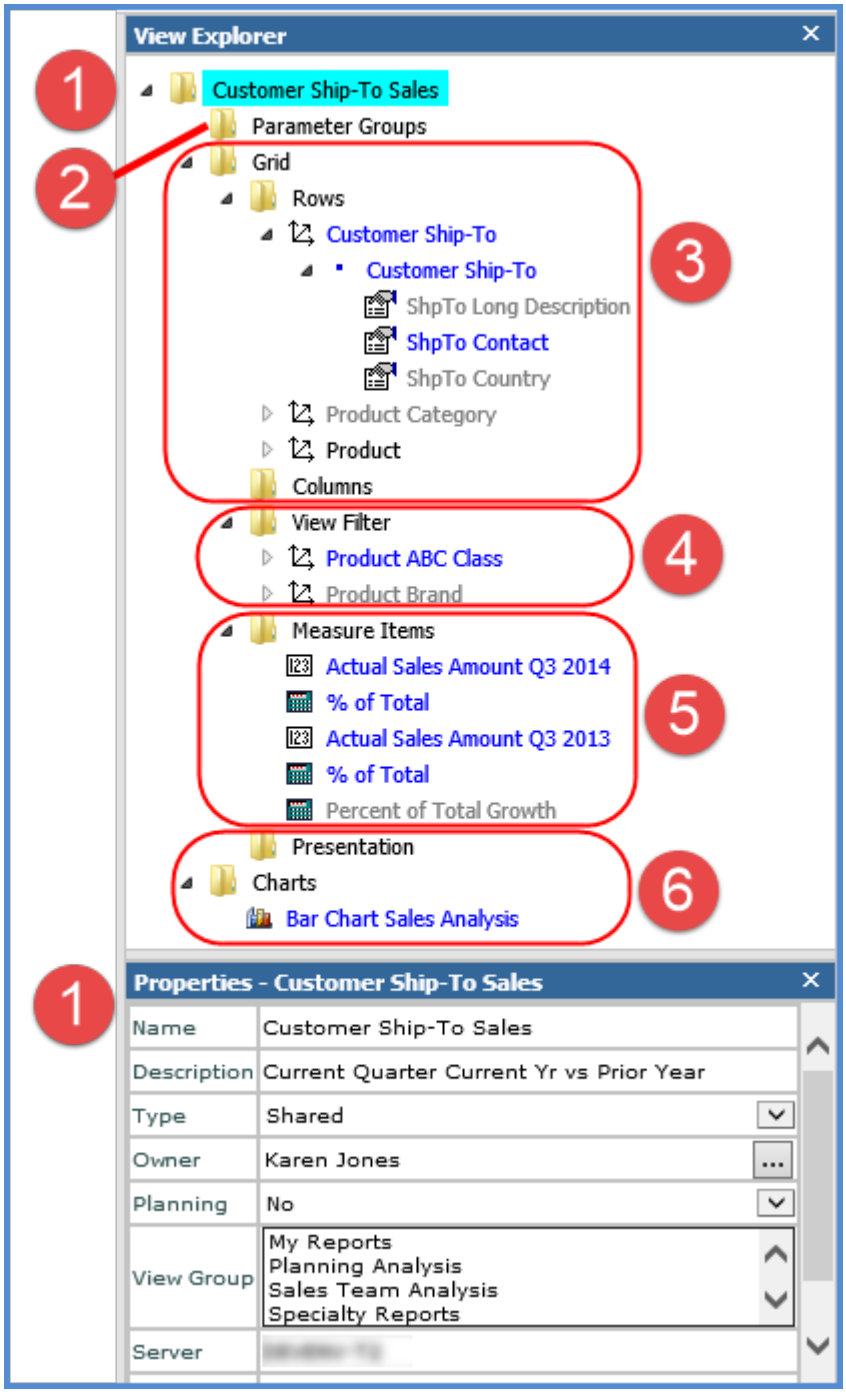
1	**Time Range** – This controls the type of measure items that you can set up for the view – either measure items with time ranges (Yes) or measure items without time ranges (No). Leave the property set to Yes if you want to work with measure items that have time ranges. Time hierarchies will not be available. Change the property to No if you want to work with measure items without time ranges and want to be able insert time hierarchies into the view. Changing this property for existing views will impact existing measure items and time hierarchies. • **Change from Yes to No =** existing measure items will be removed. Then you can work with time hierarchies and measure items without time ranges. • **Change from No to Yes =** existing measure items and time hierarchies will be removed. Then you can work with measure items that have time ranges.
2	**Drilldown View** - Assign a drilldown view if you want to drill from measure items to another view, for example, to a view with related or complimentary data to the originating view. Choose from views that you normally have access to in the application.

Select Measure Window



1	**Search section** - Use the Search For field and values in the Search By drop-down list to narrow down the measures displayed in the window. Search using one or more criteria separated by semicolons (;) and by the category or measure. Additional search specifications can be associated with the search, for example, Contains, Greater Than, or Not Equal To.
2	**Measure section** - Select a measure for the measure item. Measures are listed by their category and the section can be sorted. If a search has been executed, the section is refreshed to display search results.
3	**Paging Controls** - Use the paging arrows and links to move between pages of measure. Controls are active only when there are multiple pages of measures.

View Explorer



The elements in view explorer are organized into a tree structure that has expandable/collapsible folders. Folders are described in the following table. Color-coding is used throughout to help you distinguish which items will be visible in the grid and which are hidden.

- **Items in blue text** – Any items currently shown in the grid. Their Visible property is “Yes” in their Properties window.
- **Items in black text** – Any items that are not actively shown in the grid, but that have a Visible property of “Yes.” This means they will display in the grid once you reach them in the drill down path for the view.

- **Items in grey text** – Any items that have a Visible property of "No." For levels, this means they will not display in the grid as you drill through it. Attribute relationships, measure items, and charts displayed in grey text also will not display in the grid. You can right-click on them anytime and select Show to make change their Visible property.

When you click an item, it is highlighted in a bright blue box like the view name, "Customer Ship-To Sales," in the above example. When double-clicked, the Properties window of the active item opens at the bottom of the view explorer as shown in the above example. You can also right-click to invoke a pop-up menu of actions to take on items from view explorer.

1	**View name folder** – displays the name of the view. Double-click to access the Properties window for editing basic properties like the Name, Type, Planning, and View Group properties. Administrators can use the Owner property to change the owner of a view.
2	**Parameter Groups folder** – for parameter groups and parameters within each group. As you insert groups and parameters, they will display under this folder. Each group and parameter has a related Properties window. You can drag and drop groups and parameters within each group to rearrange them.
3	**Grid folder** – The folders for Rows, Columns, View Filters, and Measure Items are organized under the Grid folder. From the Grid folder, you can access a Grid Properties window which determines if the grid is visible and if paging is enabled for the grid display. **Rows and Columns folders** – All of the included levels and attribute relationships, grouped by hierarchy, display appropriately in the Rows and Columns folder. You can move hierarchies along with their levels and attribute relationships between the Rows, Columns, or View Filter by dragging and dropping them within view explorer or into the grid from view explorer. Properties windows exist for hierarchies, levels, and attribute relationships in these folders. Use them to hide or show items, set up filters or sorting, control totals, etc. • **Hierarchies** – This image displays next to the names of hierarchies. • **Levels** – Blue boxes next to a level indicate the level it is based for all the levels in its hierarchy. For example, a level with one box next to it would be the first level for its hierarchy. A level with two boxes next to it would be the second level available in its hierarchy, and so forth. • **Attribute Relationships** – This image displays next to the names of attribute relationships for levels.
4	**View Filter folder –** Levels included in the view filter. Setting up a view filter requires a level to be in the View Filter section and then applying a filter to that level. Drag or drop the desired level(s) into the View Filter section of the grid or into the View Filter folder of view explorer.
5	**Measure Items folder** – All measure items defined for this view display in the folder. You can edit, insert, remove and hide measure items from this folder. The Time Range controls the type of measure items that you can set up for the view – either measure items with time ranges (Yes) or measure items without time ranges (No). You can also use the Properties windows for individual measure items to change their caption, images, conditional formatting, pop-up labels, hyperlinks, filtering, sorting, totals, etc. • **Regular Measure Item** – This image displays next to regular measure items. • **Calculated Measure Item** – This image displays next to calculated measure items. • **Distinct Calculated Measure Item** – This image displays next to distinct calculated measure Items.
6	**Presentation folder –** The properties for this folder are used to set the default presentation format for the view (either Viewer or Excel) and to determine whether or not users will be prompted to choose the presentation format before the view opens for them.

	Chart folder – The Chart folder displays the names of any charts that you have created for a view. Charts displayed in blue are currently visible in the grid. Charts displayed in grey are hidden. Charts can be dragged and dropped in the folder to change the order in which they display in the grid.

Advanced Concepts

Availability of Time Range Properties

A couple factors influence the availability of time range properties in the Insert Measure Item window and Edit Measure Item window.

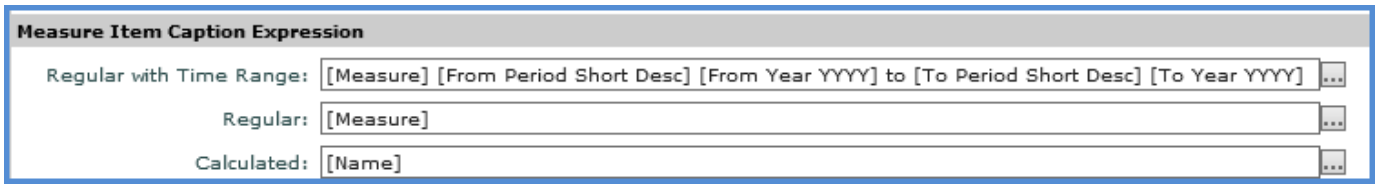
Properties for Time Unit, From/To Year, Period, and Offset only display when the Time Range property for the view is set to Yes. See Why isn't there a Section for Time in the Insert/Edit Measure Item Window?.

In cases where Time Range = Yes and you select multiple measure items in the windows, all of the properties will display but some of them may be disabled. Only properties that the selected measure items have in common will be enabled.

Default Values for Captions

The content of captions assigned to new measure items in your views are controlled by application settings. You can customize captions after adding measure items to views or leave captions set to the application default.

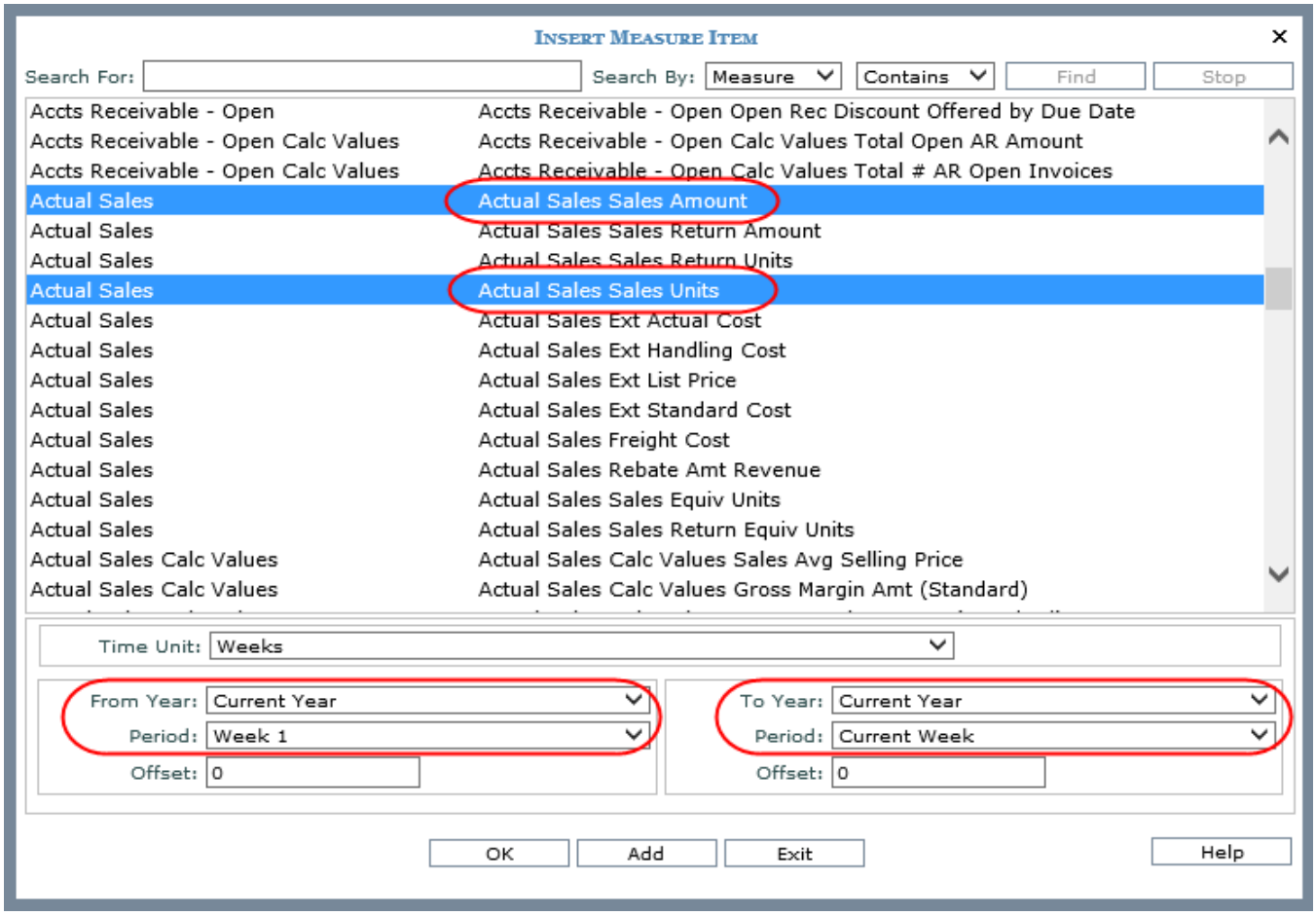
The state of the expressions for default captions upon first use of Stratum.Viewer is shown below. There is a unique caption expression defined for each type of measure item -- regular measure items with time ranges, regular measure items (those without time ranges), and calculated measure items. Security administrators can make adjustments to these defaults to match the preferences of your company. To do so, they click the Browse button ... next to the expression and make changes in the Caption Expression window.



The next few pages have examples of how the above default caption expressions translate into captions in a view.

Regular with Time Range

Here are the measures and time ranges specified for two new, regular measure items with time.



Next are the measure items in the view. The captions consist of six elements:

- [Measure] - the name of the underlying measure.
- [From Period Short Desc] [From Year YYYY] - the short description of the From period and four-digit year of the From year.
- The text " to "
- [To Period Short Desc] [To Year YYYY] - the short description of the To period and four-digit year of the To year.

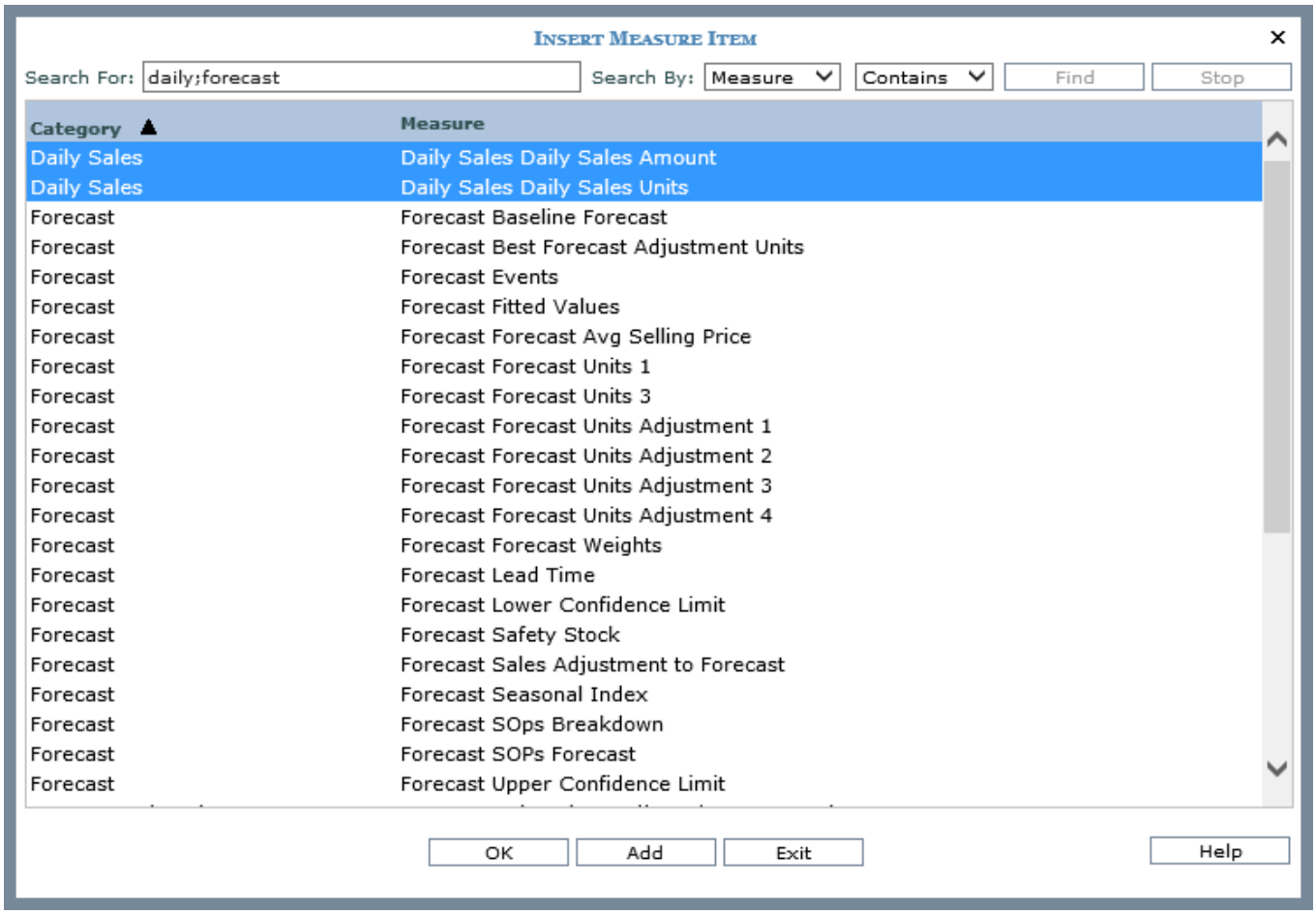
View Name: *Customer Ship-To YTD Top 10 Customers*

View Filter

Customer Ship-To	Actual Sales Sales Amount Wk 1 2014 to Wk 38 2014	Actual Sales Sales Units Wk 1 2014 to Wk 38 2014	Actual Sales Sales Amount Wk 38 2014 to Wk 38 2014	Actual Sales Sales Units Wk 38 2014 to Wk 38 2014
Wilder Foods -- St Louis MO WOB	$23,909,981	608,027	$765,806	15,980
Wilder Foods -- St Louis MO WOJ	$21,518,983	547,224	$689,225	14,382
Wilder Foods -- St Louis MO WOI	$20,323,484	516,823	$650,935	13,583
Wilder Foods -- St Louis MO	$19,277,186	494,669	$631,440	13,181
Wilder Foods -- St Louis MO WOH	$19,127,985	486,421	$612,645	12,784
Wilder Foods -- St Louis MO WOG	$17,932,486	456,020	$574,355	11,985
Wilder Foods -- St Louis MO WOF	$16,736,987	425,619	$536,064	11,186
Wilder Foods -- St Louis MO WOE	$15,541,488	395,217	$497,774	10,387
Wilder Foods -- Buffalo NY WOB	$14,777,358	377,286	$445,498	9,410
Wilder Foods -- St Louis MO WOD	$14,345,989	364,816	$459,484	9,588
Grand Total	**$183,491,927**	**4,672,121**	**$5,863,226**	**122,469**

Regular

Here are measures for two new, regular measure items. The view the measure items are being added to has a Time Range property of No, which means there are no time ranges for the measure items.



Next are the measure items in the view, where the captions are the names of the underlying measures -- represented by the [Measure] text in the caption expression shown earlier in this topic.

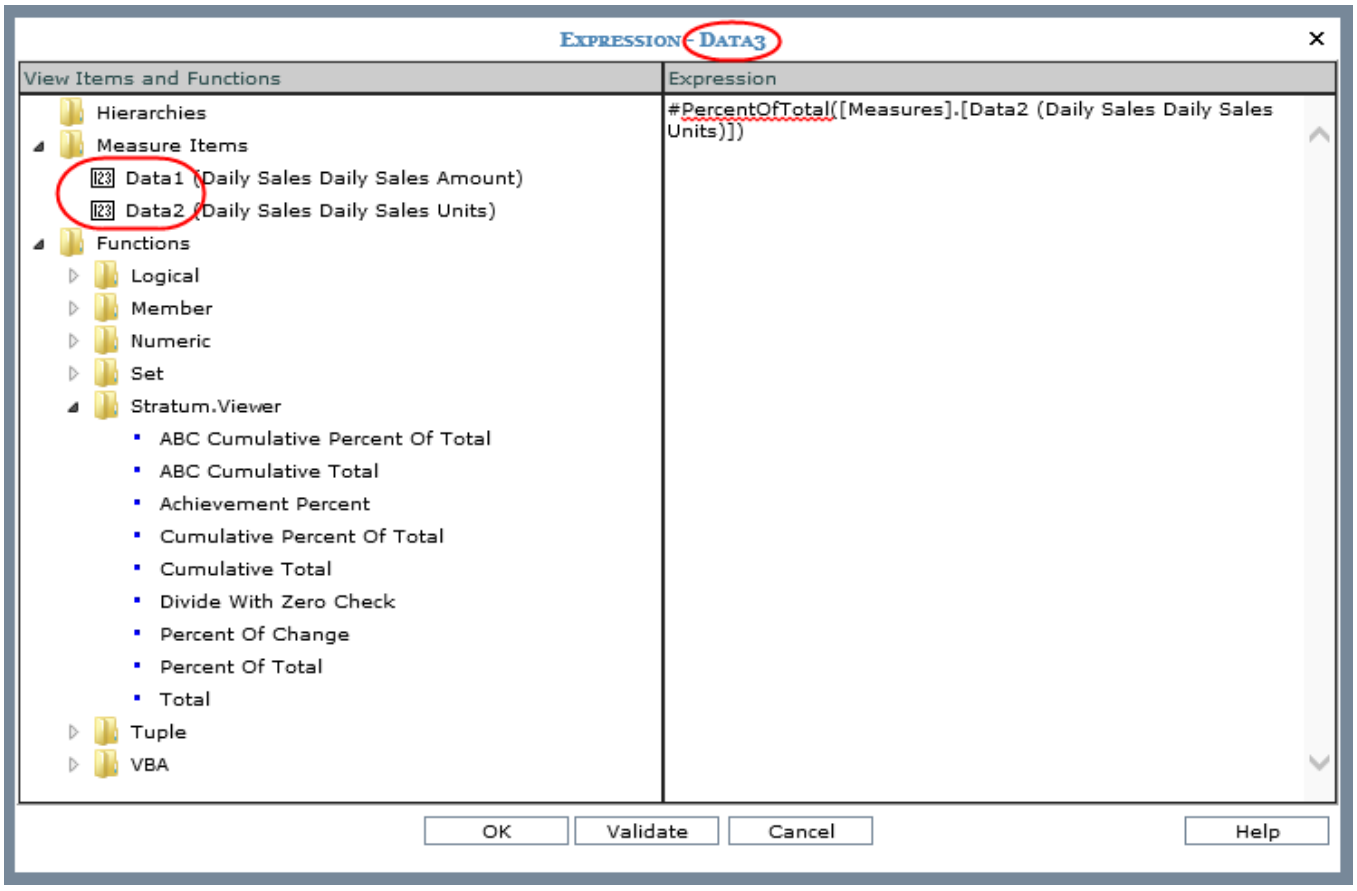
View Name: *Daily Sales Current Year by Category*

View Filter

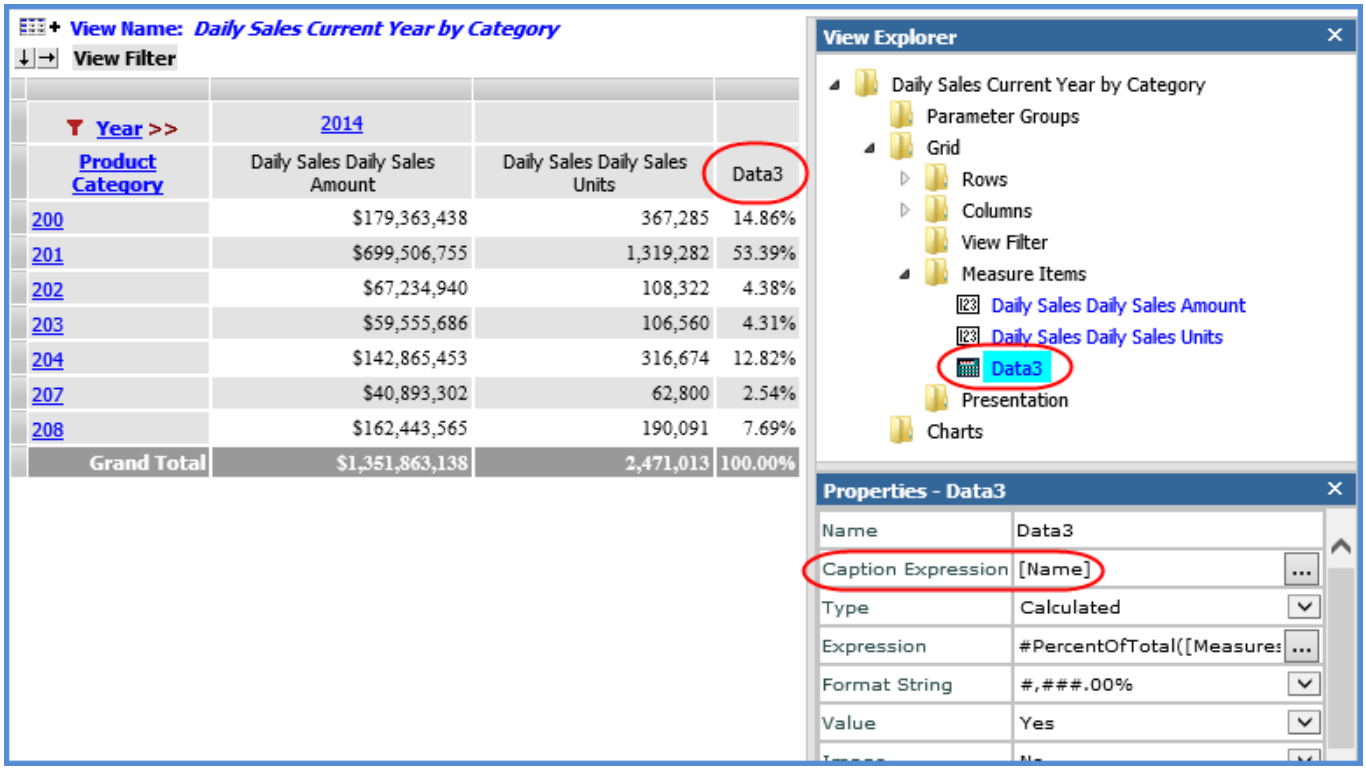
Year >>	2014	
Product Category	Daily Sales Daily Sales Amount	Daily Sales Daily Sales Units
200	$179,363,438	367,285
201	$699,506,755	1,319,282
202	$67,234,940	108,322
203	$59,555,686	106,560
204	$142,865,453	316,674
207	$40,893,302	62,800
208	$162,443,565	190,091
Grand Total	$1,351,863,138	2,471,013

Calculated

Here is a calculated measure item being set up for the same view as the prior one. You can see the existing regular measure items in the Expression window, designated by their names Data1 and Data2 followed by the respective captions. Measure item names are in the format of DataN by default. The caption for the calculated measure item will be the name Data3 because our default caption expression for that type of measure item is [Name] and 3 is the next number available to assign to a name. You can see this measure items caption in the title of the Expression window.



Here is the measure item in the view. You can see the default caption of Data3 in the view, view explorer, and the Properties window. You could give the measure item a more specific name by clicking the Browse button ... in the Properties window and making changes in the Caption Expression window.



Define Pop-up Labels for Measure Items

You can define pop-up labels for individual measure items using the Pop-up Label Expression property. You can include static text, variables, or a combination. When you specify a pop-up label, it takes precedence over other properties that would normally impact what displays in pop-up label text. If a pop-up label is defined, then it will display as the pop-up label text. If no pop-up label is defined but a hyperlink exists on the measure item, then the hyperlink displays in the pop-up label. If no pop-up label or hyperlink is defined but there is a drilldown view defined for the Measure Items axis, then the pop-up label will be the text 'Drill To" followed by the name of the drilldown view.

The basic steps for defining a pop-up label and a few examples follow.

1. Right-click the measure item in the view or view explorer and select Properties.

2. In the Properties window, select Yes for the Pop-up Label Expression property.

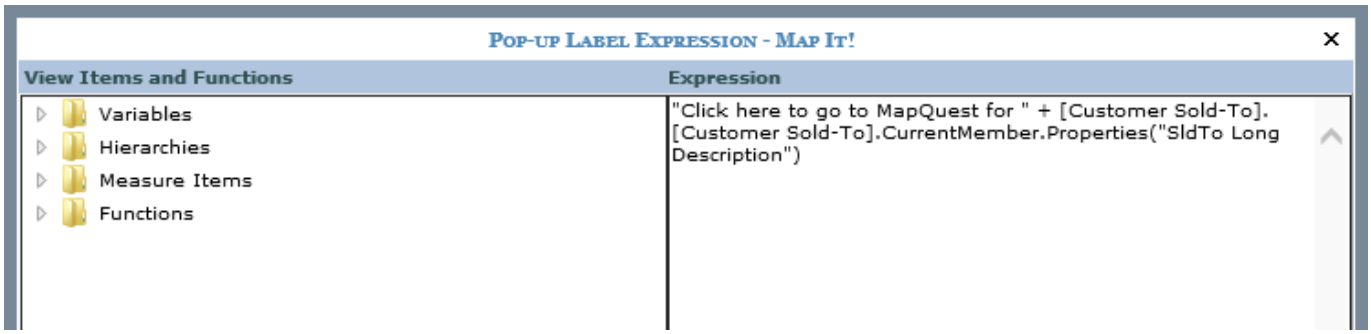
3. In the Pop-up Label Expression window, set up an expression to define the pop-up label and then click OK.

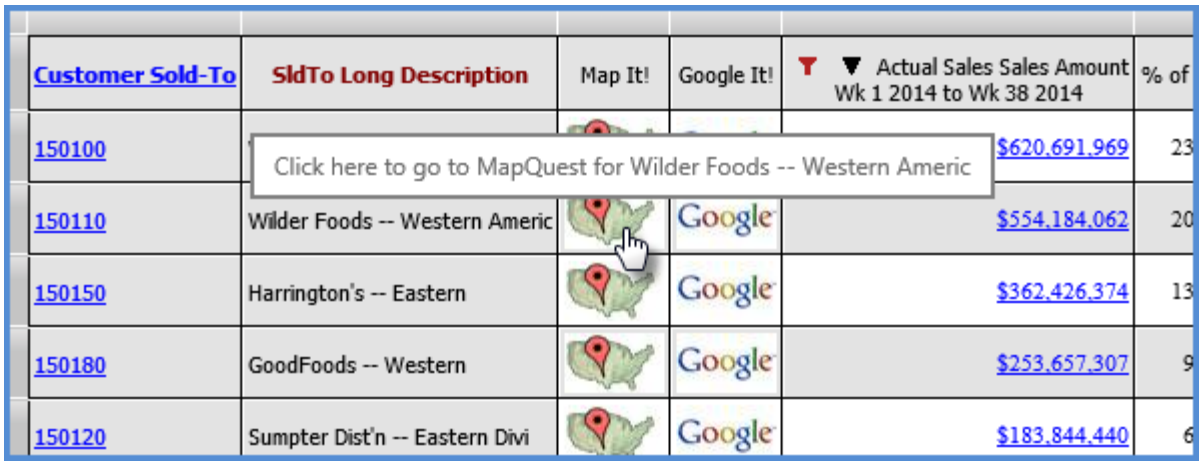
    - Click an item from the View Items and Functions side of the window to add it to the expression,
    - Use double quotes to enclose static text.
    - Use a plus sign + to concatenate parts of a multi-part expression.

