Step-by-step for Guide Data Insights

Introduction to Data Insights

Before we delve into Data Insights, let's explore the uses of these powerful tools in Salesforce Data Cloud. Insights allow you to get a 360 view of your customer by creating metrics & KPIs from raw data in Data Cloud. They allow you to have a more meaningful understanding of your customer by turning raw engagement data and profile transactions into data insights which are meaningful to your business. These insights could include the customer's top products or their lifetime value. Insight metrics can be customized to match the unique definition of each org or department, and once created, these Insights can be used across the entirety of Salesforce. From visualizing insights in a dashboard to activating them back into Sales & Service Cloud, Insights drive action in Data Cloud!

Data Insights use workflows, complex logic, mathematics, statistics (different from those found in Model Builder, which engage in statistical modeling and provide prediction, regression, and clustering capabilities), and time series functions to calculate custom metrics. These tools optimize streaming data & analytical functions in near-real time, providing in-depth analysis of your data.

Data Insights are the ultimate tool for understanding and getting value from your data in Data Cloud.

Tip: In Salesforce, functions are allow you to write code that integrates with Salesforce data and events, enabling the execution of custom logic on-demand while models represent the structure of data within Salesforce, defining relationships between different objects and fields to effectively manage customer information

Technical Benefits of Data Insights

The technical benefits of data insights within Data Cloud include real-time analysis, reduced data silos, self-serve analytics capabilities, unified data access, and the ability to generate complex calculations across diverse data sources. Data Insights lets you define and calculate multidimensional metrics on your entire digital state in Data Cloud. Those metrics can encapsulate business logic for common calculations, including customer satisfaction scores (CSAT) and lifetime value (LTV) at the segment or population level. Data Cloud insights simplify segmentation and speed up queries by having calculations pre-aggregated, along with visualizing the insights in CRM Analytics to understand data patterns. With Data Insights, you can use Salesforce's new sub-second real-time events usage, allowing you to support business use cases where speed is a top priority. This is key in use cases where end-to-end execution needs to happen in less than 500 milliseconds, and it ensures low latency.

Key Technical Features:

- **Reduces the time required to build Data Insights**

- **Public Cloud Infrastructure:** Salesforce uses public cloud infrastructure like Hyper force to scale resources dynamically and elastically.
- **Data Model:** The Salesforce data model is an aggregation of Salesforce objects and fields.
- **Calculated Insights:** The Calculated Insights feature allows users to define and calculate multidimensional metrics from their entire digital state stored in Salesforce CDP. Users can create calculated insights using SQL.

Key Concepts & Types of Data Insights

In Salesforce Data Cloud, Data Insights are cataloged in one of three types: Calculated Insights, Streaming Insights, & Real Time Insights. Calculated insights use any data in Data Cloud to create complex calculations. Streaming insights help drive data action in Near Real Time, and Real Time Insights define and process metrics in real time based on personalization logic.

	Calculated Insights	**Streaming Insights**	**Real Time Insights**
How is data processed & collected?	Data is processed together as a unit in high-volume batches.	Data is processed from streaming data sources such as from the Web or Mobile SDKs	Data is processed on-demand from various sources such as from the Web, mobile apps, or social media, and are based on data from a real time data graph
What is the time frame in which data is processed & collected?	Batch; hourly to daily	Micro Batch; minutes to hours	Individual Data Events; milliseconds
What types of data are used?	Calculated insights can be created from any data.	Streaming insights can only be created from engagement data, not streaming profile data.	Real Time insights are created from data in the data graph.
How can you use these insights?	Calculated insights can be used to define segment criteria and personalization attributes for activation using metrics, dimensions, and filters.	Streaming insights help build time series aggregation in near real time that can be used to drive orchestration or data actions.	Real Time Insights can calculate insights from a single record and use them to drive personalization logic using aggregated metrics.
How can these insights be shared?	Insights are stored in a CIO data object and can be used across the platform by Segmentation, Actions, Activation Reports,etc. Define once and use consistent metrics everywhere.	Streaming Insights can be used with Data Action to automatically respond to important data events.	Real Time Insights are stored on the RT Graph and can be accessed by the Graph Query APIs.

