

# MATTEO ZAMBON

## REPORTS IN GA4 AND BIGQUERY

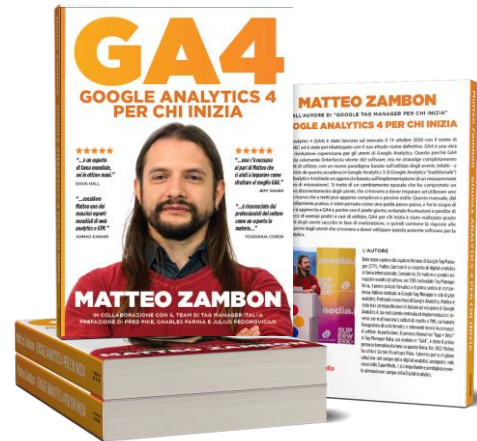
I will dig up concrete best practices, real case study and solutions to solve practical problems we faced during implementations for our major customers.



# MATTEO ZAMBON

## Tag Manager Italia

- Digital Analyst
- Founder of Tag Manager Italia
- Lecturer at University of Bergamo
- Beta Tester of Google Tag Manager
- Alpha Tester of Google Analytics 4







Tal Management Italia









# Top Analytics Educator Winner



**Matteo Zambon**  
Founder of Tag Manager Italia



**Quanties**











**I'M PRETTY SURE  
OF THREE THINGS...**



1. My GTM Skills  $\gg$  My English skills



1. My GTM Skills **>** My English skills

2. My GA4 Skills **>** My English skills





YOU  
The Art Of Solving Problems

a from @Team\_Simmer at #SPWK





# HELP ME HELP YOU

The Art Of Solving Problems



@SimoAhava from @Team\_Simmer at #SPWK







**3. Help the community  
and the **community** will help you**



# How to move FROM Enhanced Ecommerce tracking TO Google Analytics 4 ecommerce tracking with Google Tag Manager



[www.tagmanageritalia.it](http://www.tagmanageritalia.it)

[www.tagmanageritalia.it/how-to-move-from-enhanced-ecommerce-tracking-to-google-analytics-4-ecommerce-tracking-with-google-tag-manager/](http://www.tagmanageritalia.it/how-to-move-from-enhanced-ecommerce-tracking-to-google-analytics-4-ecommerce-tracking-with-google-tag-manager/)





## EEC dataLayer Builder for GA4

by [matteo-zambon-gtm](#) ✓

Add to workspace

WEB VARIABLE

### Description

This original template converts existing Enhanced E-commerce events from the "old" version of Google Analytics (Universal Analytics) to the new Google Analytics 4 E-commerce events

### What's new

Added makeInteger parsing for quantities

### Permissions ⓘ

	<b>Accesses global variables</b> Accesses a global variable (potentially including sensitive APIs)	▼
	<b>Logs to console</b> Logs to the developer console and Tag Manager's preview mode	▼
	<b>Reads data layer</b> Reads data from the dataLayer	▼

### LAST UPDATED

June 18, 2021

### LINKS

- [Homepage](#)
- [Documentation](#)
- [Repository](#)
- [Report issue](#)
- [Report abuse](#)

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A1:D1 fx

This document was written by [Matteo Zambon](#) of Tag Manager Italia.**Did you find a GA4 bug?**Please, send an email to [matteo@tagmanageritalia.it](mailto:matteo@tagmanageritalia.it) and I will insert the bug in this document

Found on	Category	Fixed	Tnx to	Description	How To fix	Other info	Fixed
Since 2020	DebugView	<input type="checkbox"/>		The price on the DebugView is multiplicated by 1,000,000 For example 110 you <b>will see 110000000</b>	No solution. Please send this feedback to Google Team		
March 30, 2022	DebugView	<input type="checkbox"/>	Matteo Zambon	if you push many items (for example 15 items on the view_item_list) the payload of the request "change" and that event is not available on the DebugView.	Fortunately it just a DebugView problem, so we will waiting for the fix	<a href="https://www.linkedin.com/pulse/i-found-2-bugs-debuv-google-analytics-4-matteo-zambon/">https://www.linkedin.com/pulse/i-found-2-bugs-debuv-google-analytics-4-matteo-zambon/</a>	
March 31, 2022	DebugView	<input type="checkbox"/>	Matteo Zambon	If you use items parameters on the view_item_list event: promotion_id, promotion_name, item_list_id, item_list_name  the DebugView show you 3 different items: - Name of Product - Item 1 - Item 2	Fortunately it just a DebugView problem, so we will waiting for the fix	<a href="https://www.linkedin.com/pulse/i-found-2-bugs-debuv-google-analytics-4-matteo-zambon/">https://www.linkedin.com/pulse/i-found-2-bugs-debuv-google-analytics-4-matteo-zambon/</a>	
April 5, 2022	Explore Report	<input checked="" type="checkbox"/>	Matteo Zambon Eugen Potlog Charles Farina	if you select dimensions and/or metrics by clicking on the label, won't do the import. Instead, if you click on the checkbox and it will work.	Click the Checkbox and NOT the label of dimensions/metrics	<a href="https://www.youtube.com/watch?v=q8475b37QRo&amp;ab_channel=TagManagerItalia">https://www.youtube.com/watch?v=q8475b37QRo&amp;ab_channel=TagManagerItalia</a>  <a href="https://twitter.com/CharlesFarina/status/1513570060010340354?e=20&amp;t=DqWBoNwU9QM52-6t-PFW9">https://twitter.com/CharlesFarina/status/1513570060010340354?e=20&amp;t=DqWBoNwU9QM52-6t-PFW9</a>	May 20, 2022
April 10, 2022	Audience	<input type="checkbox"/>	Piotrek Sobczyk	In GA4 I approach it in a following way: - Include Users WHEN event 'purchase' + add parameter (item_id IS one of {list of item ids}). The problem is that item_id does not exist as a possible parameter to be used in this way for 'purchase' event. It is not on the parameter list (as well as any other item-related data).	No solution. Please send this feedback to Google Team		For some reason that dimension is still not available

A1:D1



This document was written by [Matteo Zambon](#) of Tag Manager Italia.

Did you find a GA4 bug?

Please, send an email to [matteo@tagmanageritalia.it](mailto:matteo@tagmanageritalia.it) and I will insert the bug in this document

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March 30, 2022	DebugView	<input type="checkbox"/>	Matteo Zambon	If you put many items (for example 10 items on the view_item_list) on the DebugView, you will see a "payload of the request is too large" and that event is not available on the DebugView.	Unfortunately it's a DebugView problem, so we will wait for the fix	<a href="https://www.linkedin.com/pulse/i-found-2-bugs-debug-view-google-analytics-4-matteo-zambon/">https://www.linkedin.com/pulse/i-found-2-bugs-debug-view-google-analytics-4-matteo-zambon/</a>	
March 31, 2022	DebugView	<input type="checkbox"/>	Matteo Zambon	If you use items parameters on the view_item_list event: promotion_id, promotion_name, item_list_id, item_list_name  the DebugView show you 3 different items: - Name of Product - Item 1 - Item 2	Fortunately it just a DebugView problem, so we will waiting for the fix	<a href="https://www.linkedin.com/pulse/i-found-2-bugs-debug-view-google-analytics-4-matteo-zambon/">https://www.linkedin.com/pulse/i-found-2-bugs-debug-view-google-analytics-4-matteo-zambon/</a>	
April 5, 2022	Explore Report	<input checked="" type="checkbox"/>	Matteo Zambon Eugen Potlog Charles Farina	If you select dimensions and/or metrics by clicking on the label, won't do the import. Instead, if you click on the checkbox and it will work.	Click the Checkbox and NOT the label of dimensions/metrics	<a href="https://www.youtube.com/watch?v=g8475b37QRo&amp;ab_channel=TagManagerItalia">https://www.youtube.com/watch?v=g8475b37QRo&amp;ab_channel=TagManagerItalia</a>  <a href="https://twitter.com/CharlesFarina/status/1513570060010340354?s=20&amp;t=DqWBeNwLj9QM52_6t_PFWg">https://twitter.com/CharlesFarina/status/1513570060010340354?s=20&amp;t=DqWBeNwLj9QM52_6t_PFWg</a>	May 20, 2022
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# bit.ly/ga4-bug-list



label:ga4-bug-list

From Any time Has attachment To Advanced search

1-16 of 16

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Stephen, Matteo 2	Inbox	GA4 GTM SST session_start missing bug - Hi Stephen, and thank you for the email. I don't know the reason for the missing session_start event. I tried many cases but I...	Nov 2
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Deepak, Matteo 3	Inbox	Purchase Event is not showing up in the Events Report - Okay, Thank you. Best regards, Deepak From: Matteo Zambon <matteo@tagmanageritalia.it> Sent: 23 Septem...	Sep 23
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	George, Matteo 7	Inbox	GA4 Bug List - by Tag Manager Italia - Done! On Fri, Sep 23, 2022, 15:58 George Arnaoutoglou   Relevance <garnaoutoglou@relevance.gr> wrote: Dear Matteo, Apologi...	Sep 22
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sara, Matteo 8	Inbox	Possible bug in GA4 - I made my proofs now with your tagging. This time I used incognito mode and closing browser in each proof. So each test should be have the ev...	Sep 22
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Deepak, Matteo 3	Inbox	Transactions report behaviour different in GA4 reports and Data Studio - Hi Matteo, Thanks for the quick response. I have gone through the post, it seems like GA4 aut...	Sep 20
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Giulia, Matteo 2	Inbox	Re: GA4 - segnalazione bug EDIT TECH OVERVIEW - Grazie Giulia, scusa se non ti ho più risposto :) Aggiungo al documento. On Wed, Sep 7, 2022 at 5:08 PM Giulia Gir...	Sep 7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Giulia, Matteo 3	Inbox	GA4 - segnalazione bug e missing features - Ciao Matteo, grazie per la risposta. In giornata imposto tutto in inglese e preparo anche i video. Ti aggiorno, grazie ancor...	Sep 5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Phil Pearce (via Go...	Inbox	Spreadsheet shared with you: "GA4 Bug List - Pls add these to your lists..." - Phil Pearce shared a spreadsheet Phil Pearce (phil@measuremindsgroup.com) has invite...	Sep 4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Phil Pearce (Google...	Inbox	GA4 Bug List - by... - Category: Community Templates (new ca... - Phil Pearce added a comment to the following document GA4 Bug List - by Tag Manager Italia 1 com...	Sep 4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Chris, Matteo 2	Inbox	Bug: Hour Dimension is Not Available in GA4 - Hi Chris, it's not a bug but a simple "missing" dimension. You can use BigQuery or create your timestamp with a custom ...	Sep 1
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Phil, Matteo 4	Inbox	Re: GA4 bug... And... 2 more issues... - Hi Phil, thanks for your email :) I will check and let you know. Probably these are "optimization" and not "bug" so I will create oth...	Aug 30
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Phil Pearce	Inbox	Re: Fwd: GA4 bug... Sorry.... one more while I remember... - Sorry.... one more while I remember... ----- Category=Custom Dimen...	Aug 28
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Phil Pearce	Inbox	Fwd: GA4 bug... One more for your sheet... - One more for your sheet... my suggestion to fix would be for Google to change the enhanced event from {{Event}}=click >...	Aug 28
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Phil Pearce	Inbox	GA4 bug... Pls add these 2 issues to your sheet - Hi Matteo Hope you are well. Pls add these 2 issues to your sheet... https://docs.google.com/spreadsheets/d/1e6PmC...	Aug 28
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Monica, Matteo 3	Inbox	GA4 Bug - item_variant - Right - you can't access the ecommerce variant in the GA4 UI currently, I have to fire it as an event-scoped parameter and access it that way...	Aug 18
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	emelye c	Inbox	GA4 BUG - Hi Matteo, One to investigate further and add to the GA4 bug list? When using consent mode, after consent is given, the pageview hit is automatically sent...	Jun 20

# Possible bug in GA4

ExternalInbox xGA4 Bug List xS

Sara Pa [redacted].com>

Hi Matteo,

I'm Sara from Spain. Last week when I was testing the tagging guide of GA4 to see if attribution traffic of different channels was right, I saw a strange thing that I suppose was a bug.

I use different utms to make sure that traffic comes to a determinate channel, using [Google's guidelines](#)

Default Channel Grouping	Source/Medium	Acquisition		
		Users	New Users	Sessions
		11 % of Total: 100.00% (11)	11 % of Total: 100.00% (11)	13 % of Total: 100.00% (13)
1. Paid Search	Google Shopping / cpc	2 (15.38%)	1 (9.09%)	2 (15.38%)
2. (Other)	dailymotion / push	1 (7.69%)	1 (9.09%)	1 (7.69%)
3. (Other)	dailymotion / sms	1 (7.69%)	1 (9.09%)	1 (7.69%)
4. (Other)	digg / audio	1 (7.69%)	1 (9.09%)	1 (7.69%)
5. (Other)	direct / (not set)	1 (7.69%)	0 (0.00%)	1 (7.69%)
6. (Other)	google / paid	1 (7.69%)	1 (9.09%)	1 (7.69%)
7. Affiliates	iahorro / affiliate	1 (7.69%)	1 (9.09%)	1 (7.69%)
8. Direct	(direct) / (none)	1 (7.69%)	1 (9.09%)	1 (7.69%)
9. Display	google / banner	1 (7.69%)	1 (9.09%)	1 (7.69%)
10. Email	email / email	1 (7.69%)	1 (9.09%)	1 (7.69%)

Session default channel grouping	Session source/medium	Session campaign	+ Sessions	Total users
Totals			11 100% of total	11 100% of total
1 Unassigned	(not set) / (not set)	(not set)	10	10
2 Direct	(direct) / (none)	(direct)	1	1

You can see in GA4 all traffic enters like not set (And I'm not using automatic tagging, only utms). I made a [consult in twitter](#), and following some advices I checked my BQ. And....oh, surprise!!! In BQ was ok all mv proofs. but not in GA4 platform.







Matteo Zambon <matteo@tagmanageritalia.it>

to Sara, Matteo ▾

Hi Sara,  
glad to hear you and your test

I tested these UTM and I always delete cookies to be sure there was a new session

[https://demo.tagmanageritalia.it/esempio/privacy-policy/?utm\\_source=webinar+addio+ga3&utm\\_medium=paid&utm\\_campaign=consulenza+ga4](https://demo.tagmanageritalia.it/esempio/privacy-policy/?utm_source=webinar+addio+ga3&utm_medium=paid&utm_campaign=consulenza+ga4)

[https://demo.tagmanageritalia.it/esempio/privacy-policy/?utm\\_source=test+term&utm\\_medium=paid&utm\\_campaign=consulenza+ga4&utm\\_term=term](https://demo.tagmanageritalia.it/esempio/privacy-policy/?utm_source=test+term&utm_medium=paid&utm_campaign=consulenza+ga4&utm_term=term)

[https://demo.tagmanageritalia.it/esempio/privacy-policy/?utm\\_source=test+content&utm\\_medium=paid&utm\\_campaign=consulenza+ga4&utm\\_content=content](https://demo.tagmanageritalia.it/esempio/privacy-policy/?utm_source=test+content&utm_medium=paid&utm_campaign=consulenza+ga4&utm_content=content)

[https://demo.tagmanageritalia.it/esempio/privacy-policy/?utm\\_source=test+content+e+term&utm\\_medium=paid&utm\\_campaign=consulenza+ga4&utm\\_term=term&utm\\_content=content](https://demo.tagmanageritalia.it/esempio/privacy-policy/?utm_source=test+content+e+term&utm_medium=paid&utm_campaign=consulenza+ga4&utm_term=term&utm_content=content)

[https://demo.tagmanageritalia.it/esempio/privacy-policy/?utm\\_source=test+content+e+term&utm\\_medium=paid&utm\\_campaign=errore+name](https://demo.tagmanageritalia.it/esempio/privacy-policy/?utm_source=test+content+e+term&utm_medium=paid&utm_campaign=errore+name)

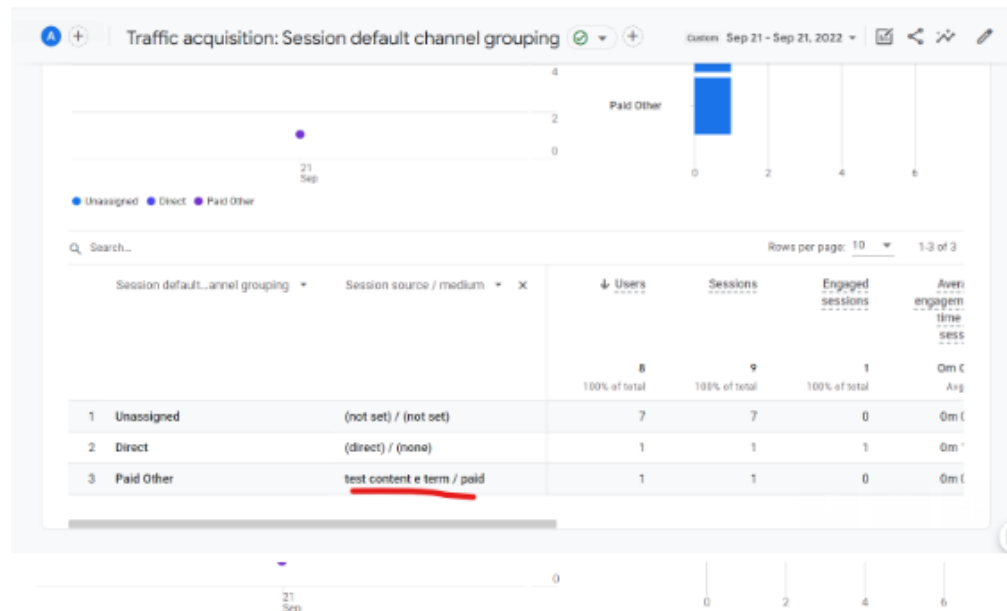
[https://demo.tagmanageritalia.it/esempio/privacy-policy/?utm\\_source=test+content+e+term&utm\\_medium=paid&utm\\_campaign=errore+campaign](https://demo.tagmanageritalia.it/esempio/privacy-policy/?utm_source=test+content+e+term&utm_medium=paid&utm_campaign=errore+campaign)

[https://demo.tagmanageritalia.it/esempio/privacy-policy/?utm\\_source=test+content+e+term&utm\\_medium=paid&utm\\_campaign=errore+term&utm\\_term=term](https://demo.tagmanageritalia.it/esempio/privacy-policy/?utm_source=test+content+e+term&utm_medium=paid&utm_campaign=errore+term&utm_term=term)

[https://demo.tagmanageritalia.it/esempio/privacy-policy/?utm\\_source=test+content+e+term&utm\\_medium=paid&utm\\_campaign=errore+content&utm\\_content=content](https://demo.tagmanageritalia.it/esempio/privacy-policy/?utm_source=test+content+e+term&utm_medium=paid&utm_campaign=errore+content&utm_content=content)

All are **paid medium** I added different UTM and errors.

This is the Session Result



4	Paid Other	errore content	1	0	0%	0.00
5	Paid Other	errore name	1	0	0%	0.00
6	Paid Other	errore term	1	0	0%	0.00

I see the session\_start event is just counted 2 times:  
Probably this could be the missed session attribution

Analytics

**Variables**

None

**Dimensions**

- Session source / ref.
- Session attribution
- Event name
- Source / device
- City / country / zip
- Carrier
- Previous session / ...
- Previous attribution
- Previous campaign

**Metrics**

- Sessions

**Table Settings**

Session attribution

Drop or select dimension

**Rows**

- Session attribution

Drop or select dimension

Sort by: 1

Direction: Desc

Refresh: No

**Columns**

- Total count

Drop or select dimension

**Free form 1**

Event name	First visit	page_view	view_engagement	session_start	events
Session default channel grouping	Total users	Total users	Total users	Total users	Total users
<b>Totals</b>	0	0	0	2	0
	100% of total	100% of total	100% of total	100% of total	100% of total
1 Unassigned	0	0	0	0	0
2 Direct	1	0	1	1	1
3 Paid Other	0	0	1	1	1

Can you check if you have the session\_start event?







Matteo Zambon <matteo@tagmanageritalia.it>

to Matteo, Sara ▾

I can confirm it.

Without session\_start event the session default channel grouping is always Unassigned

The screenshot shows the Google Analytics interface with a table titled "Free form 1". The table has columns for "Segment", "All", "session\_start", and "Totals". The rows represent different channel groupings. The "Unassigned" row is highlighted with a red circle, showing 492 sessions in the "All" column and 32 in the "session\_start" column. A red oval highlights the "session\_start" column header, with a callout box containing the text "All sessions with session\_start event".

Segment	All	session_start	Totals
Session default channel grouping	Sessions	Sessions	+ Sessions
Totals	446,338 100% of total	446,575 100% of total	446,338 100% of total
1 Organic Search	270,797	270,797	270,797
2 Cross-network	67,763	67,763	67,763
3 Direct	49,116	49,116	49,116
4 Paid Search	48,920	48,920	48,920
5 Email	11,674	11,674	11,674
6 Organic Social	2,673	2,673	2,673
7 Referral	444	444	444
8 Unassigned	492	32	492
9 Display	312	312	312
10 Paid Social	185	185	185
11 Organic Video	16	16	16
12 Organic Shopping	1	1	1

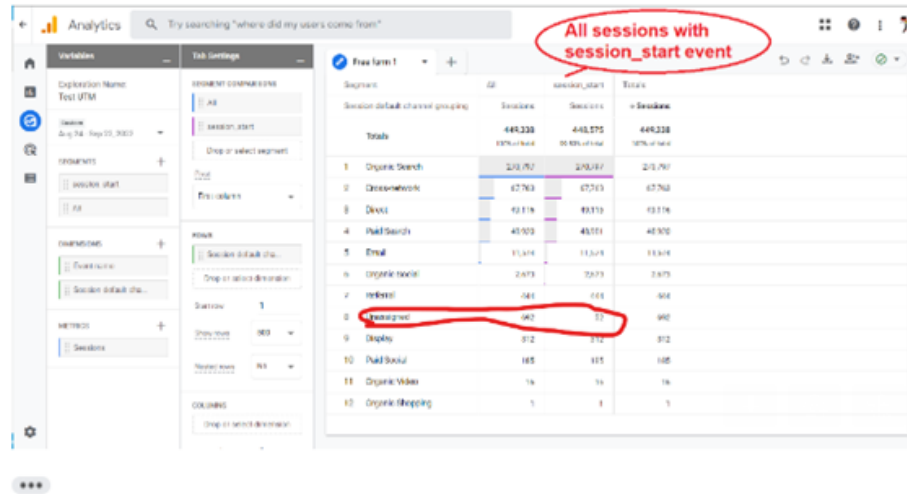


Matteo Zambon <matteo@tagmanageritalia.it>

to Matteo, Sara

I can confirm it.

Without session\_start event the session default channel grouping is always Unassigned



Sep 23, 2022, 1:29 PM (10 days ago)



Sara Pa [redacted]

Sep 23, 2022, 2:31 PM (10 days ago)



OMG!

You are right, all of these "not set" have not session event but I cleaned the cookies from the padlock of the browser before I paste each new test URL. So, In which situation the event session\_start is launched? I thought this event had launched in the first visit, so if I clean cookies in the next load page (with cookies accepted) session\_start should be launched.

cookies on use

Permitido

Bloqueado

Se han permitido las siguientes cookies al visitar esta página

- ▶ google.com
- ▶ chat.google.com



# Fight the Bot

Analyze. Suffer. Exclude. Prevent.



David Hermann & Lukas Oldenburg  
Superweek, February 1st, 2023



OpenAI



# Fight the Bot

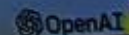
Analyze. Suffer. Exclude. Prevent.



[bit.ly/fight-the-bot](https://bit.ly/fight-the-bot)





David Hermann & Lukas Oldenburg  
Superweek, February 1st, 2023





### Tag Configuration

Tag Type

 **Google Analytics: GA4 Configuration**  
Google Marketing Platform 

Measurement ID 



Send a page view event when this configuration loads

Send to server container 

> Fields to Set

▼ User Properties

Property Name

Value

<input type="text" value="user_possible_bot"/> 	<input type="text" value="{{JS - Possible Bot}}"/>  
--	--

Add Row

> Advanced Settings

# Annotations in Google Analytics 4



# ~~Annotations in Google Analytics 4~~

But there is a teeny-tiny problem...





# ~~Annotations in Google Analytics 4~~

**Solution #1:** using Google Sheets as support



# GA4 Annotation Template



File Edit View Insert Format Data Tools Extensions



100%



\$

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.00

123



Default (Ari...

