Before you begin: Log in to your Education sandbox

You have a shared sandbox environment to learn about, use, and experiment with MicroStrategy Web.

1. In your browser, navigate to **education.microstrategy.com/MicroStrategy/servlet/mstrWeb**.
2. Log in to the sandbox with your **MicroStrategy Account** credentials.
3. The MicroStrategy Landing page opens. Click the **MicroStrategy Tutorial** project.
4. Click **Go to MicroStrategy Web**.

   The Shared Reports folder of the MicroStrategy Tutorial project opens.

   In the sandbox environment, you cannot save items in the Shared Reports folder.

Exercise: Change the dynamic aggregation function to view averages for multiple attributes

You need to calculate average revenue for each call center, but you also want to have the ability to view average revenue for each region instead. Create a report that contains both attributes; you can move attributes on and off the report grid to view the different levels of aggregation. To ensure that the averages are calculated correctly, create two metrics to explore the difference between using the automatic dynamic aggregation function and selecting the average function as the dynamic aggregation function.

Use these metrics to explore how dynamic aggregation works and how selecting a dynamic aggregation function affects the report results.

Create a revenue average metric

1. Access your Education sandbox. For a reminder on how to do this, see *Exercise: Access your Education sandbox*.
2. On the My Reports folder page, click **Create** and select **New Metric**.
3. In the Functions list on the left, double-click **Avg** to add it to the metric definition window.

4 Add the **Revenue** fact to the metric definition.

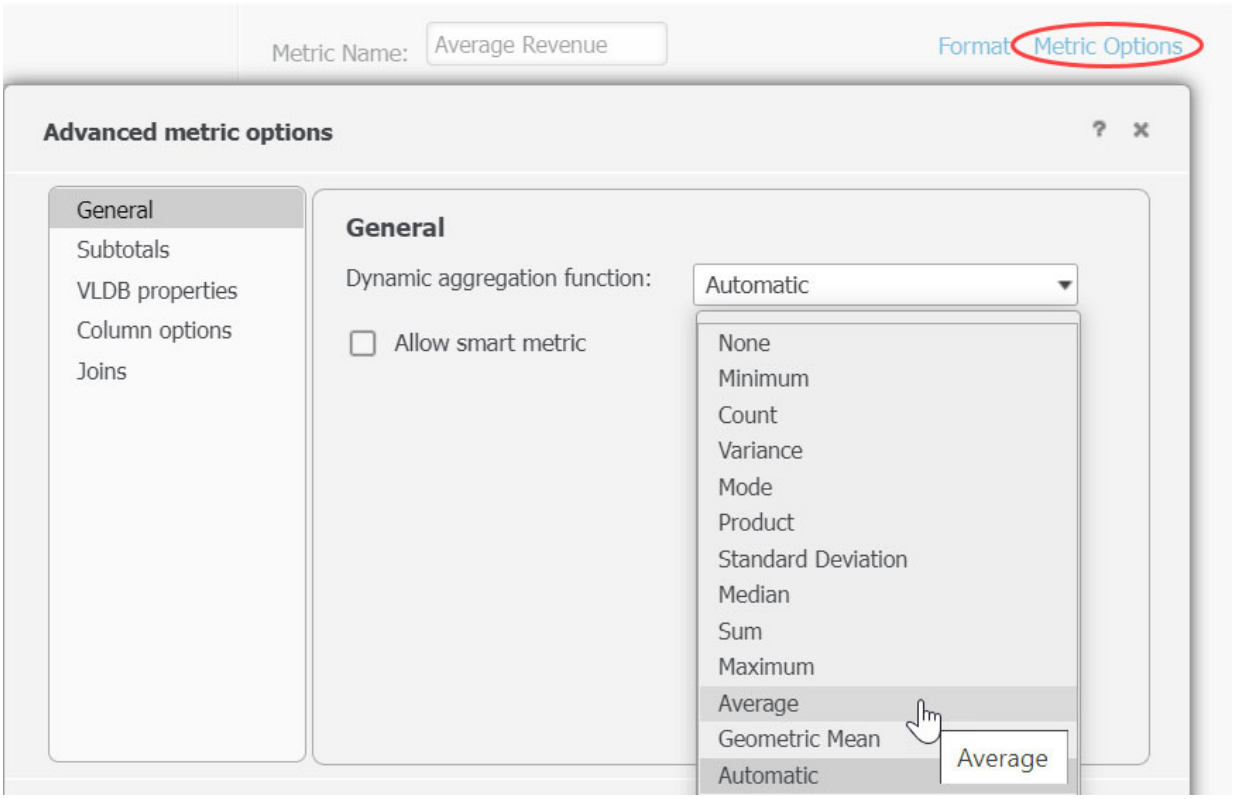
5 Type **Average Revenue** in the **Metric Name** box.

