Before you begin: Access Library in the Education sandbox

The Education sandbox is a shared, cloud-based environment to help you learn about and experiment with MicroStrategy Web and Library.

Use the Education sandbox to complete various report and dossier exercises. Complete the steps below to access the sandbox.

1   In your browser, navigate to **education.microstrategy.com/MicroStrategy/servlet/mstrWeb**.

2   Log in to the sandbox with your **MicroStrategy Account** credentials.

Open the Tutorial project

3   The MicroStrategy landing page opens. Click the **MicroStrategy Tutorial** project.

MicroStrategy Tutorial
MicroStrategy Tutorial project and application set designed to illustrate the platform's rich functionality. The theme is an Electronics, Books, Movies and Music store. Employees, Inventory, Finance, Product Sales and Suppliers are analyzed.
Server name

The MicroStrategy Tutorial home page opens.

4   Click **Go to MicroStrategy Library**.

5   If prompted, enter your **MicroStrategy Account** credentials, and then click **Log in with Identity**.

Your Library home page displays.

Exercise: Specify whether a derived metric aggregates using the dataset or visualization attributes

As you analyze your revenue for specific regions and categories, you want to quickly identify the maximum revenue at different levels and for different combinations of regions and categories. Because you do not know where your analysis leads, you decide against creating multiple derived metrics. Instead, you add and remove attributes and change the filter. Explore how the derived metric calculates values when it uses the dataset attributes or the attributes on the visualization.

Save a copy of the Manual Aggregation dossier to My Reports

In the sandbox environment, you cannot save items in the Shared Reports folder. You want to edit the dossier and save your changes, so you save a copy to the My Reports folder.

1   Access Library. For a reminder on how to do this, see *Exercise: Access Library in the Education sandbox*.

2   On your Library home page, in the All area, click the **Manual Aggregation** dossier to open it. *Alternatively, you can use the search bar in the upper right of the Library toolbar to search for the dossier.*

3   To edit the dossier, click the **Edit** icon ✎ in the toolbar.

4   From the **File** menu of the dossier, select **Save As**, and then save the dossier in the **My Reports** folder.

Explore manual aggregation behavior for a derived metric

The dossier contains the Region & Category Revenue dataset, with the Region, Category, and Subcategory attributes and the Revenue metric.
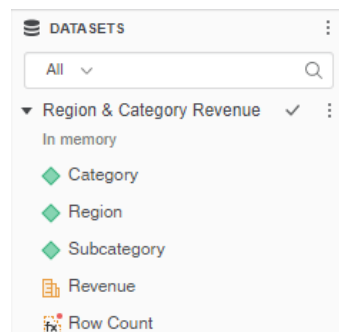
- The dossier filters for the Northeast and Northwest regions, and for the Movies and Music categories.

- All the dataset objects are placed on a grid, which is subtotaled at the Category and Region levels, returning the maximum revenue in the category

or region, as shown below. (The subtotal values help you understand the aggregation that occurs later in the exercise.)

Subtotals grid

Subtotals

Region	Category	Subcategory	Revenue
Northeast	Maximum		$201,764
	Movies	Maximum	$201,764
		Action	$148,648
		Comedy	$164,441
		Drama	$168,547
		Horror	$155,926
		Kids / Family	$162,235
		Special Interests	$201,764
	Music	Maximum	$179,760
		Alternative	$171,182
		Country	$179,760
		Music - Miscellaneous	$141,697
		Pop	$165,421
		Rock	$170,738
		Soul / R&B	$114,927
Northwest	Maximum		$37,577
	Movies	Maximum	$37,577
		Action	$30,453
		Comedy	$33,561
		Drama	$34,830
		Horror	$31,865
		Kids / Family	$32,608
		Special Interests	$37,577
	Music	Maximum	$37,322
		Alternative	$37,322
		Country	$35,560
		Music - Miscellaneous	$30,623
		Pop	$34,069
		Rock	$34,785
		Soul / R&B	$23,910

- Note the following values:

  □ For the Movies category in Northeast, the greatest Revenue value is $201,764, for the Special Interests subcategory.

  □ For the Music category in Northeast, the greatest Revenue value is $179,760, for the Country subcategory.

  □ For the Northeast region as a whole, the greatest Revenue value is $201,764, for the Movies category (higher than the Music category).

- The second grid, Dataset vs. Visualization, also contains all the dataset objects, without subtotals. You add your new metrics to this grid.
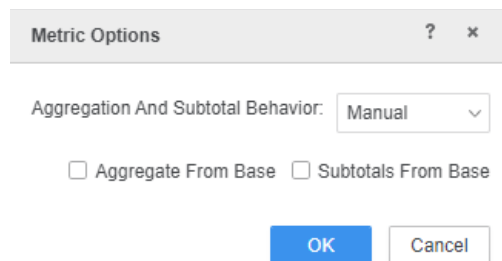
Create a metric to calculate the maximum revenue using the visualization

1 In the Datasets panel, right-click **Revenue**, and select **Create Metric**.

2 In the Metric Editor, change the function from Sum to **Max**.
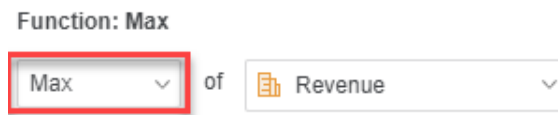
3 When aggregation is triggered, you want this metric to use the attributes on the visualization to calculate values.

   a   In the top right of the Metric Editor, click **Metric Options**.

   b   By default, aggregation and subtotal calculations are automatically determined. From the **Aggregation and Subtotal Behavior** drop-down list, select **Manual**.

