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Calculated and Advanced Calculated (Derived) Metrics

Calculated and Advanced Calculated (or Derived) Metrics are custom metrics that you can create from existing metrics.

⚠️ **Important:** In July 2018, Adobe Analytics introduced Attribution IQ, which revised the way allocation models in calculated metrics are evaluated. As part of this change, calculated metrics that use a non-default allocation model were migrated to new improved attribution models:

- “Marketing Channel Last Touch” and “Marketing Channel First Touch” allocation models will be migrated to new “Last Touch” and “First Touch” attribution models respectively (Note: “Marketing Channels” will not be deprecated - only the two allocation models that appear in calculated metrics will be).
- In addition, we will be correcting the way Linear allocation is calculated. For customers using calculated metrics with “Linear” allocation models, the reports may change slightly to reflect the new, corrected attribution model. This change to calculated metrics will be reflected in Analysis Workspace, Reports and Analytics, the Reporting API, Report Builder, and Ad Hoc Analysis. For more information, see How Linear Allocation works (as of July 19, 2018).

Our Calculated Metrics tools offer a highly flexible way of building, managing and curating metrics. They allow you as marketers, product managers and analysts to ask questions of the data without having to change your Adobe Analytics implementation. The custom metrics available in each Analytics package are:

- Adobe Analytics Foundation: Calculated
- Adobe Analytics Select: Calculated + Advanced Calculated
- Adobe Analytics Prime: Calculated + Advanced Calculated
- Adobe Analytics Ultimate: Calculated + Advanced Calculated

Here is a comparison of Calculated Metrics and Advanced Calculated Metrics capabilities:

<table>
<thead>
<tr>
<th>Builder Options</th>
<th>Calculated Metrics</th>
<th>Advanced Calculated (Derived) Metrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Format types (decimal, time, percent, currency)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Attribution changes (default, linear, participation, etc.)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Metric types (standard, total)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Basic operators (add, subtract, multiply, divide)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Applying segments</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Basic functions (count, abs value, mean, etc)</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Advanced functions (regression, if/then, t-score, etc)</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Capabilities**

You can

- Create segmented metrics that are derived at report run time, *without having to change the implementation*. These can be viewed historically because they are based on segments.
- Share metrics across report suites. This means that all newly created metrics apply to all reports suites in the same login company.
• (Advanced Calculated Metrics only) Segment on metrics. For example, you can create a metric for "New visitors", with a count of people for whom this is the first session.
• (Advanced Calculated Metrics only) Incorporate statistical functions to help you better describe your data. For example, you can count the number of items in a report or add in the number of standard deviations for each item.
• Utilize metrics created in Ad Hoc Analysis in the other Analytics tools and vice versa.

💡 **Note:** You can continue to create metrics in Ad Hoc Analysis. Its calculated metric builder user interface is now similar to the new metric builder.

**Limitations**

Some Adobe Analytics features let you use events but not calculated metrics:

• Funnels in Reports & Analytics
• Fallout in Analysis Workspace
• Cohort Analysis in Analysis Workspace
• Data Warehouse
• Segments
• Real-Time reports
• Current Data reports
• Analytics for Target

**Tools**

Here is a short overview of the Calculated Metrics tools:

<table>
<thead>
<tr>
<th>Tool</th>
<th>Capabilities</th>
</tr>
</thead>
</table>
| **Calculated Metric Builder** | • Create calculated and advanced calculated metrics using advanced allocation models.  
                                 | • Add segments inline to metric formulas.                                    
                                 | • Compare segments in the same report. For example, compare local visitors vs. international visitors.  
                                 | • Use statistical functions.                                                 
                                 | • Provide detailed metric descriptions (show what it does, where to use it, where NOT to use it).  
                                 | • Copy definitions into new metrics.                                         
                                 | • Provide an inline metric preview.                                          
                                 | • Set metric polarity, which indicates whether it's good or bad if a given custom event (metric) goes up.  
                                 | • Tag metrics.                                                               |
| **Calculated Metric Manager** | • Share metrics with others.                                                 
                                 | • Approve and curate metrics.                                                
                                 | • Organize (tag) your metrics so people can find them.                       
                                 | • Delete metrics.                                                            
                                 | • Rename metrics.                                                           |
| Metric Selector rail          | Replaces the **Show Metrics** popup in Reports & Analytics.                  |
It lets you search for and add/apply metrics to the report. You can also change the sort order (options are: alphabetical, recommended, frequently used, recently used.) In addition, you can filter on Report Suites to show only metrics created in a specific report suite.

To access this Metric Selector, click the Metrics icon to the left of a report. This is what the Metric Selector looks like:

<table>
<thead>
<tr>
<th>Tool</th>
<th>Capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>API for Calculated Metrics</strong></td>
<td>Part of the Admin API set.</td>
</tr>
</tbody>
</table>
Frequently Asked Questions

These changes to the way calculated metrics work in Analytics may impact you.

1. How do I access the Calculated Metric Builder?
2. How do I access the Calculated Metric Manager?
3. Why do I see so many Calculated Metrics with the Same Name?
4. What happened to my Global Calculated Metrics?
5. What happened to Global Calculated Metrics that were shared across Login Companies?
6. What happened to Calculated Metrics with a Numeric or Numeric2 Classification?
8. What happened to Life-Time Metrics?
9. What do I need to know about Calculated Metrics based on Daily/Weekly/Monthly/Quarterly/Yearly Unique Visitor metrics?
10. What about Calculated Metrics created or managed with the old report suite API methods?
11. Does Current Data Does support all types of Calculated Metrics?
12. What does "No name provided" mean in conjunction with migrated calculated metrics?
13. What happens to a user’s calculated metrics if that user was deleted?
14. Why do I see “Unknown” calculated metrics that aren’t ‘valid’ for other report suites even though they can be created and applied to those report suites?
15. Why were changes that I made to my legacy calculated metrics not saved?
16. Why don’t my calculated metrics show up in the Marketing Channels report?
17. Why do some of the calculated metrics show formulas without the parentheses I added?
18. (Ad Hoc Analysis only) Are Calculated Metrics with Embedded or Inline Segment Definitions still supported?
19. (Report Builder only) Why have calculated metrics disappeared from my requests?
20. How do Calculated Metrics Totals work?

1. How do I access the Calculated Metric Builder?
   • Click at the top of the Calculated Metric Manager, or
     • In any Analytics report, click the Metrics icon to the left of a report to bring up the Metrics rail, then click Add.

2. How do I access the Calculated Metric Manager?
   • Go to Analytics > Components in the left navigation. Then click Calculated Metrics.
     • In any Analytics report, click the Metrics icon to the left of a report to bring up the Metrics rail, then click Manage.

3. Why do I see so many Calculated Metrics with the same name?
   (Previously, global calculated metrics were not owned by any specific Admin user and were visible to all users of that report suite. The metrics were segregated by report suite. If a metric in one report suite had the same name as
a metric in a different report suite, it would simply appear to users as the same metric when they switched report
suites.)

Now, metrics are no longer segregated by report suites. If a metric in one report suite had the same name as a
metric in a different report suite, they will both be visible in the Calculated Metric Builder as well as the Metric Selector
and might appear as duplicate metrics even though they may or may not have the same definition.

You would see a number of calculated metrics with the same name (but created in different report suites) only if you
unchecked the (Only <report suite>) checkbox as shown here:

What You Need to Do

Consider consolidating calculated metrics with similar names and definitions but exercise caution when doing so.
You can check the report suite for a calculated metric in the Calculated Metric Manager to verify its original report
suite. You should also check the definitions of metrics when deleting potential duplicates to ensure that you are
correctly consolidating metrics.

Note: Even though calculated metrics are no longer bound to a specific report suite and can be used across
any report suite that is visible to the login company, the report suite under which the calculated metric was
created or last saved is still visible in the Calculated Metric Manager.

Note: Even if a Calculated Metric is deleted, any bookmarks or dashboard reports that reference that metric
will still function.

4. What happened to my Global Calculated Metrics?

(Previously, an Admin could create calculated metrics (known as "global calculated metrics" or "report suite calculated
metrics") in a Report Suite via Admin Tools.

Global calculated metrics are now owned by the first Admin user in the login company's list of Admin users. They
will be shared with "Everyone" by default. This pattern follows the same sharing model and migration plans as
segments.

What You Need to Do

Nothing. However, the new Admin owner should exercise caution when modifying or deleting these calculated
metrics - they may be used in a number of bookmarked reports and dashboards.

Note: Even if a Calculated Metric is deleted, any bookmarks or dashboard reports that reference that metric
will still function.

5. What happened to Global Calculated Metrics that were shared across Login Companies?

(Previously, an Admin could create calculated metrics (known as "global calculated metrics" or "report suite calculated
metrics") in a Report Suite via Admin Tools. These metrics could then be "shared" across login companies by adding
the report suite to multiple login companies.)
Global calculated metrics can no longer be shared across login companies. They are no longer bound or tied to a specific report suite but are instead tied to a specific login company. Calculated metrics that were shared across login companies

- Will be migrated to all the login companies with access to that report suite.
- Will default to "shared with Everyone".
- Will be copies independent from all the other login companies.

**Note:** If the calculated metric was used in a bookmark, dashboard, alert, or scheduled report, editing the new copy will NOT affect the old persisted calculated metric.

6. What happened to Calculated Metrics with a Numeric or Numeric2 Classification?

(Previously, calculated metrics with a Numeric or Numeric2 classification were only visible in Reports & Analytics, Report Builder, and the APIs.)

Now, calculated metrics with a Numeric or Numeric2 classification will continue to be visible in Reports & Analytics, Report Builder, and the APIs. However, they will not be supported in any report with a segment applied.

In addition, calculated metrics with a Numeric or Numeric2 classification will not be supported in the following components: Ad Hoc Analysis, Analysis Workspace, Real-Time reports, Anomaly Detection, and Contribution Analysis. When you create or edit a calculated metric with a Numeric or Numeric2 classification, you will see a compatibility warning that the calculated metric is not compatible with certain areas of the product.