Example – Static Text & View Information

This expression uses static text in combination with information from the view. The pop-up label will vary as you click on each Map It! measure item value based on corresponding Customer Sold-To member information.

"Click here to go to MapQuest for " + [Customer Sold-To].[Customer Sold-To].CurrentMember.Properties("SldTo Long Description")

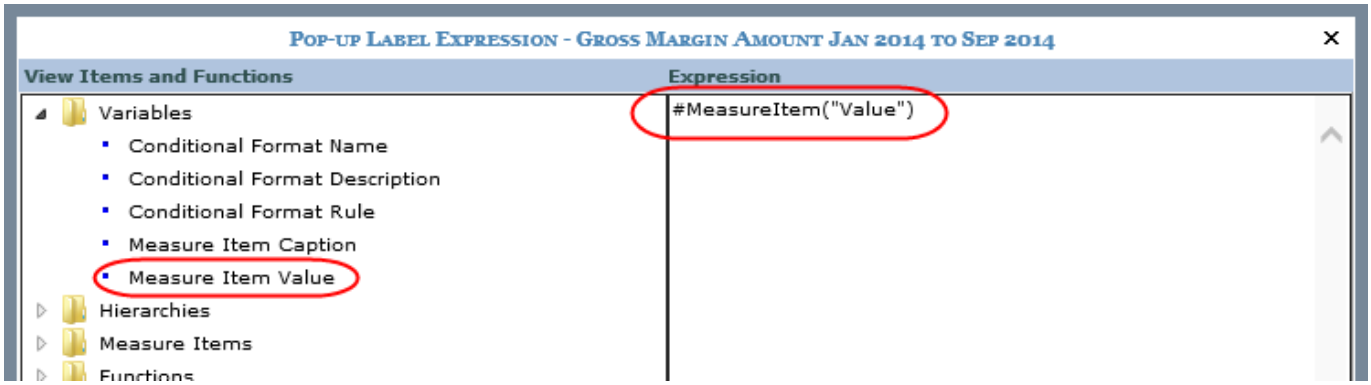


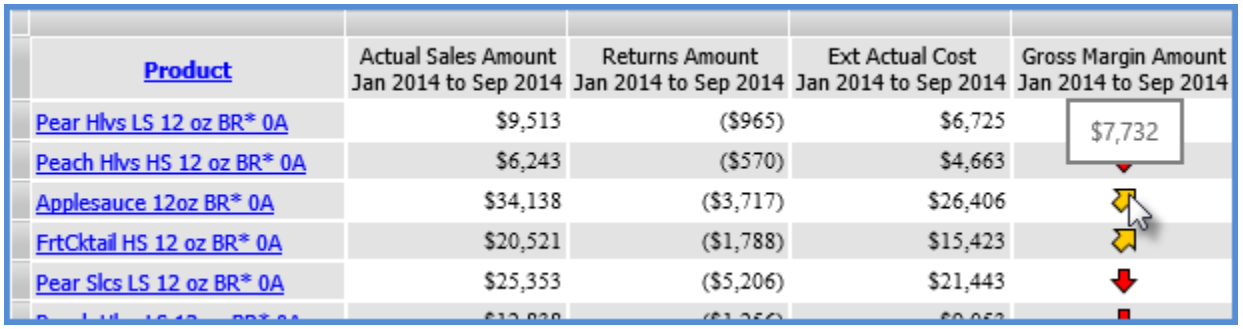


Example – Measure Item Value Variable

This expression uses only the Measure Item Value variable.

#MeasureItem(“Value”)

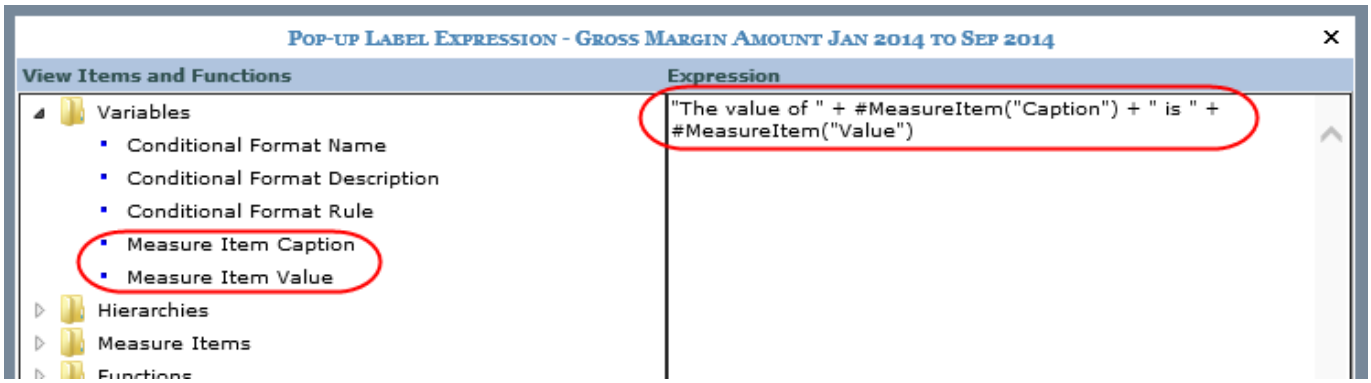


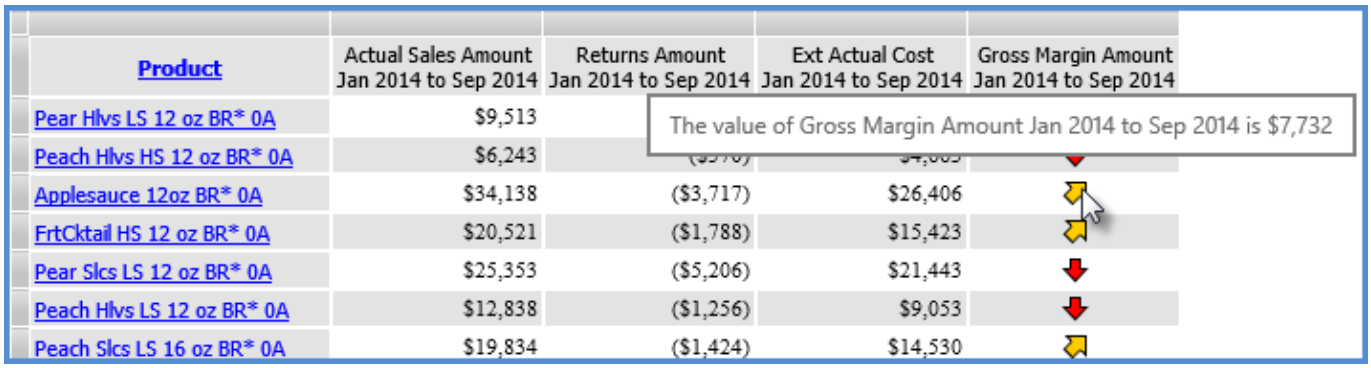


Example – Static Text & Measure Item Variables

This expression uses static text in combination with the two Measure Item variables.

"The value of " + #MeasureItem("Caption") + " is " + #MeasureItem("Value")

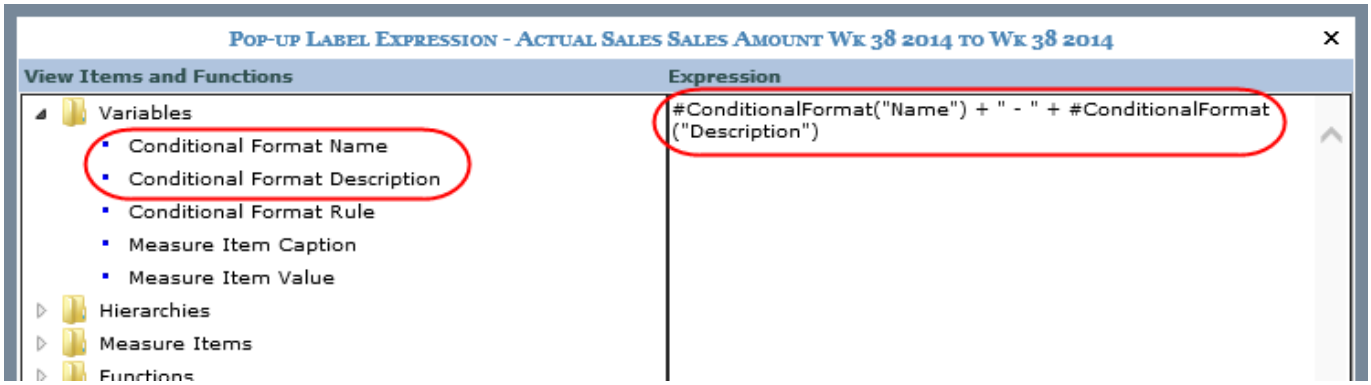


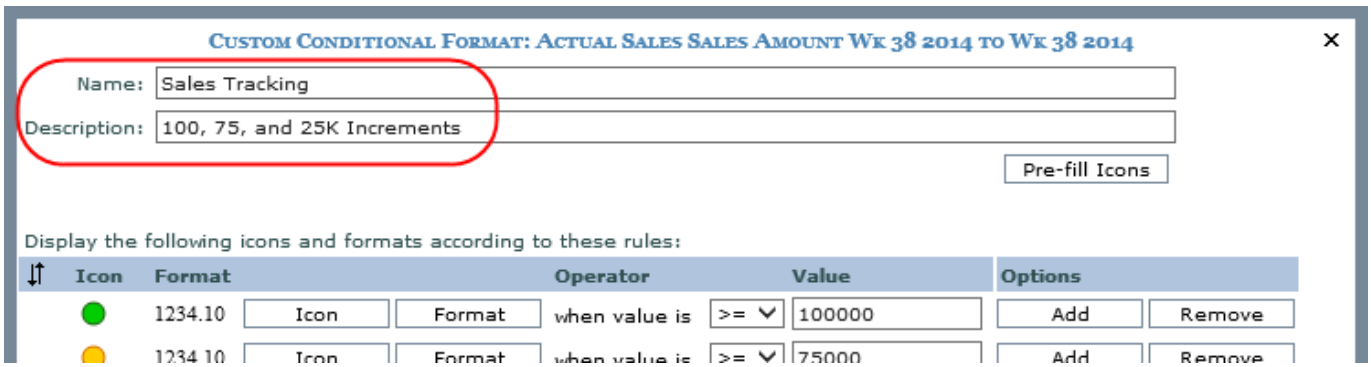


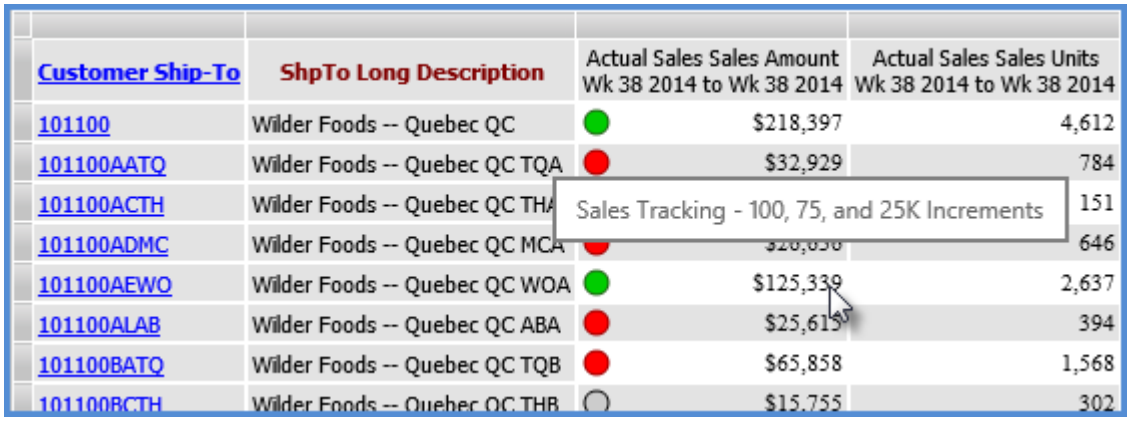
Example – Static Text & Conditional Format Variables

This expression uses two of the Conditional Format variables separated by static text (a dash mark). The pop-up label is for a measure item that has a conditional format defined for it.

#ConditionalFormat("Name") + " - " + #ConditionalFormat("Description")



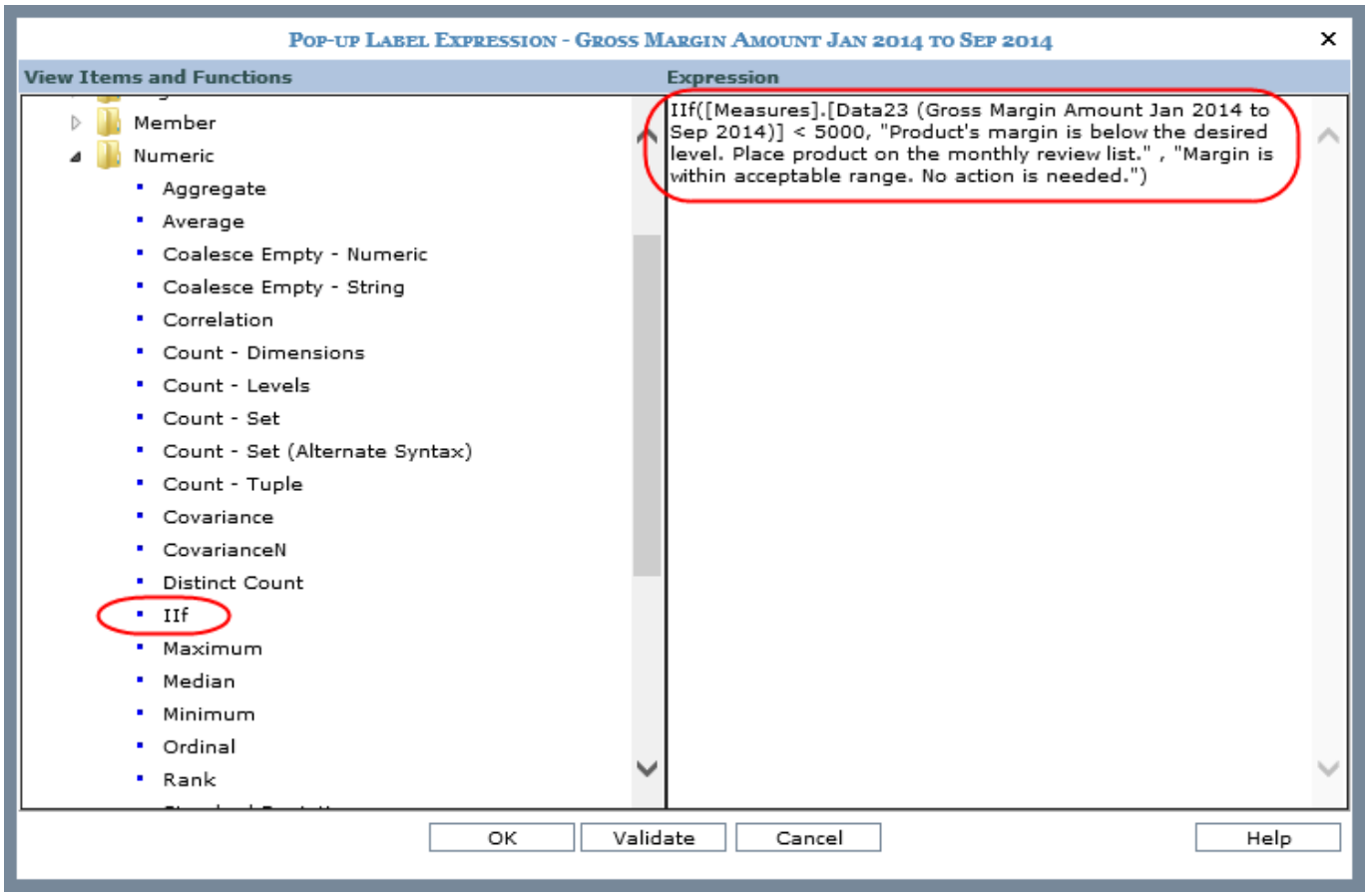


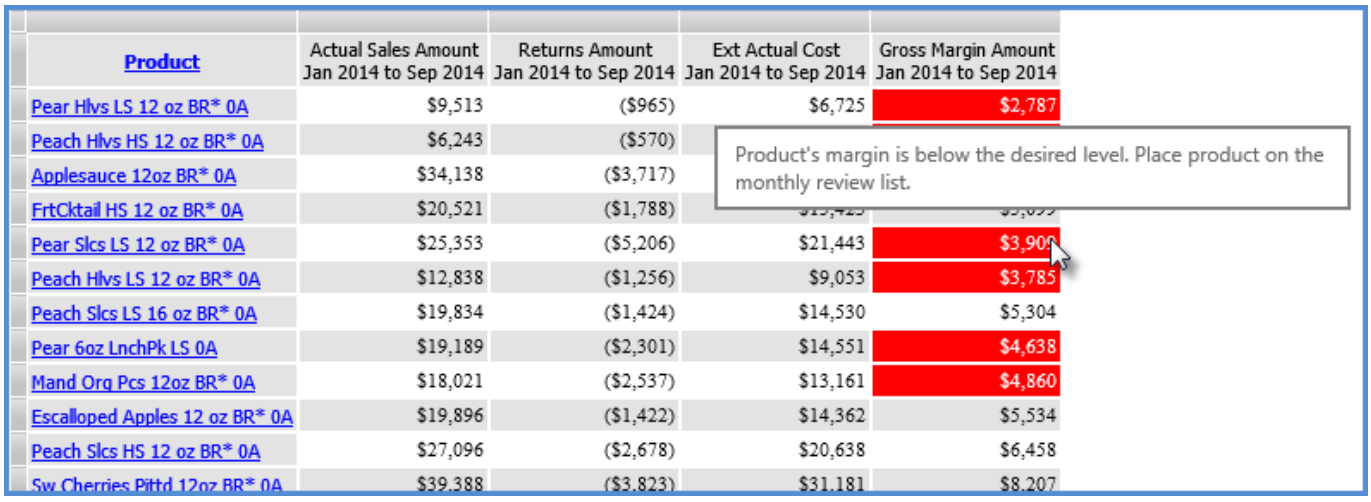


Example – Conditional Pop-up Label

This expression uses the IIf function to define a conditional expression. The label will display one of two statements depending on the conditions in the view grid. If Gross Margin Amount is less than $5,000, the first statement will display. If the margin is greater than $5,000, then the second statement will display.

IIf([Measures].[Data23 (Gross Margin Amount Jan 2014 to Sep 2014)] < 5000, "Product's margin is below the desired level. Place product on the monthly review list." , "Margin is within acceptable range. No action is needed.")





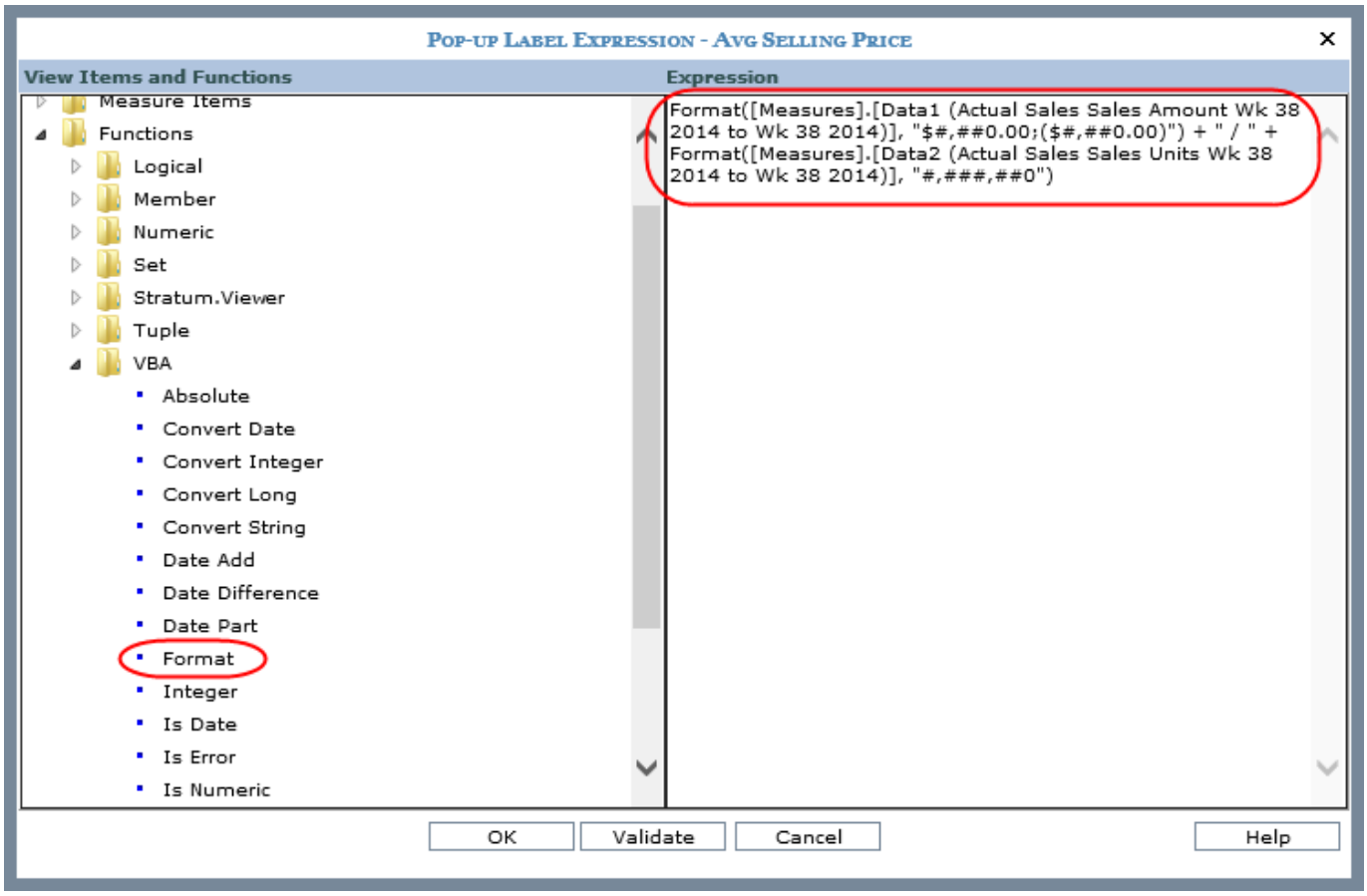
Product	Actual Sales Amount Jan 2014 to Sep 2014	Returns Amount Jan 2014 to Sep 2014	Ext Actual Cost Jan 2014 to Sep 2014	Gross Margin Amount Jan 2014 to Sep 2014
Pear Hlvs LS 12 oz BR* 0A	$9,513	($965)	$6,725	$2,787
Peach Hlvs HS 12 oz BR* 0A	$6,243	($570)	$4,663	$1,580
Applesauce 12oz BR* 0A	$34,138	($3,717)	$26,406	$7,732
FrtCktail HS 12 oz BR* 0A	$20,521	($1,788)	$15,423	$5,099
Pear Slcs LS 12 oz BR* 0A	$25,353	($5,206)		
Peach Hlvs LS 12 oz BR* 0A	$12,838	($1,256)		
Peach Slcs LS 16 oz BR* 0A	$19,834	($1,424)	$14,530	$5,304
Pear 6oz LnchPk LS 0A	$19,189	($2,301)	$14,551	$4,638
Mand Org Pcs 12oz BR* 0A	$18,021	($2,537)	$13,161	$4,860
Escalloped Apples 12 oz BR* 0A	$19,896	($1,422)	$14,362	$5,534
Peach Slcs HS 12 oz BR* 0A	$27,096	($2,678)	$20,638	$6,458
Sw Cherries Pittd 12oz BR* 0A	$39,388	($3,823)	$31,181	$8,207

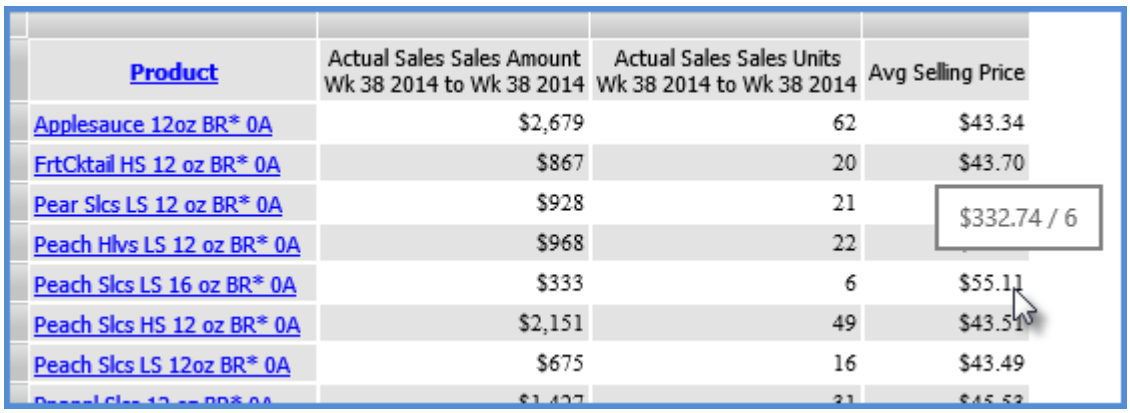
Margin is within acceptable range. No action is needed.

Example – Format Variable & Showing Values Behind a Calculation

This expression displays the value of a sales amount measure item followed by a division sign and the value of a sales units measure item. The VBA Format function is used to control the display format of the values in the pop-up label. The pop-up label is meant to show the values behind a calculated measure item's results.

Format([Measures].[Data1 (Actual Sales Sales Amount Wk 38 2014 to Wk 38 2014)], "$#,##0.00;($#,##0.00)") + " / " + Format([Measures].[Data2 (Actual Sales Sales Units Wk 38 2014 to Wk 38 2014)], "#,###,##0")





Product	Actual Sales Sales Amount Wk 38 2014 to Wk 38 2014	Actual Sales Sales Units Wk 38 2014 to Wk 38 2014	Avg Selling Price
Applesauce 12oz BR* 0A	$2,679	62	$43.34
FrtCktail HS 12 oz BR* 0A	$867	20	$43.70
Pear Slcs LS 12 oz BR* 0A	$928	21	
Peach Hlvs LS 12 oz BR* 0A	$968	22	
Peach Slcs LS 16 oz BR* 0A	$333	6	$55.11
Peach Slcs HS 12 oz BR* 0A	$2,151	49	$43.51
Peach Slcs LS 12oz BR* 0A	$675	16	$43.49

Display Images for Measure Items

Displaying images for measure items involves setting up an expression to define the image name/location and setting the Image property to Yes. You can specify a single image for the entire measure item, in which case each cell for measure item will display same image. Or, you can specify an expression that displays a unique image for each cell based on dynamic text in the expression, such as an image that corresponds to products listed in the view. Typically the Value property is set to No and Total property is set to None in these cases.

Here are the basic steps followed by two examples.

1. Right-click the Measure Items folder in view explorer and select Insert Calculated Measure Item.

2. In the Properties window, select Calculated as the Type.

3. In the Expression window, set up an expression to define the name and location of the image and then click OK in that window.

    - Image file(s) must reside in the Stratum.Viewer application folders. It is recommended that all custom images reside in a subfolder of the Images folder of the Stratum.Viewer application.
    - Supported file types *.jpg, *.jpeg, *.png, *.bmp, *.gif, *.tif, and *.tiff.
    - Images will display in the grid according to their original, default size.

4. Set the Value property to No.

Note: If you set Value to Yes then the entire expression will display in the cell next to the image.

5. Set the Image property to Yes.

6. Set the Total property to None (images aren't needed for total / subtotal rows).

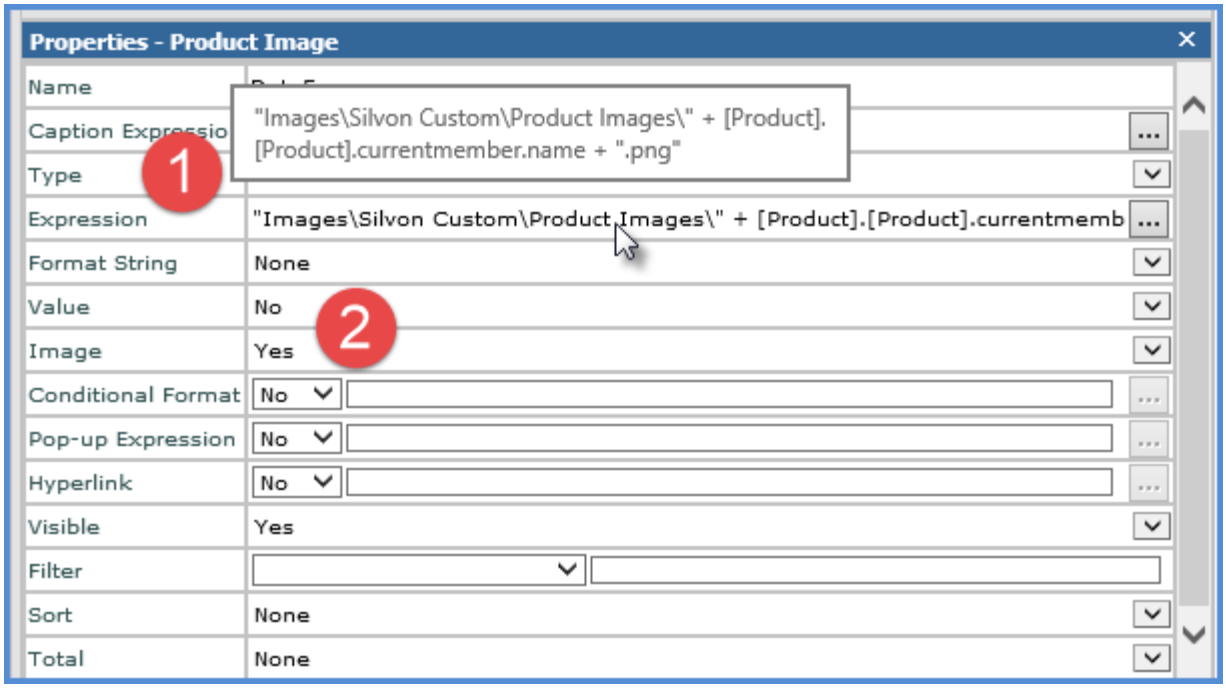
7. {Optional} Enhance the images by defining a hyperlink or pop-up label for the measure item.

Example 1

This view displays an image for each product. The calculated measure item “Product Image” defines the location and file name of the product images.

