

Workbook

For



MicroStrategy

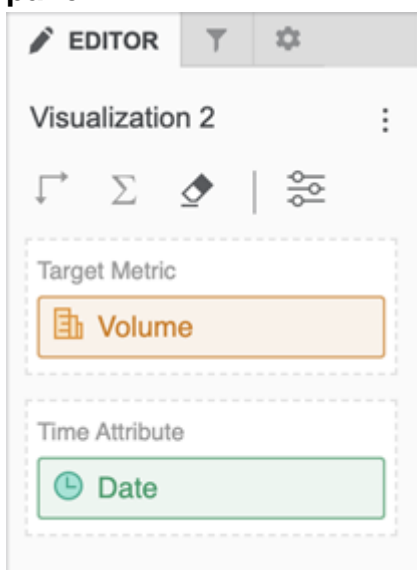
Truman Ng, PMP, HCIE

Forecast Line Chart

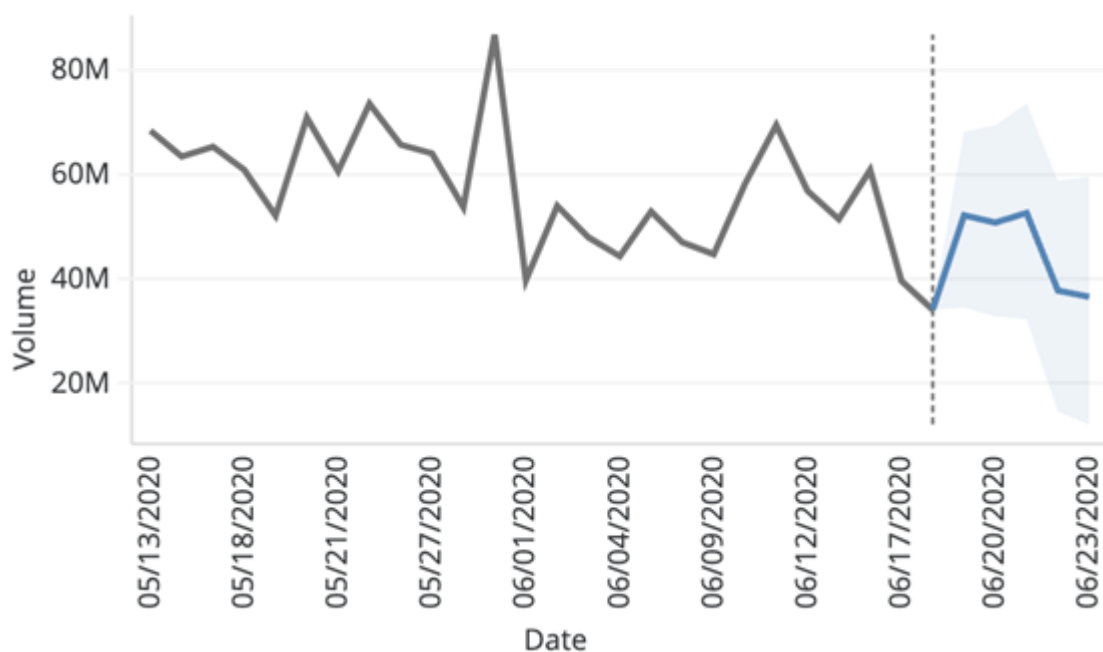
https://www2.microstrategy.com/producthelp/Current/Library/en-us/Content/time_series_forecasting_create.htm


Create a Forecast Analysis Line Chart

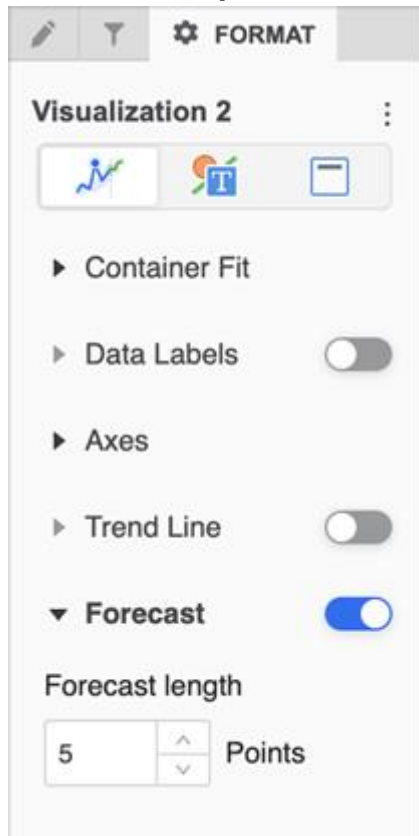
1. Open a dashboard for editing.
2. In the top toolbar, click Visualization .
3. Choose Insight+ > Forecast Line Chart .
4. Drag a metric and time attribute from the Datasets panel to the Editor panel.