**What You Need to Do**

Avoid creating calculated metrics with Numeric1 or Numeric2 classifications if the metric is intended to be used with a segment or with any of the non-compatible components.

8. What happened to Life-Time Metrics?

Life-Time metrics (a.k.a. all-time metrics) are no longer supported and no longer visible in the Reports & Analytics UI or any other UI. They cannot be queried by the Report API.

Any bookmarks, dashboards, scheduled reports, or alerts that contained an all-time metric will continue to run without that metric as long as at least one other valid metric is also on the report. If the only metric on the bookmark, dashboard, scheduled report, or alert is an all-time metric, the report will no longer run.

9. What do I need to know about Calculated Metrics based on Daily/Weekly/Monthly/Quarterly/Yearly Unique Visitor metrics?

Calculated metrics based on Unique Visitor metrics will be visible in the following Analytics components: Reports & analytics, Report Builder, and Reporting API.

However, these metrics will not be supported in the following components: Segments, Analysis Workspace, Real-Time reports, Anomaly Detection, and Contribution Analysis. When you create or edit a calculated metric based on Unique Visitors metrics, you will see a compatibility warning that the metric is not compatible with certain areas of the product.

You use a base Unique Visitor metric on a report with a segment. You can create a Calculated Metric based on a Unique Visitor metric; however, that calculated metric cannot be applied to a report with a segment, nor can that calculated metric have a segment embedded in it.
10. What happens to Calculated Metrics created or managed with the old report suite API methods?

Previously, saving a calculated metric with the (1.3 or 1.4) API method ReportSuite.SaveCalculatedMetrics was the same as creating or updating a calculated metric in the Admin Console. The same applied to ReportSuite.DeleteCalculatedMetrics. Also, the list of calculated metrics displayed in the Admin Console or when calling ReportSuite.GetCalculatedMetrics was the same.

Going forth, the ReportSuite CalculatedMetrics API methods (1.3 or 1.4) will continue to save, delete and retrieve calculated metrics using the old store. Existing calculated metrics will be migrated over and will be visible in the new Calculated Metrics Builder. New calculated metrics created with the API methods will be visible only in the API. They will still be usable in the Reporting API.

What You Need to Do

If you need to use both the API and the Calculated Metric Builder, you should stop using the ReportSuite CalculatedMetrics API methods and instead use the new CalculatedMetrics API methods (Get, Save, Delete and GetFunctions).

11. Does Current Data support all types of Calculated Metrics?

Current data does not support calculated metrics that contain segments or statistical functions. The only functions that are supported are basic mathematical functions like addition, deletion, multiplication, division, and negation (-x).

12. What does "No name provided" mean in conjunction with migrated calculated metrics?

"No name provided" means that no metric name is associated with this migrated metric (just a formula without a descriptive name).

13. What happens to a user's calculated metrics if that user was deleted?

Any calculated metrics that this user created are also deleted. However, deleted calculated metrics will still work as part of saved bookmarks, dashboards, or scheduled reports.

14. Why do I see “Unknown” calculated metrics that aren't 'valid' for other report suites even though they can be created and applied to those report suites?

The user interface displays “unknown” if the calculated metric contains base metrics or dimensions that don’t exist for the selected report suite.

15. Why were changes that I made to my legacy calculated metrics not saved?

This might be due to the timing of the migration to the new calculated metric database, which took place between June 15 and June 18, 2015.

What You Need to Do

You will have to redo the changes you made to your legacy metrics.

16. Why don’t my calculated metrics show up in the Marketing Channels report?

(Previously, all calculated metrics were listed in the metric selector on Marketing Channels reports with a First Touch and Last Touch option.)

Now, only those calculated metrics that have their allocation type specifically set to First Touch or Last Touch in the Calculated Metrics builder will be available in the metric selector on Marketing Channels reports. Note that any
calculated metrics already applied to Marketing Channel reports will continue to be applied and work as they did before. To create a calculated metric for Marketing Channels, click the configuration icon in the metric builder and select either First Touch or Last Touch as the allocation type. Remember that doing this will make the calculated metric compatible only with Marketing Channel reports and it won’t be usable on any other report.

17. Why do some of the calculated metrics show formulas without the parentheses I added?
During the migration, Adobe stripped out superfluous parentheses from some formulas. Only parentheses that do not affect how the metric is calculated were removed. This won’t change the data - it just simplifies the formula.

18. (Ad Hoc Analysis only) Are Calculated Metrics with embedded or inline segment definitions still supported?
Calculated metrics created in Ad Hoc analysis could previously contain inline segment definitions. This is no longer possible.

What You Need to Do
You will be required to explicitly save the segment. Existing calculated metrics with inline segment definitions will continue to run correctly and can be viewed in Ad Hoc Analysis, but they cannot be saved without explicitly saving the segment.

19. (Report Builder only) Why have calculated metrics disappeared from my requests?
If the request was created in v5.2 and it contains calculated metrics, those metrics are not visible in version 5.1 (or earlier versions). This is because calculated metrics now use Global IDs (non report-suite-specific IDs).

What You Need to Do
You need to upgrade to v5.2 to be able to see these metrics.

20. How do Calculated Metrics Totals work?
When Reports & Analytics shows a calculated metrics total in R&A, it's just applying the formula to the total. For example, the total for the calculated metric Orders/Visit takes the Total Orders and divides them by the Total Visits. In some cases, however, the calculated metric total is not just the sum of line items, but a total for the site.

Example 1: Visitors for a search term: the same visitor may have searched for multiple terms, so in this case, total visitors do not equal the sum of the line items.

Example 2: Page views on products: in the cart, there may be multiple products, so as a result, there are multiple page views for the cart. For more information on comparing the sum of line items to report totals, see this knowledge base article.
How-To Videos

These short videos (8 minutes or less) provide an overview of how to optimize the use of the Calculated Metric tools.

• Metric Selector
• Metric Builder
• Segmented Metrics
• Implementation-Less Metrics
• Functions
• Admin-Specific Tips
Calculated Metrics Workflow

<table>
<thead>
<tr>
<th>Step</th>
<th>Workflow Task</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Plan Calculated Metrics</td>
<td>Especially for metrics that are going to be officially &quot;approved&quot;, it makes sense to outline which calculated metrics will be widely used and how they will be defined.</td>
</tr>
<tr>
<td>2</td>
<td>Build Calculated Metrics</td>
<td>Build and edit calculated and advanced calculated metrics for use in Adobe Analytics components. See examples of how to build calculated metrics.</td>
</tr>
<tr>
<td>3</td>
<td>Tag Calculated Metrics</td>
<td>Tag calculated metrics for ease of organization and sharing. See how to plan and assign tags for simple and advanced searches and organization.</td>
</tr>
<tr>
<td>4</td>
<td>Approve Calculated Metrics</td>
<td>Approve calculated metrics to make them canonical.</td>
</tr>
<tr>
<td>5</td>
<td>Apply Calculated Metrics</td>
<td>You can apply metrics directly from a report, from the Metric Selector (to access it, click Show Metrics).</td>
</tr>
<tr>
<td>6</td>
<td>Share Calculated Metrics</td>
<td>Share your metrics with the intended audience in other Analytics tools and to Adobe Target and the Adobe Experience Cloud.</td>
</tr>
<tr>
<td>7</td>
<td>Filter Calculated Metrics</td>
<td>In the Metric Selector, click Advanced Selection and filter by tags, owners, and other filters (Show All, Mine, Shared With me, Favorites, and Approved.)</td>
</tr>
<tr>
<td>8</td>
<td>Mark Calculated Metrics as Favorites</td>
<td>Marking metrics as favorites is another way to organize them for ease of use.</td>
</tr>
</tbody>
</table>

Find Metrics

Describes the two main ways of finding your metrics: sorting and filtering.

**Sorting**

When you open a report and click the Metrics icon to the left of a report to bring up the Metrics rail, the **Sort By** drop-down list in the Metrics Selector shows four sorting options:
<table>
<thead>
<tr>
<th>Option</th>
<th>When to use it</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alphabetical</td>
<td>Useful if you know the name.</td>
</tr>
<tr>
<td>Recommended</td>
<td>Common metrics that people use in the report - this is gathered by the back end from metrics users commonly use with this report.</td>
</tr>
<tr>
<td>Frequently Used</td>
<td>Useful if you are a novice user and need to see what is commonly used on the report.</td>
</tr>
<tr>
<td>Recently Used</td>
<td>Useful if you are working on a project and using the same set of metrics over and over.</td>
</tr>
</tbody>
</table>

**Filtering - Advanced Selection**

When you open a report and click the Metrics icon, then click **Manage**. Now click the Filter icon. You can filter in a number of ways.
If you want to | Then sort by
--- | ---
Show all metrics in this report suite. | Other Filters > Show All
Show only the metrics that you have | Other Filters > Mine
Show Metrics shared with me from someone else | Either Owners or
| Other Filters > Shared with Me
Show only metrics that are approved by the company. | Approved
Filter on the metrics for a project you are working on. | One of the Tags.

Build Metrics

The Calculated Metrics Builder provides a canvas to drag and drop Dimensions, Metrics, Segments, and Functions to create custom metrics based on container hierarchy logic, rules, and operators. This integrated development tool lets you build and save simple calculated metrics or complex advanced calculated metrics.