       Clear both the **Aggregate from Base** and **Subtotals from Base** check boxes, if they are not already automatically cleared. (Since base means dataset, this metric calculates values using the visualization attributes rather than the dataset.)
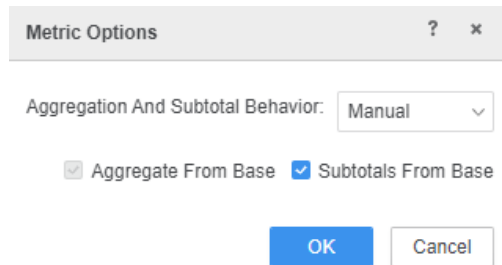

   c   Click **OK**.

4 In the **Metric Name** box, type **Max Revenue (Viz)**.

5 Click **Save**.

Create a metric to calculate the maximum revenue using the dataset

6 In the Datasets panel, right-click **Revenue**, and select **Create Metric**.

7 Change the function from Sum to **Max**.

8 When aggregation is triggered, you want this metric to use the attributes on the dataset to calculate values.

    a   Click **Metric Options**.

    b   From the **Aggregation and Subtotal Behavior** drop-down list, select **Manual**.

    c   Select the **Subtotals from Base** check box. The **Aggregate from Base** check box is automatically selected as well.

    You can aggregate from the base and subtotal from the visualization, but you cannot subtotal from the base and aggregate from the visualization.

    d   Click **OK**.

9 In the **Metric Name** box, type **Max Revenue (Dataset)**.

10 Click **Save**.

Display revenue values for regions, categories, and subcategories

The Dataset vs. Visualization grid calculates revenue at the subcategory level. Add the new derived metrics to the grid, to calculate the maximum revenue at the same level.

11 Select the **Dataset vs. Visualization** grid.

12 In the Datasets panel, double-click the **Max Revenue (Dataset)** and then the **Max Revenue (Viz)** metrics to add them to the grid. Both metrics calculate the same values as the Revenue metric because only one revenue value exists at the region-category-subcategory level. To calculate a real maximum, the metric needs multiple revenue values, such as multiple subcategory revenue values, to compare.

Display revenue values for regions and categories

You now want the grid to calculate at the region and category level, so you remove subcategory from the grid. Removing attributes triggers dynamic aggregation, which rolls up (aggregates) the metric values.

13 Right-click the **Subcategory** header in the grid, and select **Remove**. The metric values in the grid change.

Dataset vs. Visualization

Region	Category	Revenue	Max Revenue (Dataset)	Max Revenue (Viz)
Northeast	Movies	$1,001,561	$201,764	$1,001,561
	Music	$943,724	$179,760	$943,724
Northwest	Movies	$200,894	$37,577	$200,894
	Music	$196,269	$37,322	$196,269

As expected, the Revenue metric dynamically aggregates at the new level, calculating a category value, instead of a subcategory value. In addition, each Max Revenue metric displays a different value for the same Region-Category combination. Compare them to the maximum subtotals in the *Subtotals grid*.

- The **Max Revenue (Dataset)** metric calculates the maximum revenue value for each category. That is, the metric chooses among the values for the subcategories included in each category, matching the Category maximum subtotal displayed in the first grid.

  For the Movies category in Northeast, the greatest subcategory revenue value is $201,764, for the Special Interests subcategory. Similarly, for the Music category in Northeast, the greatest revenue value is $179,760, for the Movies category.

- The **Max Revenue (Viz)** metric calculates the maximum revenue value using only the data on the visualization. For each category, the grid contains only one value, so that is the maximum value.

If you remove Category from this grid, what happens to the metric values?

Display revenue values for regions

14 Remove **Category** from the grid.

Dataset vs. Visualization

Region	Revenue	Max Revenue (Dataset)	Max Revenue (Viz)
Northeast	$1,945,285	$201,764	$1,945,285
Northwest	$397,162	$37,577	$397,162

The metric values are calculated to reflect regional values.

- The **Max Revenue (Dataset)** metric calculates the maximum revenue value for each region. That is, the metric chooses among the values for the categories included in each region, matching the Region maximum subtotal displayed in the first grid.

  For the Northeast region, the greatest category Revenue value is $201,764, for the Movies category. Similarly, for the Northwest region, the greatest category Revenue value is $37,577, for the Movies category.

- The **Max Revenue (Viz)** values are recalculated because the visualization level has changed. The values match the recalculated Revenue values for each region.

15 Save the dossier.