

How-To: Building a Custom Roll-up Using Calculated Members



Vena Support Team
Updated 6 months ago

Create custom roll-ups using **Calculated Members** for more efficient report creation.

Why use this feature?

In Vena, you can create special members that are comprised of other members--called **Calculated Members**.

Calculated Members are most often used to create a special roll-up that is not supported by the regular hierarchy. This roll-up can then be used as a custom reporting bucket, representing a useful shortcut when building reports.

In this article, you will learn about situations in which Calculated Members can be used, as well as how to create them.

Before you begin

In order to complete the steps outlined on this page, you need at least **Modeler** access.

Additionally, to map Calculated Members on templates and reports, you need **Manager** access and the relevant Data Permissions for the Calculated Members (if Data Permissions are set up in your environment).

Use case examples

The following examples illustrate when using a Calculated Member would be recommended. To go straight to the instructions on how to create a Calculated Member, skip to the [How to](#) section.

Example 1

Imagine that your company operates a number of stores nationwide. In your hierarchy, the stores are placed under parent members representing the city in which they are located (e.g., Chicago, New York, etc.), and are tagged with attributes based on the type of product they carry (e.g., Widget A, Widget B, etc.).

Given this hierarchy, if you were creating a report and wanted to get a number representing just the stores carrying Widget A, it would not be possible to use a roll-up. Since the hierarchy is organized geographically, it will give you a roll-up for all the stores in, say, Chicago, but not for all the stores that carry Widget A (regardless of location). Instead, you would need to find a different approach.

Example 2

Consider a standard hierarchy in which all of your expense accounts are grouped under a parent member named *Total Expenses*. If you build a report and map the *Total Expenses* roll-up, the report will display a figure that includes all of the expense accounts listed under the *Total Expenses* parent. But what if you wanted to exclude an account?

For example, in some instances, it might be useful to see a figure representing all of your expenses, but without depreciation included. In this case, the *Total Expenses* roll-up will not work, as it will include the *Depreciation* account. You would need to find some other way of getting total expenses with depreciation excluded.

Solutions: Alternate Hierarchies vs. Calculated Members

Creating alternate hierarchies with shared members can solve the problem of rolling up specific members, such as all stores with Widget A or all expense accounts except depreciation. However, this method can clutter your hierarchy.

A better solution is to use a Calculated Member. By writing a simple expression, you can create a synthetic parent member for a subset of members (e.g., "all stores with Widget A" or "all expense accounts except depreciation"). This allows you to use the Calculated Member in reports for roll-ups.

Some other benefits of using Calculated Members instead of alternate hierarchies:

- Parent members cannot be shared, but Calculated Members can include both parent and bottom level members.
- Unlike alternate hierarchies, Calculated Members can be defined both statically and dynamically.

For a more extensive list of differences between Alternate Hierarchies and Calculated Members, visit this article.

How to

Setting up a Calculated Member is a two-step process:

1. Create the Calculated Member in the data model.
2. Define the members to be rolled up.

Create & Configure a Calculated Member

Calculated Members are created in the Modeler, similar to the way standard members are created.

To create a Calculated Member:

1. Navigate to the **Modeler** tab.
2. Select **Data Modeler**, then **Members** in the sidebar.
3. Choose the data model you want to modify using the drop-down menu.

Member Name	Alias	Attributes	Operator	Actions
All Entities				+
Members to be Deleted				+
Alternate Rollups				+
Undefined	Not Entity Specific			+