D8



*fx*

A

B

1

Date

Note

2

2022-11-11

This is the first annotation :)

3

2022-11-16

quiz modal + click\_popup

4

2022-11-29

Pause popup quiz BF and run exit popup

5

2022-12-12

Fix category performance

6

# Blend Data



Table 1  
(Table Name)

Tag Manager Italia GA4

### Dimensions

- Date
- Event name
- category
- action
- label
- gtm\_container\_info

Add dimension

### Available Fields

Type to search

- action
- Age
- App version
- Audience ID
- Audience name
- Browser
- Campaign
- Campaign ID

1 condition



Table 2  
(Table Name)

GA4 Annotation Template - Sheet1

### Dimensions

- Note
- Date

Add dimension

### Metrics

Add metric

### Date range

Add dimension

### Available Fields

Type to search

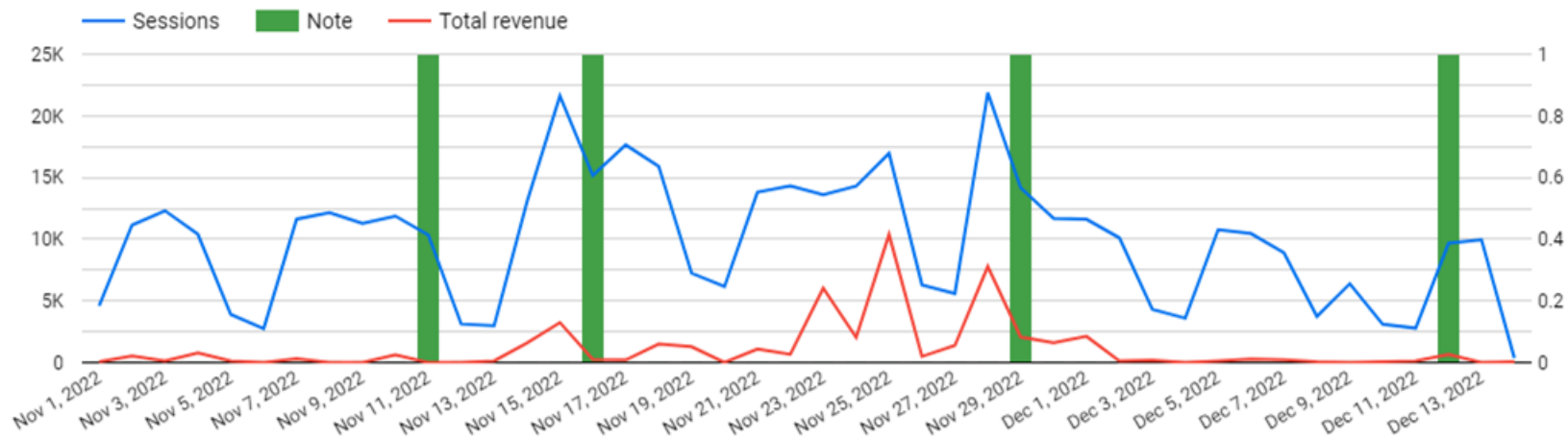
- Date
- Note
- Record Count





# GOOGLE SHEET ANNOTATION

Nov 1, 2022 - Dec 14, 2022



Date	Note
1. Nov 11, 2022	This is the first annotation :)
2. Nov 16, 2022	quiz modal + click_popup
3. Nov 29, 2022	Pausa popup quiz BF e attivazione exit popup
4. Dec 12, 2022	Fix category performance

# ~~Annotations in Google Analytics 4~~

**Solution #2:** using custom events in GA4



# Event Builder

## Overview

[View the Event Builder demo](#) | [View the Event Builder demo](#) | [View the Event Builder demo](#) | [View the Event Builder demo](#) | [View the Event Builder demo](#)

## Event details

Finally, specify the parameters to send with the event. By default, only recommended parameters for the event will appear here. Check "show advanced options" to add custom parameters or user properties.

show advanced options

## Parameters

	<small>name</small> category	<small>string value</small> Generic annotation
	<small>name</small> action	<small>string value</small> Update configuration
	<small>name</small> label	<small>string value</small> Fix category performance duplicate

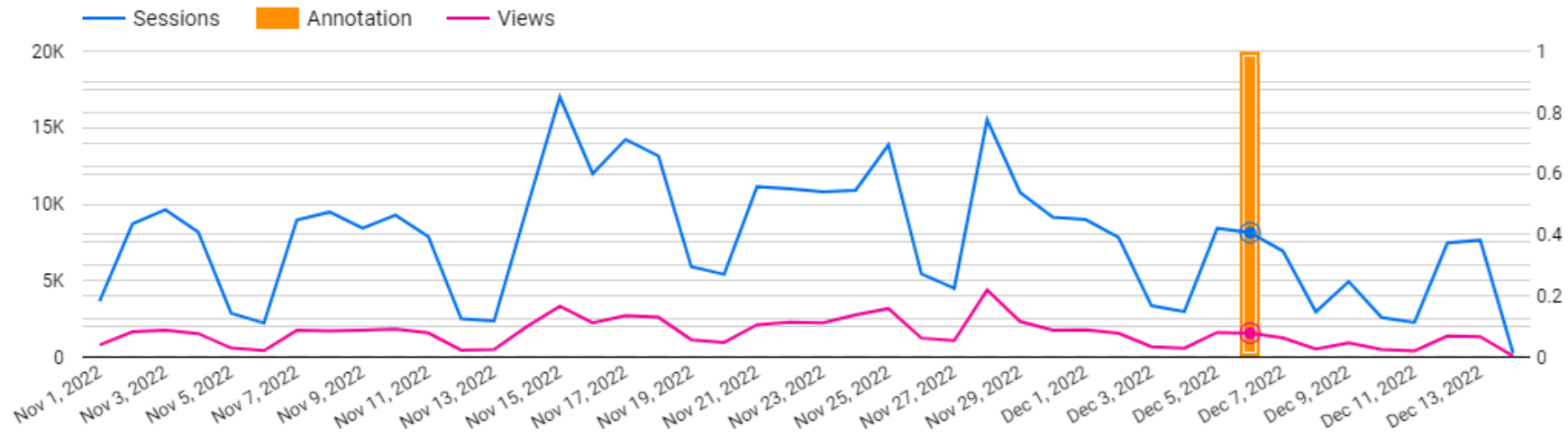
+ STRING

+ NUMBER

+ ITEMS

The unique identifier for an instance of a web client

# GOOGLE ANALYTICS 4 ANNOTATION (CUSTOM EVENT)



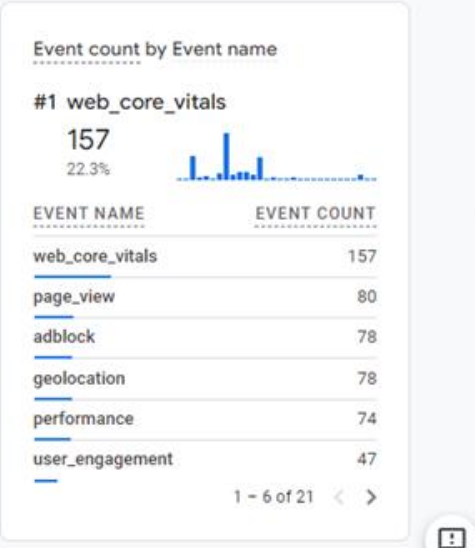
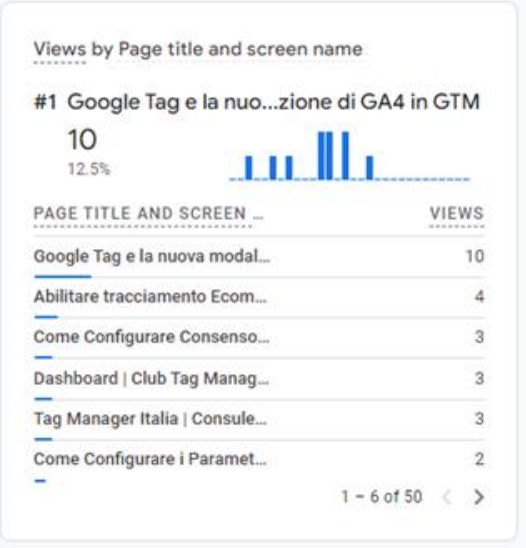
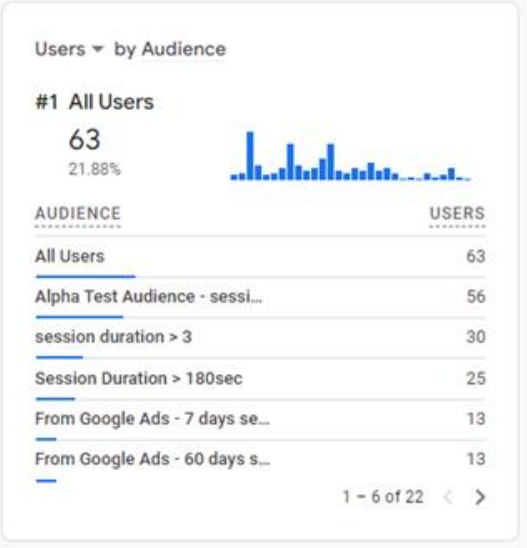
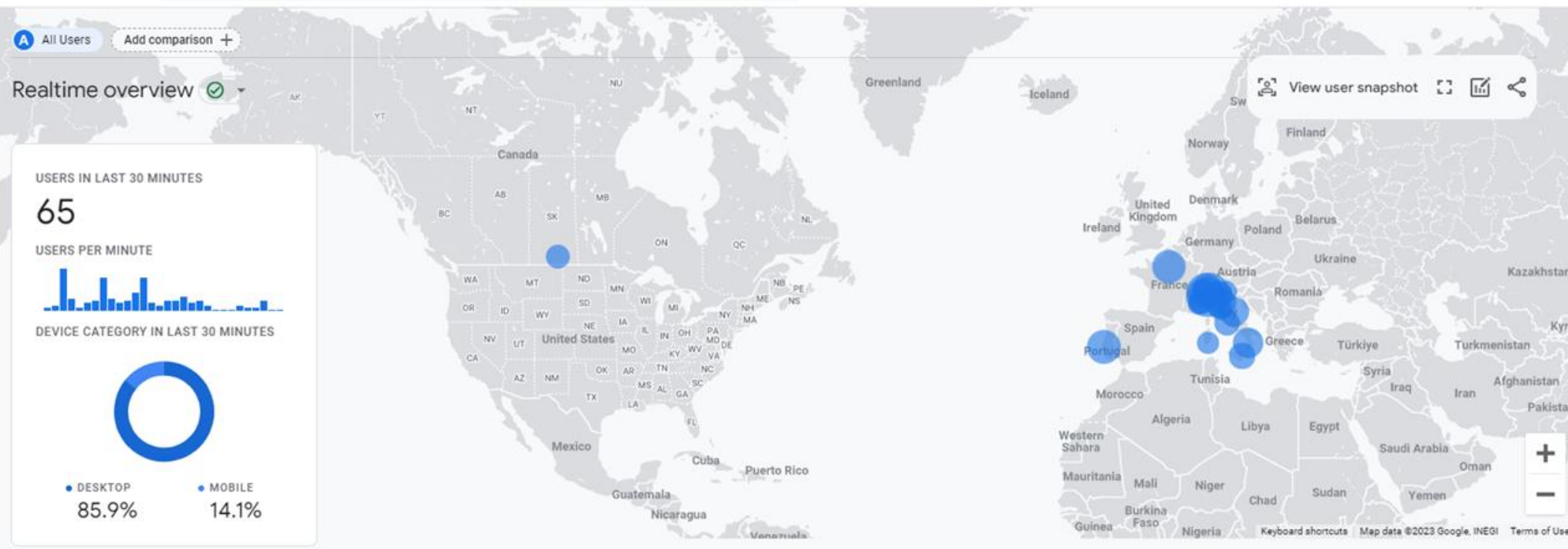
	Date	Event name	category	label	action
1.	Dec 6, 2022	annotation	Generic annotation	This is the first annotation	Add configuration



# GA4 REAL TIME REPORT **PROBLEMS**



- Reports snapshot
- Realtime
- Business objectives
  - Generate leads
  - Drive online sales
  - Raise brand awareness
  - Examine user behavior
- Life cycle
  - Acquisition
  - Engagement
  - Monetization
  - Retention
- Matteo Zambon
- My reports
- Search Console
  - Search Console
- SEO Team
  - Terms
- Team Adv (TMI)
  - Conversion
- User
  - User Attributes
  - Tech
- Library



**What are the  
problems?**





# Problems

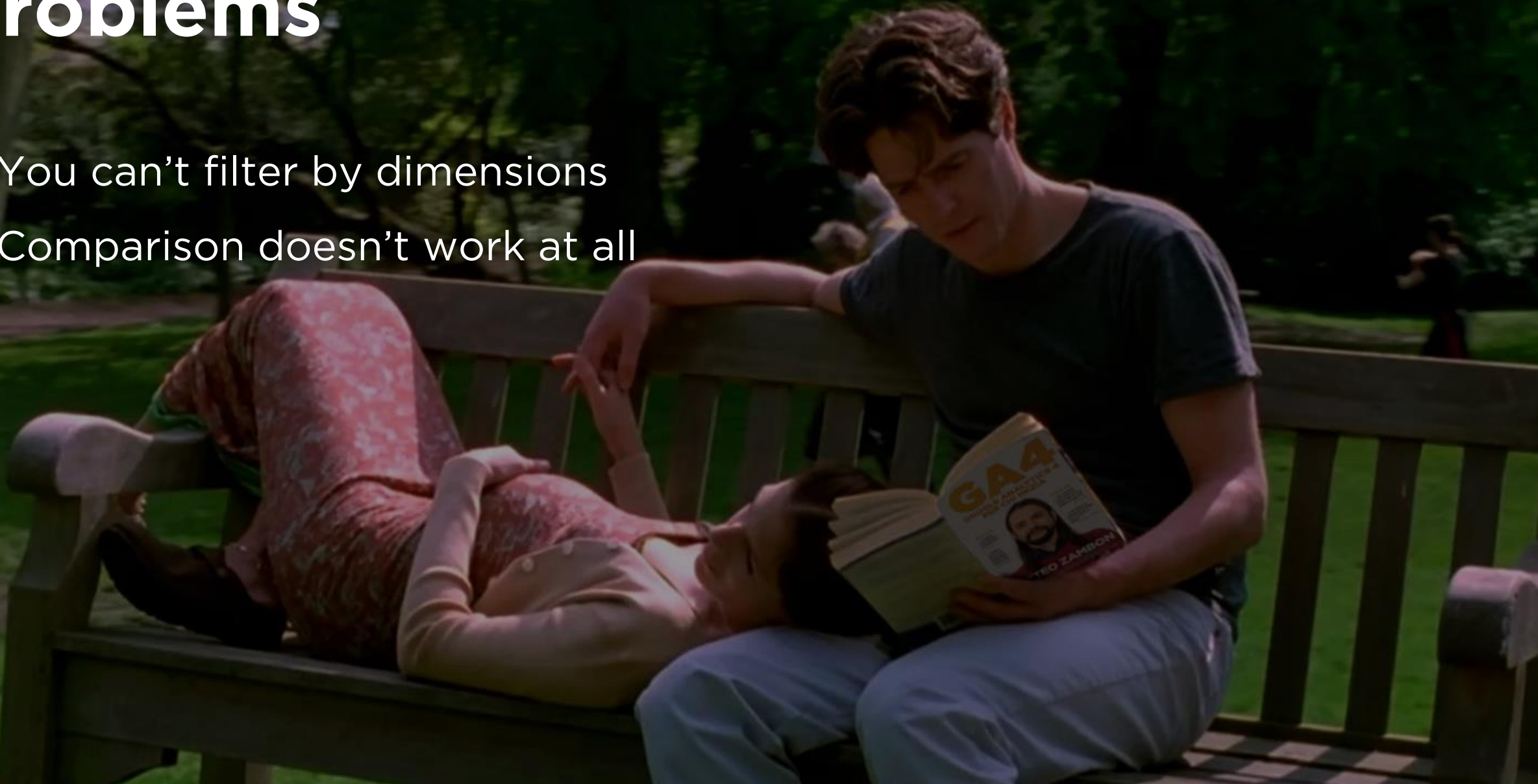
- You can't filter by dimensions





# Problems

- You can't filter by dimensions
- Comparison doesn't work at all

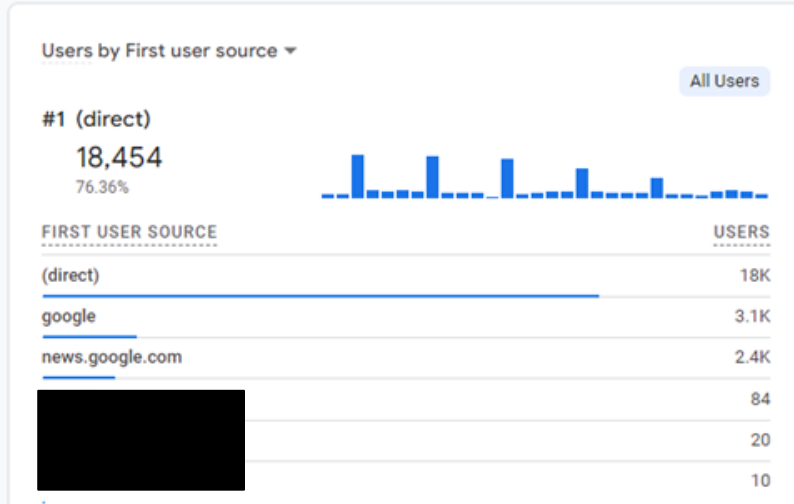
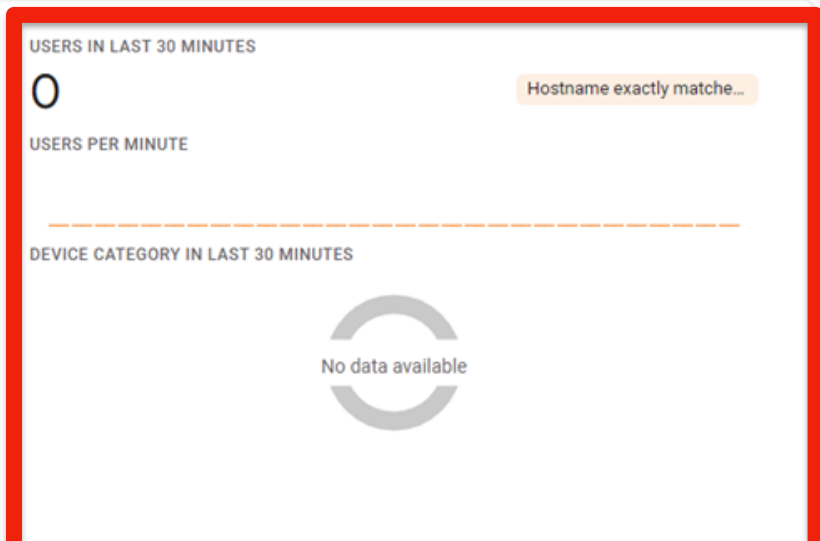
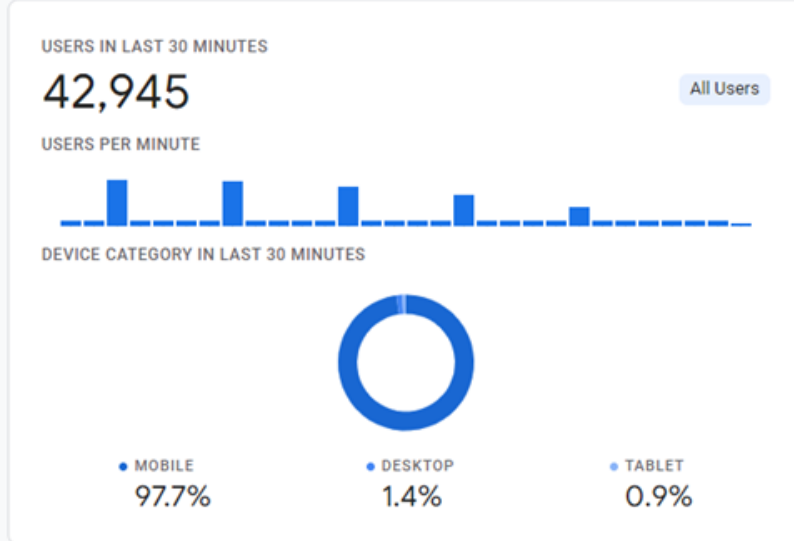


- Reports snapshot
- Realtime
- Ciclo di vita
- Acquisition
- Engagement
- Monetization
- Retention
- Scopi commerciali
- Generate leads
- Drive online sales
- Raise brand awareness
- Examine user behavior
- User
- User Attributes
- Tech

All Users X Hostname exactly matc... X Add comparison +

### Realtime overview

View user snapshot



Hostname exactly matches v [redacted]

**i**

Realtime data is not supported for this comparison.

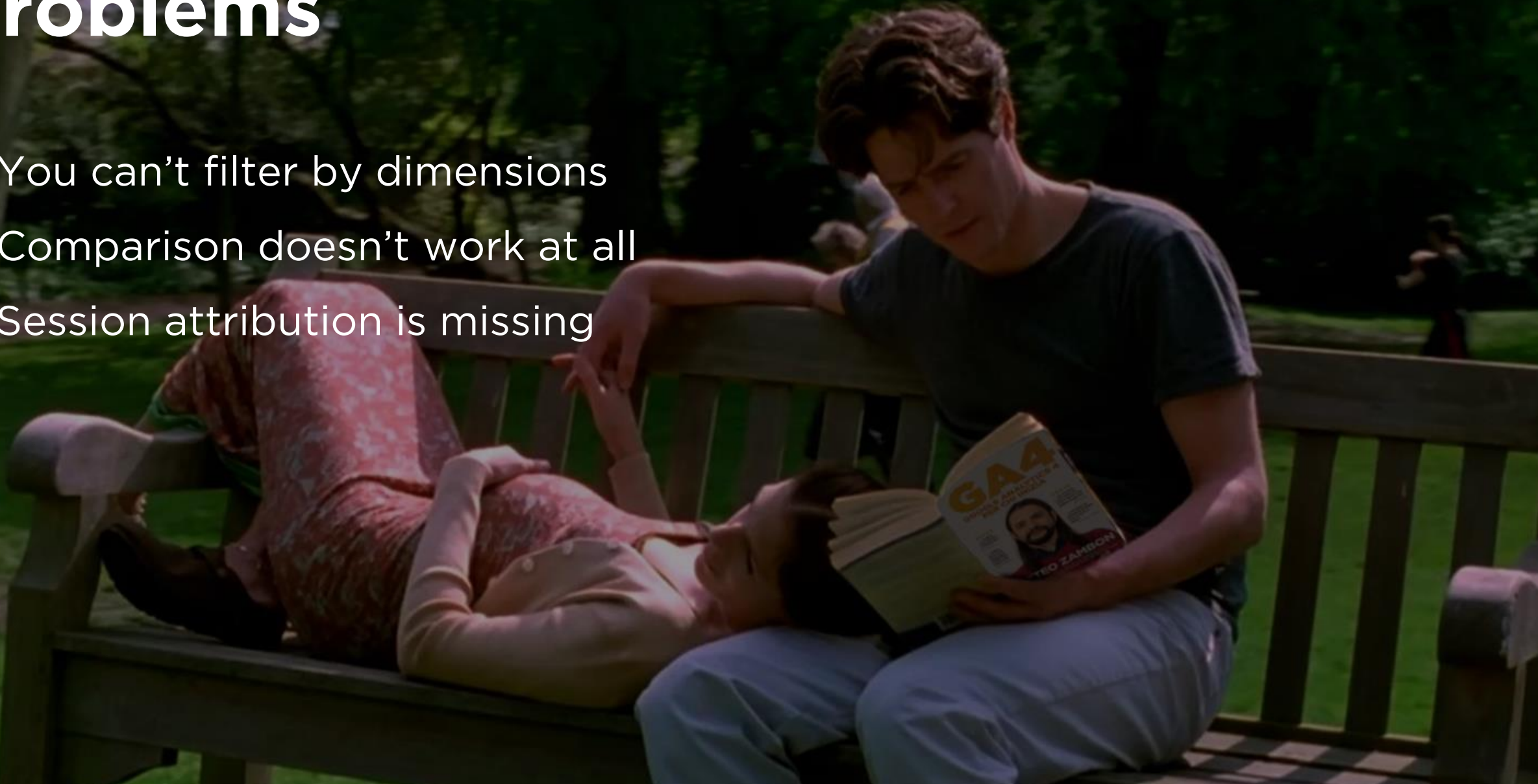
[Learn more](#)

### Customize report

- COMPARISONS (ADD UP TO 4)
- All Users
  - Hostname exactly matches [redacted]
- + Add new comparison

# Problems

- You can't filter by dimensions
- Comparison doesn't work at all
- Session attribution is missing





# Problems

- You can't filter by dimensions
- Comparison doesn't work at all
- Session attribution is missing
- Acquisition is missing (there are only user scopes)



# Problems

- You can't filter by dimensions
- Comparison doesn't work at all
- Session attribution is missing
- Acquisition is missing (there are only user scopes)
- You cannot change cards/widget in the report





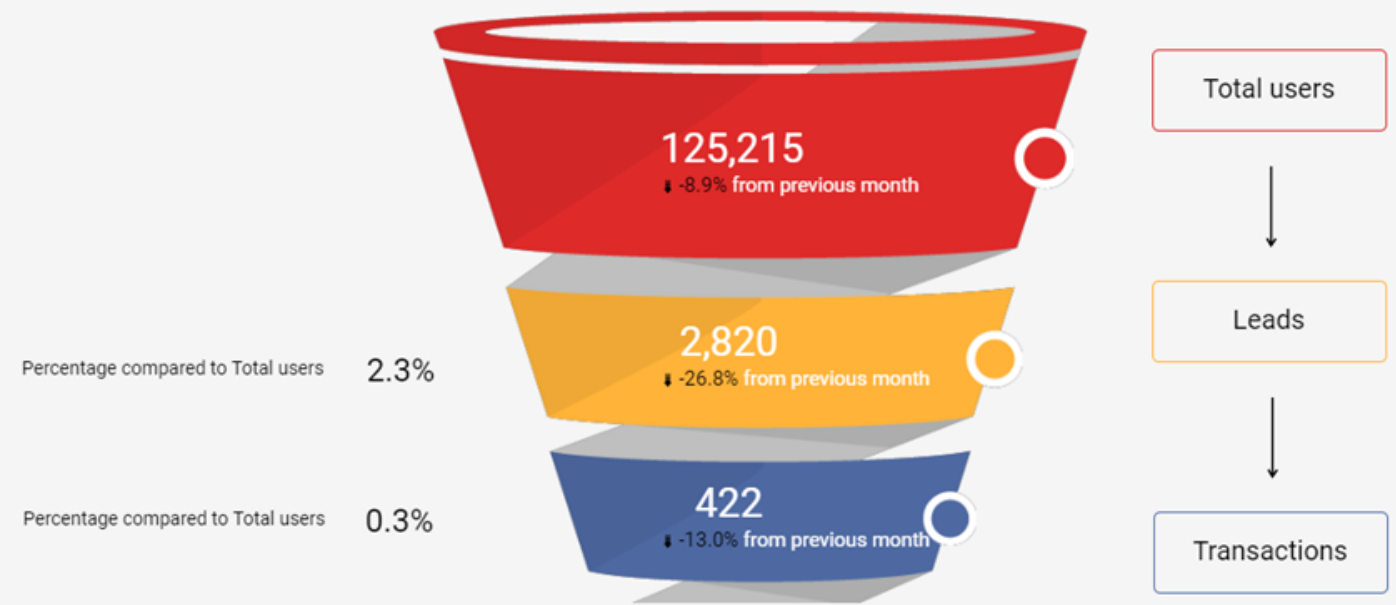
**AS ALWAYS THE  
SOLUTION FOR GA4  
IS BIGQUERY**



- Traffic
- Funnel**
- GA4 - GAds
- GAds
- Glossary

2.25%  
↓ -0.55%

Funnel



## Product Updates

**Monitor a report's Google Analytics 4 usage data**

For Looker Studio reports that connect to Google Analytics 4 (GA4) data, you can now monitor quota token usage to more easily keep your reports within [Google Analytics Data API \(GA4\) quotas](#) .

In edit mode, right-click on a report chart or canvas to access the *Google Analytics Token Usage* dialog, where you can view both the amount of quota tokens consumed by report components and the remaining amount of tokens. This information, combined with the recommended [best practices for reducing the amount of data that is queried from GA4](#), can help reports keep within GA4 quota limits.

