GOOGLE ANALYTICS 4 (GA4)

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OptimizeSmart.com

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About the author

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- **Nominated for Digital Analytics Association Awards for Excellence**
- **Runs one of the most popular blogs in the world on digital analytics**
- **Consultant to countless small and big businesses over the decade**

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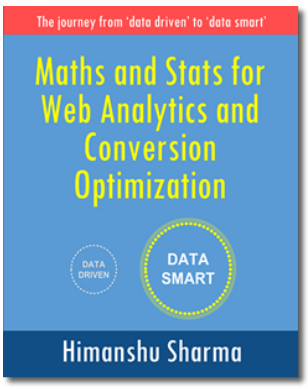

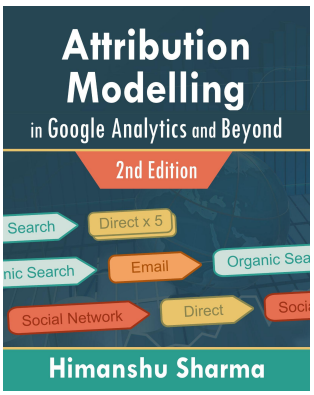

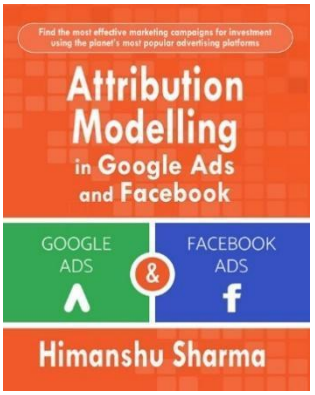

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#2 Set Up Your Google Analytics 4 (GA4) Account Correctly And Fast (70 pages)

> **WHAT'S INSIDE:** Learn to set up your GA4 account correctly and fast using this 62 points checklist.
>
> **FAQ: Do you show "How" to do each item on the checklist? If so, with screenshots?**
> Yes. There are links to the articles with detailed step by step instructions.
>
> **FAQ: Does this ebook cover GTM too?**
> Yes.

#3 Google Tag Manager Data Layers (100+ pages)

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What is Google Analytics 4?

Google Analytics 4 (also known as Apps + Web) is the latest version of Google Analytics. Since it is the 4th version, it is called **GA4**.

Following are the other three versions of Google Analytics:

1. **The first version of Google Analytics (also known as GA1)** is **Classic Google Analytics** (ga.js JavaScript library).
2. **The second version of Google Analytics (also known as GA2)** is **Universal Analytics** (analytics.js JavaScript library)
3. **The third version of Google Analytics (also known as GA3)** is also **Universal Analytics,** but it uses a different JavaScript library called gtag.js JavaScript library.

Note: GA4 also uses the gtag.js library but uses a new measurement model called the '**Event+Parameter**' model.

GA4 uses the 'Event and Parameter' measurement model to track all types of users' activities (including 'pageviews').

The 'event and parameter' measurement model is more flexible than the traditional 'sessions and pageviews' model for the following reasons:

#1 It allows you to see integrated data across mobile apps and websites in a single GA4 reporting view.

#2 It allows you to use a single set of metrics and dimensions across mobile apps and websites.

#3 It allows you to automatically track certain types of user interactions (like scrolls, outbound clicks, file downloads, video engagement, site search, etc.).

> ***Through GA4, you can combine mobile app and website usage data for unified reporting and analysis.***

In the past, if you wanted to measure your website usage data, then you would need to use the **GA property meant for tracking website data.**

You needed to use Google Analytics for Firebase to measure your mobile app usage data. There was no easy way to combine mobile app and website usage data for unified reporting and analysis.

However, this has all changed with the advent of the **GA4 property** (**formerly known as the 'Apps and Web' property**).

Key Benefits of Using GA4

I used to recommend GA4 Alternatives. Over time I concluded that you don't need these tools.

Don't let the user interface fool you into thinking that GA4 is worse than Universal Analytics or that other analytics tools are now superior.

This is what the vendors of paid web analytics tool wants you to believe so that you ditch GA4 and pay for their tool indefinitely. People who criticize GA4 do not really understand its full potential.

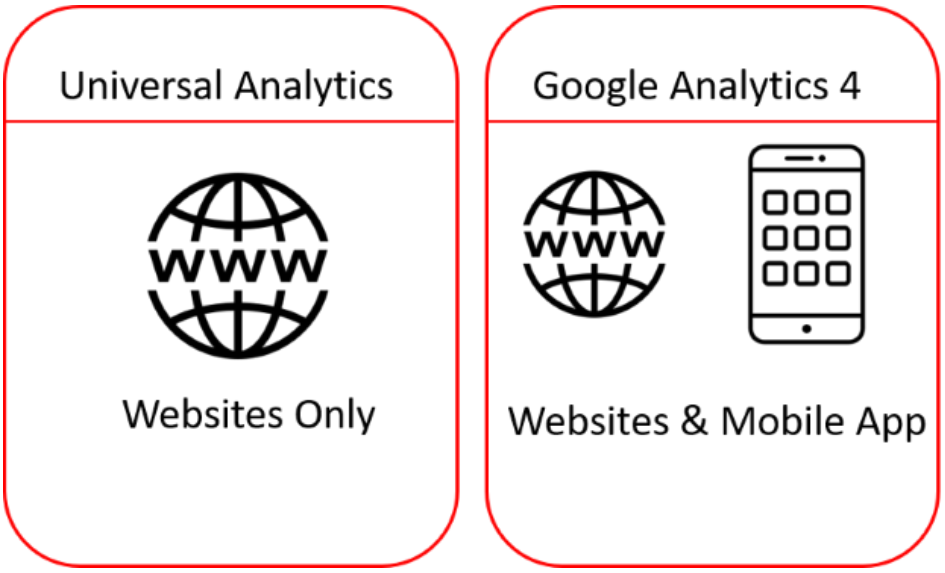
Following are the Key Benefits of Using GA4:

#1 GA4 measurement model is more flexible and superior to the one used by GA3

GA3 uses the measurement model, which is based on sessions and pageviews. Whereas GA4 uses the measurement model based on events and parameters.

Thus the measurement model used by GA4 is more flexible and superior to the measurement model used by GA3.

#2 One of the biggest benefits of GA4 is that you can use it for your website or mobile app, as well as both website and mobile app together.



Earlier, you had to use GA3 for your website and Firebase for mobile applications.

But with GA4, you can use the ‘app + web’ implementation, which is basically Google Analytics for Firebase with website tracking capabilities.

Now you have the ability to consolidate data from websites as well as mobile applications in a single property.

#3 GA4 property has roll-up reporting built-in

Roll-up reporting is simply the reporting of data in an aggregated form from multiple digital properties (websites, mobile apps).

Through roll-up reporting, you can aggregate all of your website’s data in one reporting view and see aggregated performance metrics.

Roll-up reporting helps you understand the overall performance of all of your company’s websites and mobile apps.

#4 GA4 roll-up reporting is much more accurate than the one provided by GA3

In the case of GA4, both mobile apps and websites use the same schema for tracking users’ activities.

This makes GA4 roll-up reporting much more accurate and reliable than the one you get with GA3.

#5 GA4 provides much more accurate cross-device insight than GA3

In GA4, you can measure a customer purchase journey across your website and mobile apps more accurately.

Such cross-device insight can help you to:

1. Improve your understanding of customer purchase journeys across platforms and provide a better user experience as a result.
2. Fix cross-device attribution issues. For example, you can determine the number of users who started their purchase journey on your mobile app before visiting your website to complete the purchase.
3. Understand the effectiveness of your marketing campaigns across devices/platforms. For example, you can determine the marketing channel(s) responsible for acquiring the most customers across mobile and desktop.

#6 GA4 provides much more robust cross-device and cross-platform tracking than GA3.

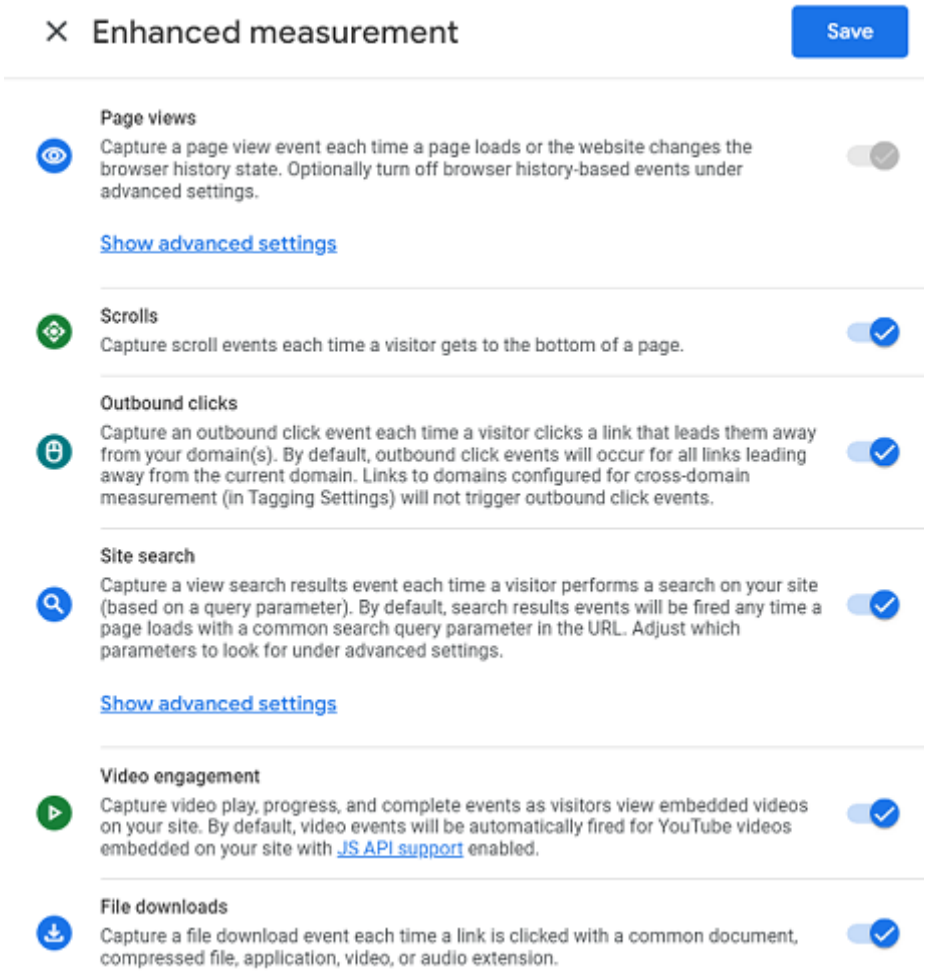
This is because:

1. GA4 has roll-up reporting built-in for app and web data.

2. Both the web and app data in GA4 use the same schema. Whereas in the case of GA3, this is not the case.
3. Accurate roll-up reporting enables robust cross-device and cross-platform tracking capabilities in GA4.

#7 GA4 provides automatic tracking for certain types of events

A GA4 property has the '**enhanced measurement**' feature built-in, allowing automatic tracking for certain types of events without any additional coding/tagging.

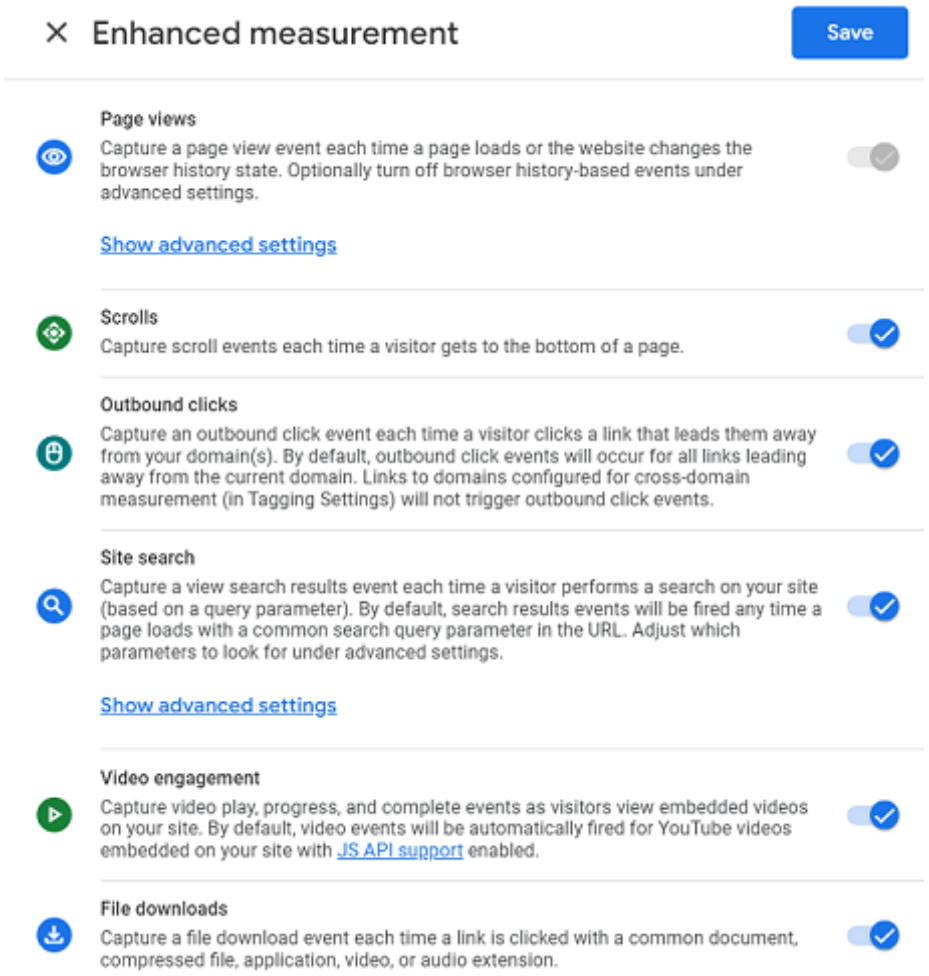


You can automate the tracking of the following types of events in GA4:

1. Scroll tracking
2. Outbound clicks (aka exit tracking)
3. Site Search tracking
4. Video engagement (aka video tracking)
5. Tracking file downloads.

This is something that is not possible with GA3 (aka Universal Analytics).

A GA4 property has the '**enhanced measurement**' feature built-in, allowing automatic tracking for certain types of events without any additional coding/tagging.



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1. Scroll tracking
2. Outbound clicks (aka exit tracking)

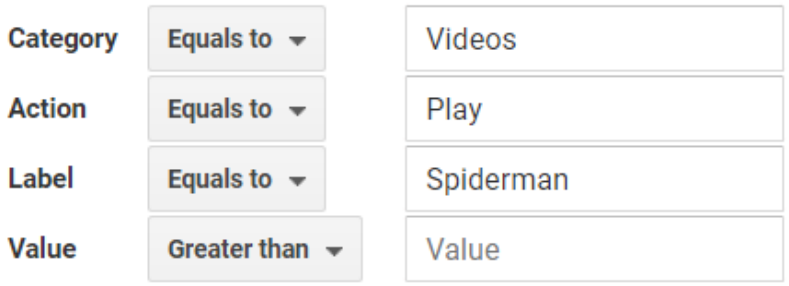
3. Site Search tracking
4. Video engagement (aka video tracking)
5. Tracking file downloads.

This is something that is not possible with GA3 (aka Universal Analytics).

#8 GA4 makes event tracking setup much easier

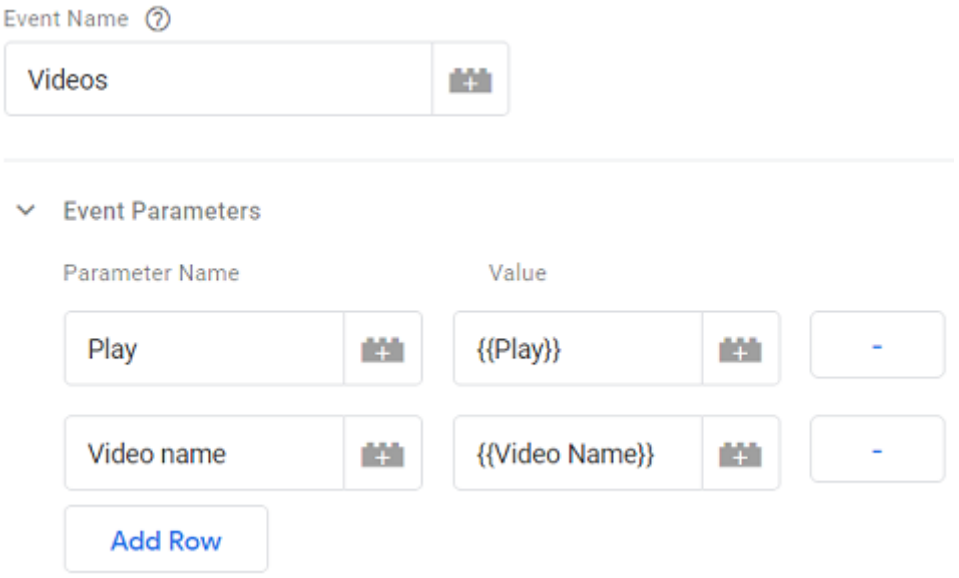
In GA4, you can easily modify any event or create a new event based on the occurrence of other events and parameters. This is something that is not possible with GA.

When you are using GA3, all the tracked events must follow the ***category-action-label-value*** schema:



This is not the case with GA4 which provides a much more flexible event-tracking setup.

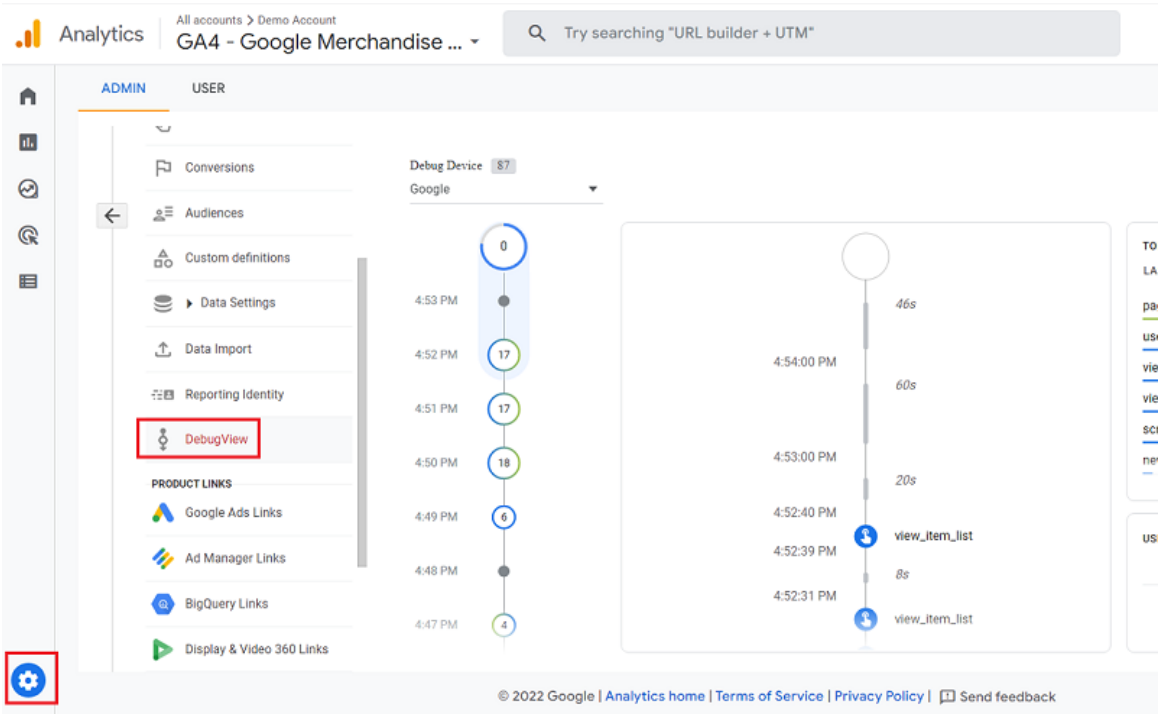
In the case of GA4, additional information is supplied to an event via parameters:



You can not supply additional information to a GA3 event via parameters.

Thus setting up event tracking is much easier in GA4.

#9 GA4 provides debugging within the reporting interface

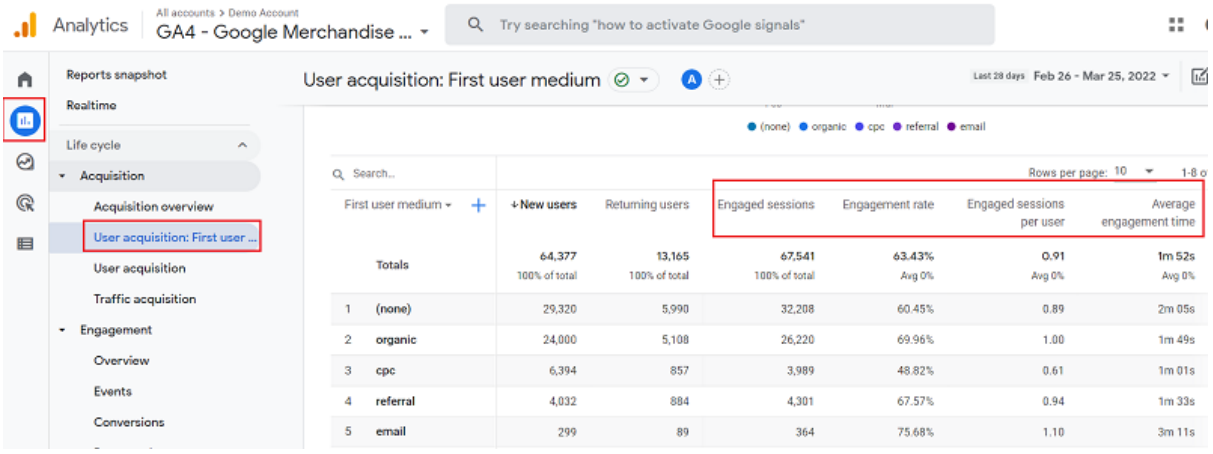


The GA4 reporting view provides the ***DebugView report*** through which you can quickly validate your analytics configuration for a website/app from within the reporting interface.

This is not possible with a GA3 reporting view, as no DebugView report is available.

#10 GA4 provides a new set of metrics for more accurate engagement tracking

GA4 reporting view provides a new set of engagement metrics that can track users' engagement with your website/app much more accurately than the page views and bounce rate metrics used by GA3.



Following are examples of GA4 engagement metrics:

1. Engaged Sessions
2. Engagement Rate

3. Engaged Sessions per User
4. Average Engagement Time.

#11 GA4 provides better users' privacy control options

#1 Unlike in GA3, the IP anonymization feature is built-in in GA4, is enabled by default, and you can not disable it.

#2 Unlike in GA3, the GA4 does not log IP addresses. This is done to prevent individuals from being identified via report data.

#3 GA4 allows disabling the collection of Google signals data on a per-region basis.

#4 GA4 collects and processes measurement data from EU users via domains and servers based in the EU.

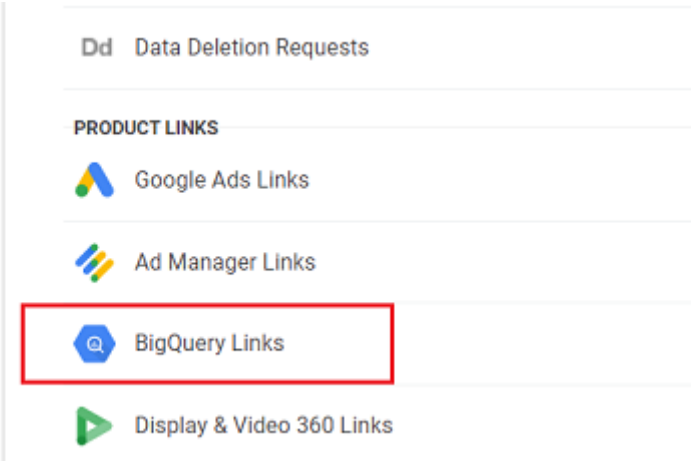
#5 GA4 drops any sensitive data that it collects from EU users before logging that data via domains and servers based in the EU.

#6 In GA3, you can set the **'User and event data retention'** setting to a **maximum of '50 months' or 'Do not automatically expire'.**

Whereas in GA4, you can set the **'User and event data retention'** setting to a **maximum of 14 months.**

Thus unlike in GA3, the GA4 can retain user-specific data for an inactive website user for only up to 14 months before automatically deleting it.

#12 GA4 provides a free connection to BigQuery

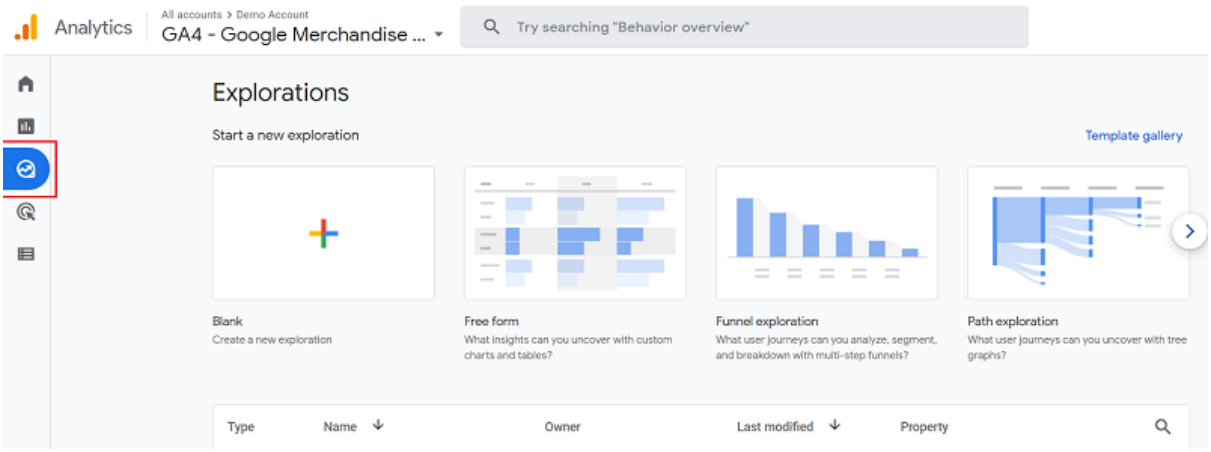


Unlike GA3, GA4 comes with a free connection to BigQuery. Earlier, this feature was available only to GA 360 customers.

So now you can access the raw GA data and can run SQL queries on it. This is very useful when you want to connect GA4 data with an external data source.

#13 GA4 provides Exploration report templates

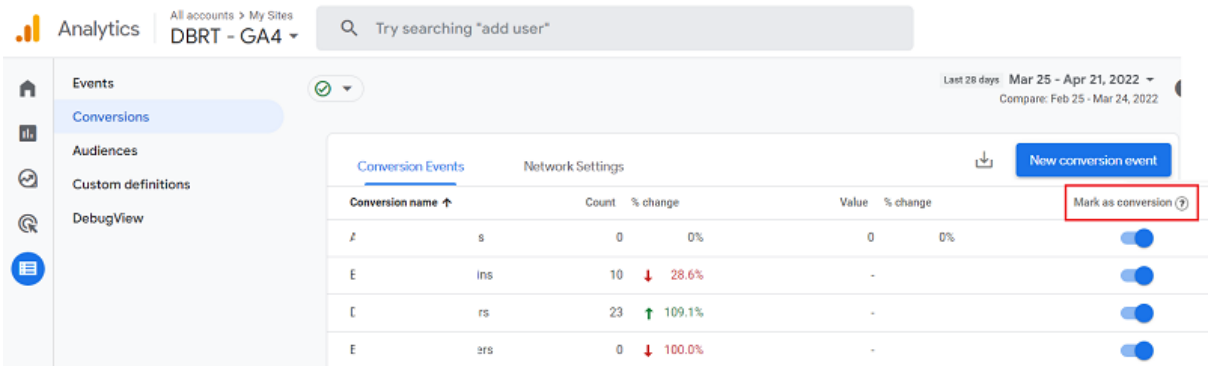
The reporting view of a GA4 property comes with a new set of report templates called '**Explorations**' through which you can do advanced data analysis:



In the case of GA3, only GA 360 customers can use the 'Exploration' report templates.

#14 GA4 makes conversion tracking much easier

In GA4, you can easily mark any logged event as a conversion.



This is something that is not possible with GA3. Thus setting up conversion tracking is much easier in GA4.

Note: In GA3, you can track a maximum of 20 conversions per reporting view. GA4 does not have any such restrictions. You can set up as many conversions as you want in GA4.

#15 GA4 allows the creation of complex conversions

GA3 allows you to create conversions based on the following:

1. Pageviews
2. Events
3. Duration
4. Pageviews/screens per session

But GA3 does not allow you to create conversions that satisfy multiple conditions.

For example, you can not define the following user activity as a conversion in GA3:

> *A user that visited your website via your newsletter and then watched a 5 minutes long video before making a purchase that is above $100.*

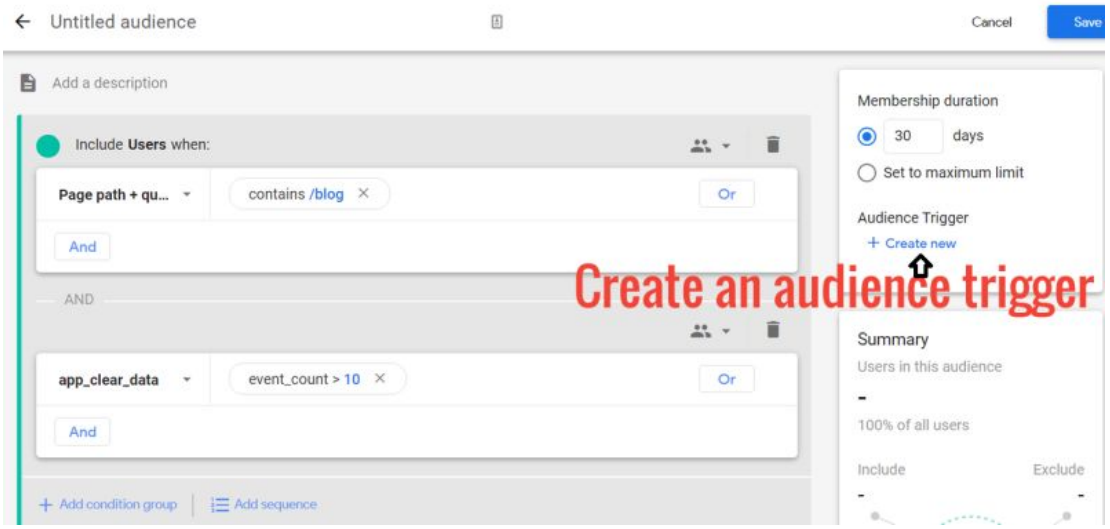
However, GA4 lets you create conversions that are based on multiple conditions.