There are several ways to get to the Calculated Metric Builder:

- In Analysis Workspace, open a project and click **New > Create Metric**.
- In Adobe Analytics, go to **Components > Calculated Metrics**.
- Click **Add** at the top of the Calculated Metric Manager, or

  Go to **Analytics > Reports**, open any report and click the Metrics icon to bring up the Metrics rail, then click **Add**.
### UI Components

<table>
<thead>
<tr>
<th>#</th>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Title</td>
<td>Naming the metric is mandatory. You cannot save the metric unless it is named.</td>
</tr>
<tr>
<td>2</td>
<td>Description</td>
<td>Give it a user-friendly description to show what it's used for and to distinguish it from similar ones. The description also appears within a report. It's best NOT to put the formula into the description - instead, describe what this metric should and should not be used for. (The formula is generated as you build the metric, underneath the Summary heading. As a result, there is no need to add the formula to the description.)</td>
</tr>
<tr>
<td>3</td>
<td>Format</td>
<td>Choices include Decimal, Time, Percent, and Currency.</td>
</tr>
<tr>
<td>4</td>
<td>Decimal Places</td>
<td>Shows how many decimal places will be shown in the report. The maximum number of decimal places you can specify is 10.</td>
</tr>
<tr>
<td>5</td>
<td>Show Upward Trend As...</td>
<td>This metric polarity setting shows whether Analytics should consider an upward trend in the metric as good (green) or bad (red). As a result, the report's graph will show as green or red when it's going up.</td>
</tr>
<tr>
<td>#</td>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>----</td>
<td>-------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 6  | Tags              | Tagging is a good way to organize metrics. All users can create tags and apply one or more tags to a metric. However, you can see tags only for those segments that you own or that have been shared with you. What kinds of tags should you create? Here are some suggestions for useful tags:  
  - Tags based on team names, such as Social Marketing, Mobile Marketing.  
  - Project tags (analysis tags), such as Entry-page analysis.  
  - Category tags: Men's; geography.  
  - Workflow tags: To be approved; Curated for (a specific business unit) |
| 7  | Summary           | The Summary formula updates anytime you make a change to the metric definition. This formula also shows up in the metrics rail on the left when you hover over a metric and click the icon. |
| 8  | Definition        | This is where you drag in metrics/calculated metrics, segments, and/or functions to build the calculated metric.  
  - If you drag in a calculated metric, it will expand its metric definition automatically.  
  - You can nest definitions with containers. However, unlike segment containers, these containers function like a math expression and determine the order of operations. |
| 9  | Operator          | Divided by (÷) is the default operator, plus there are the +, -, and x operators. |
| 10 | Preview           | Provides a quick read on any possible errors. The preview covers the last 90 days. This is a way of initially gauging whether you have selected the right components for your metric. An unexpected result would mean you need to take a second look at the metric definition. |
| 11 | Product Compatibility | Product compatibility shows you whether the metric is compatible with Current Data, with Fully Processed Data, or only with Marketing Channel reports (first-touch allocation).  
  **Note**: Current Data does not support all metrics. Metrics that contain segments or functions are not compatible with current data. More... |
| 12 | Add               | For all types of calculated metrics, you can add containers and static numbers to the definition. For advanced calculated metrics, you can also add segments and functions.  
  - Containers function like a math expression and determine the order of operations. So anything in a container will get processed before the next operation.  
  - Dragging a segment onto a container segments everything in that container. (Advanced calculated metrics only)  
  - You can stack multiple segments in a container. |
<table>
<thead>
<tr>
<th>#</th>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Gear icon (Metric Type, Attribution)</td>
<td>Selecting the gear icon next to a metric lets you specify the <strong>metric type and attribution models</strong>.</td>
</tr>
<tr>
<td>14</td>
<td>+ New</td>
<td>Lets you create a new component, such as a new segment (which takes you to the Segment Builder).</td>
</tr>
<tr>
<td>15</td>
<td>Search Components</td>
<td>This search bar lets you search for dimensions, metrics, segments (advanced calculated metrics only), and functions (advanced calculated metrics only).</td>
</tr>
<tr>
<td>16</td>
<td>List of Dimensions</td>
<td>Rather than leaving the Calculated Metric Builder in order to build a simple segment (in the Segment Builder), e.g. “Page = Homepage”, you can drag in Page and select Homepage directly from the Calculated Metric Builder. This results in a much more streamlined workflow for creating segmented calculated metrics.</td>
</tr>
</tbody>
</table>
| 17 | List of Metrics | Metrics come in 3 categories:  
- Standard metrics ( )  
- Calculated metrics ( )  
- Metrics templates ( ) - at the bottom of the list.  
When you hover over a metric, you can see the Info icon to the right of it: . Clicking this icon gives you the following information:  
- The formula of how it is calculated.  
- A preview trend of the metric.  
- An edit (pencil) icon at the top right that will take you to the Calculated Metrics Builder where you can edit this calculated metric. |
| 18 | List of Segments | (Advanced calculated metrics only) As an Admin, this list shows all segments created in your login company. If you are a non-Admin user, this list shows segments you own and those shared with you. More... |
# Field | Description
---|---
19 | List of Functions

(List of Functions)

Functions are divided into two lists: Basic (used most often) and Advanced.

20 | Report Suite selector

Lets you switch to a different report suite.

Metric Type and Attribution

Selecting the gear icon next to a metric lets you specify the metric type and the attribution model.

- **Metric Type**
- **Column Attribution Model**
- **How Linear Allocation works (as of July 19, 2018)**

Metric Type

<table>
<thead>
<tr>
<th>Metric Type</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>These metrics are the same metrics used in standard Analytics reporting. If a formula consisted of a single standard metric, it displays identical data to its non-calculated-metric counterpart. Standard metrics are useful for creating calculated metrics specific to each individual line item. For example, ([\text{Orders}] / [\text{Visits}]) takes orders for that specific line item and divides it by the number of visits for that specific line item.</td>
</tr>
<tr>
<td>Total</td>
<td>Use the total for the reporting period in every line item. If a formula consisted of a single total metric, it displays the same total number on every line item. Total metrics are useful for creating calculated metrics that compare against site total data. For example, ([\text{Orders}] / [\text{Total Visits}]) shows the proportion of orders against ALL visits to your site, not just the visits to the specific line item.</td>
</tr>
</tbody>
</table>
Column Attribution Model

**Important:** In July 2018, Adobe Analytics introduced Attribution IQ, which revised the way allocation models in calculated metrics are evaluated. As part of this change, calculated metrics that use a non-default allocation model were migrated to new improved attribution models:

- For a full list of non-default attribution models and lookback windows supported, see the Attribution IQ documentation.
- “Marketing Channel Last Touch” and “Marketing Channel First Touch” allocation models will be migrated to new “Last Touch” and “First Touch” attribution models respectively (Note: “Marketing Channels” will not be deprecated - only the two allocation models that appear in calculated metrics will be).
- In addition, we will correct the way Linear allocation is calculated. For customers using calculated metrics with “Linear” allocation models, the reports may change slightly to reflect the new, corrected attribution model. This change to calculated metrics will be reflected in Analysis Workspace, Reports and Analytics, the Reporting API, Report Builder, and Ad Hoc Analysis. For more information, see How Linear Allocation works (as of July 19, 2018).

How Linear Allocation works (as of July 19, 2018)

In July 2018, Adobe Analytics changed how linear allocation is reported for Calculated Metrics. This change impacts Analysis Workspace, Ad Hoc Analysis, Reports & Analytics, Report Builder, Activity Map, and the Reporting APIs. The change will primarily impact eVars and other dimensions that have persistence. Note that these changes will only apply to calculated metrics and will not impact other reports using linear allocation (such as the Pages report in Reports & Analytics). Other reports using linear allocation will continue to use the existing method of linear allocation.

The following example illustrates how calculated metrics with linear allocation will change in reporting:

<table>
<thead>
<tr>
<th>Hit 1</th>
<th>Hit 2</th>
<th>Hit 3</th>
<th>Hit 4</th>
<th>Hit 5</th>
<th>Hit 6</th>
<th>Hit 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Sent In</td>
<td>PROMO A</td>
<td>-</td>
<td>PROMO A</td>
<td>PROMO B</td>
<td>-</td>
<td>PROMO C</td>
</tr>
<tr>
<td>Last Touch eVar</td>
<td>PROMO A</td>
<td>PROMO A</td>
<td>PROMO A</td>
<td>PROMO B</td>
<td>PROMO B</td>
<td>PROMO C</td>
</tr>
<tr>
<td>First Touch eVar</td>
<td>PROMO A</td>
<td>PROMO A</td>
<td>PROMO A</td>
<td>PROMO A</td>
<td>PROMO A</td>
<td>PROMO A</td>
</tr>
<tr>
<td>Example prop</td>
<td>PROMO A</td>
<td>-</td>
<td>PROMO A</td>
<td>PROMO B</td>
<td>-</td>
<td>PROMO C</td>
</tr>
</tbody>
</table>

In this example, the values A, B, and C were sent into a variable on hits 1, 3, 4, and 6 before a $10 purchase was made on hit 7. In the second row, those values persist across hits on a last touch visit basis. The third row illustrates a first-touch visit persistence. Finally, the last row illustrates how data would be recorded for a prop which does not have persistence.