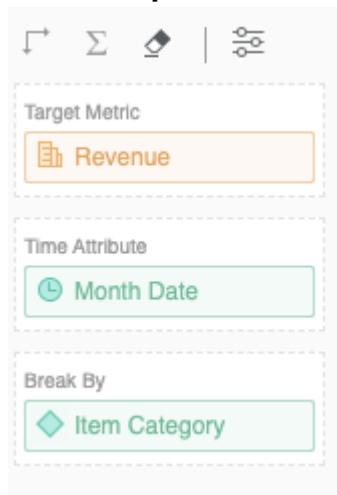
5. View the rendered visualization with the forecasted values on the right.



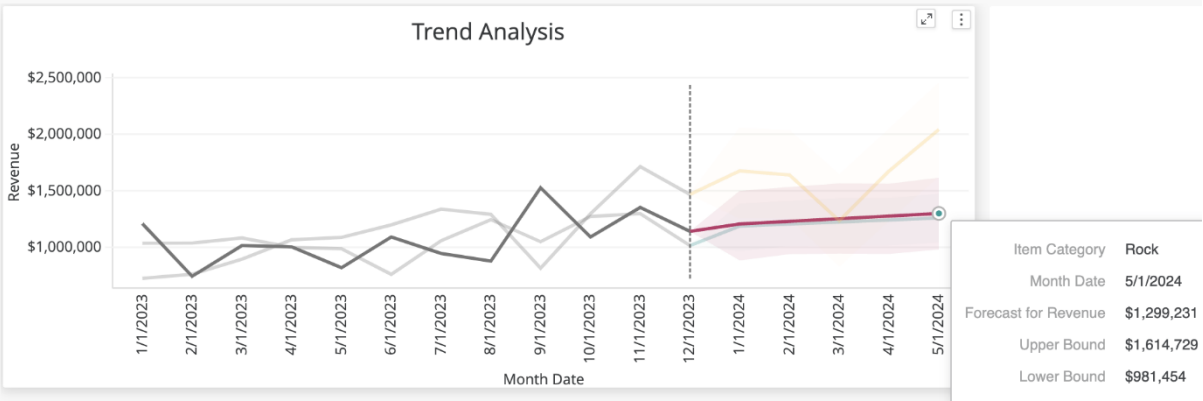
6. The default number of forecasted points is five. To change this number, go to Format panel and click Visualization Options . In Forecast length, change the number of forecasted points. The maximum number of forecasted points is 100.



7. Starting in MicroStrategy ONE (June 2024), drag an attribute from the Datasets panel to Break By in the Editor panel.



8. Starting in MicroStrategy ONE (June 2024), multiple forecasts render. Hover over a line to highlight specific forecasts and display a detailed tool tip.



ESRI Map Integration

https://www2.microstrategy.com/producthelp/Current/GISHelp/en-us/Content/ESRI_Integration.htm

https://www2.microstrategy.com/producthelp/Current/GISHelp/en-us/Content/ESRI_Setup.htm

<https://www.esri.com/content/dam/esrisites/sitecore-archive/Files/Pdfs/library/fliers/pdfs/esri-maps-for-microstrategy.pdf>

Mobile Apps in MicroStrategy

https://www.youtube.com/watch?v=1nu71ioKEzk&list=PLu4_Ge2aZ8ooyAuP0B4TMaN3VP9kj_KQd

Mo

Install and Configure Mobile App

To view dashboards and documents in your Library on the go, download the Library app for iOS or Android.

IOS:

<https://apps.apple.com/us/app/microstrategy-library/id1333261570>

Andriod:

https://play.google.com/store/apps/details?id=com.microstrategy.android.dossier&am;hl=en_US

MicroStrategy Mobile:

https://www2.microstrategy.com/producthelp/current/InstallConfig/en-us/Content/MicroStrategy_Mobile.htm

Create a Bot with Existing Data

https://www2.microstrategy.com/producthelp/Current/Library/en-us/Content/auto_bots_config_data.htm?tocpath=MicroStrategy%20Library%7CMicroStrategy%20AI%7CAuto%20Bots%7CCreate%20Auto%20Bots%7C 1

Starting in MicroStrategy ONE Update 12 you can create Bots with a single dataset. Only in-memory OLAP and MTDI cube datasets are supported.