You can create such types of complex conversions in GA4 by carrying out the following three tasks:

#1 Create a new audience in GA4 with one or more conditions (like visiting your website via newsletter, watching a video for at least 5 minutes etc.).

#2 Create an audience trigger that logs an event when a user becomes a member of your new audience.

#3 Mark the event as conversion.



#16 GA4 users' engagement tracking is much more aligned with contemporary browsing behaviour.

Users these days use multiple tabs while browsing websites. They may open your website in one tab and then navigate to another tab to do some other work.

Then they may come back hours later on your website to finish what they started. GA3 user engagement tracking does not work well to capture such user behaviour.

However, GA4 does. This is because, **unlike in GA3, a GA4 session can start with or without a pageview/screenview.**

Thus GA4 can track user engagement more accurately than GA3.

For example, consider the following scenario:

A user landed on your website but immediately navigated to another browser tab. After a couple of hours, he returned to your website, consumed the content and closed the tab from the landing page without browsing any further.

In this scenario, GA3 will likely count only one session with a pageview and 100% bounce rate.

But GA4 would count as two sessions. One session with pageviews and one session with user engagement.

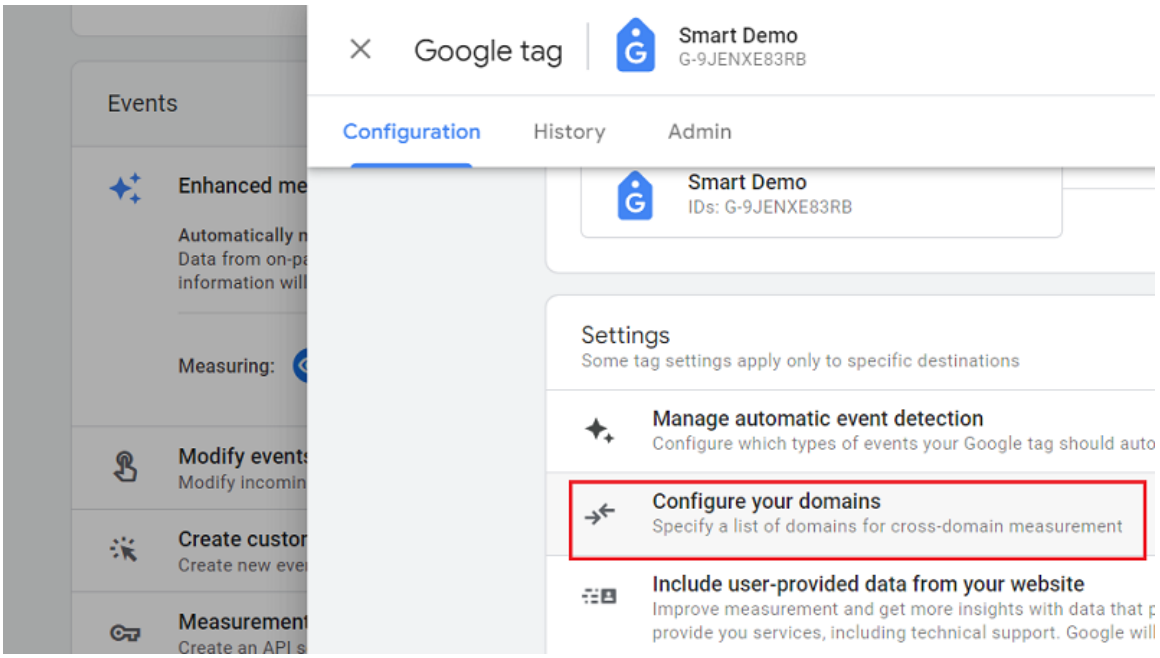
The session with user engagement started when the user returned to your website hours later and started consuming content.

#17 GA4 makes cross-domain tracking setup much easier

Complicated tracking setups are required in GA3 to make cross-domain tracking work.

It is usually done by using the '*allowlinker*' parameter sent with every single Google Tag Manager tag (if you are using Google Tag Manager) or every 'gtag.js' (global site tag) call.

In the case of GA4, setting up cross-domain tracking has been made very simple, and no additional tagging is required. You just need to configure your domains in the Admin section:

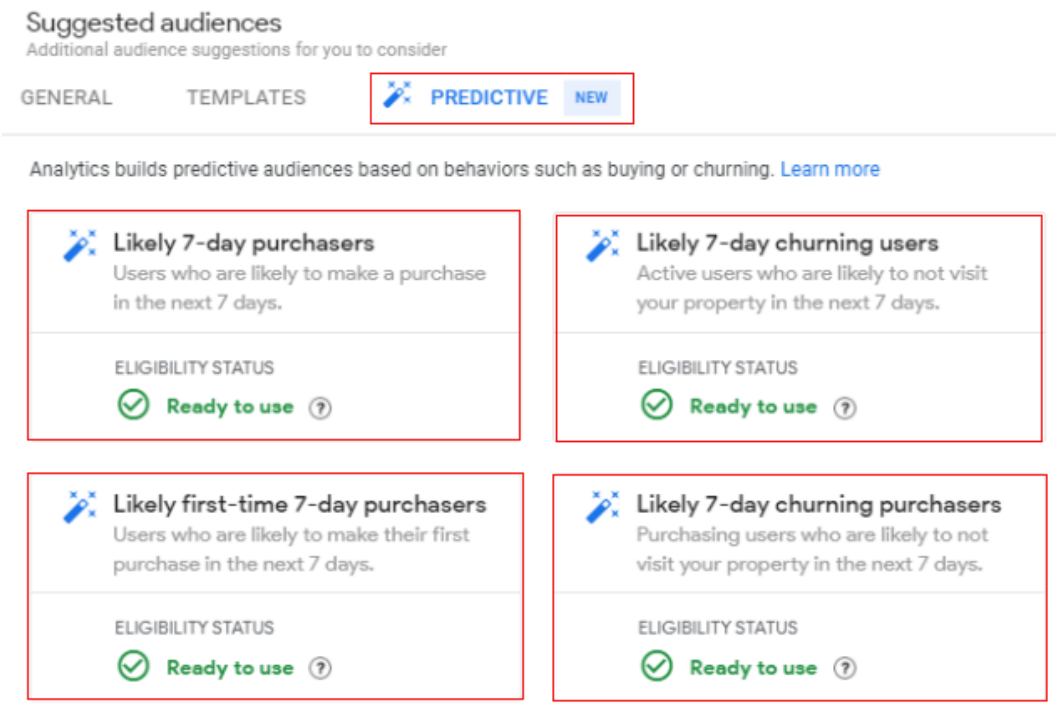


#18 GA4 provides access to far more custom dimensions and custom metrics

GA3 (excluding GA 360) supports only 20 custom dimensions and 20 custom metrics.

Whereas GA4 supports **50 event scoped custom dimensions** and **50 event scoped custom metrics.** In addition to that, GA4 also supports **25 user scoped custom dimensions**.

#19 GA4 provides predictive analytics capabilities



One of the major benefits of GA4 is that you get to use **predictive metrics**. These metrics are derived from machine learning algorithms that measure conversion progress.

With predictive metrics, you can identify users and their actions on your website/app that would likely lead to a purchase or conversion.

This could help you to discover more users who may purchase a product in the next 7 days.

To predict the potential actions of users, GA4 automatically enriches the data on your dataset with Google machine learning algorithms.

GA4 currently supports three predictive metrics:

1. **Purchase probability**: The probability that a user who was active in the last 28 days will generate a purchase event within the next 7 days. Currently, only *purchase*/*ecommerce_purchase* and *in_app_purchase* events are supported in GA4.

2. **Churn probability**: The probability that a user who was active on your website within the last 7 days will not be active within the next 7 days.

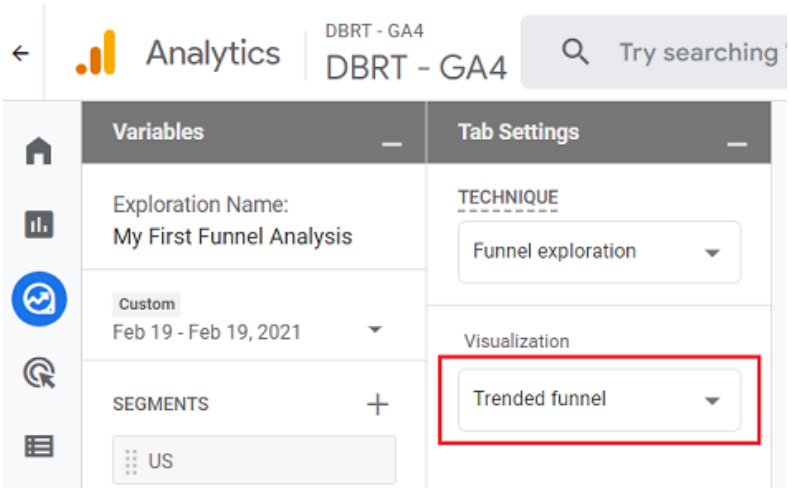
3. **Revenue prediction**: The revenue expected from all purchase events within the next 28 days from the users who were active in the last 28 days on the website.

#20 GA4 provides superior funnel creation and analysis capabilities

The funnel creation and analysis capabilities have greatly improved in GA4. For example, you can not create funnels on the fly in GA3, but you can in GA4.

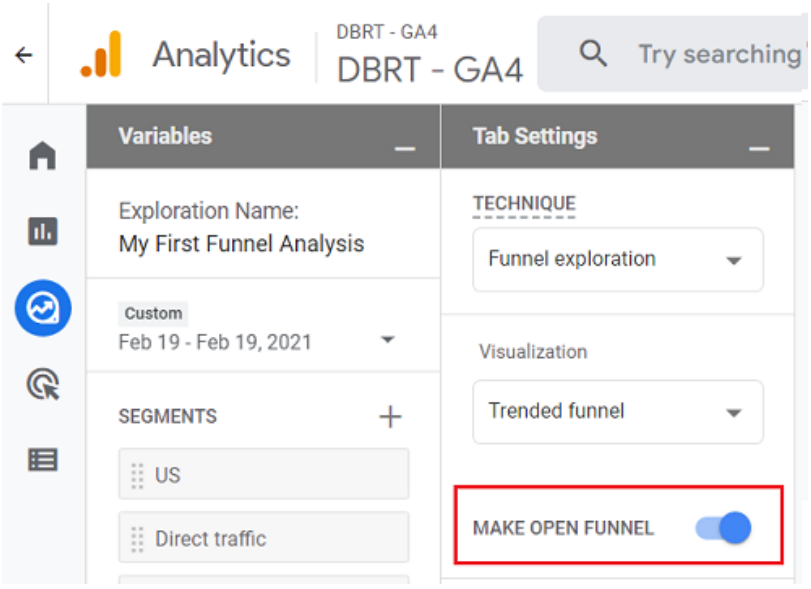
Similarly, you could not apply advanced segments to a funnel in GA3, but you can in GA4.

The GA4 funnel exploration report provides a visualization called '**trended funnel'** through which you can determine how the funnel is performing over time:



Neither GA3 nor GA3 360 provided the ability to create trended funnels.

In GA4, you can make a funnel open or close on the fly by using a toggle button:



This is something not possible with GA3.

I have used many web analytics tools over the years.

Most of these tools don't hold a candle to GA4 in terms of features and usability, and the ones that do, are just too difficult/expensive to use.

All web analytics tools face the same browser and privacy restrictions as the free tools and do not provide keyword data.

For 99% of businesses, the free version of GA4 is all you need.

Companies buy paid web analytics tools hoping to get some magical/hidden insight. But they forget that it is not the tool but the person using that tool that brings the real difference.

Use tools that supplement GA4 and not compete with it.

Use tools like ahrefs, semrush, Google Search Console, SEOTesting, Microsoft Clarity etc., to get the insight you can't easily get through GA4.

You don't need paid web analytics tools.

Comparing GA4 vs Universal Analytics data.

You probably know that both GA3 and GA4 use different data models.

GA3 data model is based on sessions and pageviews.

In contrast, the GA4 data model is based on events and parameters. Thus both GA3 and GA4 can collect, process, and report the same data differently.

However, that should not stop you from comparing GA3 and GA4 data.

It is a good practice to do such comparisons.

The following are the main benefits of comparing GA3 and GA4 data:

1. You can quickly detect anomalies in data collection.
2. You learn a lot about how GA4 works.
3. You can explain data discrepancies between GA3 and GA4 to your client/boss.

#1 You can quickly detect anomalies in data collection

For example, if GA3 reports 100 newsletter sign-ups, but GA4 reports only ten sign-ups during the same period, one of the GA versions is not collecting data correctly.

Without such a comparison, you may never know whether your GA4 property is set up correctly.

#2 You learn a lot about how GA4 works

By comparing GA3 and GA4 data, you learn how GA4 works. This would help you in data interpretation and reporting.

#3 You can explain data discrepancies between GA3 and GA4 to your client/boss

You don’t look like a fool in front of your client/boss when they ask you why the reports and metrics are not matching.

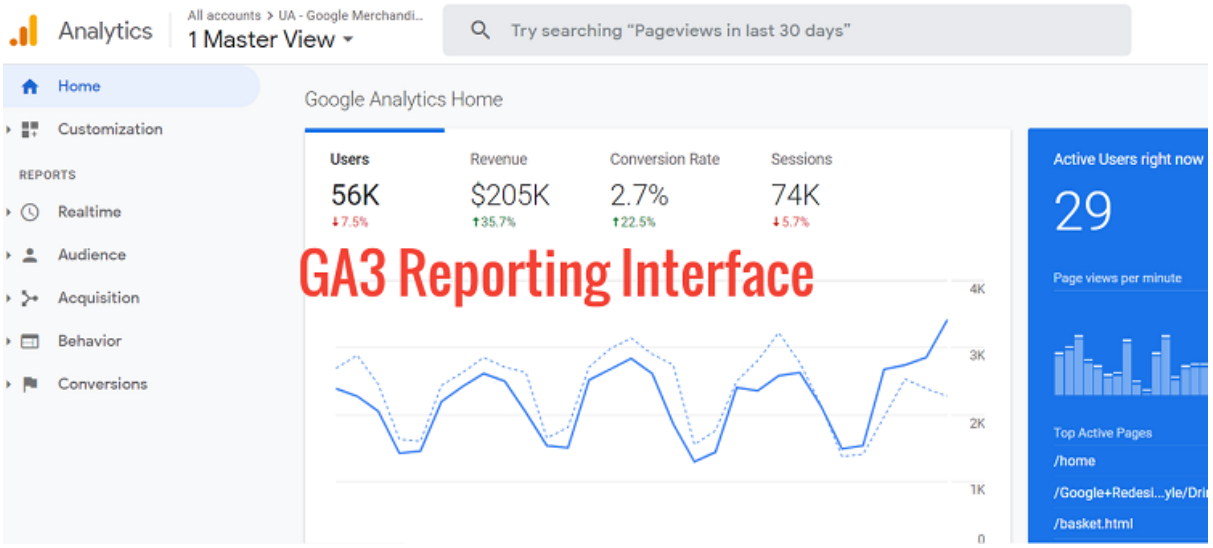
Even if you choose not to compare GA3 and GA4 data, the decision-makers will likely do such a comparison and ask you questions about data discrepancies.

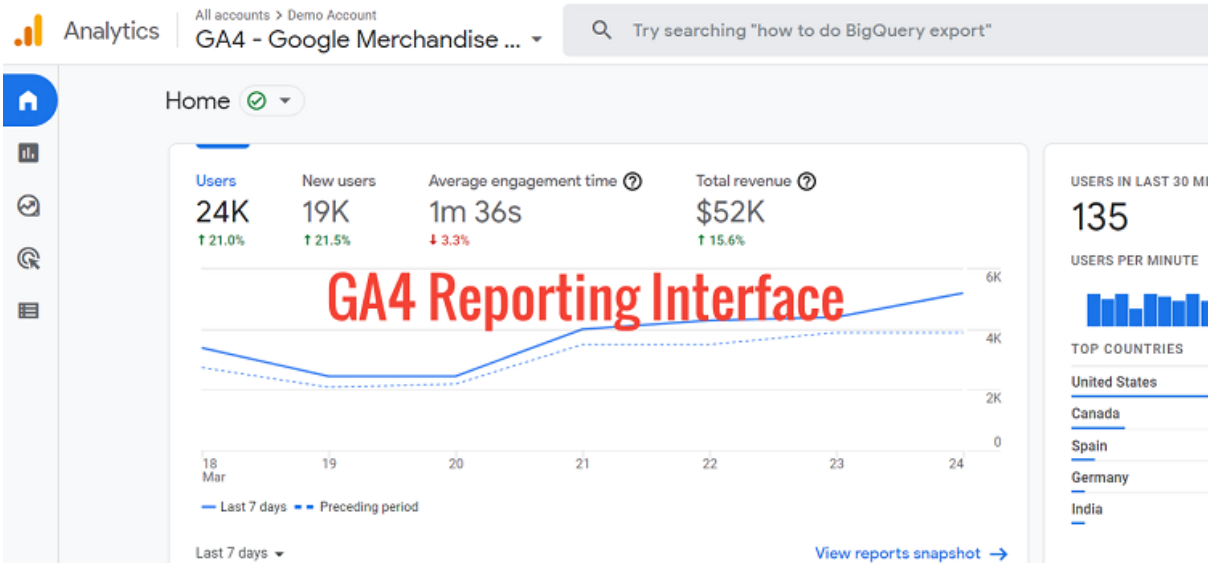
And they are likely to ask such questions for as long as GA3 exists.

So it is in your best interest to do such a comparison and improve your understanding of GA4.

Following are the key differences between Google Analytics 4 (GA4) and Universal Analytics (GA3).

#1 Reporting interface





At first glance, the GA4 reporting view may look intimidating as many of the reports and metrics you are familiar with are not there. They have either been removed or replaced.

> ***Businesses should not expect to see the same reports that were available in GA3 since GA4 is based on a different measurement model.***

You will see different sets of reports in your GA4 view, and you will not see many reports.

This is because many reports are only generated when you start tracking events.

The reporting interface of the GA4 view looks similar to that of Google Analytics for Firebase (because GA4 is built on Firebase analytics). But it is quite different from any GA3 reporting view.

#2 Measurement model

GA3 (aka Universal Analytics) uses the measurement model, which is **based on sessions and pageviews.**

GA4 uses the measurement model, which is **based on events and parameters**.

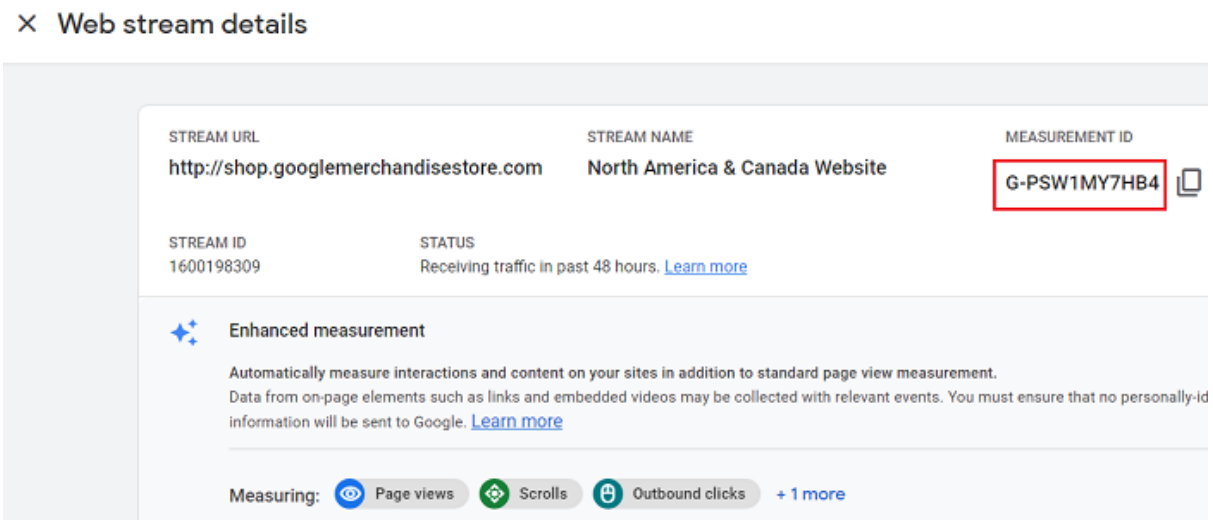
***In GA4 even a 'pageview' is considered** an event.*

Every tracked activity taken by a user in GA4 is considered an event, and these events can provide much more detailed information.

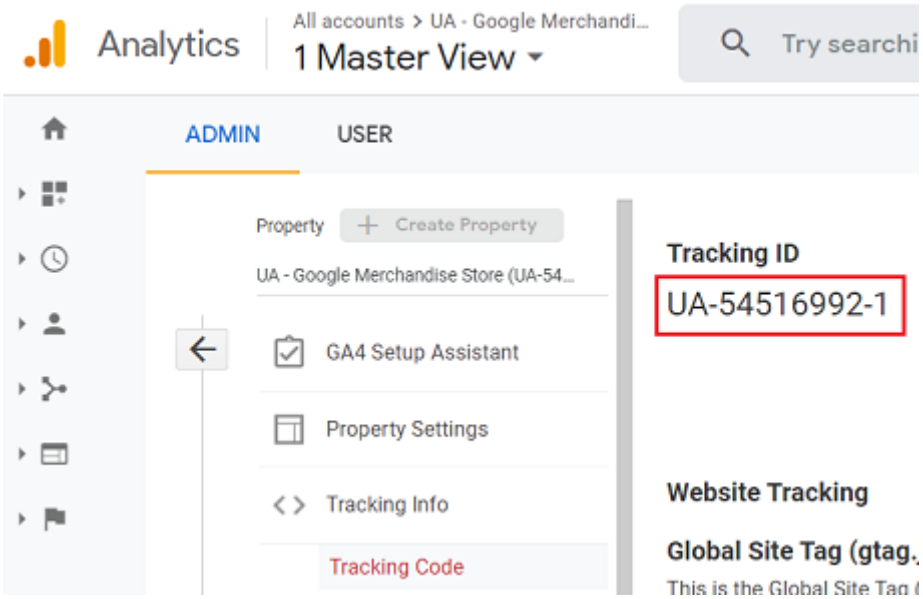
Let's say we are tracking 'pageview' as an event in GA4. This GA4 event would also have additional information attached to it, like the title of the page, user location, etc.

#3 Tracking IDs

To set up any type of tracking in GA4 via GTM, we use the **measurement ID**.



Whereas we use the tracking ID to set up tracking in GA3 via GTM.



If you have set up a GA4 property with a web data stream, then your measurement ID begins with the characters 'G-'.

For example, **G-TXKT959827**

If you have set up a GA3 property then it uses the tracking ID (and not measurement ID) and this tracking ID begins with characters 'UA-'.

For example, **UA-1509844-8**

#4 View and Data Streams Setup

Historically, as Google Analytics' best practice, it was always advised to have a minimum of three different views in a Google Analytics property.

One would be the 'unfiltered view', which would contain all the raw and unfiltered data; another would be a 'test view', which would contain filters, goals and other configuration changes that you would like to test, and the other a 'master view' which will have goals, filters and the other configuration that you tested in test view.

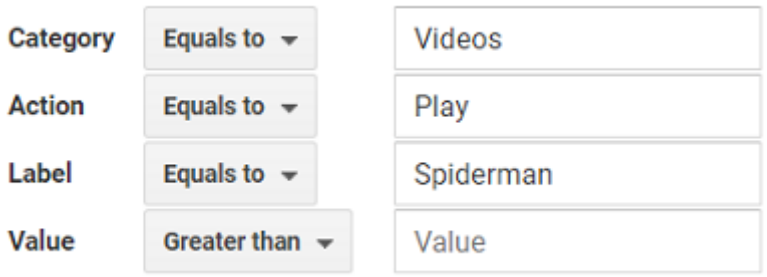
In GA3, you have the option to create additional views. You can create a view for your app and web tracking separately.

In the GA4 standard, you do not have the option to create views. However, you do have the option to create data streams for your web and apps.

#5 Event tracking setup

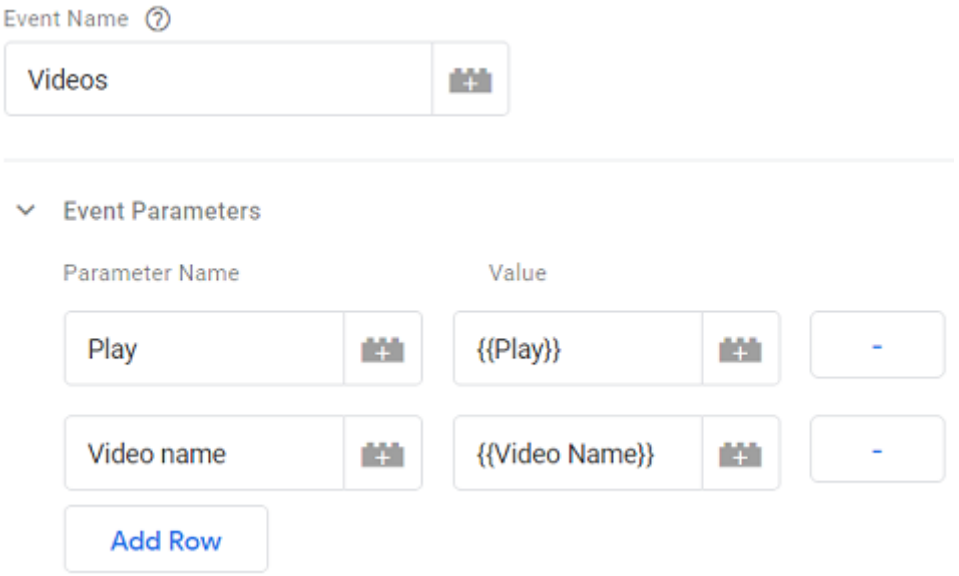
The events are tracked differently in GA4 than in GA3.

When you are using GA3, all the tracked events must follow the **category-action-label-value schema**:



This is not the case with GA4, which provides a more flexible event tracking setup.

In the case of GA4, additional information is supplied to an event via parameters:



In GA4, you do not have an event category, action, and label, but it captures the four categories of events, which are:

- Automatically collected events
- Enhancement Measurement events
- Recommended events
- Custom events

Out of the above four event categories, *automatically collected* and *enhancement measurement* events do not require code changes on the page or app.

These events are automatically captured if the web page has gtag.js implemented directly on the page or via Google Tag Manager.

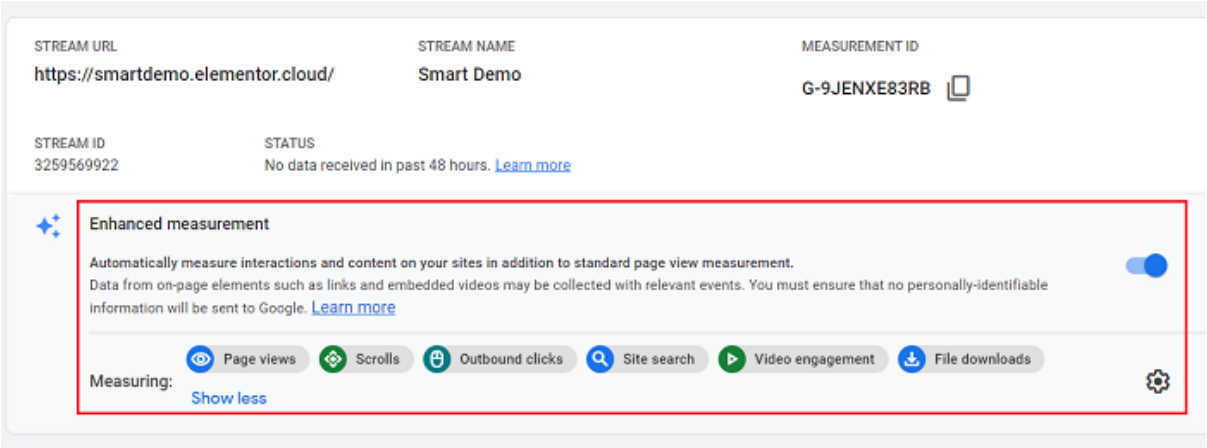
You can send up to 25 custom parameters per event, and each value can be 100 characters long.

There is a limit of 500 unique event names per GA4 property.

However, if you need to create new events after reaching your quota, you can archive the ones that are not in use.

#6 Event tracking automation

A GA4 property has got the '**enhanced measurement**' feature built-in which allows automatic tracking for certain types of events without any additional coding/tagging:



You can automate the following types of events in GA4:

1. Scroll tracking
2. Outbound clicks (aka exit tracking)

3. Site Search tracking
4. Video engagement (aka video tracking)
5. Tracking file downloads.

This is something that is not possible with GA3.

> ***Both automatically collected events and enhancement measurement events do not require any code changes.***

Such events will be automatically captured if the page you are looking to track has gtag.js implemented.

However, the following two GA4 event categories require code changes to the app or web.

- Recommended events
- Custom events

Recommended events have predefined names and parameters and are used for specific business verticals like retail and ecommerce, travel, games, jobs, and real estate.

Custom events are implemented by people like you and me.