**Summary of how linear allocation worked prior to July 2018**

Prior to July 19, 2018, linear attribution was calculated after first touch or last touch persistence has already occurred. This meant that for the last touch eVar above, the $10 would be distributed as follows: $10 \times (3/6) = 5, \ B = 10 \times (2/6) = 3.33, \ C = 10 \times (1/6) = 1.67.
For the first touch eVar above, all $10 would be given to A. For the prop: \( A = 10 \times \frac{2}{4} = $5, \ B = 10 \times \frac{1}{4} = $2.50, \) and \( C = 10 \times \frac{1}{4} = $2.50. \) To summarize linear allocation as it worked previously:

<table>
<thead>
<tr>
<th>Values</th>
<th>Current Last Touch eVar</th>
<th>Current First Touch eVar</th>
<th>Current Prop</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROMO A</td>
<td>$5.00</td>
<td>$10.00</td>
<td>$5.00</td>
</tr>
<tr>
<td>PROMO B</td>
<td>$3.33</td>
<td>$0</td>
<td>$2.50</td>
</tr>
<tr>
<td>PROMO C</td>
<td>$1.67</td>
<td>$0</td>
<td>$2.50</td>
</tr>
<tr>
<td>Total</td>
<td>$10.00</td>
<td>$10.00</td>
<td>$10.00</td>
</tr>
</tbody>
</table>

Summary of how linear allocation works as of July 19, 2018

After July 19th, we corrected this behavior in calculated metrics. Instead of using the persisted values based on last touch or first touch, Analytics now uses only the values that were passed in (the first row of the top table). As such, the dimension allocation settings no longer impact the way linear allocation is calculated (meaning props and eVars will be treated in the same way), and the results reflect what was originally passed in rather than the first or last touch values that may have persisted. So, in all three cases, \( A = 10 \times \frac{2}{4} = $5, \ B = 10 \times \frac{1}{4} = $2.50, \) and \( C = 10 \times \frac{1}{4} = $2.50. \)

<table>
<thead>
<tr>
<th>Values</th>
<th>New Last Touch eVar</th>
<th>New First Touch eVar</th>
<th>New Prop</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROMO A</td>
<td>$5.00</td>
<td>$5.00</td>
<td>$5.00</td>
</tr>
<tr>
<td>PROMO B</td>
<td>$2.50</td>
<td>$2.50</td>
<td>$2.50</td>
</tr>
<tr>
<td>PROMO C</td>
<td>$2.50</td>
<td>$2.50</td>
<td>$2.50</td>
</tr>
<tr>
<td>Total</td>
<td>$10.00</td>
<td>$10.00</td>
<td>$10.00</td>
</tr>
</tbody>
</table>

Simple "Page Views per Visits" Metric

Shows how to build a simple "Page Views per Visits" metric.

For a detailed description of the UI components, see Building Metrics.

Here’s how to build a simple "Page Views per Visits" metric.

1. Navigate to the Calculated Metric Builder.
2. Name the metric "Page Views per Visits" or something similar.
3. Give it a user-friendly Description to show what it’s used for.
4. Select the right Format, in this case Decimal.
5. Decide how many decimal places you want the report to show.
6. Set the metric polarity. For this metric, an upward trend would be a good (green) thing.
7. Add a Tag to organize your metrics.
8. For this metric, first drag Page Views into the canvas, then drag Visits underneath (wait until the blue line appears to drop it).
9. Select the Divide operator. (Divide is the default operator.)
10. You can now see a Preview of that metric as you are building it, at the top right.
11. Product compatibility shows you whether the metric is compatible with Current Data or only with Fully Processed Data.
12. Click Save.
13. Notice that the Summary formula updates anytime you make a change to the metric definition.
14. You are now automatically taken to the **Calculated Metric Manager**, which is similar to the Segment Manager. It lets you share, approve, (re-)tag, rename, or delete metrics.

**Segmented Metrics**

Segmenting on individual metrics allows you to make metric comparisons within the same report. (Derived metrics only)

**Compare Segments**

Let's say you want to compare different aspects of a "US Visitors" segments to those of an "International Visitors" segment. You can create metrics that will give you insights such as:

- How does content browsing behavior compare between the two groups? (Another example would be: How does the conversion rate compare between the two segments?)
- As a percentage of total visitors, how many US visitors browse certain pages, versus International visitors?
- Where are the biggest differences in terms of which content is accessed by these different segments?

Let's explore the first question: How does content browsing behavior compare between the two groups?

1. If you don't have a comparable segment, create an internal segment right in the Calculated Metric Builder called "German Visitors", where "Countries" equals "Germany". Just drag the Countries dimension into the Definition canvas and select Germany as the value:

   ![Create Segment from Dimension](image)

   **Note:** You can also do this in the **Segment Builder**, but we have simplified the workflow by making dimensions available in the Calculated Metric Builder.

   **Note:** "Internal" means that the segment is not visible in the **Segments** list in the left rail. You can however, make it public by hovering over the "i" icon next to it and clicking **Make public**.

2. If you don't have a comparable segment, create a segment called "International Visitors" where "Countries" does not equal "Germany."

3. Build and save a metric called "German Visitors" by dragging the Germany segment into the Definition canvas and dragging the Unique Visitors metric within it:
4. Repeat Step 3 with the International Visitors segment and the Unique Visitors metric to create an International Visitors metric.

5. In Analysis Workspace, drag the Page Dimension into a Freeform Table and drag the 2 new calculated metrics next to each other to the top:

- Compare Percentages of Totals

You can introduce another level of inquiry by comparing visitor browsing behavior in normalized percentages. To do so, create, two new metrics, ”% of Total German Visitors” and ”% of Total International Visitors”:
1. Drop the German (or International) Visitors segment into the canvas.
2. Drop another German (or International) Visitors segment below. However, this time, click its configuration (gear) icon to select the Metric Type "Total". The Format should be "Percent". The operator should be "divided by". You end up with this metric definition:

![Image of metric definition]

3. Apply this metric to your project:

![Image of metric application]

**Compare Differences in Percentages (using Containers)**

If you want to see the biggest differences between US and International browsing behavior at a glance, you can create another metric that subtracts the percentages from each other. To do so, you can use the Container functionality that effectively acts as parentheses around the 2 sets of metrics.

1. In the **Definition** canvas, click **Add > Container**:
2. Drop the "% of Total US Visitors" metric that you created previously into the first container - it expands to its full definition:

3. Create another container below and drop the "% of Total International Visitors" metric into it.

4. Change the operator between the 2 containers to a minus (-).
5. Save the metric (make sure you have named it something like "Difference in % between US and Int'l.").
6. When applied to the report, you can easily where the greatest differences in percentages are, and you can sort the report accordingly.

**Stacking and Replacing Segments**

Shows how to stack and replace segments within the Calculated Metric Builder.

**Stacking Segments**

In the Definition canvas, simply drop the new segment next to the existing one:

**Replacing one Segment with Another**

In the Definition canvas, simply drop the new segment on top of the existing one:
Filtered and Weighted Metrics
Shows examples of filtered and weighted metrics.

Filtered Bounce Rate
This simple filtered metric shows the bounce rate for only those pages with over 100 visits:

Keep in mind that this formula is dependent on a consistent time range. If you run a report for a single day, any page with more than 20 visits is worth looking at. If you run it for a month, you may want the filter to include more visits.

Filtered Bounce Rate with Percentile
This filter shows the Bounce Rate for the top 30 percent of pages, when sorted by visits.
Weighted Metric

Suppose you want to sort by bounce rate in general, but pages with higher visits should be higher on the list. You could create a Weighted Bounce Rate that looks like this:

Order Assists Metric

Explains how to create a metric that shows which Marketing Channels assist in driving orders. This can be adapted to any dimension or success event of interest.

1. In the Calculated Metrics Builder, name the metric "Assisted Orders".
2. In the Definition canvas, drag in an Orders metric. Then, adjust the attribution model through the settings gear by checking the **Use non-default attribution models** checkbox.
3. Select **Custom** as the attribution model. Change the weights to 0 (starter), 100 (player), and 0 (closer).

4. Save the metric.

5. Create a freeform table in Analysis Workspace with the Marketing Channel dimension, Orders and your new Assisted Orders metric.
This is an easy way to tell which Marketing Channels assisted in driving orders. Alternatively, from a freeform table, you can right-click any metric and adjust the attribution model directly from the table.

**Using Functions**

Functions let you filter/sort your data and do statistical analysis.

For a list of all functions, refer to *Basic Functions* and *Advanced Functions*.

💡 **Note:** When including functions in a calculated metrics formula, always apply the function before dragging in metrics or segments.

Watch this [video](#) to understand the use of functions.

**Participation Metric**

With the Calculated Metric builder, anyone can create a participation metric.

💡 **Note:** You used to have to do this via the Admin Tools. You can still enable participation metrics in the Admin Tools, but only for custom events 1 - 100.

Here is a simple use case: You are a content owner and you want to see which pages contributed to (participated in) visits that contained an order. Here’s how:

1. Create a new metric in the Calculated Metric Builder.
2. Drag the success event *Orders* into the Definition canvas.
3. Change the *attribution model* of that event to *Participation* under the *Settings* gear. Choose *Visit* lookback. The definition should look similar to this:

4. Save the metric.
5. Use the calculated metric in a *Pages* report.
6. (Optional) Share the metric with other users in your organization.

**Tag Calculated Metrics**

In the Calculated Metric Manager, tagging segments allows you to organize them. All users can create tags for calculated metrics and apply one or more tags to a metric. However, you can see tags only for those calculated metrics that you own or that have been shared with you. What kinds of tags should you create? Here are some suggestions for useful tags:

- **Tags based on team names**, such as Social Marketing, Mobile Marketing.
- **Project tags** (analysis tags), such as Entry-page analysis.
- **Category tags**: Men's; geography.
- **Workflow tags**: To be approved; Curated for (a specific business unit)

1. In the Calculated Metric Manager, mark the checkbox next to the metric you want to tag. The management tool bar appears:
2. Click **Tag** and either
   - select from existing tags, or
   - add a new tag name in the Add Tags/Search dialog box and press **Enter**.
3. Click **Tag** again to tag the metric.

The tag should now appear in the Tags column. (Click the gear icon on the top right to manage your columns.)

You can also filter on tags by going to **Show Filters > Tags**.

**Approve Calculated Metrics**

Within the Calculated Metric Manager, you can set up a workflow that includes approving metrics for various levels of application and for specific departments or groups.

Here is how to flag a calculated metric as approved:

1. In Calculated Metric Manager, check the checkbox to the left of the metric title.
2. Click **Approve** in the management task at the top.
3. Consider sharing the approved calculated metric/s with your organization.
4. Click **OK**.
5. Notice the approval icon next to the calculated metric in the list:
6. You can also click **Unapprove** to take this metric off the list of approved ones.
7. And you can filter on approved metrics by clicking **Show Filters > Other Filters > Approved**.

**Share Calculated Metrics**

Depending on your permissions, you can share metrics with your whole organization, groups, or individual users.