You might use **Calculated Insights** to define multidimensional metrics, calculate multidimensional metrics, and understand the customer journey in Salesforce. Conversely, tap into the power of **Streaming Insights** to focus on data at a specific point in time, take action on data notifications, and for multiple use cases, such as initiating workflows. Or, use **Real Time** insights to personalize your customer's web experience with recommendations based on products viewed in milliseconds.

Industry	Use Case
Retail	**Challenge**: A Northern Trail Outfitters (NTO) customer enters a retail store in Seattle. Isabelle, an NTO marketer, wants to send push notifications with a coupon to any customer entering a store for the first time in 3 months. **Solution**: NTO creates a streaming insight based on real-time customer geofence data. When a customer enters a store's geofence and hasn't appeared in the data for at least 3 months, a workflow is initiated. The workflow adds the customer to a reengagement journey in Marketing Cloud Engagement.
Hospitality	**Challenge**: Gallagher Resorts sales reps want to know which of their customers have the highest points balance, especially when they call their top customers at year end. **Solution**: Gallagher Resorts creates a streaming insight that automatically updates a Salesforce report with the top 50 customers based on points balance. Sales reps have a dashboard created on their homepage that highlights which of the top customers are in their portfolio. This allows them to prioritize a phone call with that customer.
Healthcare	**Challenge**: In order to streamline an agent's conversation, Bloomington Caregivers wants to know what troubleshooting steps a customer has taken before they call support. **Solution**: Bloomington Caregivers sets up a streaming insight to track customers visiting their top knowledge articles. Then, a case is automatically created for any customer visiting the page more than 5 times or with an average viewing time of over 10 minutes. Support agents can proactively reach out to those customers or have a case already created if a customer calls support directly.

Before we go any further, let's explore the differences between *Insights* and *Transforms*. Transforms are used to prep or shape your data so that you can map it to the standard model. Use Transforms to pivot, split, normalize, denormalize your data. Insights are done after modeling and Identity Resolution. When calculating metrics, you want to do so based on your cleaned, modeled, unified SSOT data. Creating metrics prior to this step can be confusing as the metrics would be based on non-unified identities.

Now that we understand the basics, let's explore Calculated Insights in more detail.

Understanding Calculated Insights

Understanding Calculated Insights involves several important pieces of information. When you are creating Calculated Insights, you have 3 options:

1. **SQL** - Write SQL expressions to create metrics and dimensions from mapped objects and fields. You can create a calculated insight in Data Cloud using SQL.
2. **Builder** -Create a calculated insight without using SQL by using the builder tool in Data Cloud.

3. **Packages** - Create a calculated insight from an installed Salesforce package in Data Cloud.

As you create your Calculated Insights, consider several features you can use to enhance them. Let's take a look at each below:

Processing & Retention Times	Keep your calculated insights up to date when data changes by using the schedule feature. You can specify the frequency, start date, and time to process a calculated insight. You can process a calculated insight every 1, 6, 12, or 24 hours, or process it manually.
Formulas & Operators	Create audiences in different ways and at different stages of your workflow using formulas, operators, and calculated insights in Data Cloud.
Join Keys	Use Joins to create metrics and dimensions when the data is spread out across multiple objects. When you join two or more objects in Insight Builder, the join nodes and join keys are autopopulated based on their relationships in Data Cloud. A join is a simple way to link tables.

Also, consider the ways that you can ***use*** Calculated Insights. Let's explore a few examples below:

Segmentation	Use a calculated insight to add metrics Livetime Value or Product Affinity or RFM to Segmentation so you can define more precise segments by filtering on calculated metrics quickly.
Metrics on Metrics	You can use your metrics to create new metrics and always keep everything in sync with the Insights scheduler. For example, create an Insight to rank product purchases by total value. Then build an Insight on this Insight to filter to the top 3 and calculate affinity scores. With metrics on metrics, you can improve and reuse metrics for multiple scenarios.
Dashboards	Visualize & display multi-dimensional, complex metrics which have been derived from your customer data. Dashboards take you beyond the raw data and provide deeper insights using charts and graphs.
Data Actions	Trigger automatic responses & personalized activations based on Calculated Insights. Create dynamic customer segments which allow you to personalize customer interactions.