Google Analytics (GA4) Token Usage				
Report	Component			
<b>Tokens used this session</b>				
	Tokens consumed	Tokens saved by caching	Total tokens	
Session	189	0	189	
Current page	189	0	189	
<b>Remaining tokens</b>				
Datasource	Per day	Per hour	Per project per hour	Last update
	249770	49770	12270	Tue, 20 Dec 2022 19:13:17 GMT
<b>Top charts by token usage</b>				
Chart	Tokens used this session	Tokens from most recent request		
Table	59	59	<a href="#">Details</a>	
Pie chart	39	39	<a href="#">Details</a>	
Table	17	17	<a href="#">Details</a>	
Area chart	16	16	<a href="#">Details</a>	

## NEW LIMITS

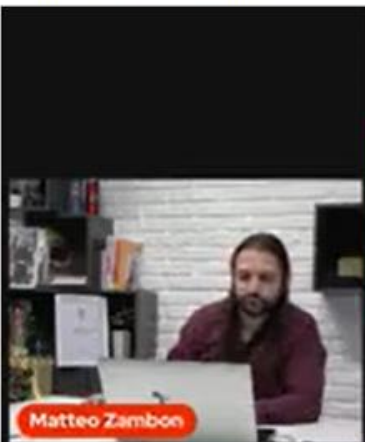
Nome quota	Limite proprietà standard	Limite proprietà Analytics 360
Token principali per proprietà al giorno	200.000	2.000.000
Token principali per proprietà all'ora	40.000	400.000
Token principali per progetto Per proprietà all'ora	14.000	140.000
Richieste simultanee principali per proprietà	10	50
Errori del server principale per progetto per proprietà all'ora	10	50
Token in tempo reale per proprietà al giorno	200.000	2.000.000
Token in tempo reale per proprietà all'ora	40.000	400.000
Token in tempo reale per progetto per proprietà all'ora	14.000	140.000
Richieste in tempo reale per proprietà in tempo reale	10	50
Errori del server in tempo reale per progetto per proprietà all'ora	10	50
Token della canalizzazione per proprietà al giorno	200.000	2.000.000
Token della canalizzazione per proprietà all'ora	40.000	400.000
Token della canalizzazione per progetto per proprietà all'ora	14.000	140.000
Richieste simultanee di canalizzazione per proprietà	10	50
Errori del server di canalizzazione per progetto e per ora oraria	10	50

## OLD LIMITS

Nome quota	Limite di proprietà standard	Limite proprietà Analytics 360
Token principali per proprietà al giorno	25.000	250.000
Token principali per proprietà all'ora	5000	50.000
Token principali per progetto per proprietà all'ora	1.250	12.500
Richieste simultanee principali per proprietà	10	50
Errori principali del server per progetto per proprietà all'ora	10	50
Token in tempo reale per proprietà al giorno	25.000	250.000
Token in tempo reale per proprietà all'ora	5000	50.000
Token in tempo reale per progetto per proprietà all'ora	1.250	12.500
Richieste simultanee in tempo reale per proprietà	10	50
Errori in tempo reale del server per progetto per proprietà all'ora	10	50
Token della canalizzazione per proprietà al giorno	25.000	250.000
Token della canalizzazione per proprietà all'ora	5000	50.000
Token della canalizzazione per progetto per proprietà all'ora	1.250	12.500
Richieste simultanee della canalizzazione per proprietà	10	50
Errori del server di canalizzazione per progetto per proprietà all'ora	10	50



Webinar gratuito Novembre 2022 - "Le ultime novità di GA4" (durata 01:06:40)



Matteo Zambon

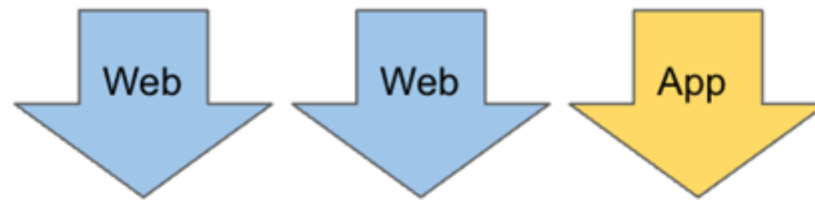


Roberto Gulotto



COMPLETA E CONTINUA →

Data Streams



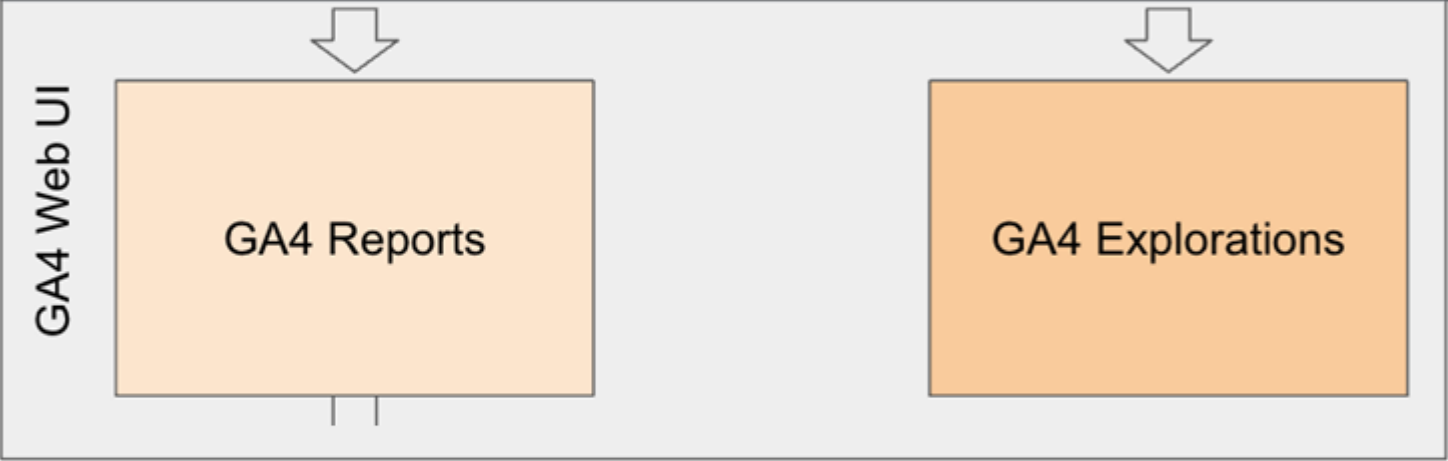
**Google Analytics 4 Property**

Credits: Analytics Canva

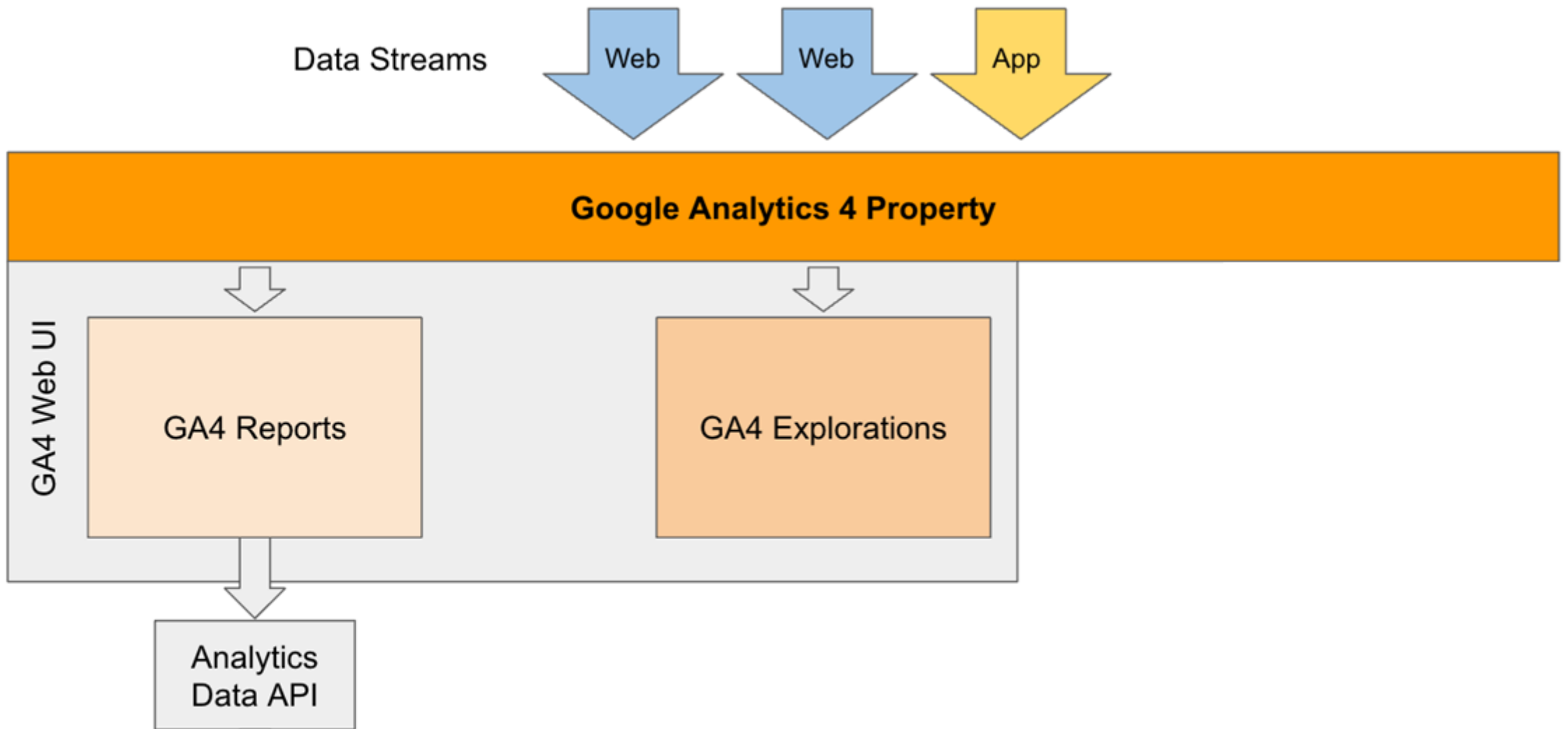
Data Streams



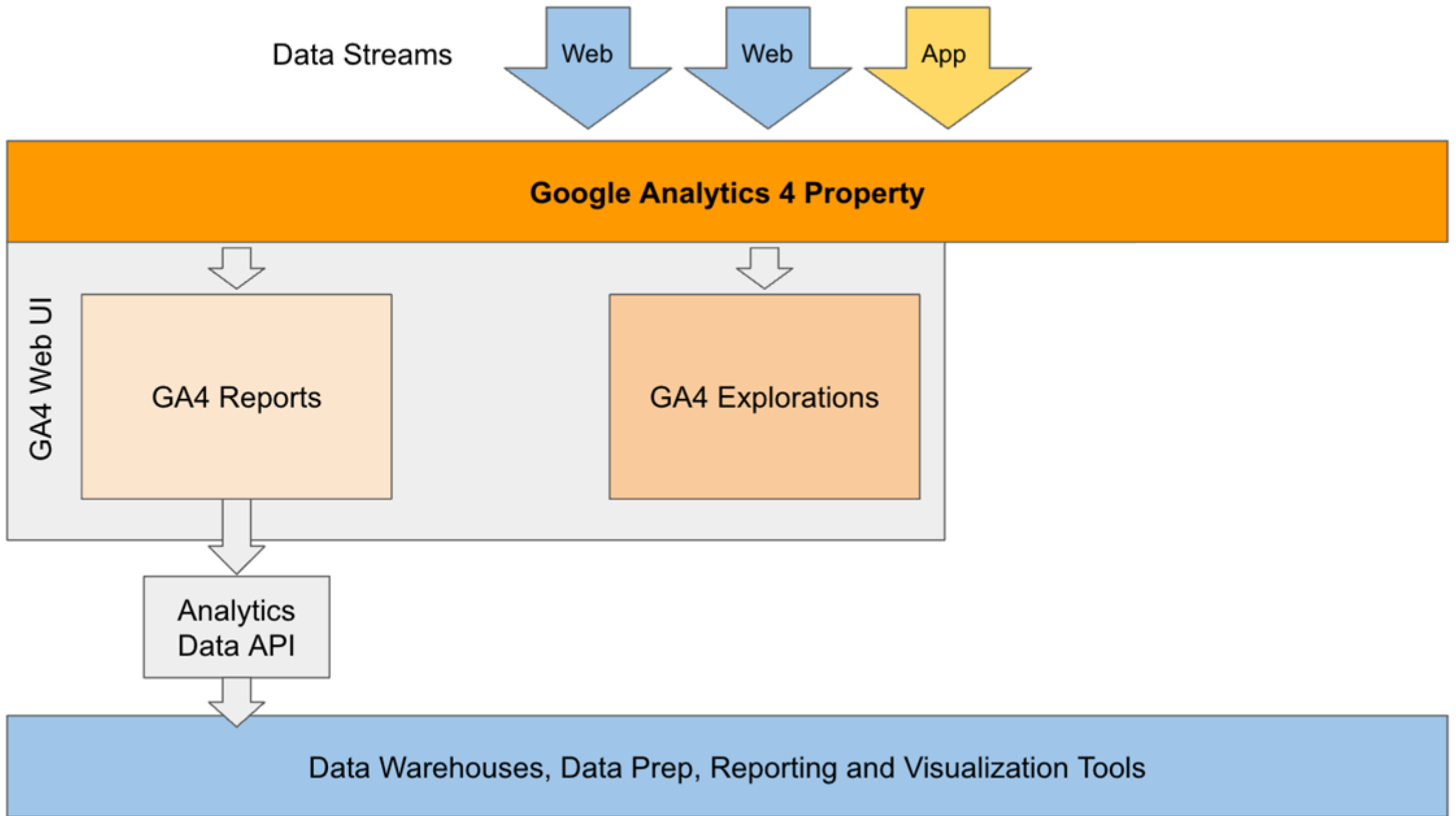
**Google Analytics 4 Property**



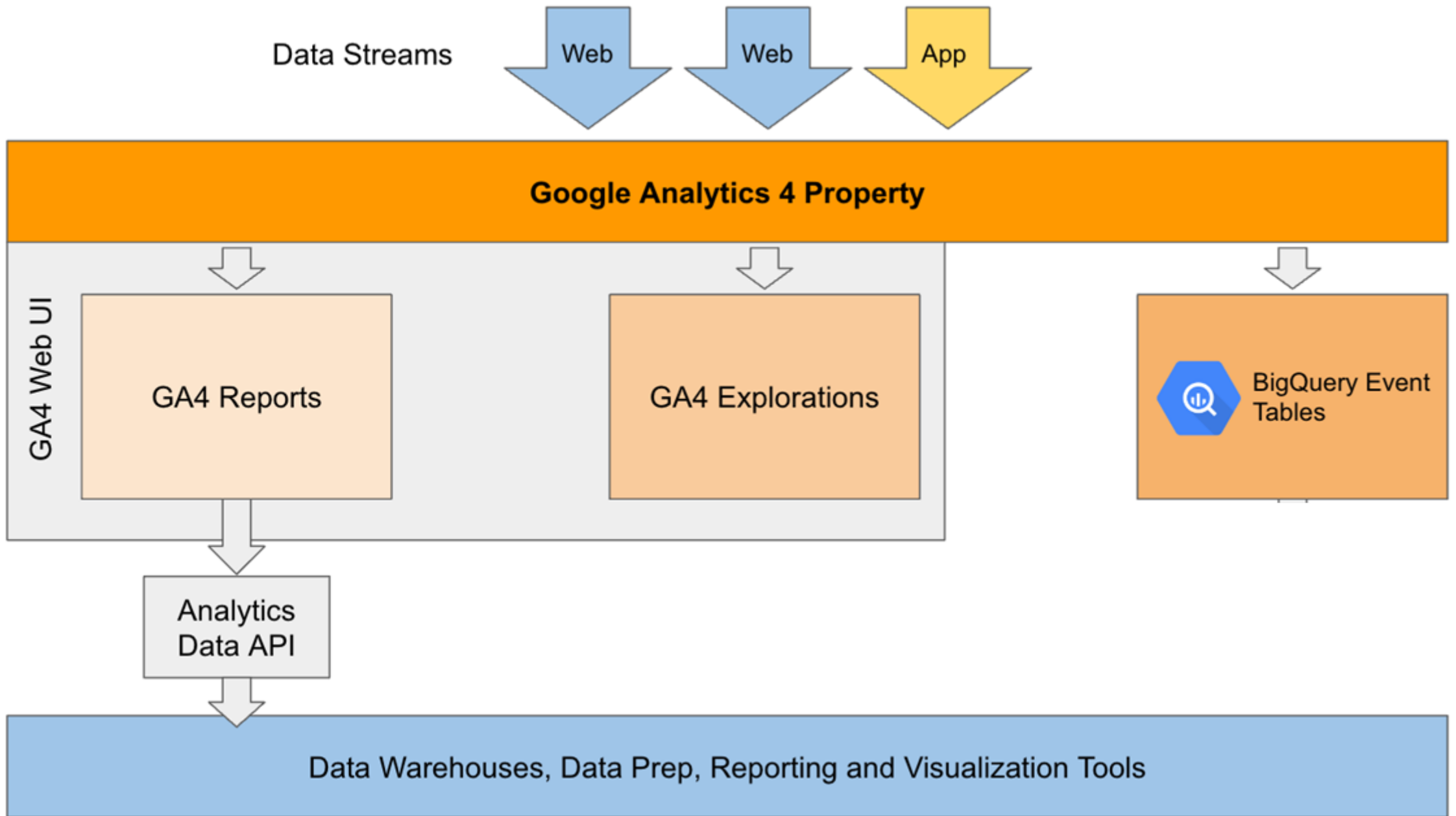




Credits: Analytics Canva

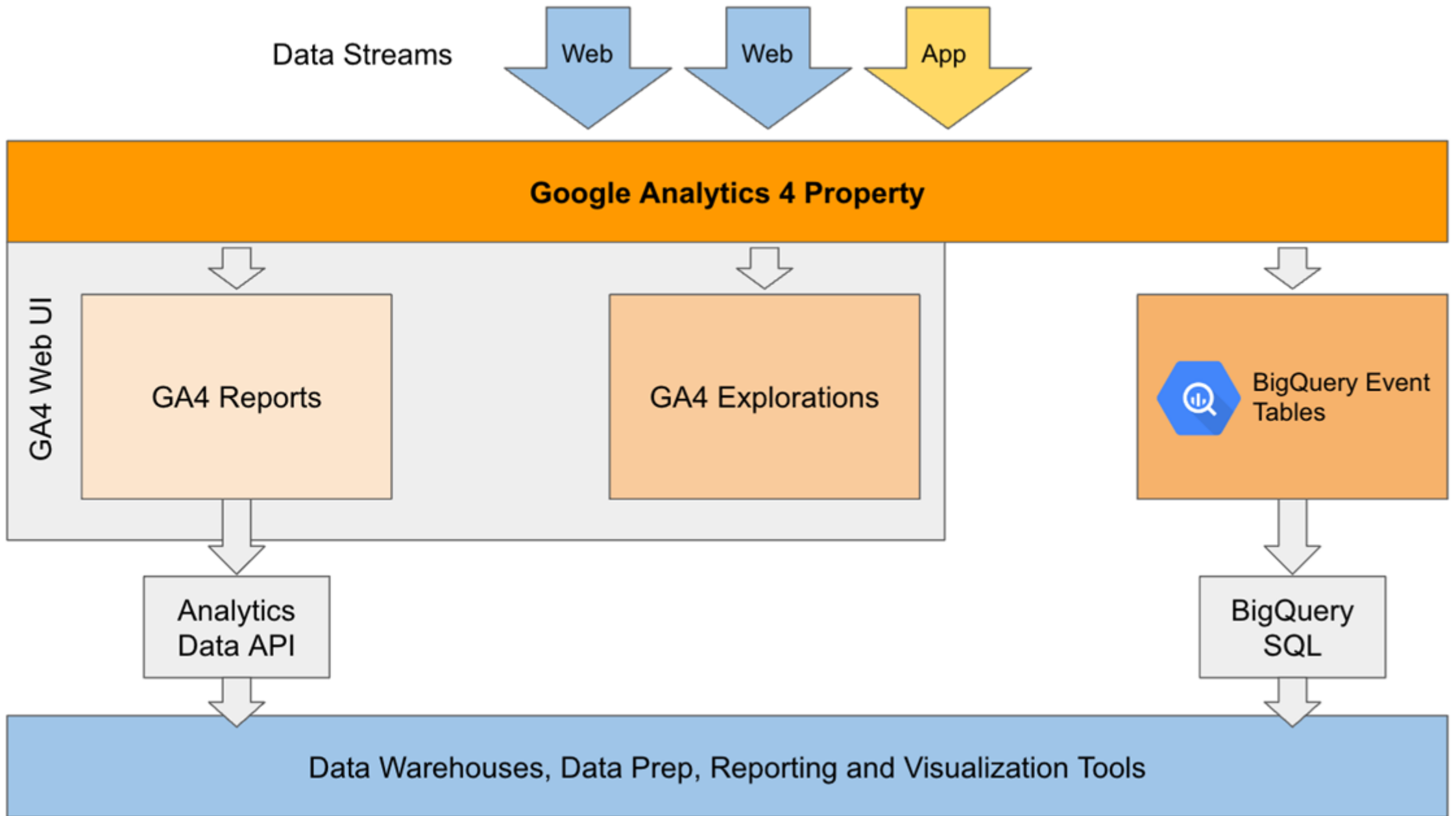


Credits: Analytics Canva

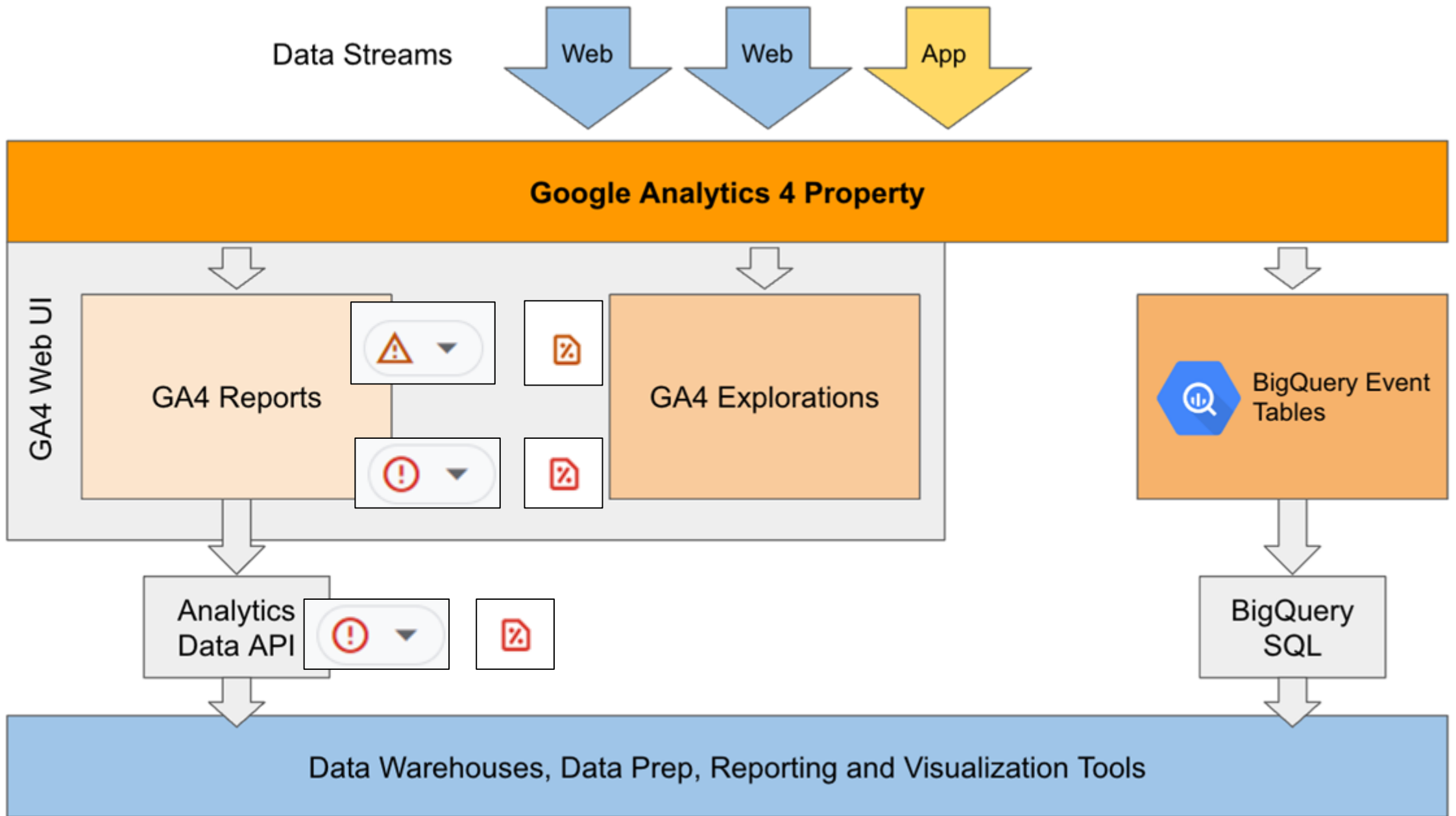


Credits: Analytics Canva

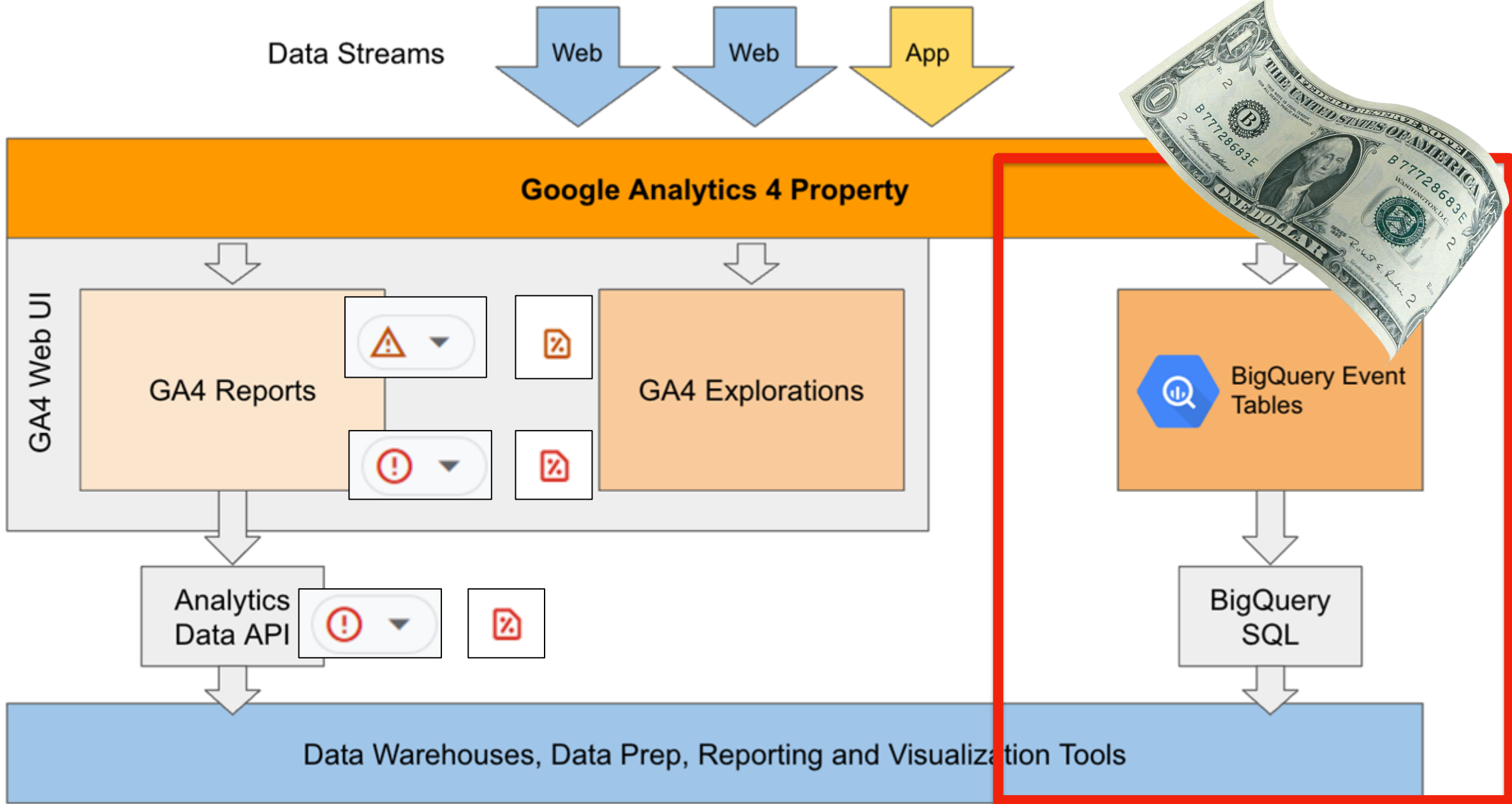




Credits: Analytics Canva



Credits: Analytics Canva



Credits: Analytics Canva



Explorer + ADD <

Viewing workspace resources. SHOW STARRED ONLY

- tag-manager-italia
  - External connections
  - Saved queries (3)
  - analytics\_208876289
    - events\_ (890)
      - events\_intraday\_ (1)
      - test\_campaign
      - analytics\_271295306
      - analytics\_273317618
      - analytics\_286501718
      - analytics\_296390059
      - firebase\_crashlytics