<table>
<thead>
<tr>
<th>Administrator</th>
<th>Can share metrics with All, with Groups, and with Users. Groups are set up as permission groups in the Admin console.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Administrator</td>
<td>Can share metrics only with individual users.</td>
</tr>
</tbody>
</table>
When should you share metrics with the entire company versus just a group of users or individuals? Here are some best practices you might follow:

- As an Admin, share a metric with All if it's of use to the entire company and everyone is comfortable using it. In this case, you should also consider making it an approved metric.
- As an Admin, share a metric with a specific Group if the metric provides good business value for that team.
- As an Admin or an individual user, share a metric with other individuals to vet and validate it. If it doesn't prove useful, it can be discarded. Do not officially approve this type of metric.

1. In the Calculated Metric Manager, mark the checkbox next to the metric you want to share. The task bar appears:

2. Click the Share icon.

3. Click Share.

   The Shared icon appears next to the metric: 📝

4. You can filter on metrics shared with you by going to Filters > Other Filters > Shared with Me.

**Calculated Metric Manager**

The Calculated Metric Manager offers many ways of curating metrics, such as sharing, filtering, tagging, approving, copying, deleting, and marking as favorites.

The Calculated Metric Manager shows you all the segments you own and that have been shared with you. Admin-level users can see all custom metrics in the organization. This overview presents the user interface and the capabilities of the Calculated Metric Manager. Access it by
• Going to **Analytics > Components** in the left navigation. Then click **Calculated Metrics**.

![Calculated Metrics Workflow](image)

<table>
<thead>
<tr>
<th>#</th>
<th>UI Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Calculated Metrics Management Tool Bar</td>
<td>Once you have checked a metric, this tool bar appears. Most management tasks can be completed from this tool bar.</td>
</tr>
<tr>
<td>2</td>
<td>Show/Hide Filters</td>
<td>Clicking Show Filters brings up the filter menu. You can filter by Tags, Report Suites, Owners, Show All (Admin only), Shared with Me, Mine, Favorites, and Approved.</td>
</tr>
<tr>
<td>3</td>
<td>Check boxes</td>
<td>Check a custom metric in order to manage it.</td>
</tr>
<tr>
<td>4</td>
<td>Favorites</td>
<td>Clicking the star next to a metric turns the star yellow and marks the metric as a favorite.</td>
</tr>
<tr>
<td>5</td>
<td>Segment titles and descriptions</td>
<td>Provided in the Calculated Metric Builder. To edit the title and description, click the title link - this takes you back to the Calculated Metric Builder.</td>
</tr>
<tr>
<td>6</td>
<td>Report Suites</td>
<td>This column indicates in which report suite the metric was last saved.</td>
</tr>
<tr>
<td>7</td>
<td>Owner</td>
<td>Indicates who owns the custom metric. As a non-Admin, you can see only metrics you own or those that were shared with you.</td>
</tr>
<tr>
<td>8</td>
<td>Tags</td>
<td>Shows tags that were applied to the metric, either by you or by people who shared the segment with you.</td>
</tr>
<tr>
<td>9</td>
<td>Shared with</td>
<td>Lists individuals or groups (Admin only) or All (Admin only) that you shared the segment with.</td>
</tr>
<tr>
<td>10</td>
<td>Column selector</td>
<td>Lets you select or deselect columns in the Calculated Metric Manager so that you can customize the view.</td>
</tr>
<tr>
<td>11</td>
<td>Shared icon (not shown)</td>
<td>Indicates that this custom metric is shared by you or with you.</td>
</tr>
<tr>
<td>12</td>
<td>Approved icon (not shown)</td>
<td>Indicates that this custom metric has been approved by an Administrator.</td>
</tr>
</tbody>
</table>
Basic Functions

The Calculated Metrics Builder lets you apply statistical and mathematical functions to build Advanced Calculated Metrics.

Here is an alphabetical list of the functions and their definitions.

💡 Note: Where metric is identified as an argument in a function, other expressions of metrics are also allowed. For example, MAXV(metrics) also allows for MAXV(PageViews + Visits).

Table Functions versus Row Functions

A table function is one where the output is the same for every row of the table. A row function is one where the output is different for every row of the table.

Absolute Value (Row)

Returns the absolute value of a number. The absolute value of a number is the number with a positive value.

ABS(metric)

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>metric</td>
<td>The metric for which you want the absolute value.</td>
</tr>
</tbody>
</table>

Column Maximum

Returns the largest value in a set of dimension elements for a metric column. MAXV evaluates vertically within a single column (metric) across dimension elements.

MAXV(metric)

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>metric</td>
<td>A metric that you would like to have evaluated.</td>
</tr>
</tbody>
</table>

Column Minimum

Returns the smallest value in a set of dimension elements for a metric column. MINV evaluates vertically within a single column (metric) across dimension elements.

MINV(metric)

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>metric</td>
<td>A metric that you would like to have evaluated.</td>
</tr>
</tbody>
</table>
Column Sum

Adds all of the numeric values for a metric within a column (across the elements of a dimension).

\[ \text{SUM}(\text{metric}) \]

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>\text{metric}</td>
<td>The metric for which you want the total value or sum.</td>
</tr>
</tbody>
</table>

Count (Table)

Returns the number, or count, of non-zero values for a metric within a column (the number of unique elements reported within a dimension).

\[ \text{COUNT}(\text{metric}) \]

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>\text{metric}</td>
<td>The metric that you want to count.</td>
</tr>
</tbody>
</table>

Exponent (Row)

Returns \( e \) raised to the power of a given number. The constant \( e \) equals 2.71828182845904, the base of the natural logarithm. \( \text{EXP} \) is the inverse of \( \text{LN} \), the natural logarithm of a number.

\[ \text{EXP}(\text{metric}) \]

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>\text{metric}</td>
<td>The exponent applied to the base ( e ).</td>
</tr>
</tbody>
</table>

Exponentiation

Power Operator

\[ \text{pow}(x, y) = x^y = x \times x \times x \times \ldots \quad (y \text{ times}) \]

Mean (Table)

Returns the arithmetic mean, or average, for a metric in a column.

\[ \text{MEAN}(\text{metric}) \]

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>\text{metric}</td>
<td>The metric for which you want the average.</td>
</tr>
</tbody>
</table>

Median (Table)

Returns the median for a metric in a column. The median is the number in the middle of a set of numbers—that is, half the numbers have values that are greater than or equal to the median, and half are less than or equal to the median.

\[ \text{MEDIAN}(\text{metric}) \]
<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>metric</td>
<td>The metric for which you want the median.</td>
</tr>
</tbody>
</table>

**Modulo**

The remainder of col1 / col2, using Euclidean division.

Returns the remainder after dividing x by y.

\[ x = \text{floor}(x/y) + \text{modulo}(x,y) \]

The return value has the same sign as the input (or is zero).

- \( \text{modulo}(4,3) = 1 \)
- \( \text{modulo}(-4,3) = -1 \)
- \( \text{modulo}(-3,3) = 0 \)

To always get a positive number, use

\[ \text{modulo}(\text{modulo}(x,y)+y,y) \]

**Percentile (Table)**

Returns the k-th percentile of values for a metric. You can use this function to establish a threshold of acceptance. For example, you can decide to examine dimension elements who score above the 90th percentile.

\[ \text{PERCENTILE}(\text{metric},k) \]

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>metric</td>
<td>The metric column that defines relative standing.</td>
</tr>
<tr>
<td>k</td>
<td>The percentile value in the range 0 to 100, inclusive.</td>
</tr>
</tbody>
</table>

**Quartile (Table)**

Returns the quartile of values for a metric. For example, quartiles can be used to find the top 25% of products driving the most revenue. MINV, MEDIAN, and MAXV return the same value as QUARTILE when quart is equal to 0 (zero), 2, and 4, respectively.

\[ \text{QUARTILE}(\text{metric},\text{quart}) \]

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>metric</td>
<td>The metric for which you want the quartile value.</td>
</tr>
<tr>
<td>quart</td>
<td>Indicates which *value to return.</td>
</tr>
</tbody>
</table>

*If \( \text{quart} = 0 \), QUARTILE returns the minimum value. If \( \text{quart} = 1 \), QUARTILE returns the first quartile (25\(^{\text{th}}\) percentile). If \( \text{quart} = 2 \), QUARTILE returns the first quartile (50\(^{\text{th}}\) percentile). If \( \text{quart} = 3 \), QUARTILE returns the first quartile (75\(^{\text{th}}\) percentile). If \( \text{quart} = 4 \), QUARTILE returns the maximum value.*
**Round**

Returns the nearest integer for a given value. For example, if you want to avoid reporting currency decimals for revenue and a product has $569.34, use the formula `Round(Revenue)` to round revenue to the nearest dollar, or $569. A product reporting $569.51 will be round to the nearest dollar, or $570.

```
ROUND(metric)
```

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>number</td>
<td>The metric you want to round.</td>
</tr>
</tbody>
</table>

Round without a digits parameter is the same as round with a digits parameter of 0, namely round to the nearest integer. With a digits parameter it returns that many digits to the right of the decimal. If digits is negative, it returns 0's to the left of the decimal.

```
round( 314.15, 0) = 314
round( 314.15, 1) = 314.1
round( 314.15, -1) = 310
round( 314.15, -2) = 300
```

**Row Count**

Returns the count of rows for a given column (the number of unique elements reported within a dimension). “Uniques exceeded” is counted as 1.

**Row Max**

The maximum of the columns in each row.

**Row Min**

The minimum of the columns in each row.

**Row Sum**

The sum of the columns of each row.

**Square Root (Row)**

Returns the positive square root of a number. The square root of a number is the value of that number raised to the power of 1/2.

```
SQRT(metric)
```

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>number</td>
<td>The metric for which you want the square root.</td>
</tr>
</tbody>
</table>

**Standard Deviation (Table)**

Returns the standard deviation, or square root of the variance, based on a sample population of data.