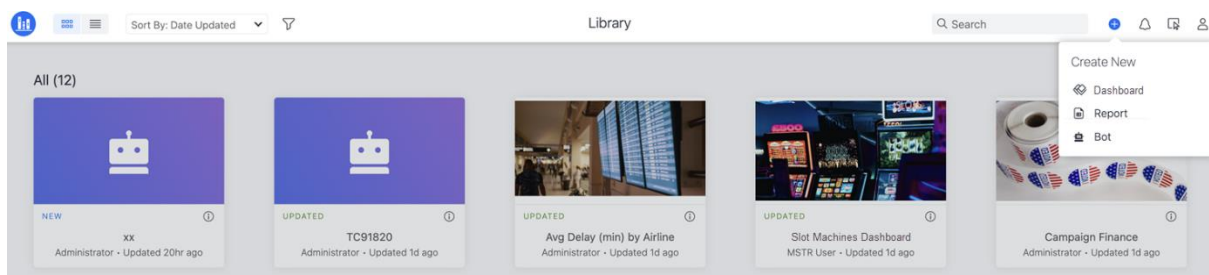
MicroStrategy ONE (September 2024) adds support for multiple datasets in Bots as well as support for report objects as a valid dataset format.

The following object types are not supported datasets for Bots:

- Prompted reports (system prompts are supported)
- Live-connect cubes
- MDX reports
- Reports with recursive attributes

1. Choose **Create New**  > **Bot**.

For more information before creating a Bot, see [Prerequisites](#).



2. Select one or more datasets or reports.

New Bot X

Create Bot In AI Sandbox

Add Data

Certified Only

	<input type="checkbox"/> Name	<input type="checkbox"/> Certified	<input type="checkbox"/> Owner	<input type="checkbox"/> Date Modified	<input type="checkbox"/> Date Created
<div style="margin-bottom: 5px;"> Dataset</div> <div> Report</div>	<input type="checkbox"/> Cube - Michal		Administrator	2023-12-04 14:43:...	2023-10-03 12:51:21
	<input type="checkbox"/> Données Meteo France		Administrator	2023-12-04 14:43:...	2023-09-20 11:28:...
	<input type="checkbox"/> customer dataset 2.0		Administrator	2023-12-04 14:43:...	2023-09-28 05:48:...
	<input type="checkbox"/> customer dataset MTDI		Administrator	2023-12-04 14:43:...	2023-09-27 19:24:...
	<input type="checkbox"/> M&M TRADING - XRA		Administrator	2023-12-04 14:43:...	2023-09-21 09:19:...
	<input type="checkbox"/> Customer Dataset_mu		Administrator	2023-12-04 14:43:...	2023-09-21 12:59:...
	<input type="checkbox"/> Customer Dataset_mu ...		Administrator	2023-12-04 14:43:...	2023-09-27 13:12:...
	<input type="checkbox"/> AI DATASET - KACPER		Administrator	2023-12-04 14:43:...	2023-09-28 07:19:...
	<input type="checkbox"/> Test Dataset v1.6		Administrator	2023-12-04 14:43:...	2023-09-21 08:50:...
	<input type="checkbox"/> Test Dataset 日本語 v1....		Administrator	2023-12-04 14:43:...	2023-09-25 23:36:...
	<input type="checkbox"/> shampoo sales (foreca...		Administrator	2023-12-04 14:43:...	2023-08-01 14:10:...
	<input type="checkbox"/> demo_dossier (key driv...		Administrator	2023-12-04 14:43:...	2023-08-03 06:06:...

0 selected

Create with New Data

Cancel
Create

If you encounter a server error when you pick a dataset, ensure the dataset has been published before importing. If a database is grayed out, refer to it's associated documentation to configure sources correctly.

3. Click **Create**.

Starting with MicroStrategy ONE (September 2024) you can edit datasets used for Bot creation. Earlier platform versions do not support editing datasets when the Bot was created with the Existing Data option.

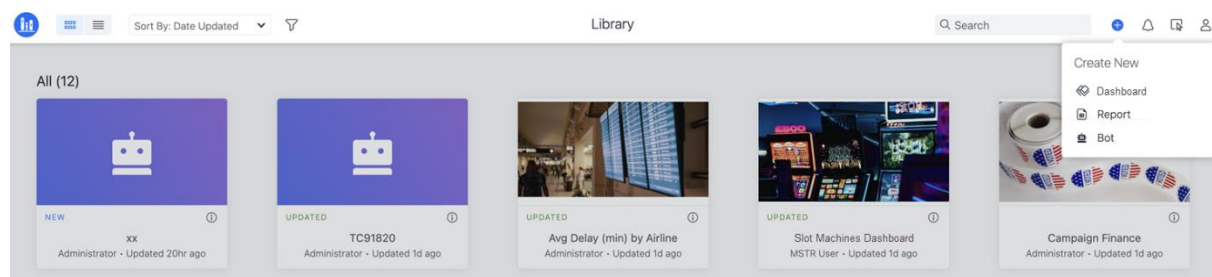
Create a Bot with New Data

https://www2.microstrategy.com/producthelp/Current/Library/en-us/Content/create_edit_bot.htm?tocpath=MicroStrategy%20Library%7CMicroStrategy%20AI%7CAuto%20Bots%7CCreate%20Auto%20Bots%7C 2

Create a Bot with new data when you need to add new data to MicroStrategy, or if the existing datasets do not contain your required data.

