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.

Access Library in the Education 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.

The MicroStrategy Tutorial home page opens.

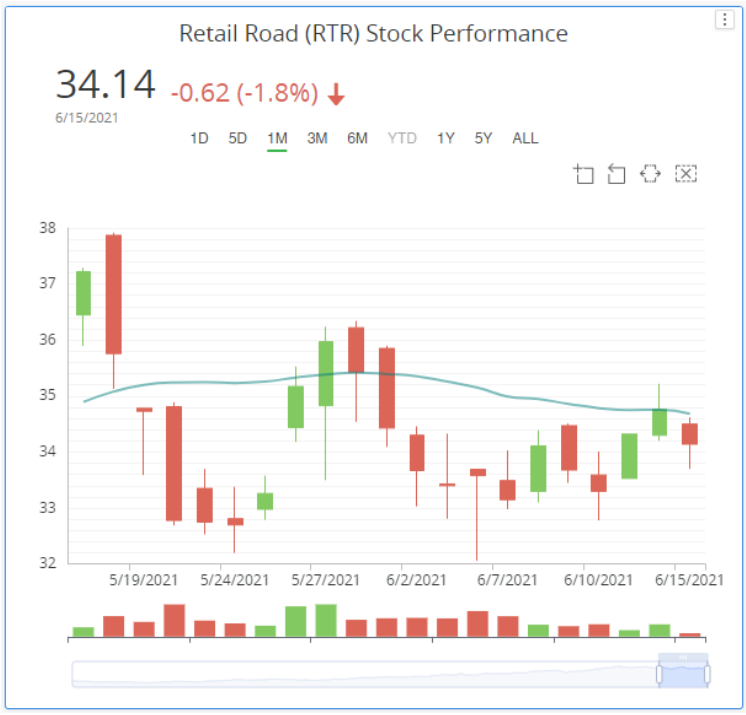
4. Click **Go to MicroStrategy Library**.
5. If prompted, enter your **MicroStrategy Account** credentials, and then click **Log in with Identity**.

Your Library home page displays.

Exercise: Create a time series visualization

Your store's parent company, RetailRoad, went public on the New York Stock Exchange last year. To track overall stock performance, create a time series visualization. Your completed time series visualization looks like the image below when viewing one month of data, from 5/17/2021 to 6/15/2021.

Sample time series visualization



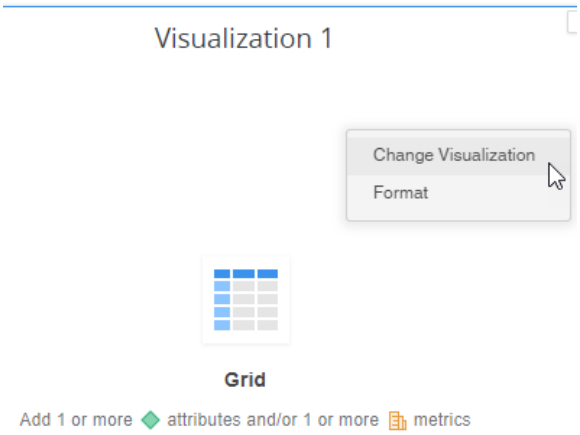
Create a time series visualization

1. In the Education sandbox Library, open the **Visualization Types** dossier in Edit mode, if not already there. For a reminder on how to do this, see *Exercise: Access Library in the Education sandbox*, and *Exercise: Add the Visualization Types dossier to MicroStrategy Library*.

2. In the Contents panel on the left, in the Change Over Time chapter, click the **Time Series Visualization** page.

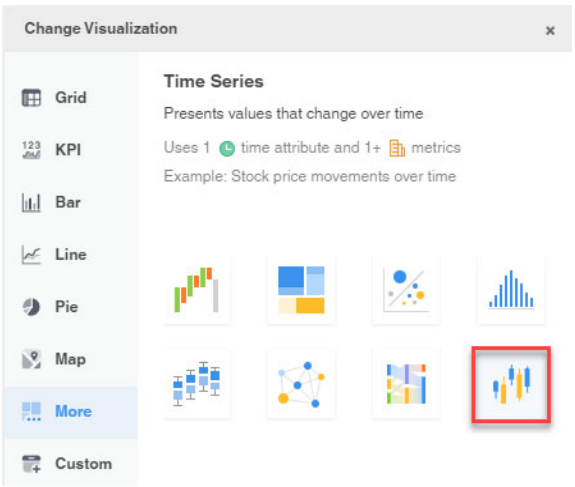
   If the Contents panel is not displayed, click the Contents Panel icon in the left toolbar.