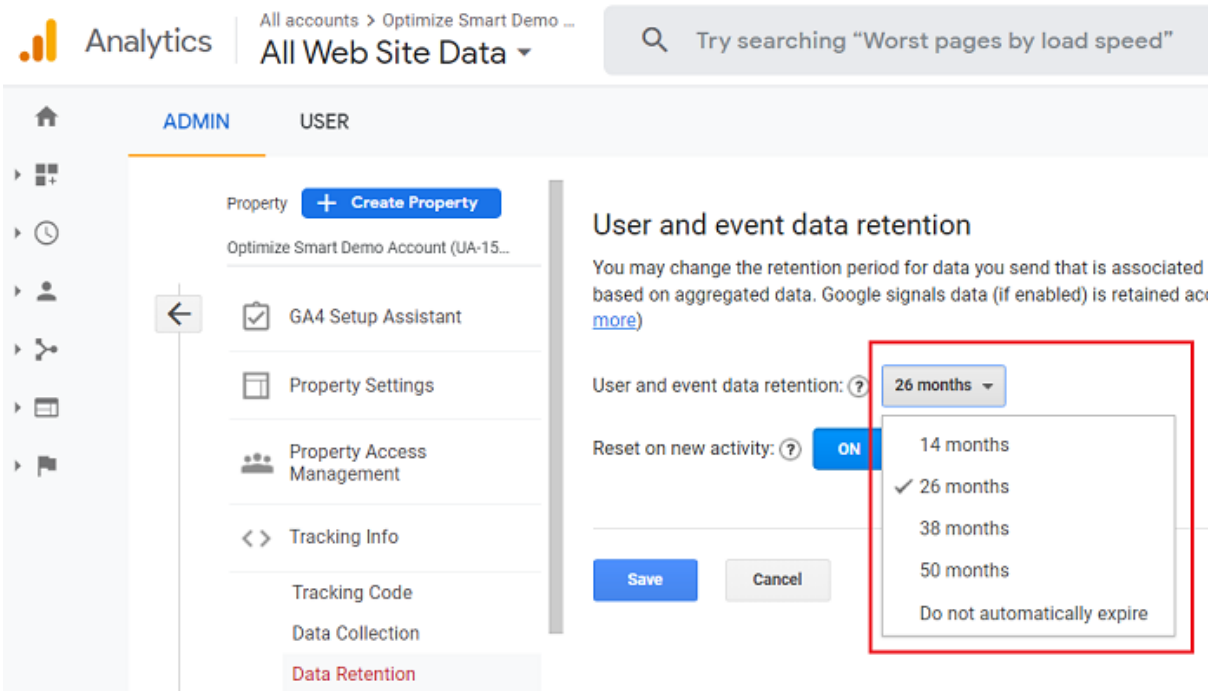
#7 User and event data retention

Through the '**User and event data retention**' feature, you can set the amount of time for which Google Analytics retains user-specific data for an inactive website user before automatically deleting it.

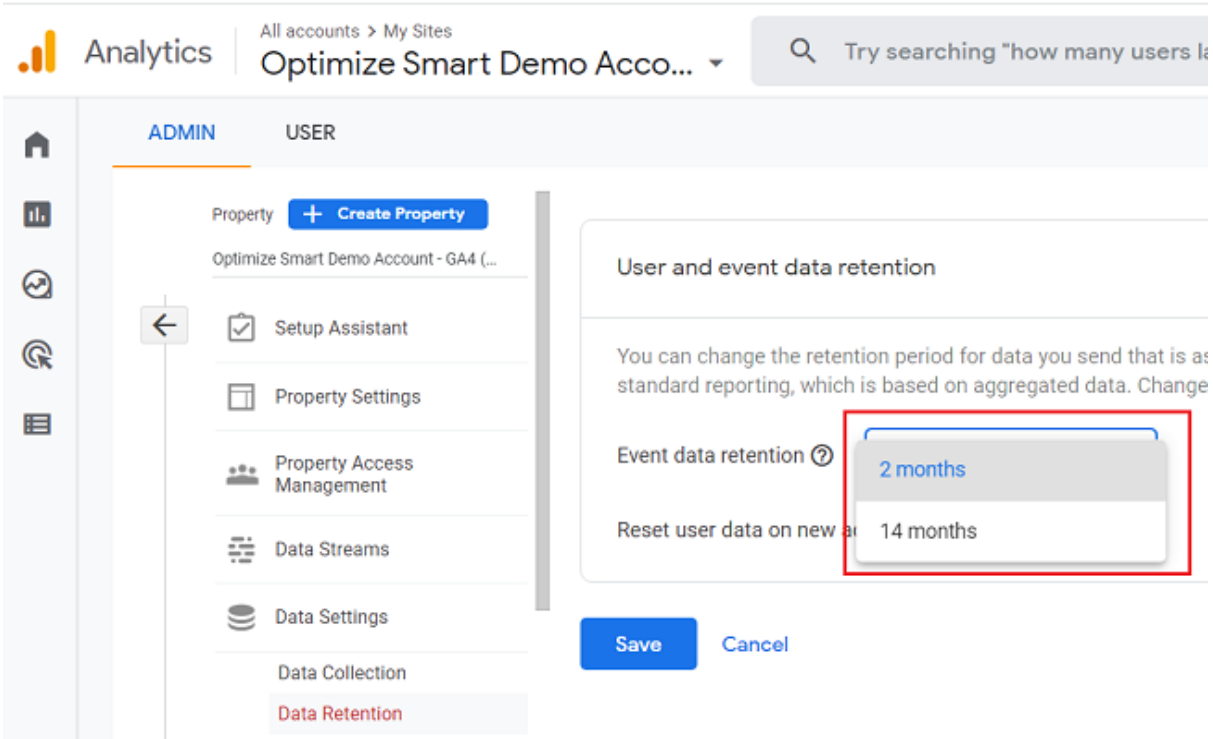
The user-specific data is the data that is associated with cookies, user identifiers, or advertising identifiers.

In the case of GA3, you can set the amount of time to one of the following:

1. 14 months
2. 26 months
3. 38 months
4. 50 months or
5. Do not automatically expire



In the case of GA4, you can set the amount of time to either **two months** or **14 months**. There are no other options available:



#8 Ecommerce tracking

The ecommerce tracking capabilities provided by GA4 are still in their infancy. They are nowhere as powerful as the ecommerce tracking capabilities provided by GA3.

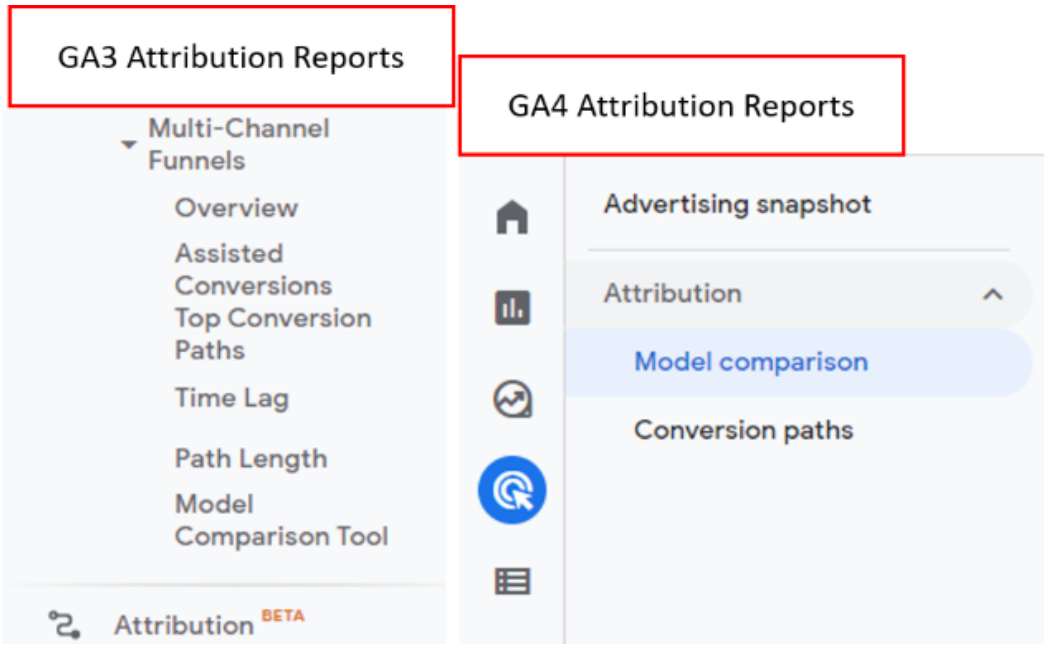
Also, ***GA4 does not provide enhanced e-commerce tracking.***

#9 Cross-device and cross-platform tracking

In the case of GA4, both the web and app data use the same schema. Whereas in the case of GA3, this is not the case.

Because of this reason, GA4 provides much more robust and reliable cross-device and cross-platform tracking than GA3.

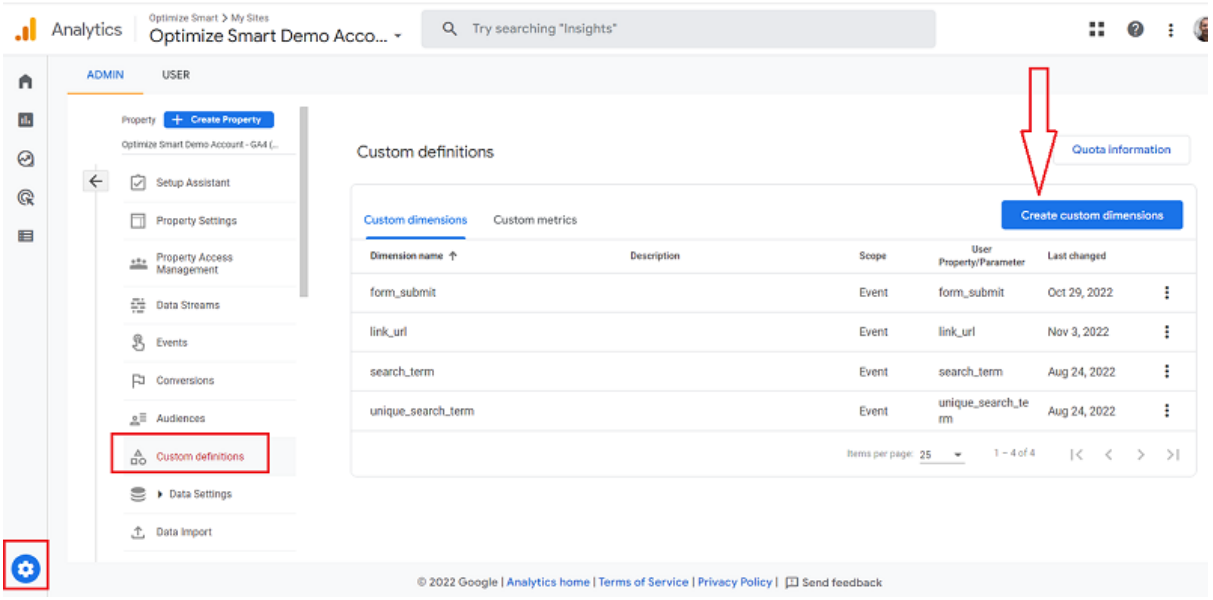
#10 Attribution modelling



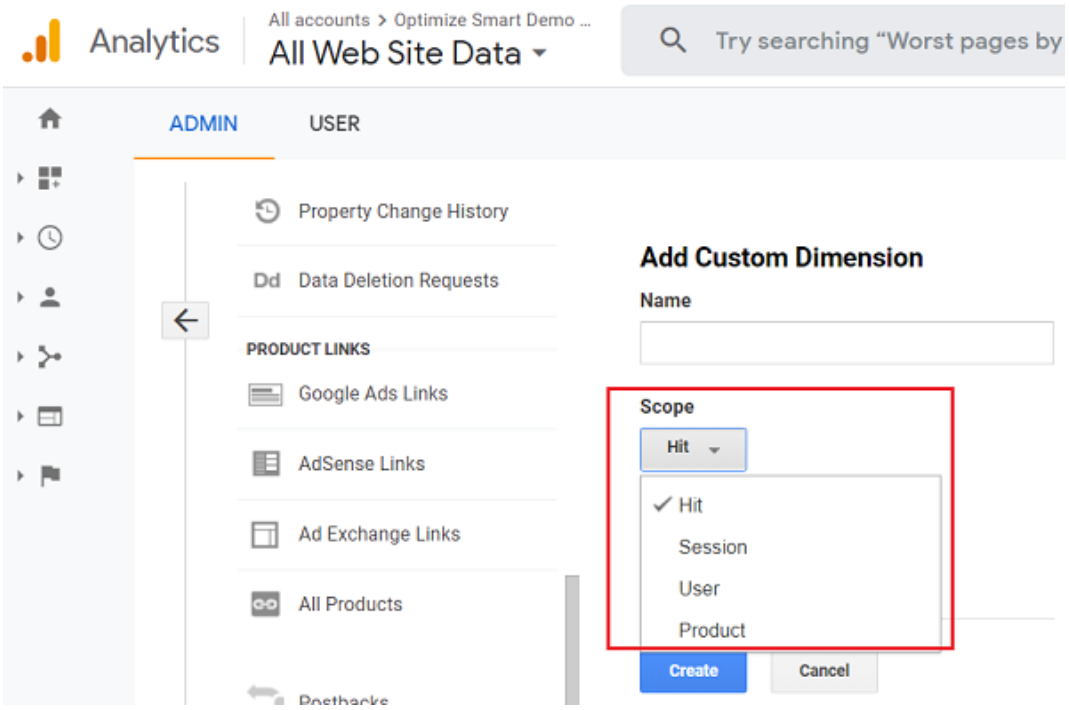
GA3 provides powerful attribution modelling capabilities via multi-channel funnels and attribution reports. Such attribution modelling capabilities barely exist in GA4.

#11 Custom dimensions

In GA4, custom dimensions are created differently than in GA3.



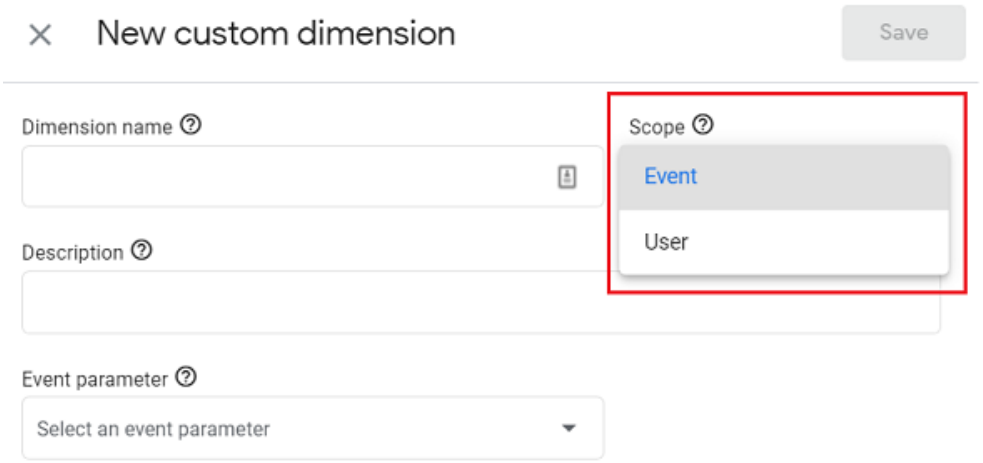
If you are using GA3, you can set/change the scope of your custom dimension to 'Hit', 'Session', 'User' or 'Product'.



There are no 'Hit' and 'Session' scopes in the case of GA4. It has been replaced by the 'event' scope.

For now, you can not create a custom dimension with the 'product' scope in GA4. You would need to use e-commerce parameters.

You can create a custom dimension in GA4 with either the 'event' scope or 'user' scope:

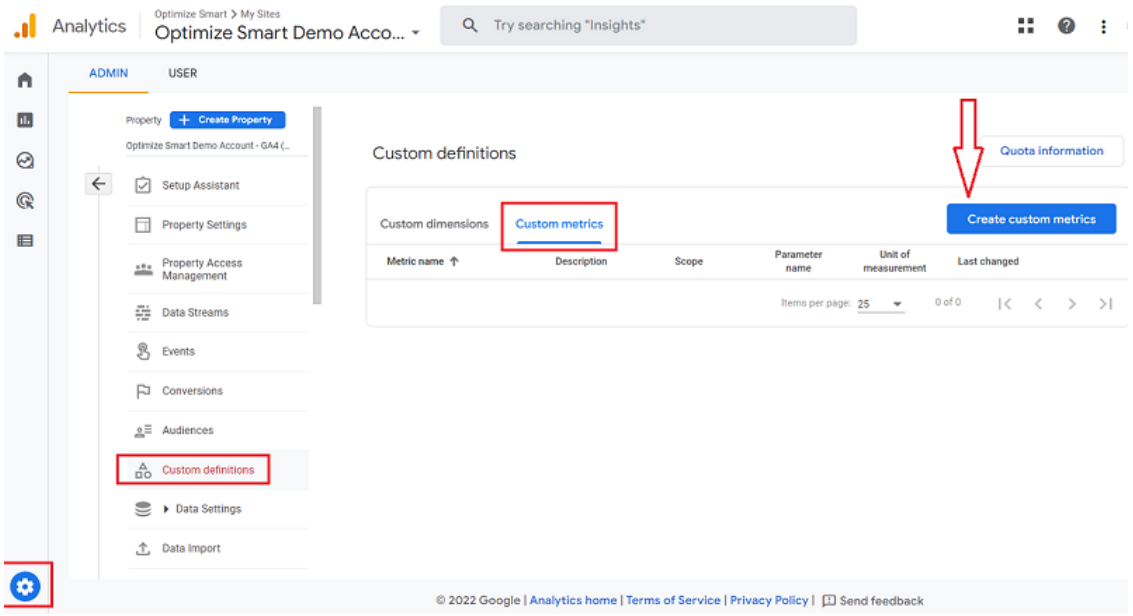


In GA4, the value of custom dimensions and custom metrics are supplied by logged event parameters and user properties.

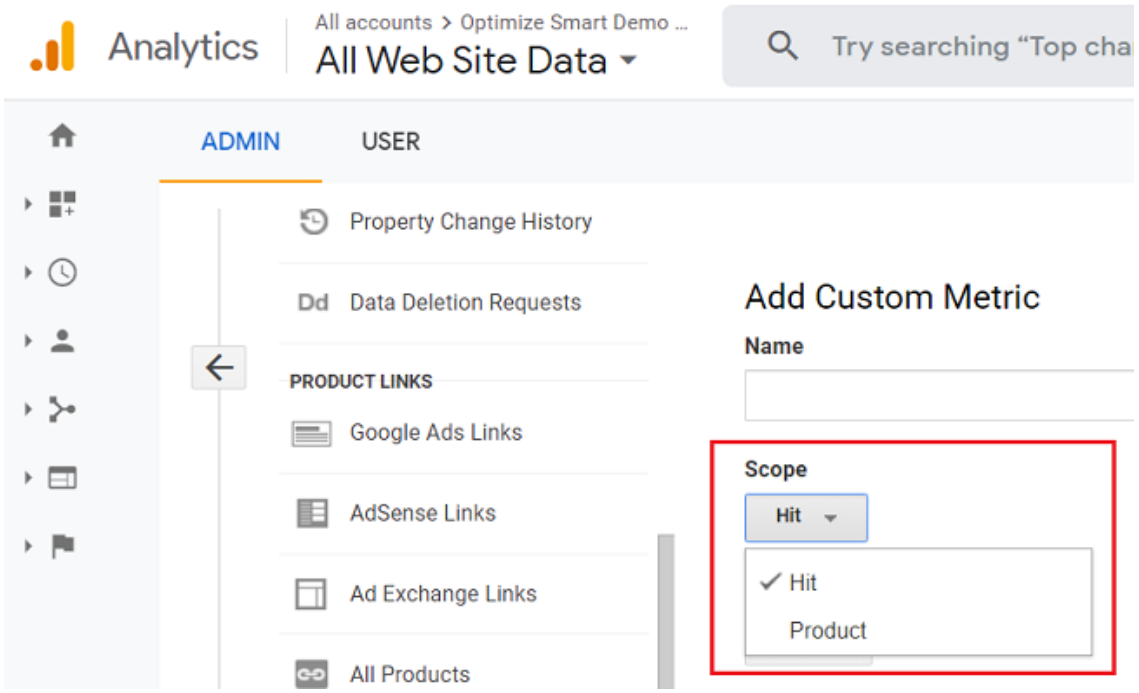
This is not the case with GA3.

#12 Custom metrics

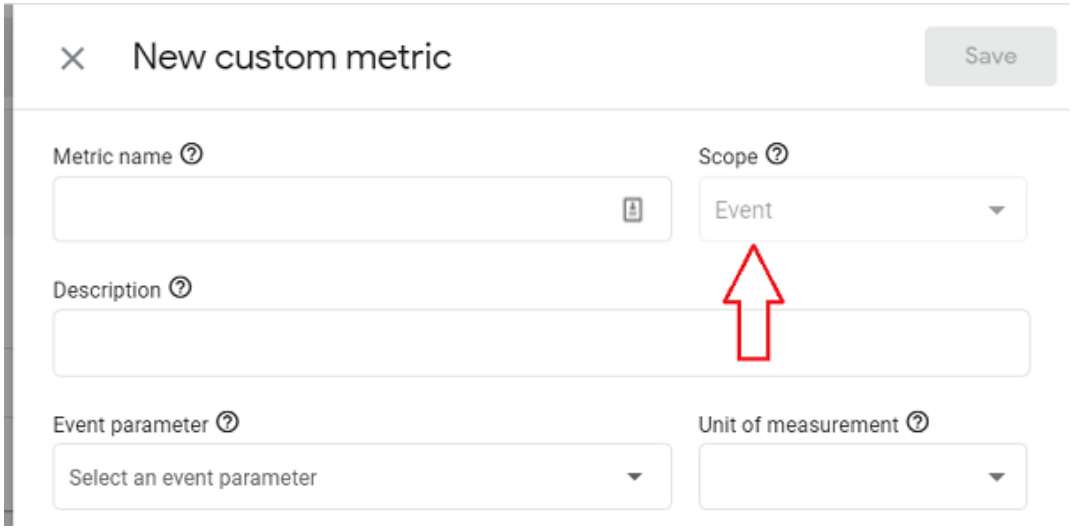
In GA4, custom metrics are created differently than in GA3.



If you are using GA3, then you can set/change the scope of your custom metric to 'Hit' or 'Product':

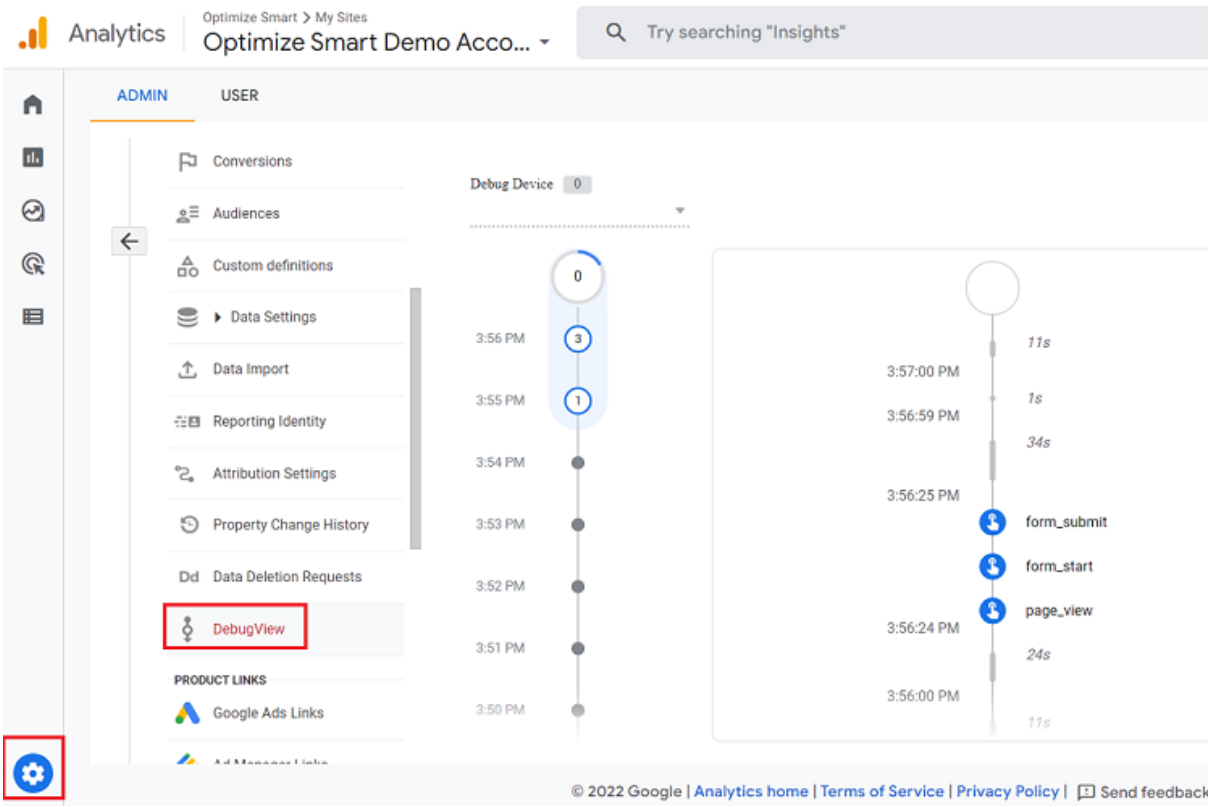


In the case of GA4, it is not possible to set/change the scope of your custom metric. A GA4 custom metric has only one scope and that is the 'event' scope.



#13 Debugging

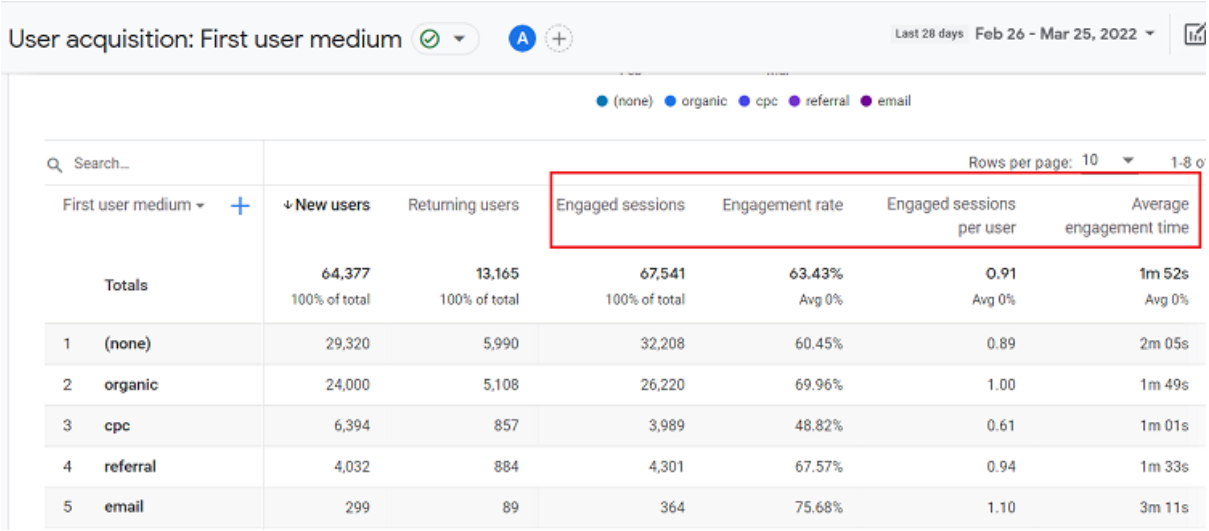
The GA4 reporting view provides the **DebugView report** through which you can validate your analytics configuration from within the reporting interface:



This is impossible with a GA3 reporting view as there is no DebugView report available.

#14 Engagement metrics

GA4 reporting view provides a new set of engagement metrics that can track users' engagement with your website/app much more accurately than the pageviews and bounce rate metrics used by GA3.



Following are examples of GA4 engagement metrics:

1. Engaged Sessions
2. Engagement Rate
3. Engaged Sessions per User
4. Average Engagement Time

#15 IP anonymization

Under GDPR, an IP address is considered personal data.

Google Analytics tracks and stores the IP addresses of your website users to report on geolocation data. However, GA does not report on IP addresses in its reports.

If your privacy policy or local privacy laws prevent the storage of full IP addresses, then you can use the IP anonymization feature to anonymize/mask website visitors' IPs.

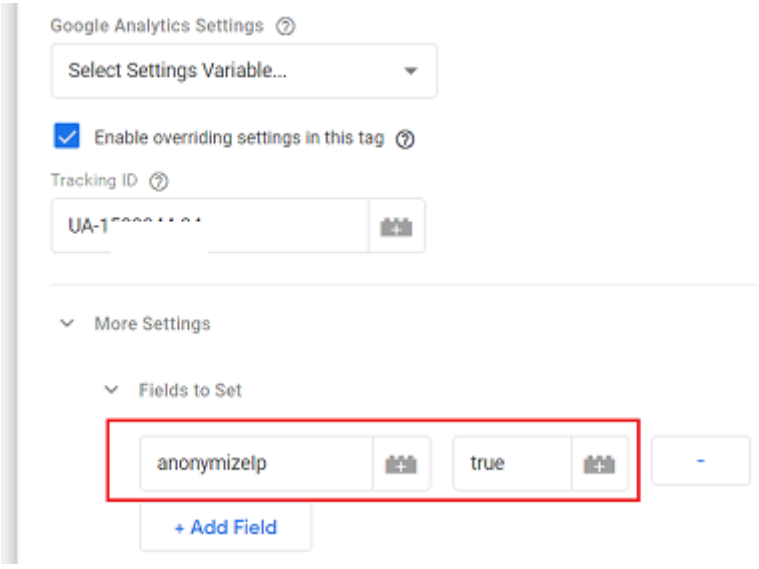
> ***When you anonymize visitor IP, the last three digits from your website visitor's IP address are automatically dropped/deleted.***

In other words, the IP anonymization feature sets the last octet of IPv4 user IP addresses and the last 80 bits of IPv6 addresses to zeros.

For example,

If a website visitor has a public IP of 12.214.31.144, then as soon as the Analytics Collection Network receives the IP data, Google will anonymize/mask the IP to 12.214.31.0

If you are using the GA3 property, you can enable or disable IP anonymization.