After the creation of your Calculated Insight, you decide whether to **schedule** it or process it manually. The schedule feature allows you to keep your Calculated Insights current as data changes by using the schedule feature. If you create a Calculated Insight with SQL or Builder, you can define the frequency, start date, and time to process it.

Manual Processing offers the option to run it manually rather than waiting for a Calculated Insight to be processed in a Scheduled Batch. The **Calculated Insights List View** updates the status, last run time, last run status, and schedule fields are updated in near-real time.

Now that we understand the basics of data insights, let's explore how their power can be harnessed & optimized in Salesforce Data Cloud.

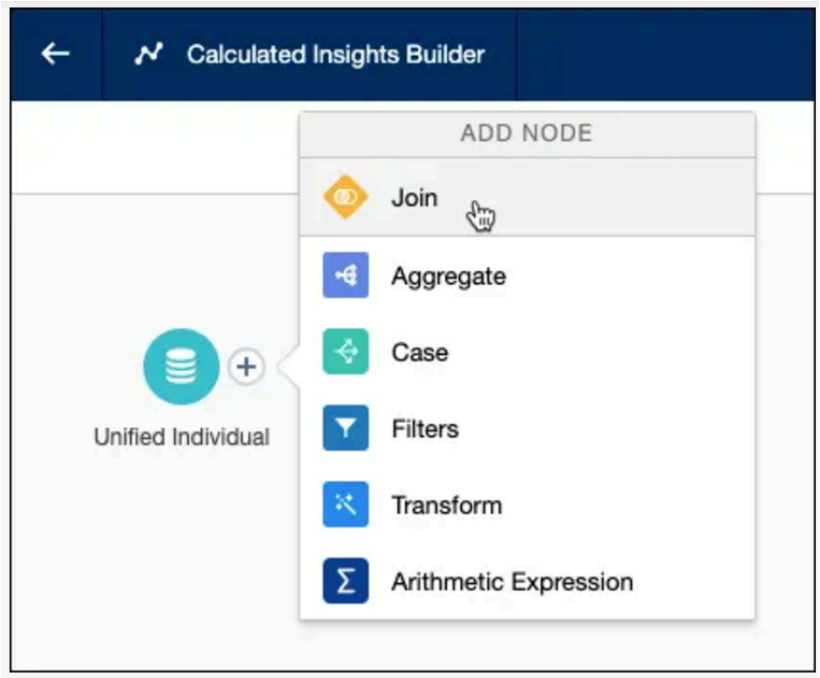
Steps to Use Data Insights with Data Cloud

Step 1: Creating Calculated Insights with Data Cloud

When creating Insights in Data Cloud, you can do so in one of three ways. These are: creating insights with Builder, creating insights from a package, and creating insights using SQL. Calculated Insights are a powerful tool, let's look at an example Sunshine Trails Hospitality. Sunshine Trails Hospitality can use Calculated Insights to identify high-value members and provide targeted marketing campaigns to them or to understand the life time value of a customer. Let's explore each of these methods in more detail.

Step 1.1: Create Calculated Insights with Builder
Creating Insights using Builder allows you to quickly and easily drag & drop elements to build your SQL statements using the Builder tool in Data Cloud. For our example of Sunshine Trails Hospitality, we can create the life-time value for a customer based upon our Sales Order to support our Customer 360 view. To create insights using Builder, you'll want to follow these steps:

1. Click the **New** button from the **Calculated Insights** tab in **Data Cloud**.
2. Select **Create with Builder** > click **Next** > click **Select Objects** to select that data model object.
3. Locate your data model object—for our example, Unified Individual > click **Next**.
4. Click the **+** icon next to your selected object > Click the node, **Join**.