Product	Prod Long Description	Prod ABC Classification	Product Image	Actual Sales Sales Units Jan 2014 to Sep 2014	Actual Sales Sales Units Jan 2013 to Sep 2013
620A954020	Navel Oranges 0A	D		19,462	24,468
620B954000	Red Ripe Tomatoes 0B	B		15,195	19,665
620A954017	Cherries, Bing 0A	D		13,674	17,260
620A954014	Asparagus 0A	B		13,091	18,148
620A954011	Baby Carrots 0A	A		12,692	17,800
620A954016	Strawberries 0A	C		12,320	17,119
620A954008	Bananas 0A	A		4,588	6,906

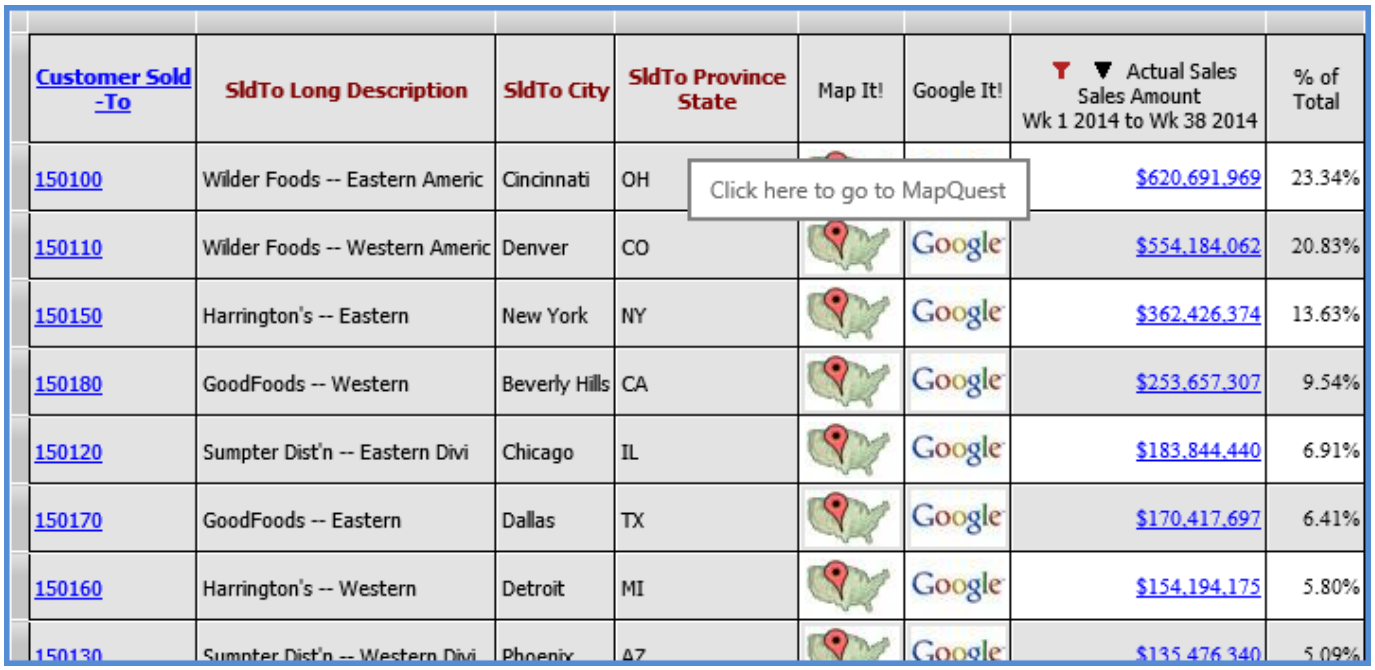
The Product Image measure item is defined as follows:



1	**Expression** – In this example, the product images reside in a subfolder of the Stratum.Viewer Images folder called “Silvon Custom/Product Images”. The first part of the expression determines the location of the product images and the remainder dynamically determines the file name. "Images\Silvon Custom\Product Images\" + [Product].[Product].currentmember.name + ".png"
2	**Value –** Set to No. **Image** – Set to Yes (required to display the image defined by the expression). **Total** – Set to None.

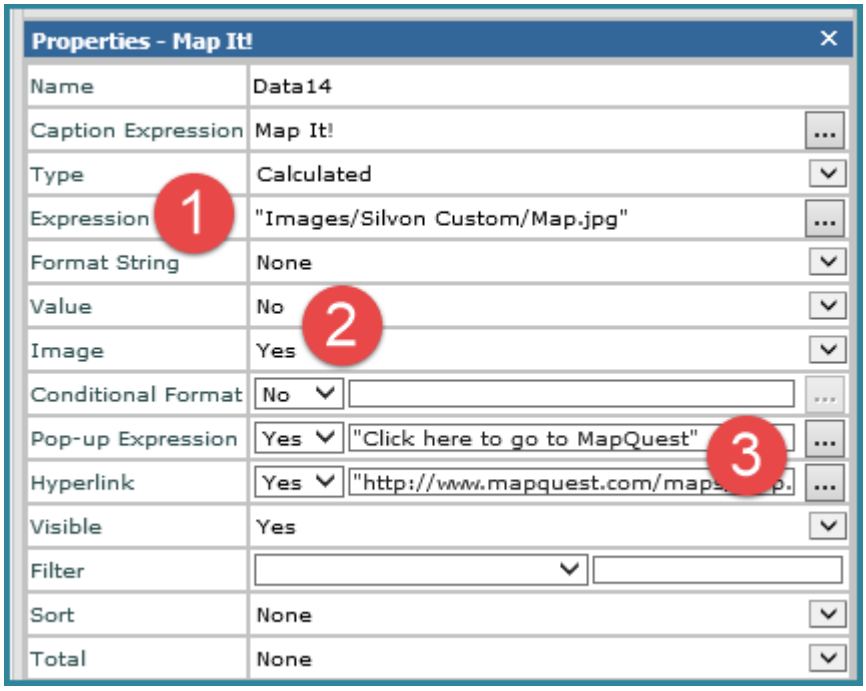
Example 2

The example that follows shows a view containing images with hyperlinks that will take the user to MapQuest and Google using information from each Customer Sold-To attribute relationships. A pop-up label displays additional information for the user.



Customer Sold -To	SldTo Long Description	SldTo City	SldTo Province State	Map It!	Google It!	Actual Sales Sales Amount Wk 1 2014 to Wk 38 2014	% of Total
150100	Wilder Foods -- Eastern Americ	Cincinnati	OH			$620,691,969	23.34%
150110	Wilder Foods -- Western Americ	Denver	CO		Google	$554,184,062	20.83%
150150	Harrington's -- Eastern	New York	NY		Google	$362,426,374	13.63%
150180	GoodFoods -- Western	Beverly Hills	CA		Google	$253,657,307	9.54%
150120	Sumpter Dist'n -- Eastern Divi	Chicago	IL		Google	$183,844,440	6.91%
150170	GoodFoods -- Eastern	Dallas	TX		Google	$170,417,697	6.41%
150160	Harrington's -- Western	Detroit	MI		Google	$154,194,175	5.80%
150130	Sumpter Dist'n -- Western Divi	Phoenix	AZ		Google	$135,476,340	5.09%

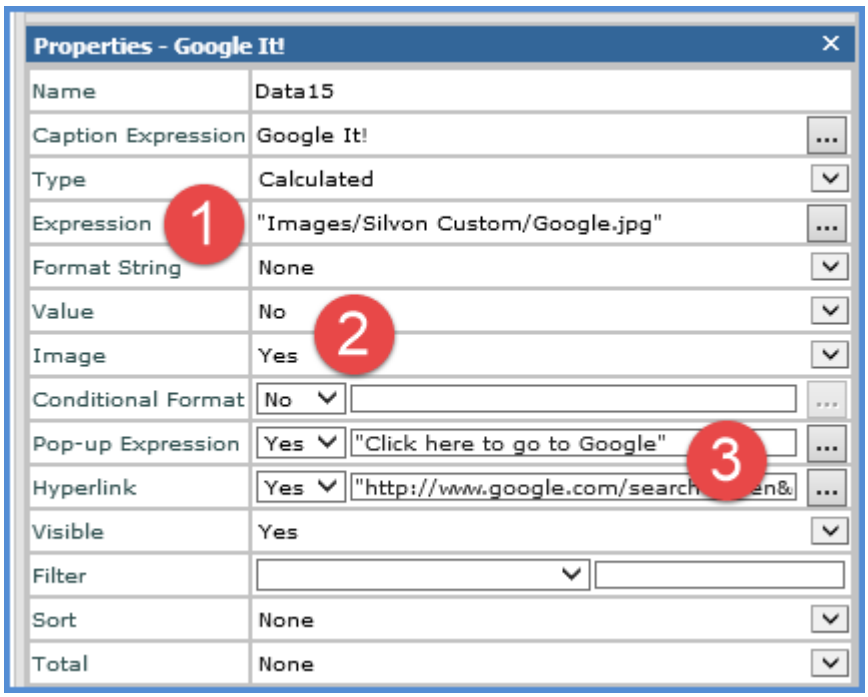
The Map It! measure item was defined as follows:



1	**Expression** – In this example, the image resides in a subfolder of the Stratum.Viewer Images folder called “Silvon Custom”. The full expression defines the relative path to the image: "Images/Silvon Custom/Map.jpg"
2	**Value –** Set to No. **Image** – Set to Yes (required to display the image defined by the expression).

	Total – Set to None.
3	**Pop-up Label Expression** – Here's the expression for the pop-up label: "Click here to go to MapQuest" **Hyperlink –** Here's the expression used for the Map It! hyperlink: "http://www.mapquest.com/maps/map.adp?&city=" + [Customer Sold-To].[Customer Sold-To].CurrentMember.Properties("SldTo City") + "&state=" + [Customer Sold-To].[Customer Sold-To].CurrentMember.Properties("SldTo Province State") + "&zipcode=" + [Customer Sold-To].[Customer Sold-To].CurrentMember.Properties("SldTo Postal Code") + "&country=US&cid=lfmaplink"

The Google It! measure item was defined as follows:



1	**Expression** – In this example, the image resides in a subfolder of the Stratum.Viewer Images folder called "Silvon Custom". The full expression defines the relative path to the image: "Images/Silvon Custom/google.jpg"
2	**Value –** Set to No. **Image** – Set to Yes (required to display the image defined by the expression). **Total** – Set to None.
3	**Pop-up Label Expression** – Here's the expression for the pop-up label: "Click here to go to Google" **Hyperlink –** Here's the expression used for the Google It! hyperlink: "http://www.google.com/search?hl=en&q=" + [Customer Sold-To].[Customer Sold-To].CurrentMember.Properties("SldTo Long Description")

Edit the Axis for Measure Items

1. Double-click the Measure Items folder in view explorer.

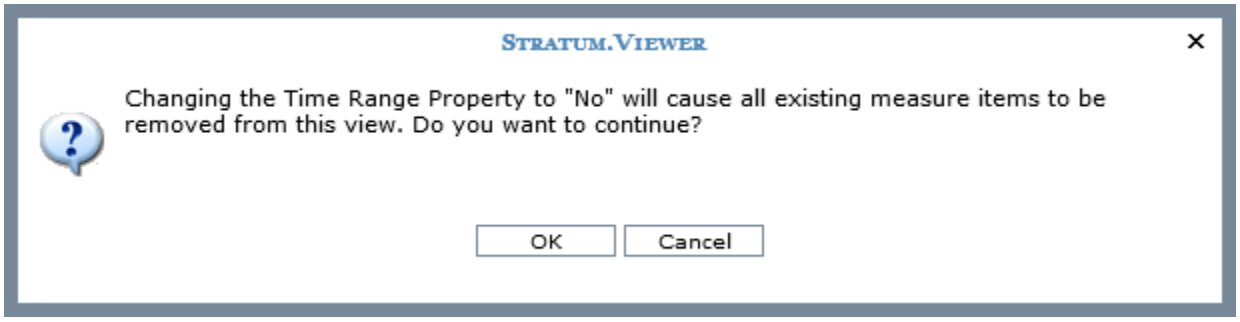
2. In the Properties window, select the desired axis for all measure items -- either the row or column axis.

Edit the Time Range Property for a View

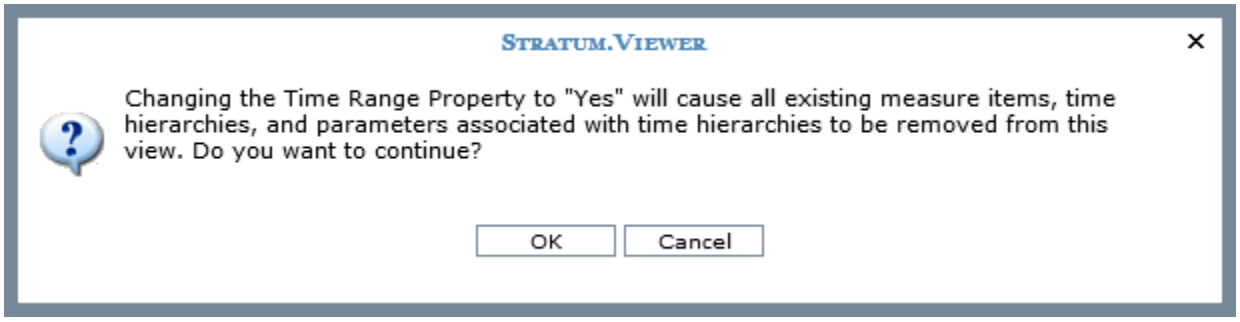
1. Double-click the Measure Items folder in view explorer.

2. In the Properties window, change the Time Range property as desired:

   - Change to "No" if you want to disable time range capabilities with respect to measure items. If your view already has measure items in it, you will be prompted to confirm the change. If you click OK, all existing measure items will be removed from the view.



   - Change to "Yes" if you want to enable time range capabilities with respect to measure items. If your view already has measure items and hierarchies in it, you will be prompted to confirm the change. If you click OK, all existing measure items, time hierarchies, and parameters based on time hierarchies will be removed from the view.



See also: What Happened to a Measure Item that Used to be in my View?

Make a Calculated Measure Item "Distinct"

1. Right-click a calculated measure item in the grid or view explorer, and select Properties.

2. In the Properties window, select Distinct Calculated as the type.

3. Click OK in the prompt that informs you the change will cause the measure item to be moved to the end of the view.

4. {Optional} If you want the measure item positioned at the beginning of the view, drag and drop it to that position in the Measure Items folder of view explorer.

Stratum.Planner Influence on Caption Variables

Stratum.Planner ViewSetItem properties are available to you as variables when setting up captions for regular measure items with time ranges in Stratum.Viewer. The From and To variables you see in the Caption Expression window correspond to the Short Description, Long Description, and Year properties of ViewSetItems. The property values for the selected variables in an expression will display in the evaluated caption in the grid.

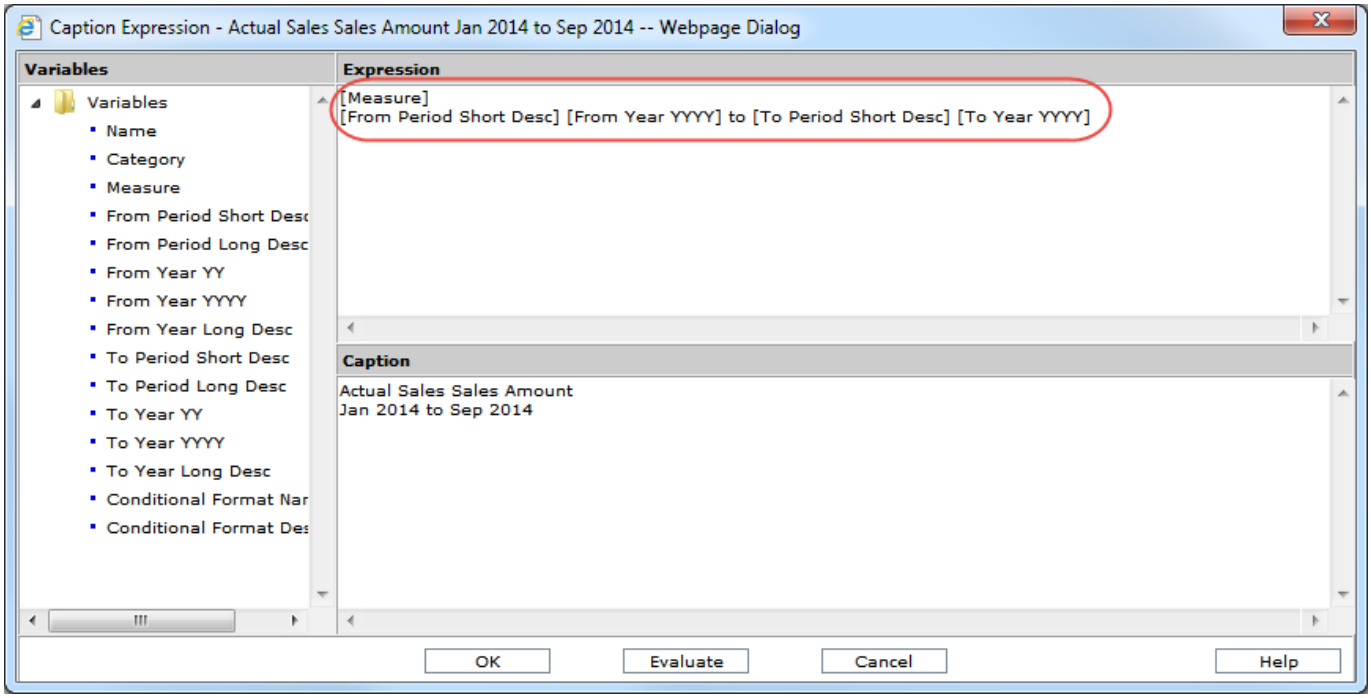
Note: For a full list of From and To variables and what ViewSetItem values they resolve to in the executed caption, see Caption Expression Window. See also ViewGroups and ViewSets in the Stratum Storage Database,

Here is a view with two measure items and their captions.

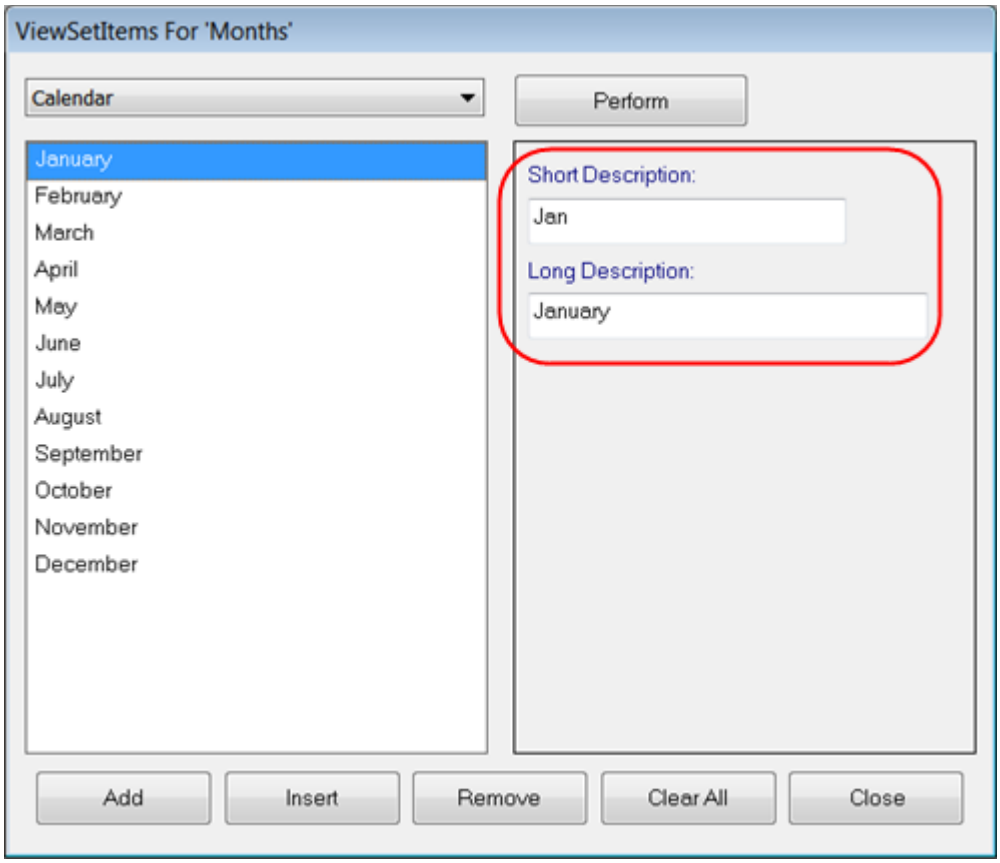
View Name: *Ship-To Region by RepBroker Type*
View Filter

	RepBroker Type >>	Broker		Grand To
Ship-To Region	SRgn Regional Sales Manager	Actual Sales Sales Amount Jan 2014 to Sep 2014	Actual Sales Sales Return Amount Jan 2014 to Sep 2014	Actual Sales Amoun Jan 2014 t 2014
USA	Beverly Wirtz	$42,494,992	($913,078)	$42,4
USA	Edward Hanson	$86,933,867	($2,752,794)	$86,9
USA	Dan Bixman	$149,464,779	($3,816,944)	$149,4
USA	Catherine Dowling	$69,647,280	($2,458,196)	$69,6
CAN	Pierre Lejeune	$91,471,256	($2,790,511)	$91,4
CAN	Gerald Delaney	$75,880,774	($2,415,986)	$75,8
Grand Total		$515,892,946	($15,147,509)	$515,8

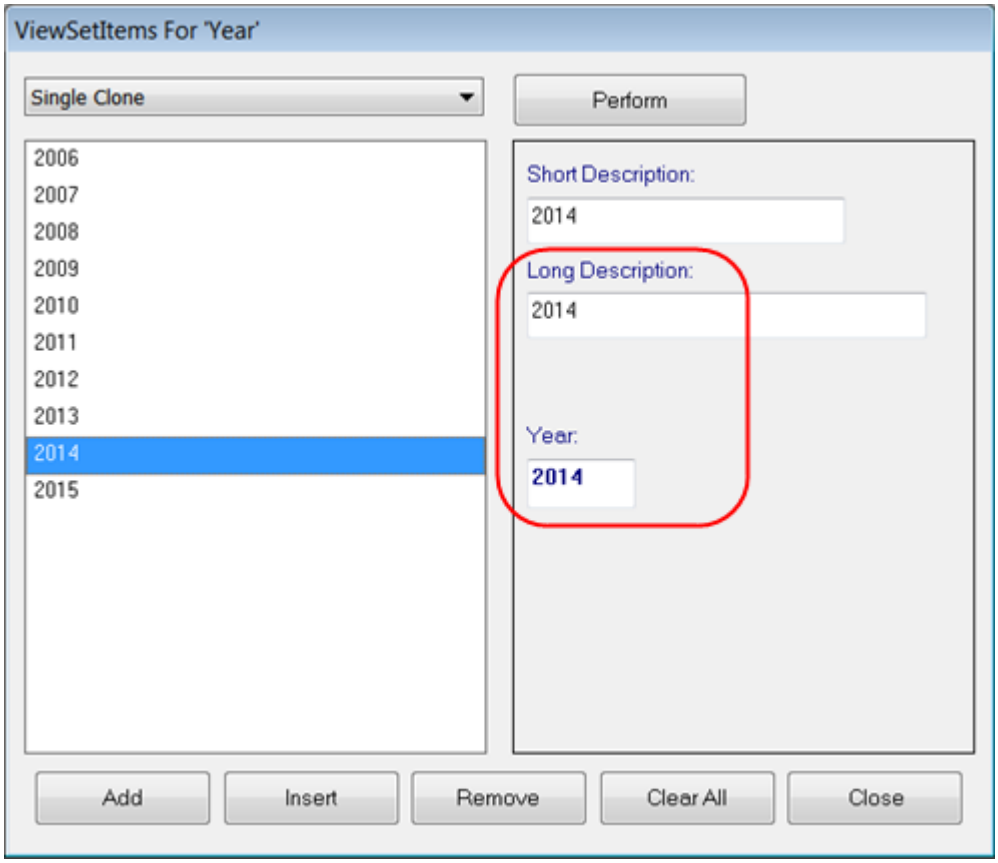
The same expression syntax was used for both measure items. Four of the From and To variables were used to build the caption expression – From Period Short Desc, To Period Short Desc, From Year YYYY, and To Year YYYY.



The short description from the corresponding ViewSetItem is used for the From and To Period Short Desc variables. If our example caption had used the From and To Period Long Desc variables, then the long description from the corresponding ViewSetItem would have been used.



The four digit Year from the corresponding ViewSetItem is used for the From and To Year YYYY variables in our example. If our example caption had used the From and To Year YY variables, then only the last two digits of the Year from the corresponding ViewSetItem would have been used. And if our example caption had used the From Year or To Year Long Desc variables, then the Year Long Description from the corresponding ViewSetItem would have been used in the evaluated expression in the grid.



Stratum.Planner Influence on Time Range Properties for Measure Items

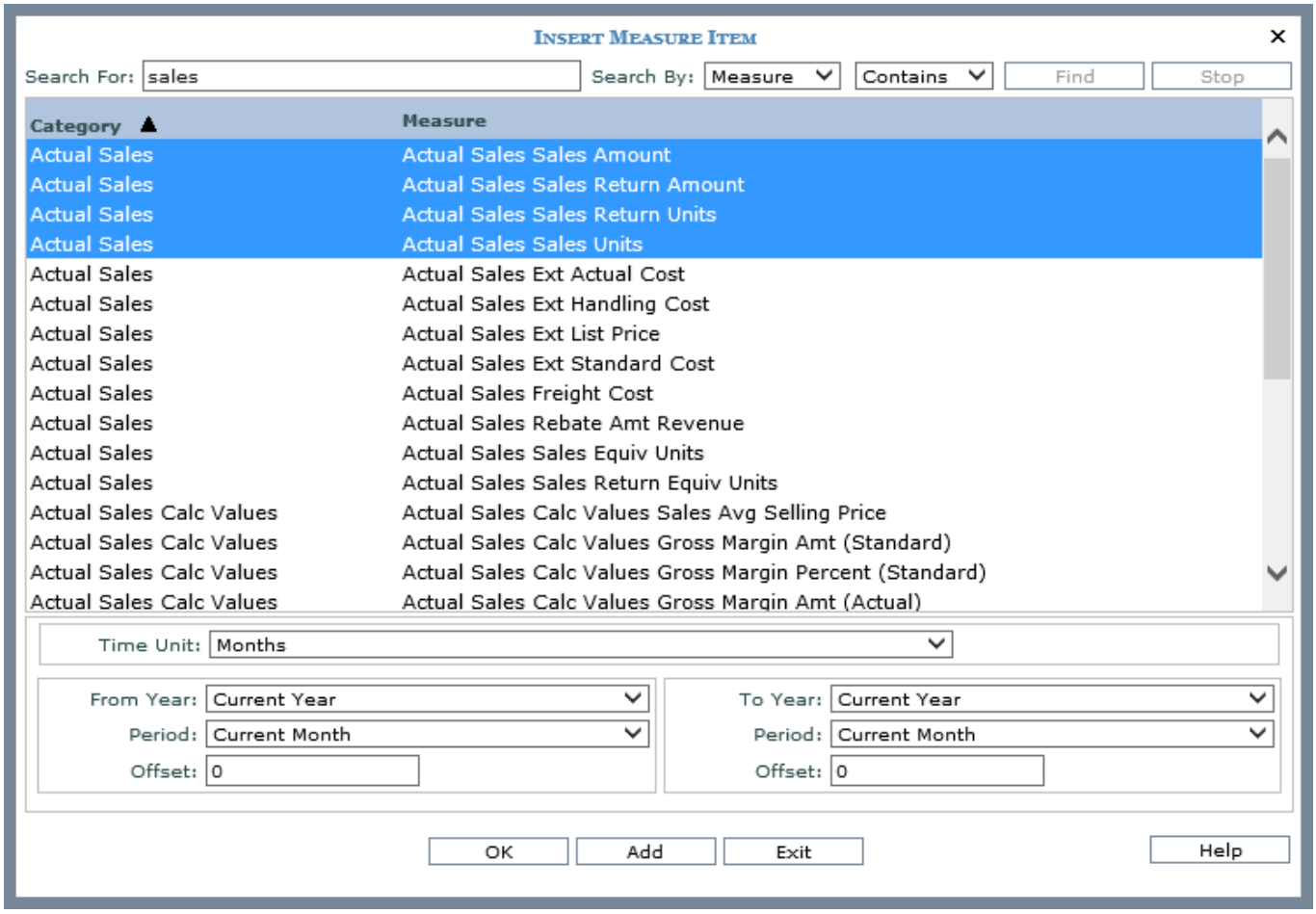
Stratum.Planner ViewGroups, ViewSets, and ViewSetItems impact the options available to you when setting up time range properties for regular measure items. Time range properties are available in the Insert and Edit Measure Item windows when the Time Range property in a view is set to Yes. See Time Dimension Creation for Stratum.Viewer for more detailed information about the Stratum.Planner influence on time in Stratum.Connector for Viewer and Stratum.Viewer.

Note: See also ViewGroups and ViewSets in the Stratum Storage Database and Using Time Ranges vs. Time Hierarchies in Views.

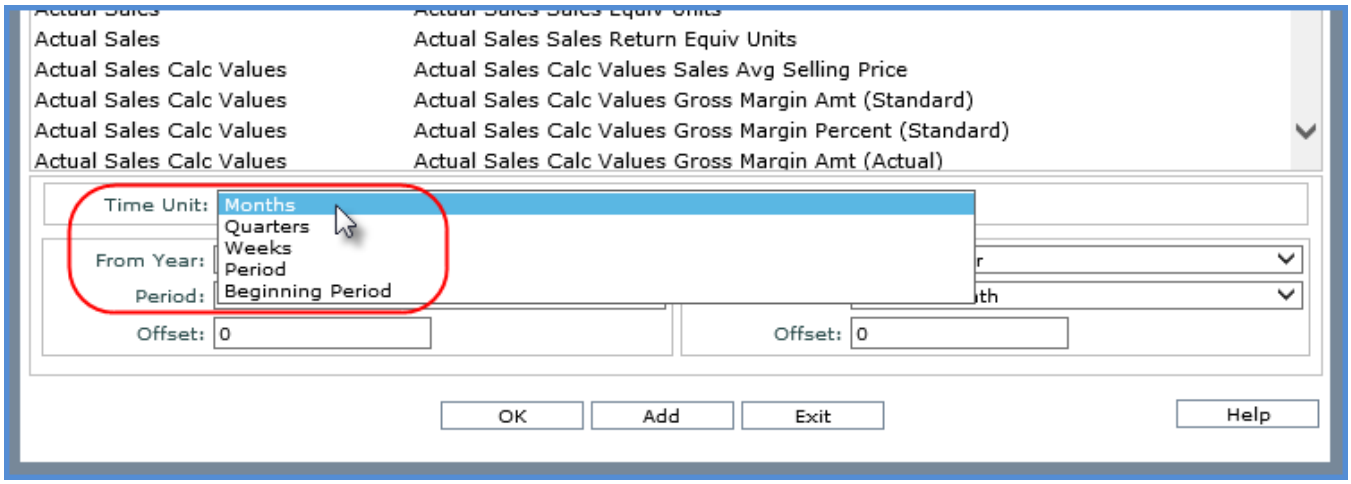
Here is a summary of how your time setup in Stratum.Planner impacts Stratum.Viewer time range properties. An example follows.

- The ViewGroup defined for a Structure Code determines the time units (quarters, months, etc.) available for each measure in the Stratum.Viewer Insert and Edit Measure Item window. Each absolute periodic ViewSet becomes a time unit.
- The ViewSet priority determines the order in which they display in the Time Unit drop-down list.
- The ViewSetItems from the absolute and based year ViewSets associated with the selected measure are used to create the available To / From years for the time units.
- The ViewSetItems from the absolute and based periodic ViewSets associated with the measure are used to create the available To / From periods for each time unit.
- The based ViewSetItems marked as “Default” in Stratum.Planner will be used as the default year / period for the corresponding time unit.