The equation for STDEV is:
where $x$ is the sample mean ($\text{metric}$) and $n$ is the sample size.

\[ \sqrt{\frac{\sum (x - \overline{x})^2}{n}} \]

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\text{metric}$</td>
<td>The metric for which you want for standard deviation.</td>
</tr>
</tbody>
</table>

**Variance (Table)**

Returns the variance based on a sample population of data.

The equation for VARIANCE is:

\[ \frac{\sum (x - \overline{x})^2}{n} \]

where $x$ is the sample mean, $\text{MEAN(\text{metric})}$, and $n$ is the sample size.

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\text{metric}$</td>
<td>The metric for which you want the variance.</td>
</tr>
</tbody>
</table>

In order to calculate a variance you look at an entire column of numbers. From that list of numbers you first calculate the average. Once you have the average you go through each entry and do the following:

1. Subtract the average from the number.
2. Square the result.
3. Add that to the total.

Once you have iterated over the entire column you have a single total. You then divide that total by the number of items in the column. That number is the variance for the column. It is a single number. It is, however, displayed as a column of numbers.

As an example, let's say you have a three-item column:

1
2
3

The average of this column is 2. The variance for the column will be $( (1 - 2)^2 + (2 - 2)^2 + (3 - 2)^2 )/3 = 2/3$. In Ad Hoc Analysis this will look like this:

1 2/3
2 2/3
Advanced Functions

Access these functions by checking Show Advanced in the Functions drop-down list.

Table Functions versus Row Functions

A table function is one where the output is the same for every row of the table. A row function is one where the output is different for every row of the table.

What does the Include-Zeros parameter mean?

It tells whether to include zeros in the computation. Sometimes zero means "nothing", but sometimes it's important.

For example, if you have a Revenue metric, and then add a Page Views metric to the report, there are suddenly more rows for your revenue which are all zero. You probably don't want this to affect any MEAN, MIN, QUARTILE, etc. calculations that you have on the revenue column. In this case, you would check the include-zeros parameter.

On the other hand, if you have two metrics that you are interested in, it may not be fair to say that one has a higher average or minimum because some of its rows were zeros, so you would not check the parameter to include the zeros.

AND

Returns the value of its argument. Use NOT to make sure that a value is not equal to one particular value.

*Note:* 0 (zero) means False, and any other value is True.

\[
\text{AND}(\text{logical\_test1},[\text{logical\_test2}],...)
\]

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>\text{logical_test1}</td>
<td>Required. Any value or expression that can be evaluated to TRUE or FALSE.</td>
</tr>
<tr>
<td>\text{logical_test2}</td>
<td>Optional. Additional conditions that you want to evaluate as TRUE or FALSE.</td>
</tr>
</tbody>
</table>

Approximate Count Distinct (dimension)

Returns the approximated distinct count of dimension items for the selected dimension. The function uses the HyperLogLog (HLL) method of approximating distinct counts. It is configured to guarantee the value is within 5% of the actual value 95% of the time.

\[
\text{Approximate Count Distinct (dimension)}
\]

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>\text{dimension}</td>
<td>The dimension for which you want the approximate distinct item count.</td>
</tr>
</tbody>
</table>

Example Use Case

Approximate Count Distinct (customer ID eVar) is a common use case for this function.

Definition for a new ‘Approximate Customers’ calculated metric:
This is how the "Approximate Customers" metric could be used in reporting:

Uniques Exceeded
Like Count() and RowCount(), Approximate Count Distinct() is subject to "uniques exceeded" limits. If the "uniques exceeded" limit is reached within a particular month for a dimension, the value is counted as 1 dimension item.

Comparing Count Functions
Approximate Count Distinct() is an improvement over Count() and RowCount() functions because the metric created can be used in any dimensional report to render an approximated count of items for a separate dimension. For example, a count of customer IDs used in a Mobile Device Type report.

This function will be marginally less accurate than Count() and RowCount() because it uses the HLL method, whereas Count() and RowCount() are exact counts.

Arc Cosine (Row)
Returns the arccosine, or inverse of the cosine, of a metric. The arccosine is the angle whose cosine is number. The returned angle is given in radians in the range 0 (zero) to pi. If you want to convert the result from radians to degrees, multiply it by 180/PI().

\[
\text{ACOS} \ (\text{metric})
\]

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>\text{metric}</td>
<td>The cosine of the angle you want from -1 to 1.</td>
</tr>
</tbody>
</table>
Arc Sine (Row)

Returns the arcsine, or inverse sine, of a number. The arcsine is the angle whose sine is number. The returned angle is given in radians in the range -pi/2 to pi/2. To express the arcsine in degrees, multiply the result by 180/PI().

\[ \text{ASIN}(\text{metric}) \]

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>\textit{metric}</td>
<td>The cosine of the angle you want from -1 to 1.</td>
</tr>
</tbody>
</table>

Arc Tangent (Row)

Returns the arctangent, or inverse tangent, of a number. The arctangent is the angle whose tangent is number. The returned angle is given in radians in the range -pi/2 to pi/2. To express the arctangent in degrees, multiply the result by 180/PI().

\[ \text{ATAN}(\text{metric}) \]

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>\textit{metric}</td>
<td>The cosine of the angle you want from -1 to 1.</td>
</tr>
</tbody>
</table>

Exponential Regression: Predicted Y (Row)

Calculates the predicted y-values (\textit{metric}_Y), given the known x-values (\textit{metric}_X) using the "least squares" method for calculating the line of best fit based on \( Y = b \times \exp(a \times X) \).

\[ \text{ESTIMATE.EXP}(\textit{metric}_X, \textit{metric}_Y) \]

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>\textit{metric}_X</td>
<td>A metric that you would like to designate as the dependent data.</td>
</tr>
<tr>
<td>\textit{metric}_Y</td>
<td>A metric that you would like to designate as the independent data.</td>
</tr>
</tbody>
</table>

Cdf-T

Returns the percentage of values in a student's t-distribution with \( n \) degrees of freedom that have a z-score less than \( x \).

\[
cdf_{t}( - , n ) = 0 \\
cdf_{t}( , n ) = 1 \\
cdf_{t}( 3, 5 ) = 0.99865 \\
cdf_{t}( -2, 7 ) = 0.0227501 \\
cdf_{t}( x, ) = \text{cdf}_z( x )
\]

Cdf-Z

Returns the percentage of values in a normal distribution that have a z-score less than \( x \).

\[
cdf_{z}( - ) = 0 \\
cdf_{z}( ) = 1 \\
cdf_{z}( 0 ) = 0.5 \\
cdf_{z}( 2 ) = 0.97725 \\
cdf_{z}( -3 ) = 0.0013499
\]
Ceiling (Row)

Returns the smallest integer not less than a given value. For example, if you want to avoid reporting currency decimals for revenue and a product has $569.34, use the formula CEILING(Revenue) to round revenue up to the nearest dollar, or $570.

\[
\text{CEILING}(\text{metric})
\]

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>metric</td>
<td>The metric that you want to round.</td>
</tr>
</tbody>
</table>

Cosine (Row)

Returns the cosine of the given angle. If the angle is in degrees, multiply the angle by PI(\()/180.

\[
\text{COS}(\text{metric})
\]

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>metric</td>
<td>The angle in radians for which you want the cosine.</td>
</tr>
</tbody>
</table>

Cube Root

Returns the positive cube root of a number. The cube root of a number is the value of that number raised to the power of 1/3.

\[
\text{CBRT}(\text{metric})
\]

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>metric</td>
<td>The metric for which you want the cube root.</td>
</tr>
</tbody>
</table>

Cumulative

Returns the sum of x for the last N rows (as ordered by the dimension, using hash values for string based fields).

If N <= 0 it uses all previous rows. Since it’s ordered by the dimension it’s only useful on dimensions that have a natural order like date or path length.

<table>
<thead>
<tr>
<th>Date</th>
<th>Rev</th>
<th>cumul(0,Rev)</th>
<th>cumul(2,Rev)</th>
</tr>
</thead>
<tbody>
<tr>
<td>May</td>
<td>$500</td>
<td>$500</td>
<td>$500</td>
</tr>
<tr>
<td>June</td>
<td>$200</td>
<td>$700</td>
<td>$700</td>
</tr>
<tr>
<td>July</td>
<td>$400</td>
<td>$1100</td>
<td>$600</td>
</tr>
</tbody>
</table>

Cumulative Average

Returns the average of the last N rows.

If N <= 0 it uses all previous rows. Since it’s ordered by the dimension it’s only useful on dimensions that have a natural order like date or path length.
Note: This does not work as you might expect with rate metrics like revenue/visitor: it averages the rates instead of summing revenue over the last N and summing visitors over the last N and then dividing them. Instead, use

\[
\text{cumul(revenue)}/\text{cumul(visitor)}
\]

Equal

Returns items that match exactly for a numeric or string value.

Exponential Regression Correlation Coefficient (Table)

Returns the correlation coefficient, \( r \), between two metric columns (\( \text{metric\_A} \) and \( \text{metric\_B} \)) for the regression equation \( y = b\times\exp(a\times x) \).

\[
\text{CORREL.EXP} (\text{metric\_X}, \text{metric\_Y})
\]

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \text{metric_X} )</td>
<td>A metric that you would like to correlate with ( \text{metric_Y} ).</td>
</tr>
<tr>
<td>( \text{metric_Y} )</td>
<td>A metric that you would like to correlate with ( \text{metric_X} ).</td>
</tr>
</tbody>
</table>

Exponential Regression: Intercept (Table)

Returns the intercept, \( b \), between two metric columns (\( \text{metric\_X} \) and \( \text{metric\_Y} \)) for \( Y = b\times\exp(a\times X) \).

\[
\text{INTERCEPT.EXP} (\text{metric\_X}, \text{metric\_Y})
\]

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \text{metric_X} )</td>
<td>A metric that you would like to designate as the dependent data.</td>
</tr>
<tr>
<td>( \text{metric_Y} )</td>
<td>A metric that you would like to designate as the independent data.</td>
</tr>
</tbody>
</table>

Exponential Regression: Slope (Table)

Returns the slope, \( a \), between two metric columns (\( \text{metric\_X} \) and \( \text{metric\_Y} \)) for \( Y = b\times\exp(a\times X) \).

\[
\text{SLOPE.EXP} (\text{metric\_X}, \text{metric\_Y})
\]

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \text{metric_X} )</td>
<td>A metric that you would like to designate as the dependent data.</td>
</tr>
<tr>
<td>( \text{metric_Y} )</td>
<td>A metric that you would like to designate as the independent data.</td>
</tr>
</tbody>
</table>

Floor (Row)

Returns the largest integer not greater than a given value. For example, if you want to avoid reporting currency decimals for revenue and a product has $569.34, use the formula \( \text{FLOOR(Revenue)} \) to round revenue down to the nearest dollar, or $569.

\[
\text{FLOOR} (\text{metric})
\]
<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>metric</td>
<td>The metric you want to round.</td>
</tr>
</tbody>
</table>

**Greater Than**

Returns items whose numeric count is greater than the value entered.