5. Search the objects in your data model for that data source—for example, sales order. Once found, click **Next**.
6. Next, identify the Join Type & Join Keys, following the on-screen instructions.
7. Following that, determine if you're using identity resolution & unified profiles. If you are, be sure to connect your unified individual DMO to the unified individual link DMO (bridge table).
8. Finally, determine your Measures (the metric you are looking for in our example annual spend) & Dimensions (how you want the data grouped in our example value of the customer). Use the Aggregate Node to apply your criteria.
    a. For our example, we can look at Sales Orders over a Total Amount.

Create Calculated Insights from a Package

When you or your team have already created calculated insights in another Org, you can install those insights as a package in Data Cloud. To do that, the first thing you need to do is create a data kit in the original Org. Let's walk through these steps.

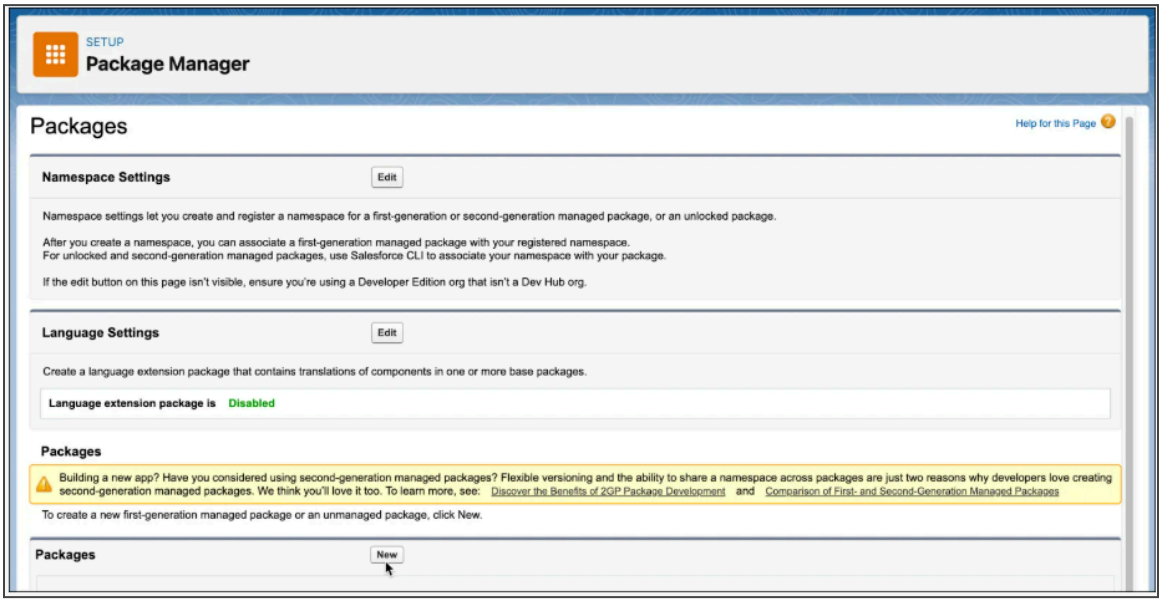
Creating Calculated Insights from a Package can be helpful to allow you to test your Calculated Insights in a separate Org, and bring them over when you are ready.

1. Create the Insight definition in a Dev Edition Org > create the Data Kit.
2. Create the Package & add the Data Kit.
3. Subscriber Org Admin deploys Package in Subscriber Org.
4. Subscriber Org installs Insight from Package in the Insight UI workflow.

Now that your Data Kit has been created, let's install our Package.

1. Go to Package Manager and click **New**.

2. To create a managed package, click **Edit** in Namespace Settings and register your namespace.
3. To create an unmanaged package, click **New** under Packages.



4. Add a Package Name and then click **Save**.
5. After the package is created, under Components (1) click **Add**.
6. Search for the Component Type called Data Package Kit Definition. Locate your created data kit and click **Add to Package**.
7. Click **Upload**.
8. Add in a **Version Name** and Version Number (1).
9. You can also fill out optional fields, like password protection (2).
10. When done, click **Upload** (3).