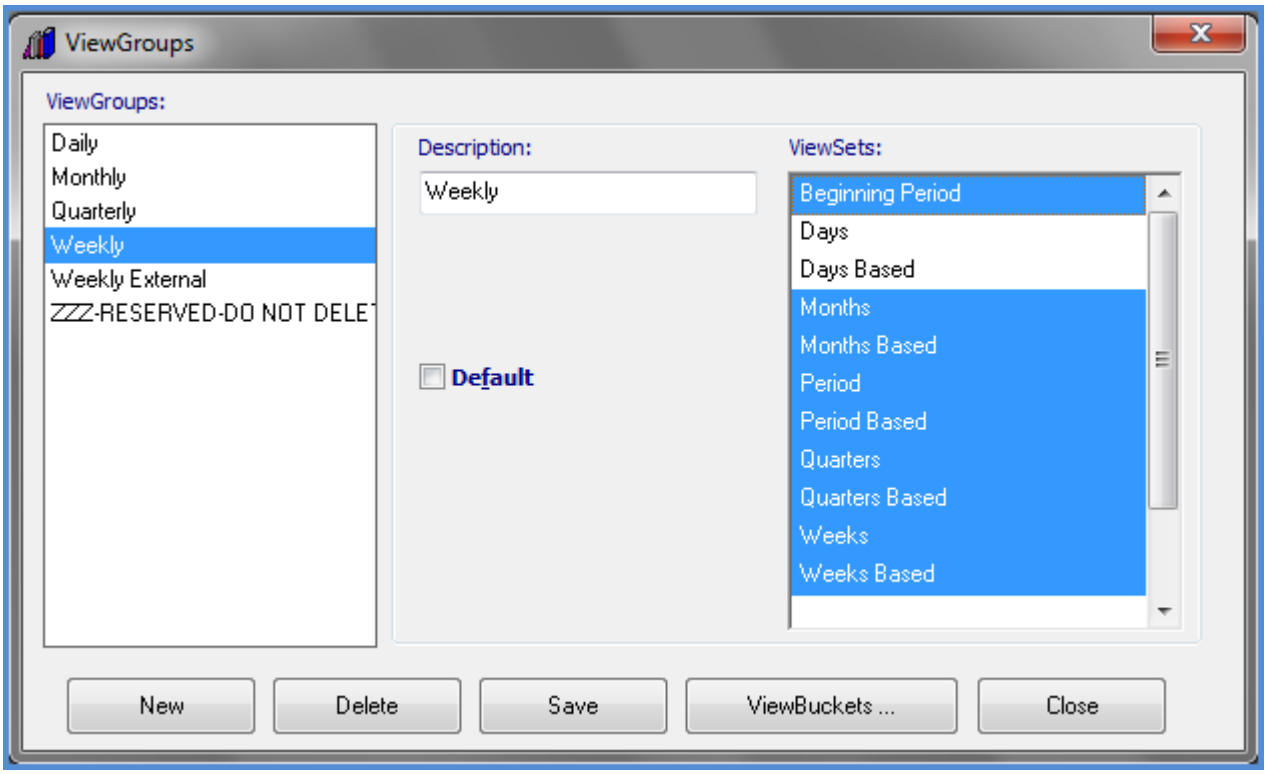
Here are some Actual Sales measures in Stratum.Viewer that belong to the Actual Sales Category.



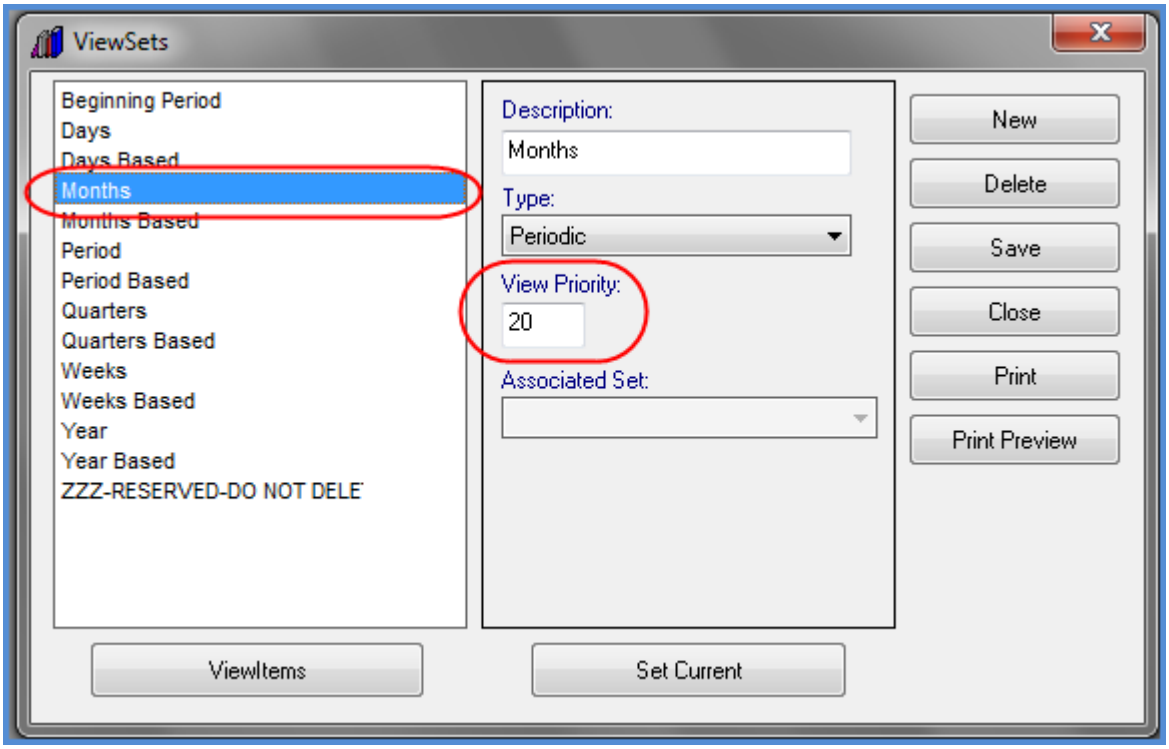
Here are the time units displayed in the Insert Measure Item window. The list of available Time Units is based on the Stratum.Planner ViewGroup associated with the selected measures.



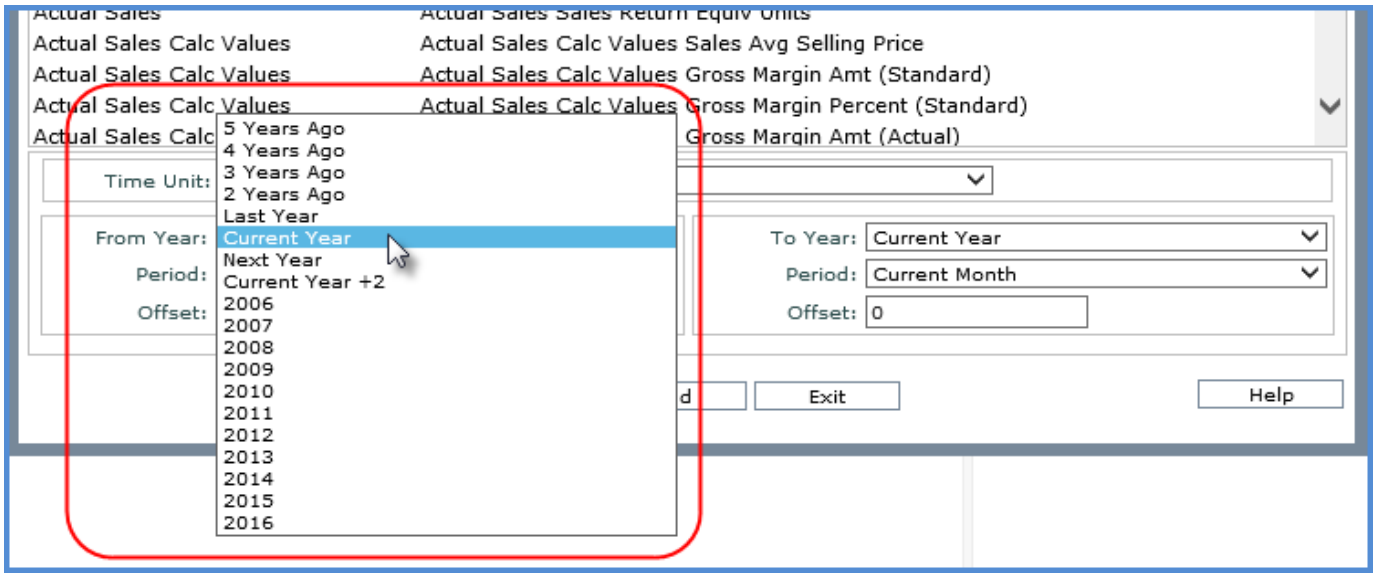
The Stratum.Planner ViewGroup associated with Actual Sales measures is “Weekly”. Each absolute periodic ViewSet associated with this ViewGroup becomes an available time unit for the Actual Sales measures. In this case, the units are Beginning Period, Months, Period, Quarters, and Weeks. They display in the Time Unit drop-down list based on the ViewSet Priority property assigned to them in Stratum.Planner.



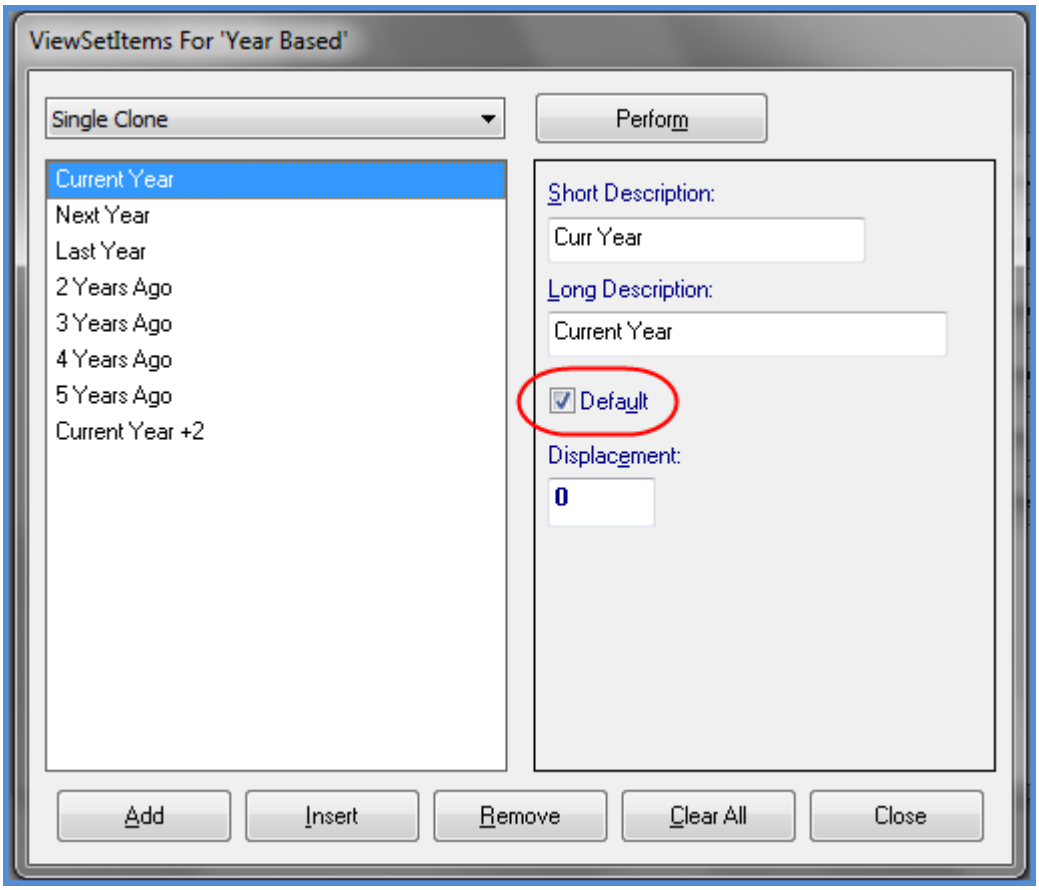
The Months ViewSet has the lowest priority. Therefore, it appears first in the list and is also the default time unit for Actual Sales measures.



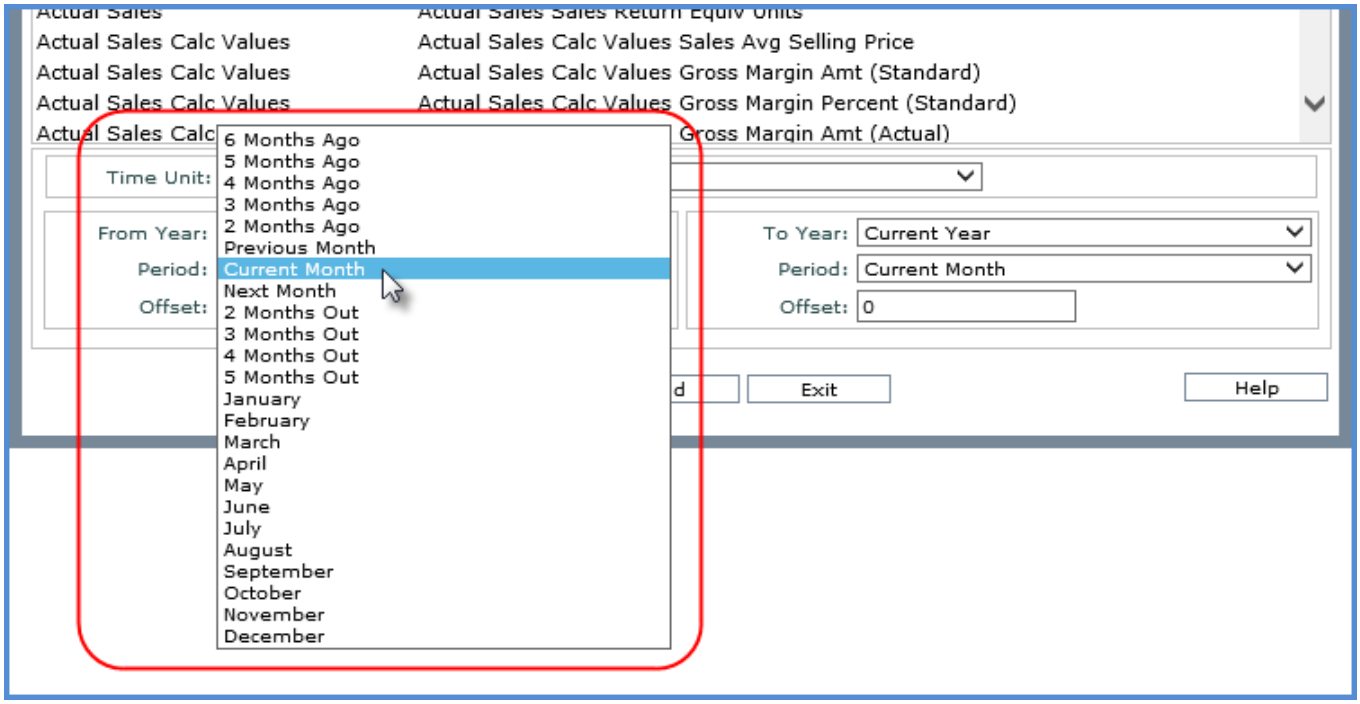
Here is the From Year drop-down list for the Months time unit in the Insert Measure Item window. The available years and year selected by default are determined by ViewSetItems from absolute and based year ViewSets.



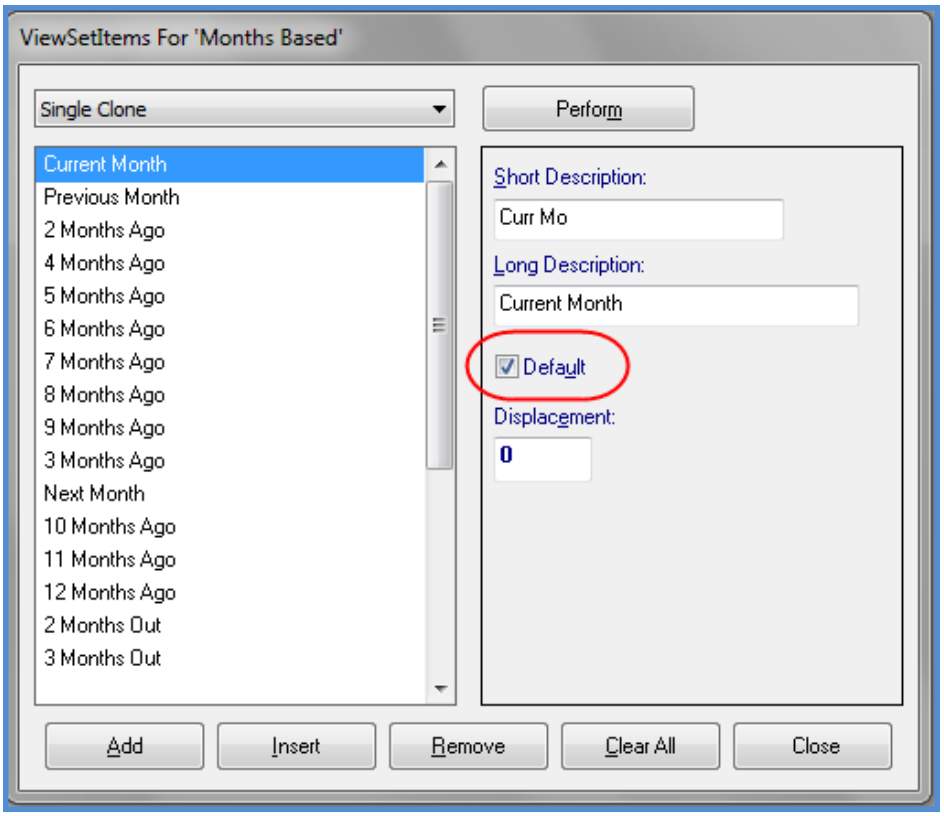
The From Year and To Year drop-down lists in the window are populated with the ViewSetItems from the absolute and based year ViewSets associated with the ViewGroup – in this example the Year Based and Years ViewSets. The years will display based on the priority of their associated ViewSets. In this example, the Based Year ViewSet has a lower priority than the Year ViewSet; therefore, the based years appear before the absolute years. The ViewSetItem defined as the Default for the based ViewSet will be selected as the default for the From Year and To Year drop-down lists. The Default ViewSetItem in this example is Current Year.



Here is the From Period drop-down list for the Months time unit in the Insert Measure Item window. The available periods and period selected by default are determined by ViewSetItems from the Months ViewSet and the associated based periodic ViewSet.



The From Period and To Period drop-down lists in the window will be populated with the applicable time unit's absolute and based periodic ViewSetItems – in this example they are from the Months Based and Months ViewSets. The months will display based on the priority of their associated ViewSets. In this example, the Based Months ViewSet has a lower priority than the Months ViewSet, therefore the based months appear before the absolute months. The ViewSetItem defined as the Default for the based ViewSet will be selected by default for the From Period and To Period drop-down lists. The Default ViewSetItem in this example is Current Month.



Time Dimension Creation for Stratum.Viewer

A single Time dimension with multiple time hierarchies, levels, and attribute relationships is created by Stratum.Connector for Viewer when the application processes the Stratum.Connector for Viewer Analysis Services database. The Time dimension components are based on the ViewGroups and ViewSets associated with each measure group selected in Stratum.Connector for Viewer.

Note:.See also ViewGroups and ViewSets in the Stratum Storage Database, Using Time Ranges vs. Time Hierarchies in Views, and Stratum.Planner Influence on Time Range Properties for Measure Items.

Stratum.Connector for Viewer creates absolute, based, and rolling based time hierarchies that will be available in any view that has its Time Range property set to No. The time hierarchies, levels, and attribute relationships can be used in rows, columns, and the view filter and can be used for filtering purposes, in graphs, and for calculated measure items. Time hierarchies and their components can be used in the same manner as non-time hierarchies and their components.

- Time Hierarchies
- Time Members

Time Hierarchies

When Stratum.Connector for Viewer creates the Time dimension, the application begins by analyzing the ViewSets associated with each selected Measure Group. ViewSets are the basis for creating the time hierarchies, levels, and attribute relationships. ViewSetItems of a ViewSet are used to create time members, and ViewSetItem long descriptions are used as the values for the time members.

Time Hierarchy Naming Conventions

Two time hierarchies are created for each absolute periodic ViewSet associated with a selected measure group in Stratum.Connector for Viewer.

The names of the first hierarchy and its levels follow the patterns of:

Hierarchy:	[Year ViewSet Name] + [Periodic ViewSet Name]
First Level:	[Year ViewSet Name]
Second Level:	[Periodic ViewSet Name]

The names of the second hierarchy and its level follow the patterns of:

Hierarchy:	[Periodic ViewSet Name]
Level:	[Periodic ViewSet Name]

Three time hierarchies are created for each based periodic ViewSet associated with a selected measure group in Stratum.Connector for Viewer.

The names of the first hierarchy and its levels follow the patterns of:

Hierarchy:	[Based Year ViewSet Name] + [Based Periodic ViewSet Name]
First Level:	[Based Year ViewSet Name]
Second Level:	[Based Periodic ViewSet Name]

The names of the second hierarchy and its level follow the patterns of:

Hierarchy:	Rolling + [Based Year ViewSet Name] + [Based Periodic ViewSet Name]
First Level:	[Based Year ViewSet Name]
Second Level:	[Based Periodic ViewSet Name]

The names of the third hierarchy and its level follow the patterns of:

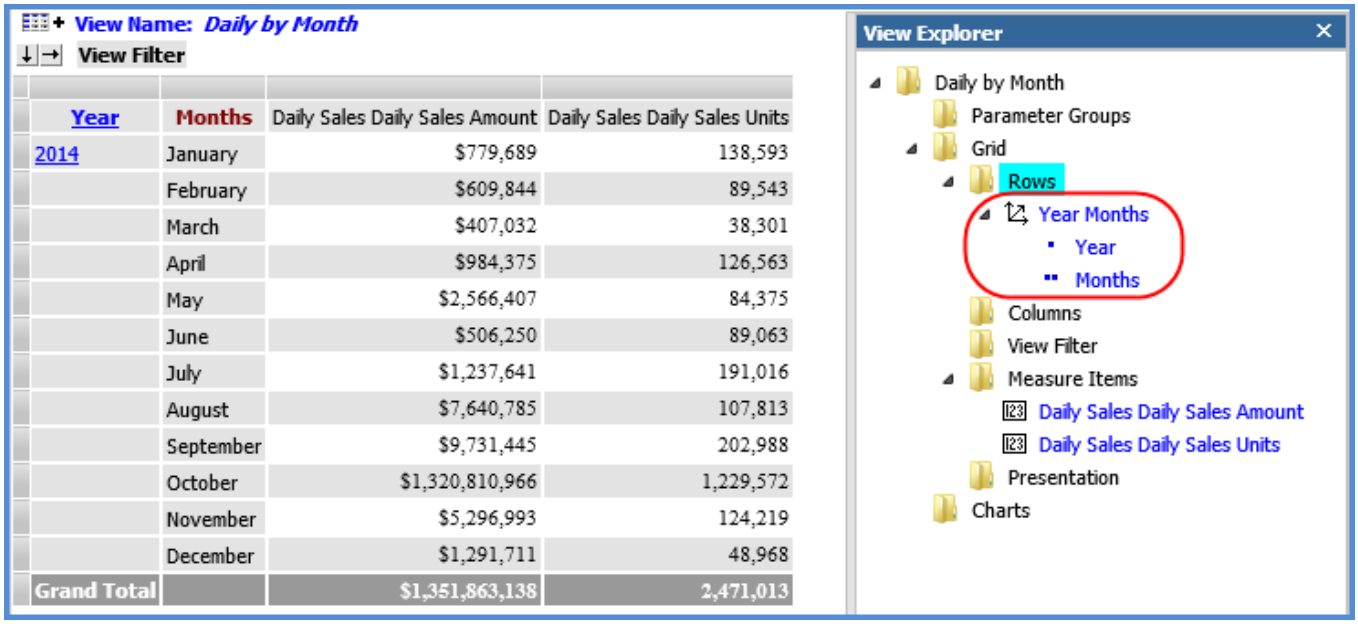
Hierarchy:	Rolling + [Based ViewSet Name]
Level:	[Based ViewSet Name]

Time Hierarchy Example

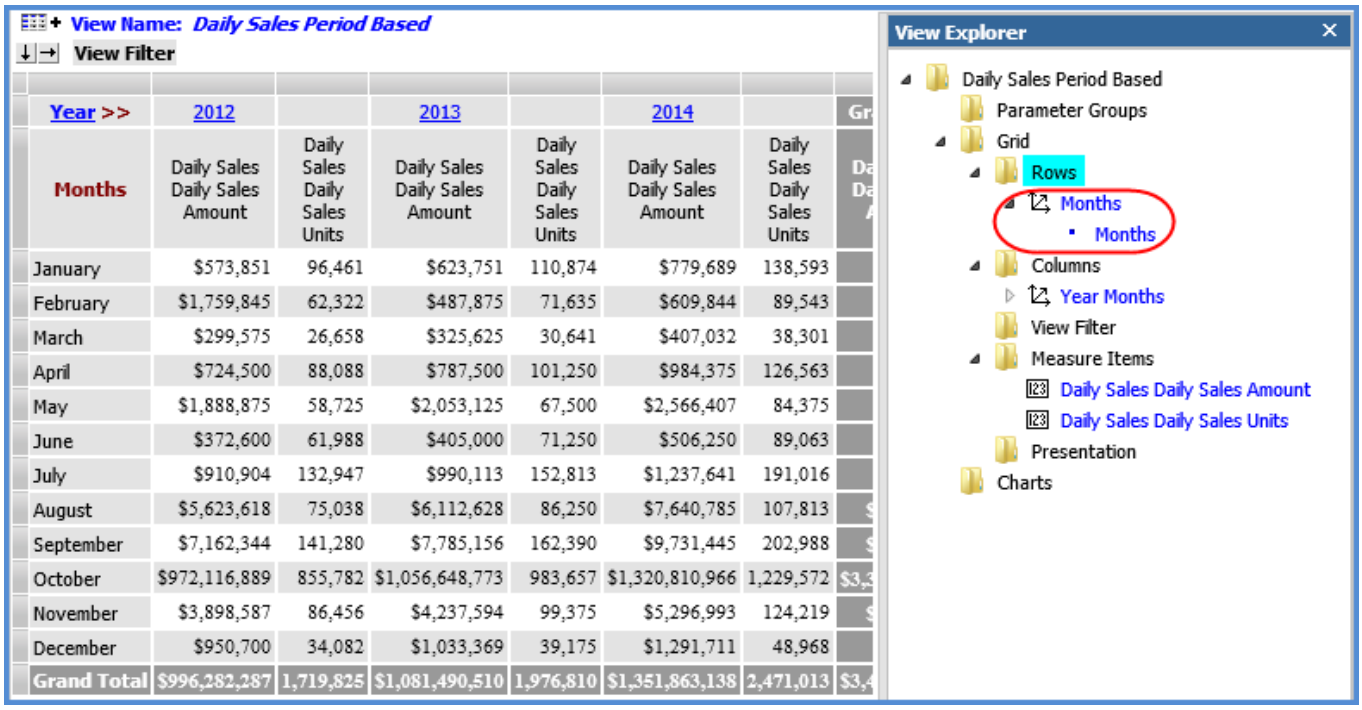
Following is an example of the hierarchies created for the absolute periodic ViewSet “Months” and the associated based periodic ViewSet “Months Based”.

Two hierarchies are created for the Months ViewSet.

1. The first hierarchy is Years Months, and it contains two levels. The first level is Year, for the associated Year ViewSet. The second level is Months, for the absolute periodic ViewSet. This time hierarchy can be used to create period based views that allow the user the ability to drill from year to period on the same axis.



2. The second hierarchy is Months, and it contains a single level with the same name. Stratum.Connector for Viewer also creates Named Sets associated with this level that can be used in creating period based YTD views. This time hierarchy can be used in conjunction with other time hierarchies to create period based views with year on one axis and period on the other.



View Name: *Daily Sales Period Based*

View Filter

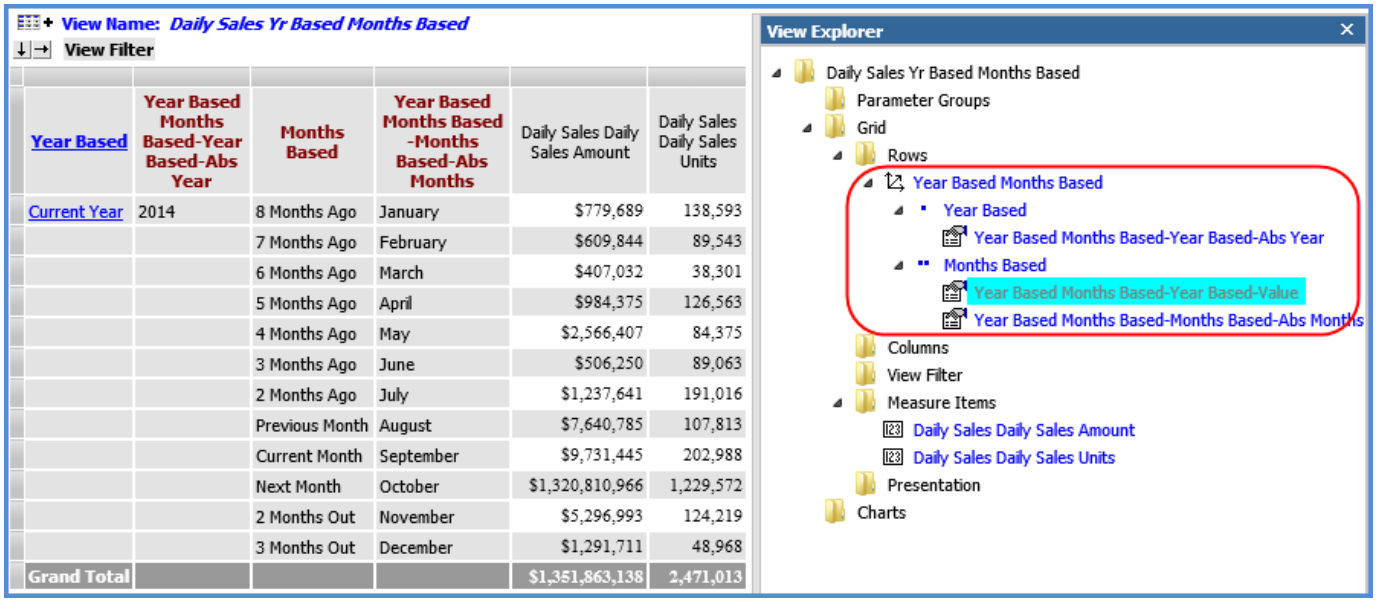
Year >>	2012		2013		2014		Gr
Months	Daily Sales Daily Sales Amount	Daily Sales Daily Sales Units	Daily Sales Daily Sales Amount	Daily Sales Daily Sales Units	Daily Sales Daily Sales Amount	Daily Sales Daily Sales Units	Da Da
January	$573,851	96,461	$623,751	110,874	$779,689	138,593	
February	$1,759,845	62,322	$487,875	71,635	$609,844	89,543	
March	$299,575	26,658	$325,625	30,641	$407,032	38,301	
April	$724,500	88,088	$787,500	101,250	$984,375	126,563	
May	$1,888,875	58,725	$2,053,125	67,500	$2,566,407	84,375	
June	$372,600	61,988	$405,000	71,250	$506,250	89,063	
July	$910,904	132,947	$990,113	152,813	$1,237,641	191,016	
August	$5,623,618	75,038	$6,112,628	86,250	$7,640,785	107,813	$
September	$7,162,344	141,280	$7,785,156	162,390	$9,731,445	202,988	$
October	$972,116,889	855,782	$1,056,648,773	983,657	$1,320,810,966	1,229,572	$3,3
November	$3,898,587	86,456	$4,237,594	99,375	$5,296,993	124,219	$
December	$950,700	34,082	$1,033,369	39,175	$1,291,711	48,968	
Grand Total	$996,282,287	1,719,825	$1,081,490,510	1,976,810	$1,351,863,138	2,471,013	$3,4

View Explorer

- Daily Sales Period Based
  - Parameter Groups
  - Grid
    - Rows
      - Months
        - Months
    - Columns
      - Year Months
    - View Filter
    - Measure Items
      - Daily Sales Daily Sales Amount
      - Daily Sales Daily Sales Units
    - Presentation
  - Charts

Three hierarchies are created for the Months Based ViewSet.