1. Choose **Create New**  > **Bot**.

If you can't see the **Create with New Data** option, check [Prerequisites](#) section and ensure you have correct privileges assigned.



2. Click **Create with New Data**.

New Bot

Create Bot In

AI Sandbox

Add Data

Dataset

Report

<input type="checkbox"/>	Name	Certified	Owner	Date Modified	Date Created
<input type="checkbox"/>	Cube - Michal		Administrator	2023-12-04 14:43:...	2023-10-03 12:51:21
<input type="checkbox"/>	Données Meteo France		Administrator	2023-12-04 14:43:...	2023-09-20 11:28:...
<input type="checkbox"/>	customer dataset 2.0		Administrator	2023-12-04 14:43:...	2023-09-28 05:48:...
<input type="checkbox"/>	customer dataset MTDI		Administrator	2023-12-04 14:43:...	2023-09-27 19:24:...
<input type="checkbox"/>	M&M TRADING - XRA		Administrator	2023-12-04 14:43:...	2023-09-21 09:19:...
<input type="checkbox"/>	Customer Dataset_mu		Administrator	2023-12-04 14:43:...	2023-09-21 12:59:...
<input type="checkbox"/>	Customer Dataset_mu ...		Administrator	2023-12-04 14:43:...	2023-09-27 13:12:...
<input type="checkbox"/>	AI DATASET - KACPER		Administrator	2023-12-04 14:43:...	2023-09-28 07:19:...
<input type="checkbox"/>	Test Dataset v1.6		Administrator	2023-12-04 14:43:...	2023-09-21 08:50:...
<input type="checkbox"/>	Test Dataset 日本語 v1....		Administrator	2023-12-04 14:43:...	2023-09-25 23:36:...
<input type="checkbox"/>	shampoo sales (foreca...		Administrator	2023-12-04 14:43:...	2023-08-01 14:10:...
<input type="checkbox"/>	demo_dossier (key driv...		Administrator	2023-12-04 14:43:...	2023-08-03 06:06:...