The IP anonymization is disabled by default in GA3.

However,

If you are using a GA4 property, then the IP anonymization feature is built-in, is enabled by default, and you can not disable it.

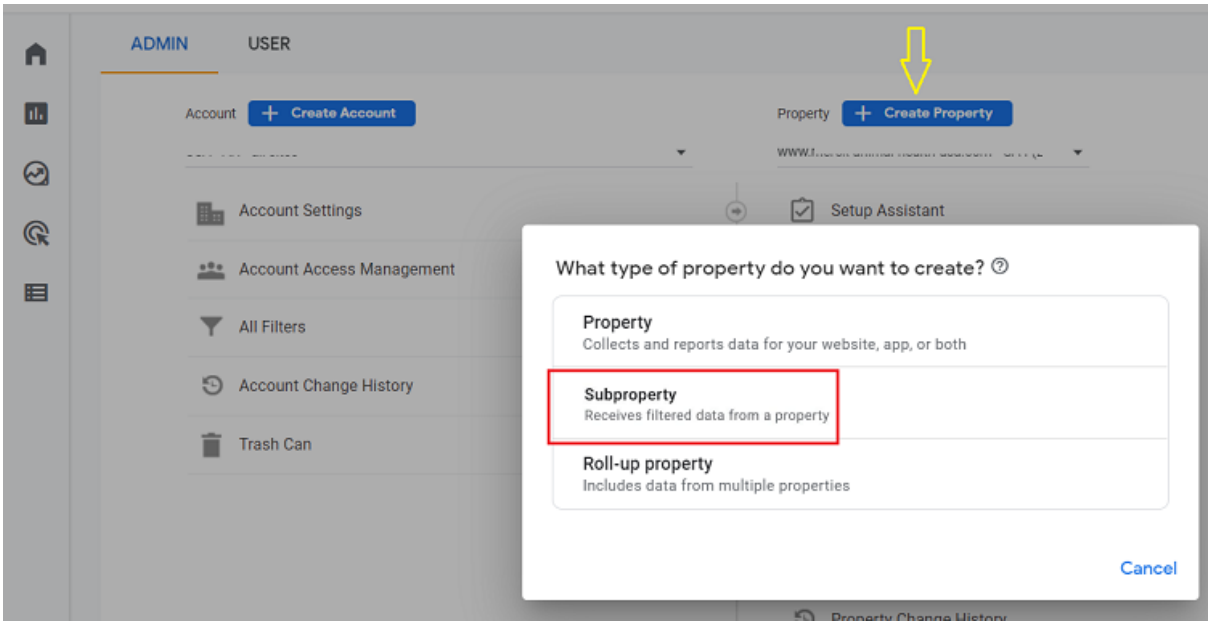
#16 Reporting views

Using GA3, you can create up to 25 reporting views per property. But in the case of GA4, you can use only one reporting view.

Currently, there is no option to create additional views in the standard GA4 property.

However,

If you are using GA4 360, you can create replicate some of the functionality of a reporting view by creating a new sub-property.



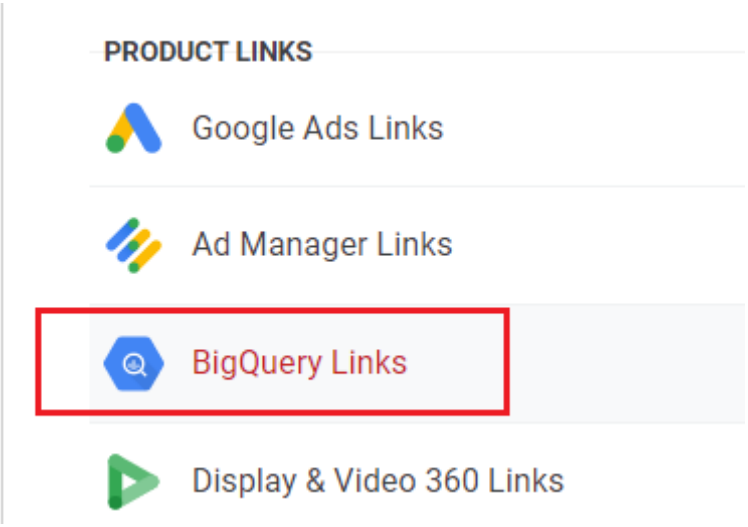
There are workarounds available for creating additional views in the GA4 standard.

You can create new '**Audiences**' or '**Data Streams**' and use them in place of filtered views.

#17 BigQuery

GA4 comes with a free connection to BigQuery. So you can access the raw GA4 data and run SQL queries on it.

This helps in more precise and multilevel data analysis of your users so that it is easy to understand the user activities on the website.



> ***GA3 does not come with a free connection to BigQuery (unless you are using GA 360).***

#18 GA3 hits vs GA4 events

> ***A GA3 property captures users' interactions with your website in the form of hits.***

A hit is a user's interaction with your website that sends data to the Google Analytics server.

A hit can be a pageview, event, social interaction, ecommerce, screenview etc.

A GA4 property captures all users' interactions with your website only in the form of events.

As such:

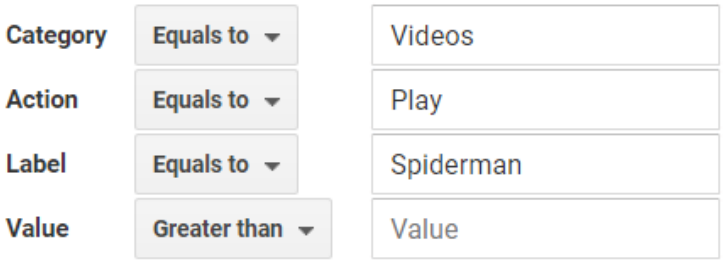
1. A **pageview hit** is captured as an **event** in a GA4 property.
2. An **event hit** is captured as an **event** in a GA4 property.
3. **Social interaction hit** is captured as an **event** in a GA4 property.
4. An **ecommerce hit** is captured as an **event** in a GA4 property.
5. A **user timing hit** is captured as an **event** in a GA4 property.
6. An **exception hit** is captured as an **event** in a GA4 property.
7. A **Screenview hit** is captured as an **event** in a GA4 property.

A GA3 property will process the hits as long as they arrive within 4 hours of the preceding day's close. Such hits are called **'late hits'** as they are not sent immediately.

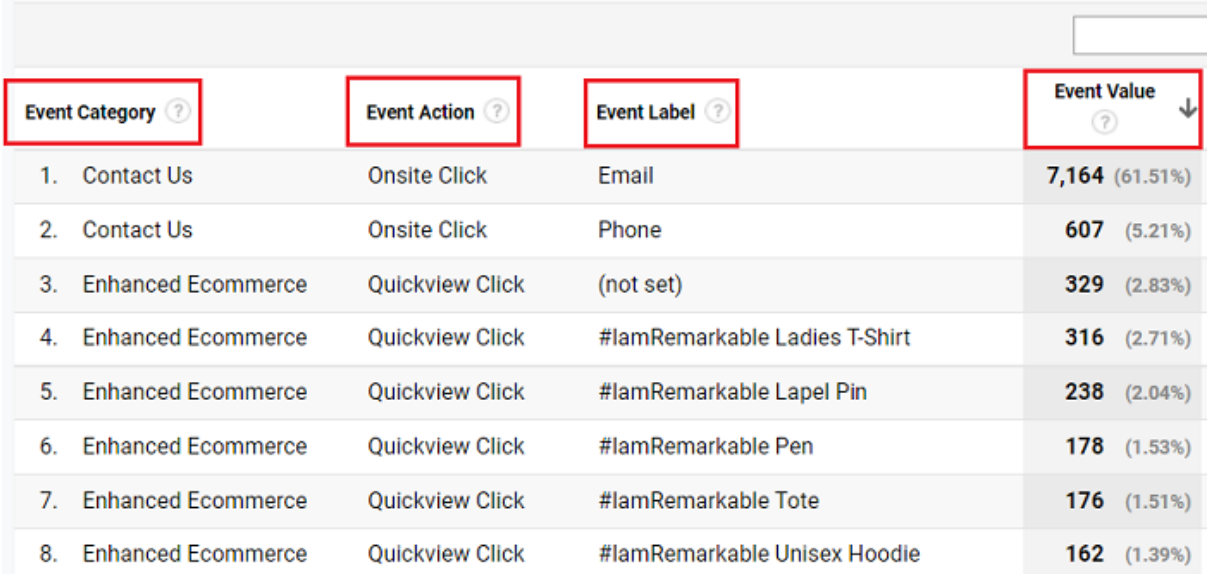
Whereas in GA4, events are processed even if they arrive up to 72 hours late. Such events are called '**late events**' as they are not sent immediately.

#19 GA3 vs GA4 events

A GA3 event hit follows the **category-action-label-value** schema and is its own hit type:



GA3 reports display event hit data in the form of **category-action-label-value**:



	Event Category	Event Action	Event Label	Event Value
1.	Contact Us	Onsite Click	Email	7,164 (61.51%)
2.	Contact Us	Onsite Click	Phone	607 (5.21%)
3.	Enhanced Ecommerce	Quickview Click	(not set)	329 (2.83%)
4.	Enhanced Ecommerce	Quickview Click	#IamRemarkable Ladies T-Shirt	316 (2.71%)
5.	Enhanced Ecommerce	Quickview Click	#IamRemarkable Lapel Pin	238 (2.04%)
6.	Enhanced Ecommerce	Quickview Click	#IamRemarkable Pen	178 (1.53%)
7.	Enhanced Ecommerce	Quickview Click	#IamRemarkable Tote	176 (1.51%)
8.	Enhanced Ecommerce	Quickview Click	#IamRemarkable Unisex Hoodie	162 (1.39%)

A GA4 event is a hit of any type.

For example,

> ***A GA4 event can be pageview, event, social interaction, ecommerce, screenview etc.***

As such, the event count between GA3 and GA4 is unlikely ever to match.

A GA4 event does not follow the *category-action-label-value* schema.

Also, GA4 reports do not display event hit data in the form of *category-action-label-value*.

Unlike in GA3, in GA4, you can send one or more parameters with each event.

> Through parameters, you can provide additional information about an event like where, why and how the event was logged.

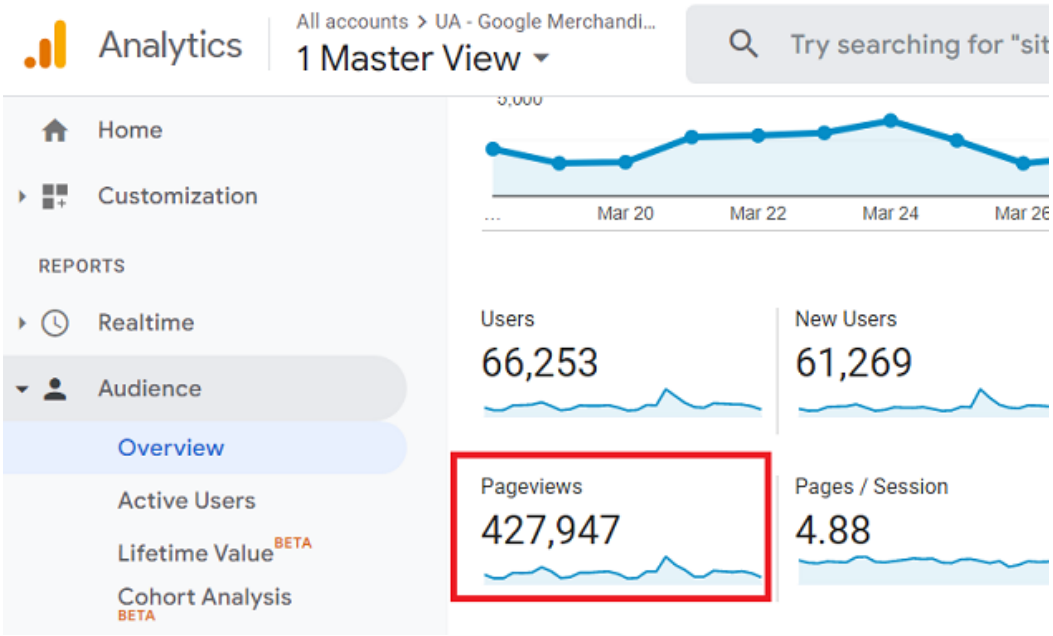
Unlike in GA3, in GA4, event names do not need to be unique and are differentiated by the parameter values collected.

In fact,

> In GA4, reusing the same event name as many times as possible is considered as best practice.

#20 GA3 vs GA4 pageviews

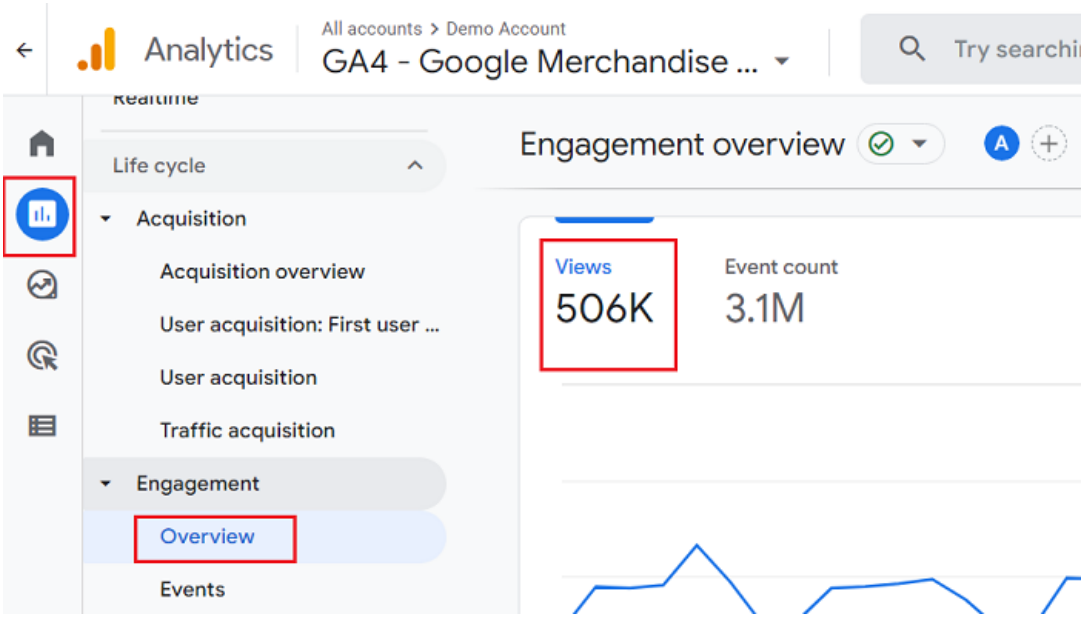
In GA3, the pageviews metric represents the number of views of a web page or set of web pages:



Repeated views of the same page are counted in the ‘Pageviews’ metric of GA3.

Note: The ‘pageviews’ metric in GA3 does not report on screenviews. The screenviews are reported in a separate mobile-specific GA3 property.

GA4 reports ‘pageviews’ via the ‘views’ metric



The 'views' metric in GA4 is the combination of pageviews and screenviews as GA4 combines both app and web data in the same property.

The repeated views of a single screen or page are counted in the 'views' metric of GA4.

Pageviews are calculated differently between GA3 and GA4.

So you should not compare them. They are unlikely to match.

Unlike in GA3, the GA4 property does not have the 'unique pageviews' metric.

#21 GA3 vs GA4 Sessions

The GA3 sessions count is unlikely to match the GA4 sessions count.

This is because both GA3 and GA4 sessions are calculated and adjusted differently.

A GA3 session is a group of hits recorded for a user in a given time period. In contrast, a GA4 session is a group of events recorded for a user in a given time period.

> ***To learn more about the differences between GA3 and GA4 sessions, check out this article: Understanding Google Analytics 4 Sessions***

#22 Session counting method

In Universal Analytics, a session is basically a combination of pageviews, events, ecommerce transactions, and social interactions and would end in 30 minutes in the case of inactivity.

In contrast to this, a Google Analytics 4 session is derived from the session_start event, and there is no limit to how long the session would last.

For an app session, it would begin to end when the app is moved to the background.

However, you can extend the session by logging the extend_session parameter (with a value of 1) on events logged while the app is in the background.

Additionally, you have the option to override the default 30-minute session timeout for an app by using the **setSessionTimeoutDuration** method.

You would also see lower session counts in Google Analytics 4 since it does not create a new session when the campaign source changes mid-session, like in Universal Analytics.

In GA4, we have three types of session-based metrics:

1. **Sessions**: The number of sessions that began on your site based on the session_start event on the app or web.
2. **Engaged sessions:** The number of sessions that have lasted for 10 seconds or longer.
3. **Engaged sessions per user**: The number of engaged sessions per user.

#23 Difference in user counts

Google Analytics 4 uses the User ID method and considers active users on the site, who are currently engaging, to calculate user count.

Universal Analytics uses the Client ID method and focuses on the total users on the site to calculate user counts.

#24 Spam data prevention

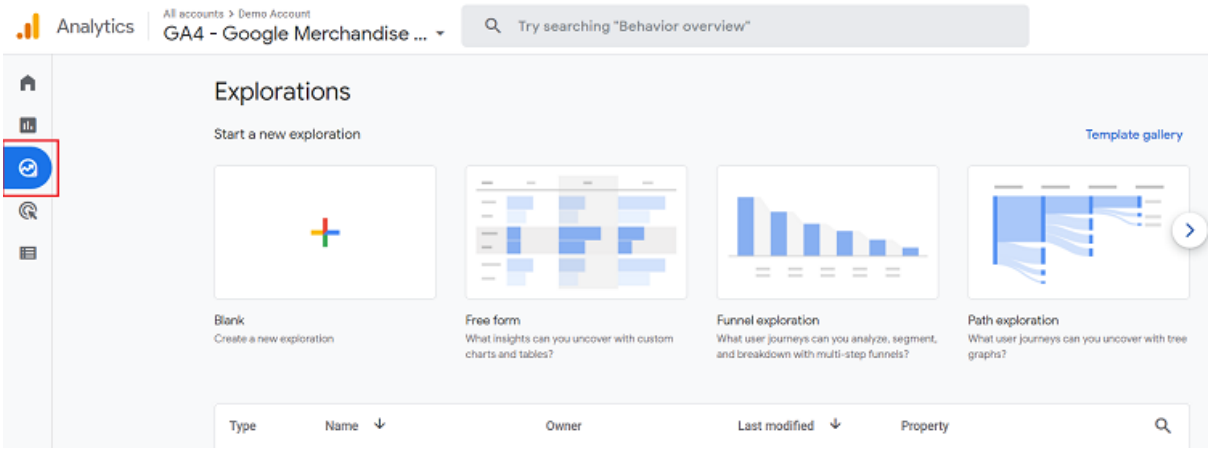
A common problem in Universal Analytics has been spam referrals, and it was possible for anyone to send spam hits to a Google Analytics property using measurement protocol.

This issue of spam hits has been addressed in Google Analytics 4 by forcing the measurement protocol hits to include the secret key.

This key is available only to the users who have access to analytics property and is not available publicly. Only hits with a valid key will be able to send data to a Google Analytics 4 property.

#25 Explorations Reports

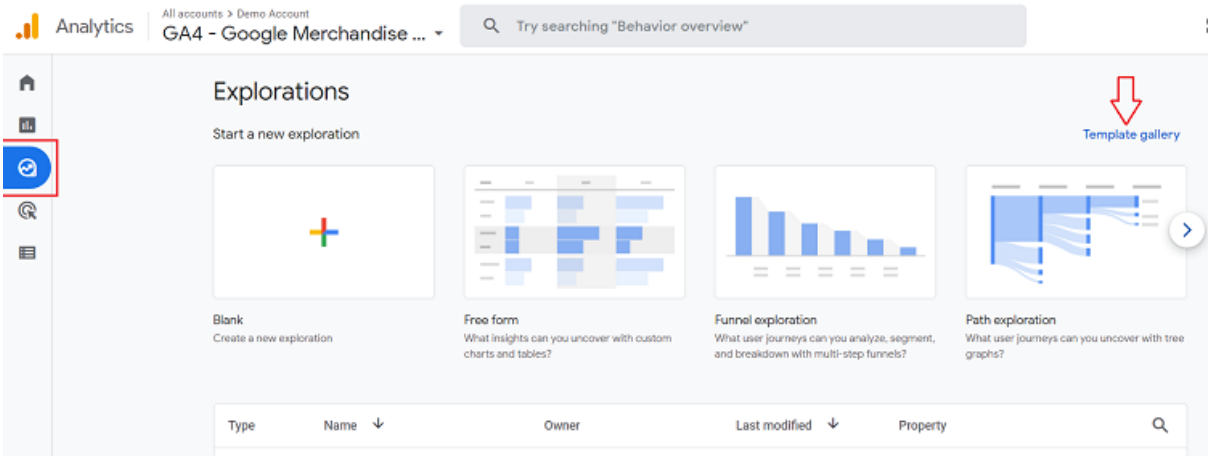
The reporting view of a GA4 property comes with a new set of report templates called ‘Explorations’ through which you can do advanced data analysis:

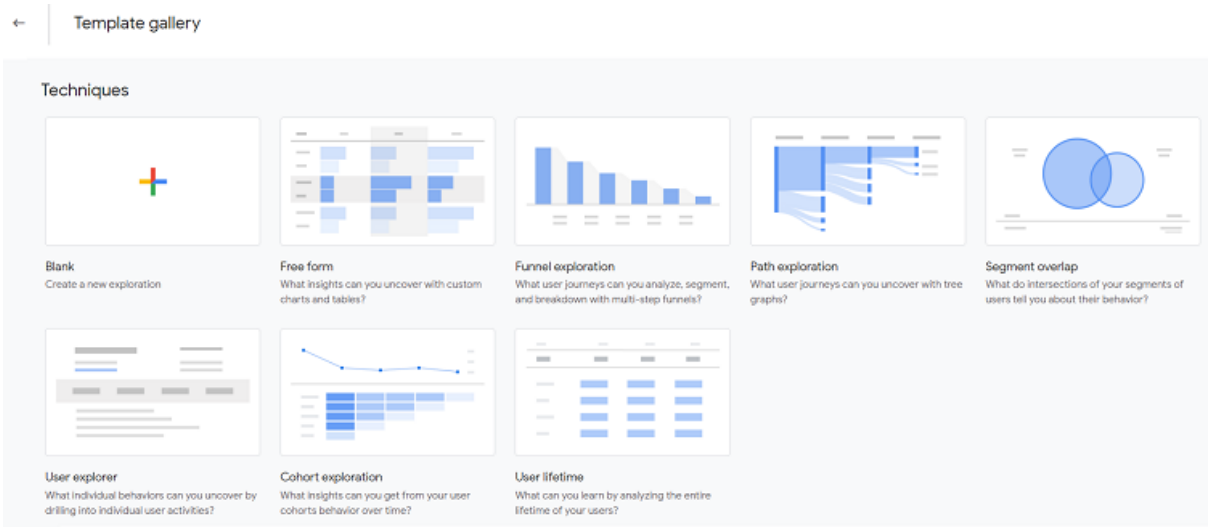


Following are the various GA4 Exploration report templates:

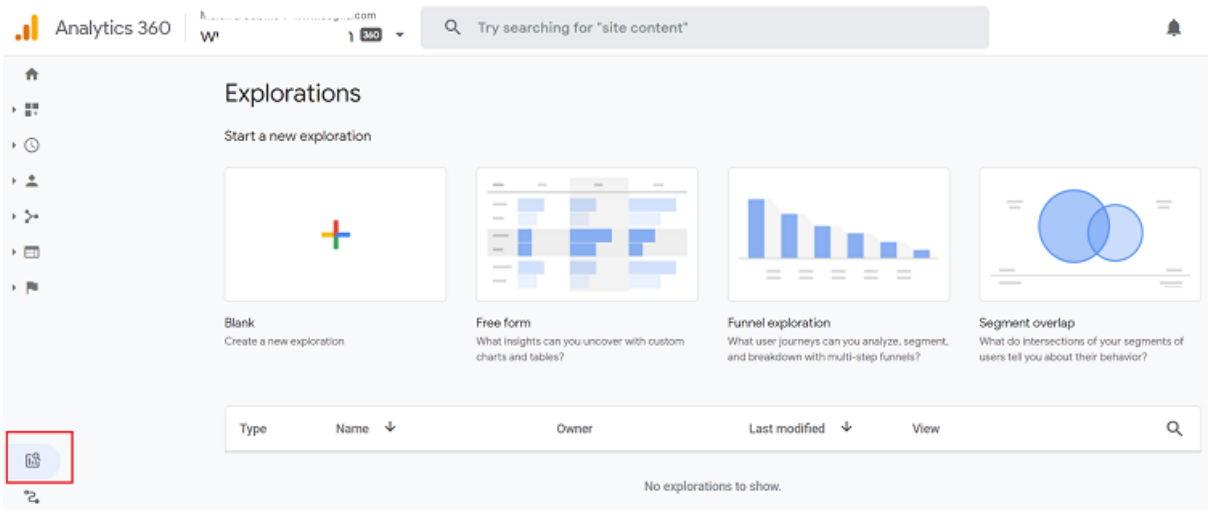
1. **Blank report**
2. **Free form report**
3. **Funnel exploration report**
4. **Path exploration report**
5. **Segment overlap report**
6. **User Explorer report**
7. **Cohort exploration report**
8. **User lifetime report**

You can see the full list of the GA4 exploration report templates by clicking on the '**Template Gallery**' link:





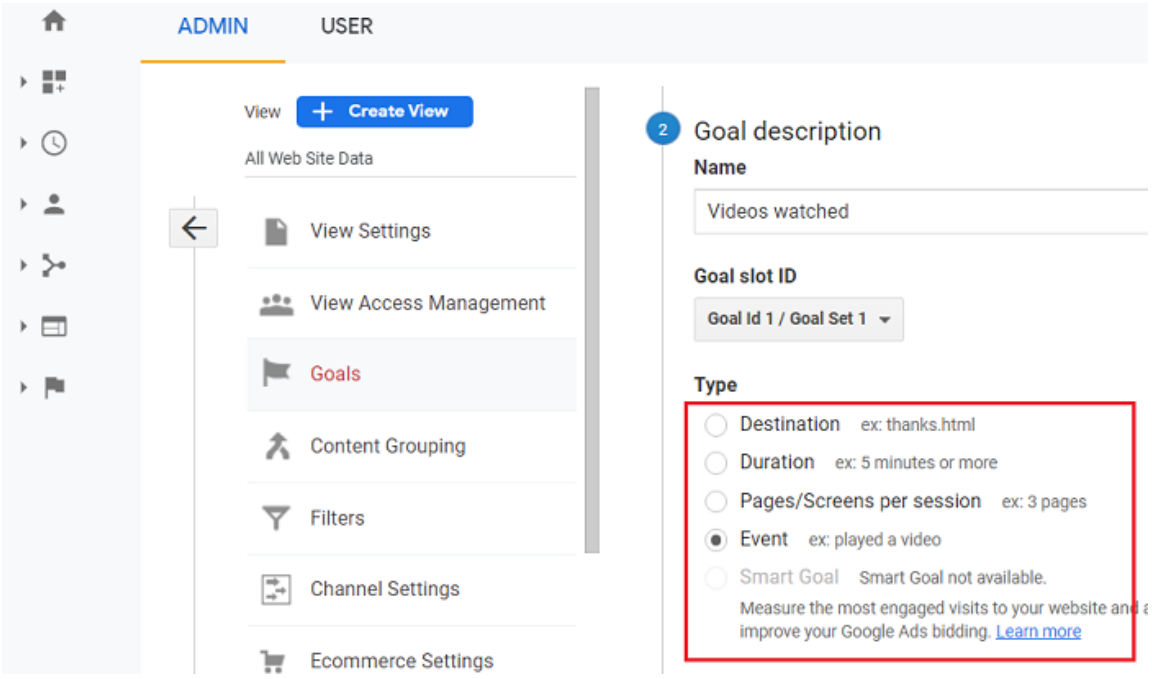
In the case of GA3, only GA 360 customers can use this feature.



#26 Ability to create conversions that satisfy multiple conditions

GA3 allows you to create conversions based on:

1. Pageviews
2. Events
3. Duration
4. Pageviews/screens per session



But **GA3 does not allow you to create conversions that satisfy multiple conditions.**

For example, you can not define the following user activity as a conversion in GA3:

A user who visited your website via your newsletter and then watched a five minutes long video before making a purchase above $100.