Once uploaded, you can use the Installation URL to install the package in another org. You also get an email once your package is uploaded successfully!

Step 1.2: Create Calculated Insights using ANSI SQL

We've successfully explored creating insights with Builder, and created insights from a Package. Now, let's create Insights using ANSI SQL. When creating insights from ANSI SQL, it's helpful if you have some previous familiarity with ANSI SQL statements. Let's break down this sample ANSI SQL statement:

```
SELECT
  SUM(ssot__SalesOrder__dlm.ssot__GrandTotalAmount__c) AS customer_spend__c,
  ssot__Individual__dlm.ssot__Id__c AS customer_id__c,
  ssot__Individual__dlm.KQ_Id__c AS kq_customer_id__c
FROM ssot__SalesOrder__dlm
JOIN ssot__Individual__dlm
ON (ssot__SalesOrder__dlm.ssot__SoldToCustomerId__c = ssot__Individual__dlm.ssot__Id__c)
AND IFNULL(ssot__SalesOrder__dlm.KQ_SoldToCustomerId__c, '') = IFNULL(ssot__Individual__dlm.KQ_Id__c, '')
WHERE
(ssot__SalesOrder__dlm.ssot__CreatedDate__c <= date_add(current_date(), 365.0))
GROUP BY
customer_id__c, kq_customer_id__c
```

1. First, determine the information you are looking for, how you want to aggregate the measure, and how the metric will be stored in the system:

```
SELECT
  SUM(ssot__SalesOrder__dlm.ssot__GrandTotalAmount__c) AS customer_spend__c,
  ssot__Individual__dlm.ssot__Id__c AS customer_id__c,
  ssot__Individual__dlm.KQ_Id__c AS kq_customer_id__c
```

2. Next, identify the source of the data:

```
FROM ssot__SalesOrder__dlm
```

3. Following that, include any other data neede:

```
JOIN ssot__Individual__dlm
ON (ssot__SalesOrder__dlm.ssot__SoldToCustomerId__c = ssot__Individual__dlm.ssot__Id__c)
AND IFNULL(ssot__SalesOrder__dlm.KQ_SoldToCustomerId__c, '') = IFNULL(ssot__Individual__dlm.KQ_Id__c, '')
```

4. Next, identify the data you want to include or not include. Best practice is to always define the date range you need for engagement data. This will aid in optimizing consumption.

```
WHERE
(ssot__SalesOrder__dlm.ssot__CreatedDate__c <= date_add(current_date(), 365.0))
```

5. Finally, determine how you want to group the data. This reflects the dimensions by which your metrics will be aggregated.

```
GROUP BY
customer_id__c, kq_customer_id__c
```

Step 2: Create Streaming Insights

Now that we've explored creating calculated insights, let's take a moment to explore Streaming insights in Data Cloud. Just as with Calculated Insights, there are two ways to create Streaming Insights in Data Cloud. Let's explore each of those in depth.

Prerequisites to Streaming Insights

Before setting up Streaming Insights, you'll need to ensure some prerequisites are in place. The