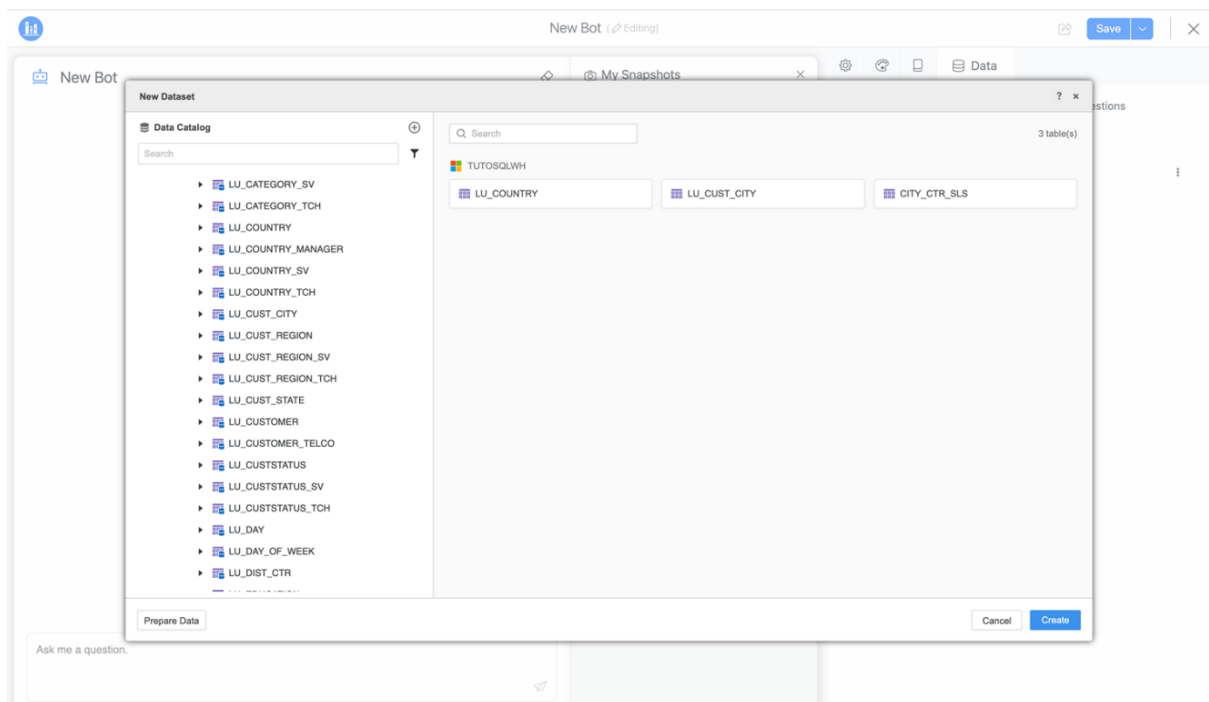
0 selected

Create with New Data

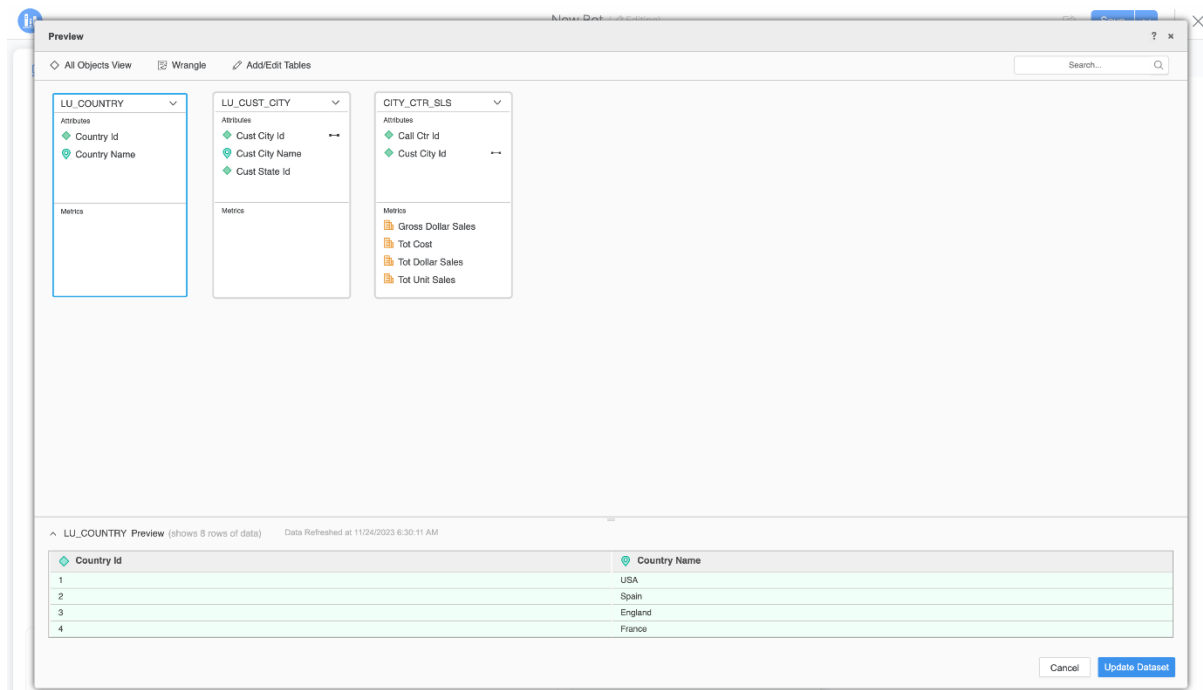
Cancel

Create

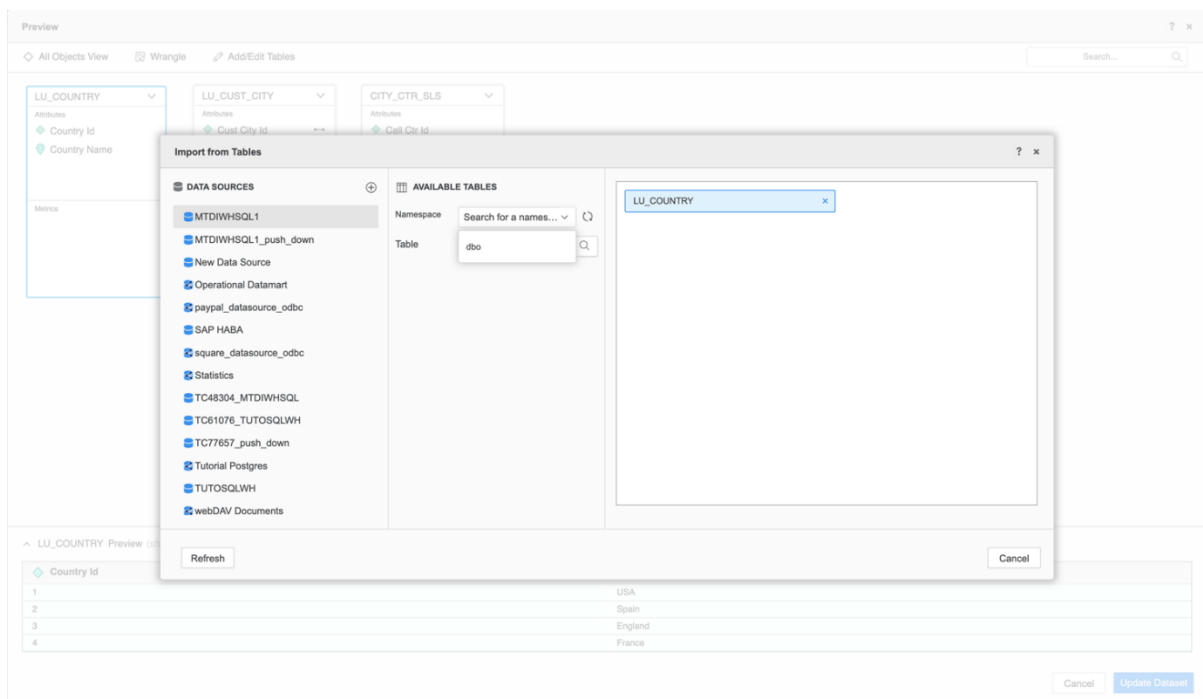
3. Select from the different data sources that are available, including the following main sections:
 - **General** Upload new data from locations such as Clipboard, Data from URL, File from Disk, Import existing dataset, Public Data, or Sample Files
 - **Services** Upload data from data sources enabled by your platform Administrator. These data sources are from other services such as Dropbox, Google Drive, Financial Force, Salesforce, and others.
4. Once you import your data, drag and drop tables from the left **Data Catalog** panel to the main screen.



5. If necessary, click **Prepare Data** to clean or modify your data on the [Preview Dialog](#). Otherwise, click **Create** and skip to step 8.



6. Click **Wrangle**. Click **Refresh**, wrangle your data, and click **Apply**. See [Data Wrangling Dialog](#) for more information.



Wrangle Your Data

Select Column Select Function

Suggestions

Script

```

0) Duplicate Column [COUNTRY_NAME 1] [COUNTRY_NAME] (7 Rows)
1) Rename Column [COUNTRY_NAME 1] To [COUNTRY]

```

Sample data: LU_COUNTRY

COUNTRY_ID	COUNTRY_NAME	COUNTRY
1	USA	USA
2	Spain	Spain
3	England	England
4	France	France
5	Germany	Germany
6	Canada	Canada
7	Web	Web

1 - 7 / 7 Rows

1 / 1 Page

Apply Cancel

7. Click **Add/Edit Tables** to add or remove existing tables and then click **Update**.

Edit Dataset

Data Catalog

city X

DATABASES

- MTDIWHSQL1
 - dbo
 - CITY_CTR_SLS
 - CITY_MNTH_SLS
 - CITY_SUBCATEG_SLS
 - LU_CUST_CITY

Show All

Search

4 table(s)

MTDIWHSQL1

LU_COUNTRY LU_CUST_CITY CITY_CTR_SLS

CITY_SUBCATEG_SLS

CITY_SUBCATEG_SLS