1. The first hierarchy is Year Based Months Based, and it contains two levels. The first level is Year Based, for the associated based year ViewSet. The second level is Months Based, for the based periodic ViewSet. This time hierarchy can be used to create period based views that allow users the ability to drill from year to period on the same axis using based definitions. The members for this time hierarchy will change as the current month definition changes since the members for each based year must be part of the same absolute year.



View Name: *Daily Sales Yr Based Months Based*

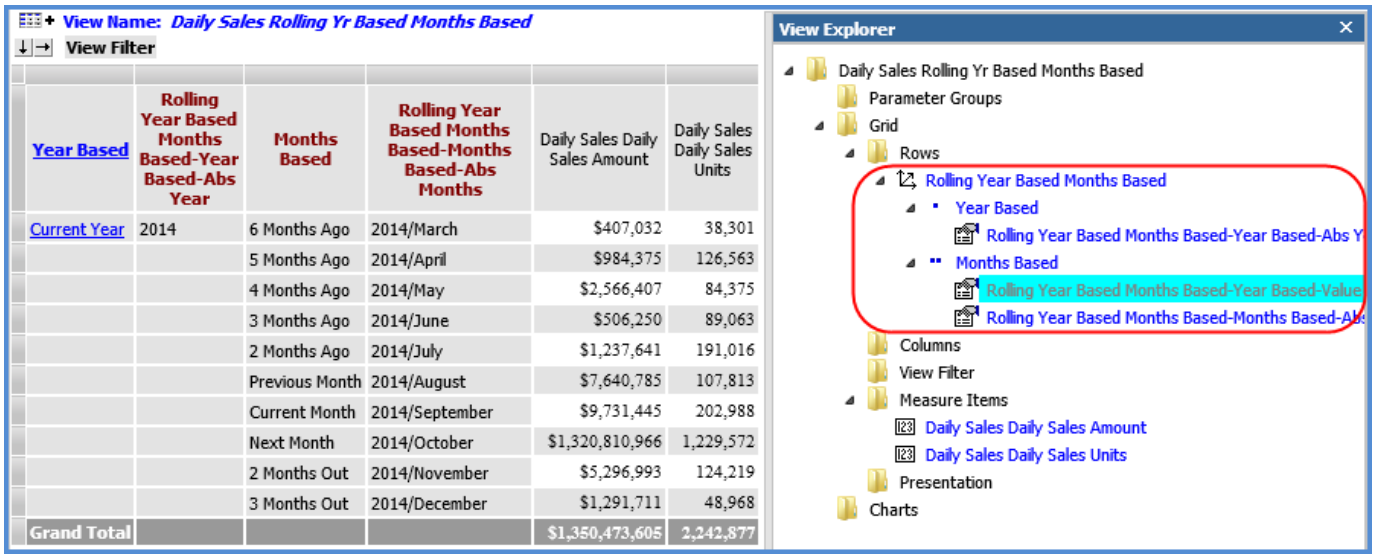
View Filter

Year Based	Year Based Months Based-Year Based-Abs Year	Months Based	Year Based Months Based-Months Based-Abs Months	Daily Sales Daily Sales Amount	Daily Sales Daily Sales Units
Current Year	2014	8 Months Ago	January	$779,689	138,593
		7 Months Ago	February	$609,844	89,543
		6 Months Ago	March	$407,032	38,301
		5 Months Ago	April	$984,375	126,563
		4 Months Ago	May	$2,566,407	84,375
		3 Months Ago	June	$506,250	89,063
		2 Months Ago	July	$1,237,641	191,016
		Previous Month	August	$7,640,785	107,813
		Current Month	September	$9,731,445	202,988
		Next Month	October	$1,320,810,966	1,229,572
		2 Months Out	November	$5,296,993	124,219
		3 Months Out	December	$1,291,711	48,968
Grand Total				$1,351,863,138	2,471,013

View Explorer

- Daily Sales Yr Based Months Based
  - Parameter Groups
  - Grid
    - Rows
      - Year Based Months Based
        - Year Based
          - Year Based Months Based-Year Based-Abs Year
        - Months Based
          - Year Based Months Based-Year Based-Value
          - Year Based Months Based-Months Based-Abs Months
    - Columns
    - View Filter
    - Measure Items
      - Daily Sales Daily Sales Amount
      - Daily Sales Daily Sales Units
    - Presentation
  - Charts

2. The second hierarchy is Rolling Year Based Months Based, and it also contains two levels. The first level is Year Based, for the associated based year ViewSet. The second level is Months Based, for the based periodic ViewSet. This time hierarchy can be used to create period based views that allow users the ability to see a rolling set of periods that can cross year boundaries. Since the members for a rolling based year do not have to belong to the same absolute year, this hierarchy should not be used in views that show annual data.

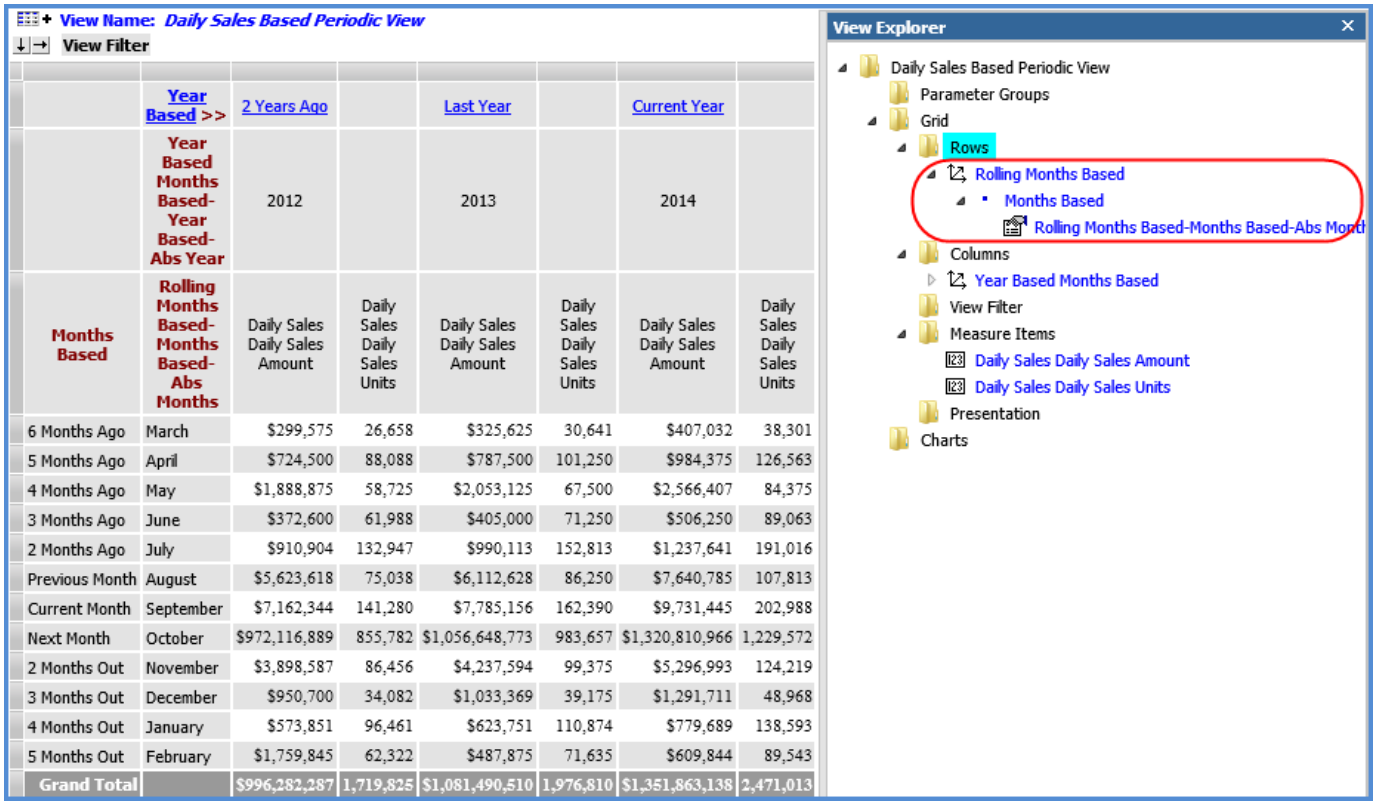


View Name: *Daily Sales Rolling Yr Based Months Based*

View Filter

Year Based	Rolling Year Based Months Based-Year Based-Abs Year	Months Based	Rolling Year Based Months Based-Months Based-Abs Months	Daily Sales Daily Sales Amount	Daily Sales Daily Sales Units
Current Year	2014	6 Months Ago	2014/March	$407,032	38,301
		5 Months Ago	2014/April	$984,375	126,563
		4 Months Ago	2014/May	$2,566,407	84,375
		3 Months Ago	2014/June	$506,250	89,063
		2 Months Ago	2014/July	$1,237,641	191,016
		Previous Month	2014/August	$7,640,785	107,813
		Current Month	2014/September	$9,731,445	202,988
		Next Month	2014/October	$1,320,810,966	1,229,572
		2 Months Out	2014/November	$5,296,993	124,219
		3 Months Out	2014/December	$1,291,711	48,968
Grand Total				$1,350,473,605	2,242,877

3. The third hierarchy is Rolling Months Based, and it contains a single level with the same name for the based ViewSet. This time hierarchy can be used in conjunction with other time hierarchies to create period based view with year on one axis and period on the other.

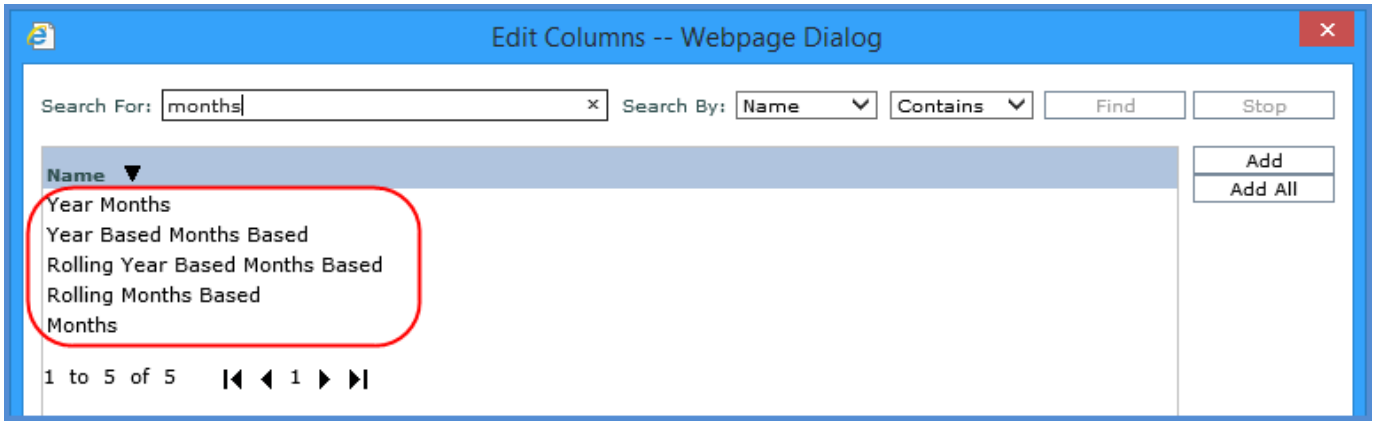


View Name: *Daily Sales Based Periodic View*

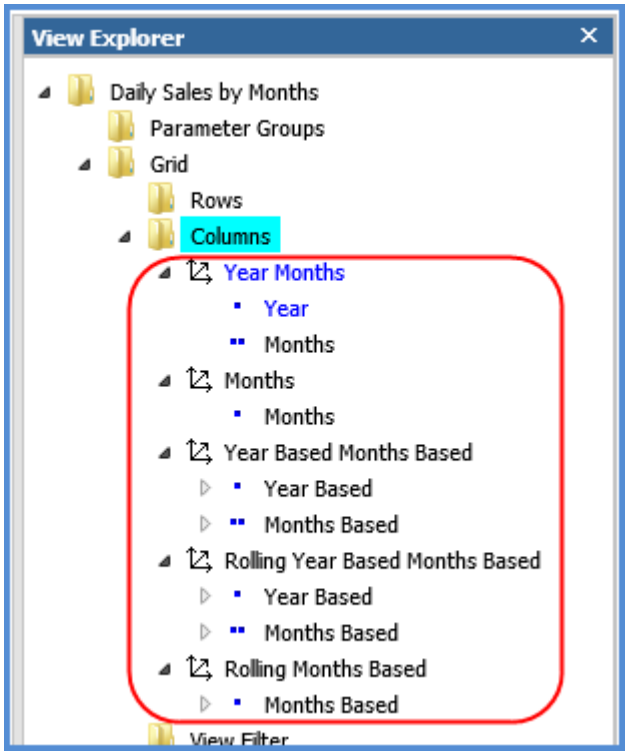
View Filter

	Year Based >>	2 Years Ago		Last Year		Current Year	
	Year Based Months Based-Year Based-Abs Year	2012		2013		2014	
Months Based	Rolling Months Based-Months Based-Abs Months	Daily Sales Daily Sales Amount	Daily Sales Daily Sales Units	Daily Sales Daily Sales Amount	Daily Sales Daily Sales Units	Daily Sales Daily Sales Amount	Daily Sales Daily Sales Units
6 Months Ago	March	$299,575	26,658	$325,625	30,641	$407,032	38,301
5 Months Ago	April	$724,500	88,088	$787,500	101,250	$984,375	126,563
4 Months Ago	May	$1,888,875	58,725	$2,053,125	67,500	$2,566,407	84,375
3 Months Ago	June	$372,600	61,988	$405,000	71,250	$506,250	89,063
2 Months Ago	July	$910,904	132,947	$990,113	152,813	$1,237,641	191,016
Previous Month	August	$5,623,618	75,038	$6,112,628	86,250	$7,640,785	107,813
Current Month	September	$7,162,344	141,280	$7,785,156	162,390	$9,731,445	202,988
Next Month	October	$972,116,889	855,782	$1,056,648,773	983,657	$1,320,810,966	1,229,572
2 Months Out	November	$3,898,587	86,456	$4,237,594	99,375	$5,296,993	124,219
3 Months Out	December	$950,700	34,082	$1,033,369	39,175	$1,291,711	48,968
4 Months Out	January	$573,851	96,461	$623,751	110,874	$779,689	138,593
5 Months Out	February	$1,759,845	62,322	$487,875	71,635	$609,844	89,543
Grand Total		$996,282,287	1,719,825	$1,081,490,510	1,976,810	$1,351,863,138	2,471,013

The image that follows shows the months hierarchies in the Stratum.Viewer Edit window.



The following view explorer example and table show the levels for the hierarchies. Here are the Months and Months Based hierarchies and levels as seen in view explorer.



Similar hierarchies are created for the other absolute based ViewSets as shown in this table.

ViewSet:	Hierarchies:	Levels:
Quarters	Year Quarters	Year
		Quarters
	Quarters	Quarters
Quarters Based	Year Based Quarters Based	Year Based
		Quarters Based
	Rolling Year Based Quarters Based	Year Based

		Quarters Based
	Rolling Quarters Based	Quarters Based
Months	Year Months	Year
		Months
	Months	Months
Months Based	Year Based Months Based	Year Based
		Months Based
	Rolling Year Based Months Based	Year Based
		Months Based
	Rolling Months Based	Months Based
Weeks	Year Weeks	Year
		Weeks
	Weeks	Weeks
Weeks Based	Year Based Weeks Based	Year Based
		Weeks Based
	Rolling Year Based Weeks Based	Year Based
		Weeks Based
	Rolling Weeks Based	Weeks Based

Time Members

The next two sections have information about the members for the different types of time hierarchies. ViewSetItem long descriptions are used as the values for time members.

Absolute Time

Time hierarchies built for absolute ViewSets have member lists for specific periods of time. Consider the hierarchies and levels created for the Months ViewSet earlier in this topic. Example member lists for each level are shown below along with images from Stratum.Planner showing the ViewSetItem long descriptions.

Hierarchy: Year Months

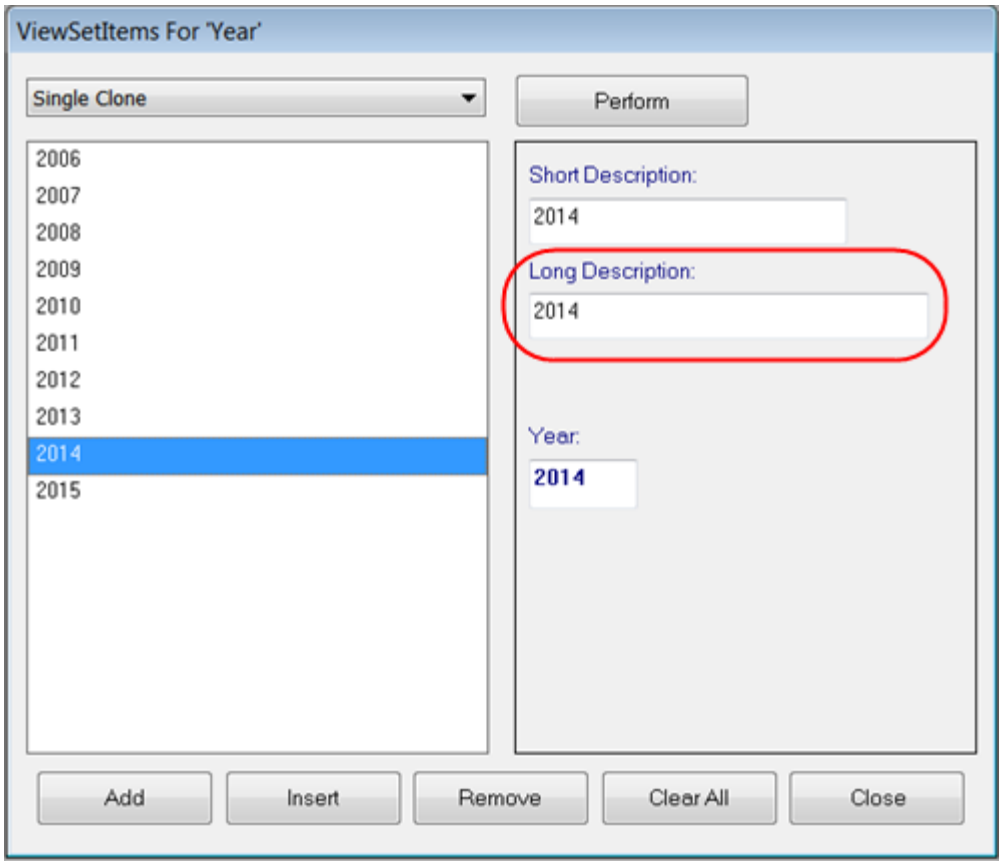
Level 1:	**Level 2:**
Year	**Months**
2012	January February March …..

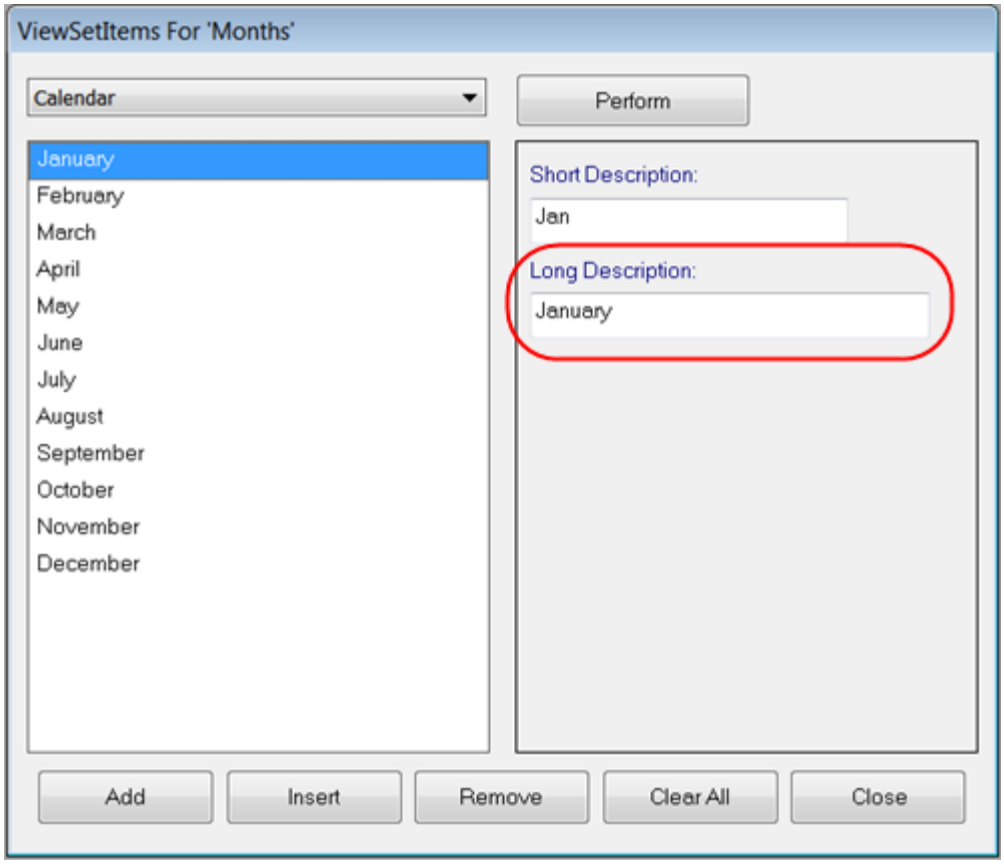
2013 2014	December January February March ….. December January February March ….. December

Hierarchy: Months

Level:
Months
January February **…** December

Here are the related long descriptions from the Year and Months ViewSetItems in Stratum.Planner.





Based Time

Remember there are three time hierarchies built for based periodic ViewSets. The first hierarchy members are determined by absolute member values that fall into the actual calendar years. Example member lists for each level follow along with images from Stratum.Planner showing the ViewSetItem long descriptions.

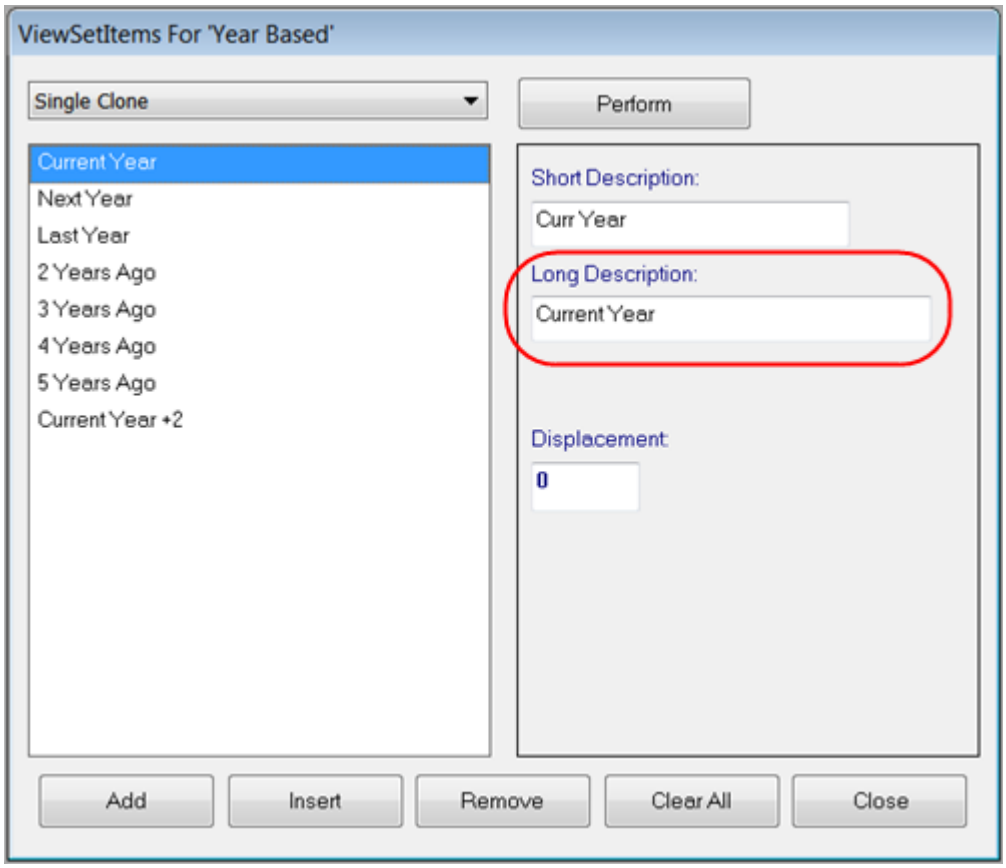
Here are example members for levels in the first hierarchy, Year Based Months Based. The member list for Months Based will vary depending on which Based Members fall into the actual calendar years. In the example below, April 2014 is the current month. Given this, the member 4 Months Ago will not be included in the member list for the Months Based level because it does not belong to the current year. For example, Current Year Current Period = April 2014, Current Year Previous Month = March 2014, Current Year 2 Months Ago = February 2014, Current Year 3 Months Ago = January 2014. This means that Current Year 5 Months Ago corresponds to December 2013 and since it is not part of Year 2014, that member will not apply to the Months Based member list.

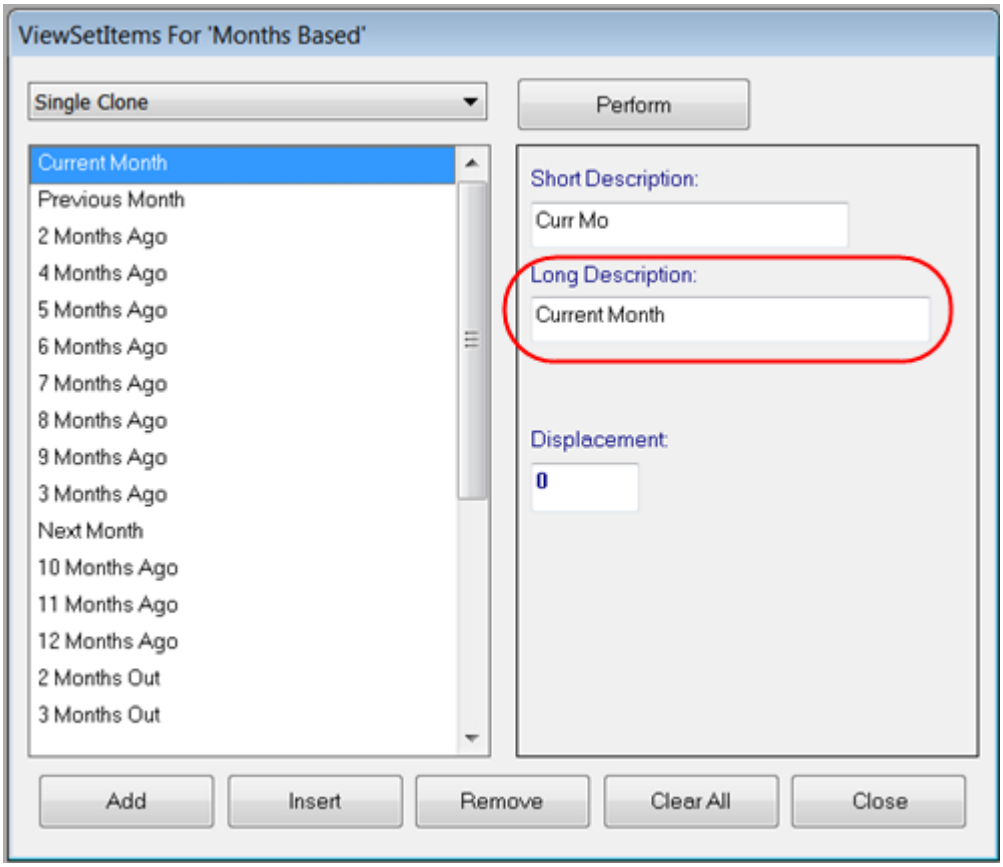
Hierarchy: Year Based Months Based

Level 1:		**Level 2:**	
Year Based	**Absolute Year**	**Months Based**	**Absolute Month**
2 Years Ago	2012	3 Months Ago	January 2012
2 Years Ago	2012	2 Months Ago	February 2012
2 Years Ago	2012	Previous Month	March 2012
2 Years Ago	2012	Current Month	April 2012
Last Year	2013	3 Months Ago	January 2013
Last Year	2013	2 Months Ago	February 2013
Last Year	2013	Previous Month	March 2013

Last Year	2013	Current Month	April 2013
Current Year	2014	3 Months Ago	January 2014
Current Year	2014	2 Months Ago	February 2014
Current Year	2014	Previous Month	March 2014
Current Year	2014	Current Month	April 2014

Here are the related long descriptions from Year Based and Months Based ViewSetItems in Stratum.Planner. The corresponding absolute ViewSetItems are the ones shown earlier in this section.





As the current month changes, the members for each based year and their Absolute Year and Month are updated. For example, in May 2014 the 4 Months Ago member is added to each based year and the Absolute Year and Month are updated for all members to what is shown below.

Level 1:		**Level 2:**	
Year Based	**Absolute Year**	**Months Based**	**Absolute Month**
2 Years Ago	2012	4 Months Ago	January 2012
2 Years Ago	2012	3 Months Ago	February 2012
2 Years Ago	2012	2 Months Ago	March 2012
2 Years Ago	2012	Previous Month	April 2012
2 Years Ago	2012	Current Month	May 2012
Last Year	2013	4 Months Ago	January 2013
Last Year	2013	3 Months Ago	February 2013
Last Year	2013	2 Months Ago	March 2013
Last Year	2013	Previous Month	April 2013
Last Year	2013	Current Month	May 2013
Current Year	2014	4 Months Ago	January 2014
Current Year	2014	3 Months Ago	February 2014
Current Year	2014	2 Months Ago	March 2014
Current Year	2014	Previous Month	April 2014
Current Year	2014	Current Month	May 2014

Hierarchy: Rolling Year Based Months Based

Example members for levels in the Rolling Year Based Months Based hierarchy are shown next. As in the previous example, April 2014 is the current period. The member list for the Year Based level always contains the same number of members. The number of members in the level cannot exceed the number of ViewSetItems in the related Absolute ViewSet. In the case of Rolling Year Based Months Based, it is related to the Monthly ViewSet; therefore, its Months Based level can contain up to and including 12 members.

In this case, each rolling based year has 12 members.