However,

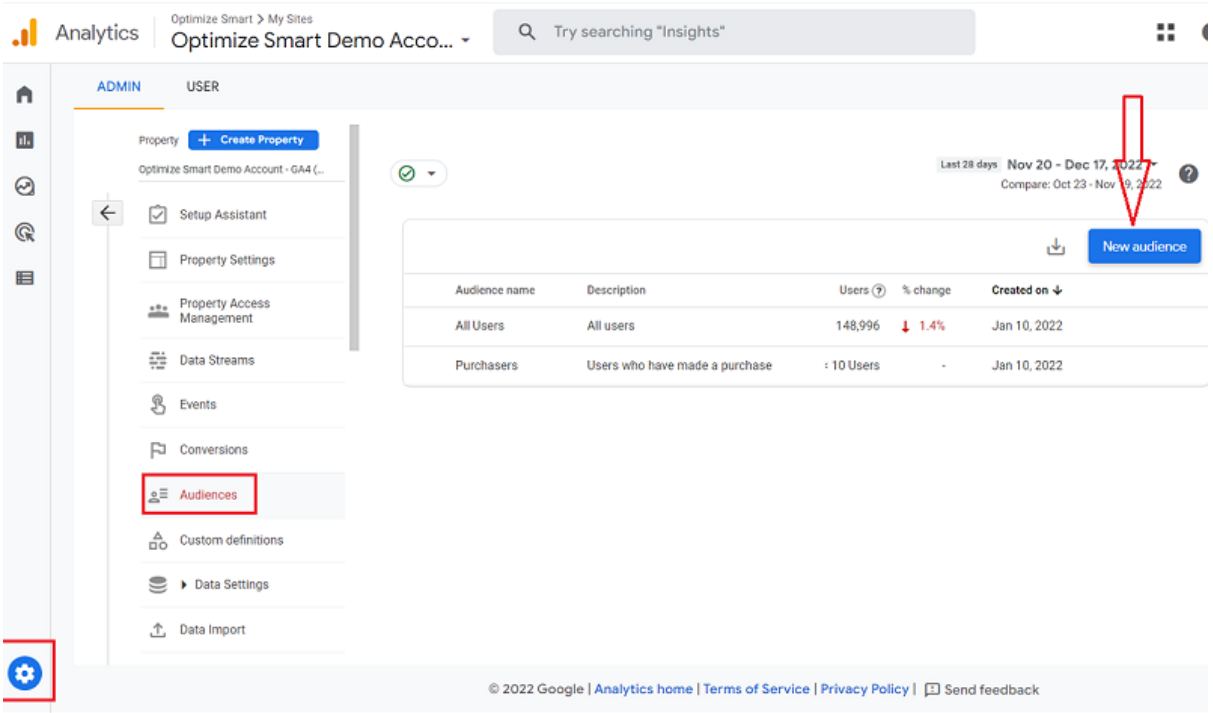
> ***GA4 lets you create conversions that are based on multiple conditions.***

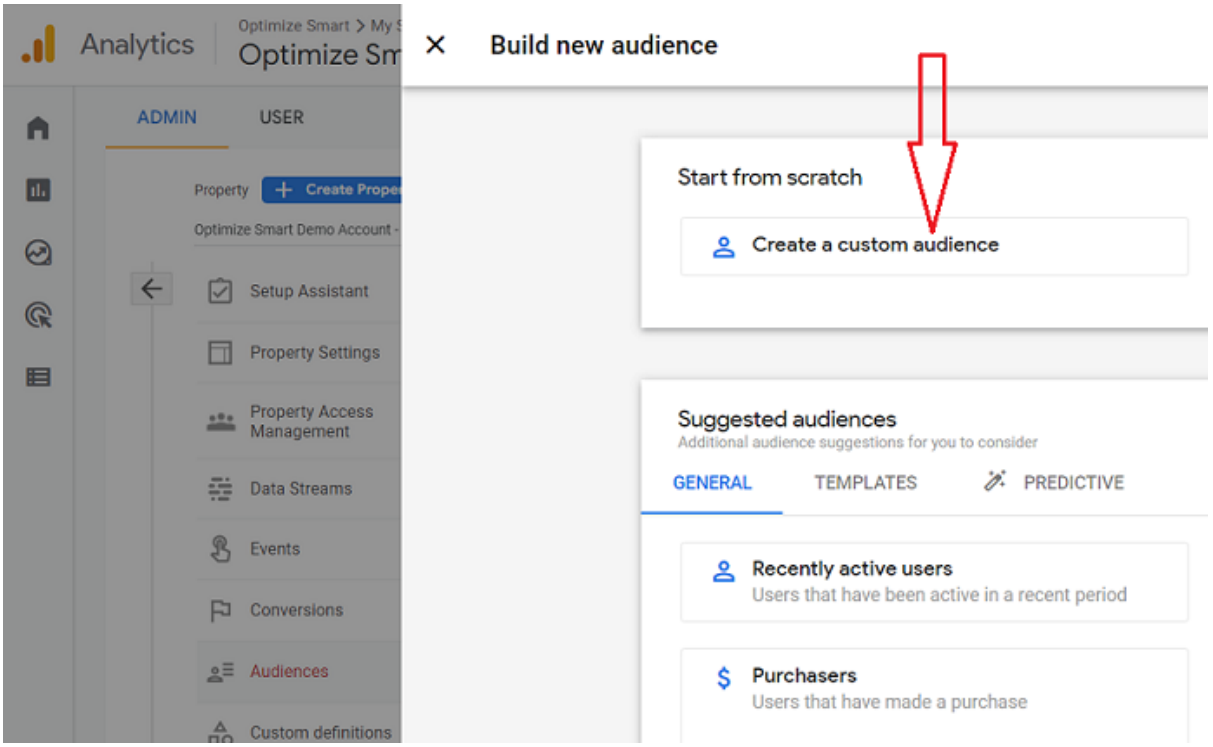
You can create such type of complex conversions in GA4 by carrying out the following three tasks:

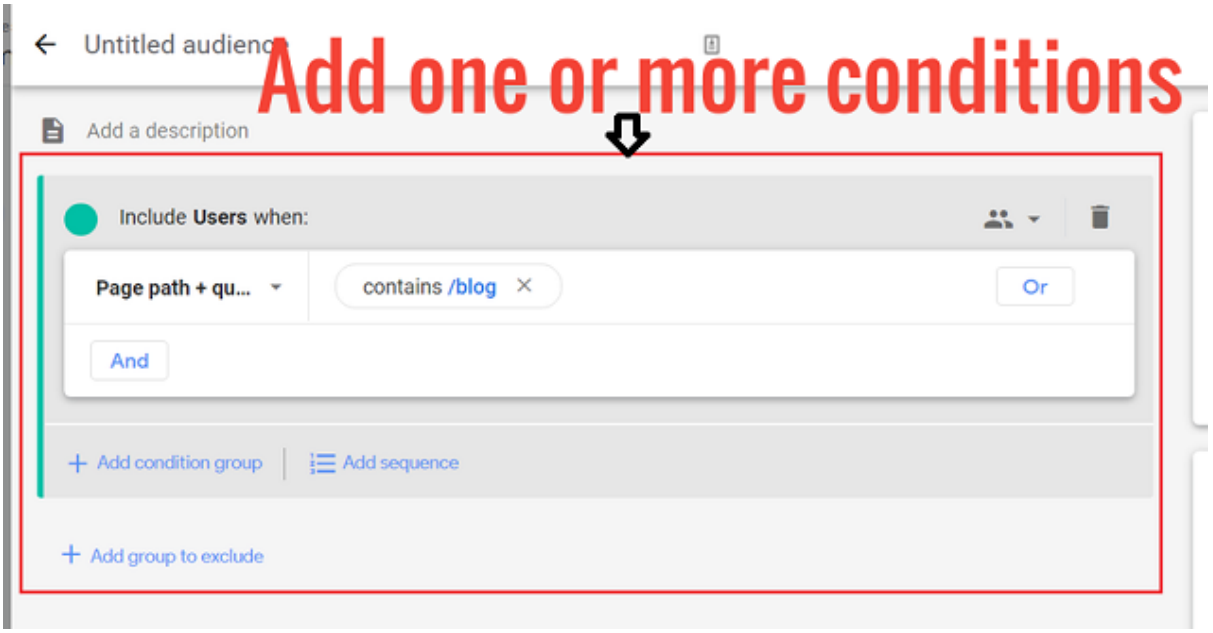
#1 Create a new audience in GA4 with one or more conditions (like visiting your website via newsletter, watching a video for at least 5 minutes etc.).

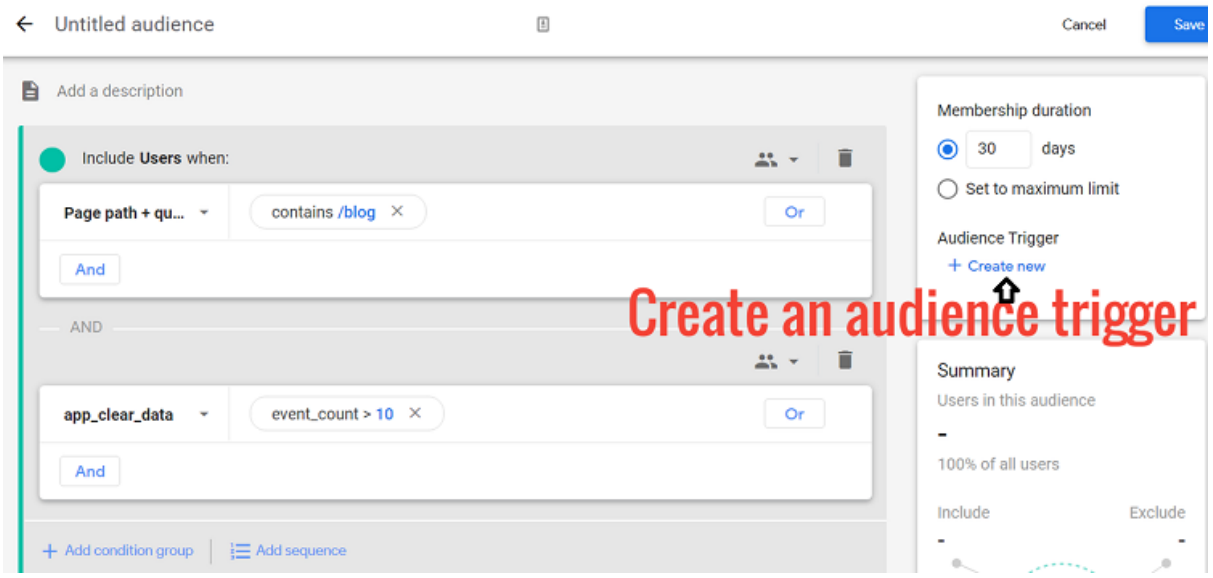
#2 Create an audience trigger that logs an event when a user becomes a member of this audience.

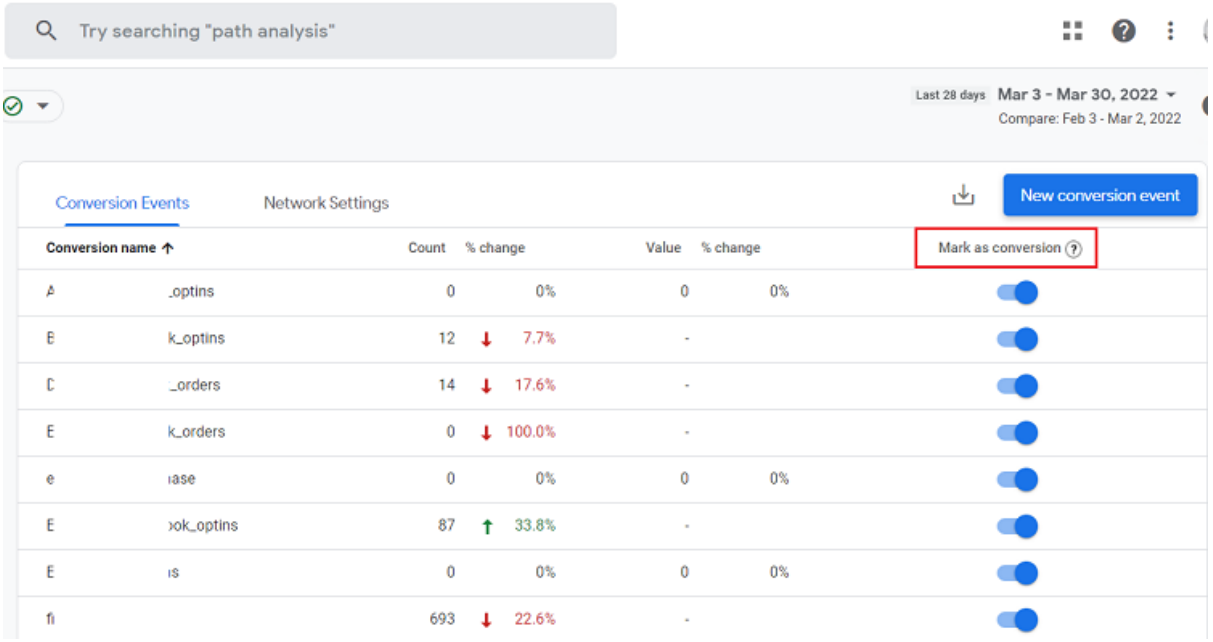
#3 Mark the event as conversion.




Analytics
Optimize Smart > My
Optimize Sm
ADMIN
USER
Property
Create Prope
Optimize Smart Demo Account
Setup Assistant
Property Settings
Property Access Management
Data Streams
Events
Conversions
Audiences
Custom definitions
Build new audience
Start from scratch
Create a custom audience
Suggested audiences
Additional audience suggestions for you to consider
GENERAL
TEMPLATES
PREDICTIVE
Recently active users
Users that have been active in a recent period
Purchasers
Users that have made a purchase


Untitled audience
Add one or more conditions
Add a description
Include Users when:
Page path + qu...
contains /blog
Or
And
Add condition group
Add sequence
Add group to exclude





#27 GA3 vs GA4 Content Grouping

***Content grouping** is a rule-based grouping of related content groups. It is made up of one or more content groups.*

A content group is a set of web pages that should be based on the same/similar theme.

So in the case of a blog, a content group can be a set of web pages based on the same/similar topic (like 'Attribution Modelling').

In the case of an ecommerce website, a content group can be a set of web pages that sell similar products (like 'shirts').

Since 'content grouping' is made up of one or more 'content groups', 'Men' content grouping can consist of the following content groups:

1. Men shirts
2. Men trousers
3. Men sportswear

Similarly,

'Women' content grouping can consist of the following content groups:

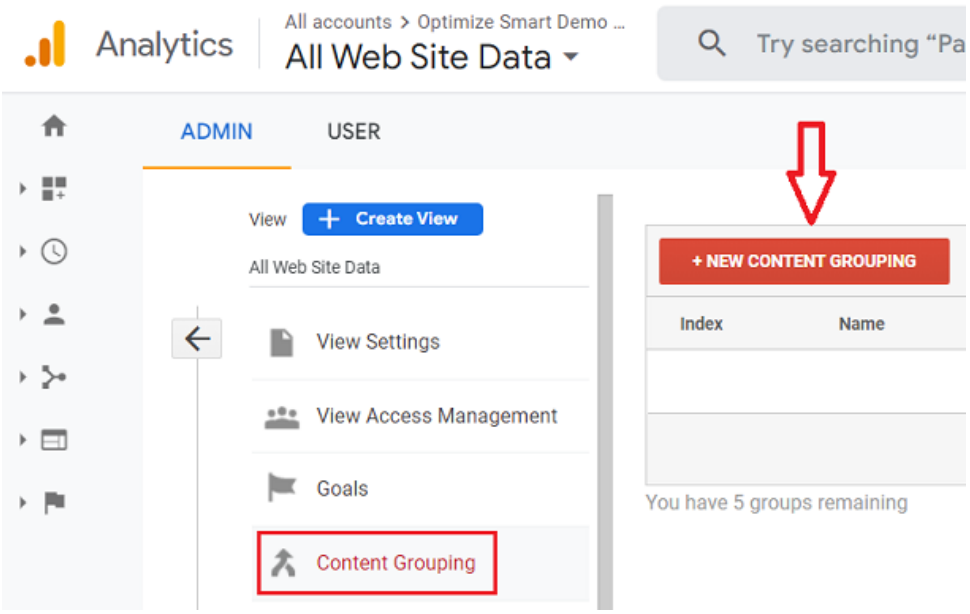
1. Women shirts
2. Women trousers
3. Women sportswear

As a rule of thumb use content/product categories for 'content grouping' and content/product sub-categories for 'content groups'

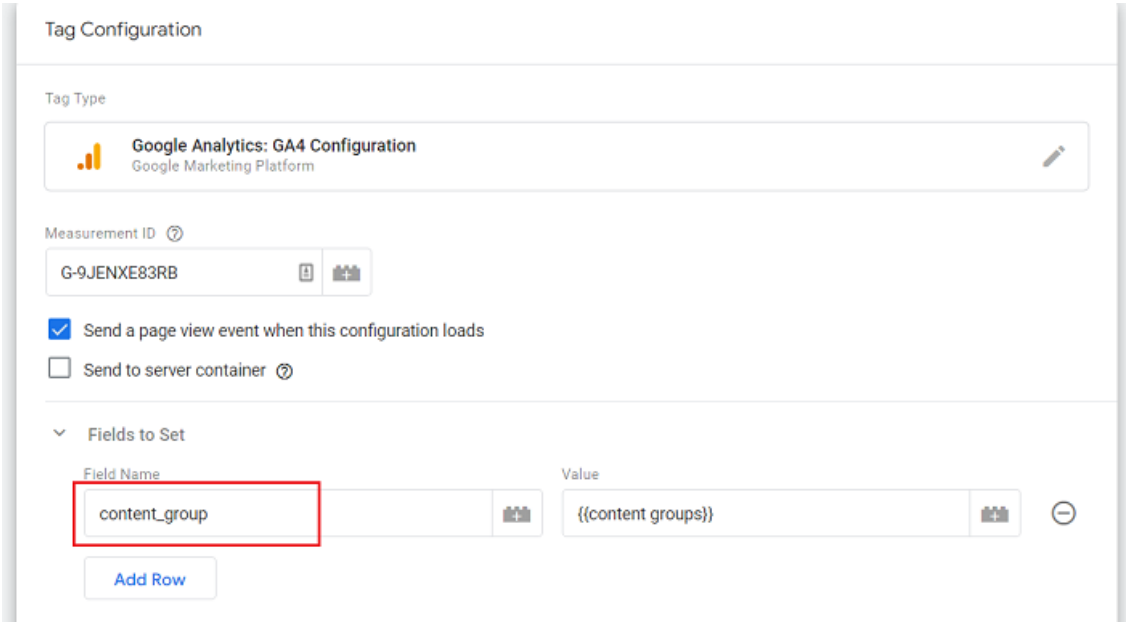
Content grouping is used to quickly check the performance of a content group or compare the performance of different content groups with each other.

Content grouping is especially useful if you have a big website with hundreds or thousands of pages; you can realistically measure the content performance only at the group level and not at the individual page level.

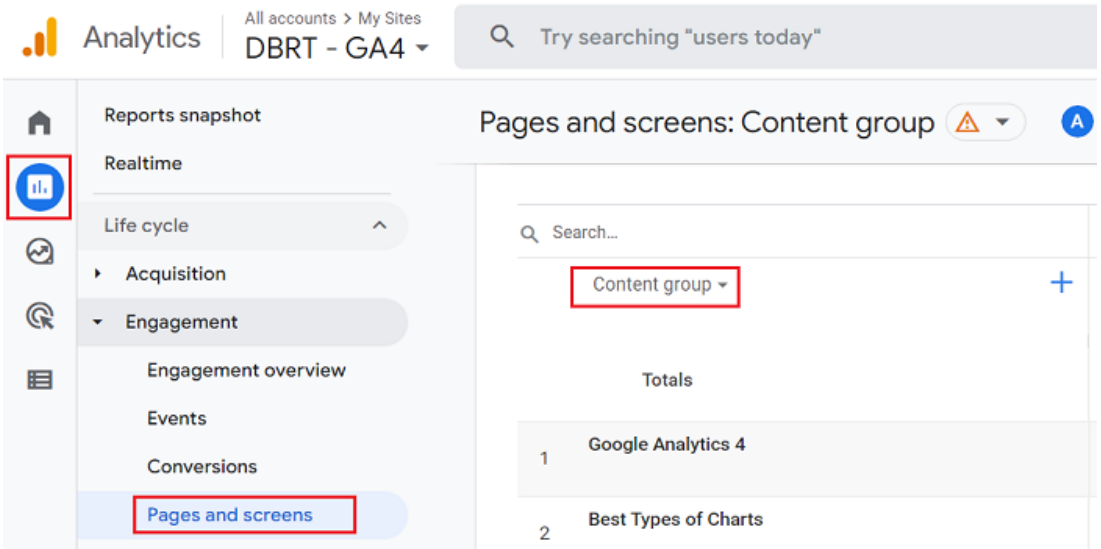
In GA3, you can create a new content grouping by clicking on the '**+NEW CONTENT GROUPING**' button:



In GA4, we create content grouping using a predefined event parameter called “**content_group**“:



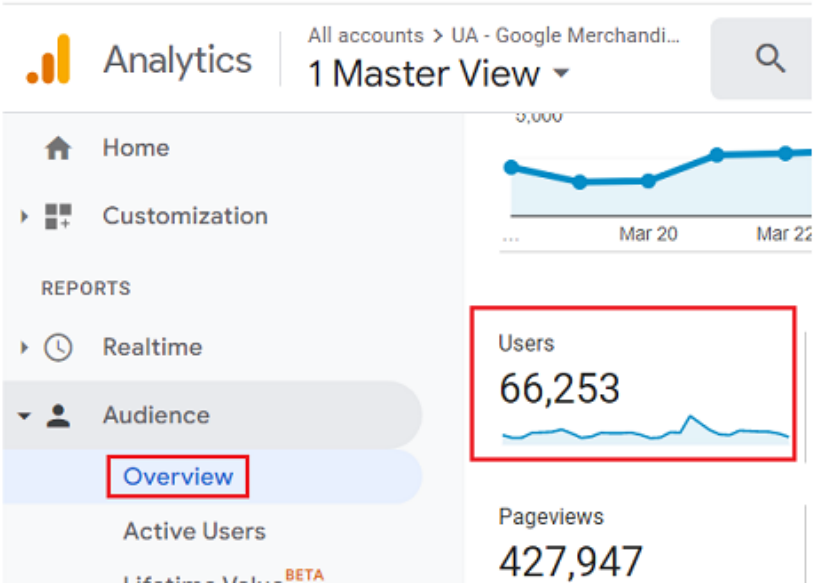
The “content_group” event parameter populates data into the “**Content Group**” dimension (found under **Reports** > **Engagement** > **Pages and Screens**):

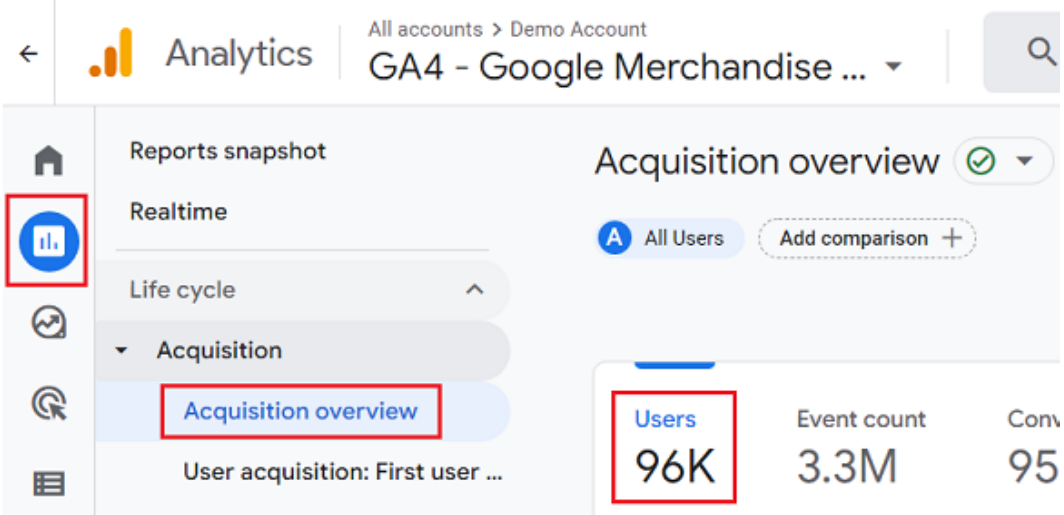


Note: Unlike in GA3, you can create only one content grouping in GA4.

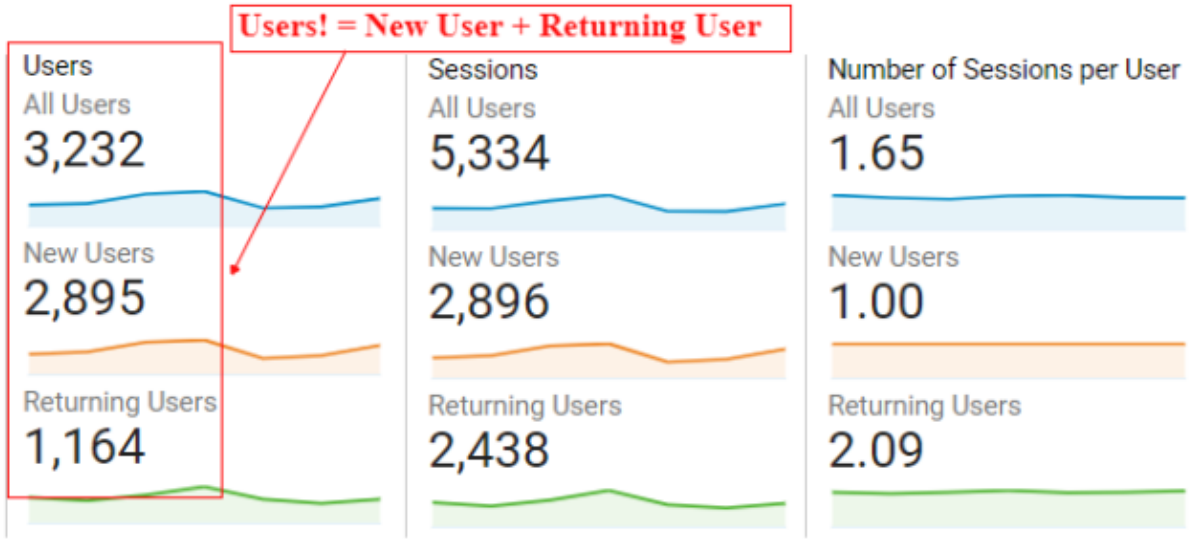
#28 GA3 vs GA4 Users

Both GA3 and GA4 report on the total number of users via the 'users' metric:





The total number of users reported by either GA3 or GA4 is not equal to the sum of 'New Users' and 'Returning Users'.



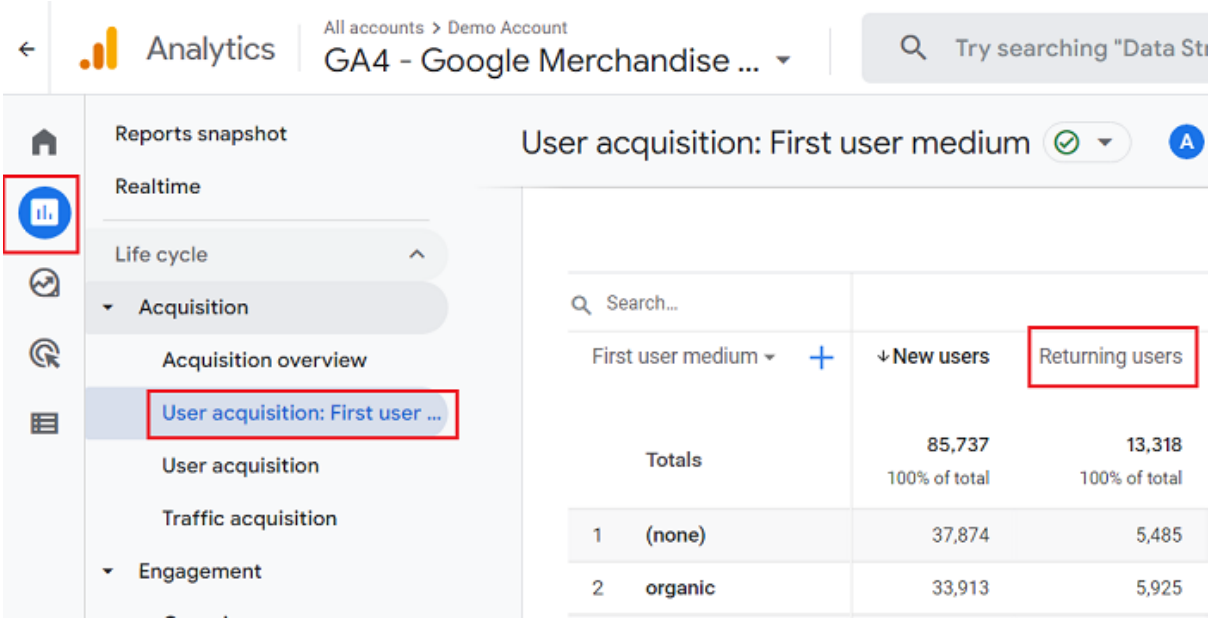
This is because Google Analytics also counts new users as returning users if they return within the selected time period.

Thus there is an overlap between new and returning users.

> ***A new user can also be labelled as a returning user both by GA3 and GA4.***

GA3 does not have the '**Returning Users**' metric. It is missing for no apparent reason.

Whereas **GA4 has the Returning Users' metric**:



By default, GA3 could not measure user engagement on a page, if a user does not navigate to another page.

As a result, the time spent on the page is reported zero.

GA4 on the other hand could measure user engagement on a page even if a user does not navigate to another page.

It can do that via enhanced measurement events, which allow automatic tracking for certain types of events (scroll, click, site search, time elapsed etc.) without any additional coding/tagging.

#29 GA3 vs GA4 User ID

Both GA3 and GA4 can use the following identifiers to identify a user:

1. **Google Signals** – identify Google account users who have enabled ads personalisation.
2. **Client ID** – identify users by their device and browser.
3. **User ID** – identify users via the user IDs assigned to them.

Google Analytics (whether GA3 or GA4) defines user ID as a unique set of characters (like 455688863) assigned to a user so that they can be identified across devices and/or web browsers and throughout multiple sessions.

> ***The usage of the user ID feature helps in improving the cross-device measurement and in fixing cross-device attribution issues both in GA3 and GA4.***

Since each user ID is interpreted as a separate user, without the user ID implementation, the same user can be counted multiple times both by GA3 and GA4.

This could inflate your user count in GA3/GA4.

Thus, implementing the user ID feature provides you with a more accurate user count whether you are using GA3 or GA4.

From a data collection standpoint, no specific changes are necessary to map user IDs in a GA3 property to a GA4 property.

However,

Unlike the GA3 property, you don't need a separate user ID view in a GA4 property as the user ID feature is built-in in a GA4 reporting view.

Google recommends that you keep the following factors in mind while implementing the user ID feature in a GA4 property so that the implementation of user ID on your website is consistent with the implementation of user ID on your mobile app:

1. **You use the same user ID to track a user across your mobile app and website.**
2. **The values passed for user ID are of the same data type across your mobile app and website.**

Google Analytics (whether GA3 or GA4) cannot automatically generate user IDs for you. You also can not use Client IDs as User IDs.

To implement the User-ID feature, you would need to generate your own unique IDs and assign those IDs to new and returning users through your user authentication system.

You would need the help of a web developer here as the implementation is quite technical.

This user authentication system is usually your website login, the system through which users can log in and log out.