Prepare Data

Cancel Update

8. Click **Update**.

9. Click **Finish**.

https://www2.microstrategy.com/producthelp/Current/Library/en-us/Content/personalize_appearance.htm?tocpath=MicroStrategy%20Library%7CMicroStrategy%20AI%7CAuto%20Bots%7C_____3

Case Study 1: Building a MicroStrategy Dashboard for Flight Cancellations

Objective:

To build a MicroStrategy dashboard that analyzes flight cancellations using a given dataset with the following columns:

- Origin Airport
- Airline Name
- Departure Hour
- Day of Week
- Year
- Month
- On-Time
- Number of Flights
- Flights Delayed
- Flights Cancelled
- Average Delay (min)

1. Defining the Goal (Start with the End in Mind)

The primary goal is to understand the patterns and causes behind flight cancellations. The dashboard should allow users to:

- Identify trends in cancellations based on origin airports, airlines, and time periods.
- Compare performance between airlines in terms of cancellations, delays, and on-time arrivals.
- Investigate the relationship between delays and cancellations.
- Provide actionable insights, such as suggesting which time frames or airlines have the highest risk of cancellations.

2. Dataset Preparation

To prepare the dataset for analysis:

- **Ensure Data Completeness:** Verify that each column has complete and accurate data.
- **Create Key Metrics:** Metrics such as cancellation rate, delay rate, and average delay per airline can provide valuable insights.
 - **Cancellation Rate:** $(\text{Flights Cancelled} / \text{Number of Flights}) * 100$
 - **Delay Rate:** $(\text{Flights Delayed} / \text{Number of Flights}) * 100$
 - **On-Time Rate:** $(\text{On-Time} / \text{Number of Flights}) * 100$
 - **Average Delay (min):** Pre-calculated from the dataset.