3 By default, a new page displays a blank grid visualization on the canvas. To change the visualization to a time series visualization, right-click inside the visualization, and select **Change Visualization**.



The Change Visualization window opens, displaying the Visualization Gallery.

4 In the Visualization Gallery, point to **More**, and then click the **Time Series** icon.



The dossier canvas displays a blank time series visualization.

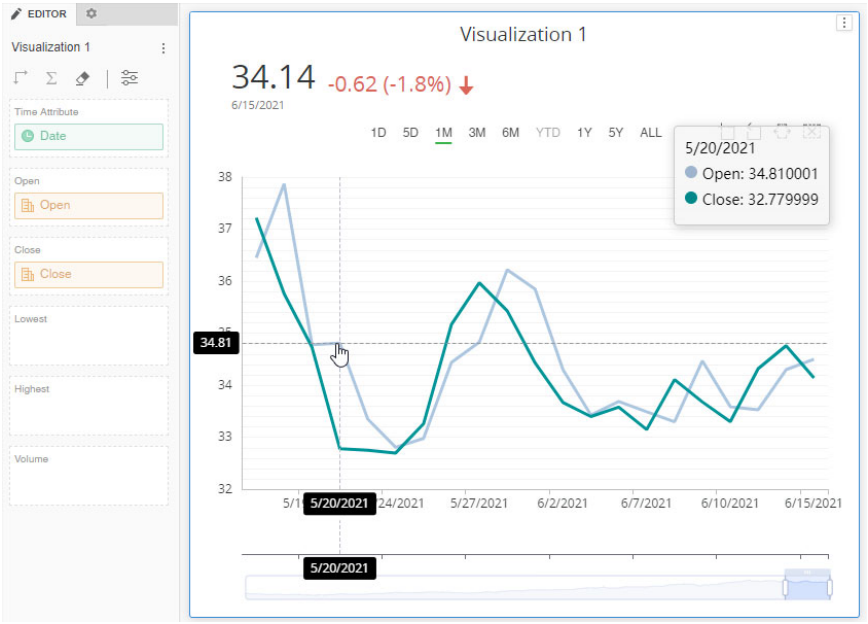
5 The data you need for this analysis is stored in the RTR dataset. In the Datasets panel, click the arrow icon to the left of the **RTR** dataset to expand it. The dataset's attributes and metrics display.

6 To focus on the objects in the RTR dataset rather than the other datasets, collapse any other datasets that are expanded by clicking the arrow icon to the left of the dataset name.

7 Click the **Editor** icon to display the Editor panel, if not already displayed.

8 From the **RTR** dataset, double-click the **Date** attribute to add it to the **Time Attribute** drop zone in the Editor panel.

9 From the **RTR** dataset, double-click the **Open** metric to add it to the **Open** drop zone in the Editor panel, and then double-click the **Close** metric to add it to the **Close** drop zone.



The time series visualization displays:

- The date on the horizontal axis
- The stock price on the vertical axis
- A KPI at the top of the visualization, representing the last closing price available in the data (in this scenario, 34.14 for the date 6/15/2021)
- A line representing the daily opening stock price
- A line representing the daily closing stock price

You can hover over the visualization to view details for a specific date, as shown in the image above.

10 You also want to know the high and low values of the stock price for each day. Double click the **Low** metric to add it to the **Lowest** drop zone, and then double-click the **High** metric to add it to the **Highest** drop zone.

When you add both the Low and High metrics to the visualization, the data is represented by a candlestick for each day, rather than lines.

11 Hover over the candlestick for **5/27/2021**, as shown in the image above. The candlestick is green, indicating that the Close value for the day was higher than the Open value. *A red candlestick means that the Close value was lower than the Open value.*

- The top of the candlestick body is the day's Open or Close value, whichever is higher. For 5/27/2021, the closing value was higher, at 35.97.
- The bottom of the candlestick body is the day's Open or Close value, whichever is lower. For 5/27/2021, the opening value was lower, at 34.83.
- The candlestick's shadows, or "wicks", display the day's High and Low values, compared to the Open and Close values. For 5/27/2021, the low value was 33.5, and the high value was 36.24.

12 You also want to analyze stock volume (the number of shares traded each day) because it can help indicate investors' current interest in the stock. Double-click the **Volume** metric to add it to the **Volume** drop zone.

The stock volume for each day displays in a bar below the candlestick. The color of the bar indicates whether the stock price increased (green) or decreased (red).

13 To rename the visualization, double-click the **Visualization 1** title, and type **Retail Road (RTR) Stock Performance**.