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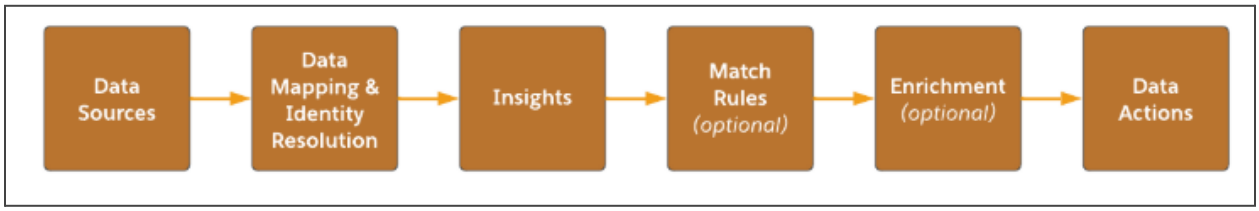
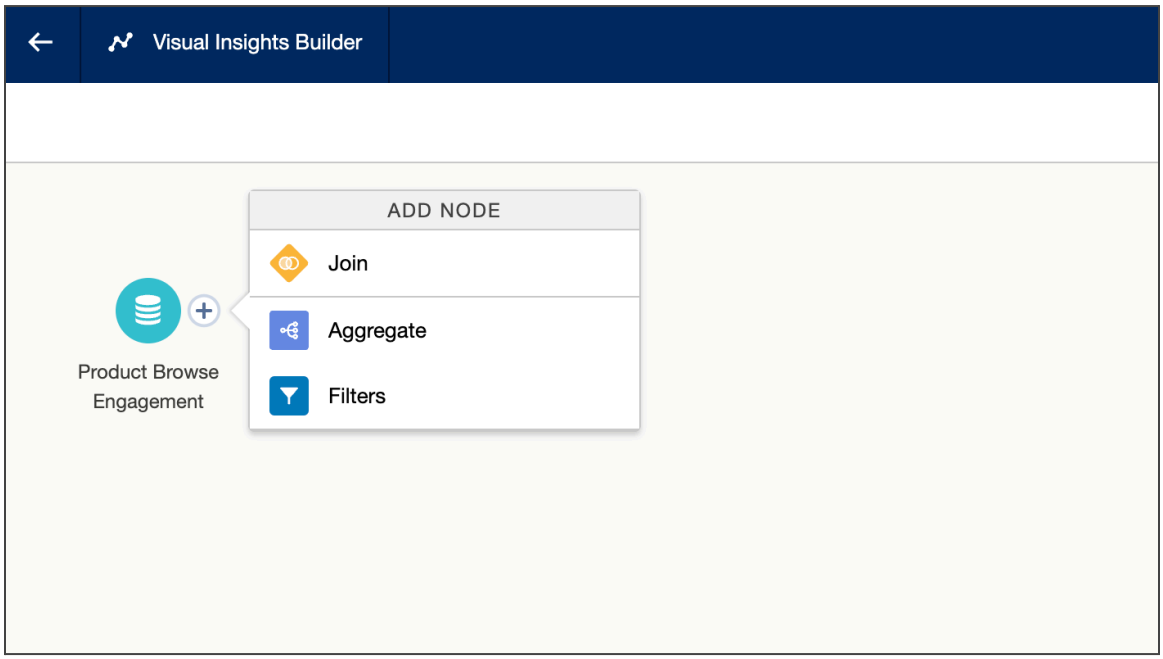
below illustration defines that flow for you.