Level 1:		**Level 2:**	
Rolling Year Based Months Based	**Absolute Year**	**Months Based**	**Absolute Month**
2 Years Ago	2012	6 Months Ago	October 2011
2 Years Ago	2012	5 Months Ago	November 2011
2 Years Ago	2012	4 Months Ago	December 2011
2 Years Ago	2012	3 Months Ago	January 2012
2 Years Ago	2012	2 Months Ago	February 2012
2 Years Ago	2012	Previous Month	March 2012
2 Years Ago	2012	Current Month	April 2012
2 Years Ago	2012	Current Month +.1	May 2012
2 Years Ago	2012	Current Month + 2	June 2012
2 Years Ago	2012	Current Month + 3	July 2012
2 Years Ago	2012	Current Month + 4	August 2012
2 Years Ago	2012	Current Month + 5	September 2012
Last Year	2013	6 Months Ago	October 2012
Last Year	2013	5 Months Ago	November 2012
Last Year	2013	4 Months Ago	December 2012
Last Year	2013	3 Months Ago	January 2013
Last Year	2013	2 Months Ago	February 2013
Last Year	2013	Previous Month	March 2013
Last Year	2013	Current Month	April 2013
Last Year	2013	Current Month +.1	May 2013
Last Year	2013	Current Month + 2	June 2013
Last Year	2013	Current Month + 3	July 2013
Last Year	2013	Current Month + 4	August 2013
Last Year	2013	Current Month + 5	September 2013
Current Year	2014	6 Months Ago	October 2013
Current Year	2014	5 Months Ago	November 2013
Current Year	2014	4 Months Ago	December 2013
Current Year	2014	3 Months Ago	January 2014
Current Year	2014	2 Months Ago	February 2014
Current Year	2014	Previous Month	March 2014

Current Year	2014	Current Month	April 2014
Current Year	2014	Current Month +.1	May 2014
Current Year	2014	Current Month + 2	June 2014
Current Year	2014	Current Month + 3	July 2014
Current Year	2014	Current Month + 4	August 2014
Current Year	2014	Current Month + 5	September 2014

As the current month changes, the members for each Rolling Based Year remain the same. Only their Absolute Year / Month are updated. For example, in May 2014 the Absolute Year and Month is updated for all members to what is shown below.

Level 1:		**Level 2:**	
Rolling Year Based Months Based	**Absolute Year**	**Months Based**	**Absolute Month**
2 Years Ago	2012	6 Months Ago	November 2011
2 Years Ago	2012	5 Months Ago	December 2011
2 Years Ago	2012	4 Months Ago	January 2012
2 Years Ago	2012	3 Months Ago	February 2012
2 Years Ago	2012	2 Months Ago	March 2012
2 Years Ago	2012	Previous Month	April 2012
2 Years Ago	2012	Current Month	May 2012
2 Years Ago	2012	Current Month +.1	June 2012
2 Years Ago	2012	Current Month + 2	July 2012
2 Years Ago	2012	Current Month + 3	August 2012
2 Years Ago	2012	Current Month + 4	September 2012
2 Years Ago	2012	Current Month + 5	October 2012
Last Year	2013	6 Months Ago	November 2012
Last Year	2013	5 Months Ago	December 2012
Last Year	2013	4 Months Ago	January 2013
Last Year	2013	3 Months Ago	February 2013
Last Year	2013	2 Months Ago	March 2013
Last Year	2013	Previous Month	April 2013
Last Year	2013	Current Month	May 2013
Last Year	2013	Current Month +.1	June 2013
Last Year	2013	Current Month + 2	July 2013
Last Year	2013	Current Month + 3	August 2013
Last Year	2013	Current Month + 4	September 2013
Last Year	2013	Current Month + 5	October 2013
Current Year	2014	6 Months Ago	November 2013
Current Year	2014	5 Months Ago	December 2013

Current Year	2014	4 Months Ago	January 2014
Current Year	2014	3 Months Ago	February 2014
Current Year	2014	2 Months Ago	March 2014
Current Year	2014	Previous Month	April 2014
Current Year	2014	Current Month	May 2014
Current Year	2014	Current Month +.1	June 2014
Current Year	2014	Current Month + 2	July 2014
Current Year	2014	Current Month + 3	August 2014
Current Year	2014	Current Month + 4	September 2014
Current Year	2014	Current Month + 5	October 2014

Hierarchy: Rolling Months Based

Similar logic as used for the Rolling Year Based Months Based hierarchy is used to determine members for the Months Based level of the last time hierarchy of Rolling Months Based.

Level:	
Months Based	**Absolute Month**
6 Months Ago	October
5 Months Ago	November
4 Months Ago	December
3 Months Ago	January
2 Months Ago	February
Previous Month	March
Current Month	April
Current Month +.1	May
Current Month + 2	June
Current Month + 3	July
Current Month + 4	August
Current Month + 5	September

If there were more than 12 ViewSetItems associated with Months Based, such as exists in this example, then Stratum.Connector for Viewer would allow members for the ViewSetItem in the 0 (zero) offset position as well as some prior to and after that position. The number of ViewSetItems before the 0 offset position that Stratum.Connector for Viewer includes is based on the formula x/2, where "x" equals the number of ViewSetItems for the Absolute ViewSet. The number of ViewSetItems after the 0 offset position that Stratum.Connector for Viewer includes is based on the formula x/2 - 1.

Note: In the event of ViewSetItems with no ViewSetItems after the 0 offset position, Stratum.Connector for Viewer would use the ViewSetItem in the offset position and take the remaining allowed number of members (x-1) from the positions prior to the offset position.

Offset Member Position:	ViewSetItems:
-20	Previous Month -20
.....	.....
-1	Previous Month
0	Current Month
+1	Current Month +1
.....	.....
+20	Current Month +20

Following the formula described above, members for these 12 ViewSetItems would be included as members for the Months Based level of the Rolling Year Based Months Based hierarchy:

- Previous Month -5
- Previous Month -4
- Previous Month -3
- Previous Month -2
- Previous Month -1
- Previous Month
- Current Month
- Current Month +1
- Current Month +2
- Current Month +3
- Current Month +4
- Current Month +5

Use Hyperlinks in a View

Hyperlinks can be added to measure items for use in directing users to other applications, websites or views. The hyperlinks can be used in combination with other measure item features, such as for measure items that display images in views.

The basic steps for adding a hyperlink and a few examples follow.

1. Double-click the measure item in view explorer.

2. In the Properties window, set the Hyperlink property to Yes.

3. In the Hyperlink Expression window, set up an expression to define the hyperlink and then click OK in that window.

4. {Optional} Customize other measure item features such as applying a conditional format or pop-up label.

Example – Open a Website and Pass View Information to Website

Example 1

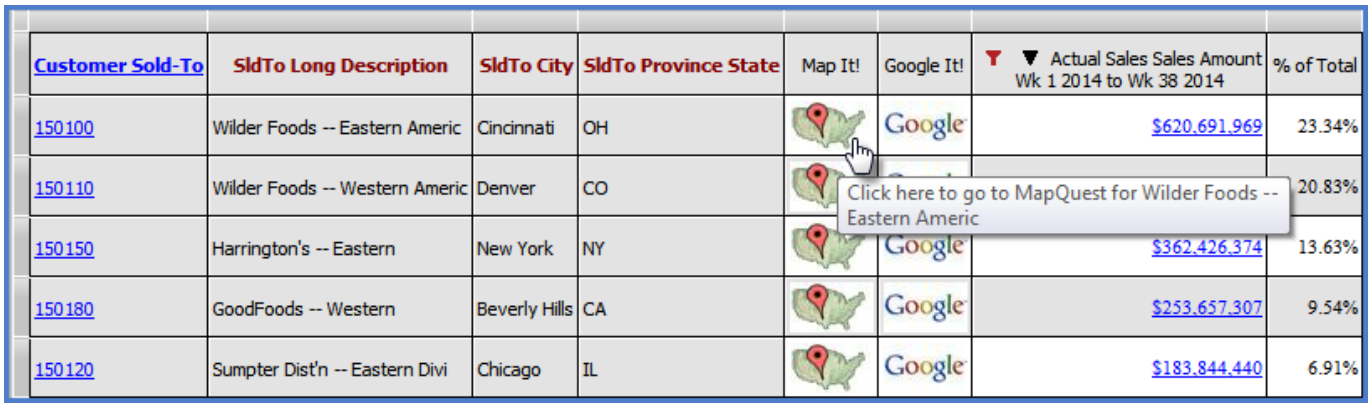
This example uses a URL only in the hyperlink expression. Clicking the hyperlink in the related view will access the Mapquest home page.

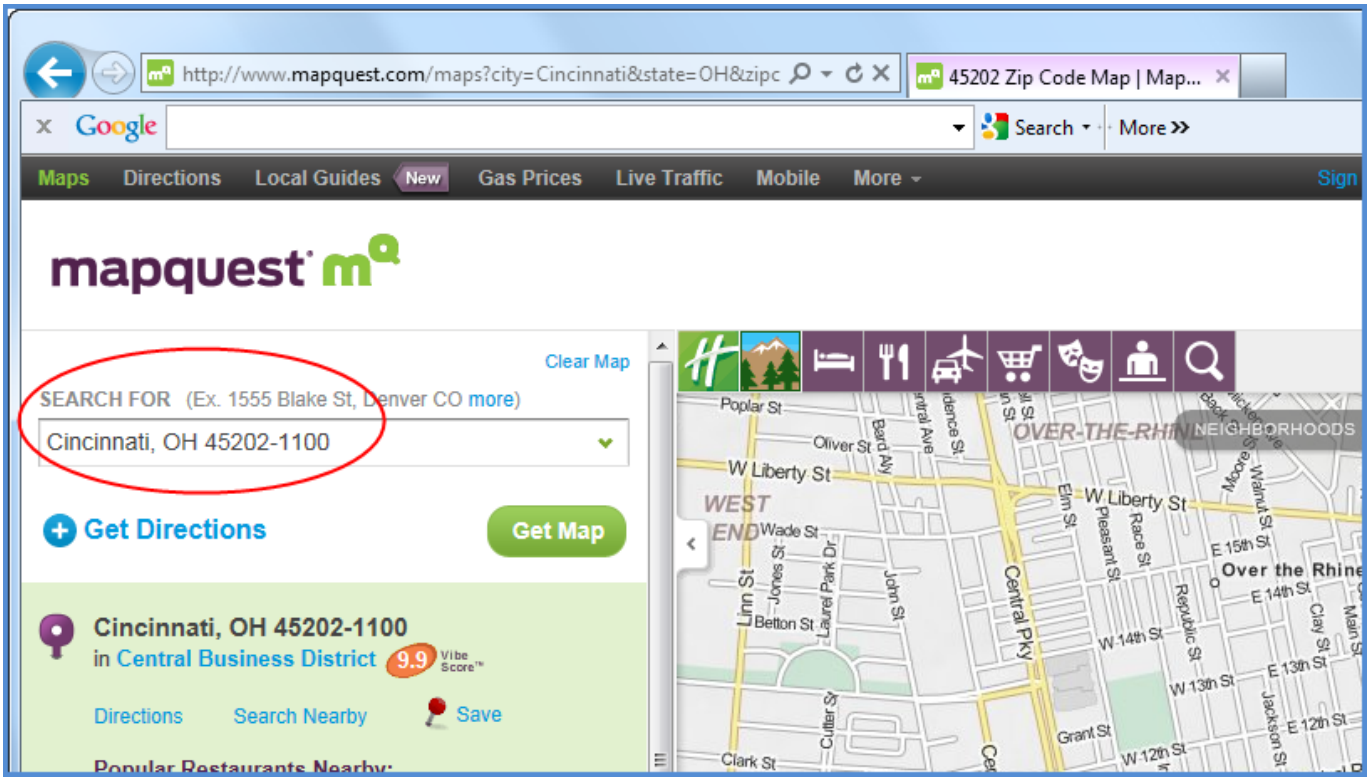
"http://www.mapquest.com"

Example 2 and 3

The next examples include view information in the hyperlink expression. In the first example, several attribute relationships for Customer Sold-To are used in the expression. The city, state, and postal code information derived from the current member are used as parameter values in the URL.

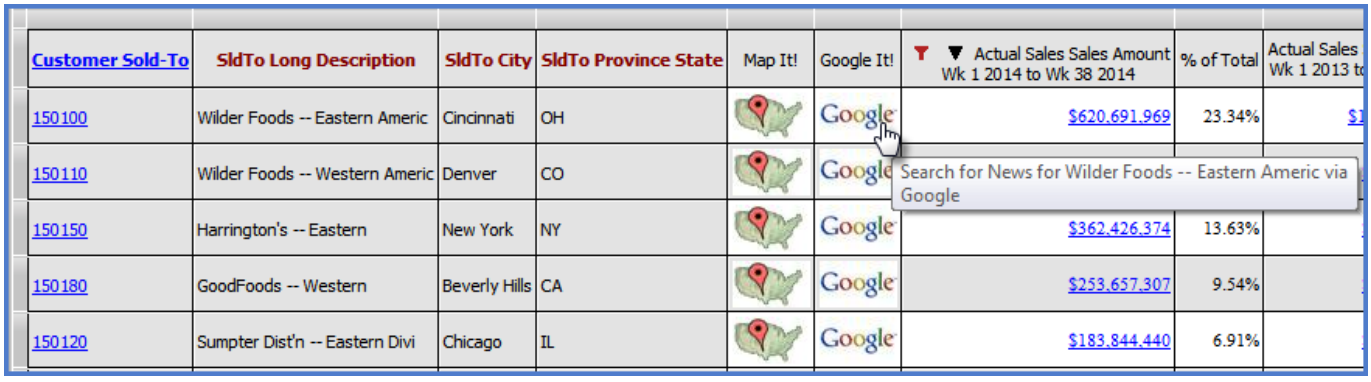
"http://www.mapquest.com/maps/map.adp?&city=" + [Customer Sold-To].[Customer Sold-To].CurrentMember.Properties("SldTo City") + "&state=" + [Customer Sold-To].[Customer Sold-To].CurrentMember.Properties("SldTo Province State") + "&zipcode=" + [Customer Sold-To].[Customer Sold-To].CurrentMember.Properties("SldTo Postal Code") + "&country=US&cid=lfmaplink"



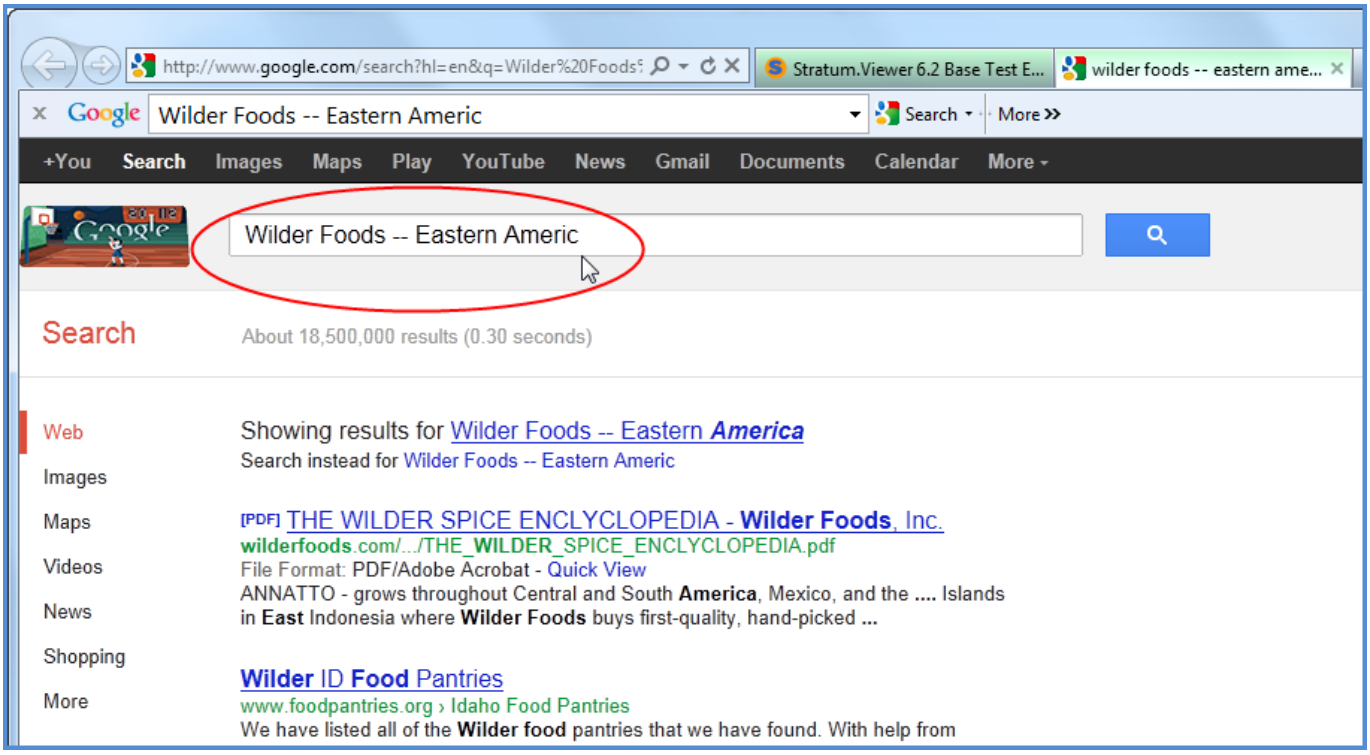


The second example has syntax that first checks to see if a particular attribute relationship exists. If so, the hyperlink opens to Google and searches on that attribute relationship. The SldTo Long Description is the attribute relationship used in the expression.

Iif([Customer Sold-To].[Customer Sold-To].CurrentMember.Properties("SldTo Long Description")=null, null, "http://www.google.com/search?hl=en&q=" + [Customer Sold-To].[Customer Sold-To].CurrentMember.Properties("SldTo Long Description"))



Customer Sold-To	SldTo Long Description	SldTo City	SldTo Province State	Map It!	Google It!	Actual Sales Sales Amount Wk 1 2014 to Wk 38 2014	% of Total	Actual Sales Wk 1 2013 to
150100	Wilder Foods -- Eastern Americ	Cincinnati	OH		Google	$620,691,969	23.34%	$1
150110	Wilder Foods -- Western Americ	Denver	CO		Google			
150150	Harrington's -- Eastern	New York	NY		Google	$362,426,374	13.63%	
150180	GoodFoods -- Western	Beverly Hills	CA		Google	$253,657,307	9.54%	
150120	Sumpter Dist'n -- Eastern Divi	Chicago	IL		Google	$183,844,440	6.91%	



Example – Run another View and Filter it with Member Information from Original View

Example 1

This example opens another view and runs it based on that view definition only. The Stratum.Viewer URL and ID for the view are used in the expression.

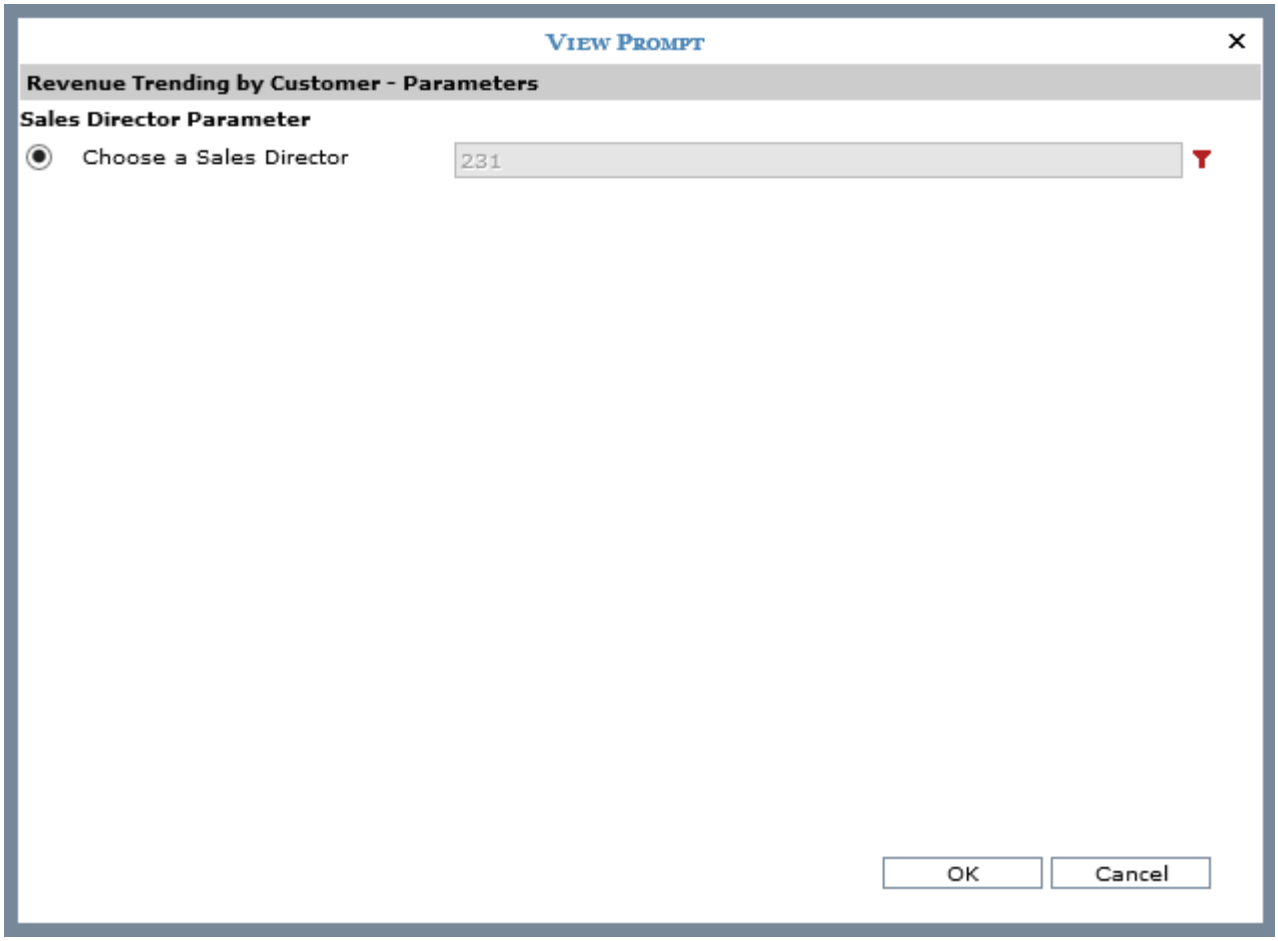
"http://silvonxyz:60001/ViewWindow.aspx?ViewId=10391"

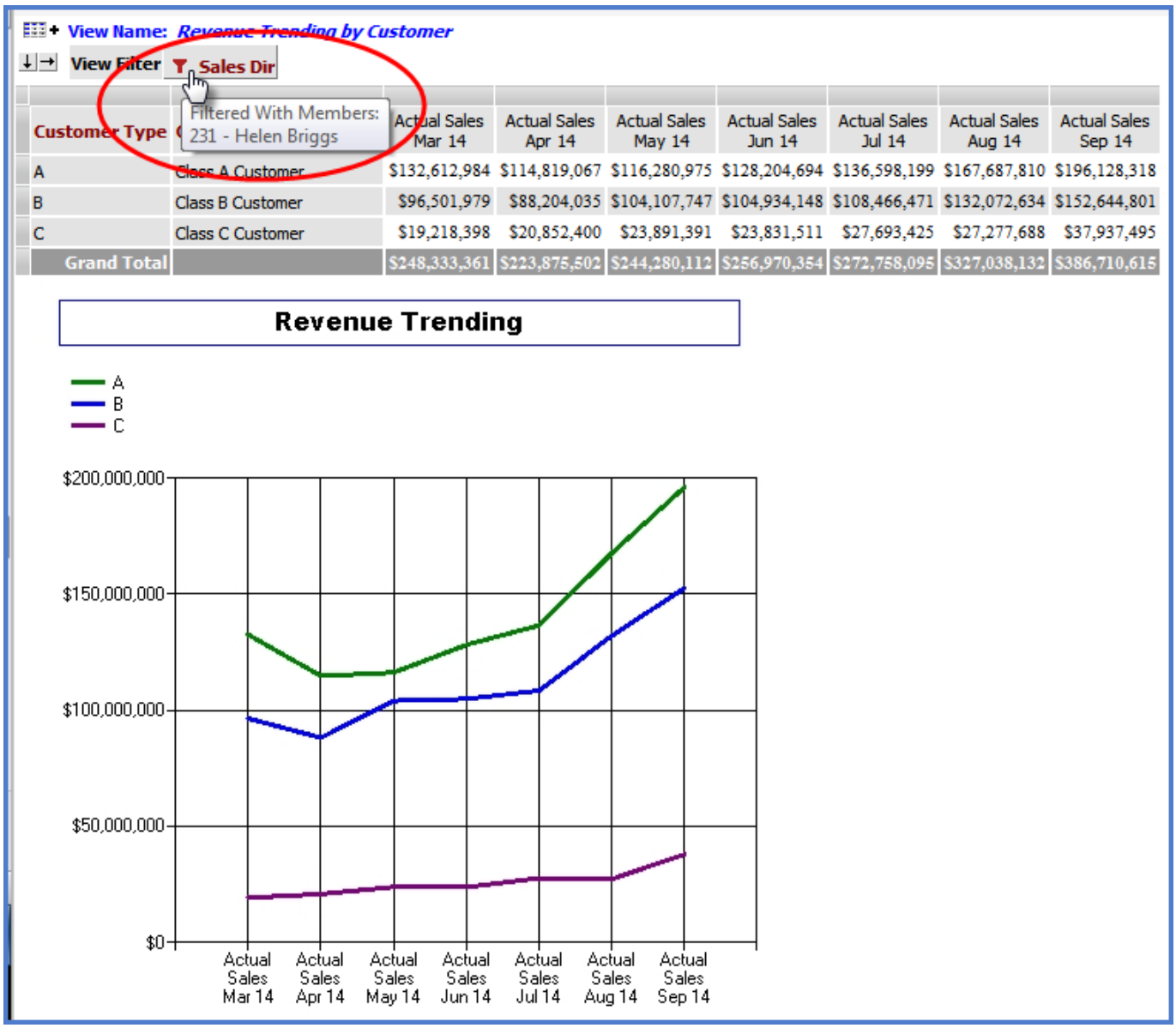
Here is a view containing the hyperlink.

Sales Dir	Product Category	PCat Long Description	Actual Sales Sales Amount Jan 14 to Sep 14	Budget Budget Amount Frozen Jan 14 to Sep 14
Helen Briggs	200	Fresh Vegetables	$252,288,448	$292,343,197
	201	Canned Fruit	$1,592,446,315	$1,911,515,291
	202	Pork		$113,635,199
	203	Beef	$82,317,494	$95,124,551
	204	Fresh Fruit	$174,091,318	$203,061,692
	207	Frozen Fruit Products	$62,914,286	$73,351,506
	208	Frozen Prepared Dinners	$163,326,546	$193,111,782
	Helen Briggs Total		**$2,425,211,606**	**$2,882,143,218**
Steve Mentas	200	Fresh Vegetables	$183,642,551	$216,193,890
	201	Canned Fruit	$484,321,714	$580,609,405
	202	Pork	$62,803,326	$74,025,994

Revenue Trending by Customer

Here is the other view, Revenue Trending by Customer which will open and prompt you to choose a sales director for which you want to see view data. The prompting comes from parameters tied to a level in the View Filter of the view.



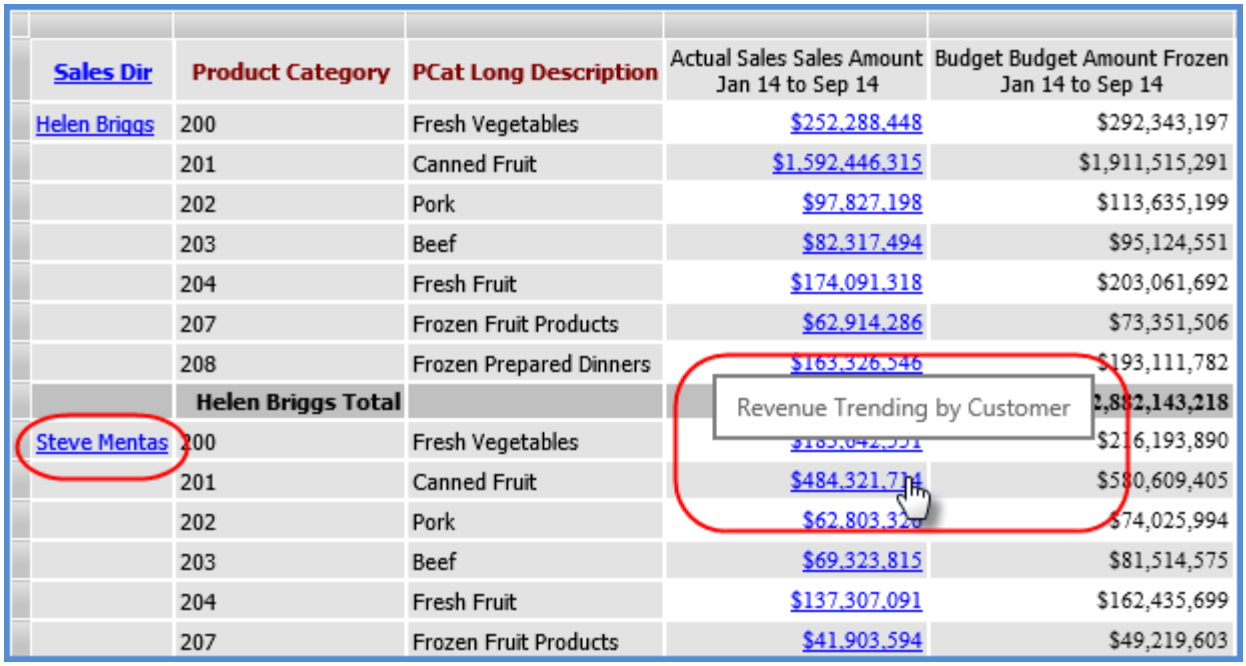

View Name: Revenue Trending by Customer
View Filter
Sales Dir
Filtered With Members:
231 - Helen Briggs
Customer Type
Actual Sales Mar 14
Actual Sales Apr 14
Actual Sales May 14
Actual Sales Jun 14
Actual Sales Jul 14
Actual Sales Aug 14
Actual Sales Sep 14
A
Class A Customer
$132,612,984
$114,819,067
$116,280,975
$128,204,694
$136,598,199
$167,687,810
$196,128,318
B
Class B Customer
$96,501,979
$88,204,035
$104,107,747
$104,934,148
$108,466,471
$132,072,634
$152,644,801
C
Class C Customer
$19,218,398
$20,852,400
$23,891,391
$23,831,511
$27,693,425
$27,277,688
$37,937,495
Grand Total
$248,333,361
$223,875,502
$244,280,112
$256,970,354
$272,758,095
$327,038,132
$386,710,615
Revenue Trending
A
B
C
$200,000,000
$150,000,000
$100,000,000
$50,000,000
$0
Actual Sales Mar 14
Actual Sales Apr 14
Actual Sales May 14
Actual Sales Jun 14
Actual Sales Jul 14
Actual Sales Aug 14
Actual Sales Sep 14

Example 2

The previous expression is then adjusted to pass sales director information from the original view to the other view. The hyperlink will open the view and filter it for the sales director associated with the measure item value that was clicked.