**Greater Than or Equal**

Returns items whose numeric count is greater than or equal to the value entered.

**Hyperbolic Cosine (Row)**

Returns the hyperbolic cosine of a number.

*COSH(metric)*

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>metric</td>
<td>The angle in radians for which you want to find the hyperbolic cosine.</td>
</tr>
</tbody>
</table>

**Hyperbolic Sine (Row)**

Returns the hyperbolic sine of a number.

*SINH(metric)*

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>metric</td>
<td>The angle in radians for which you want to find the hyperbolic sine.</td>
</tr>
</tbody>
</table>

**Hyperbolic Tangent (Row)**

Returns the hyperbolic tangent of a number.

*TANH(metric)*

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>metric</td>
<td>The angle in radians for which you want to find the hyperbolic tangent.</td>
</tr>
</tbody>
</table>

**IF (Row)**

The IF function returns one value if a condition you specify evaluates to TRUE, and another value if that condition evaluates to FALSE.

*IF(logical_test, [value_if_true], [value_if_false])*

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>logical_test</td>
<td>Required. Any value or expression that can be evaluated to TRUE or FALSE.</td>
</tr>
<tr>
<td>[value_if_true]</td>
<td>The value that you want to be returned if the <em>logical_test</em> argument evaluates to TRUE. (This argument defaults to 0 if not included.)</td>
</tr>
<tr>
<td>Argument</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>[value_if_false]</td>
<td>The value that you want to be returned if the logical_test argument evaluates to FALSE. (This argument defaults to 0 if not included.)</td>
</tr>
</tbody>
</table>

**Less Than**

Returns items whose numeric count is less than the value entered.

**Less Than or Equal**

Returns items whose numeric count is less than or equal to the value entered.

**Linear regression_ Correlation Coefficient**

$Y = a \times X + b$. Returns the correlation coefficient

**Linear regression_ Intercept**

$Y = a \times X + b$. Returns $b$.

**Linear regression_ Predicted Y**

$Y = a \times X + b$. Returns $Y$.

**Linear regression_ Slope**

$Y = a \times X + b$. Returns $a$.

**Log Base 10 (Row)**

Returns the base-10 logarithm of a number.

$\log_{10}(\text{metric})$

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>metric</td>
<td>The positive real number for which you want the base-10 logarithm.</td>
</tr>
</tbody>
</table>

**Log regression: Correlation coefficient (Table)**

Returns the correlation coefficient, $r$, between two metric columns ($\text{metric}_X$ and $\text{metric}_Y$) for the regression equation $Y = a \ln(X) + b$. It is calculated using the $\text{CORREL}$ equation.

$\text{CORREL.DEC(\text{metric}_X, \text{metric}_Y)}$

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\text{metric}_X$</td>
<td>A metric that you would like to correlate with $\text{metric}_Y$.</td>
</tr>
<tr>
<td>$\text{metric}_Y$</td>
<td>A metric that you would like to correlate with $\text{metric}_X$.</td>
</tr>
</tbody>
</table>
Log regression: Intercept (Table)

Returns the intercept $b$ as the least squares regression between two metric columns ($\text{metric}_X$ and $\text{metric}_Y$) for the regression equation $Y = a \ln(X) + b$. It is calculated using the $\text{INTERCEPT}$ equation.

$\text{INTERCEPT}$.LOG($\text{metric}_X$, $\text{metric}_Y$)

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\text{metric}_X$</td>
<td>A metric that you would like to designate as the dependent data.</td>
</tr>
<tr>
<td>$\text{metric}_Y$</td>
<td>A metric that you would like to designate as the independent data.</td>
</tr>
</tbody>
</table>

Log Regression: Predicted Y (Row)

Calculates the predicted $y$ values ($\text{metric}_Y$), given the known $x$ values ($\text{metric}_X$) using the "least squares" method for calculating the line of best fit based on $Y = a \ln(X) + b$. It is calculated using the $\text{ESTIMATE}$ equation.

In regression analysis, this function calculates the predicted $y$ values ($\text{metric}_Y$), given the known $x$ values ($\text{metric}_X$) using the logarithm for calculating the line of best fit for the regression equation $Y = a \ln(X) + b$. The $a$ values correspond to each $x$ value, and $b$ is a constant value.

$\text{ESTIMATE}$.LOG($\text{metric}_X$, $\text{metric}_Y$)

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\text{metric}_X$</td>
<td>A metric that you would like to designate as the dependent data.</td>
</tr>
<tr>
<td>$\text{metric}_Y$</td>
<td>A metric that you would like to designate as the independent data.</td>
</tr>
</tbody>
</table>

Log regression: Slope (Table)

Returns the slope, $a$, between two metric columns ($\text{metric}_X$ and $\text{metric}_Y$) for the regression equation $Y = a \ln(X) + b$. It is calculated using the $\text{SLOPE}$ equation.

$\text{SLOPE}$.LOG($\text{metric}_A$, $\text{metric}_B$)

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\text{metric}_A$</td>
<td>A metric that you would like to designate as the dependent data.</td>
</tr>
<tr>
<td>$\text{metric}_B$</td>
<td>A metric that you would like to designate as the independent data.</td>
</tr>
</tbody>
</table>

Natural Log

Returns the natural logarithm of a number. Natural logarithms are based on the constant $e$ ($2.71828182845904$). LN is the inverse of the EXP function.

$\text{LN}$(metric)

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>metric</td>
<td>The positive real number for which you want the natural logarithm.</td>
</tr>
</tbody>
</table>
**NOT**

Returns 1 if the number is 0 or returns 0 if another number.

\[ \text{NOT(logical)} \]

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>logical</td>
<td>Required. A value or expression that can be evaluated to TRUE or FALSE.</td>
</tr>
</tbody>
</table>

Using NOT requires knowing if the expressions (<, >, =, <>, etc.) return 0 or 1 values.

**Not equal**

Returns all items that do not contain the exact match of the value entered.

**Or (Row)**

Returns TRUE if any argument is TRUE, or returns FALSE if all arguments are FALSE.

💡 *Note:* 0 (zero) means False, and any other value is True.

\[ \text{OR(logical_test1, [logical_test2],...)} \]

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>logical_test1</td>
<td>Required. Any value or expression that can be evaluated to TRUE or FALSE.</td>
</tr>
<tr>
<td>logical_test2</td>
<td>Optional. Additional conditions that you want to evaluate as TRUE or FALSE</td>
</tr>
</tbody>
</table>

**Pi**

Returns the constant PI, 3.14159265358979, accurate to 15 digits.

\[ \text{PI()} \]

The \text{PI} function has no arguments.

**Power regression: Correlation coefficient (Table)**

Returns the correlation coefficient, \( r \), between two metric columns (\text{metric}_X \text{ and metric}_Y) for \( Y = b \cdot X^a \).

\[ \text{CORREL.POWER(metric}_X, \text{ metric}_Y) \]

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>metric_X</td>
<td>A metric that you would like to correlate with metric_Y.</td>
</tr>
<tr>
<td>metric_Y</td>
<td>A metric that you would like to correlate with metric_X.</td>
</tr>
</tbody>
</table>

**Power regression: Intercept (Table)**

Returns the intercept, \( b \), between two metric columns (\text{metric}_X \text{ and metric}_Y) for \( Y = b \cdot X^a \).

\[ \text{INTERCEPT.POWER(metric}_X, \text{ metric}_Y) \]
### Power regression: Predicted Y (Row)

Calculates the predicted \( y \) values \((\text{metric}_Y)\), given the known \( x \) values \((\text{metric}_X)\) using the "least squares" method for calculating the line of best fit for \( Y = b \cdot x^a \).

\[
\text{ESTIMATE.POWER}(\text{metric}_X, \text{metric}_Y)
\]

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>\text{metric}_X</td>
<td>A metric that you would like to designate as the dependent data.</td>
</tr>
<tr>
<td>\text{metric}_Y</td>
<td>A metric that you would like to designate as the independent data.</td>
</tr>
</tbody>
</table>

### Power regression: Slope (Table)

Returns the slope, \( a \), between two metric columns \((\text{metric}_X \text{ and } \text{metric}_Y)\) for \( Y = b \cdot x^a \).

\[
\text{SLOPE.POWER}(\text{metric}_X, \text{metric}_Y)
\]

<table>
<thead>
<tr>
<th>Argument</th>
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</thead>
<tbody>
<tr>
<td>\text{metric}_X</td>
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</tr>
<tr>
<td>\text{metric}_Y</td>
<td>A metric that you would like to designate as the independent data.</td>
</tr>
</tbody>
</table>

### Quadratic regression: Correlation coefficient (Table)

Returns the correlation coefficient, \( r \), between two metric columns \((\text{metric}_X \text{ and } \text{metric}_Y)\) for \( Y=(a \cdot x+b)^2 \).

\[
\text{CORREL.QUADRATIC}(\text{metric}_X, \text{metric}_Y)
\]

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>\text{metric}_X</td>
<td>A metric that you would like to correlate with \text{metric}_Y.</td>
</tr>
<tr>
<td>\text{metric}_Y</td>
<td>A metric that you would like to correlate with \text{metric}_X.</td>
</tr>
</tbody>
</table>

### Quadratic regression: Intercept (Table)

Returns the intercept, \( b \), between two metric columns \((\text{metric}_X \text{ and } \text{metric}_Y)\) for \( Y=(a \cdot x+b)^2 \).

\[
\text{INTERCEPT.POWER}(\text{metric}_X, \text{metric}_Y)
\]

<table>
<thead>
<tr>
<th>Argument</th>
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<tr>
<td>\text{metric}_X</td>
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</tr>
<tr>
<td>\text{metric}_Y</td>
<td>A metric that you would like to designate as the independent data.</td>
</tr>
</tbody>
</table>
Quadratic regression: Predicted Y (Row)

Calculates the predicted $y$ values ($\text{metric}_Y$), given the known $x$ values ($\text{metric}_X$) using the least squares method for calculating the line of best fit using $Y=(a*X+b)^2$.