Add a moving average line

To help users understand the overall direction of the stock price, add a moving average line. The moving average smooths out the day-to-day fluctuations to show general trends.

1 Click the **Format** icon to display the Format panel.

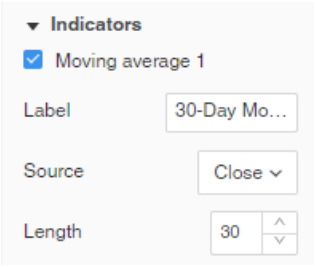
2 Expand **Indicators**.

3 Select the check box for **Moving Average 1**.

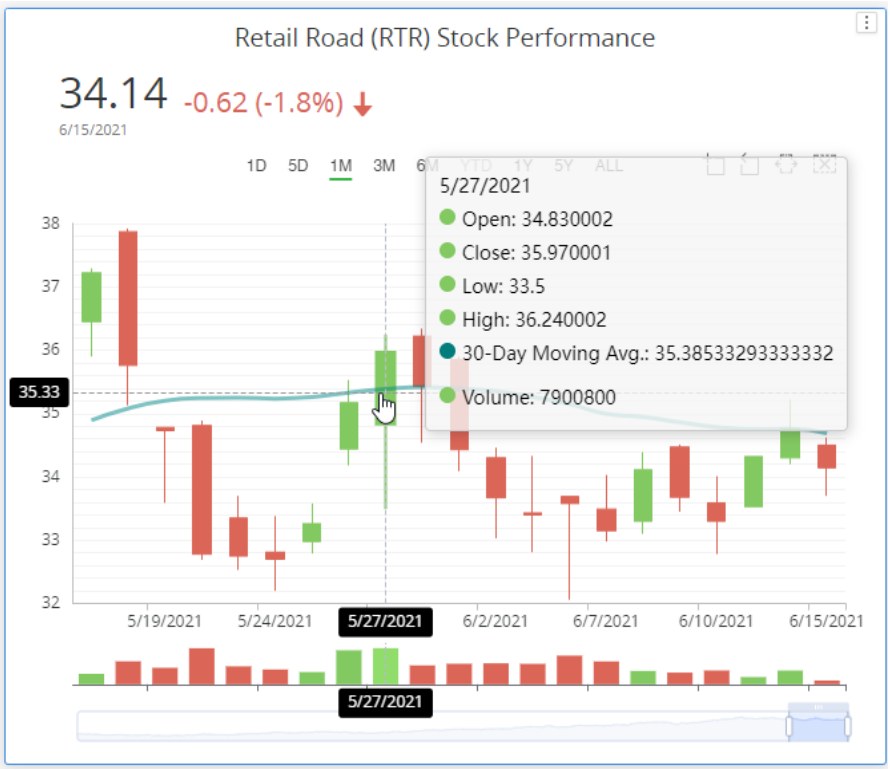
4 You want the moving average to be based on each day's closing price. Under Moving Average 1, in the **Source** drop-down list, leave **Close** selected.

5 You want the moving average to be calculated based on the previous 30 days of closing values. In the **Length** box, enter **30**. A line displays on the visualization, representing the 30-day moving average of closing prices.

6 In the **Label** box, type **30-Day Moving Avg.**



7 Hover over the visualization to see the 30-day moving average value for specific dates. In the image below, you can see that the 30-day moving average for 5/27/2021is 35.39.

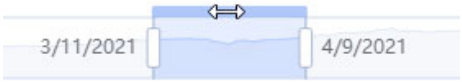


Change the time period and range displayed

1 You want to analyze trends within the past three months. Click **3M** in the selector above the chart to view three months of data.

You can also drag the time slider to adjust the amount of time displayed in the chart, as shown below.

2 To continue to display a three-month period of data, but for a different range of dates, drag the top of the slider across the time range.



For example, in the image below, three months of data is displayed for the date range 9/29/2020 to 12/24/2020.

3 Click **Save** in the upper right of the dossier toolbar.

Analyze the time series visualization

1 As you examine and interact with the time series visualization, answer the following questions:

- How quickly can you understand if RTR is trending bearish or bullish over different time periods? Is there a different type of visualization you might use to understand this?
- How can the volume bar chart at the bottom of the time series visualization help you understand the stock's performance?

  Hover over the stock volume bars at the bottom of the visualization, and notice the downward trend in volume. A stock's volume is high when it is more actively trading and, conversely, a stock's volume is low when it is less actively trading. Low volume means few investors are interested in the stock. Low volume stocks might mean market uncertainty toward the stock.