3. Dashboard Structure

Start: Overview Metrics and Key Highlights

This section should give a snapshot of overall flight performance. Key metrics include:

- **Total Flights:** Aggregated from the dataset.
- **Total Flights Cancelled:** Sum of “Flights Cancelled.”
- **Average Delay:** Calculated from “Avg Delay (min).”
- **Top 3 Airports with Highest Cancellations:** Based on the “Flights Cancelled” column.
- **Top 3 Airlines with Most Cancellations:** Based on the “Flights Cancelled” column.

Visualization: Use a summary table with KPIs for total flights, cancellation rates, and average delay across the entire dataset. Include bar charts to highlight the top airports and airlines with the most cancellations.

Middle: In-Depth Analysis of Flight Cancellations

Filters: Allow users to filter by time (Year, Month, Day of Week), airline, and origin airport.

1. Cancellation Trends Over Time

- Show a line graph displaying cancellation rates over the months or years. This can help identify if cancellations increase during specific times (e.g., winter months).

2. Cancellations by Origin Airport and Airline

- Use a heatmap that shows the cancellation rates by airline and origin airport. This helps users identify airports or airlines with more frequent cancellations.

3. **Cancellation by Day of Week and Departure Hour**

- Visualize the relationship between the time of day or day of the week and cancellations using bar or combo charts. This can reveal if flights in the early morning or specific days (like Mondays or Fridays) have higher cancellation rates.

Visualization:

- **Line Graph:** Cancellation trends by month or year.
- **Heatmap:** Cancellations by origin airport and airline.
- **Combo Chart:** Flights cancelled by day of the week and hour of the day.

End: Actionable Insights and Recommendations

The final section should summarize key findings and offer actionable insights. Examples:

- **Worst-Performing Airports and Airlines:** Recommend avoiding certain airlines or airports during peak times or bad weather.
- **Best Time to Fly:** Provide suggestions for the best time of day or week to minimize the risk of cancellations.

Visualization:

- **Pie Charts:** Show the distribution of cancellations by airline and by airport.
- **Text Box:** Summarize recommendations, such as “Avoid flights from Airport X during winter months due to high cancellation rates.”

4. Interactivity and Filtering

To allow dynamic interaction, provide users with filter panels:

- **Date Range:** Filter flights by year and month to compare performance across time periods.
- **Airline Filter:** Select specific airlines to see how they compare in terms of cancellations and delays.
- **Origin Airport Filter:** Choose specific origin airports to view their performance.
- **Time of Day Filter:** Focus on flights at different times of day to see how timing impacts cancellations.

5. Analysis Approach

- **Trend Analysis:** Spot patterns in cancellations over time, comparing year-to-year data.
- **Performance Comparison:** Evaluate how different airlines and airports perform in terms of cancellations.
- **Root Cause Investigation:** Examine if delays are a contributing factor to cancellations by visualizing the relationship between “Avg Delay (min)” and “Flights Cancelled.”

6. Actionable Outcome

The dashboard should conclude with key takeaways:

- **When are cancellations most frequent?** (e.g., during holidays or bad weather seasons).
- **Which airlines are more reliable?** Highlight airlines with the best performance in on-time flights.
- **Which airports should passengers be wary of?** Show airports with the highest cancellation rates.

Example Dashboard Layout:

1. Overview (Start):

- **KPI Cards:** Total Flights, Total Cancellations, Average Delay.
- **Bar Chart:** Top Airports and Airlines by Cancellations.

2. Cancellations by Time (Middle):

- **Line Graph:** Cancellations over time (monthly/annual).
- **Heatmap:** Cancellations by origin airport and airline.

3. Insights & Recommendations (End):

- **Pie Chart:** Cancellation distribution by airline.
- **Text Box:** Summary of recommendations.

This structure ensures that users can quickly understand the overall cancellation landscape, investigate problem areas, and take action based on data-driven insights.

Use Case 2: COVID-19 Dashboard in MicroStrategy

Objective: Create an interactive dashboard that visualizes COVID-19 cases globally, allowing users to analyze trends based on country/region and geographic location.

1. Data Preparation

Data Source:

You'll need a dataset that includes the following columns:

- **Country/Region:** The name of the country or region.
- **Latitude:** The geographical latitude of the country/region.
- **Longitude:** The geographical longitude of the country/region.
- **No_Cases:** The total number of reported COVID-19 cases.