events\_20230514 2023-05-14 QUERY SHARE COPY SNAPSHOT DELETE EXPORT REFRESH

SCHEMA DETAILS PREVIEW LINEAGE

Filter Enter property name or value

Field name	Type	Mode	Key	Collation	Default Value	Policy Tags	Description
<input type="checkbox"/> event_date	STRING	NULLABLE					
<input type="checkbox"/> event_timestamp	INTEGER	NULLABLE					
<input type="checkbox"/> event_name	STRING	NULLABLE					
<input type="checkbox"/> event_params	RECORD	REPEATED					
<input type="checkbox"/> event_previous_timestamp	INTEGER	NULLABLE					
<input type="checkbox"/> event_value_in_usd	FLOAT	NULLABLE					
<input type="checkbox"/> event_bundle_sequence_id	INTEGER	NULLABLE					
<input type="checkbox"/> event_server_timestamp_offset	INTEGER	NULLABLE					
<input type="checkbox"/> user_id	STRING	NULLABLE					
<input type="checkbox"/> user_pseudo_id	STRING	NULLABLE					
<input type="checkbox"/> privacy_info	RECORD	NULLABLE					
<input type="checkbox"/> user_properties	RECORD	REPEATED					
<input type="checkbox"/> user_first_touch_timestamp	INTEGER	NULLABLE					
<input type="checkbox"/> user_ltv	RECORD	NULLABLE					
<input type="checkbox"/> device	RECORD	NULLABLE					
<input type="checkbox"/> geo	RECORD	NULLABLE					
<input type="checkbox"/> app_info	RECORD	NULLABLE					
<input type="checkbox"/> traffic_source	RECORD	NULLABLE					
<input type="checkbox"/> stream_id	STRING	NULLABLE					
<input type="checkbox"/> platform	STRING	NULLABLE					
<input type="checkbox"/> event_dimensions	RECORD	NULLABLE					

EDIT SCHEMA VIEW ROW ACCESS POLICIES

PERSONAL HISTORY PROJECT HISTORY REFRESH



SCHEMA	DETAILS	PREVIEW	LINEAGE								
Row	event_date	event_timestamp	event_name	event_params.key category	event_params.value.string_value timer visibility tap	event_int_value null	event_float_value null	event_double_value null	event_previous	event_value_in	event_bundle
16	20230514	168405722...	first_visit	engaged_session_event	null	1	null	null	null	null	54492173
				page_title	Libro Google Analytics 4 per chi inizia: acquista la tua copia!	null	null	null			
				page_location	https://shop.tagmanageritalia.it/libro-ga4-per-chi-inizia/?wbraid=Cj0KCCQjw6vviBhClARIsAJe2w4LdC8Xi0Mlp_r	null	null	null			
				ga_session_number	null	1	null	null			
				ga_session_id	null	1684057221	null	null			
17	20230514	168405722...	session_start	page_location	https://shop.tagmanageritalia.it/libro-ga4-per-chi-inizia/?wbraid=Cj0KCCQjw6vviBhClARIsAJe2w4LdC8Xi0Mlp_r	null	null	null	null	null	54492173
				ga_session_id	null	1684057221	null	null			
				ga_session_number	null	1	null	null			
				session_engaged	null	1	null	null			
				page_title	Libro Google Analytics 4 per chi inizia: acquista la tua copia!	null	null	null			
engaged_session_event	null	1	null	null							
18	20230514	168405722...	page_view	gtm_hit_timestamp	2023-05-14T11:40:21.367+02:00	null	null	null	null	null	54757001
				page_title	Libro Google Analytics 4 per chi inizia: acquista la tua copia!	null	null	null			

Viewing workspace resources. SHOW STARRED ONLY

- tag-manager-italia
  - Saved queries (3)
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  - analytics\_208876289
    - events\_ (1019)
    - events\_intraday\_ (1)**
    - pseudonymous\_users\_ (79)
    - test\_campaign
    - users\_ (77)
  - analytics\_271295306
  - analytics\_273317618
  - analytics\_286501718
  - analytics\_296390059
  - analytics\_311301273
  - firebase\_crashlytics
  - views

events\_intraday\_20230921 2023-09-21 QUERY SHARE COPY SNAPSHOT DELETE EXPORT

SCHEMA DETAILS PREVIEW LINEAGE DATA PROFILE DATA QUALITY

Filter Enter property name or value

<input type="checkbox"/>	Field name	Type	Mode	Key	Collation	Default Value	Policy Tags ?	Description
<input type="checkbox"/>	event_date	STRING	NULLABLE					
<input type="checkbox"/>	event_timestamp	INTEGER	NULLABLE					
<input type="checkbox"/>	event_name	STRING	NULLABLE					
<input type="checkbox"/>	▶ event_params	RECORD	REPEATED					
<input type="checkbox"/>	event_previous_timestamp	INTEGER	NULLABLE					
<input type="checkbox"/>	event_value_in_usd	FLOAT	NULLABLE					
<input type="checkbox"/>	event_bundle_sequence_id	INTEGER	NULLABLE					
<input type="checkbox"/>	event_server_timestamp_offset	INTEGER	NULLABLE					
<input type="checkbox"/>	user_id	STRING	NULLABLE					
<input type="checkbox"/>	user_pseudo_id	STRING	NULLABLE					
<input type="checkbox"/>	▶ privacy_info	RECORD	NULLABLE					
<input type="checkbox"/>	▶ user_properties	RECORD	REPEATED					
<input type="checkbox"/>	user_first_touch_timestamp	INTEGER	NULLABLE					
<input type="checkbox"/>	▶ user_ltv	RECORD	NULLABLE					
<input type="checkbox"/>	▶ device	RECORD	NULLABLE					
<input type="checkbox"/>	▶ geo	RECORD	NULLABLE					
<input type="checkbox"/>	▶ app_info	RECORD	NULLABLE					
<input type="checkbox"/>	▶ traffic_source	RECORD	NULLABLE					
<input type="checkbox"/>	stream_id	STRING	NULLABLE					
<input type="checkbox"/>	platform	STRING	NULLABLE					
<input type="checkbox"/>	▶ event_dimensions	RECORD	NULLABLE					
<input type="checkbox"/>	▶ ecommerce	RECORD	NULLABLE					
<input type="checkbox"/>	▶ items	RECORD	REPEATED					
<input type="checkbox"/>	▶ collected_traffic_source	RECORD	NULLABLE					

EDIT SCHEMA VIEW ROW ACCESS POLICIES





# STREAMING EXPORT = INTRADAY TABLE

BigQuery streaming export makes data for the current day available within a few minutes via BigQuery Export.

For each day, streaming export creates one new table:

**events\_intraday\_YYYYMMDD**



**WHAT DO YOU NEED  
TO CONFIGURE BIGQUERY EXPORT**

# WHAT DO YOU NEED

To connect GA4 with BigQuery, it is necessary to have the following:

- GA4 property



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To connect GA4 with BigQuery, it is necessary to have the following:

- GA4 property
- Google Cloud Project (with billing account)

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- Admin permission

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- Admin permission
- Link Google Cloud to GA4

# WHAT DO YOU NEED

To connect GA4 with BigQuery, it is necessary to have the following:

- GA4 property
- Google Cloud Project (with billing account)
- Admin permission
- Link Google Cloud to GA4
- Some data in your website 😊





ADMIN

USER

Reporting Identity

Attribution Settings

Property Change History

Data Deletion Requests

DebugView

PRODUCT LINKS

Google AdSense Links

Google Ads Links

Ad Manager Links

BigQuery Links

Display & Video 360 Links

Floodlight Links

Merchant Center

Google Play Links

Search Ads 360 Links

Search Console Links

Firebase Links

### BigQuery links

Search

Link

Project ID	Project name	Project number	
tag-manager-italia	Tag Manager Italia	1042635594896	>



ADMIN USER

Reporting Identity

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Property Change History

Data Deletion Requests

DebugView

PRODUCT LINKS

Google AdSense Links

Google Ads Links

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Merchant Center

Google Play Links

Search Ads 360 Links

Search Console Links

Firebase Links

### BigQuery links

Link

Project ID	Project name	Project number	
tag-manager-italia	Tag Manager Italia	1042635594896	>



Completed link details

**Project ID**

tag-manager-italia

**Project name**

Tag Manager Italia

**Project number**

1042635594896

**Default location for dataset creation** ⓘ

United States (us)

**Created by**

System

**Created date**

Jun 16, 2020

**Data configurations**

Event data



**Data streams and events**

Configure which data streams and events to export. All event volumes are estimated. Daily limit enforcement will be based on actual export. [Learn more](#)

TOTAL ESTIMATED DAILY EVENT VOLUME TO BE EXPORTED

0.01 / 1 million daily limit ⓘ

1 of 4 streams selected

No events excluded

[Configure data streams and events](#)



Include advertising identifiers for mobile app streams



TOTAL ESTIMATED DAILY EVENT VOLUME TO BE EXPORTED

0.01 / 1 million daily limit ⓘ

Data streams to export 1 of 4 streams selected

<input type="checkbox"/>	Stream name	ID	Platform	Excluded event volume ⓘ	Daily event volume ↓
<input checked="" type="checkbox"/>	Tag Manager Italia	1550891420	Web	0	8,912
<input type="checkbox"/>		1950772294	iOS	0	1
<input type="checkbox"/>		1956843599	Android	0	0
<input type="checkbox"/>	Alpha Tag Manager Italia	5226909905	Web	0	0

Items per page: 10 ▾ 1 - 4 of 4 |< < > >|

Events to exclude ⓘ No events excluded

Specify event by name

Add

Event name Marked as conversion ⓘ Daily event volume ↓

No excluded events yet. Click "Add" or "Specify event by name" to choose which event to exclude during export.





Choose events to exclude

Search

Add

<input type="checkbox"/>	Event name	Marked as conversion ⓘ	Daily event volume (based on selected streams) ↓
<input type="checkbox"/>	web_core_vitals	No	1,627
<input type="checkbox"/>	page_view	No	1,008
<input type="checkbox"/>	performance	No	801
<input type="checkbox"/>	session_start	No	784
<input type="checkbox"/>	geolocation	No	735
<input type="checkbox"/>	adblock	No	713
<input type="checkbox"/>	user_engagement	No	573
<input type="checkbox"/>	first_visit	No	441
<input type="checkbox"/>	timer_1_min	No	411
<input type="checkbox"/>	error_javascript	No	297
<input type="checkbox"/>	scroll	No	270
<input type="checkbox"/>	timer_5_min	No	182
<input type="checkbox"/>	dialog_view	No	177
<input type="checkbox"/>	session_3_min	No	145
<input type="checkbox"/>	timer_10_min	No	130
<input type="checkbox"/>	rage_click	No	118
<input type="checkbox"/>	timer	No	93

## Data configurations

### Event data



#### Data streams and events

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TOTAL ESTIMATED DAILY EVENT VOLUME TO BE EXPORTED

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1 of 4 streams selected

No events excluded

[Configure data streams and events](#)



Include advertising identifiers for mobile app streams



#### Export type



Daily

A full export of data that takes place once a day



Streaming

Continuous export, within seconds of event arrival. [Learn more](#)

### User data

All users with activity for the current day, based on a change in one of the user's [attributes](#), will be exported. User data export will be paused if the event data export exceeds the limit. [Learn more about BigQuery user data export](#)



#### Export type



Daily

A full export of data that takes place once a day

## Data configurations

### Event data



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TOTAL ESTIMATED DAILY EVENT VOLUME TO BE EXPORTED

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[Configure data streams and events](#)



Include advertising identifiers for mobile app streams



#### Export type



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#### Export type



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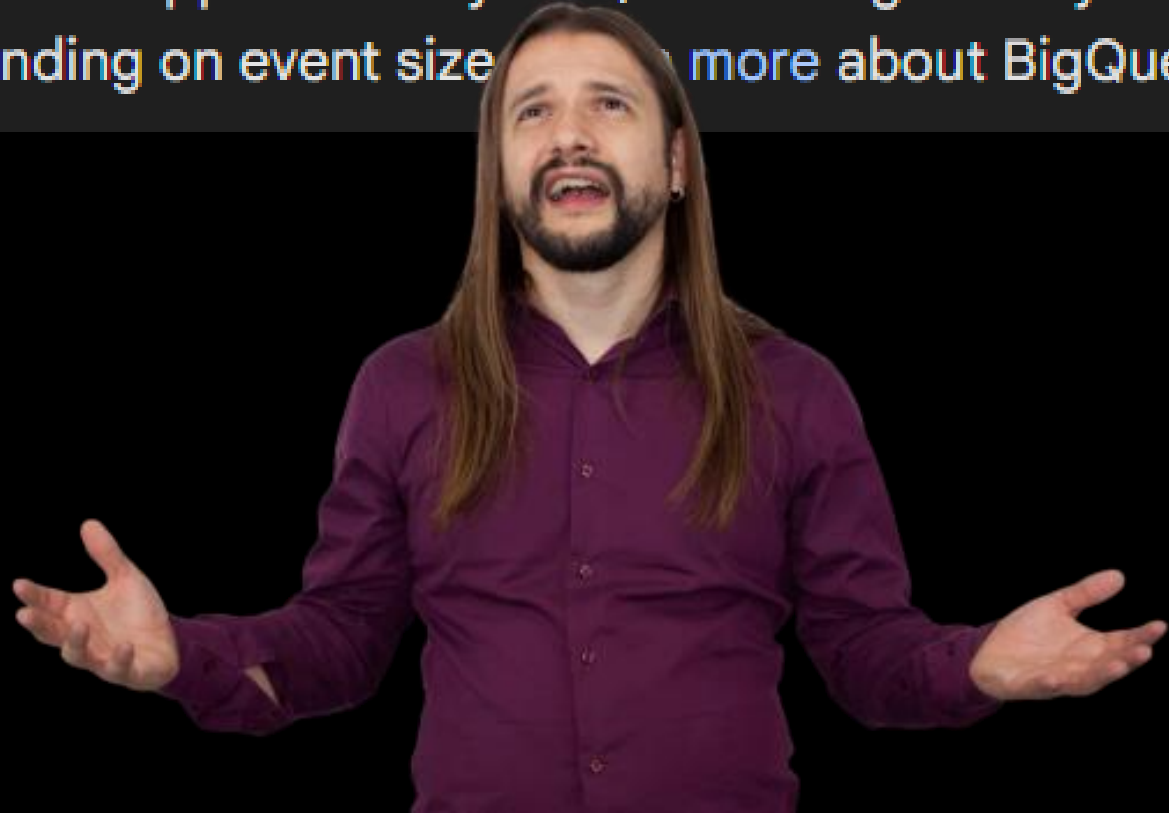
# IT IS NOT (COMPLETELY) FREE

You will incur additional BigQuery costs for using streaming export at the rate of \$0.05 per gigabyte of data. 1 gigabyte equates to approximately 600,000 Google Analytics events, though that number will vary depending on event size. [Learn more about BigQuery pricing.](#)



# IT IS NOT (COMPLETELY) FREE

You will incur additional BigQuery costs for using streaming export at the rate of \$0.05 per gigabyte of data. 1 gigabyte equates to approximately 600,000 Google Analytics events, though that number will vary depending on event size. Learn more about BigQuery pricing.



View and download cost details for a specific invoice month. Recurring data exports to BigQuery can be set up on the [billing export page](#).

Invoice number: [REDACTED]

Invoice date: 2023-07-31

Total amount due: €2.44

Currency: EUR

Currency exchange rate ⓘ : 0.915

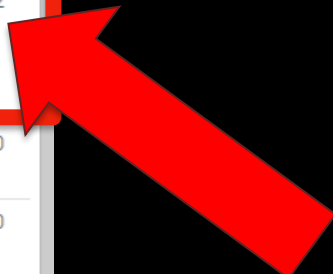
Billing ID: [REDACTED]

Billing account ID: [REDACTED]

### In Risalto Billing Account, 7/1/23 – 7/31/23



<input type="checkbox"/>	Project name > Service description > SKU description	Billing account name	Billing account ID	Project name	Project ID	Project hierarchy	↓ Cost (€)
<input type="checkbox"/>	▼ Tag Manager Italia	In Risalto Billing Account	[REDACTED]	Tag Manager Italia	tag-manager-italia		2.44
<input type="checkbox"/>	▼ BigQuery	In Risalto Billing Account	[REDACTED]	Tag Manager Italia	tag-manager-italia		2.00
<input type="checkbox"/>	▶ Long Term Logical Storage	In Risalto Billing Account	[REDACTED]	Tag Manager Italia	tag-manager-italia		1.38
<input type="checkbox"/>	▶ Active Logical Storage	In Risalto Billing Account	[REDACTED]	Tag Manager Italia	tag-manager-italia		0.60
<input type="checkbox"/>	▼ Streaming Insert	In Risalto Billing Account	[REDACTED]	Tag Manager Italia	tag-manager-italia		0.02
<input type="checkbox"/>	Streaming Insert	In Risalto Billing Account	[REDACTED]	Tag Manager Italia	tag-manager-italia	[Project not associated with folders or organizations]	0.02
<input type="checkbox"/>	▶ Analysis	In Risalto Billing Account	[REDACTED]	Tag Manager Italia	tag-manager-italia		0.00
<input type="checkbox"/>	▶ Long Term Logical Storage (europe-west1)	In Risalto Billing Account	[REDACTED]	Tag Manager Italia	tag-manager-italia		0.00
<input type="checkbox"/>	▶ Active Logical Storage (europe-west1)	In Risalto Billing Account	[REDACTED]	Tag Manager Italia	tag-manager-italia		0.00
<input type="checkbox"/>	▶ Tax	In Risalto Billing Account	[REDACTED]	Tag Manager Italia	tag-manager-italia		0.44



Saved views

December 1, 2021 – August 31, 2023 (total cost) ?

€0.23

includes €0.00 in credits , €0.00 tax



€0.23 over March 1, 2020 – November 30, 2021



DOWNLOAD CSV

Service	Cost	Discounts	Promotions and others	Subtotal	% Change ?
BigQuery	€0.23	-	€0.00	€0.23	-



Subtotal	€0.23
Filtered total ?	€0.23

Presets

Time range

Usage date Invoice month

From December 2021

To August 2023

Group by Service

Projects All projects (6)

Services All services (2)

SKUs

Filter stre

1 filtered results

Streaming Insert

services/24E6-581D-38E5/skus/934C-4547-E59A

Invoice level charges

Tax

RESET

# OK, AND NOW?

Now you can use events\_intraday table to populate some  
Looker Studio reports.



# OK, AND NOW?

The problem with BigQuery tables is that you have to calculate metrics (sessions, active users), attribution (channel grouping) with SQL query.

[developers.google.com/analytics/blog/2023/bigquery-vs-ui](https://developers.google.com/analytics/blog/2023/bigquery-vs-ui)

# Bridging the gap between Google Analytics UI and BigQuery export

*Minhaz Kazi, Developer Advocate, Google Analytics – April 2023*

*"But why won't the numbers match with the UI?"*

If you have worked with the BigQuery event export data for your GA4 property, you definitely have asked this question at some point. Or worse - someone else asked you this. And while trying to answer it, you probably have been asked the dreaded followup question:

*"And where does it say that?"*

With this article, we will try to shed light on both.

Before we go into details of how the numbers vary, it is important to understand the intended purpose of the BigQuery event export data. Google Analytics users send their collected data to GA via one of the collection methods - [Google Tag](#), [Google Tag Manager](#), [Measurement Protocol](#), [SDKs](#), and [Data Import](#). Based on the GA property's settings, Google Analytics does significant value addition to the collected data before it reaches the standard reporting surfaces including [standard reports](#), [Explorations](#), and the [Data API](#). These value additions can include inclusion of Google Signals, modeling, traffic attribution, prediction etc.

The standard reporting surfaces aim to provide the maximum value to GA users at the lowest friction. However, we understand that on the broad spectrum of users, some might want to supplement the value additions by Google Analytics or even do something completely customized. For these users, BigQuery event export is the intended starting point. BigQuery event export will have **collected data**, which is sent from the client or app to Google Analytics. BigQuery event export will not contain granular data on most value additions mentioned above.

Thus, for a large number of use cases, the standard reporting surfaces and the BigQuery export data aren't expected to be reconcilable when it comes to these value addition parts. If there is internal consistency in both and they match with what you are collecting, you should be good to go.

Now let's get into some of the specific reasons for the differences and explore ways for mitigating them when possible. This article focuses on the BigQuery Daily event export only and not the Streaming export.





**GA4 REAL TIME REPORT**

**LOOKER STUDIO TEMPLATE**

# FORTUNATELY, THERE ARE SIMPLE SOLUTION

The GA4 community is great and some Looker Studio experts share some free templates.





# Take Action On Data

Don't Just Look At It

≡ Link Down Below



**JJ Reynolds** (He/Him) · 1st

Activating Data 1 Client at a Time | Building a sustainable company.  
Talk about measurement systems



Mediauthentic

FREE

100% FREE Realtime Report Delivered

# Looker Studio GA4 Realtime Report

Using BigQuery's Intraday Streaming

First Name \*

Email (This is where the report will be sent) \*

Company Name \*

Which Best Describes You \*

Your GA4 Dataset ID \*

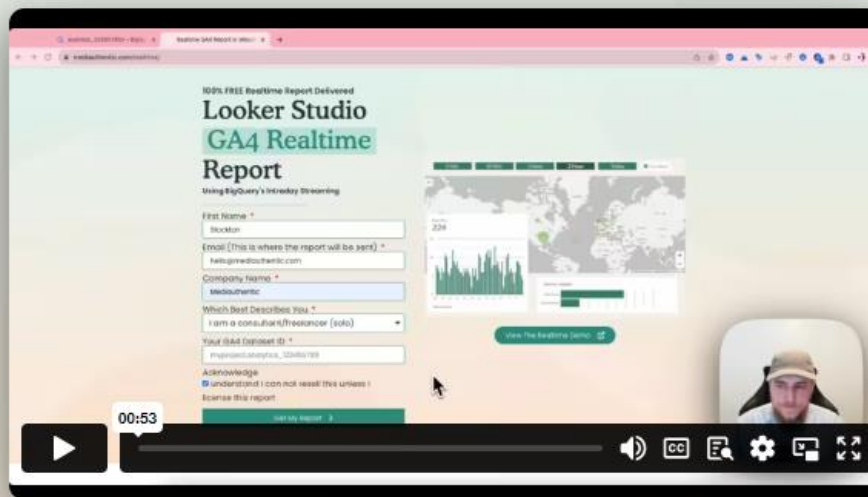
Acknowledge

understand I can not resell this unless I

license this report

Get My Report >

Please Watch This First



View The Realtime Demo

FREE

100% FREE Realtime Report Delivered

# Looker Studio GA4 Realtime Report

Using BigQuery's Intraday Streaming

First Name \*

Email (This is where the report will be sent) \*

Company Name \*

Which Best Describes You \*

Consultant/freelancer (solo) ▾

Your GA4 Dataset ID \*

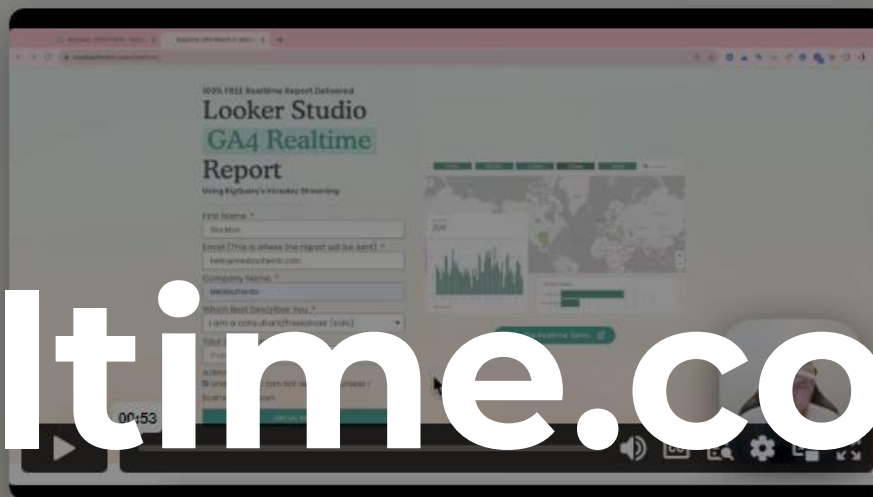
Acknowledge

understand I can not resell this unless I

license this report

Get My Report >

Please Watch This First



View The Realtime Demo

ga4realtime.com

- RECENT PROJECTS
  - MY PROJECTS
  - SHARED PROJECTS
  - CUSTOM QUERY
  - PUBLIC DATASETS
- Billing Project
- Tag Manager Italia
- Wizard test
- ga3-tmi-backup
- Tag Manager Italia - Demo GA4
- Demo Tag Manager Italia GA4
- Voice Analytics
- Test Firebase

```
Enter Custom Query

1 -- Query for Final Table
2 SELECT
3 -- event name, minutes past at event level
4 sourceDataSet,
5 eventName,
6 time_since_in_minutes as minutes_past,
7 page_location
8
9 FROM (
10 --Prep Query for Final Table
11 SELECT
12     sourceDataSet,
13     event_timestamp,
14     time_since_in_minutes,
15     session_uid,
16     eventName,
17     page_location
18 FROM (
19     SELECT
20         events.sourceDataset,
21         events.session_uid,
22         events.event_timestamp,
23         events.eventName,
24         events.time_since_in_minutes,
25         events.page_location
26
27     -- Events table
28     FROM (
29         SELECT
```

Use Legacy SQL ?