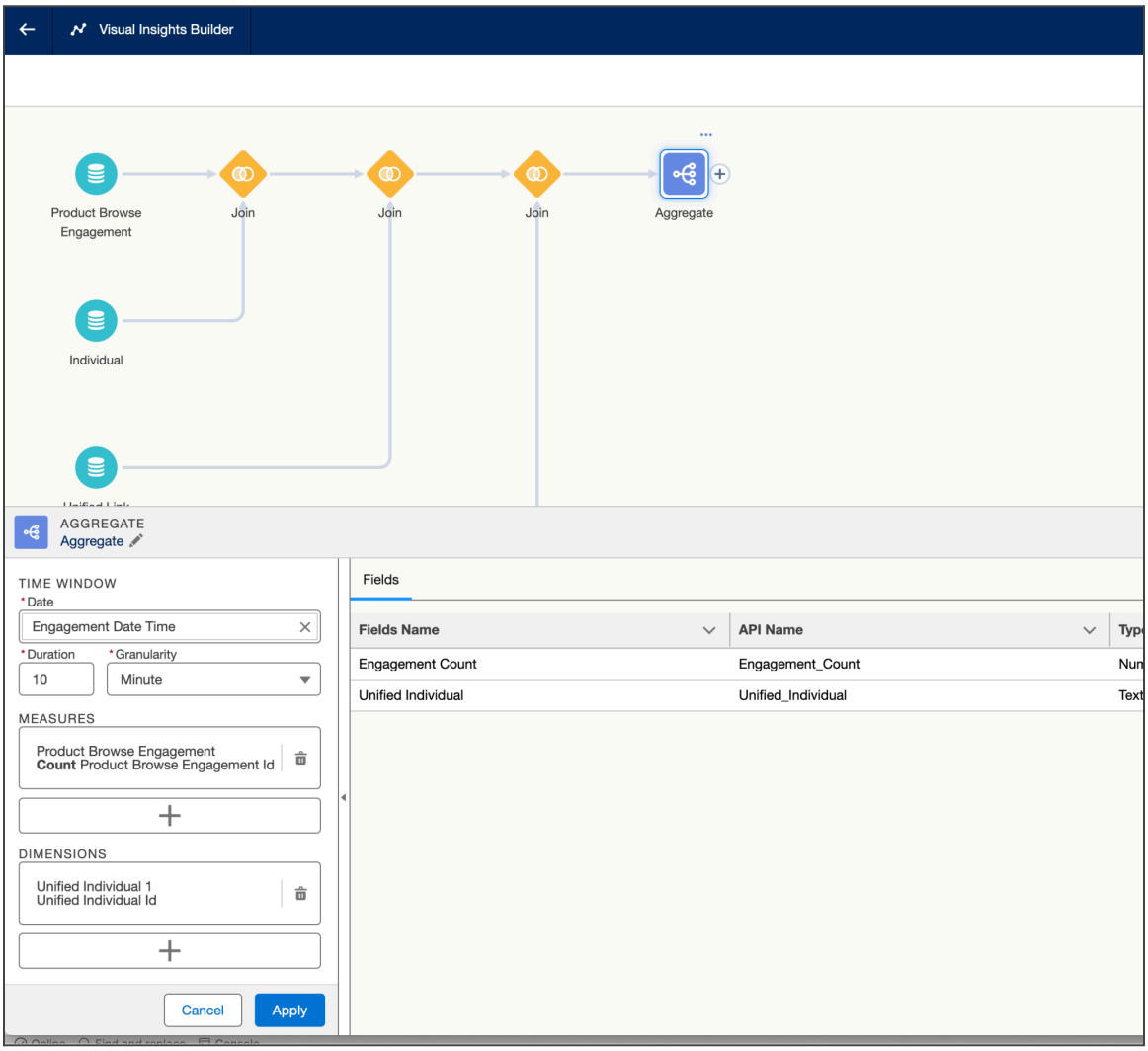
- Data sources—Map sources to different objects from Web & Mobile SDK and Marketing Cloud Personalization (formerly Interaction Studio) data streams.
- Identity resolution and data mapping— Get your Customer Single Source of Truth by deduping multiple identities and create unified individuals with identity resolution.
- Insights—Streaming Insights are similar to calculated insights but have specialized functions to manage streaming data.
- Match rules—Enrich with unified individual data from customers.
- Enrichment—Enhance data actions with profile-related attributes.
- Data actions—Apply data actions on a streaming insight and evaluate if the action is necessary.

Step 2.1: Create a Streaming Insight using Builder

1. In Data Cloud, go to the Calculated Insights tab > click **New**.
2. Select a data space > Click **Create with Builder** > click **Next** > Click **Streaming Insight** > click **Next.**
3. Click **Select an Object**, select the object > click **Next.**
4. If your Insight includes currency fields, select the Insight Currency value at the top of the page.
5. Add at least one node by clicking **+** next to the object.



6. Add at least one measure and dimensions to your insight by clicking **Aggregate**.
    a. Enter a date and time window duration > From the Granularity dropdown, select a time interval.
    b. Under Measures, click **+** > Select a metric function and the field that you want to calculate > click **Next**.
    c. Enter the metric name > click **Apply** > Under Dimensions, click **+**.
    d. Select the field that you want to group by > click **Next** > Enter the dimension name > click **Apply**.
7. To save the aggregate node, click **Apply**.
8. (Optional) To enhance your insight with additional data, add the join and filters nodes.
9. Click **Save and Run**.
10. Enter the streaming insight name > click **Next.** The Streaming Insight API Name field is auto-filled > Click **Save**.