\text{ESTIMATE.QUADRATIC}(\text{metric}_A, \text{metric}_B)

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\text{metric}_A$</td>
<td>A metric that you would like to designate as the dependent data.</td>
</tr>
<tr>
<td>$\text{metric}_B$</td>
<td>A metric that you would like to designate as the dependent data.</td>
</tr>
</tbody>
</table>

Quadratic regression: Slope (Table)

Returns the slope, $a$, between two metric columns ($\text{metric}_X$ and $\text{metric}_Y$) for $Y=(a*X+b)^2$.

\text{SLOPE.QUADRATIC}(\text{metric}_X, \text{metric}_Y)

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\text{metric}_X$</td>
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</tr>
<tr>
<td>$\text{metric}_Y$</td>
<td>A metric that you would like to designate as the independent data.</td>
</tr>
</tbody>
</table>

Reciprocal regression: Correlation coefficient (Table)

Returns the correlation coefficient, $r$, between two metric columns ($\text{metric}_X$) and $\text{metric}_Y$ for $Y = a/X+b$.

\text{CORREL.RECIPROCAL}(\text{metric}_X, \text{metric}_Y)

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\text{metric}_X$</td>
<td>A metric that you would like to correlate with $\text{metric}_Y$.</td>
</tr>
<tr>
<td>$\text{metric}_Y$</td>
<td>A metric that you would like to correlate with $\text{metric}_X$.</td>
</tr>
</tbody>
</table>

Reciprocal regression: Intercept (Table)

Returns the intercept, $b$, between two metric columns ($\text{metric}_X$ and $\text{metric}_Y$) for $Y = a/X+b$.

\text{INTERCEPT.RECIPROCAL}(\text{metric}_A, \text{metric}_B)

<table>
<thead>
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</thead>
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<tr>
<td>$\text{metric}_Y$</td>
<td>A metric that you would like to designate as the independent data.</td>
</tr>
</tbody>
</table>

Reciprocal regression: Predicted Y (Row)

Calculates the predicted $y$ values ($\text{metric}_Y$), given the known $x$ values ($\text{metric}_X$) using the least squares method for calculating the line of best fit using $Y = a/X+b$.

\text{ESTIMATE.RECIPROCAL}(\text{metric}_X, \text{metric}_Y)
Reciprocal regression: Slope (Table)

Returns the slope, $a$, between two metric columns ($\text{metric}_X$ and $\text{metric}_Y$) for $Y = a/X + b$.

$$SLOPE.RECIPROCAL(\text{metric}_X, \text{metric}_Y)$$

<table>
<thead>
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<tbody>
<tr>
<td>$\text{metric}_X$</td>
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</tr>
<tr>
<td>$\text{metric}_Y$</td>
<td>A metric that you would like to designate as the independent data.</td>
</tr>
</tbody>
</table>

Sine (Row)

Returns the sine of the given angle. If the angle is in degrees, multiply the angle by $\pi$/180.

$$\text{SIN}(\text{metric})$$

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\text{metric}$</td>
<td>The angle in radians for which you want the sine.</td>
</tr>
</tbody>
</table>

T-Score

Alias for Z-Score, namely the deviation from the mean divided by the standard deviation

T-Test

Performs an $m$-tailed t-test with t-score of col and $n$ degrees of freedom.

The signature is $t\_test(\ x, \ n, \ m \ )$. Underneath, it simply calls $m*cdf\_t(-abs(x),n)$.(This is similar to the z-test function which runs $m*cdf\_z(-abs(x))$).

Here, $m$ is the number of tails, and $n$ is the degrees of freedom. These should be numbers (constant for the whole report, i.e. not changing on a row by row basis).

$x$ is the t-test statistic, and would often be a formula (e.g. zscore) based on a metric and will be evaluated on every row.

The return value is the probability of seeing the test statistic $x$ given the degrees of freedom and number of tails.

Examples:

1. Use it to find outliers:

$$t\_test(\ zscore(bouncerate), \ row-count-1, \ 2)$$

2. Combine it with $if$ to ignore very high or low bounce rates, and count visits on everything else:

$$if\ (t\_test(\ z-score(bouncerate), \ row-count, \ 2) < 0.01, \ 0, \ visits)$$
Tangent

Returns the tangent of the given angle. If the angle is in degrees, multiply the angle by PI( )/180.

TAN (metric)

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>metric</td>
<td>The angle in radians for which you want the tangent.</td>
</tr>
</tbody>
</table>

Z-Score (Row)

Returns the Z-score, or normal score, based upon a normal distribution. The Z-score is the number of standard deviations an observation is from the mean. A Z-score of 0 (zero) means the score is the same as the mean. A Z-score can be positive or negative, indicating whether it is above or below the mean and by how many standard deviations.

The equation for Z-score is:

\[ Z = \frac{x - \mu}{\sigma} \]

where \( x \) is the raw score, \( \mu \) is the mean of the population, and \( \sigma \) is the standard deviation of the population.

Note: \( \mu \) (mu) and \( \sigma \) (sigma) are calculated from the metric automatically.

Z-score(metric)

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>metric</td>
<td>Returns the value of its first non-zero argument.</td>
</tr>
</tbody>
</table>

Z-Test

Performs an n-tailed Z-test with Z-score of A.

Returns the probability that the current row could be seen by chance in the column.

Note: Assumes that the values are normally distributed.
Metric Compatibility

Explains the three Product Compatibility options.

When you create calculated or advanced calculated metrics in the Calculated Metric Builder, your metric will show as compatible with 1 or more options: Current Data, Fully Processed Data, or Marketing Channel Reports.

<table>
<thead>
<tr>
<th>Compatible with</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Data</td>
<td>The Include Current Data option in Analytics lets you view the latest Analytics data, often before data is fully processed and finalized. Current data displays most metrics within minutes, providing actionable data for quick decision making. Current Data supports calculated metrics only (those that include multiplication, division, addition, and subtraction.) Current Data does not support advanced calculated metrics (that contain segments or functions).</td>
</tr>
<tr>
<td>Fully Processed Data</td>
<td>Data that is fully processed and includes segments and classifications. If you would rather view all metrics after the data is fully processed, you can disable Current Data by removing users from the Current Data Users group.</td>
</tr>
<tr>
<td>Marketing Channel Reports</td>
<td>Metrics with first-touch allocation are compatible only with Marketing Channel reports.</td>
</tr>
</tbody>
</table>
## Calculated Metrics: Role-Based Rights

Calculated metrics rights differ between Admin-level users and non-Admins.

<table>
<thead>
<tr>
<th></th>
<th>Creating</th>
<th>Sharing</th>
<th>Viewing/Managing</th>
<th>Approving</th>
<th>Applying</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Admin-level users</strong></td>
<td>Admins can create calculated metrics as well as create <em>groups</em> to limit the rights of users to create calculated metrics.</td>
<td>Can share with entire company, with user groups, and with individual users.</td>
<td>Reports &amp; Analytics: Can view/edit/delete/etc. their own and other users’ calculated metrics. Ad Hoc Analysis and Report Builder: Can view/edit/delete/etc. their own calculated metrics and those shared with them.</td>
<td>Can approve calculated metrics as canonical.</td>
<td>Can apply any calculated metrics across the whole organization.</td>
</tr>
<tr>
<td><strong>Non-Admin-level users</strong></td>
<td>By default, users can create calculated metrics. However, these rights may be limited by Administrators.</td>
<td>Can share with individual users only</td>
<td>Can view/edit/delete/etc. only their own calculated metrics. Non-admin users must have access to all the component events to be able to see a shared metrics (the permissions in the Admin console are still enforced). If a dashboard or scheduled report is shared with a non-admin user and they don’t have the metric shared with them, the report will run with the metric applied (assuming they have permissions to view the events). However, they will not be able to see the definition or edit the metric.</td>
<td>Can only consume approved calculated metrics; cannot mark as approved.</td>
<td>Can apply their own calculated metrics and segments that have been shared with them.</td>
</tr>
</tbody>
</table>
Contact and Legal Information

Information to help you contact Adobe and to understand the legal issues concerning your use of this product and documentation.

Help & Technical Support

The Adobe Experience Cloud Customer Care team is here to assist you and provides a number of mechanisms by which they can be engaged:

- Check the Experience Cloud help pages for advice, tips, and FAQs
- Ask us a quick question on Twitter @AdobeExpCare
- Log an incident in our customer portal
- Contact the Customer Care team directly
- Check availability and status of Experience Cloud Solutions

Service, Capability & Billing

Dependent on your solution configuration, some options described in this documentation might not be available to you. As each account is unique, please refer to your contract for pricing, due dates, terms, and conditions. If you would like to add to or otherwise change your service level, or if you have questions regarding your current service, please contact your Account Manager.

Feedback

We welcome any suggestions or feedback regarding this solution. Enhancement ideas and suggestions can be added to our Customer Idea Exchange.

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