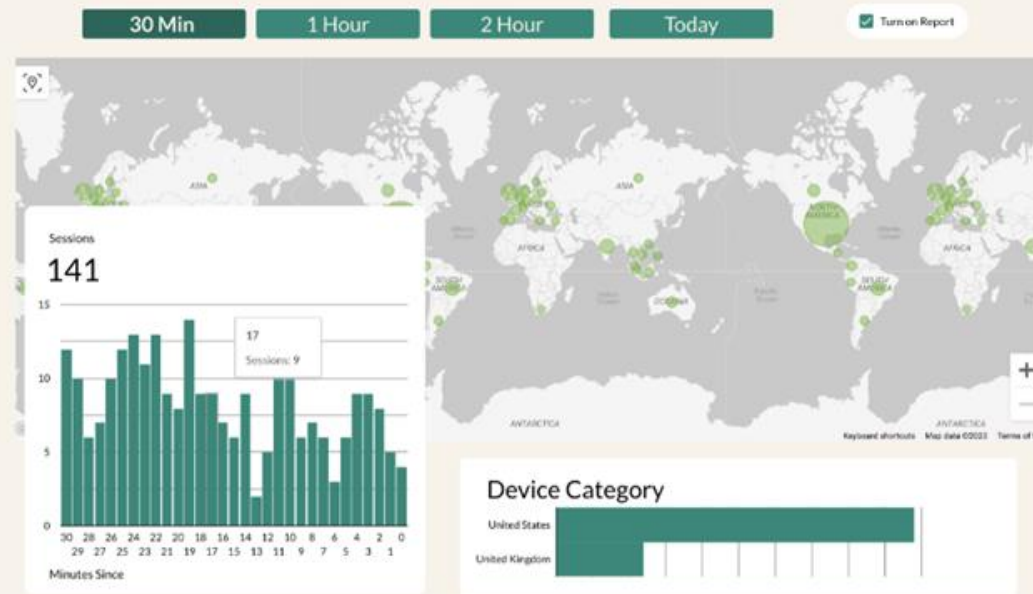
Parameters ?

**THREE CUSTOM  
QUERY DATA  
SOURCES**

Built by Mediaauthentic for Demonstration Purposes

[Learn More >](#)

# Launch Realtime GA4 + BigQuery



Welcome to the GA4 Realtime report! This report is a powerful tool that can help you debug your website or app, compare your performance, monitor your traffic in real time, and launch new features with confidence.



5 Min

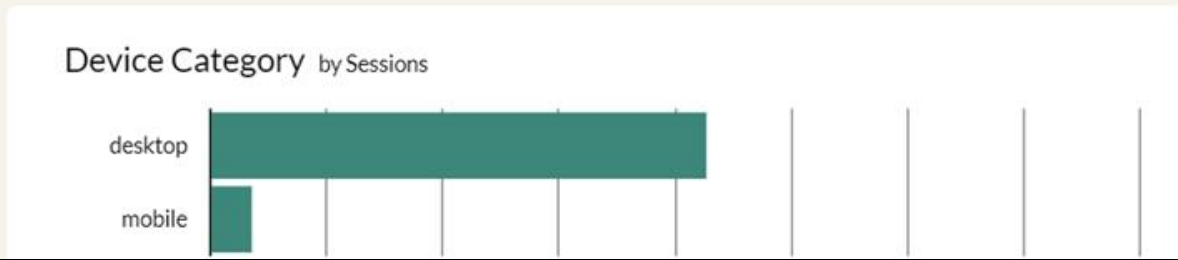
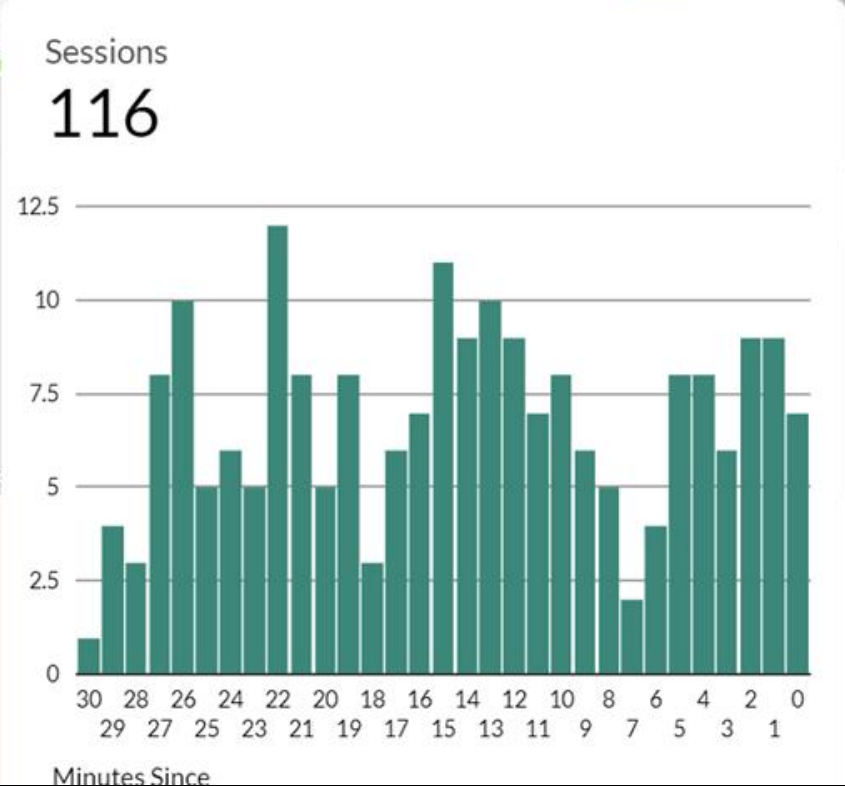
30 Min

1 Hour

2 Hour

Today

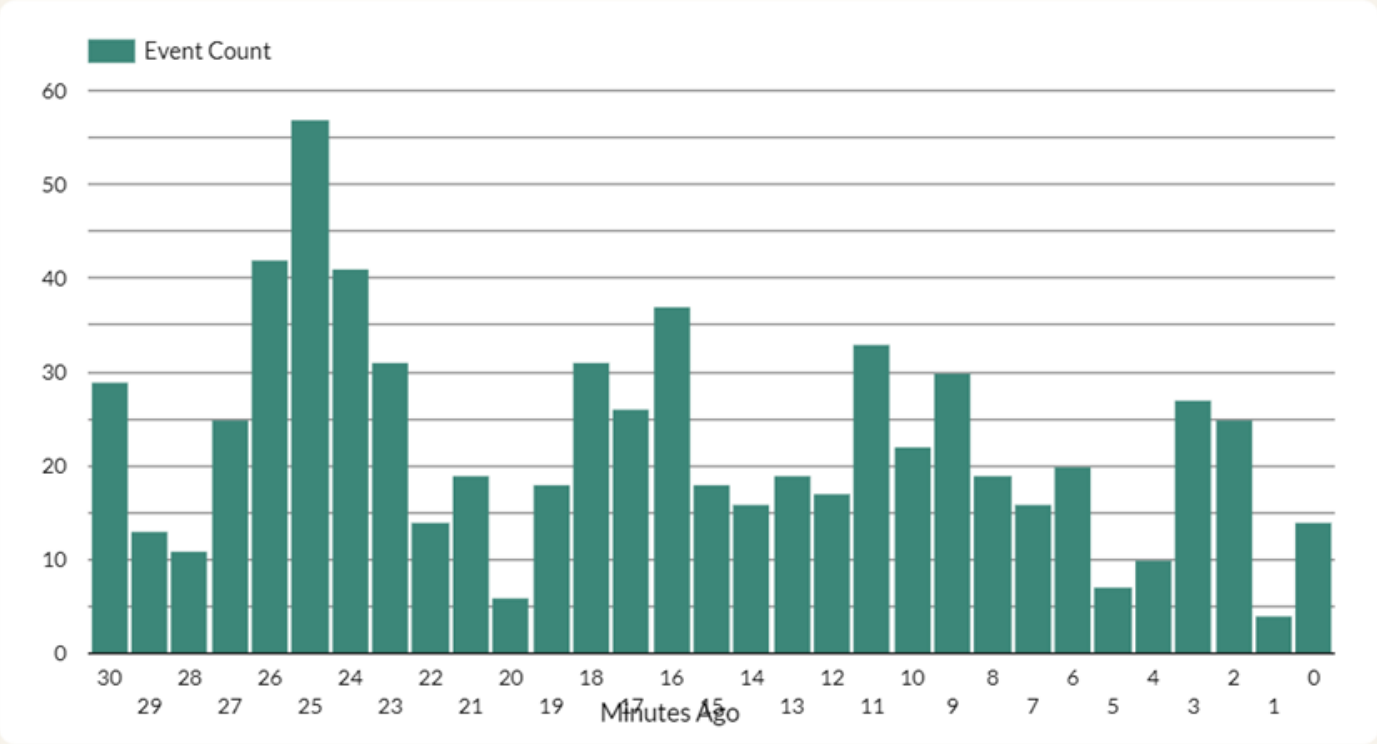
Turn on Report



- Welcome!
- Realtime Reporting
- Overview
- Event Monitor**
- Geography Report
- Ecommerce Monitor
- Administration
- Cost Monitor

- 5 Min**
- 30 Min
- 1 Hour
- All

Report Status  
 Off  On



Event Name	Event Count
1. web_core_vitals	104
2. page_view	81
3. adblock	77
4. geolocation	73
5. performance	68
6. session_start	61
7. user_engagement	50
8. timer_1_min	41
9. first_visit	26
10. dialog_view	23
11. scroll	21
12. error_javascript	20
13. timer_5_min	17

### Page Location

Raw URL  Remove Parameters

Select a page to isolate

Page Location	Total Events
https://www.tagmanageritalia.it/tag/google-analytics-4/	28
https://www.tagmanageritalia.it/cosa-diavolo-e-google-tag-manager/	19

Welcome!

Realtime Reporting

Overview

Event Monitor

Geography Report

Ecommerce Monitor

Administration

Cost Monitor



5 Min

30 Min

1 Hour

All

Report Status

Off  On



5 Min 30 Min 1 Hour 2 Hour Today

Turn on Report



View Item Events

31

Continue Rate 87.10%

Add to Cart Events

27

Continue Rate 22.22%

Purchase Events

6

Conversion Rate 19.35%

Session Source

Session Medium

Session Campaign

Device Category

Landing Page

Country

### Transactions & Session Id

Transaction ID	Session ID	Timestamp	Session Source	Session Medium	Purchase Events
trans-202308140410	1692011383_1135675894.1692011383	Aug 14, 2023, 4:10:00AM	youtube	share	\$129

# What about the BigQuery cost?

How much will it cost?





## How BigQuery pricing works

BigQuery pricing is based on compute (analysis), storage, additional services, and data ingestion and extraction. Loading and exporting data are free.

Services and usage	Subscription type	Price (USD)
Free tier	The <a href="#">BigQuery free tier</a> gives customers 10 GB storage, up to 1 TB queries free per month, and other resources.	Free
Compute (analysis)	<b>On-demand</b> Generally gives you access to up to 2,000 concurrent slots, shared among all queries in a single project.	Starting at <b>\$5.00</b> First 1 TB per month is free
	<b>Standard edition</b> Low-cost option for standard SQL analysis	<b>\$0.04</b> per slot hour
	<b>Enterprise edition</b> Supports advanced enterprise analytics	<b>\$0.06</b> per slot hour
	<b>Enterprise Plus edition</b> Supports mission-critical enterprise analytics	<b>\$0.10</b> per slot hour



# How many GB did we use for these reports?



# How many GB did we use for these reports?

It depends:

- by the number of graphs used

QUERY

# How many GB did we use for these reports?

It depends:

- by the number of graphs used
- usage frequency



QUERY

# How many GB did we use for these reports?

It depends:

- by the number of graphs used
- usage frequency
- filtering frequency

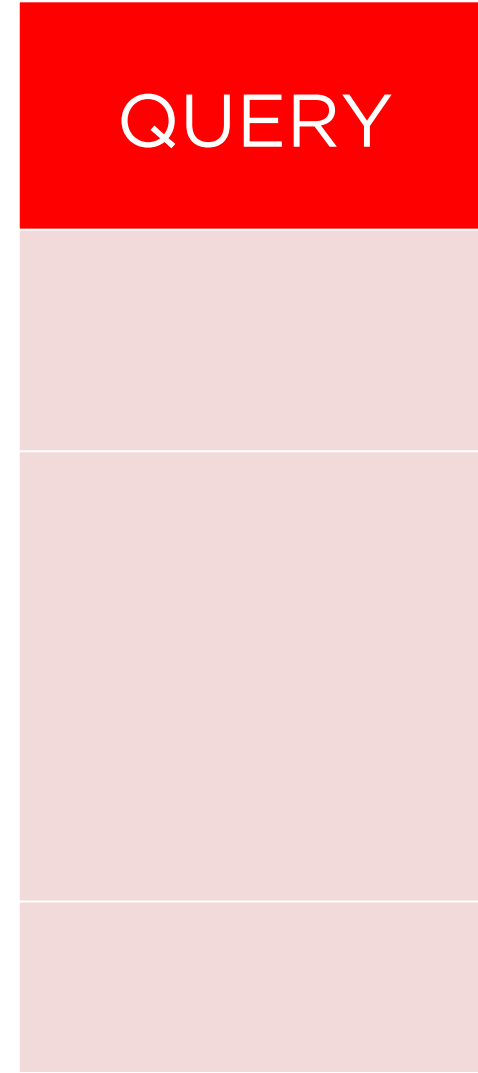




# How many GB did we use for these reports?

It depends:

- by the number of graphs used
- usage frequency
- filtering frequency
- number of users viewing the report



# How many GB did we use for these reports?

It could be 200/300GB

or

3/4 TB



QUERY

Welcome!

Realtime Reporting

Overview

Event Monitor

Geography Report

Ecommerce Monitor

Administration

Cost Monitor

# Usage & Report Cost Monitor



Aug 30, 2023 - Sep 21, 2023

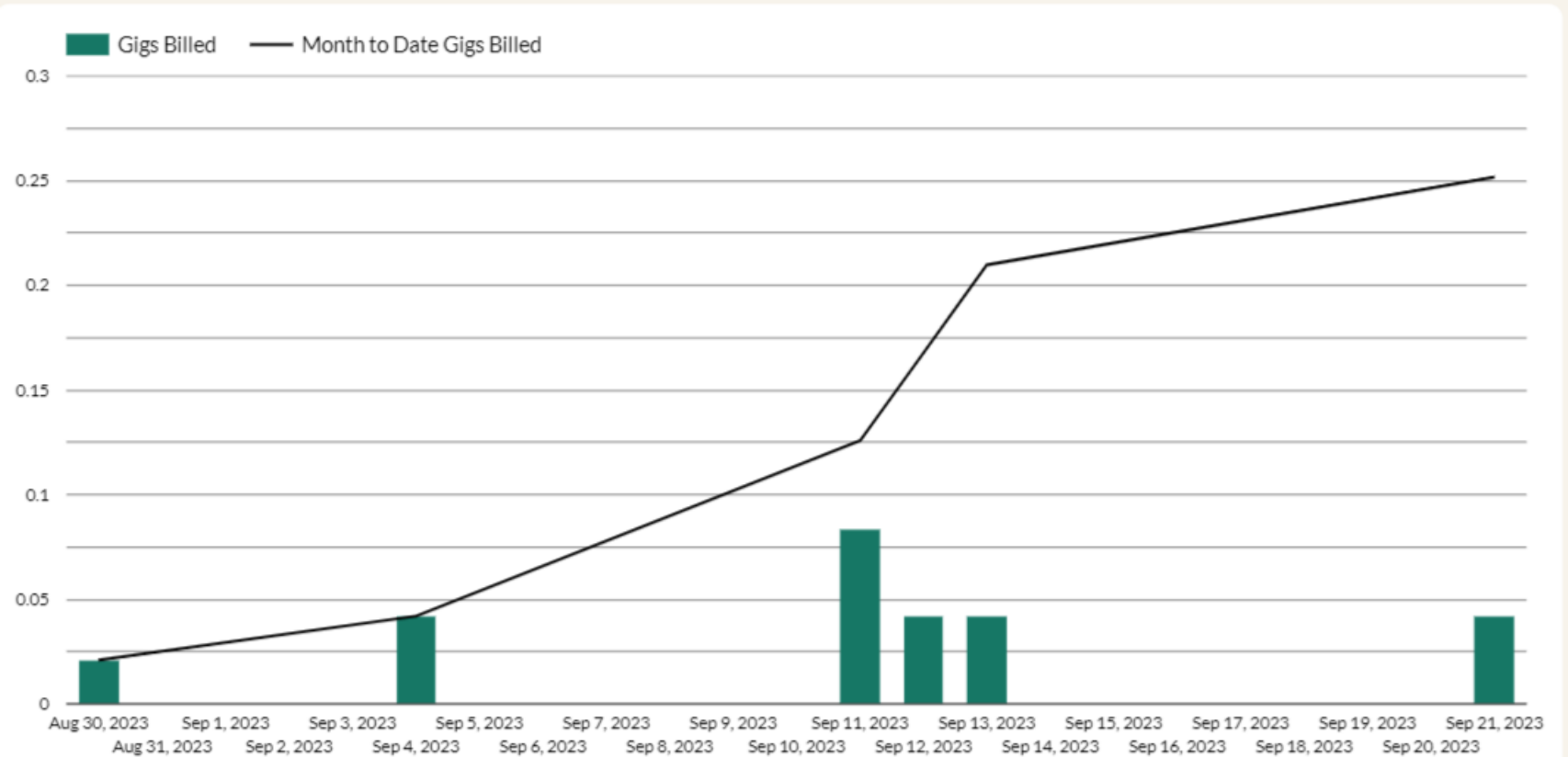
Gigs Billed  
**0.23**

% of Free Tier Used  
**0.02%**

Total Cost of this report  
**\$0.00**  
0.0%

This report does use some big query links which is NOT FREE, just really cheap, this will keep your teams in check & shut things down if they ever go over your expected budget.

\$35.00





**THAT'S GREAT!**



**HUGE TRAFFIC**



# But is that enough?

How can I **be sure** that this solution works for all cases?



# THE PROPERTY OF GA4 EXCEEDS THE LIMITS

If the website/ecommerce/app have **a huge traffic** could be a problem.

Link setup

1 Choose a BigQuery project

2 Configure settings

Event data



Data streams and events

Configure which data streams and events to export. All event volumes are estimated. Daily limit enforcement will be based on actual export. [Learn more](#)

TOTAL ESTIMATED DAILY EVENT VOLUME TO BE EXPORTED

6.95 / 1 million daily limit ⓘ

1 of 1 stream selected

No events excluded

[Configure data streams and events](#)

Include advertising identifiers for mobile app streams



Export type

Streaming only available for Cloud Projects with Billing enabled.

Daily  
A full export of data that takes place once a day

Streaming  
Continuous export, within seconds of event arrival. [Learn more](#)

User data

All users with activity for the current day, based on a change in one of the user's [attributes](#), will be exported. User data export will be paused if the event data export exceeds the limit. [Learn more about BigQuery user data export](#)



Export type

Daily  
A full export of data that takes place once a day

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### Data streams and events

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TOTAL ESTIMATED DAILY EVENT VOLUME TO BE EXPORTED

 6.95 / 1 million daily limit 

1 of 1 stream selected

No events excluded

[Configure data streams and events](#)

Include advertising identifiers for mobile app streams



# HOW TO FIX IT?

You can exclude some events (it's not a great solution...)

TOTAL ES  
6.9

- Data st
- S
- M

Events  
Event nam

<input type="checkbox"/> Event name	Marked as conversion	Daily event volume (based on selected streams) ↓
<input type="checkbox"/> page_view	No	2,220,311
<input type="checkbox"/> session_start	No	1,857,106
<input type="checkbox"/> user_engagement	No	1,364,233
<input type="checkbox"/> first_visit	No	757,940
<input type="checkbox"/> scroll	No	611,650
<input type="checkbox"/> click	No	109,298
<input type="checkbox"/> MGID Ad Request	No	30,382
<input type="checkbox"/> MGID Impression	No	834
<input type="checkbox"/> view_search_results	No	77
<input type="checkbox"/> form_start	No	73
<input type="checkbox"/> form_submit	No	55
<input type="checkbox"/> file_download	No	42
<input type="checkbox"/> video_progress	No	1
<input type="checkbox"/> video_start	No	1

Configure data streams and events

TOTAL EVENTS  
6.9

Data streams

- Stream 1
- Stream 2

Events

Event name

Choose events to exclude

Search

<input type="checkbox"/> Event name	Marked as conversion	Daily event volume (based on selected streams) ↓
<input type="checkbox"/> page_view	No	2,220,311
<input type="checkbox"/> session_start	No	1,857,106
<input type="checkbox"/> user_engagement	No	1,364,233
<input type="checkbox"/> first_visit	No	757,940
<input type="checkbox"/> scroll		611,650
<input type="checkbox"/> click		109,298
<input type="checkbox"/> MGID Ad Request		30,382
<input type="checkbox"/> MGID Impression	No	834
<input type="checkbox"/> view_search_results	No	77
<input type="checkbox"/> form_start	No	73
<input type="checkbox"/> form_submit	No	55
<input type="checkbox"/> file_download	No	42
<input type="checkbox"/> video_progress	No	1
<input type="checkbox"/> video_start	No	1

2,220,311

Configure data streams and events

Choose events to exclude

Search

Add

<input type="checkbox"/> Event name	Marked as conversion	Daily event volume (based on selected streams) ↓
<input type="checkbox"/> page_view	No	2,220,311
<input type="checkbox"/> session_start	No	1,857,106
<input type="checkbox"/> user_engagement	No	1,364,233
<input type="checkbox"/> first_visit	No	757,940
<input type="checkbox"/> scroll		611,650
<input type="checkbox"/> click		109,298
<input type="checkbox"/> MGID Ad Request		30,382
<input type="checkbox"/> MGID Impression	No	834
<input type="checkbox"/> view_search_results	No	77
<input type="checkbox"/> form_start	No	73
<input type="checkbox"/> form_submit	No	55
<input type="checkbox"/> file_download	No	42
<input type="checkbox"/> video_progress	No	1
<input type="checkbox"/> video_start	No	1

2,220,311



## BigQuery Export limits

Standard GA4 properties have a BigQuery Export limit of 1 million events for Daily (batch) exports. **There is no limit on the number of events for Streaming export.** If your property consistently exceeds the export limit, the daily BigQuery export will be paused and previous days' exports will not be reprocessed.

Property editors and administrators will receive an email notification each time a property they manage exceeds the daily limit. That notification will indicate when their export will be paused if action is not taken. Additionally, if a standard property significantly exceeds the one-million-event daily limit, Analytics may pause daily exports immediately. If you receive a notification, please leverage the data-filtering options (data-stream export and event-exclusion) to decrease the volume of events exported each day and ensure the daily export continues to operate.





**THAT'S GREAT!**

# STREAMING EXPORT

I can only choose export streaming for real time report.

**But how much will it cost?**

Data sources

CLOSE

Name	Connector Type	Type	Used in report	Status	Actions	Alias
Event Summary	BigQuery	Embedded	10 charts	Working	EDIT DUPLICATE REMOVE MAKE REUSABLE	ds261
Session Summary	BigQuery	Embedded	25 charts	Working	EDIT DUPLICATE REMOVE MAKE REUSABLE	ds255
Cost Query	BigQuery	Embedded	4 charts	Working	EDIT DUPLICATE REMOVE MAKE REUSABLE	ds258

+ ADD A DATA SOURCE

**Explorer** + ADD | <

Q Type to search ?