> ***The unique ID that you use to identify a logged-in user (also known as login ID) on your website can be sent as a User ID to your GA4 property.***

Note: The user ID should not be used to send personally identifiable information (PII), like name, email address, etc., to a GA4 property. However, you can still use PII data internally to identify users.

Once you have set up the user ID feature in GA4, you can do the following tasks:

1. Compare the behaviour of logged-in users with not-logged users.
2. Create remarketing audiences based on user IDs

#30 GA3 vs GA4 Client ID

For both GA3 and GA4, a website user is technically a client ID. However, for a mobile app, GA4 uses the 'App Instance ID' instead of the client ID.

Whenever a user visits your website for the first time, a **client ID** is assigned to him.

When the same user later returns to your website, Google Analytics (whether GA3 or GA4) checks for his client ID.

If the client ID is present, Google Analytics labels the user as a returning user and starts a new session.

If the Client ID is not present, Google Analytics labels the user as a new user and generates a new client ID.

That's how with the help of client IDs, Google Analytics can detect new and returning users.

The client ID in both GA3 and GA4 is an identifier that is used to anonymously identify a unique website user.

This identifier is a combination of a **unique random number** and **the first timestamp** (i.e. the time of the first visit).

Following is an example of a client ID:

5987532.16456790952

A Client ID represents a unique browser instance and is stored in browser cookies.

The client ID can exist only on the device/browser on which it has been set up. Because of this attribute, **a Client ID cannot be used to measure across devices.**

Since the client ID exists only on the device/browser on which it has been set up, whenever a user switches devices/browsers to visit your website, he can be labelled as a new user by Google Analytics.

As a result, **client IDs cannot be used to identify the number of unique website users accurately.**

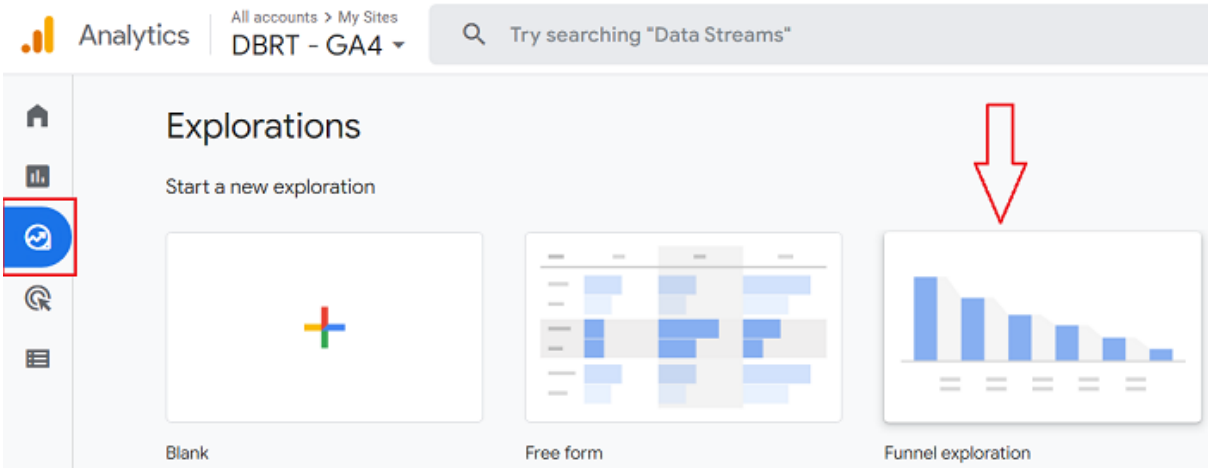
#31 GA3 vs GA4 Funnels

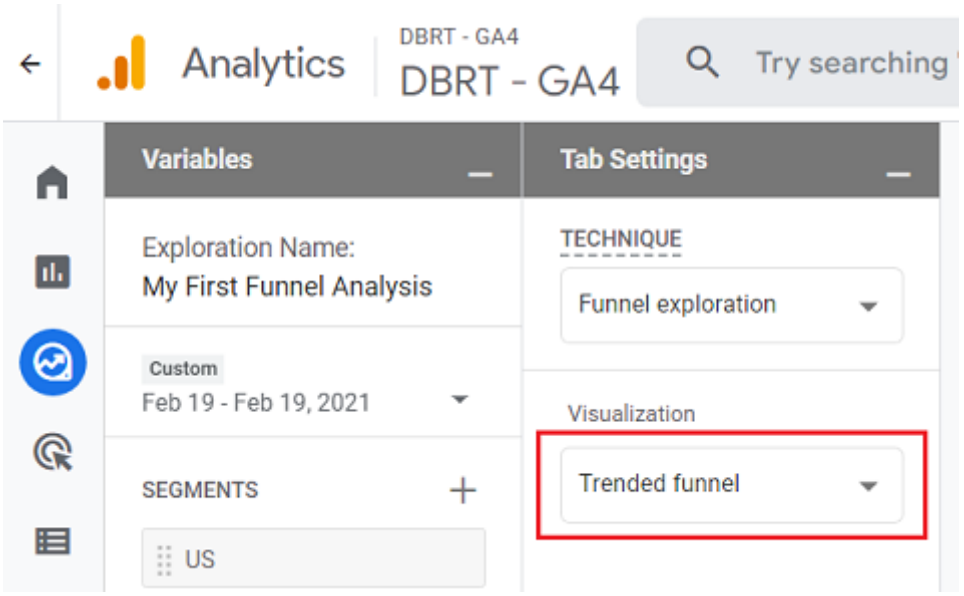
> ***The funnel creation and analysis capabilities have greatly improved in GA4.***

For example, you can not create funnels on the fly in GA3, but you can in GA4.

Similarly, you could not apply advanced segments to a funnel in GA3, but you can in GA4.

The GA4 funnel exploration report provides a visualization called 'trended funnel' through which you can determine how the funnel is performing over time:



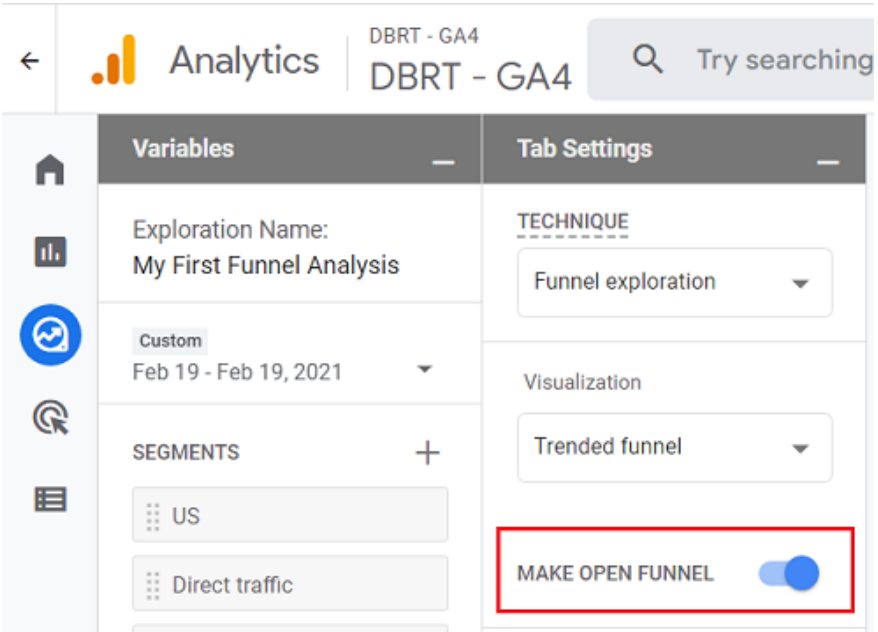


Neither GA3 nor GA3 360 provided the ability to create trended funnels.

> ***By default, the funnels that you create in GA4 are closed. What that means, is if a user does not enter the funnel via the first step, he/she will not be counted in the funnel.***

When you make a GA4 funnel open, a user can enter the funnel via any step and would still be counted in the funnel.

In GA4, you can make a funnel open or close on the fly by using a toggle button:



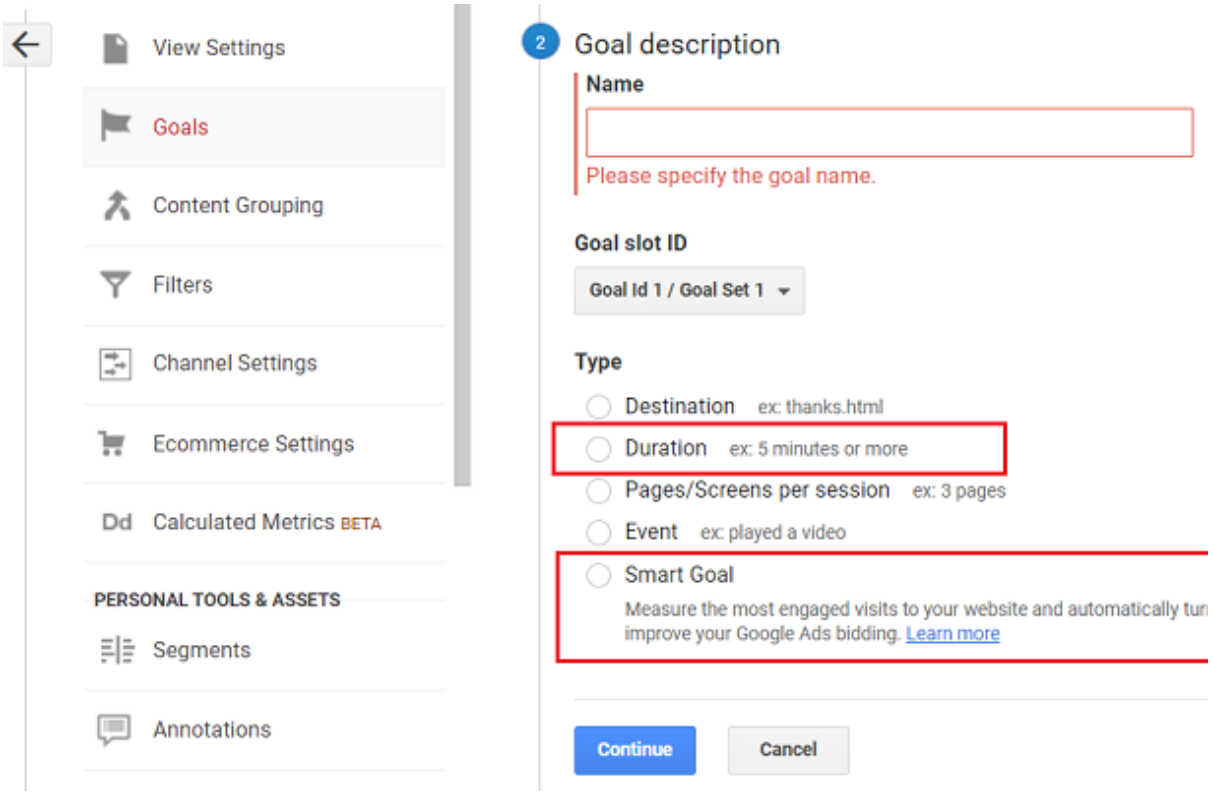
#32 GA3 vs GA4 Conversion count

In GA3, a conversion is counted only once per user session. Whereas in GA4, a conversion can be counted multiple times per user session.

So if you have defined ‘file download’ as a conversion, then GA3 will count only one file download as a conversion in a given session no matter how many times a user downloads the file in the same session.

Whereas in GA4, if a user downloaded a file twice in the same session, two conversions will be counted.

While you can duplicate most GA3 goals using GA4 conversion events, two GA3 goal types cannot be duplicated. These goals are ‘smart’ goals and ‘duration’ goals.

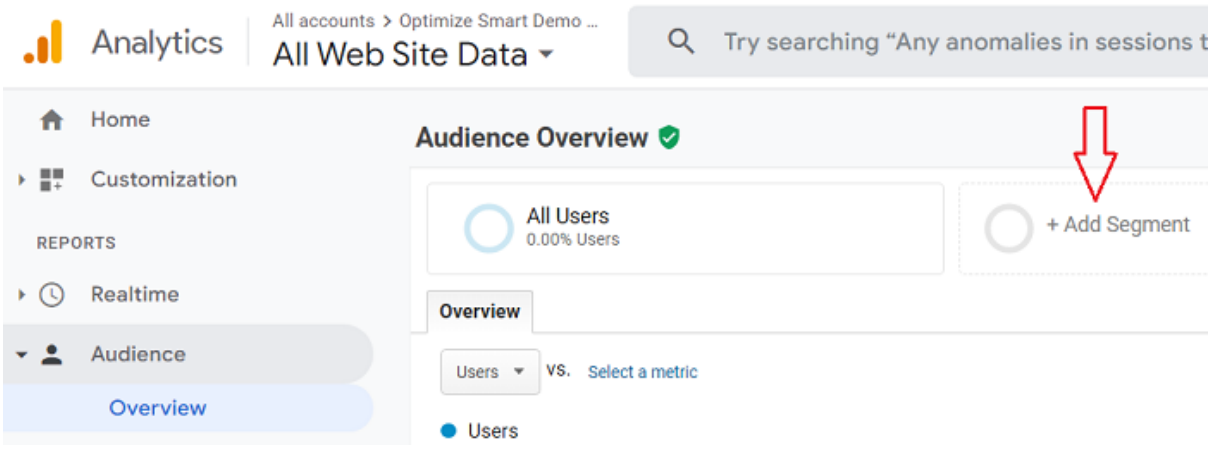


#33 GA3 vs GA4 Web purchase count

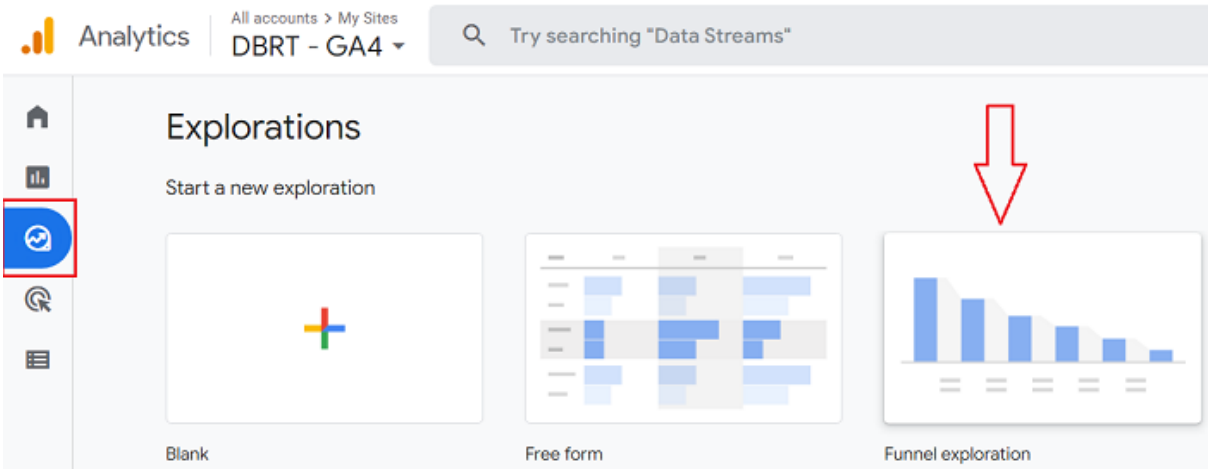
As long as you are collecting a unique transaction_id value in both GA3 and GA4, the web purchase counts should match closely between GA3 and GA4.

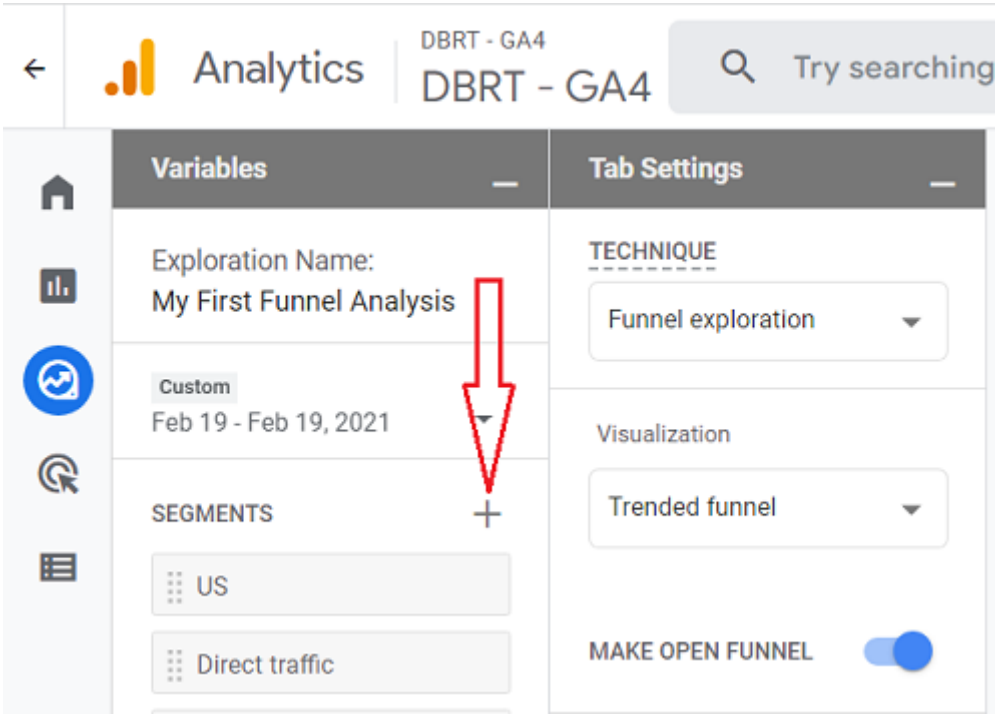
#34 GA3 vs GA4 Segments

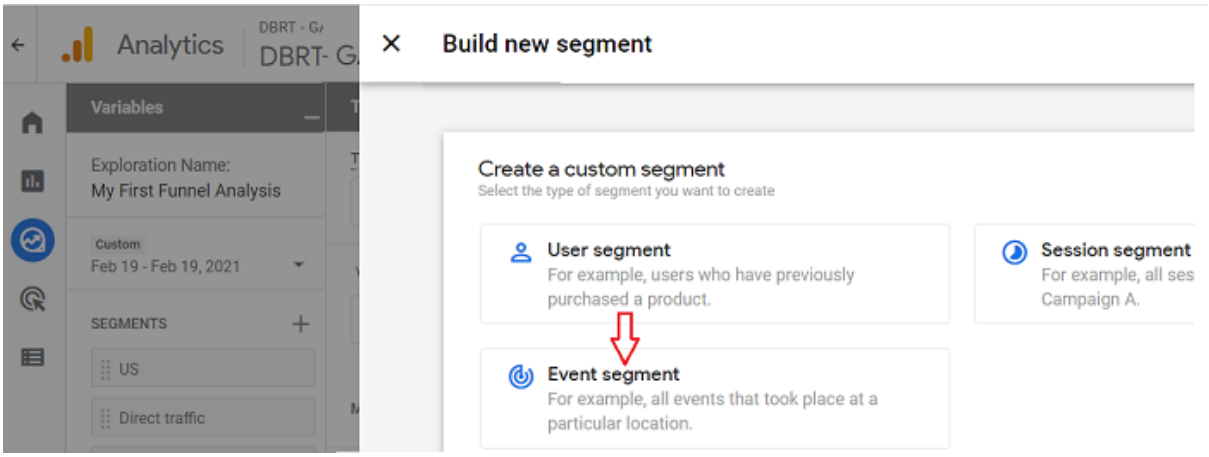
In GA3, you can create only the session, and user scoped advanced segments:



However, in GA4, you can create not only session and user scoped segments but also event scoped segments:







#35 Bounce rate vs Engagement Rate

GA3 uses 'bounce rate' as one of the metrics to measure site engagement.

Bounce rate is the percentage of single page sessions in which there was no user interaction with the page.

Since the bounce rate does not have a time threshold associated with it, a bounced session has a duration of 0 seconds.

> ***GA4 uses the 'engagement rate' metric instead of the 'bounce rate'.***

The 'engagement rate' metric is defined as the percentage of engaged sessions.

By default, an 'Engaged Session' is defined as a session that lasted longer than 10 seconds, had a conversion event, or had at least two pageviews or screenviews.

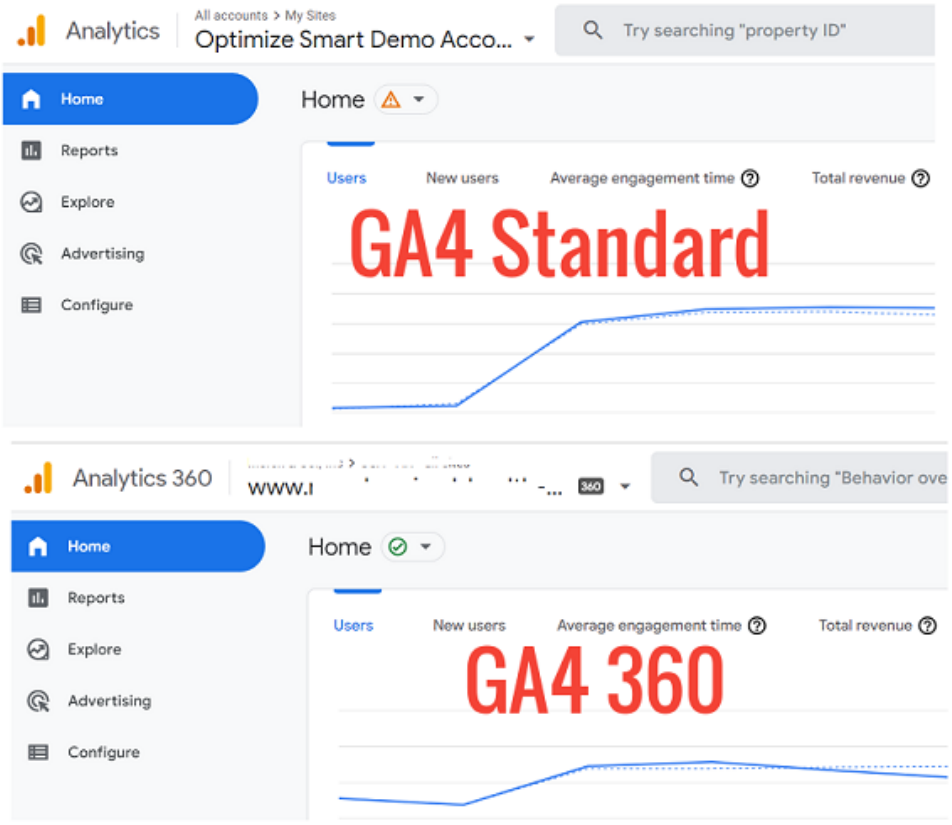
Unlike the bounce rate metric, the 'Engagement Rate' metric has a time threshold associated with it.

Because of this attribute, the 'Engagement Rate' metric is more useful than the 'bounce rate' metric in measuring user engagement, especially on a single page app/web.

The two versions of GA4

Google Analytics 4 (GA4) come in two flavours: **GA4 Standard** and **GA4 360**.

User interface wise, both GA4 standard and GA4 360 look exactly the same:



GA4 360 is one of the products of the Google Marketing Platform.

The following are the other products of the Google Marketing Platform:

- Google Tag Manager 360
- Google Optimize 360
- Google Surveys 360
- Display & Video 360
- Search Ads 360

GA4 360 is one of the products of the Google Marketing Platform and is a subscription service where you pay monthly fees.

> ***You will be billed based on your billable hit volume for GA4 360 properties and the billable amount due for any other 360 product(s) you use.***

You can manage billing and monitor billable hit volume through your Google Marketing platform account.

> ***To learn more about GA4 360 billing, check out the Google help documentation Manage billing and monitor usage.***

Key differences between GA4 Standard and GA4 360

#1: Free vs Paid

The GA4 standard refers to the standard/free version of the GA4 property. Whereas, GA4 360 refers to the premium/paid version of the GA4 property.

In other words, GA4 Standard is free to use. Whereas GA4 360 is not.

#2: Data Processing and Accuracy

Unlike GA4 360, you can not rely on GA4 standard property for a large amount of data processing and high accuracy.

This is because GA4 360 subscription comes with higher limits for data collection and processing than the GA4 standard.

So if your website gets a lot of traffic, say above 1 million visitors a month, then you would be better off with GA4 360.

#3: Enterprise-level analytics

Unlike the GA4 standard, the GA4 360 is primarily meant for large enterprises.

The GA4 360 subscription comes with **enterprise-level technical support** and **service level agreement** for data collection, data reporting, data retention, attribution and BigQuery export.

#4: Technical support

A GA4 360 subscription comes with a dedicated account manager and support staff that can help you with any issues related to data collection and reporting.

Whereas, if you use the GA4 standard, then you would need to refer to the self-service help centre and/or community forums. You are basically on your own.

#5: Accessibility

Any individual or business can access and start using the GA4 standard property straightaway.

But you can not access and use GA4 360 property without first talking to an enterprise sales representative or getting in touch with one of Google's sales partners.

Moreover, GA4 360 is likely to cost you $150k or more per year. So GA4 360 subscription is out of reach for most people.

#6: Legal requirements

In order to use GA4 360, you would need to sign a **360 contract for GA4 properties.**

Once you have signed the contract, you can then upgrade your GA4 standard property to GA4 360 property. You don't need to sign any contract in order to use GA4 Standard property.

#7: Data Limits

GA4 360 provides higher limits for data collection, reporting, retention and BigQuery export than GA4 Standard. This is the biggest advantage of using GA4 360.

#8: Data Freshness

Unlike the GA4 standard, the GA4 360 provides **enhanced data freshness.**

When you use GA4 360, you get continuous intraday data via GA4 360 user interface and the API.

The data usually appears within an hour after the data collection.

> ***Data freshness is how long it takes GA4 to collect and process an event from your website/app and then make the event data***

> ***available via the user interface or the API. If that process takes 1 hour, then data freshness is 1 hour.***

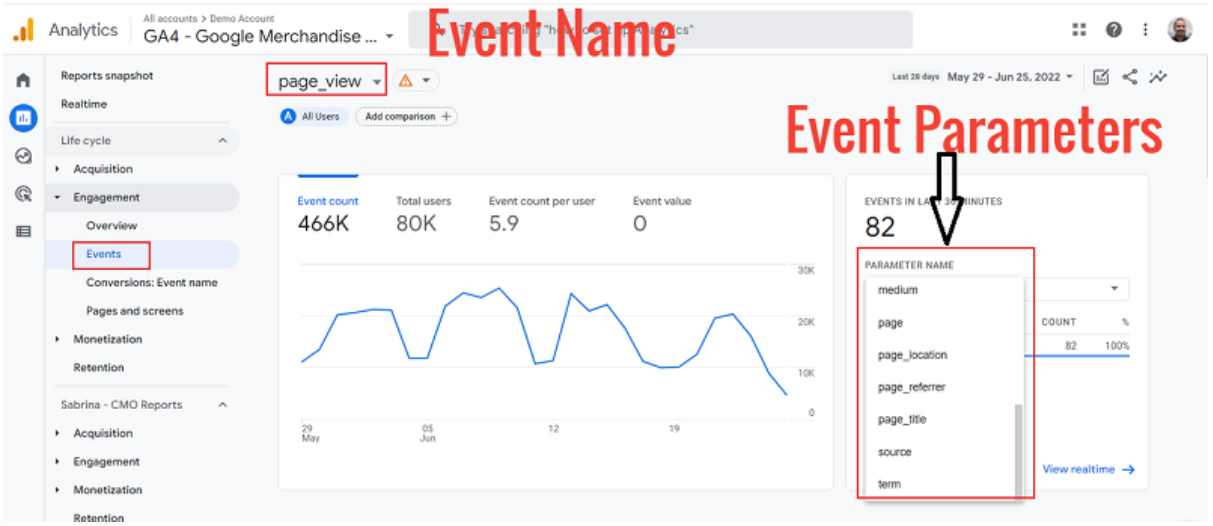
Unlike the GA4 standard, **the GA4 360 subscription guarantee data freshness.**

#9: Event Parameters

> ***An event parameter is a piece of additional information about a GA4 event that is sent along with the event.***

For example, for the GA4 event named '**page_view',** the following could be the event parameters:

- **page_location**
- **page_referrer**
- **page_title**
- **source**
- **medium**



If you are using a GA4 standard property, you can send up to 25 parameters per event.

But if you are using a GA4 360 property, then you can send up to 100 parameters per event.

Thus when you use GA4 360, you can send a lot more additional information about an event.

#10: Event Scoped Custom Dimensions

In the context of GA4, a custom dimension is an event parameter.

Use a custom dimension when you want to measure the characteristic of a user that cannot be measured by any default dimension.

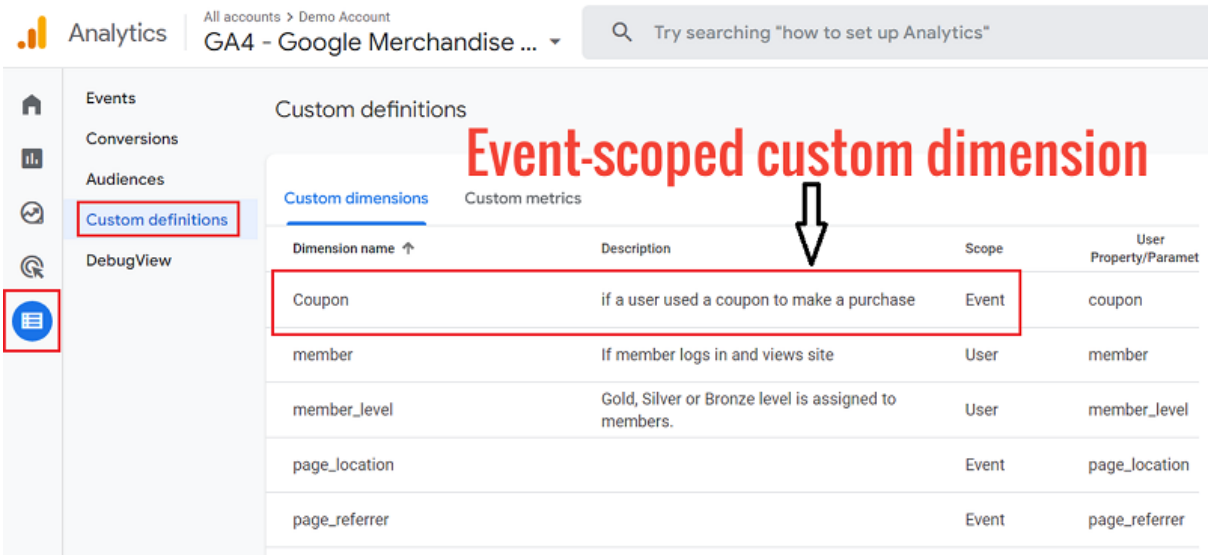
For example, you can create your own dimension to store the client IDs.