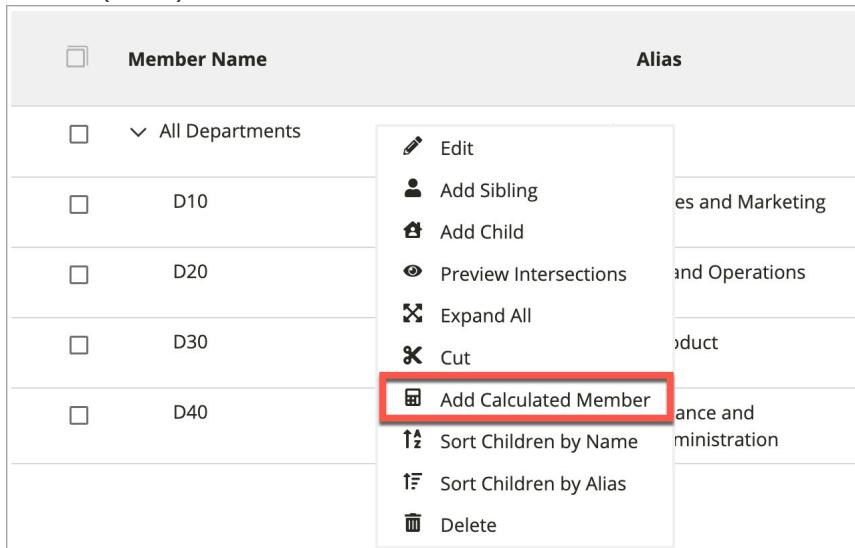
4. Select the **dimension** under which you want to create the Calculated Member.

Note

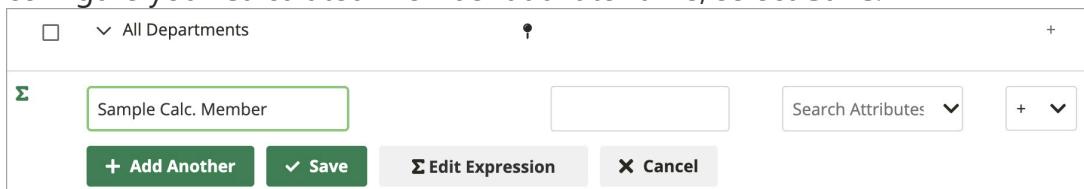
When choosing where to create a Calculated Member, remember it will be included in the roll-up to its parent member. For more information about the placement of Calculated Members within your hierarchy, review the **Notes & Best Practices** section at the end of this article.

5. Right-click on a member that is on the same level as where you want to create the Calculated Member.
6. Select **Add Calculated Member** from the menu that appears.

- *Add Calculated Member* functions essentially the same way as *Add Sibling* in that the new member is created alongside the member that you right-clicked on, not above (parent) or below (child).



7. In the text box that appears, type in a name for the Calculated Member.
8. If desired, you can also specify an Alias, add an attribute or select an operator for the Calculated Member. If you want to skip this, leave the text box blank.
9. If you are ready to configure your Calculated Member, proceed to step 11. If you want to configure your Calculated Member at a later time, select **Save**.



10. Once you have created a Calculated Member, you need to specify which members it will comprise. You do this by writing an expression, a short instruction that defines the members and (optionally) attributes that you want to include or exclude.
11. Select **Σ Edit Expression**.
12. The *Editing Calculated member* window will appear with the name of the Calculated Member listed at the top. In the text field provided, type in your expression using Model Slice Query

Language (MQL):

Σ Editing Calculated member: Sample Calc. Member

A calculated member is a member whose value is the sum of a custom group of members. To form this group, use an MQL expression. [Click here](#) for more detail.

- Expressions are constructed using MQL syntax.

Please use this reference guide for comprehensive help with writing MQL expressions.

- When you have entered your expression, select **Save**.
- The Calculated Member is now ready to be used.
- You can always edit a Calculated Member by right-clicking on it and selecting **Edit**.

Notes & best practices

- Calculated Members must be located at the bottom-level of the hierarchy. They cannot be parent members or have child members.
- When you right-click on a member which has been configured with an expression, the option *Validate Calculated Members* is available. Note that selecting this option only performs cycle detection on the expression and cannot determine if the expression is otherwise valid (i.e., whether it will work in an intended way).
- Because intersections formed with Calculated Members are not "true" intersections, the *Preview intersections* function found in the Data Modeler does not work for Calculated Members.
- We recommend creating Calculated Members at the root level of a dimension or under a designated parent. This ensures accurate roll-ups, as including Calculated Member under a parent in the hierarchy and then mapping that parent on a report will cause incorrect figures.
- Alternatively, if you do wish to place a Calculated Member among your hierarchy, you can prevent it from being included in roll-ups to its parent member by setting the *Operator* for the Calculated Member to '~' (i.e. "do not include in roll-up").
- The character limit for Calculated Members is 255.