Example Data:

Country/Region	Latitude	Longitude	No_Cases
----------------	----------	-----------	----------

USA	37.0902	-95.7129	1000000
India	20.5937	78.9629	800000
Brazil	-14.2350	-51.9253	500000
Russia	61.5240	105.3188	400000
UK	55.3781	-3.4360	600000

2. Connect to the Data in MicroStrategy

1. Import the Data:

- Load the dataset into MicroStrategy using the *Add Data* option.
- Ensure the data types are correctly defined (e.g., Latitude and Longitude as numeric).

2. Data Model:

- Create a logical data model to associate the COVID-19 cases with their geographic coordinates.

3. Dashboard Design

Visual Components:

1. Map Visualization:

- Use an ESRI map visualization to plot countries/regions based on their latitude and longitude.
- Size the markers (bubbles) by the No_Cases metric, so larger bubbles represent higher case counts.

2. Trends and Analytics:

- **Time Series Chart:** Display daily or weekly new cases over time using a line graph.
- **Bar Chart:** Compare total cases across countries or regions using a bar chart, sorted by the number of cases.

3. Filters and Slicers:

- Implement filters for users to select specific countries or regions.
- Add date slicers to allow users to view data from specific time frames.

4. KPI Indicators:

- Show key performance indicators (KPIs) such as total cases, total deaths, and recovery rates at the top of the dashboard for quick insights.

4. Interactivity Features

1. Drill Down Capabilities:

- Allow users to click on a specific country/region on the map to drill down for more detailed data (e.g., cases by state or province).

2. Tooltips:

- Configure tooltips on the map and charts to display additional information, such as recent trends or case fatality rates.

3. Alerts and Notifications:

- Set up notifications for significant changes, such as a spike in cases in a particular region.

5. Deployment and User Engagement

1. Publish the Dashboard:

- Deploy the dashboard to MicroStrategy Workspace for access by end-users.

2. User Training:

- Conduct training sessions for users to familiarize them with navigating the dashboard and utilizing its features effectively.

3. Feedback Loop:

- Establish a mechanism for users to provide feedback on the dashboard for ongoing improvements.

Conclusion

This COVID-19 dashboard in MicroStrategy will provide users with a powerful tool for visualizing and analyzing the pandemic's impact globally. By incorporating various visualization types and interactive features, users can gain insights and make informed decisions based on the data presented. If you have specific requirements or features you'd like to add, let me know!

Reshape Data in MicroStrategy

To convert your COVID cases time series data in MicroStrategy from a table format with fields like country and various date columns into a structured format with country, date, and number of cases, follow these steps:

Reshape Data in MicroStrategy

1. Load Your Data into MicroStrategy:

- First, ensure your COVID cases data is loaded into MicroStrategy as a dataset.

2. Create a New Report:

- Open MicroStrategy and create a new report using the dataset that contains your COVID cases data.

3. Add the country Attribute:

- Drag the country attribute from your dataset into the report. This will be your first column.

4. Add Date Attributes:

- If your dataset contains multiple date attributes (e.g., Date1, Date2, etc.), you will need to convert these to a single date attribute. MicroStrategy doesn't directly support unpivoting like Excel, so you may need to create a custom metric or use a transformation in the dataset.

5. Create a Metric for Cases:

- Create a new metric that will sum the number of cases across the different date attributes. Here's how you can do this:
 - Go to **Insert > Metric** and define a new metric (e.g., Total Cases).
 - Use the formula to sum all relevant case columns. For example:
 - $\text{SUM}([\text{Cases_Date1}]) + \text{SUM}([\text{Cases_Date2}]) + \dots + \text{SUM}([\text{Cases_DateN}])$

6. Pivoting Data:

- Since MicroStrategy does not support pivoting or unpivoting data directly in reports, consider creating a view in your database that

reshapes the data before loading it into MicroStrategy, or utilize an ETL process to restructure the data if necessary.

- If you have a limited number of dates, you can create derived attributes or metrics for each date and combine them accordingly.

7. Display Date in the Report:

- To display the date alongside the case numbers, you can create a derived attribute if needed. This may require some custom SQL if you are using a data warehouse.

8. Running the Report:

- After setting up your attributes and metrics, run the report to view your results.
- You should see a structured output that lists each country with the corresponding date and the number of cases.

Example Report Structure

Your final report structure should look like this:

country	date	number of cases
Country1	2021-01-01	100
Country1	2021-01-02	110
Country2	2021-01-01	150
Country2	2021-01-02	160

Additional Tips

- **Use Transformation in Data Preparation:** If your dataset supports transformations, consider applying them in the MicroStrategy Developer or Web interface.
- **Advanced SQL Views:** If you are comfortable with SQL, consider creating a view in your database that transforms your data into the desired structure before bringing it into MicroStrategy.

- **Custom Reports:** Utilize MicroStrategy's report creation features to create detailed reports that can visualize your COVID cases over time using different visualization options.

If you have specific details about how your data is structured or if you need help with a particular step, let me know!