" http://silvonxyz:60001/ViewWindow.aspx?ViewID=10391&vp:SalesDirector="+[Sales Director].[Sales Director].CurrentMember.name+ ""

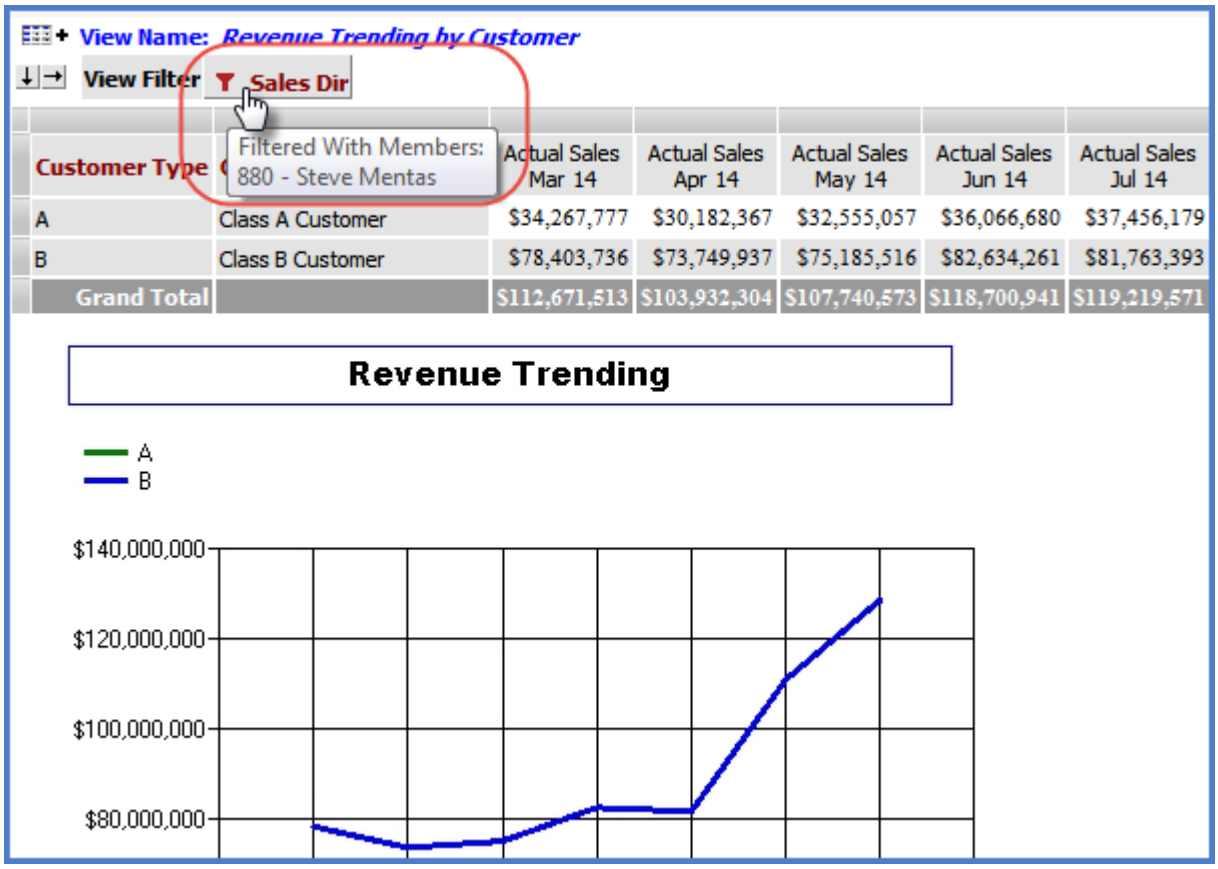
The hyperlink is clicked for the measure item value of salesperson Steve Mentas.



Sales Dir	Product Category	PCat Long Description	Actual Sales Sales Amount Jan 14 to Sep 14	Budget Budget Amount Frozen Jan 14 to Sep 14
Helen Briggs	200	Fresh Vegetables	$252,288,448	$292,343,197
	201	Canned Fruit	$1,592,446,315	$1,911,515,291
	202	Pork	$97,827,198	$113,635,199
	203	Beef	$82,317,494	$95,124,551
	204	Fresh Fruit	$174,091,318	$203,061,692
	207	Frozen Fruit Products	$62,914,286	$73,351,506
	208	Frozen Prepared Dinners	$163,326,546	$193,111,782
	Helen Briggs Total			**2,882,143,218**
Steve Mentas	200	Fresh Vegetables		$216,193,890
	201	Canned Fruit	$484,321,714	$580,609,405
	202	Pork	$62,803,326	$74,025,994
	203	Beef	$69,323,815	$81,514,575
	204	Fresh Fruit	$137,307,091	$162,435,699
	207	Frozen Fruit Products	$41,903,594	$49,219,603

Revenue Trending by Customer

The trending view opens and is filtered for that particular sales director. No prompting to choose a parameter occurs because the hyperlink determines the sales director to use in the filter.



ViewGroups and ViewSets in the Stratum Storage Database

This topic briefly describes the concepts of Structure Codes, ViewSets, and ViewGroups in the Stratum storage database. Understanding these concepts can help you understand the measures, Time dimension, time hierarchies, and named sets that can be generated by Stratum.Connector for Viewer when your administrators set up the Stratum.Connector for Viewer Analysis Services cube and database for your Stratum.Viewer implementation.

Stratum Structure Codes

During the setup of a storage database for Stratum applications, a System Administrator sets up Structure Codes. Structure Codes determine the structure of warehouse data. When setting up Structure Codes, a Stratum System Administrator determines:

1. The dimensions.
2. How many buckets of time to accumulate data into for each Structure Code -- such as 64 (for information to be organized into a weekly structure) or 12 (for information to be accumulated into a monthly structure).

Once Structure Codes and related data tables are created, additional items are set up to determine how time can be analyzed in various Stratum applications. ViewGroups are associated with Structure Codes. ViewGroups, along with the ViewSets and ViewSetItems the groups are comprised of, determine how users will be able to analyze data in the Structure Codes. Buckets of information can be grouped together in a weekly, monthly, quarterly, or other fashion to give Stratum users flexibility in how they can analyze their data.

Examples of Structure Codes are shown below.

Structure Code:	Description:	Buckets:	Categories:
OR	Sales	64	Sales
IN	Inventory	64	Inventory
FC	Forecast	122	Forecast

Stratum.Connector for Viewer organizes this Stratum data into measure groups that get displayed in that application's Measure Group Selection window. A measure group is made up of partitions, dimensions, and measures based on Structure Code definitions. Examples of measure groups are Accounts Payable - Open, Actual Sales, Budget, Daily Sales, Forecast, Inventory, and Open Orders. Measure groups become the categories seen in places such as the Stratum.Viewer Role Maintenance window and Insert Measure Item window.

Stratum ViewGroups and ViewSets

As described previously, ViewGroups are associated with Structure Codes to determine how users will be able to analyze their data -- such as in a weekly, monthly, or quarterly format.

ViewSets define the year and period definitions available in Stratum. ViewSetItems define the periods of time that make up each ViewSet. For example, a yearly ViewSet would be defined in terms of calendar years with ViewSetItems such as 2009, 2010, 2011, 2012, and so forth. A monthly ViewSet would be defined in terms of calendar months with ViewSetItems such as January, February, March, and so forth.

ViewSets can be either absolute or based. Absolute ViewSets are for specific periods of time. Examples are January 2014 or Week 5 of 2014. Based ViewSets are used to define time periods based on Absolute ViewSets. For example, Current Period of Current Year.

For the three Structure Codes described earlier in this topic, ViewSets such as the eight below could be set up in preparation for creating ViewGroups.

ViewSet:	ViewSetItems:
Year	2008, 2009, 2010, 2011, 2012, 2013, and 2014
Quarters	First Quarter, Second Quarter, Third Quarter, and Fourth Quarter
Months	January, February, March, April, and so forth
Weeks	Week 1, Week 2, Week 3, Week 4, and so forth
Year Based	2 Years Ago, Previous Year, Current Year, Next Year, and so forth
Quarters Based	2 Quarters Ago, Previous Quarter, Current Quarter, Next Quarter, and so forth
Months Based	2 Months Ago, Previous Month, Current Month, Next Month, and so forth
Weeks Based	2 Weeks Ago, Previous Week, Current Week, Next Week, and so forth

The ViewGroups can then be set up. A Weekly ViewGroup could be set up and then associated with the Sales and Inventory Structure Codes. A Monthly ViewGroup could be set up for the Forecast Structure Code.

ViewGroup:	ViewSets in the ViewGroup:
Weekly (created for use with the Sales and Inventory Structure Codes)	Year Quarters Months Weeks Year Based Quarters Based Months Based Weeks Based
Monthly (created for use with the Forecast Structure Codes)	Year Quarters Months Year Based Quarters Based Months Based

Stratum.Connector for Viewer uses this Stratum data along with the dimension and measure group selections you make in Stratum.Connector for Viewer to generate various elements of time for use in Stratum.Viewer. Those elements include a Time dimension, named sets, and time range properties (units of time, years, and periods).

Here is a summary of how ViewSets and ViewSetItems are used. See Time Dimension Creation for Stratum.Viewer, Stratum.Planner Influence on Time Range Properties for Measure Items, and Stratum.Planner Influence on Caption Variables for detailed information and examples.

1. ViewSets are used to create hierarchies, levels, and attribute relationships in the Time dimension. ViewSetItems of a ViewSet are used to create time members. The ViewSetItem long descriptions are used as the values for these members.

2. The ViewGroup defined for a Structure Code determines the time units (quarters, months, etc.) available for each measure in the Stratum.Viewer Insert and Edit Measure Item window. Each absolute periodic ViewSet becomes a time unit. The ViewSet priority determines the order in which they display in the Time Unit drop-down list. The ViewSetItems from the absolute and based year ViewSets associated with the selected measure are used to create the available To / From years for the time units. The ViewSetItems from the absolute and based periodic ViewSets associated with the measure are used to create the available To / From periods for each time unit. The based ViewSetItem marked as “Default” in Stratum.Planner will be used as the default year / period for the corresponding time unit.

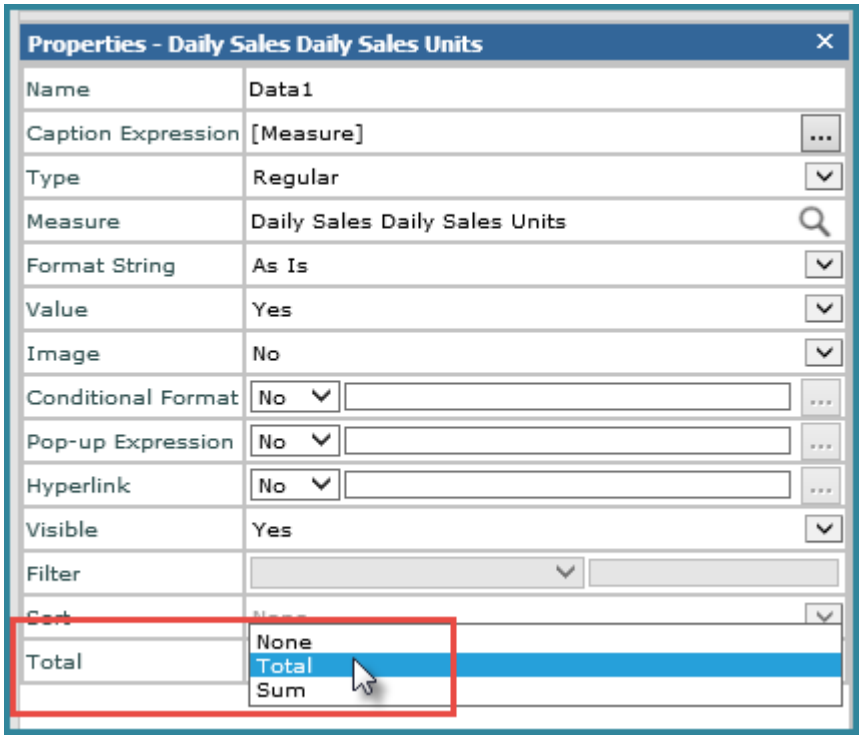
3. The short description, long description, and years (when applicable) of ViewSetItems are variables that can be used when setting up measure item captions. The variables are available when working with regular measure items that have time ranges.

When to Use the “Sum” Total Setting for Measure Items

A “Sum” type of total is one of three available Total settings for measure items in Stratum.Viewer (the other types are Total and None). A Sum total designation means that Viewer will generate totals by adding the values displayed in measure item detail cells. That summing will be used to generate the Grand Totals, sub-totals, and All Others.

The Sum type of total is intended for special cases where you don’t want any underlying calculations that Viewer performs to generate detail values applied when generating total values. You might choose to use a Sum total when a measure item calculation includes an IIF statement, such as a calculation with IF, Then, Else conditions.

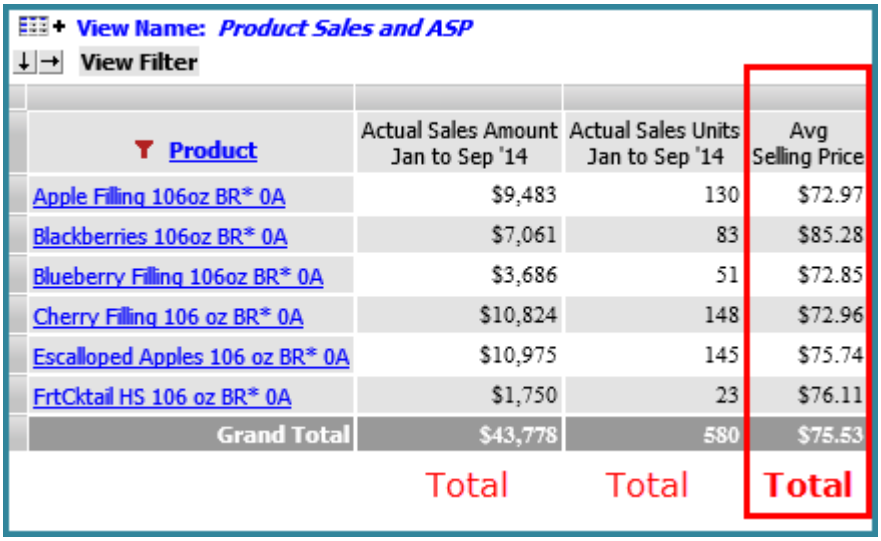
Two examples follow. The first shows an example of when you would use the Total designation for a measure item. The second shows an example of using the Sum designation.



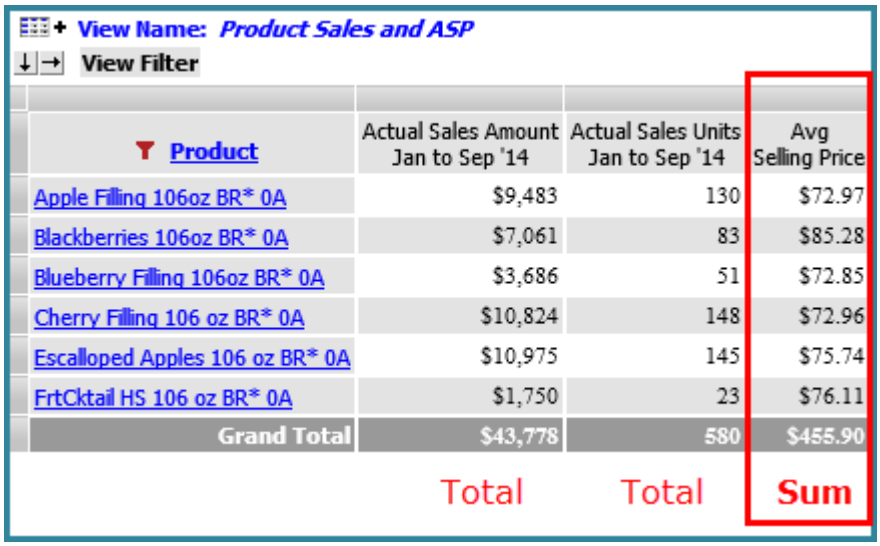
Example 1: Measure Item Set to "Total"

In most cases, the default "Total" setting for measure items will be appropriate for your views. A "Total" designation takes into account any underlying calculations for a measure item's definition when generating Grand Totals, sub-totals, and All Others – such as calculations defined in a measure item expression or associated with a Stratum.Planner calculated value.

Here is an example where the Total designation is preferred over Sum. The Average Selling Price has an underlying expression that divides Actual Sales Amount by Actual Sales Units. With the Total designation, the Grand Total is calculated by dividing the Grand Total sales by the Grand Total units sold.

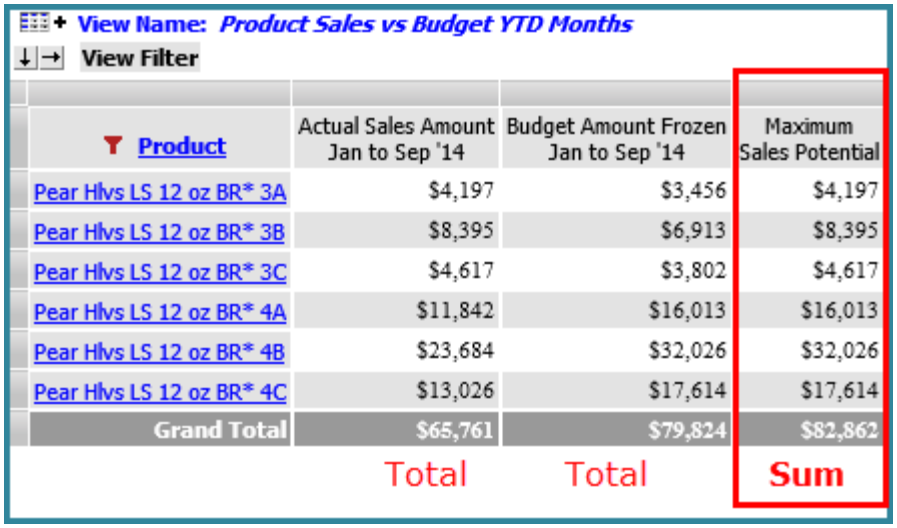


If you had used a Sum total in this case, the Grand Total would be the sum of the Average Selling Price detail values displayed for the six Products in the view. The Total designation is more appropriate than a Sum designation in this case.



Example 2: Measure Item Set to "Sum"

Here is an example where the Sum designation is preferred over Total. The Maximum Sales Potential measure item in the following view is a calculated measure item with an If, Then, Else statement built into it. It displays the actual sales value for a Product if that Product's sales are greater than its budgeted sales. Otherwise, the calculation displays the budgeted sales value for the Product. The calculation is not applied to generate the Grand Total for the measure item because it has been assigned a "Sum" total. The Grand Total is the sum of the Maximum Sales Potential detail values displayed for the six Products in the view.


View Name: *Product Sales vs Budget YTD Months*

View Filter

Product	Actual Sales Amount Jan to Sep '14	Budget Amount Frozen Jan to Sep '14	Maximum Sales Potential
Pear Hlvs LS 12 oz BR* 3A	$4,197	$3,456	$4,197
Pear Hlvs LS 12 oz BR* 3B	$8,395	$6,913	$8,395
Pear Hlvs LS 12 oz BR* 3C	$4,617	$3,802	$4,617
Pear Hlvs LS 12 oz BR* 4A	$11,842	$16,013	$16,013
Pear Hlvs LS 12 oz BR* 4B	$23,684	$32,026	$32,026
Pear Hlvs LS 12 oz BR* 4C	$13,026	$17,614	$17,614
Grand Total	$65,761	$79,824	$82,862
	Total	Total	Sum

If you had used a Total designation in this case, the results for the Grand Total calculation would display the greater of Grand Total sales compared to Grand total budget. In this example, the Sum designation is more appropriate than a Total designation.


View Name: *Product Sales vs Budget YTD Months*

View Filter

Product	Actual Sales Amount Jan to Sep '14	Budget Amount Frozen Jan to Sep '14	Maximum Sales Potential
Pear Hlvs LS 12 oz BR* 3A	$4,197	$3,456	$4,197
Pear Hlvs LS 12 oz BR* 3B	$8,395	$6,913	$8,395
Pear Hlvs LS 12 oz BR* 3C	$4,617	$3,802	$4,617
Pear Hlvs LS 12 oz BR* 4A	$11,842	$16,013	$16,013
Pear Hlvs LS 12 oz BR* 4B	$23,684	$32,026	$32,026
Pear Hlvs LS 12 oz BR* 4C	$13,026	$17,614	$17,614
Grand Total	$65,761	$79,824	$79,824
	Total	Total	Total

What Happened to a Measure Item that Used to be in my View?

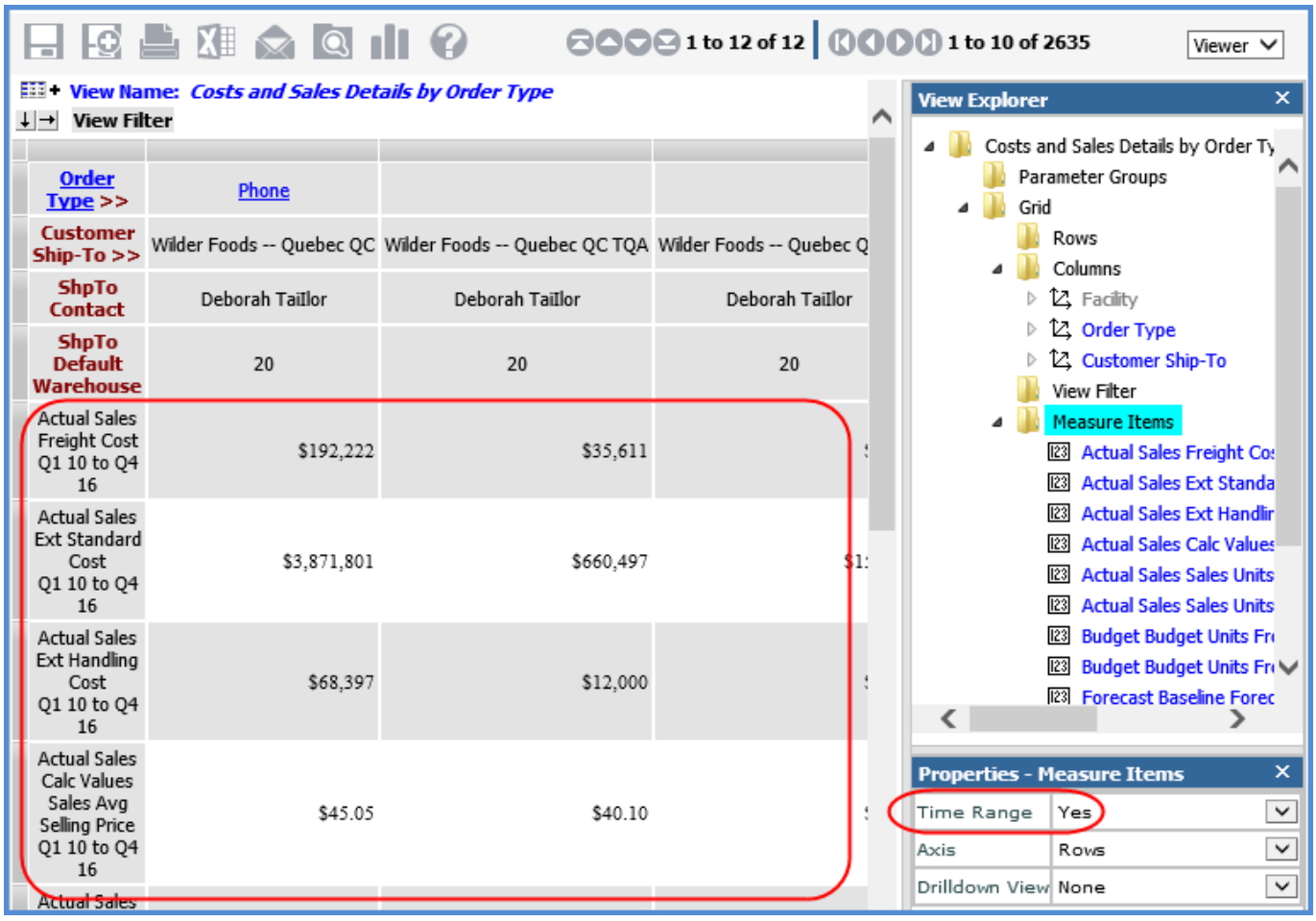
Measure items can be removed when:

- The Time Range property for the view changes. That change can impact measure items and time hierarchies.
- Your administrator changes the role for your user profile such that you no longer have permission to access the underlying measure for the measure item.
- The underlying measure was removed from your Stratum.Connector for Viewer environment and is no longer available to any users.

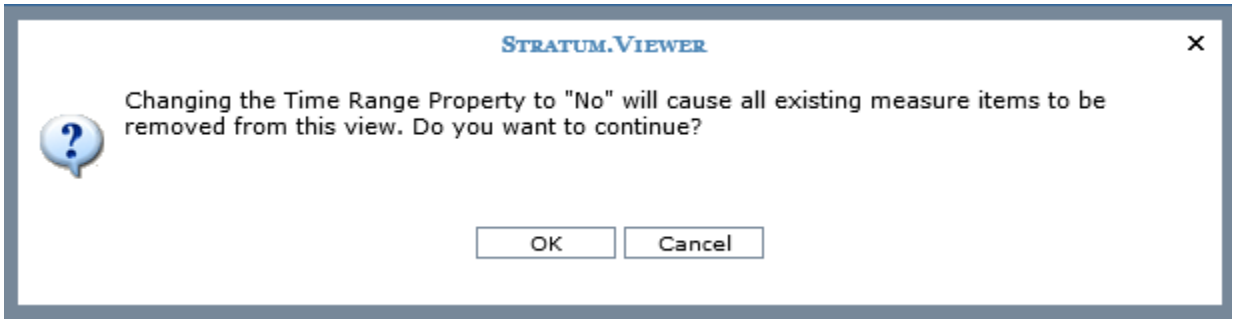
Example Time Range Property Changes

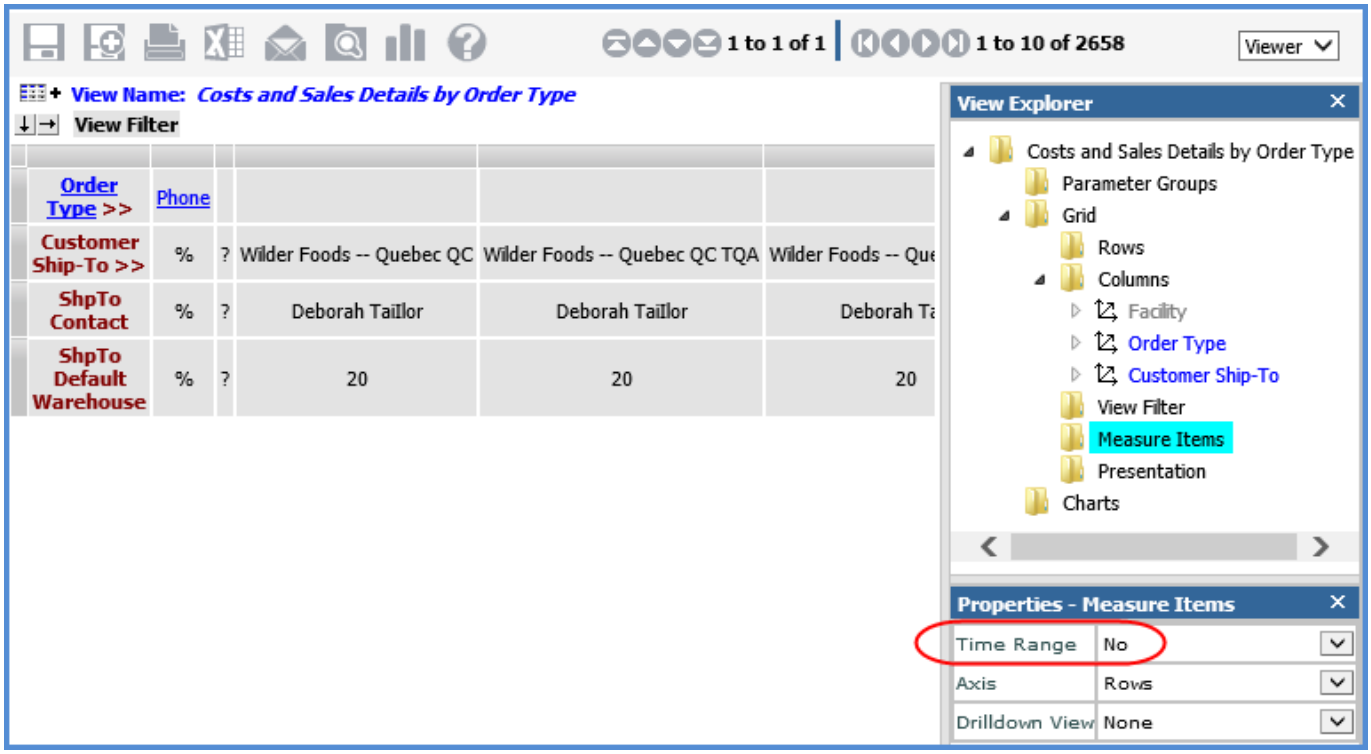
All measure items will be removed from a view if you change the Time Range property. Changing the property to No lets you use time hierarchies in the view. In that case, all measure items (they will have time ranges) will be removed. Changing the property back to Yes lets you use measure items with time ranges in the view. In that case, all measure items (they will not have time ranges) and all time hierarchies will be removed from the view.

Here is a view that has a Time Range property of Yes and measure items with time ranges on rows.



Here is the view after the Time Range property was changed to No. Also shown is the related prompt that displayed to confirm the change. All measure items were removed. Measure items without time ranges and time hierarchies can be added to the view after this change to the Time Range property.





Example Role Changes

Your role determines which dimension members and measures you can access in views and other parts of Stratum.Viewer. Roles can be changed over time. If your administrator changes your role to remove access to a measure, then you will no longer see that measure or measure items that were based on it in views.

Here is a view run by a user with access to all Actual Sales and Budget measures.

View Name: *Ship-To Market Sales vs Budget*

View Filter: Product Family

Ship-To Market	Actual Sales Amount Sep 2013 to Sep 2014	Actual Sales Units Sep 2013 to Sep 2014	Budget Amount Sep 2013 to Sep 2014	Budget Units Sep 2013 to Sep 2014
St Louis	$803,219,776	17,548,405	$772,086,618	14,528,668
Buffalo	$532,310,973	11,459,143	$510,366,324	9,439,746
Quebec QC	$492,804,378	9,789,136	$473,964,188	8,115,032
Raleigh-Durham	$459,958,588	9,571,016	$435,506,429	7,799,708
Chicago	$457,674,858	9,441,385	$439,927,759	7,781,036
Winnipeg MB	$403,255,801	7,267,792	$384,956,677	5,954,531
Calgary AB	$397,883,599	8,250,921	$377,698,181	6,752,784
Philadelphia	$394,261,089	8,475,334	$376,833,958	6,981,698
Phoenix	$324,955,310	5,972,644	$310,437,407	4,883,232
Dallas	$319,168,526	5,982,339	$302,735,157	4,889,418
Seattle	$313,696,224	5,798,091	$298,104,090	4,743,124
Pittsburgh	$125,852,545	2,252,784	$119,858,224	1,848,107
St. John NB	$121,044,177	2,281,431	$113,290,711	1,845,710
Grand Total	$5,146,085,844	104,090,420	$4,915,765,722	85,562,793

Here's what the user will see when she runs the view after her role is changed to prevent access to all Budget measures. The measure items based on Budget measures are no longer visible.

View Name: *Ship-To Market Sales vs Budget*

View Filter: Product Family

Ship-To Market	Actual Sales Amount Sep 2013 to Sep 2014	Actual Sales Units Sep 2013 to Sep 2014
St Louis	$803,219,776	17,548,405
Buffalo	$532,310,973	11,459,143
Quebec QC	$492,804,378	9,789,136
Raleigh-Durham	$459,958,588	9,571,016
Chicago	$457,674,858	9,441,385
Winnipeg MB	$403,255,801	7,267,792
Calgary AB	$397,883,599	8,250,921
Philadelphia	$394,261,089	8,475,334
Phoenix	$324,955,310	5,972,644
Dallas	$319,168,526	5,982,339
Seattle	$313,696,224	5,798,091
Pittsburgh	$125,852,545	2,252,784
St. John NB	$121,044,177	2,281,431
Grand Total	$5,146,085,844	104,090,420

What is the Difference between Hiding a Measure Item and Hiding its Value?