6 **Save** the metric in the **My Reports** folder.

Change the dynamic aggregation function

1 In the My Reports folder, click the **Average Revenue** metric.

2 Click **Metric Options**, at the top of the Metric Editor.



3 The Dynamic Aggregation Function is set to Automatic by default. From the **Dynamic Aggregation Function** drop-down list, select **Average**.

4 Click **OK**.

Save the metric with a different name

5 Click **Save As**.

6 From the **Save in** drop-down list, select **My Reports**.

7 In the **Name** box, type **Average Revenue (Avg)**.

8 In the Description box, type **Dynamic aggregation function set to Average**.

9 Click **Save**, and then click **OK** on the successful save message.

Create a report to display the metrics

1 Click **Create**, point to **Report**, and select **Blank Report**.

2 Add the **Region** and **Call Center** attributes to the rows of the report.

3 From the My Reports folder, add the following metrics to the report:

- **Revenue**
- **Average Revenue**
- **Average Revenue (Avg)**

Run the report

4 Click the **Run Report** icon  in the toolbar.

5 Display the metric values as currency, with no decimals.

The resulting report looks like the following. The Average Revenue and Average Revenue (Avg) metrics calculate the same values.

Region	Call Center	Revenue	Average Revenue	Average Revenue (Avg)
Central	Milwaukee	$4,182,139	$68,560	$68,560
	Fargo	$847,227	$60,516	$60,516
Mid-Atlantic	Washington, DC	$3,135,283	$78,382	$78,382
	Charleston	$1,317,332	$62,730	$62,730
Northeast	Boston	$1,487,936	$74,397	$74,397
	New York	$7,066,478	$76,810	$76,810
Northwest	San Francisco	$1,021,447	$68,096	$68,096
	Seattle	$739,741	$56,903	$56,903
South	New Orleans	$3,305,039	$71,849	$71,849
	Memphis	$2,084,241	$63,159	$63,159
Southeast	Atlanta	$1,052,108	$75,151	$75,151
	Miami	$1,187,843	$65,991	$65,991
Southwest	San Diego	$2,962,719	$80,073	$80,073
	Salt Lake City	$731,413	$60,951	$60,951
Web	Web	$3,902,762	$9,055	$9,055

Save the report

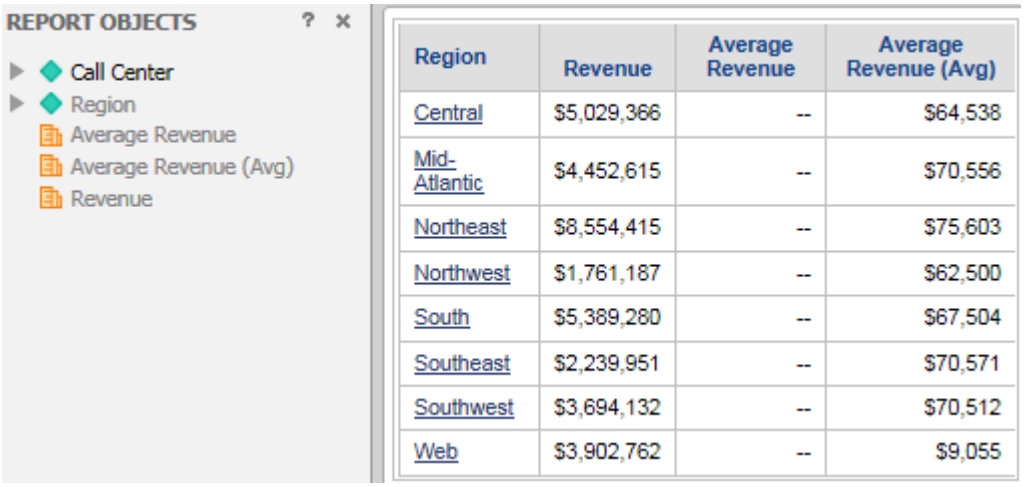
6 Save the report as **Dynamic Aggregation** in the **My Reports** folder.