Viewing workspace resources.  
[SHOW STARRED ONLY](#)

- tag-manager-italia ☆ ⋮
  - ▶ Saved queries (3) ⋮
  - ▶ External connections ⋮
  - ▶ analytics\_208876289 ☆ ⋮
  - ▶ analytics\_271295306 ☆ ⋮
  - ▶ analytics\_273317618 ☆ ⋮
  - ▶ analytics\_286501718 ☆ ⋮
  - ▶ analytics\_296390059 ☆ ⋮
  - ▶ analytics\_311301273 ☆ ⋮
    - events\_intraday\_ (2) ☆ ⋮
    - events\_intraday\_20230... ☆ ⋮
  - ▶ firebase\_crashlytics ☆ ⋮
  - ▶ views ☆ ⋮

events\_intraday\_20230912 × \*Untitled × \*Untitled 2 × +

**Untitled 2** RUN SAVE SHARE SCHEDULE MORE

✓ This query will process 1.05 GB when run.

```
1 SELECT * FROM `tag-manager-italia.analytics_311301273.events_intraday_20230911`
```

### Explorer

+ ADD | <

Type to search

Viewing workspace resources.  
SHOW STARRED ONLY

- tag-manager-italia
  - Saved queries (3)
  - External connections
  - analytics\_208876289
  - analytics\_271295306
  - analytics\_273317618
  - analytics\_286501718
  - analytics\_296390059
  - analytics\_311301273
    - events\_intraday\_ (2)
    - events\_intraday\_20230...
  - firebase\_crashlytics
  - views

events\_intraday\_20230912 | \*Untitled | \*Untitled 2

### Untitled 2

RUN | SAVE | SHARE | SCHEDULE | MORE

```
1 SELECT * FROM `tag-manager-italia.analytics_311301273.events_intraday_20230911`
```

Home | Info | Keyboard | Lightbulb | Help

✔ This query will process 1.05 GB when run



Type to search

Viewing workspace resources. SHOW STARRED ONLY

- tag-manager-italia
  - Saved queries (3)
  - External connections
  - analytics\_208876289
  - analytics\_271295306
  - analytics\_273317618
  - analytics\_286501718
  - analytics\_296390059
  - analytics\_311301273
    - events\_intraday\_ (2)
    - events\_intraday\_20230...
  - firebase\_crashlytics
  - views

Untitled 2 RUN SAVE SHARE SCHEDULE MORE

This query will process 1.17 GB when run.

```

1 -- Query for Final Table
2 SELECT
3   sourceDataSet,
4   landingPage,
5   time_since_in_minutes as minutes_past,
6   ifnull(if(regex_contains(landingPage,"gclid|gbraid|wbraid"),"google", sessionFirstSource),"direct") as source,
7   ifnull(if(regex_contains(landingPage,"gclid|gbraid|wbraid"),"cpc", sessionFirstMedium),"none") as medium,
8   ifnull(sessionFirstCampaign, "(not set)") as campaign,
9   ifnull(sessionFirstContent, "(not set)") as content,
10  ifnull(sessionFirstTerm, "(not set)") as term,
11  ifnull(sessionFirstDevice, "(not set)") as device,
12  ifnull(sessionFirstCountry, "(not set)") as country,
13  COUNT(DISTINCT session_uid) as sessions,
14  COUNT(DISTINCT IF(eventName = "page_view", session_uid,null)) as unique_page_views,
15  COUNT(DISTINCT IF(eventName = "view_item_list",session_uid,null)) as view_item_list,
16  COUNT(DISTINCT IF(eventName = "view_item",session_uid,null)) as view_item,
17  COUNT(DISTINCT IF(eventName = "add_to_cart",session_uid,null)) as add_to_cart,
18  COUNT(DISTINCT IF(eventName = "begin_checkout",session_uid,null)) as begin_checkout,
19  COUNT(DISTINCT IF(eventName = "purchase",session_uid,null)) as purchase,
20  COUNT(DISTINCT IF(eventName = "generate_lead",session_uid,null)) as leads,
21  SUM(totalRevenue) AS revenue
22
23 FROM (
24  --Prep Query for Final Table
25  SELECT
26    sourceDataSet,
27    event_timestamp,
28    time_since_in_minutes,
29    session_uid,
30    eventName,
31    landingPage,
32    sessionFirstSource,
33    sessionFirstMedium,
34    sessionFirstCampaign,
35    .....

```

Navigation menu

Viewing workspace resources.

SHOW STARRED ONLY

- tag-manager-italia
  - Saved queries (3)
  - External connections
  - analytics\_208876289
  - analytics\_271295306
  - analytics\_273317618
  - analytics\_286501718
  - analytics\_296390059
  - analytics\_311301273
    - events\_intraday\_ (2)
    - events\_intraday\_20230...
  - firebase\_crashlytics
  - views

Untitled 2

```
1 -- Query for Final Table
2 SELECT
3   sourceDataSet,
4   landingPage,
5   time_since_in_minutes as minutes_past,
6   ifnull(if(regex_contains(landingPage,"gclid|gbraid|wbraid"),"google", sessionFirstSource),"direct") as source,
7   ifnull(if(regex_contains(landingPage,"gclid|gbraid|wbraid"),"cpc", sessionFirstMedium),"none") as medium,
8   ifnull(sessionFirstCampaign, "(not set)") as campaign,
9   ifnull(sessionFirstContent, "(not set)") as content,
10  ifnull(sessionFirstTerm, "(not set)") as term,
11  ifnull(sessionFirstDevice, "(not set)") as device,
12  ifnull(sessionFirstCountry, "(not set)") as country,
13  COUNT(DISTINCT session_uid) as sessions,
14  COUNT(DISTINCT IF(eventName = "page_view", session_uid,null)) as unique_page_views,
15  COUNT(DISTINCT IF(eventName = "view_item_list",session_uid,null)) as view_item_list,
16  COUNT(DISTINCT IF(eventName = "view_item",session_uid,null)) as view_item,
17  COUNT(DISTINCT IF(eventName = "add_to_cart",session_uid,null)) as add_to_cart,
18  COUNT(DISTINCT IF(eventName = "begin_checkout",session_uid,null)) as begin_checkout,
19  COUNT(DISTINCT IF(eventName = "purchase",session_uid,null)) as purchase,
20  COUNT(DISTINCT IF(eventName = "generate_lead",session_uid,null)) as leads,
21  SUM(totalRevenue) AS revenue
22
23 FROM (
24   --Prep Query for Final Table
25   SELECT
26     sourceDataSet,
27     event_timestamp,
28     time_since_in_minutes,
29     session_uid,
30     eventName,
31     landingPage,
32     sessionFirstSource,
33     sessionFirstMedium,
34     sessionFirstCampaign,
```

Home Info Keyboard Lightbulb Full Screen

✔ This query will process 1.17 GB when run.

Saved views

September 1 – 21, 2023 (total cost) ?

€1.43

includes €0.00 in credits

↑ 14.4%

€0.18 over August 11 – 31, 2023

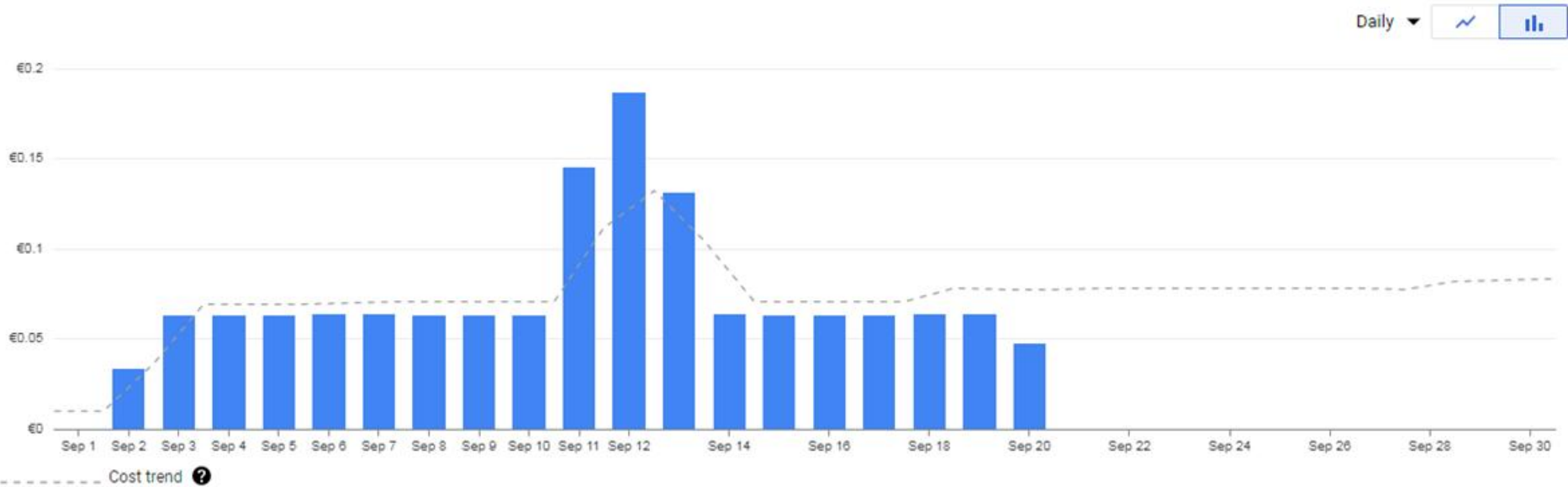
September 2023 (forecasted total cost) ?

€2.28

includes €0.00 in credits

↑ 31.03%

€0.54 over August 2023



Daily [Line Icon] [Bar Icon]

DOWNLOAD CSV

Service	Cost	Discounts	Promotions and others	Subtotal	% Change ?
BigQuery	€1.43	–	€0.00	€1.43	↑ 14%

Subtotal	€1.43
Tax ?	–
Filtered total ?	€1.43

Presets

Time range  
 Usage date  Invoice month

Current month

Group by  
 Service

Projects  
 1 out of 6 projects

Services  
 All services (2)

SKUs  
 All SKUs (15)

Locations  
 Filter by location data like region and zone.

Credits  
 Promotions and others ?  
 Promotions ?

Invoice level charges ?  
 Tax

RESET

Explorer + ADD |<

Untitled 2 RUN SAVE SHARE SCHEDULE MORE

```
1 -- Query for Final Table
2 SELECT
3 -- event name, minutes past at event level
4 sourceDataSet,
5 eventName,
6 time_since_in_minutes as minutes_past,
7 page_location
8
9 FROM (
10 --Prep Query for Final Table
11 SELECT
12 sourceDataSet,
13 event_timestamp,
14 time_since_in_minutes,
15 session_uid,
16 eventName,
17 page_location
18 FROM (
19 SELECT
20 events.sourceDataSet,
21 events.session_uid,
22 events.event_timestamp,
23 events.eventName,
24 events.time_since_in_minutes,
25 events.page_location
26
27 -- Events table
28 FROM (
29 SELECT
30 'tag-manager-italia.analytics_311301273' AS sourceDataSet,
31 CONCAT((SELECT value.int_value FROM UNNEST(event_params) WHERE key = 'ga_session_id'),'_',user_pseudo_id) AS session_uid,
32 'event_timestamp' AS event_timestamp,
33 TIMESTAMP_DIFF(CURRENT_TIMESTAMP(), TIMESTAMP_MICROS(event_timestamp),MINUTE) AS time_since_in_minutes,
34 event_name AS eventName,
35 (SELECT value.string_value from unnest(event_params) where key = 'page_location') as page_location
36 FROM
37 'tag-manager-italia.analytics_311301273.events_intraday_*'
38 --LIMIT @report_status
39 ) events
40
41 -- If you're reading this, please apply to work with us careers.mediaauthentic.com
42
```

Home Info TEST Lightbulb Full Screen

✔ This query will process 3.27 GB when run.



September 1 – 21, 2023 (total cost) ?

€2,049.48

includes €0.00 in credits

↑ 40.73%

€593.15 over August 11 – 31, 2023

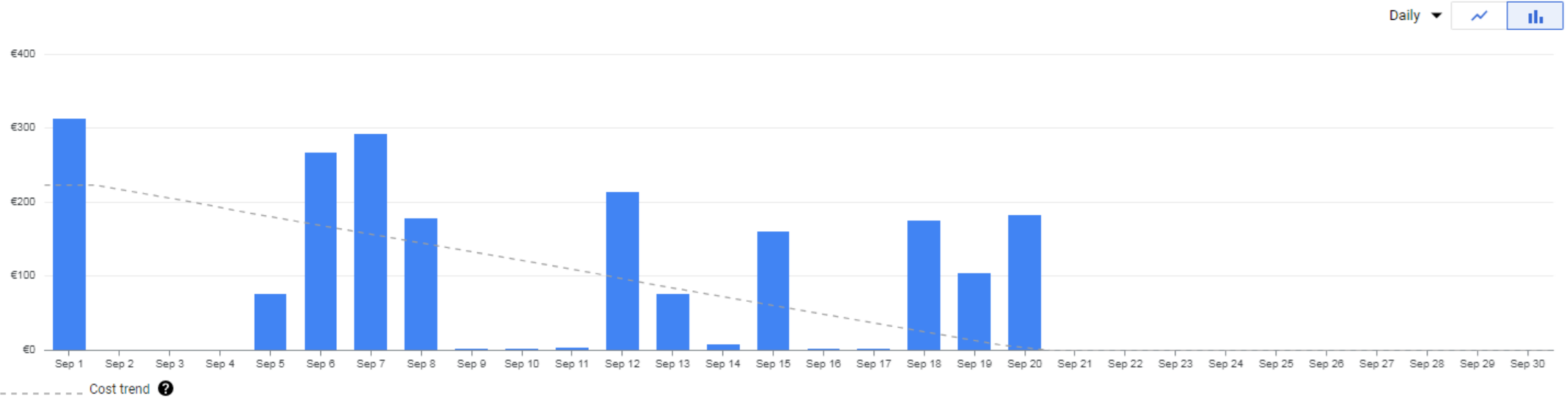
September 2023 (forecasted total cost) ?

€2,049.48

includes €0.00 in credits

↓ -7.54%

-€167.03 over August 2023



Daily

----- Cost trend ?

↓ DOWNLOAD CSV

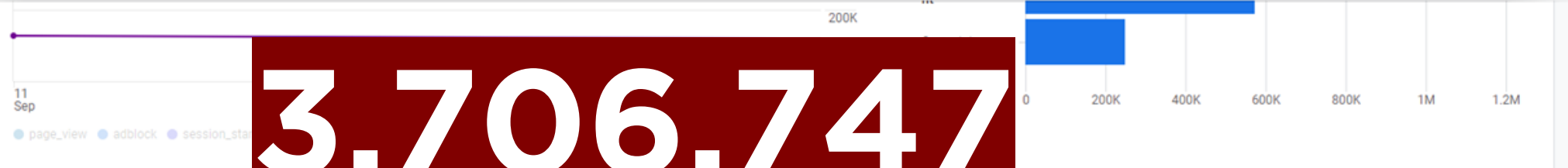
Service	Cost	Discounts	Promotions and others	↓ Subtotal	% Change ?
● BigQuery	€2,049.48	€0.00	—	€2,049.48	↑ 41%



- Reports snapshot
- Realtime
- Business objectives
  - Generate leads
  - Drive online sales
  - Raise brand awareness
  - Examine user behavior
- Life cycle
  - Acquisition
  - Engagement
    - Overview
    - Events
    - Conversions
    - Pages and screens
    - Landing page
  - Monetization
  - Retention
- User
  - User Attributes
- Library

Events: Event name

Custom Sep 11 - Sep 12, 2023



Event name	first_visit	Total users	Event count per user	Total revenue
	128,723		5.86	€0.00
	3,706,747	700,593	Avg 0%	
1 page_view	1,060,176	699,284	1.68	€0.00
2 adblock	858,172	606,636	1.49	€0.00
3 session_start	829,944	698,726	1.32	€0.00
4 user_engagement	572,214	426,263	1.35	€0.00
5 first_visit	248,609	249,542	1.00	€0.00
6 scroll	86,167	51,713	1.69	€0.00
7 iframe_ads_click	49,458	38,695	1.28	€0.00
8 click	757	621	1.22	€0.00
9 video_play	353	139	2.58	€0.00
10 video_progress	347	89	3.94	€0.00

3,706,747



- Reports snapshot
- Realtime
- Ciclo di vita
  - Acquisition
  - Engagement
    - Engagement overview
    - Events**
  - Conversions
  - Pages and screens: Hostna...
  - Pagina di destinazione: Pa...
- Monetization
- Retention
- Scopi commerciali
  - Generate leads
  - Drive online sales
  - Raise brand awareness
  - Examine user behavior
- User
  - User Attributes
- Library

Events: Event name

Custom Sep 24 - Sep 24, 2023

10,669,378



Search...

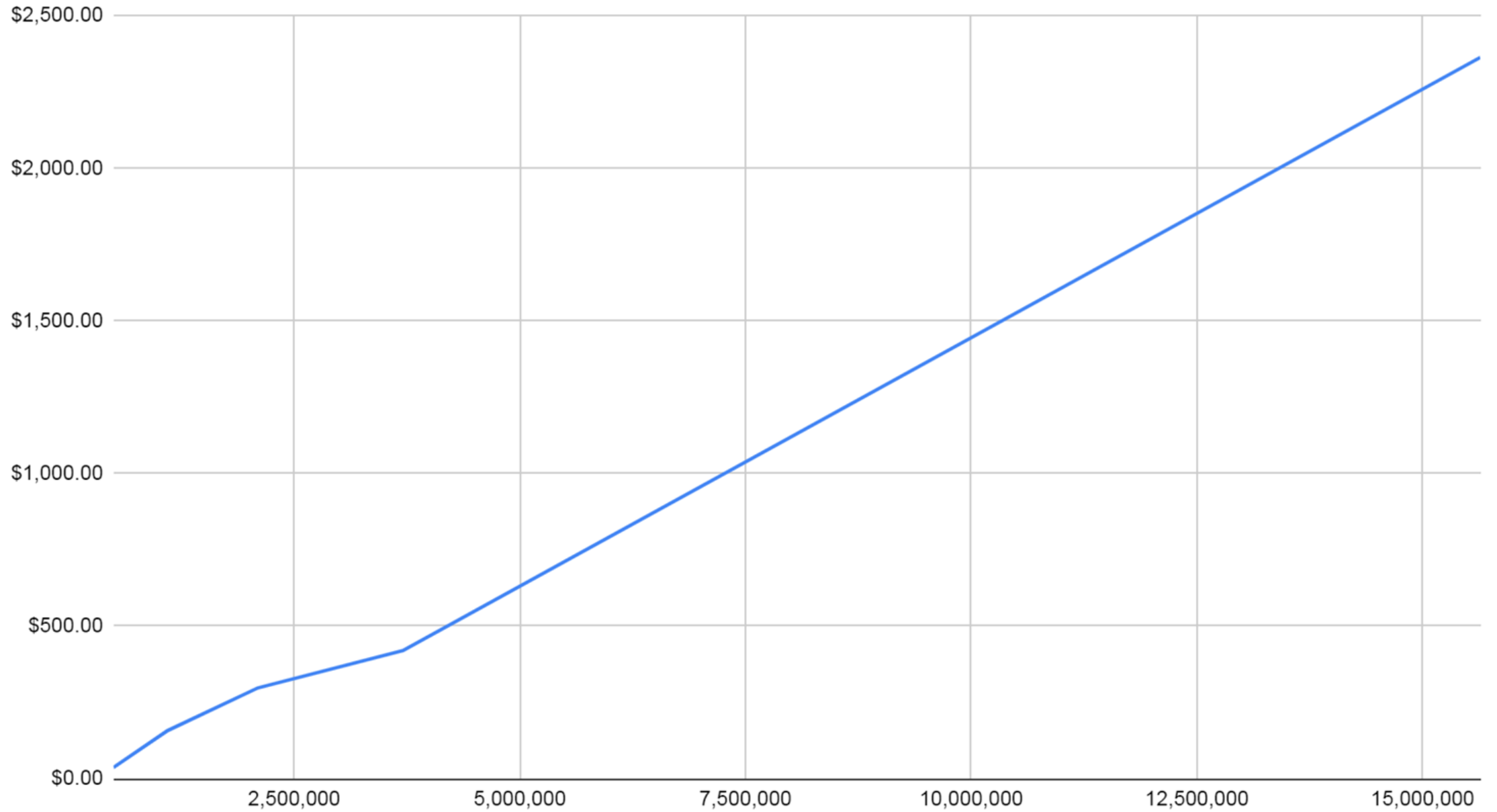
Rows per page: 10 Go to: 1 1-10 of 14

	Event name	Event count	Total users	Event count per user	Total revenue
		10,669,378 100% of total	2,542,723 100% of total	4.77 Avg 0%	€0.00
1	<a href="#">page_view</a>	3,339,228	2,535,556	1.49	€0.00
2	<a href="#">session_start</a>	2,783,102	2,533,976	1.25	€0.00
3	<a href="#">user_engagement</a>	2,163,535	1,723,024	1.26	€0.00
4	<a href="#">first_visit</a>	1,081,938	1,077,844	1.00	€0.00
5	<a href="#">scroll</a>	1,078,058	1,001,596	1.08	€0.00
6	<a href="#">click</a>	217,375	197,346	1.10	€0.00
7	<a href="#">MGID Ad Request</a>	5,691	4,709	1.24	€0.00
8	<a href="#">MGID Impression</a>	273	265	1.03	€0.00
9	<a href="#">form_start</a>	60	24	2.50	€0.00
10	<a href="#">view_search_results</a>	39	17	2.29	€0.00

Hits number	Pageview	Intraday GB	Report number	GB Query for reports	Frequency Day	Days	GB used	BigQuery cost	Pageviews month
500,000	100,000	0.4766644168	35	0.7	10	30	7350	\$36.75	3,000,000
1,097,912	250,000	1.046671166	35	2	15	30	31500	\$157.50	7,500,000
2,097,912	500,000	2	35	3.2	18	30	60480	\$297.40	15,000,000
3,707,912	1,060,602	2.5	35	4	20	30	84000	\$420.00	31,818,060
15,639,262	4,532,602	14.9093594	35	15	30	30	472500	\$2,362.50	135,978,060

The BigQuery cost will be directly proportional to the **size of the intraday** table, the **queries used**, the **number of reports** and the **frequency of use** of the reports

# Real Time report: BigQuery Cost



# Mmm... I cannot use intraday tables

Could there be another solution?





# We created our own





**CLOUD RUN**

**AND**

**CLOUD FUNCTION**

# What are Cloud Run/Cloud Function?

They are FaaS (Function as a service).

Run your code (Python) in the cloud.

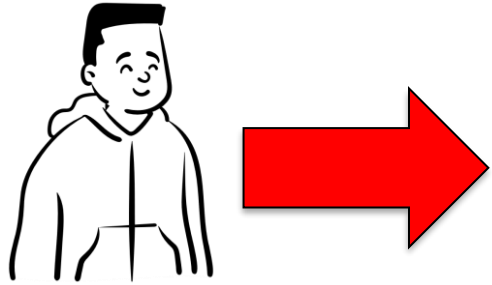
You can schedule the script



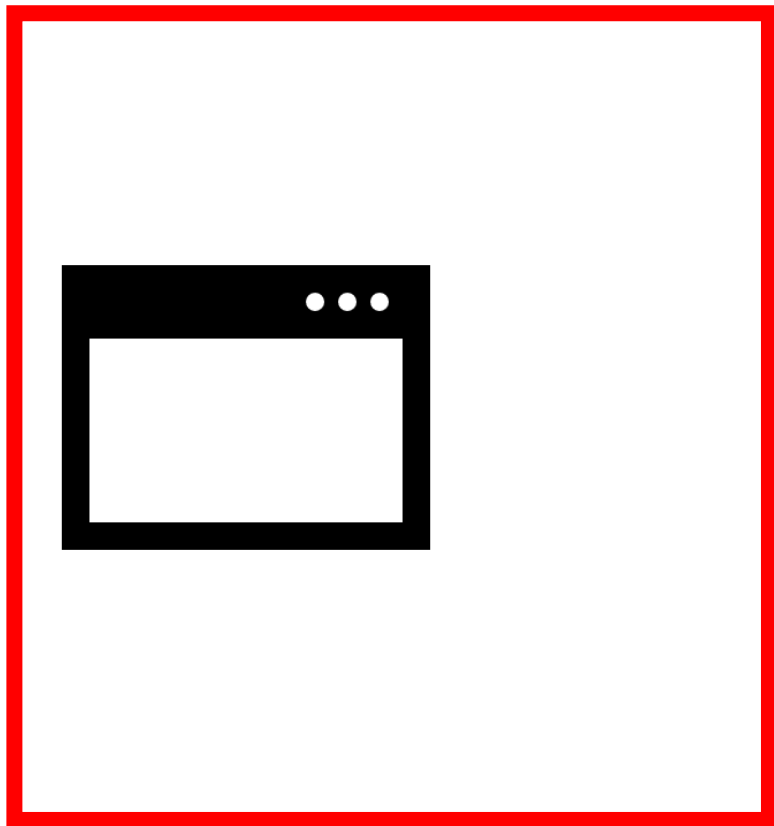
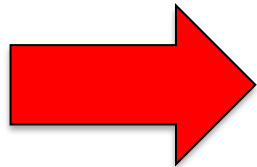
# The workaround (#barbatrucco)

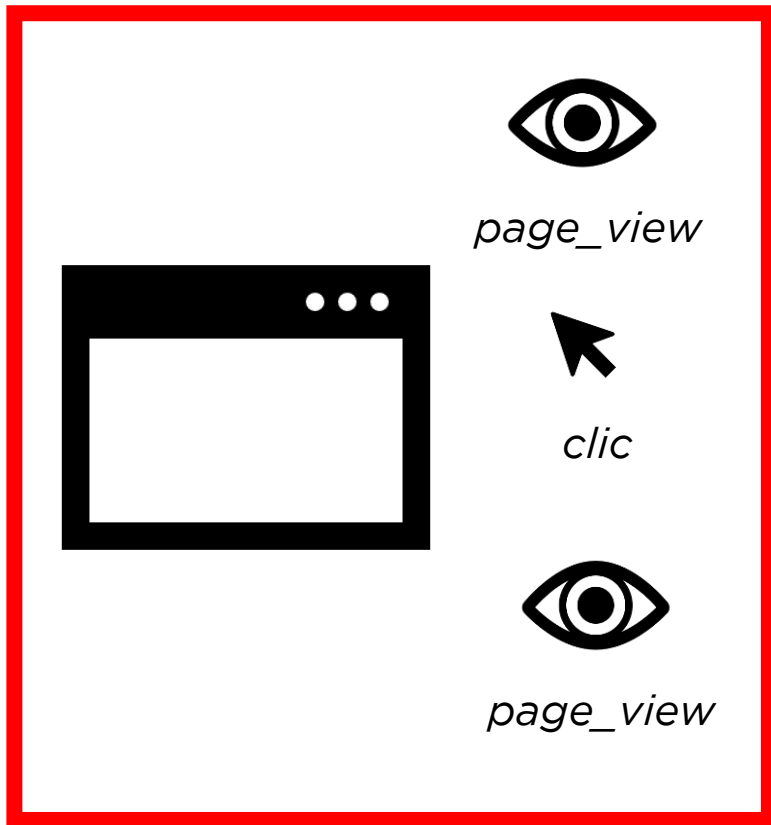
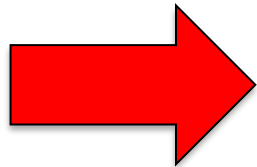
Create an endpoint in Google Cloud and send the user's browsing data