Hiding a measure item means that the row(s) or column(s) for it will no longer display in the view grid. If you just hide the value for a measure item, then the cells for that measure item will remain in the grid and only the numeric values for it will be hidden. If the measure has a conditional format or an image defined for it, then those items will still display when the value is hidden. To hide a measure item, you set its Visible property to No. To hide just the value, you set the Value property to No.

See also Why Would I want to Hide a Measure Item Value?

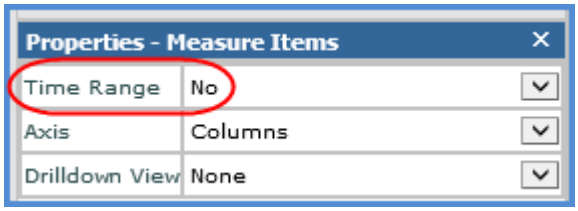
Why don't Totals Display in a View?

Totals will not display if they have been disabled:

- Totals can be disabled for individual levels and measures via the Totals property in their properties windows. If totals for all measure items have been disabled, no totals will display even if totals are enabled for levels.
- Totals can be disabled for all levels on rows and/or columns via the Totals properties on the axis icon pop-up menus  .

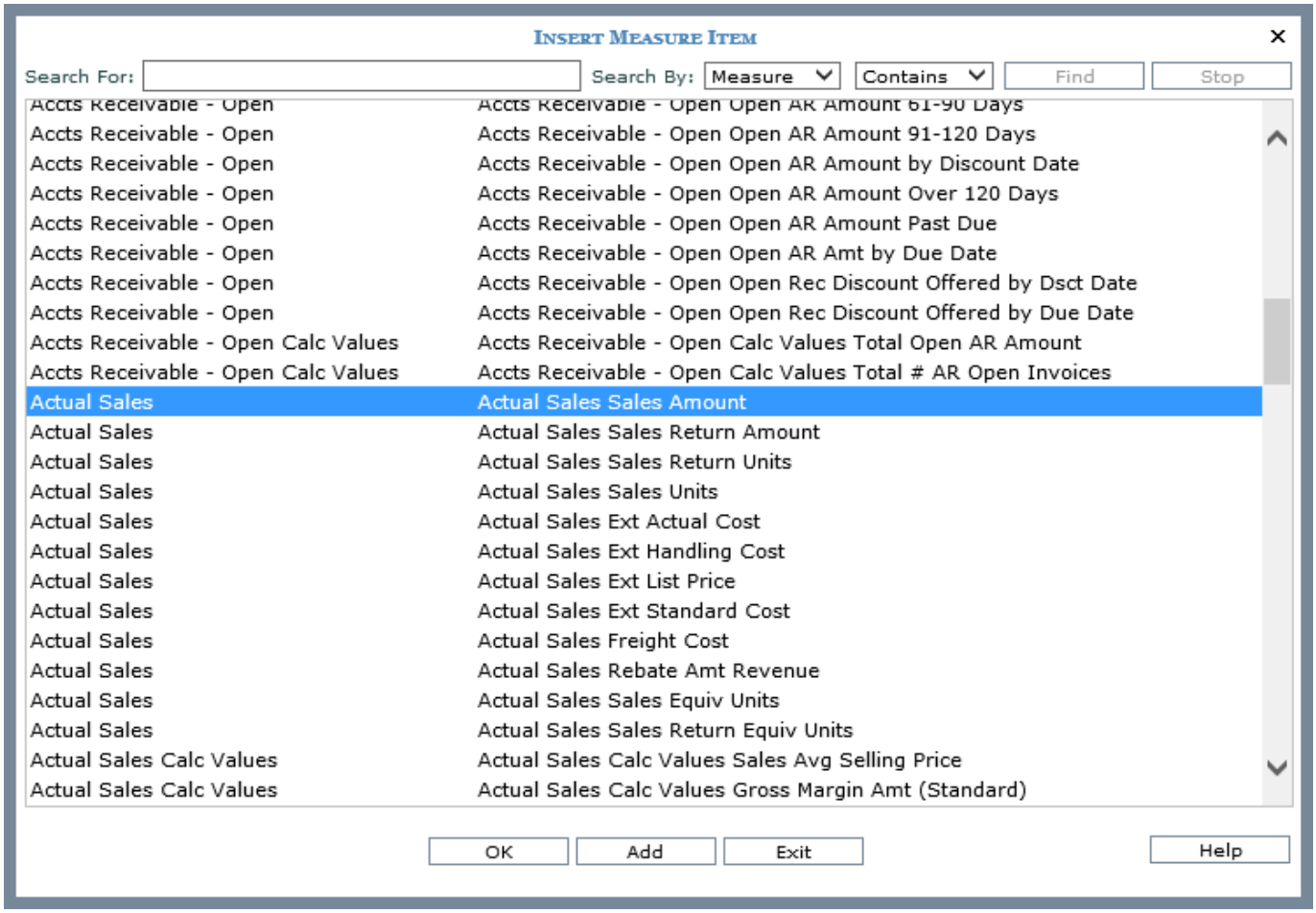
Why isn't there a Section for Time in the Insert/Edit Measure Item Window?

There won't be a section for time if the Time Range property for a view is set to No. The window containing that property is accessed by double-clicking the Measure Items folder in view explorer.



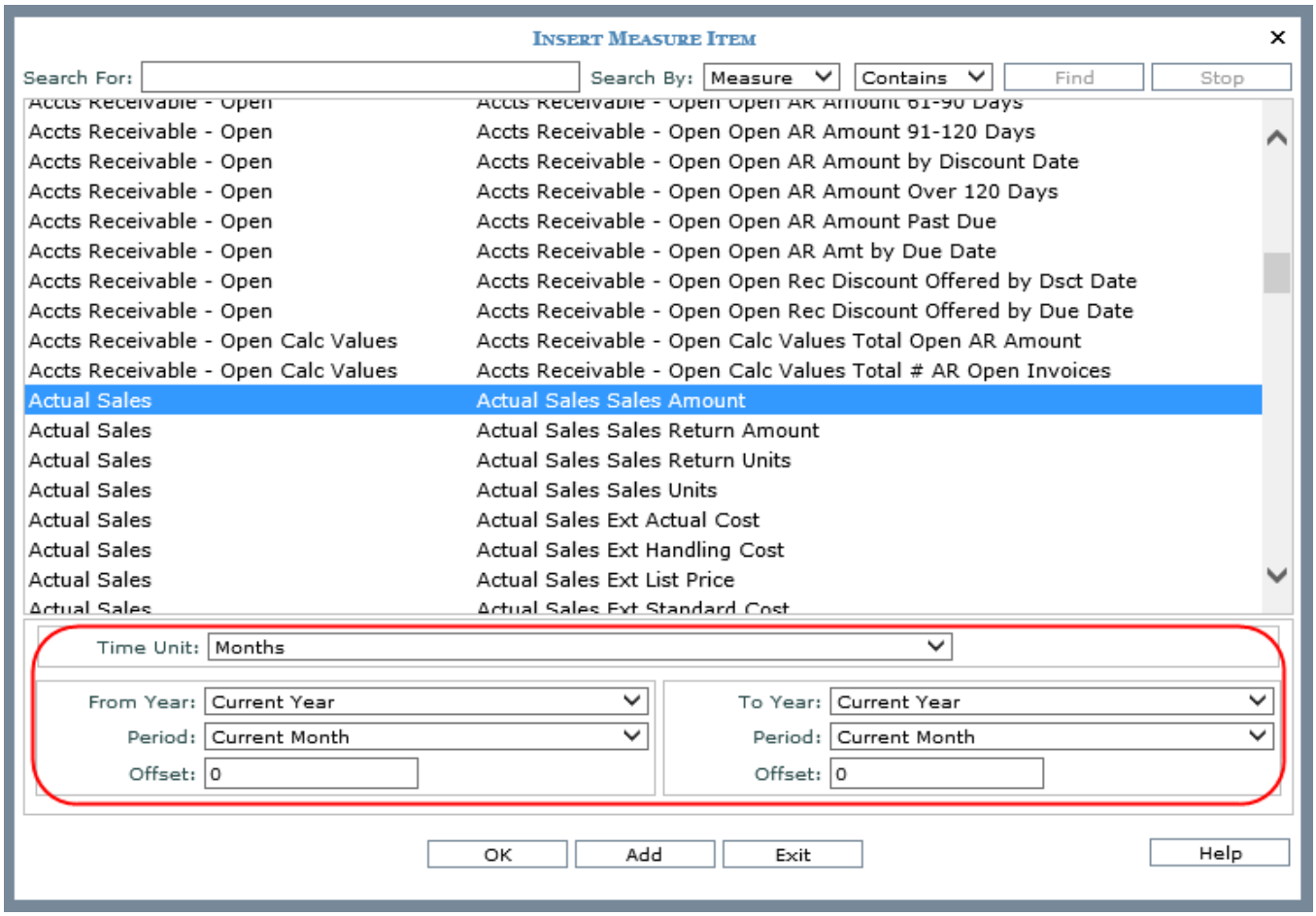
Example 1

Insert Measure Item window when Time Range = No:



Example 2

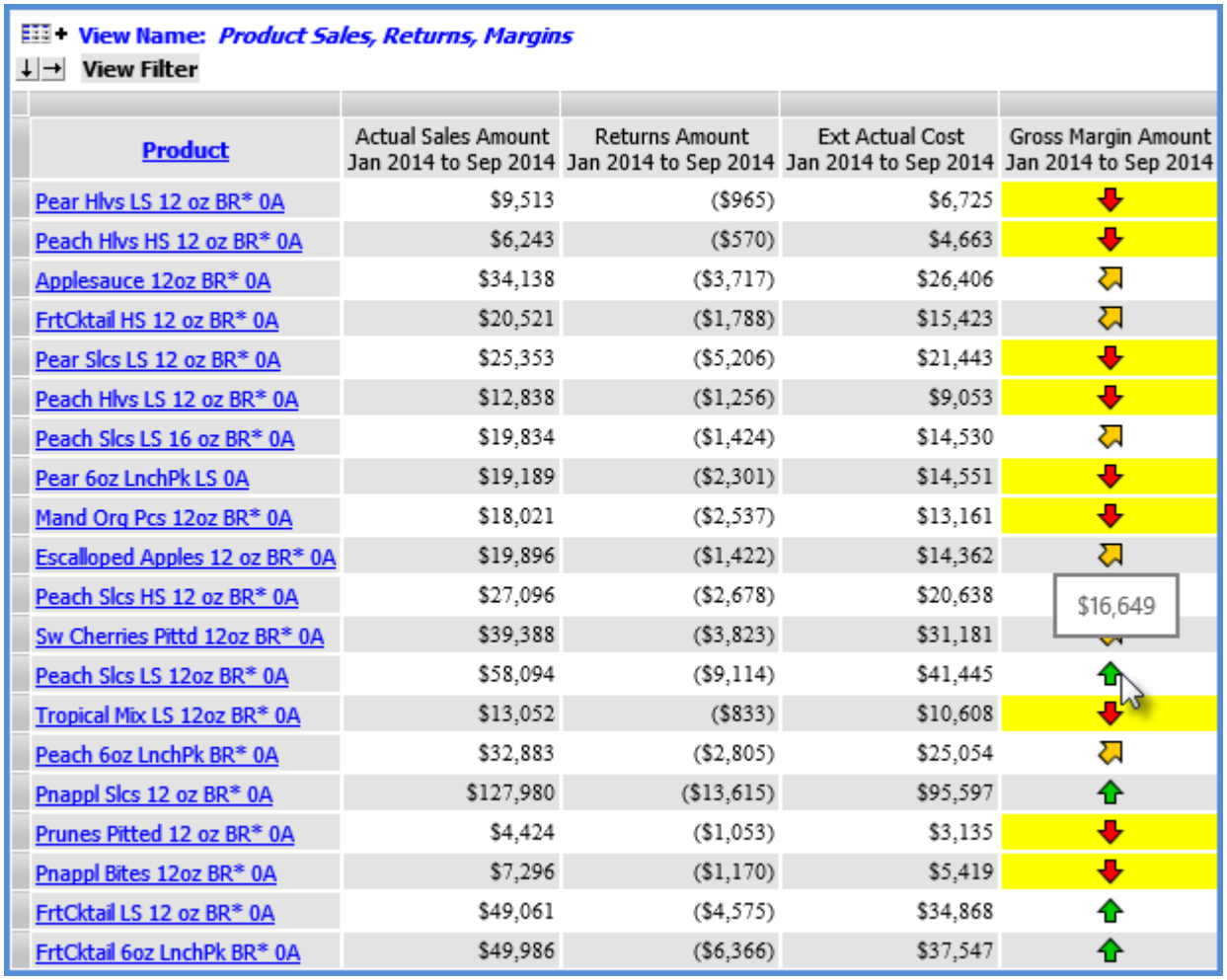
Insert Measure Item window when Time Range = Yes:



Why Would I want to Hide a Measure Item Value?

A couple examples follow to show cases where you would choose to hide the measure item value.

In this first example, the user applied a conditional format to a measure item. The user only wants the conditional format indicators to show, so the Value property for the measure item was set to No. The user set up a pop-up label on the measure item that will show the measure item value when the indicator icon is hovered over with the cursor.



Product	Actual Sales Amount Jan 2014 to Sep 2014	Returns Amount Jan 2014 to Sep 2014	Ext Actual Cost Jan 2014 to Sep 2014	Gross Margin Amount Jan 2014 to Sep 2014
Pear Hlvs LS 12 oz BR* 0A	$9,513	($965)	$6,725	
Peach Hlvs HS 12 oz BR* 0A	$6,243	($570)	$4,663	
Applesauce 12oz BR* 0A	$34,138	($3,717)	$26,406	
FrtCktail HS 12 oz BR* 0A	$20,521	($1,788)	$15,423	
Pear Slcs LS 12 oz BR* 0A	$25,353	($5,206)	$21,443	
Peach Hlvs LS 12 oz BR* 0A	$12,838	($1,256)	$9,053	
Peach Slcs LS 16 oz BR* 0A	$19,834	($1,424)	$14,530	
Pear 6oz LnchPk LS 0A	$19,189	($2,301)	$14,551	
Mand Org Pcs 12oz BR* 0A	$18,021	($2,537)	$13,161	
Escalloped Apples 12 oz BR* 0A	$19,896	($1,422)	$14,362	
Peach Slcs HS 12 oz BR* 0A	$27,096	($2,678)	$20,638	
Sw Cherries Pittd 12oz BR* 0A	$39,388	($3,823)	$31,181	
Peach Slcs LS 12oz BR* 0A	$58,094	($9,114)	$41,445	
Tropical Mix LS 12oz BR* 0A	$13,052	($833)	$10,608	
Peach 6oz LnchPk BR* 0A	$32,883	($2,805)	$25,054	
Pnappl Slcs 12 oz BR* 0A	$127,980	($13,615)	$95,597	
Prunes Pitted 12 oz BR* 0A	$4,424	($1,053)	$3,135	
Pnappl Bites 12oz BR* 0A	$7,296	($1,170)	$5,419	
FrtCktail LS 12 oz BR* 0A	$49,061	($4,575)	$34,868	
FrtCktail 6oz LnchPk BR* 0A	$49,986	($6,366)	$37,547	

This second example shows a calculated measure items that display images. The user chose to hide the measure item value in this case. If the Value property had been set to Yes, the expression for the measure item would have displayed in addition to the image.

View Name: *Product Sales and Budget with Image References*

View Filter

Product	Prod Long Description	Product Images	Actual Sales Sales Units Jan 14 to Sep 14	Budget Budget Units Frozen Jan 14 to Sep 14
620A954020	Navel Oranges 0A		19,462	15,185
620B954000	Red Ripe Tomatoes 0B		15,195	12,188
620A954017	Cherries, Bing 0A		13,674	10,701
620A954014	Asparagus 0A		13,091	11,132
620A954011	Baby Carrots 0A		12,692	10,616
620A954016	Strawberries 0A		12,320	10,447
620A954008	Bananas 0A		4,588	4,247

Definitions

Calculated and Distinct Calculated Measure Item

Calculated measure items are based on expressions that you set up in the Expression window. The measure items are calculations between pieces of data or groups of data. They can represent additions, subtractions, multiplications, divisions, etc. And, their expressions can be built using regular measure items, other calculated measure items, measures, members, named sets, and special functions such as an average, variances, and percent of total.

Calculations for a calculated measure item are executed for each member of a level. A calculated measure item with its Distinct property enabled is known as a distinct calculated data item, and the calculations for that type of measure item are executed once for each level rather than individually for each level member. In the following view, Var % YTD 2012 vs 2013 is a calculated measure item that is executed for Division F and G. The last measure item, % of Total 2013, is a distinct calculated measure item performed for the overall Division level.

View Name: *Lot Variance YTD*
View Filter

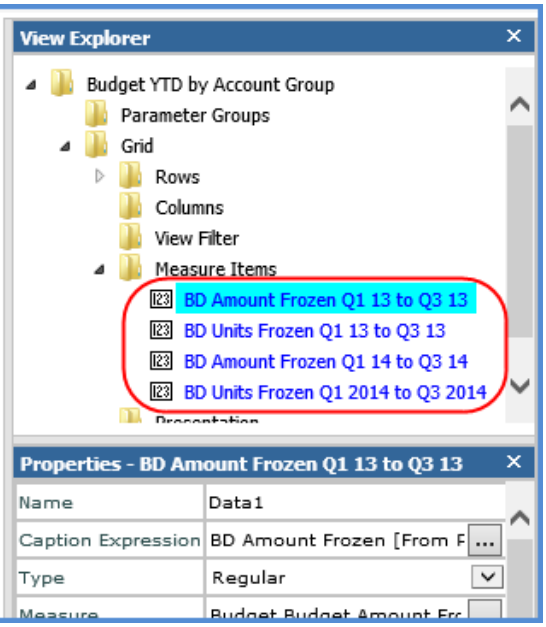
Division >>	F			G			Grand Total			
Div Long Description	Foodservice Division			Grocery Division						
Lot	Daily Sales Amount Jan 2012 to Sep 2012	Daily Sales Amount Jan 2013 to Sep 2013	Var % 2012 vs. 2013	Daily Sales Amount Jan 2012 to Sep 2012	Daily Sales Amount Jan 2013 to Sep 2013	Var % 2012 vs. 2013	Daily Sales Amount Jan 2012 to Sep 2012	Daily Sales Amount Jan 2013 to Sep 2013	Var % 2012 vs. 2013	% of Total 2013
19994336914001				$5,035	$5,078	.85%	$5,035	$5,078	.85%	.03%
19994336914002				$5,895	$5,959	1.09%	$5,895	$5,959	1.09%	.03%
19994336914003	$7,384	$7,469	1.15%	$14,461	$14,634	1.19%	$21,845	$22,103	1.18%	.11%
19994336914004				$10,370	$10,495	1.22%	$10,370	$10,495	1.22%	.05%
19994336914008	$11,702	$11,847	1.23%	$19,678	$19,922	1.24%	$31,380	$31,769	1.24%	.16%
19994336914015				$19,922	$20,170	1.24%	$19,922	$20,170	1.24%	.10%
19994336914016				$14,320	$14,500	1.26%	$14,320	$14,500	1.26%	.07%
19994336914022				$36,502	$36,988	1.33%	$36,502	$36,988	1.33%	.19%
19994336914025	$5,332	$5,388	1.06%	$4,628	$4,673	.96%	$9,960	$10,061	1.02%	.05%
19994336914301				$7,653	$7,739	1.13%	$7,653	$7,739	1.13%	.04%
19994336914302				$10,277	$10,393	1.12%	$10,277	$10,393	1.12%	.05%
19994336914303				$10,789	$10,914	1.15%	$10,789	$10,914	1.15%	.06%
19994336914304	$10,196	$10,320	1.21%	$23,586	$23,884	1.27%	$33,782	$34,204	1.25%	.17%
19994336914315				$5,839	$5,893	.92%	$5,839	$5,893	.92%	.03%
19994336914322				$39,552	$40,075	1.32%	$39,552	$40,075	1.32%	.20%

Caption

The text that you see in view header cells for measure items are captions. Captions represent the rendered text of caption expressions, which are based on administrative defaults but can be customized by you. Other places that captions display are view explorer, the Edit Measure Item window, and the Expression window.

View Name: *Budget YTD by Account Group*
View Filter

Acct Group	BD Amount Frozen Q1 13 to Q3 13	BD Units Frozen Q1 13 to Q3 13	BD Amount Frozen Q1 14 to Q3 14	BD Units Frozen Q1 14 to Q3 14
National Distributor	$3,164,652,158	55,287,315	$3,050,925,452	49,537,434
Regional Distributor	$315,708,727	4,898,971	$304,363,242	4,389,478
Independent	$878,290,713	13,909,538	$846,727,968	12,462,946
Grand Total	$4,358,651,598	74,095,824	$4,202,016,662	66,389,858



Measure

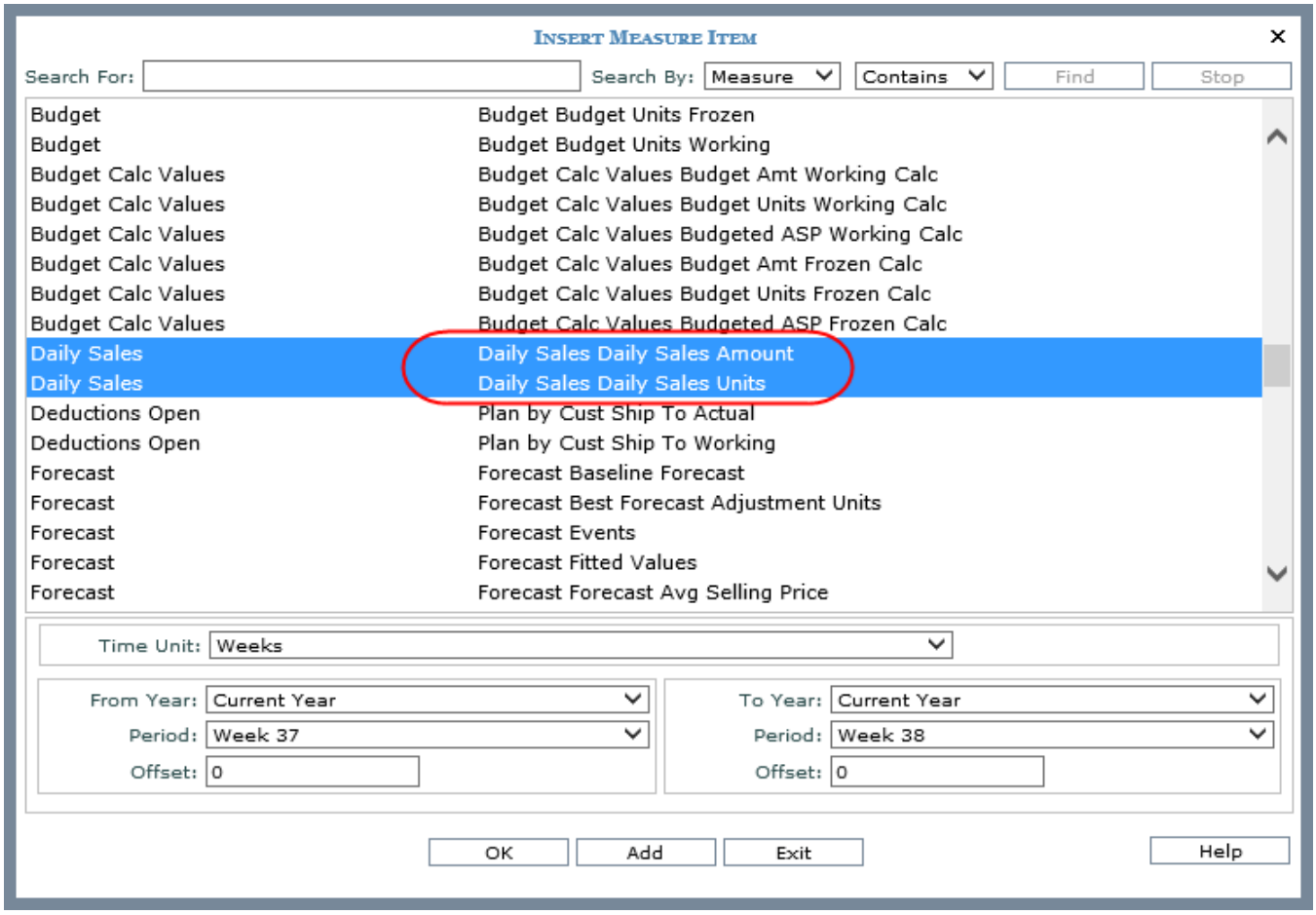
Measures are the basic units of data for your dimensions, hierarchies, and levels. Measures are used to create and insert measure items into your views. They can also be used when building the expressions for calculated measure items.

The two measure items in the following view were created from two Daily Sales measures using the Insert Measure Item window.

View Name: *Daily Sales by Customer Type*

View Filter

Customer Type	Ship-To Territory	Daily Sales Daily Sales Amount Wk 37 2014 to Wk 38 2014	Daily Sales Daily Sales Units Wk 37 2014 to Wk 38 2014
Class B Customer	Southwest	$286,797	2,554
	South Central	$317,063	2,734
	Gulf Coast	$348,421	3,227
	Midlantic	$400,396	3,779
	New England	$529,373	4,516
	Great Lakes	$189,547	1,741
	Great Plains	$329,536	3,160
	Northwest	$277,316	2,471
	Western Provinces	$186,334	1,545
	Central Provinces	$529,959	4,555
	Eastern Atlantic Provinces	$596,137	5,502
Grand Total		$3,990,880	35,784

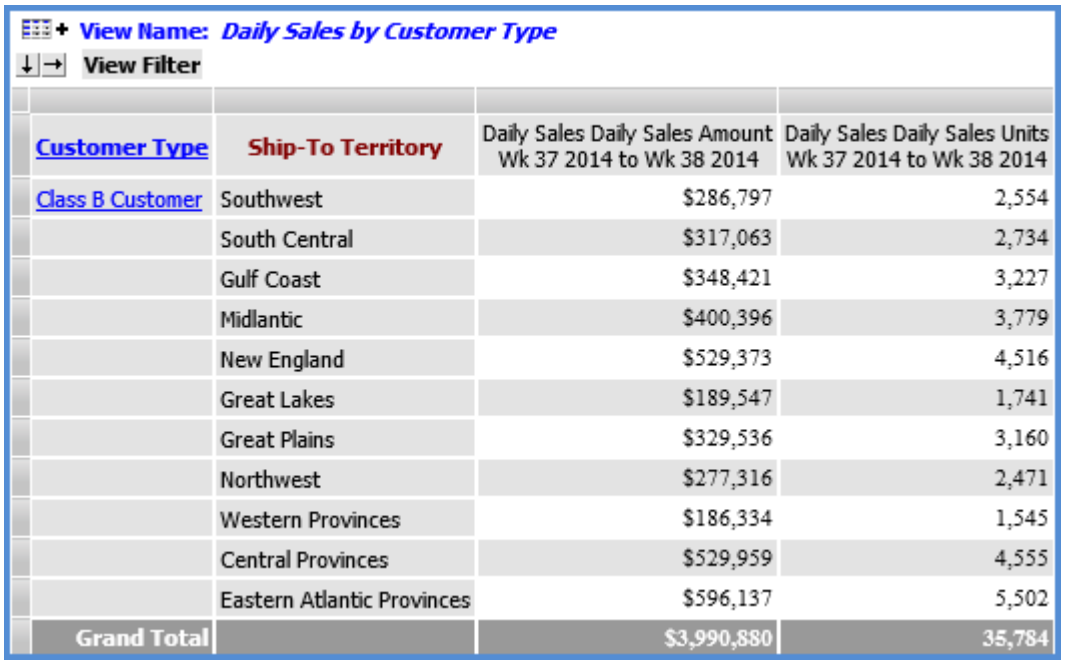


Regular Measure Item

Regular measure items are items based on the measures in the Analysis Services database for your Stratum.Viewer environment. The Insert Measure Item window is used to create regular measure items within individual views.

Regular measure items can be created with or without time ranges, depending on the Time Range property for a view. If the Time Range property is Yes for a view, you can specify time ranges for its measure items. If the Time Range property is No, then time range functionality is disabled, but you can use time hierarchies in the view.

The regular measure items in the following view are based on Daily Sales measures and have a time range of Week 37 through 38 of 2014.



View Name: *Daily Sales by Customer Type*

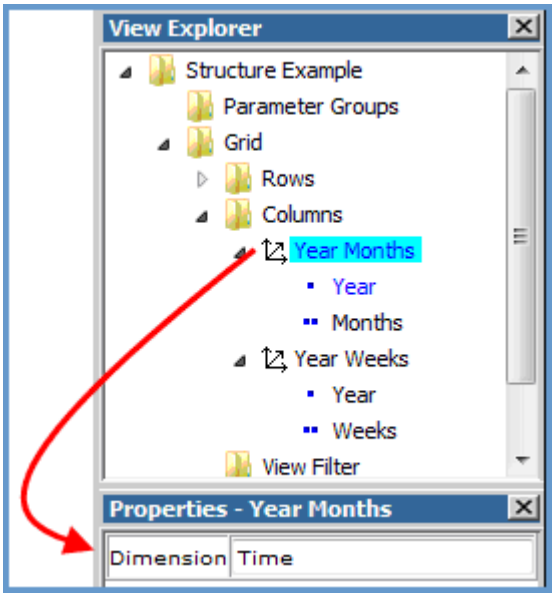
View Filter

Customer Type	Ship-To Territory	Daily Sales Daily Sales Amount Wk 37 2014 to Wk 38 2014	Daily Sales Daily Sales Units Wk 37 2014 to Wk 38 2014
Class B Customer	Southwest	$286,797	2,554
	South Central	$317,063	2,734
	Gulf Coast	$348,421	3,227
	Midlantic	$400,396	3,779
	New England	$529,373	4,516
	Great Lakes	$189,547	1,741
	Great Plains	$329,536	3,160
	Northwest	$277,316	2,471
	Western Provinces	$186,334	1,545
	Central Provinces	$529,959	4,555
	Eastern Atlantic Provinces	$596,137	5,502
Grand Total		$3,990,880	35,784

Time Hierarchy

A time hierarchy is a hierarchy from the Time dimension. The Time dimension, its hierarchies, and its levels are a means of organizing the years and time periods (for example, days, weeks, months, and quarters) that will be available for use in setting up views. Stratum.Connector for Viewer creates the Time dimension, its hierarchies, and levels based on the Stratum.Server ViewGroups and View Sets associated with the measure groups selected for your Analysis Services database.

There are two time hierarchies in this example, and both belong to the Time dimension. The Year Months hierarchy ( ) has Year (▪) and Months (▪▪) levels. The Year Weeks hierarchy ( ) has Year (▪) and Weeks (▪▪) levels. Other examples of time hierarchies are Year Based Months Based, Rolling Year Based Months Based, and Months.



Time Range

Time ranges are slices of time that you can specify for measure items in your views. The Time Range property within each view controls whether or not time ranges will be available for use with the view measure items. The property within a view needs to be Yes for time range functionality to be enabled in the view. Time ranges consist of a time unit (period, days, weeks, months, etc.), a From Year and Period, a To Year and Period, and an Offset property. A time range can span short or long units of time, for example, the current day, the months in the current year up to the current month, or multiple years.

The time range for the measure items in this example returns the sum of the Budget Amount and Units Frozen for the next 6 months -- the current month and next 5 months after it.