7 Click **Run Newly Saved Report**.

Trigger dynamic aggregation by removing Call Center from the grid

8 In the grid, right-click **Call Center** and select **Remove from Grid**.

The Average Revenue metric displays null values. Since you forced Average Revenue (Avg) to use the Avg function for dynamic aggregation, actual values are calculated for it. The Revenue metric correctly sums the revenue at the new level.

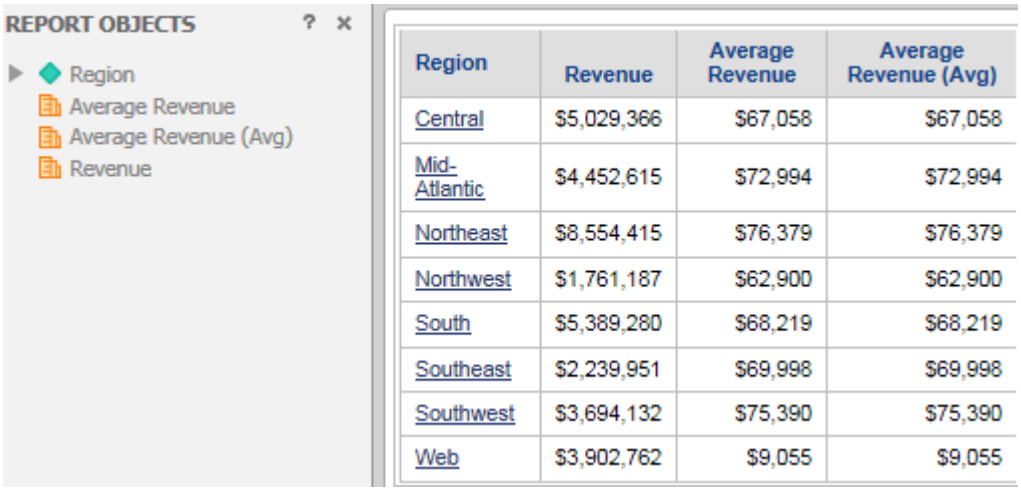


Region	Revenue	Average Revenue	Average Revenue (Avg)
Central	$5,029,366	--	$64,538
Mid-Atlantic	$4,452,615	--	$70,556
Northeast	$8,554,415	--	$75,603
Northwest	$1,761,187	--	$62,500
South	$5,389,280	--	$67,504
Southeast	$2,239,951	--	$70,571
Southwest	$3,694,132	--	$70,512
Web	$3,902,762	--	$9,055

Trigger aggregation by removing Call Center from the report

9 In the Report Objects pane, right-click **Call Center** and select **Remove from Report**.

Both the Average Revenue and Average Revenue (Avg) metrics again calculate the same values.



Region	Revenue	Average Revenue	Average Revenue (Avg)
Central	$5,029,366	$67,058	$67,058
Mid-Atlantic	$4,452,615	$72,994	$72,994
Northeast	$8,554,415	$76,379	$76,379
Northwest	$1,761,187	$62,900	$62,900
South	$5,389,280	$68,219	$68,219
Southeast	$2,239,951	$69,998	$69,998
Southwest	$3,694,132	$75,390	$75,390
Web	$3,902,762	$9,055	$9,055

10 Exit the report but do not save it, since you removed Call Center from the report.