Step 2.2: Create a Streaming Insight using SQL

Use SQL to compute metrics dimensions at specific points in time.

1. In Data Cloud, go to the Calculated Insights tab > click **New.**
2. Click the Data Space dropdown > select a data space > click **Create Streaming Insights** > click **Next.**
3. Enter the streaming insight name > click **Next** > enter a SQL query expression. Note that it is mandatory to specify the window duration & time interval in the query, according to the template shown when you initiate creation of the query.
4. When your insight includes currency measures, you must use the CURRENCY_CONVERT function.
5. Click **Check Syntax** > click **Save and Run**.

The streaming insight is displayed on the record home page. The last run status of a streaming insight is always Processing.

Additional Tools: Enhancing Data Insights in Builder

Once you've created your Data Insights, it's the perfect time to enhance them! Insights provide a robust set of tools to allow you to create exact metrics and dimensions. Use the interface nodes in Builder to further enhance your data insights. The helpful chart shown below highlights the ways in which the different nodes may be used.

Node	Description	Example
Case	Create a logic statement that narrows the result based on specific criteria.	When create date is greater than Dec. 1, 2020, provide the account name
Filters	Define filters on the measures and dimensions to reduce the results based on when a condition is met.	Where total quantity > 100
Transform	Change or clean data based on the fields in your selected data object.	Update the created date to show the day of the week
Arithmetic Expression	Write arithmetic calculations to create insights used in segmentation filters.	Subtract customer lifetime value (CLV) by total lifetime customer discounts

Step 3: Using Data Insights

Once you've created your Data Insights, it's time to put them to work! Data Insights may be used for status changes, segmentation, activation, creating action targets, and more!

Using Calculated Insights in Segmentation

When using Calculated insights in Segmentation, keep in mind that you'll need to choose a data model object (DMO) that is a Profile type - only the insights that match what the marketer is segmenting on will show in a segment. Remember, Data Cloud segmentation makes it easy for users by only showing relevant metrics for your particular segment.. (Note that if a Calculated Insight is aggregated by Unified Profile, and a Segment is created by an individual, this Calculated Insight will not be available because the segment is looking at individual data points, not the aggregated Unified Profile data.) To calculate insights in a Segment use the following steps:

1. Navigate to the Segments tab > select the appropriate Segment > click **Edit Rules**.
2. Under the DMO, find the calculated insight > click the insight to view it > drag & drop your desired metric to the segmentation canvas.
3. Update the operator > add a value > *optionally* - click **Add Dimension** to aggregate the data.

Report on Insights with Data Cloud Reports

Analyze & Build Robust Interactive Dashboards on insights with Tableau

Using Calculated Insights in Data Cloud Triggered Flows

Calculated Insights may be used to assess customer behavior by activating Data Cloud triggered flows. These flows use set thresholds or behaviors to activate automated actions. When conditions are met in the data model object (DMO) or calculated insight object (CIO), these flows are automatically triggered.

Best Practices

Design Considerations
• Be aware of the Data Model Objects (DMOs) being used and their volume
• Set the right refresh schedule
• Use multi-dimensional Calculated Insights instead of creating multiple Insights that are similar.
• Disable Calculated Insights that are not being used

Conclusion

Data Insights are powerhouse tools within Data Cloud. By tapping into their power, you'll easily transform your data into a 360 view of your customer, providing in-depth insights that will aid in forecasting and future planning. The steps outlined in this guide will help you to quickly & easily access the power of Data Cloud by maximizing your use of these tools.

Resources

Trailhead: Create Insights with the Insights Builder
Trailhead: Create and Publish a Data Kit
Trailhead: Learn SQL Concepts and Functions
Trailhead: Enhance your Insight with the Builder
Help Article: Streaming Insights
Help Article: Calculated Insights
Help Article: Calculated Insights in Segments
Help Article: Use ANSI SQL Statements in Data Cloud
Help Article: How are Calculated, Streaming, and Real Time Insights Different?