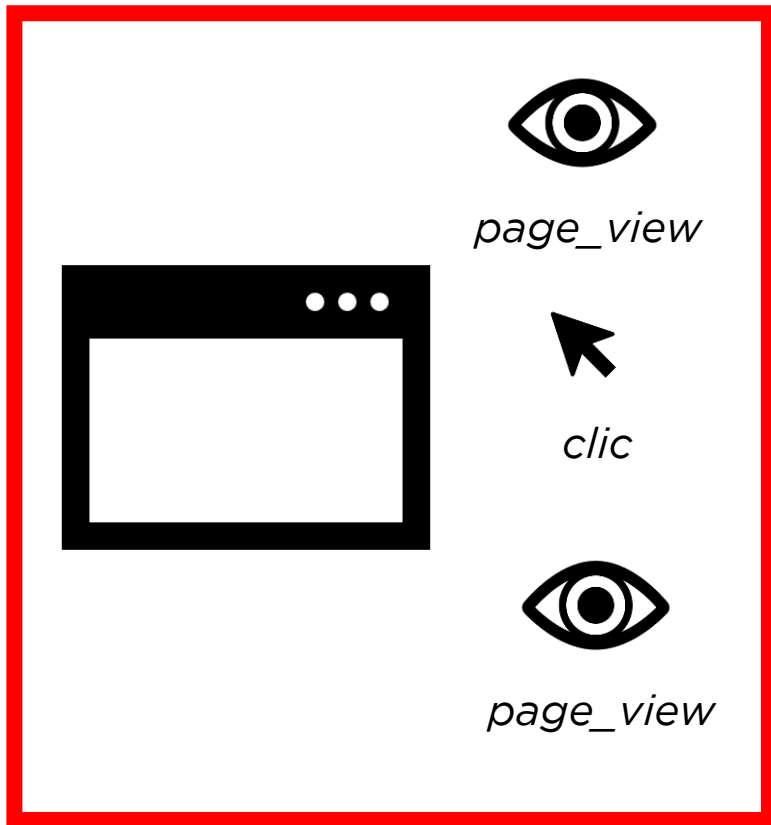
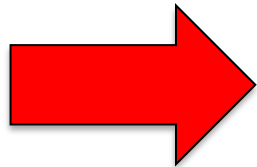


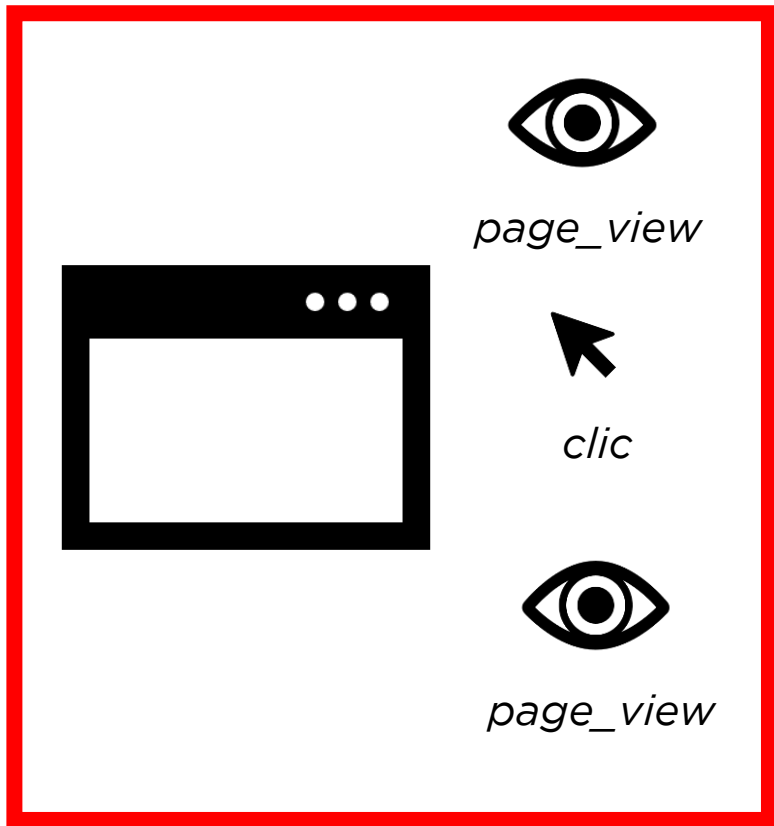
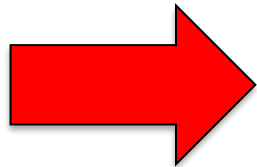




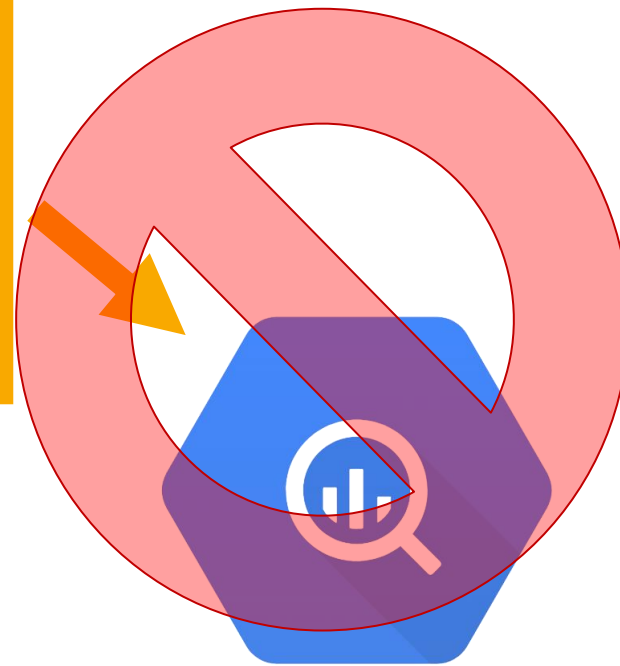
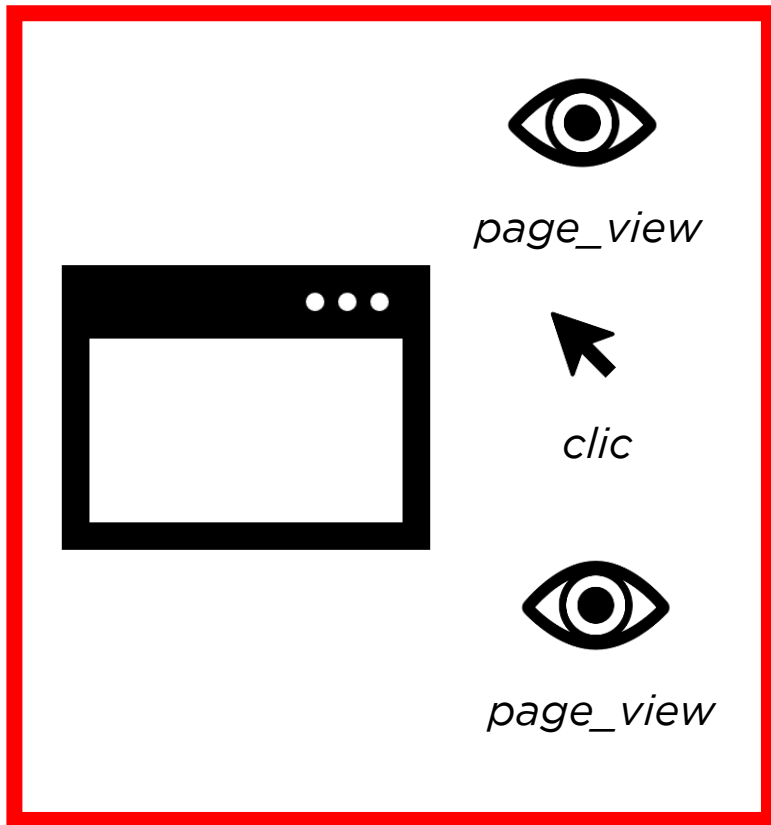
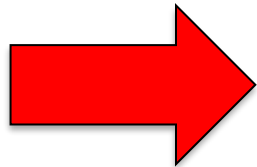




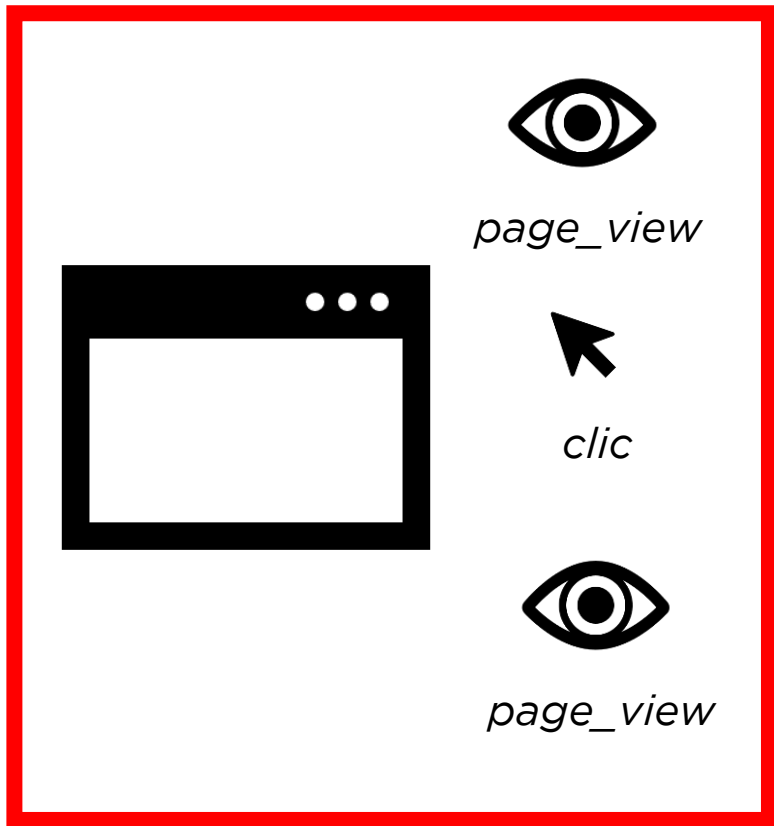
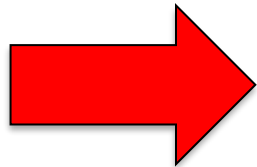




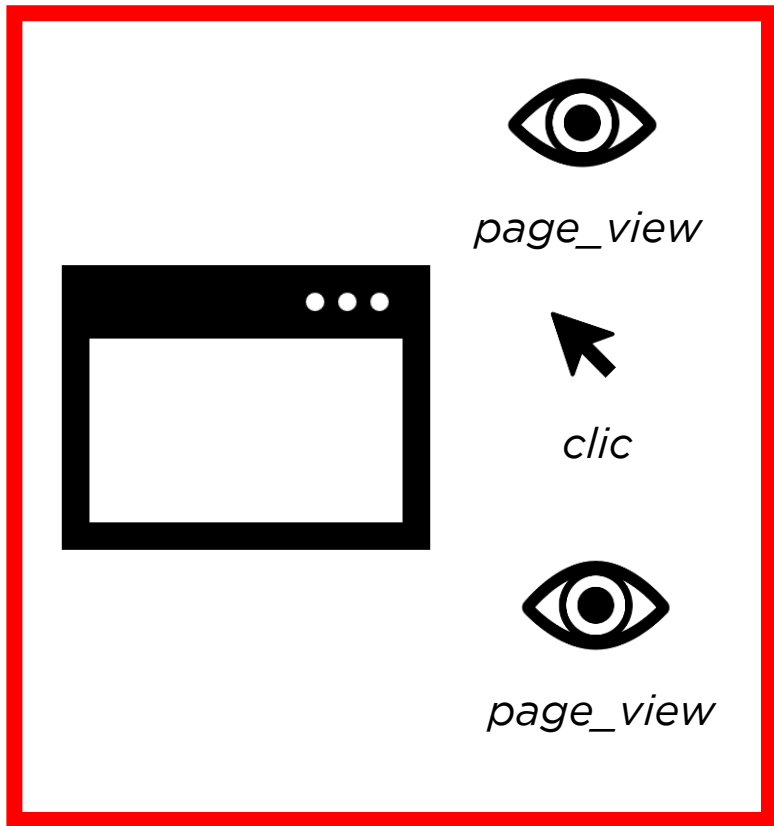
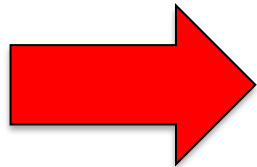
**BigQuery**



**BigQuery**







**BigQuery**

Google Cloud RealTime [REDACTED]

Search (/) for resources, docs, products, and more Search

Cloud Run Services + CREATE SERVICE + CREATE JOB MANAGE CUSTOM DOMAINS COPY DELETE TAGS

SERVICES JOBS

Filter Filter services

<input type="checkbox"/>	<input type="radio"/>	Name ↑	Req/sec ?	Region	Authentication ?	Ingress ?	Recommendation	Last deployed	Deployed by
<input type="checkbox"/>	<input checked="" type="radio"/>	<a href="#">clear-hits</a>	0	euope-west6	Allow unauthenticated	All	SECURITY	Jul 31, 2023	Cloud Functions
<input type="checkbox"/>	<input checked="" type="radio"/>	<a href="#">register-hit</a>	44.81	euope-west6	Allow unauthenticated	All		Aug 1, 2023	Cloud Functions
<input type="checkbox"/>	<input checked="" type="radio"/>	<a href="#">rtimestream</a>	0	euope-west1	Allow unauthenticated	All	SECURITY	Aug 7, 2023	tagmanageritalia.g [REDACTED]



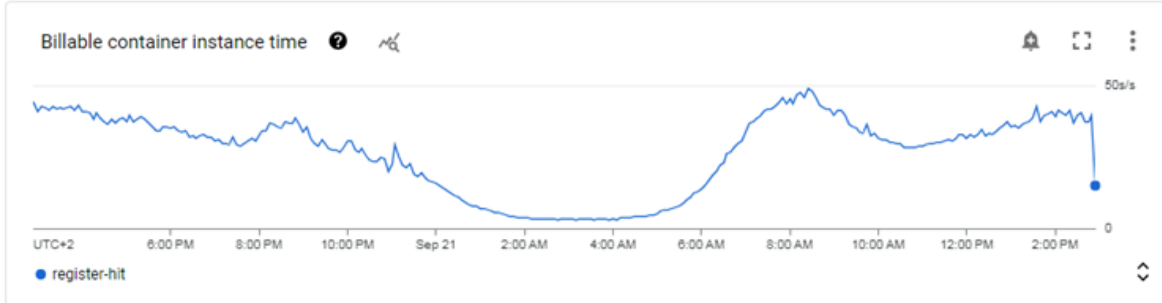
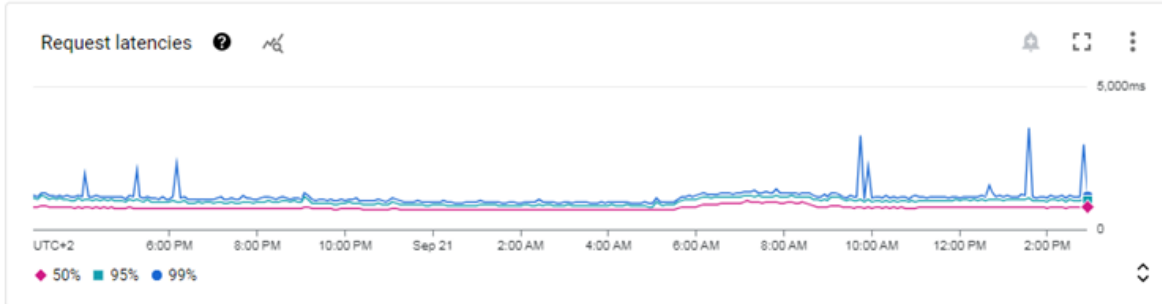
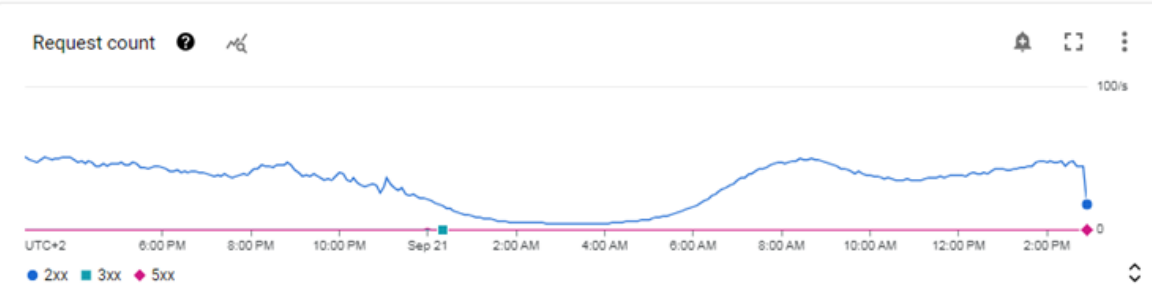
Used by Cloud Functions register-hit

- METRICS
- SLOS
- LOGS
- REVISIONS
- NETWORKING
- SECURITY
- TRIGGERS
- INTEGRATIONS
- PREVIEW
- YAML

Dashboard Predefined 1 hour 6 hours 1 day 7 days 30 days

CUSTOMIZE DASHBOARD

Occurrences	Count	Error	Users	First seen	Last seen	Status
	1	<a href="#">Traceback (most recent call last):</a> wsgi_app ( /layers/google.python.pip/pip/lib/python3.11/site-packages/flask/app.py:2190 )	0	Jul 31, 2023	14 hours ago	-



Cloud Functions Functions [+ CREATE FUNCTION](#) [REFRESH](#)

**Filter** Filter functions

<input type="checkbox"/>	Environment	Name ↑	Last deployed	Region	Recommendation	Trigger	Runtime	Memory allocated	Executed function	Actions
<input type="checkbox"/>	2nd gen	<a href="#">clear-hits</a>	Jul 31, 2023, 5:00:33 PM	europa-west6		HTTP	Python 3.11	128 MiB	clear	⋮
<input type="checkbox"/>	2nd gen	<a href="#">register-hit</a>	Aug 1, 2023, 9:35:21 AM	europa-west6		HTTP	Python 3.11	256 MiB	register	⋮



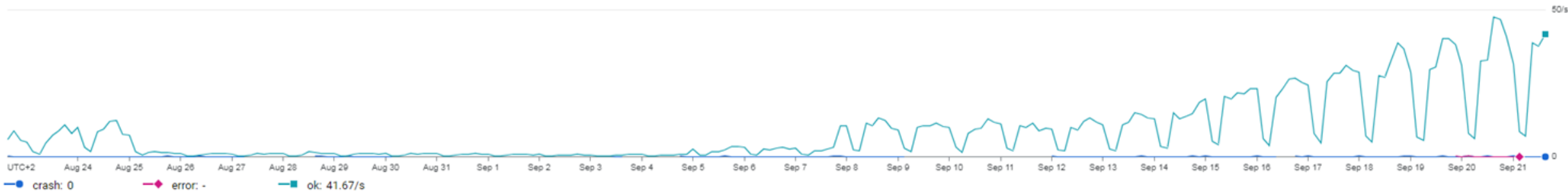
register-hit 2nd gen (Deployed at Aug 1, 2023, 9:35:21 AM) URL: https://europe-west6-realtime-magellano.cloudfunctions.net/register-hit

Powered by Cloud Run register-hit

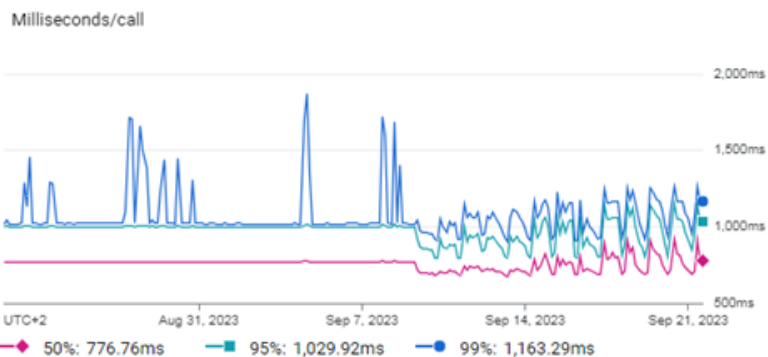
METRICS DETAILS SOURCE VARIABLES TRIGGER PERMISSIONS LOGS TESTING

1 hour 6 hours 12 hours 1 day 2 days 4 days 7 days 14 days 30 days Configure dashboard

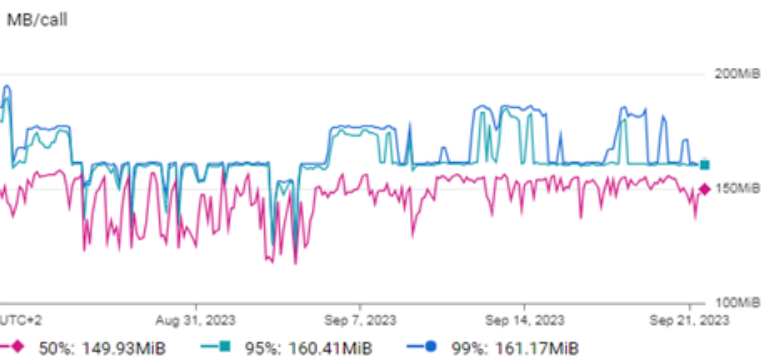
Invocations/Second



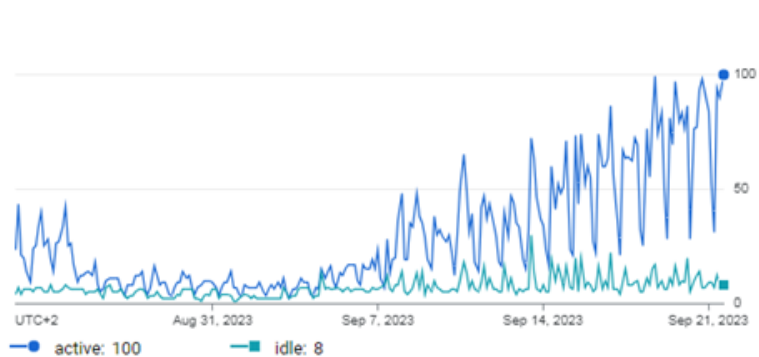
Execution time



Memory utilization



Instance count



```
1 SELECT *,
2
3     case
4         when regexp_contains(hit_referral, 'gclid') then 'Paid Search'
5         when regexp_contains(hit_referral, '/sw.js') then 'Push Notification'
6         when regexp_contains(hit_referral, hit_hostname) OR hit_referral = '' then 'Direct'
7         when regexp_contains(hit_referral, 'com.google.android') then 'Discover'
8         when regexp_contains(hit_referral, 'news.google') then 'Google News'
9         when regexp_contains(hit_referral, 'baidu|bing|duckduckgo|ecosia|google|yahoo|yandex') then 'Organic Search'
10        when regexp_contains(hit_referral, 'badoo|facebook|fb|instagram|linkedin|pinterest|tiktok|twitter|whatsapp') then 'Organic Social'
11        when regexp_contains(hit_referral, 'dailymotion|disneyplus|netflix|youtube|vimeo|twitch|vimeo|youtube') then 'Organic Video'
12        when NOT regexp_contains(hit_referral, hit_hostname) then 'Referral'
13        else 'Unassigned' end as channel_group FROM 'realtime-magellano.realtime.hits'
14 WHERE hit_timestamp >= TIMESTAMP_SUB(CURRENT_TIMESTAMP(), INTERVAL 5 MINUTE);
```




```
view_hits_last_30_min
view_hits_last_30_min
view_hits_last_30_min
view_hits_last_30_min

view_hits_last_30_min
RUN SAVE VIEW MORE

1 SELECT *,
2
3     case
4         when regexp_contains(hit_referral, 'gclid') then 'Paid Search'
5         when regexp_contains(hit_referral, '/sw.js') then 'Push Notification'
6         when regexp_contains(hit_referral, hit_hostname) OR hit_referral = '' then 'Direct'
7         when regexp_contains(hit_referral, 'com.google.android') then 'Discover'
8         when regexp_contains(hit_referral, 'news.google') then 'Google News'
9         when regexp_contains(hit_referral, 'baidu|bing|duckduckgo|ecosia|google|yahoo|yandex') then 'Organic Search'
10        when regexp_contains(hit_referral, 'badoo|facebook|fb|instagram|linkedin|pinterest|tiktok|twitter|whatsapp') then 'Organic Social'
11        when regexp_contains(hit_referral, 'dailymotion|disneyplus|netflix|youtube|vimeo|twitch|vimeo|youtube') then 'Organic Video'
12        when NOT regexp_contains(hit_referral, hit_hostname) then 'Referral'
13        else 'Unassigned' end as channel_group FROM realtime-magellano.realtime.hits
14 WHERE hit_timestamp >= TIMESTAMP_SUB(CURRENT_TIMESTAMP(), INTERVAL 5 MINUTE);
```

Home Info Table Lightbulb Arrow Full Screen

 This query will process 82.21 MB when run

```
view_hits_last_30_min
RUN SAVE VIEW MORE
1 SELECT *,
2
3 case
4   when regexp_contains(hit_referral, 'gclid') then 'Paid Search'
5   when regexp_contains(hit_referral, '/sw.js') then 'Push Notification'
6   when regexp_contains(hit_referral, hit_hostname) OR hit_referral = '' then 'Direct'
7   when regexp_contains(hit_referral, 'com.google.android') then 'Discover'
8   when regexp_contains(hit_referral, 'news.google') then 'Google News'
9   when regexp_contains(hit_referral, 'baidu|bing|duckduckgo|ecosia|google|yahoo|yandex') then 'Organic Search'
10  when regexp_contains(hit_referral, 'badoo|facebook|fb|instagram|linkedin|pinterest|tiktok|twitter|whatsapp') then 'Organic Social'
11  when regexp_contains(hit_referral, 'dailymotion|disneyplus|netflix|youtube|vimeo|twitch|vimeo|youtube') then 'Organic Video'
12  when NOT regexp_contains(hit_referral, hit_hostname) then 'Referral'
13  else 'Unassigned' end as channel_group FROM realtime-magellano.realtime.hits
14 WHERE hit_times
```

Home Info Table Lightbulb Share

✔ This query will process 82.21 MB when run

82,21 MB

```
view_hits_last_30_min
RUN SAVE VIEW MORE
1 SELECT *,
2
3 case
4   when regexp_contains(hit_referral, 'gclid') then 'Paid Search'
5   when regexp_contains(hit_referral, '/sw.js') then 'Push Notification'
6   when regexp_contains(hit_referral, hit_hostname) OR hit_referral = '' then 'Direct'
7   when regexp_contains(hit_referral, 'com.google.android') then 'Discover'
8   when regexp_contains(hit_referral, 'news.google') then 'Google News'
9   when regexp_contains(hit_referral, 'baidu|bing|duckduckgo|ecosia|google|yahoo|yandex') then 'Organic Search'
10  when regexp_contains(hit_referral, 'badoo|facebook|fb|instagram|linkedin|pinterest|tiktok|twitter|whatsapp') then 'Organic Social'
11  when regexp_contains(hit_referral, 'dailymotion|disneyplus|netflix|youtube|vimeo|twitch|vimeo|youtube') then 'Organic Video'
12  when NOT regexp_contains(hit_referral, hit_hostname) then 'Referral'
13  else 'Unassigned' end as channel_group FROM `realtime-magellano.realtime.hits`
14 WHERE hit_timestamp >= TIME
```

Home Info Table Lightbulb Share

✔ This query will process 82.21 MB when run

**-97.51%**



**I LIKE IT!**

# No problem with BigQuery costs

The free tier per month is enough for our reporting

# Invocations

Function invocations are charged at a flat rate regardless of the source of the invocation. This includes [HTTP function](#) invocations from HTTP requests, events forwarded to [background](#) or [CloudEvent](#) functions, and invocations resulting from the [call API](#). The pricing tiers shown below are based on the total number of function invocations across *all* functions associated with a particular Google Cloud Platform [billing account](#).