There are two categories of custom dimensions:

1. Event-scoped custom dimensions
2. User-scoped custom dimensions

An event-scoped custom dimension is the GA4 custom dimension whose value is calculated and sent for each event.

In other words, a custom dimension that has an 'event' scope is called the event-scoped custom dimension:



You can create up to 50 event scoped custom dimensions in a GA4 standard property.

Whereas you can create up to 125 event scoped custom dimensions in a GA4 360 property.

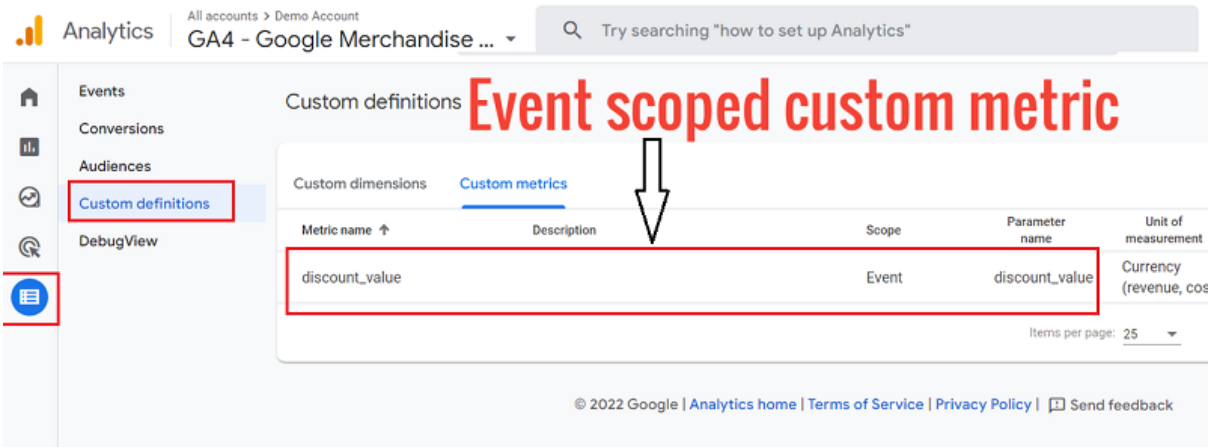
In the context of GA4, a custom metric is an event parameter.

Use a custom metric when you want to measure the characteristic of a dimension (whether it is default or custom) that can not be measured by any default metric.

For example, you can create your own metric to store the number of phone calls generated by a traffic source.

In GA4, the value of the custom metric is calculated and sent for each event. In other words, a custom metric has an 'event' scope.

That's why the custom metric in GA4 is also called the '**event scoped custom metric**':



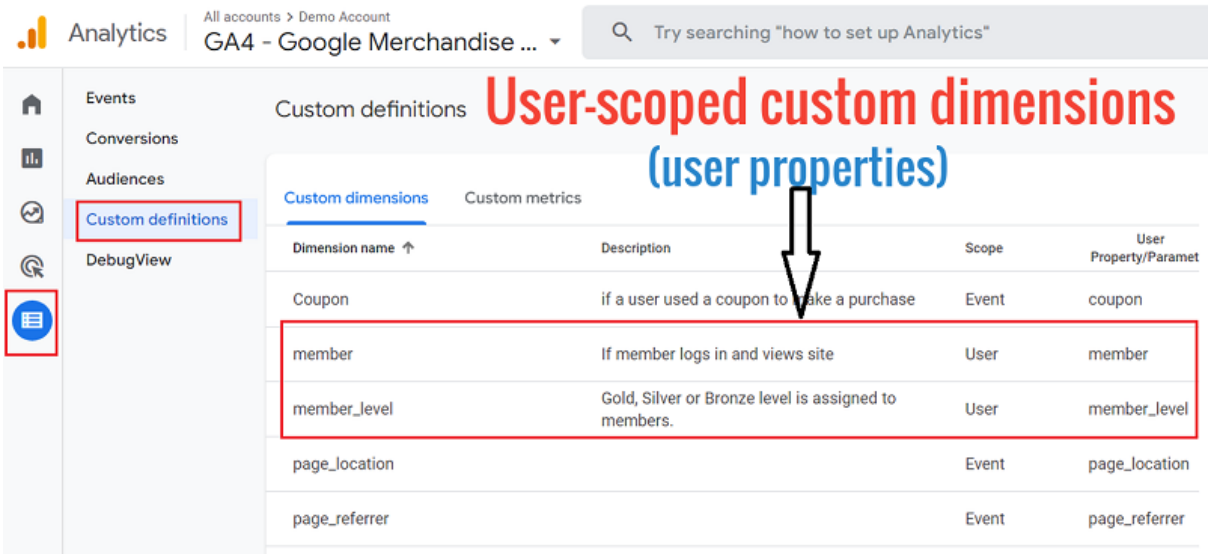
You can create up to 50 event scoped custom metrics in a GA4 standard property.

Whereas you can create up to 125 event scoped custom metrics in a GA4 360 property.

#12: User Scoped Custom Dimensions

> ***A user-scoped custom dimension is the GA4 custom dimension whose value is calculated and sent once for each user.***

In other words, a custom dimension that has a **'user' scope** is called the user-scoped custom dimension (also known as **user properties**):



Google recommends that you use a user-scoped custom dimension to identify static or slowly changing attributes of your website/app users.

These attributes could be the changes in the subscription plan, membership level, game difficulty level, etc.

You can create up to 25 user-scoped custom dimensions in a GA4 standard property.

Whereas you can create up to 100 user-scoped custom dimensions in a GA4 360 property.

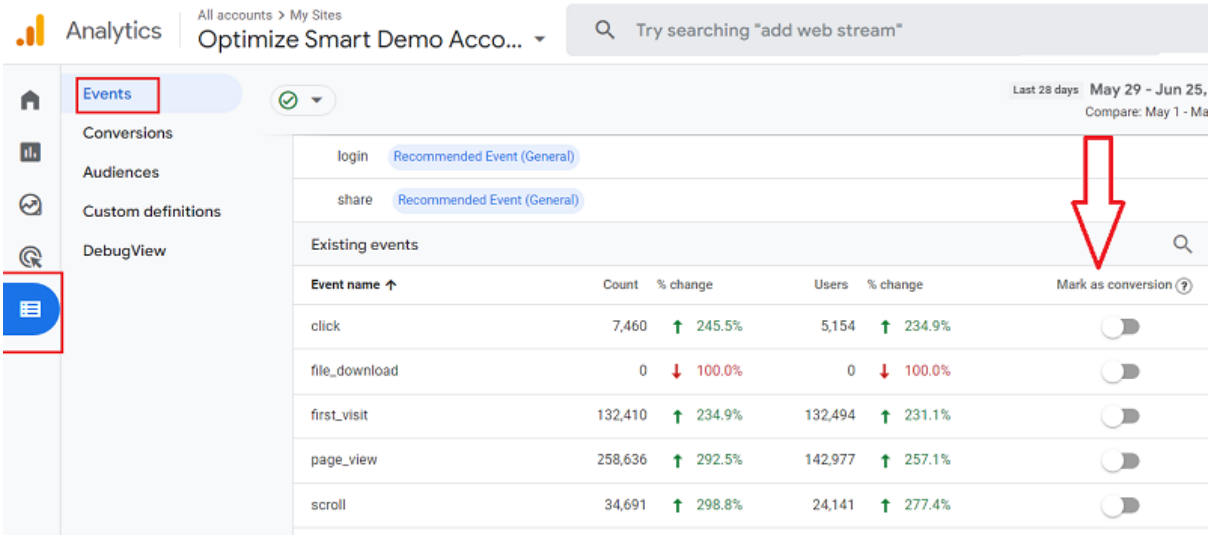
#13: Conversions

> ***Conversion is one of the objectives of setting up your website and/or mobile app.***

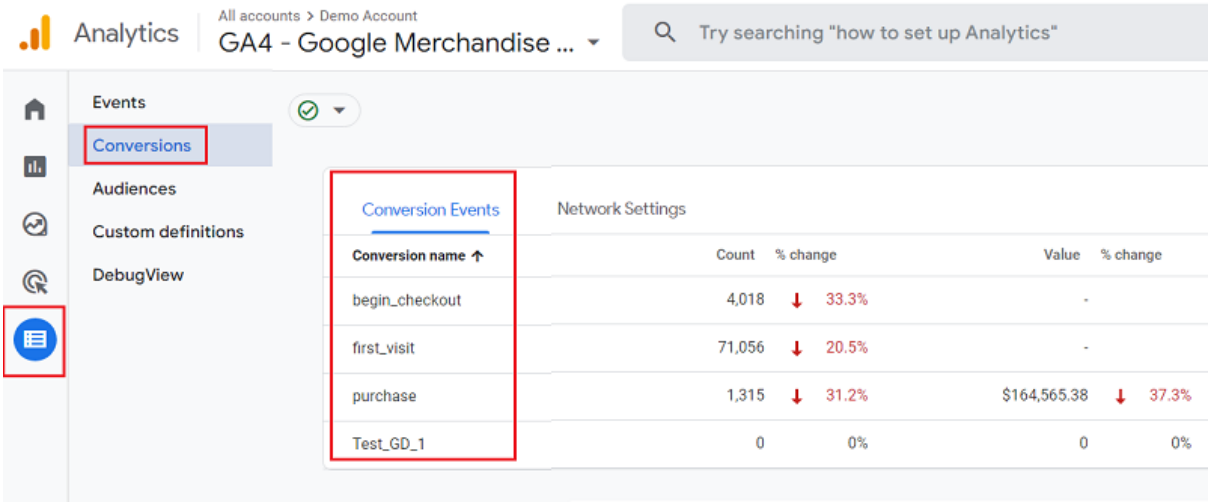
Following are the examples of conversions:

- Newsletter signups
- Number of orders
- Number of downloads etc.

In the context of GA4, a conversion is an event. In order to define a conversion in GA4, we mark an event as a conversion:



That's why a conversion is also called a '**Conversion Event**':



You can mark up to 30 events as conversions in a GA4 standard property.

Whereas you can mark up to 50 events as conversions in a GA4 360 property.

#14: Audiences

In the context of GA4, an audience (also known as a cohort) is a group of users that share common characteristics, attributes or experiences in a particular time period.

The following are examples of audiences:

- **UK audience** – a group of users who live in the UK.
- **Desktop audience** – a group of users who visited your website/app via a desktop device.
- **Facebook audience** – a group of users who visited your website/app from Facebook.
- **Purchasers** – a group of users who made a purchase on your website/app.

A user can be a member of two or more audiences at the same time.

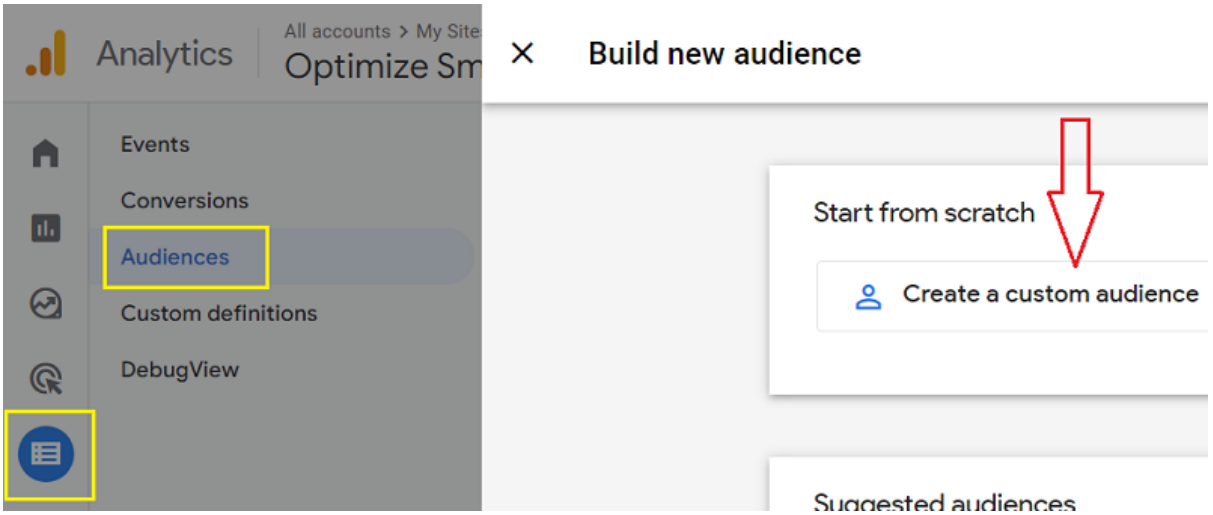
For example,

If a user from the UK visited your website via a desktop device after clicking on one of your Facebook ads and then made a purchase, then he is a member of the following audience:

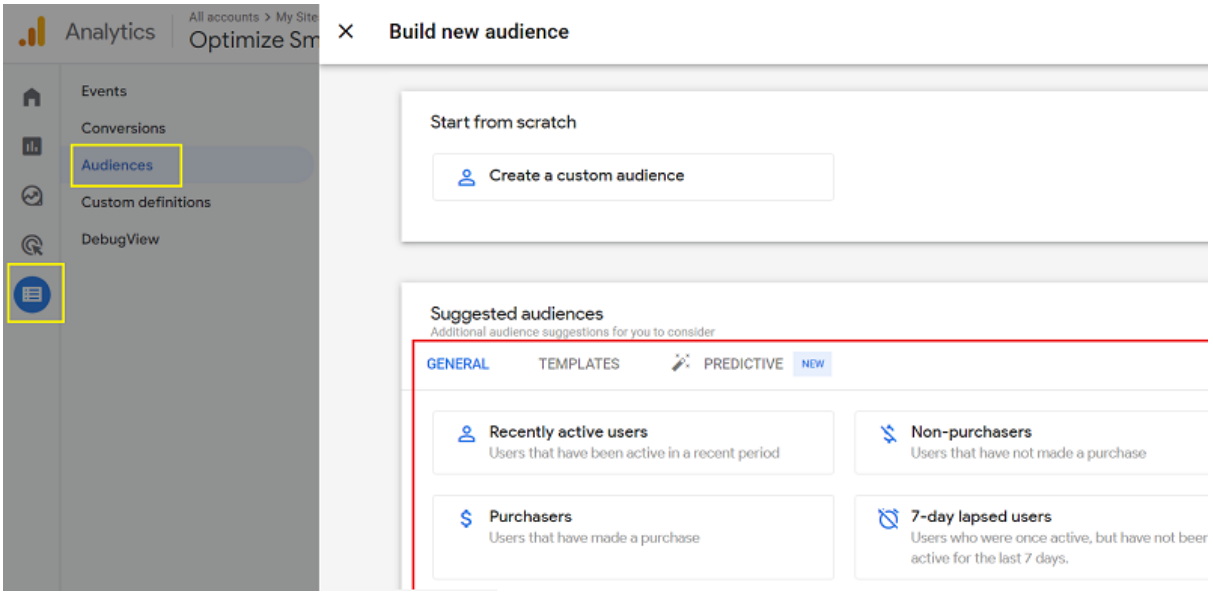
- UK audience
- Desktop audience

- Facebook audience
- Purchasers

When you create an audience from scratch it is called the **'custom audience'**:



You can also create a custom audience in GA4 by using one of the existing **audience templates**:



Through audiences, you can do cohort analysis in GA4.

You can also import the audiences created in GA4 to Google ads for the purpose of remarketing.

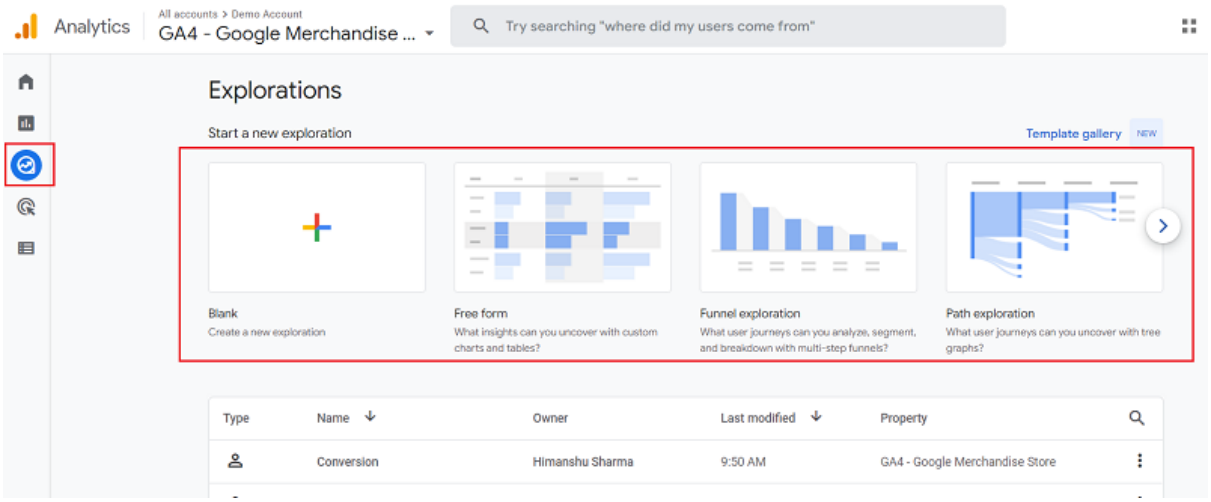
You can create up to 100 audiences in a GA4 standard property.

Whereas you can create up to 400 audiences in a GA4 360 property.

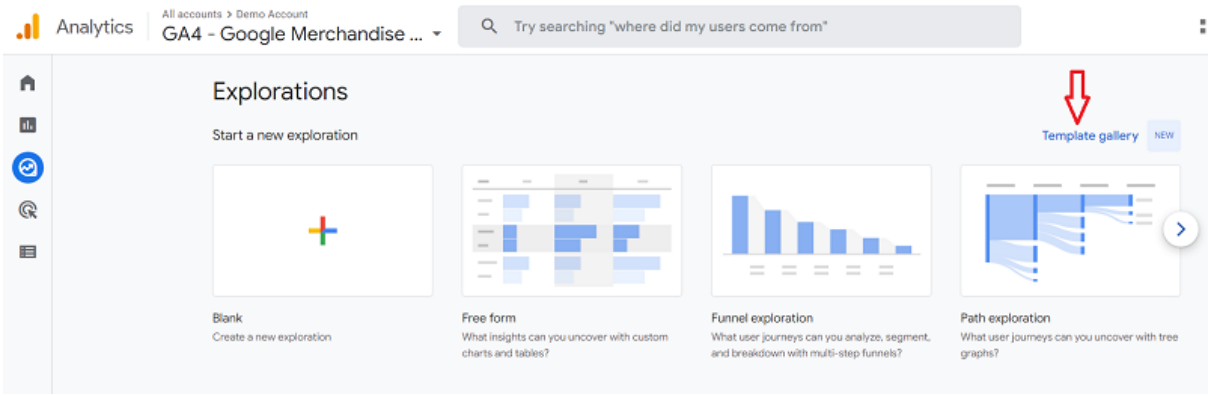
#15: Exploration reports

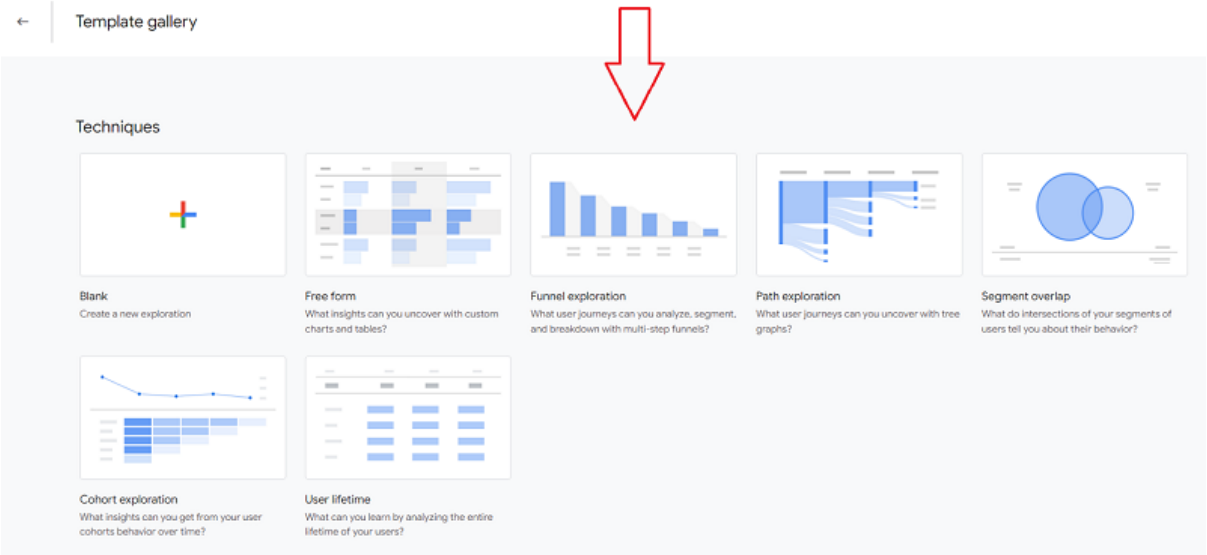
If you often wonder why GA4 does not come with as many reports as there are in GA3, then it is because Google wants you to use **Google Data Studio** for reporting purposes or create your own reports from scratch using the Explorations report templates.

Explorations is a set of report templates through which you can do advanced analysis in GA4:



Click on the **Template Gallery** link to see the full list of the **exploration report templates**:





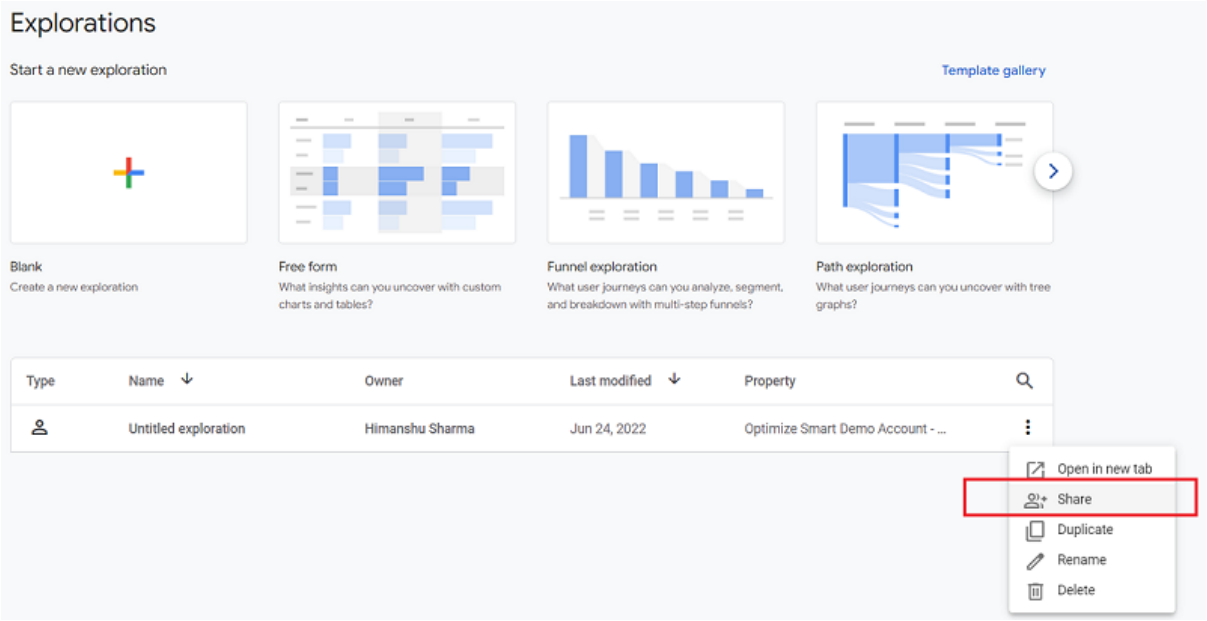
GA4 provides the following exploration report templates:

1. **Blank** – Use this template to create an exploration report from scratch.
2. **Free form** – Use this report template to discover insight using charts and tables.
3. **Funnel exploration** – Use this report template to create and analyze funnels.
4. **Path exploration** – Use this report template to determine the sequence of pages visited by users and the actions performed.
5. **Segment Overlap** – Use this report template to determine the users' behaviour through the overlapping of users' segments.
6. **Cohort Exploration** – Use this report template to analyze the behaviour of a group of users who all share the same characteristics.

7. **User lifetime** – Use this report template to analyze the behaviour of your website/app users since they first visited your website/app.

Use these report templates to create one or more **exploration reports**.

You can also **share your exploration reports** with other users of the same GA4 property. Such types of reports are called **shared exploration reports**.



GA4 standard allows you to create up to 200 exploration reports per user per property and up to 500 shared exploration reports per property.

Whereas GA4 360 allows you to create up to 200 exploration reports per user per property and up to 1000 shared exploration reports per property.

#16: Data Sampling for Exploration Reports

Data sampling is the process of analyzing and reporting a subset of traffic data. It is carried out to analyse large data sets in a cost-efficient manner and in a reasonable amount of time.

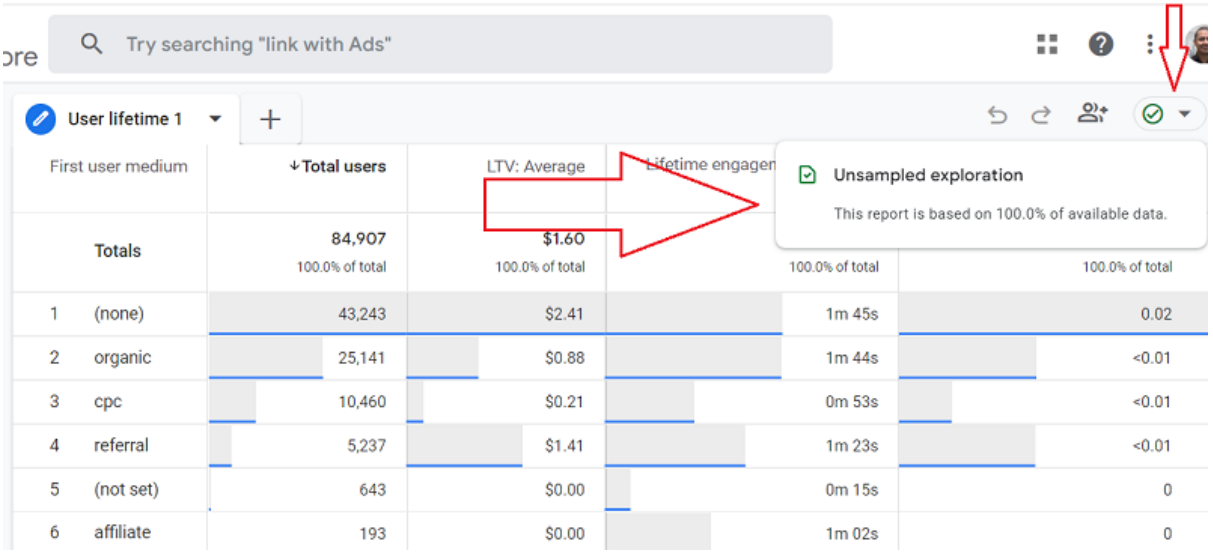
The subset of traffic data is called a **sample**. It is not a complete traffic data set. Whereas **unsampled data** is a complete traffic data set.

As long as the sample is a good representative of all of the data, analysing a sample gives similar results to analysing all of the data.

But if the selected sample is not a good representative of all of the data or if a selected sample is too small, then analysing a subset of data does not give similar results to analysing all of the data.

GA4 has an upward limit on the amount of traffic data it will not sample to produce reports. This limit has been set to save resources (computation power and cost).

GA4 may choose to analyse the complete traffic data set or only a subset of traffic data depending upon the nature of a user's query.



	First user medium	↓Total users	LTV: Average	Lifetime engagem		
	Totals	84,907 100.0% of total	$1.60 100.0% of total		100.0% of total	100.0% of total
1	(none)	43,243	$2.41		1m 45s	0.02
2	organic	25,141	$0.88		1m 44s	<0.01
3	cpc	10,460	$0.21		0m 53s	<0.01
4	referral	5,237	$1.41		1m 23s	<0.01
5	(not set)	643	$0.00		0m 15s	0
6	affiliate	193	$0.00		1m 02s	0

When GA4 start analysing only a small subset of traffic data, you can't rely on the metrics reported by it, as the selected sample may not be a good representative of all of the traffic data.

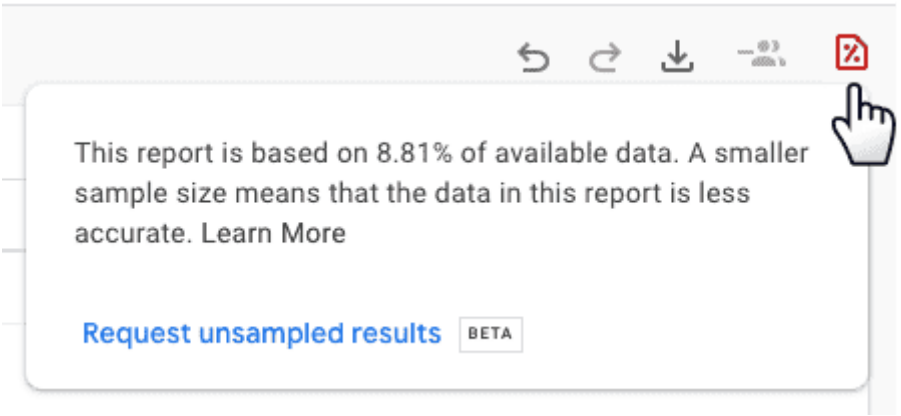
The smaller the sample size, the more inaccurate the reported traffic data becomes. Therefore it makes sense to avoid data sampling as much as possible.