Invocations per month	Price/million
First 2 million	Free
Beyond 2 million	\$0.40



# Compute Time

Compute time is measured from the time your function receives a request to the time it completes, either through you signaling completion, or through a timeout, other failure or any other termination. Compute time is measured in 100ms increments, rounded up to the nearest increment. For example, a function executing for 260ms would be billed as 300ms.

Fees for compute time are variable based on the amount of memory and CPU provisioned for the function. Units used in this calculation are:

- GB-Seconds
  - 1 GB-second is 1 second of wallclock time with 1GB of memory provisioned
- GHz-Seconds
  - 1 GHz-second is 1 second of wallclock time with a 1GHz CPU provisioned

Memory	vCPU <sup>1</sup>	Price/100ms (Tier 1 Price)	Price/100ms (Tier 2 Price)
128MB	.083 vCPU	\$0.000000231	\$0.000000324
256MB	.167 vCPU	\$0.000000463	\$0.000000648
512MB	.333 vCPU	\$0.000000925	\$0.000001295
1024MB	.583 vCPU	\$0.000001650	\$0.000002310
2048MB	1 vCPU	\$0.000002900	\$0.000004060
4096MB	2 vCPU	\$0.000005800	\$0.000008120
8192MB	2 vCPU	\$0.000006800	\$0.000009520
16384MB <sup>2</sup>	4 vCPU	\$0.000136000	\$0.000190400
32768MB <sup>2</sup>	8 vCPU	\$0.000272000	\$0.000380800

September 1 – 26, 2023 (total cost) ?

€183.52

includes €0.00 in credits

↑ 98.59%

€91.11 over August 6 – 31, 2023

September 2023 (forecasted total cost) ?

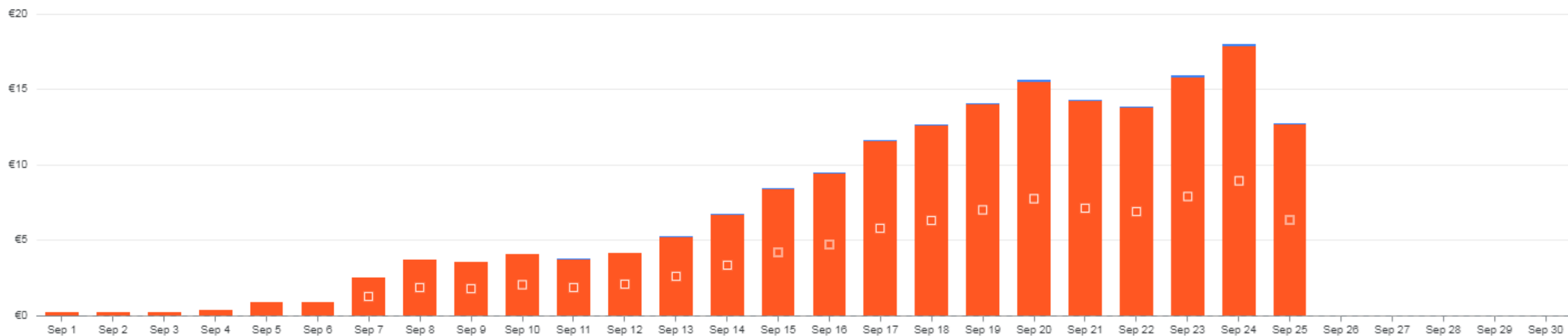
€285.71

includes €0.00 in credits

↑ 151.66%

€172.18 over August 2023

Daily



Cost trend ?

DOWNLOAD CSV

Service	Cost	Discounts	Promotions and others	Subtotal	% Change ?
Cloud Functions	€182.07	–	–	€182.07	–
BigQuery	€1.45	–	–	€1.45	New

September 1 – 26, 2023 (total cost) ?

€183.52

includes €0.00 in credits

↑ 98.59%

€91.11 over August 6 – 31, 2023

September 2023 (forecasted total cost) ?

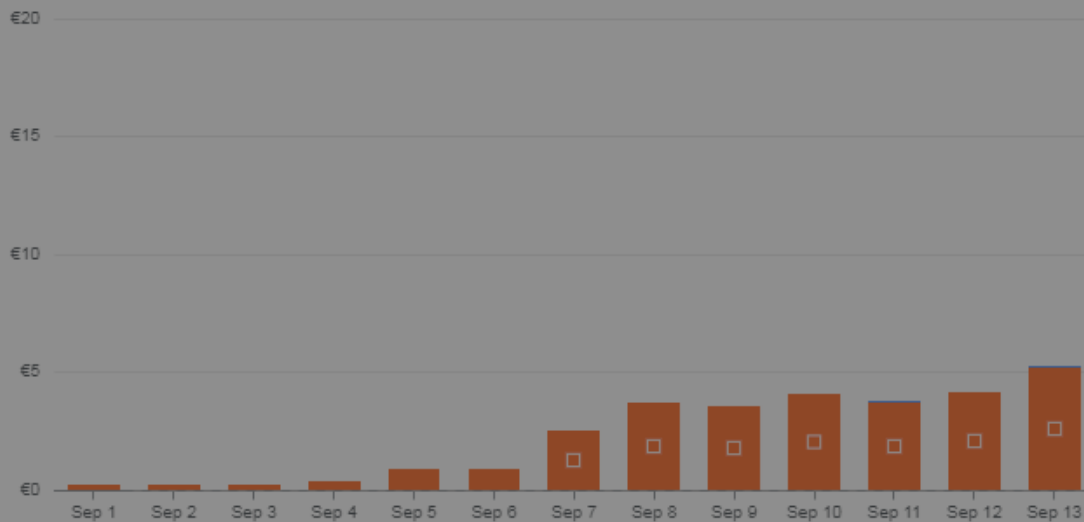
€285.71

includes €0.00 in credits

↑ 151.66%

€172.18 over August 2023

Daily



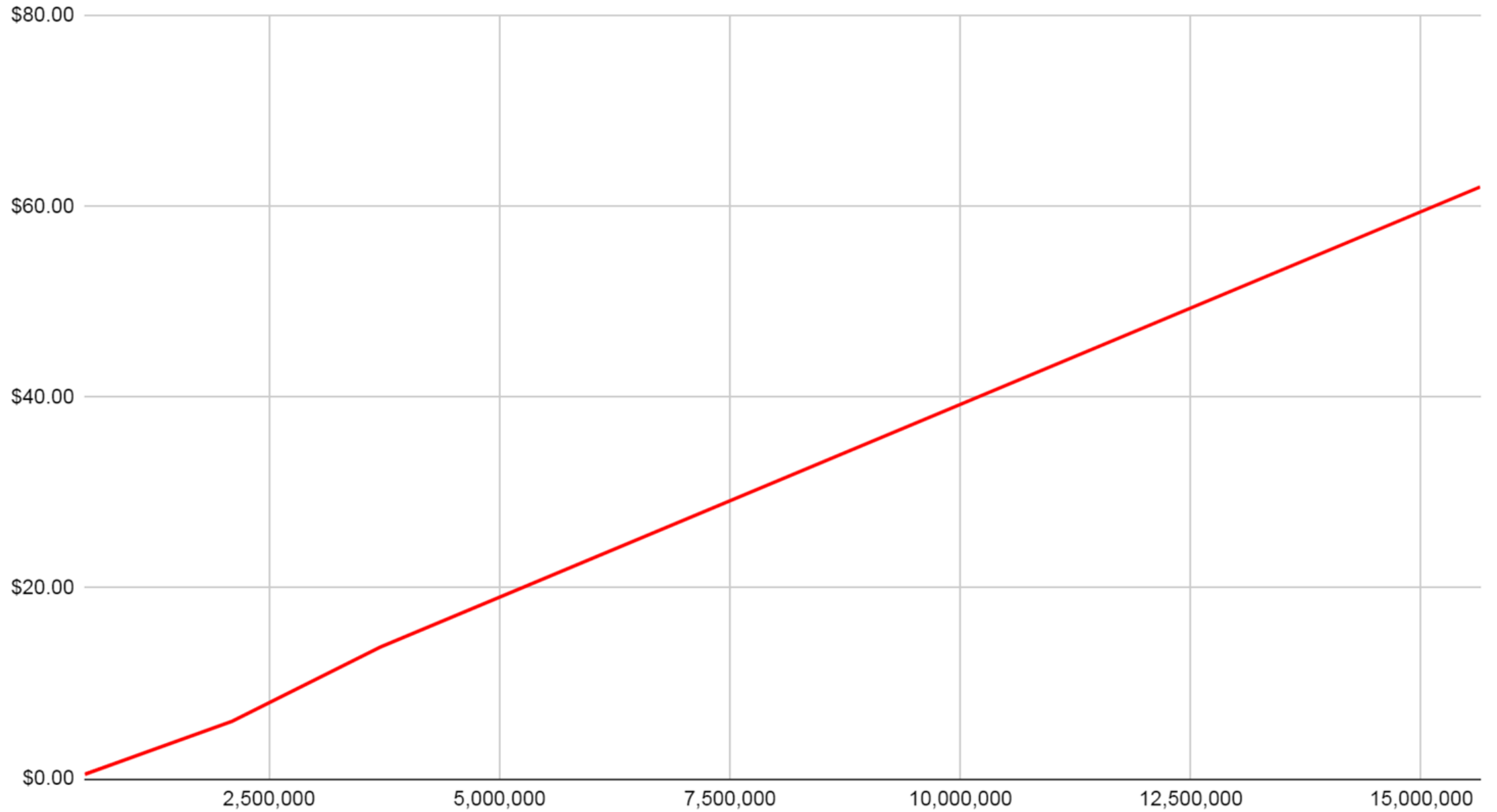
Cost trend ?

	Subtotal	% Change ?
	€182.07	-
	€1.45	New

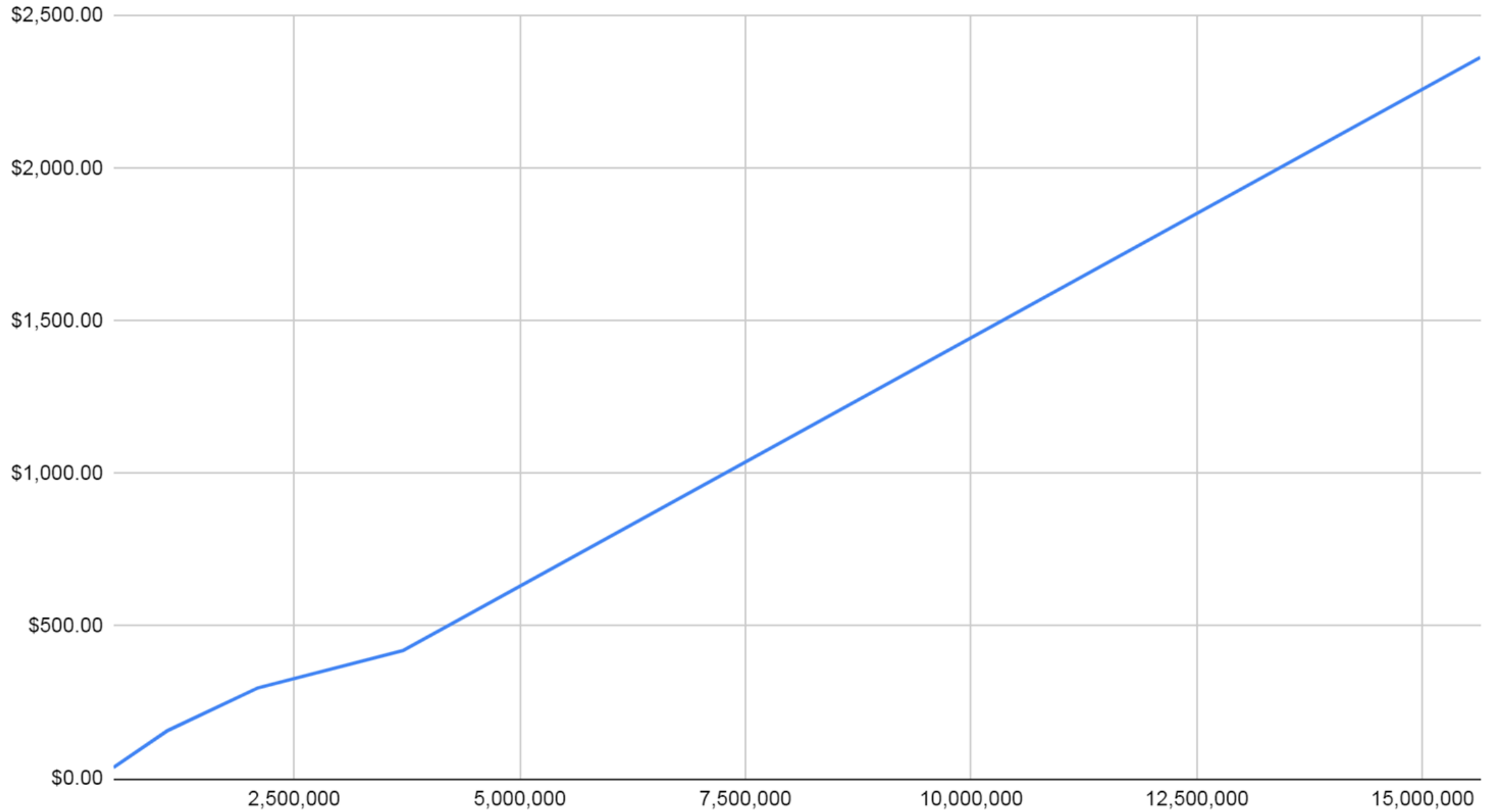


Service	Cost	Discounts
Cloud Functions	€182.07	-
BigQuery	€1.45	-

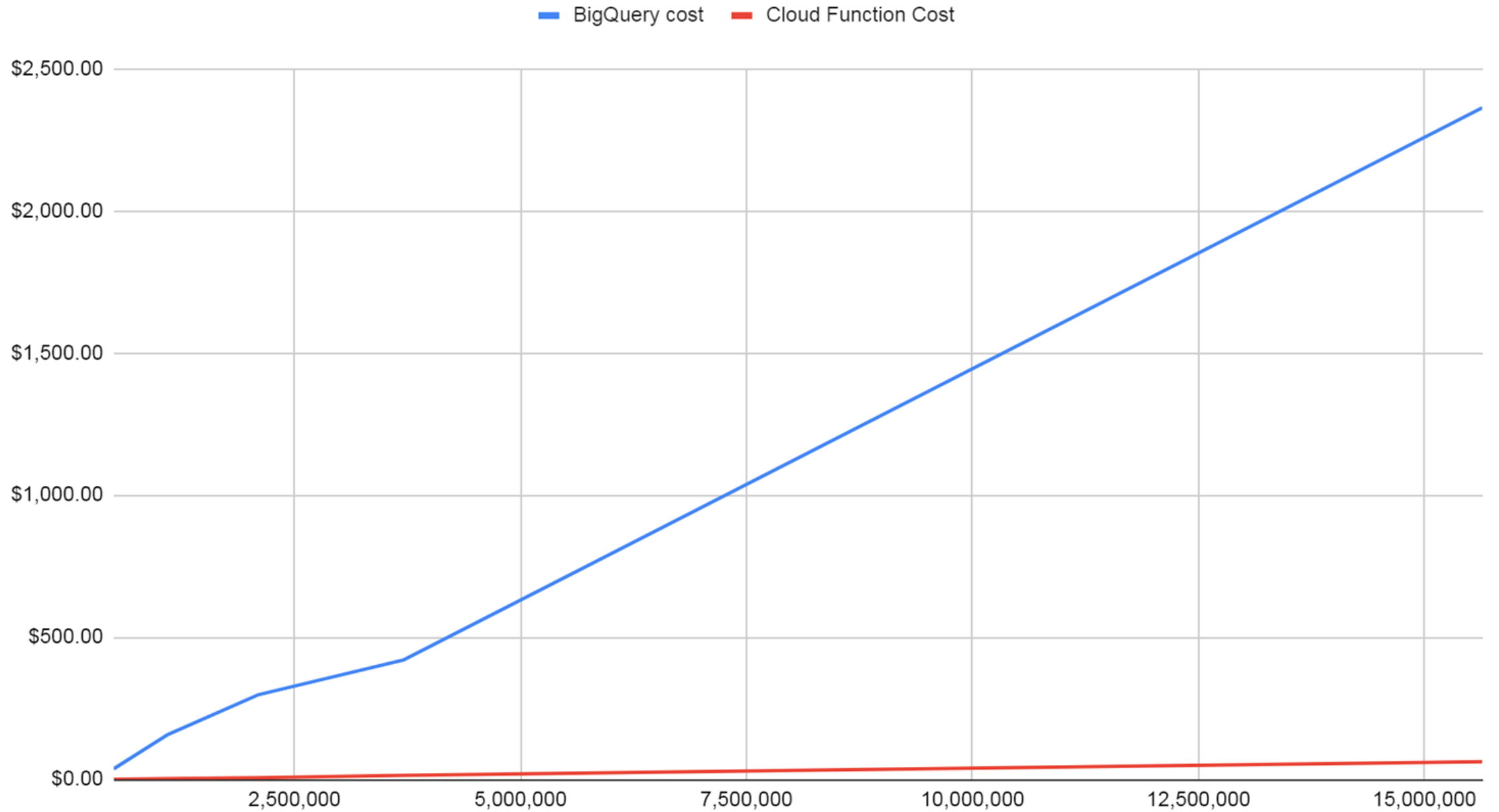
# Real Time report: Cloud Function Cost



# Real Time report: BigQuery Cost

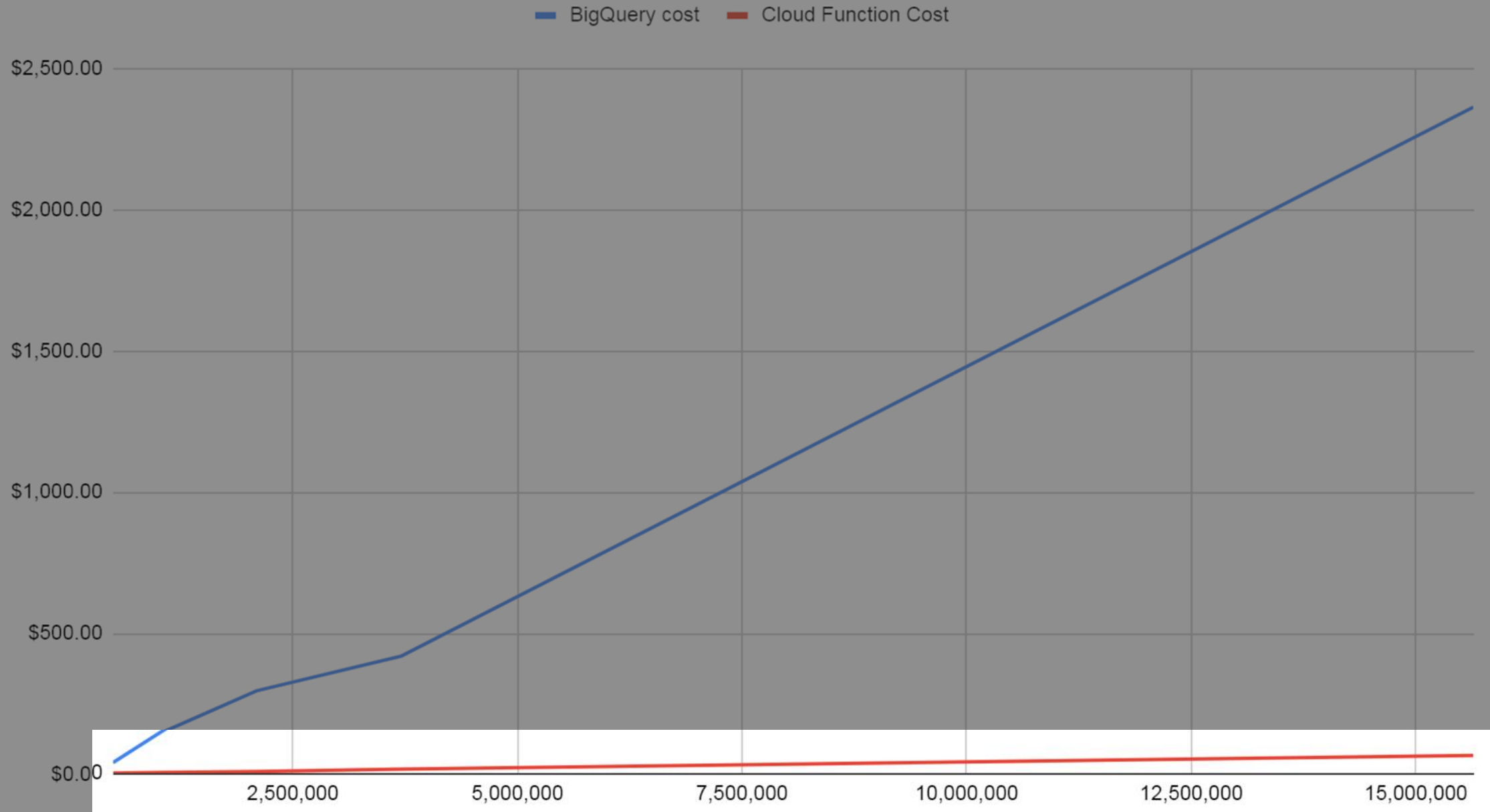


# Real Time report: BigQuery Cost vs Cloud Function Cost





# Real Time report: BigQuery Cost vs Cloud Function Cost



Dominio

URL di Pagina

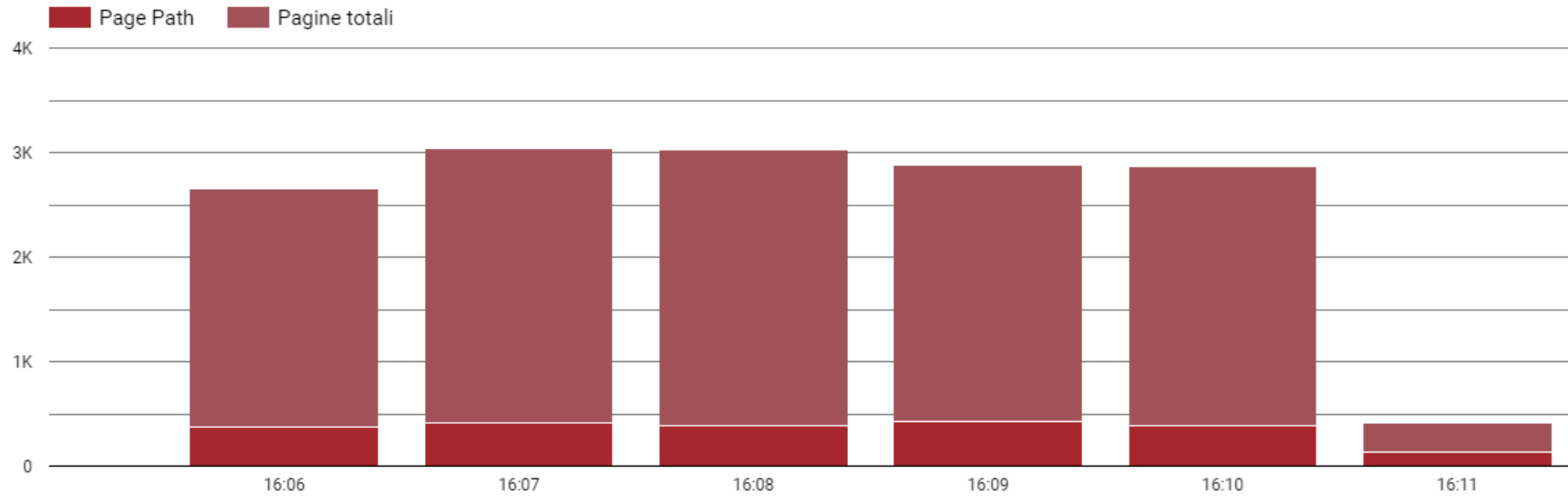
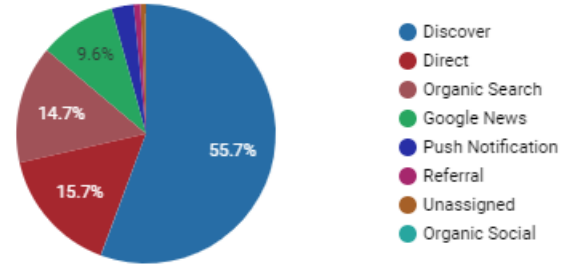
Channel Group

Contains

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Pagine totali  
**12,757**



Dominio	16:06	16:07	16:08	16:09	16:10	16:11	Grand total
www. [REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	1,964
www. [REDACTED] ort.net	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	1,754
www. [REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	1,259
www. [REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	1,071
www. [REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	1,043
www. [REDACTED] m	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	854
www. [REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	828
www. [REDACTED] gica.it	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	776
www. [REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	637
www. [REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	586
www. [REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	342
www. [REDACTED] ft	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	321
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5. /pioli-in-lacrime-infortunio-gravissimo-e-stagione-a-rischio-colpo-urgente-a-parametro-zero-310483/	321
6. /2023/09/20/contatore-acqua-il-trucco-per-smettere-di-pagarla-i-nei-condomini-non-li-scoprono-mai/	319
7. /news/batterie-ev-scoperto-il-piu-grande-giacimento-di-litio-ora-cambiano-gli-equilibri-mondiali.html	293
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**THANK YOU**



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