In the case of the GA4 standard, the exploration reports are not based on sampled data as long as you are not querying more than 10 million events at a time.

Whereas, in the case of the GA4 360, the exploration reports are not based on sampled data as long as you are not querying more than 1 billion events at a time.

#17: Unsampled Data for Exploration Reports

You can request unsampled data for your exploration report if the exploration results are currently being sampled and you use GA4 360.



You can request unsampled data for the exploration results that include up to 15 billion events.

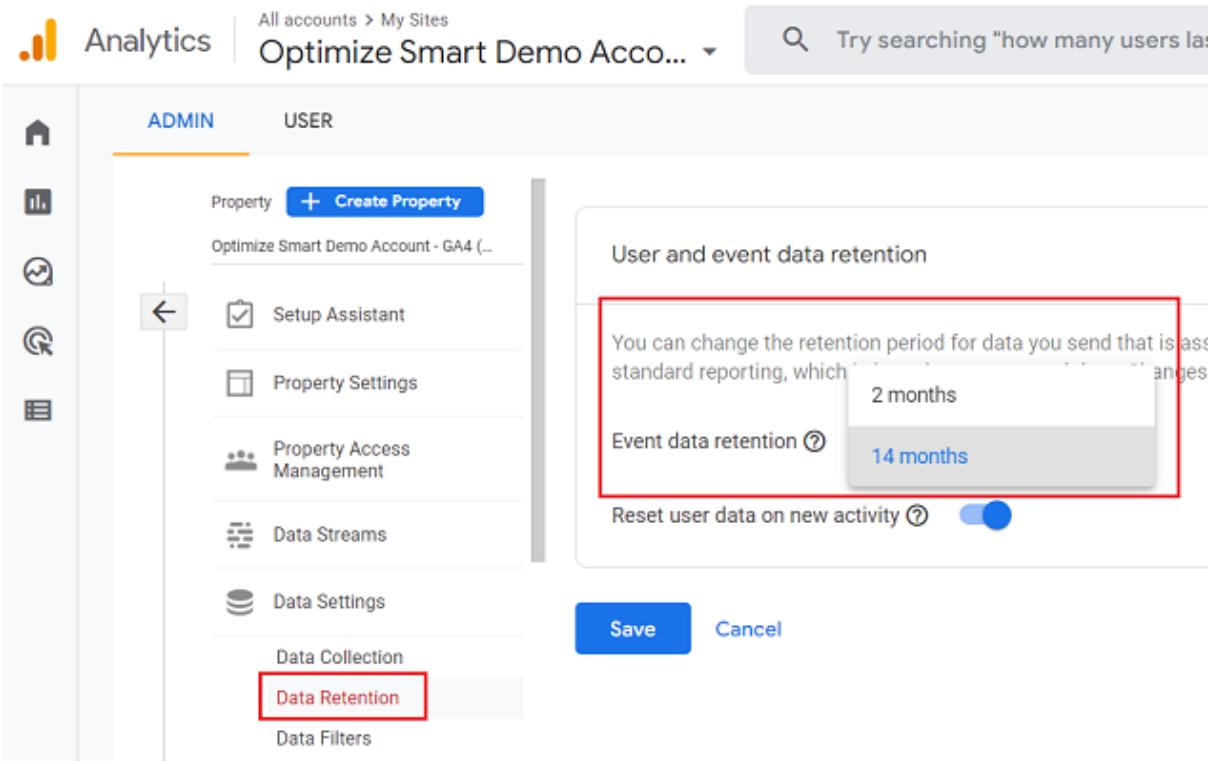
GA4 standard does not provide the feature to request unsampled data for your exploration reports.

#18: Data Retention

Through the '**User and event data retention**' feature, you can set the amount of time for which Google Analytics retains user-specific data for an inactive website user before automatically deleting it.

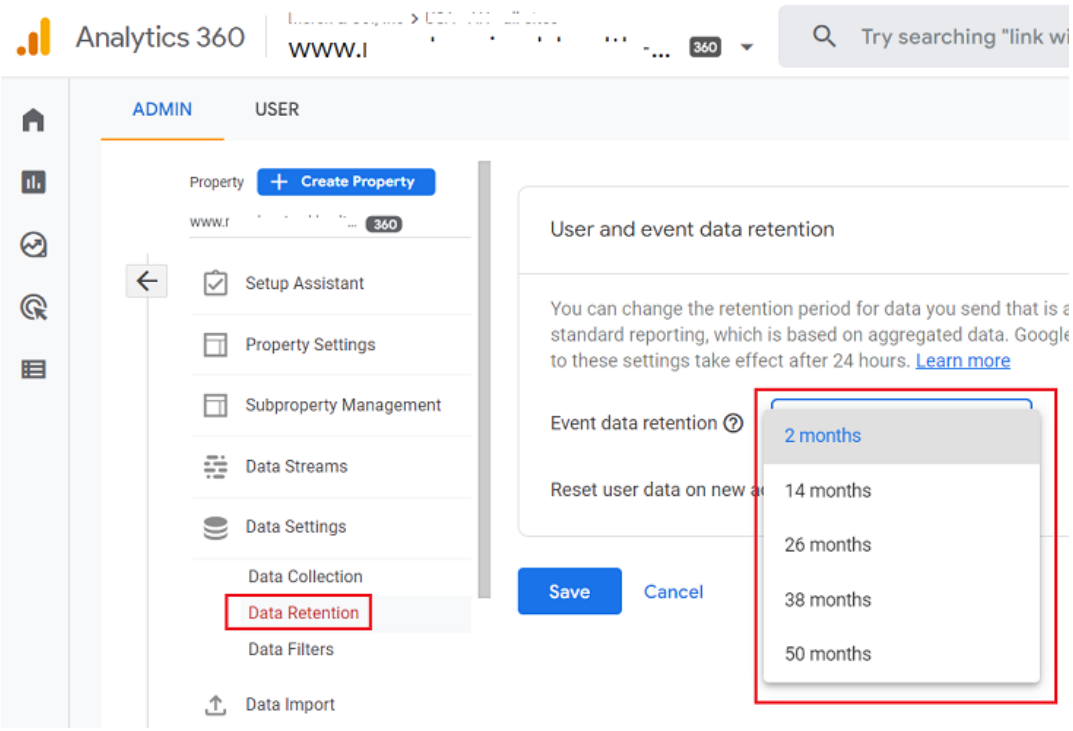
The user-specific data is the data that is associated with cookies, user identifiers, or advertising identifiers.

In the case of GA4 standard property, you can set the data retention setting to either 2 months or 14 months.



In the case of the GA4 360 property, you can set the data retention setting to one of the following:

- 2 months
- 14 months
- 26 months
- 38 months
- 50 months



#19: BigQuery Export Limit

> ***Google BigQuery is an enterprise-level data warehouse from Google which is used to provide business intelligence in the form of reports and dashboards.***

It is a data storage and management system which is used to bring data from several data sources (like GA4, Google Ads, Facebook Ads, Bing Ad Manager etc.) for the purpose of reporting and analysis.

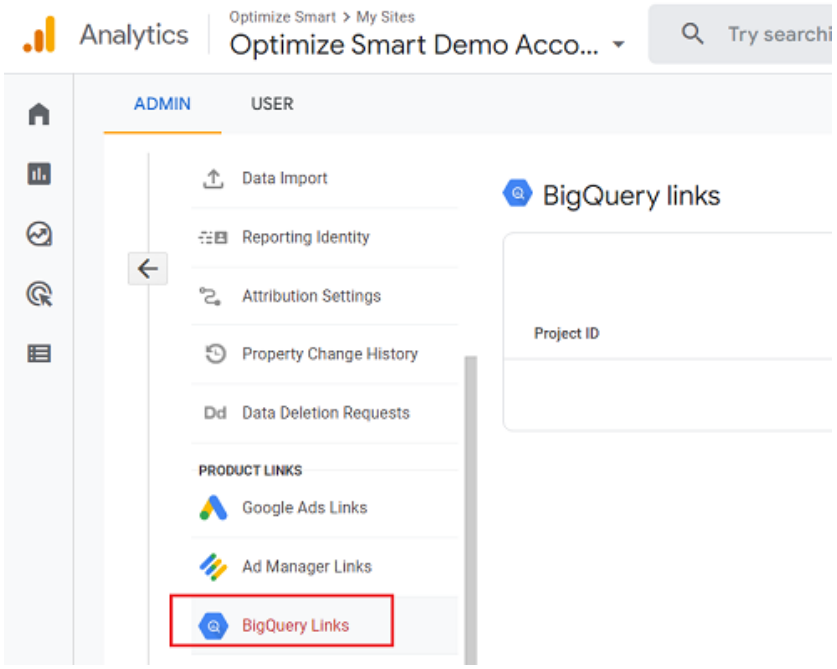
When you use BigQuery, you can manipulate GA4 data in a way which is many times simply not possible by using the GA4 user interface.

BigQuery removes most of the limitations which come when you use the GA4 user interface or the API for querying analytics data.

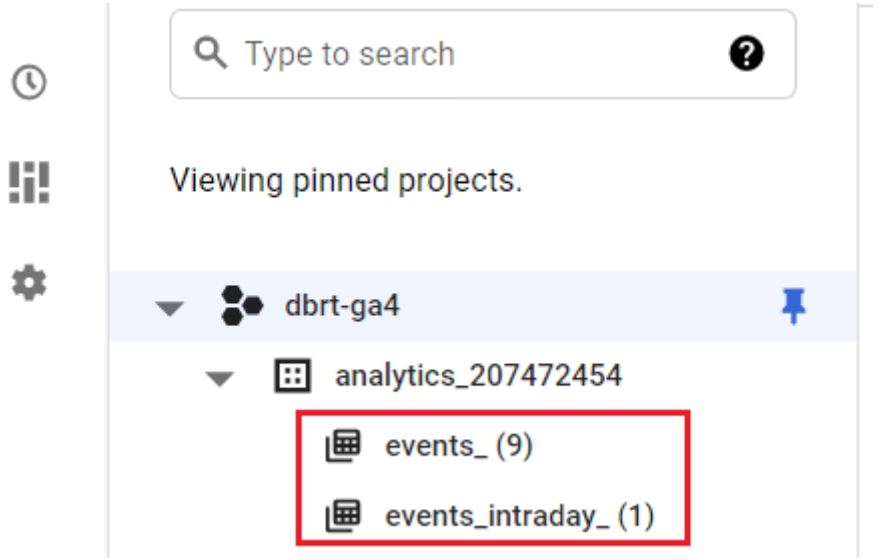
This is one of the biggest advantages of using BigQuery. It makes advanced data segmentation and analysis possible.

Unlike GA3 (aka Universal Analytics), GA4 provides a free connection to BigQuery.

All you have to do is to link your GA4 property to your BigQuery project, enable and configure BigQuery API and then query the GA4 data you need in BigQuery:



You can see your GA4 data in the following two data tables in BigQuery:



#1 **events_** data table – This table stores all the GA4 event data from the previous day(s)

#2 **events_intraday_** data table – This table stores all the GA4 event data from the current day.

> ***If you want to learn more about these two data tables then check out this article: events_& events_intraday_ tables in BigQuery for GA4 (Google Analytics 4)***

You can export raw events data from your GA4 property to BigQuery and then use SQL to query the data.

However, Google has imposed certain limits on the amount of data you can export from a GA4 property to BigQuery on any given day.

A GA4 Standard property has a daily BigQuery export limit of 1 million events.

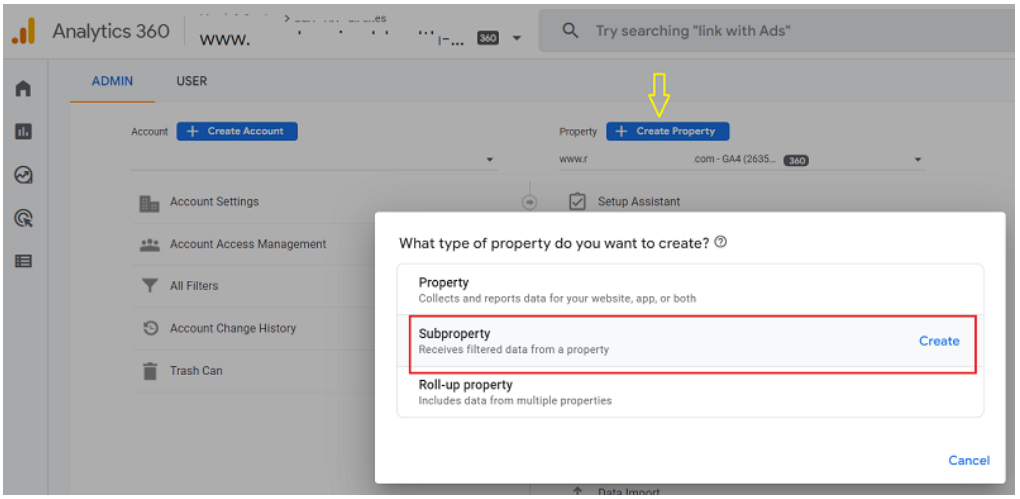
Whereas a GA4 360 property has a daily BigQuery export limit of billions of events.

#20: Subproperties

> ***A subproperty is the GA4 property which gets its event data from another GA4 property (also called the source property).***

Create a subproperty when you want to create a filtered reporting view in GA4.

The GA4 360 subscription allows you to create sub-properties:



You can not create sub-properties if you use the GA4 standard property.

#21: Roll-up Properties

> ***A roll-up property is a special type of GA4 property whose event data comes from other GA4 properties (also known as source properties).***

In other words, a roll-up property is made up of two or more source properties.

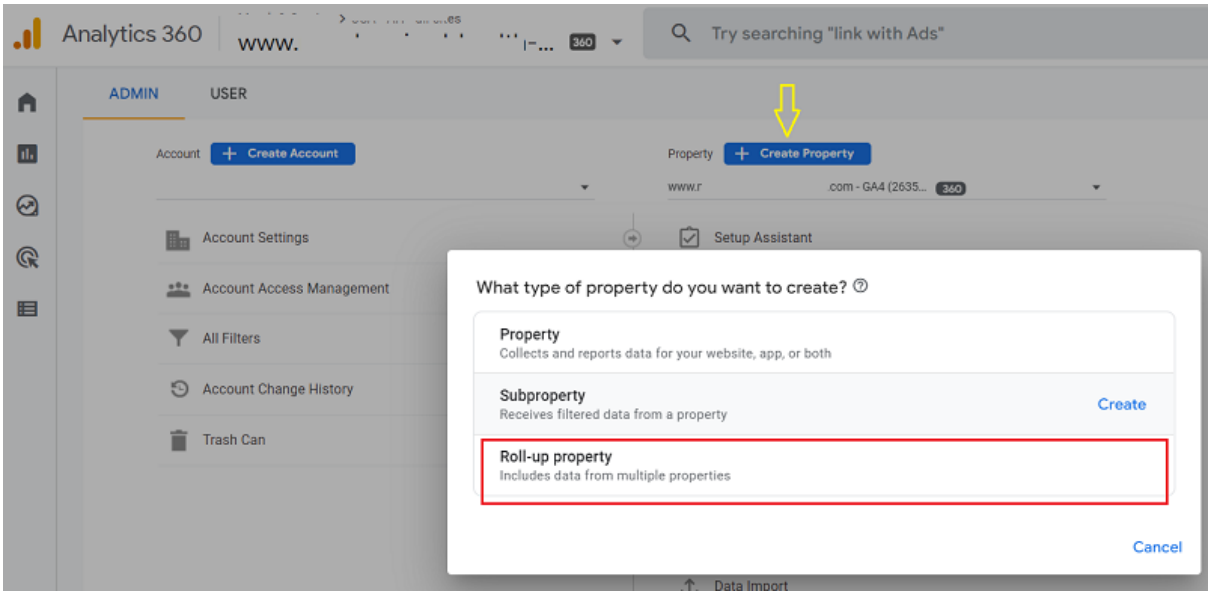
Create a roll-up property if you want to set up roll-up reporting in GA4.

> ***Roll-up reporting is the reporting of data in an aggregated form from multiple digital properties (websites, mobile apps).***

Through roll-up reporting, you can:

1. Aggregate all of your websites' data into one reporting view.
2. See aggregated global performance metrics.
3. Compare the performance of various websites to each other.

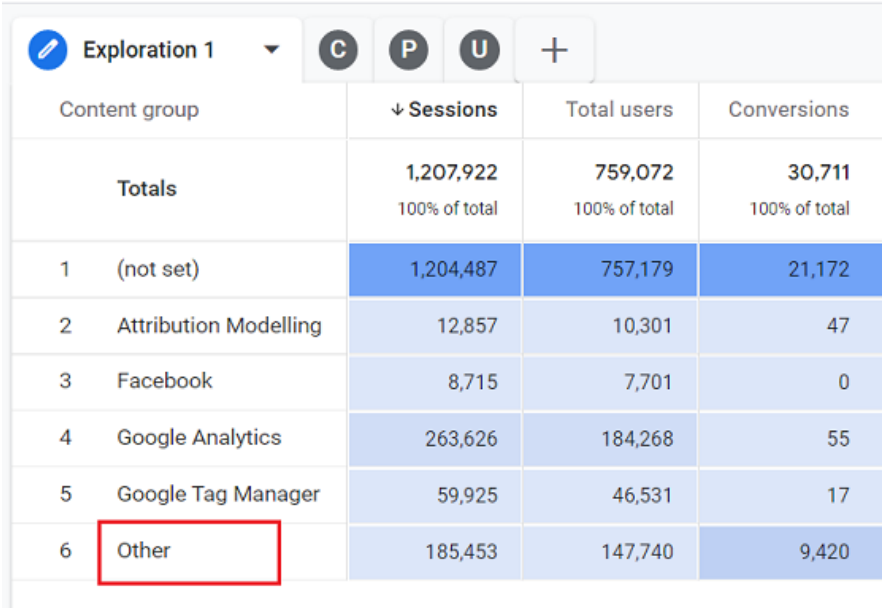
The GA4 360 subscription allows you to create roll-up properties:



You can not create roll-up properties if you use the GA4 standard property.

#22: Automatic Custom Tables

All the reports in a GA4 360 property come with **automatic custom tables** enabled, so your data aggregates under the '(other)' row far less frequently for high cardinality dimensions.



Exploration 1

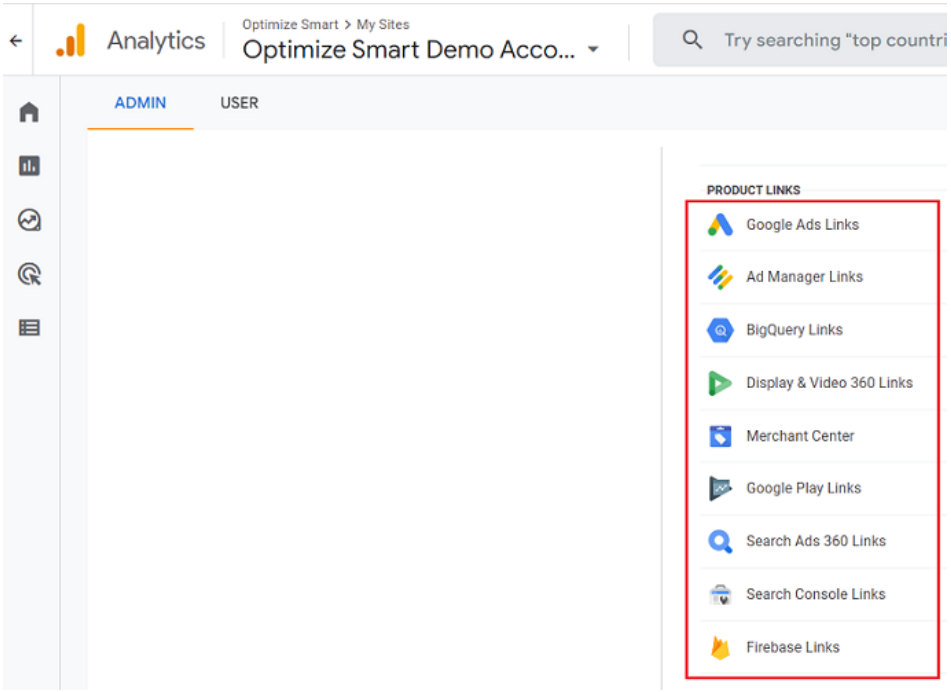
	Content group	↓ Sessions	Total users	Conversions
	Totals	1,207,922 100% of total	759,072 100% of total	30,711 100% of total
1	(not set)	1,204,487	757,179	21,172
2	Attribution Modelling	12,857	10,301	47
3	Facebook	8,715	7,701	0
4	Google Analytics	263,626	184,268	55
5	Google Tag Manager	59,925	46,531	17
6	Other	185,453	147,740	9,420

In the case of a GA4 standard property, the automatic custom tables are not enabled.

> ***A high cardinality dimension is a dimension for which GA4 reports more than 500 unique values in one day. High cardinality dimensions can cause data to aggregate under the '(other)' row.***

#23: Product integrations

Standard GA4 property integrates with other standard versions of Google products (like Google Ads, Ad Manager, Merchant Center, Google Search Console etc.):



Whereas GA4 360 property integrates with both standard and 360 versions of Google products (like Search Ads 360, Display & Video 360, Campaign Manager 360 etc.).

#24: CRM integration

Unlike the GA4 Standard property, the GA4 360 property can be natively integrated with CRMs like **Salesforce Marketing Cloud**.

Through such integration, you can see GA4 data in Salesforce. You create the integration in the Salesforce Marketing Cloud.

#25: Native remarketing integrations

GA4 Standard is best suited for native remarketing integrations with Google Ads.

Whereas GA4 360 is best suited for native remarketing integrations with Google Ads and Display & Video 360.

Note: It makes sense to use GA4 360 only if you are using other Google products (like Google Ads, Search Ads 360, Google Cloud, BigQuery etc). This is because GA4 360 natively integrate with other Google products.

Summary of GA4 360 limits

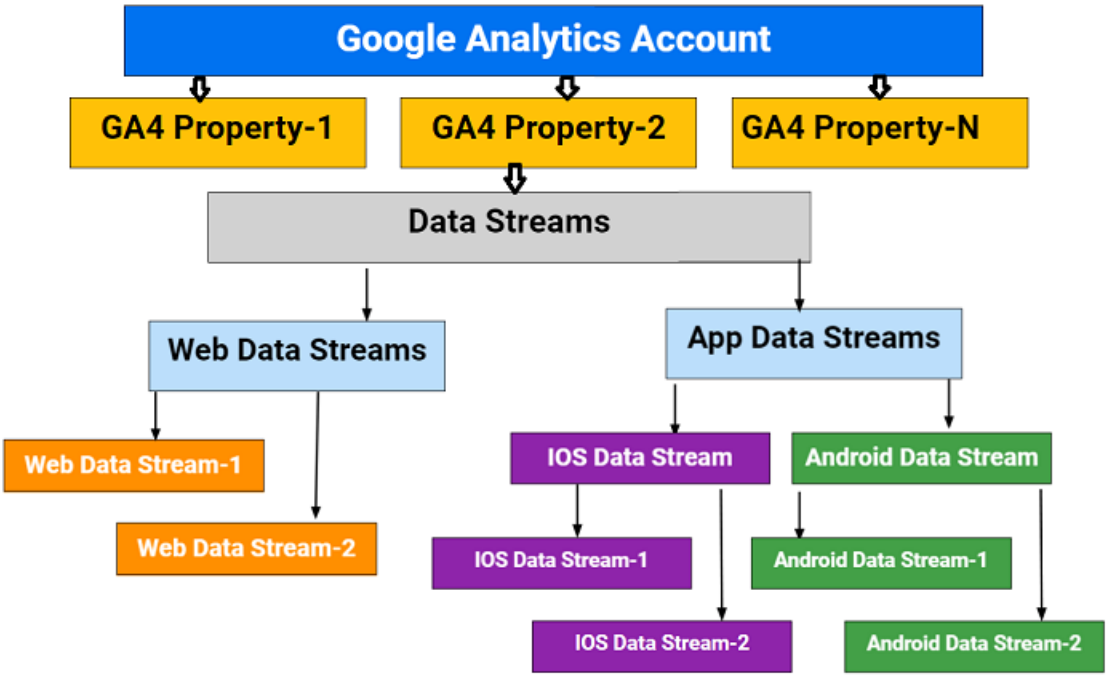
	GA4 Standard property	GA4 360 property
Event Parameters	You can send up to 25 parameters per event.	You can send up to 100 parameters per event.
Event Scoped Custom Dimensions	You can create up to 50 event scoped custom dimensions	You can create up to 125 event scoped custom dimensions
Event Scoped Custom Metrics	You can create up to 50 event scoped custom metrics	You can create up to 125 event scoped custom metrics
User Scoped Custom Dimensions	You can create up to 25 user-scoped custom dimensions	You can create up to 100 user-scoped custom dimensions

Conversions	You can mark up to 30 events as conversions	You can mark up to 50 events as conversions
Audiences	You can create up to 100 audiences.	You can create up to 400 audiences
Exploration reports	You can create up to 200 exploration reports per user per property and up to 500 shared exploration reports per property.	You can create up to 200 exploration reports per user per property and up to 1000 shared exploration reports per property.
Data Sampling for Exploration reports	The exploration reports are not based on sampled data as long as you are not querying more than 10 million events at a time.	The exploration reports are not based on sampled data as long as you are not querying more than 1 billion events at a time.
Unsampled Data for Exploration reports	You can not request unsampled data for your exploration report.	You can request unsampled data for your exploration report if the exploration results are currently being sampled.

Data Retention	You can set the data retention setting to either 2 months or 14 months.	You can set the data retention setting to one of the following: 2 months, 14 months, 26 months, 38 months or 50 months.
BigQuery Export Limit	A GA4 Standard property has a daily BigQuery export limit of 1 million events.	A GA4 360 property has a daily BigQuery export limit of billions of events.
Subproperties	You can not create sub-properties if you use the GA4 standard.	The GA4 360 subscription allows you to create sub-properties through which you can create filtered views in GA4
Roll-up Properties	You can not create roll-up properties if you use the GA4 standard.	The GA4 360 subscription allows you to create roll-up properties through which you can roll-up data from two or more GA4 properties.
Automatic Custom Tables	In the case of a GA4 standard property, the automatic custom tables are not enabled.	All the reports in a GA4 360 property come with automatic custom tables enabled so your data aggregates under the '(other)' row far less frequently for high cardinality dimensions.
Product integrations	Standard GA4 integrates with other standard versions of Google products.	GA4 360 integrates with both standard and 360 versions of Google products
CRM integration	GA4 Standard property can not be natively integrated with CRMs like Salesforce Marketing Cloud.	GA4 360 property can be natively integrated with CRMs like Salesforce Marketing Cloud.

Google Analytics 4 Account Hierarchy

It is important that before you set up the GA4 property, you understand the GA4 account hierarchy really well.



A **Google Analytics Account** is made up of one or more GA4 properties.

A Google Analytics 4 property is a GA property which allows you to integrate mobile app and website usage data. A GA4 property can collect data from both your mobile apps and website.

Even if you don't have a mobile app, Google still recommends that you create and use the GA4 property.

A GA4 property is made up of one or more **data streams**.

A data stream is a data source.

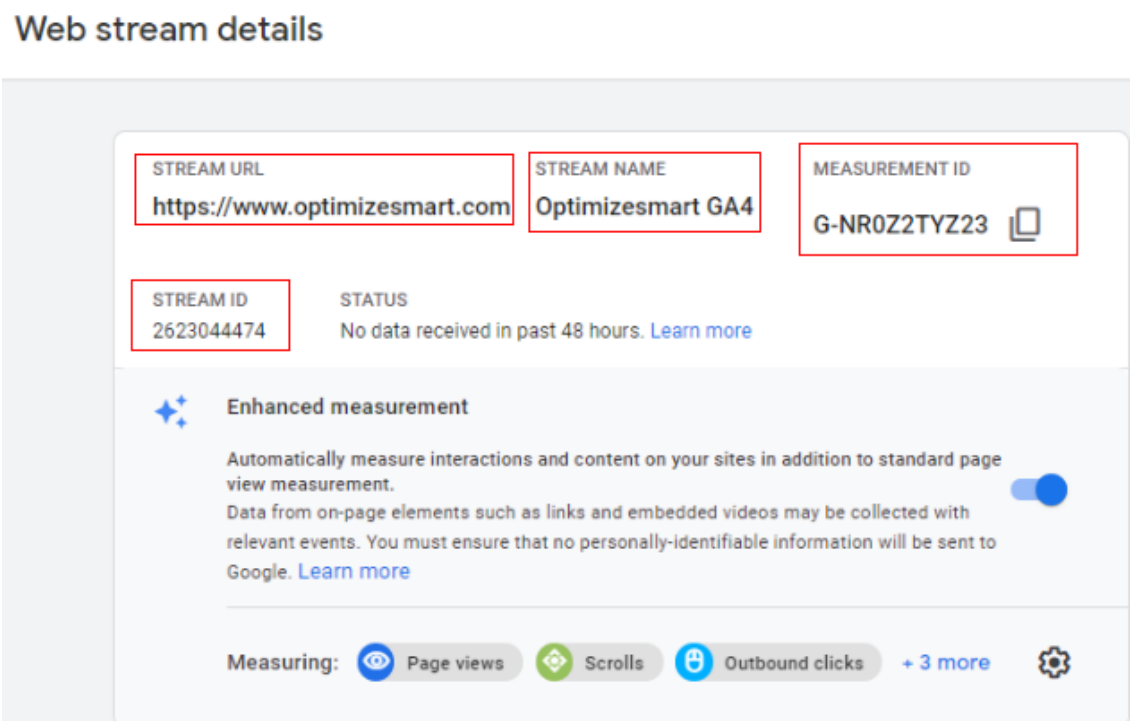
When the data source is a website, it is called a **web data stream**.

When the data source is a mobile app, it is called a mobile **app data stream.**

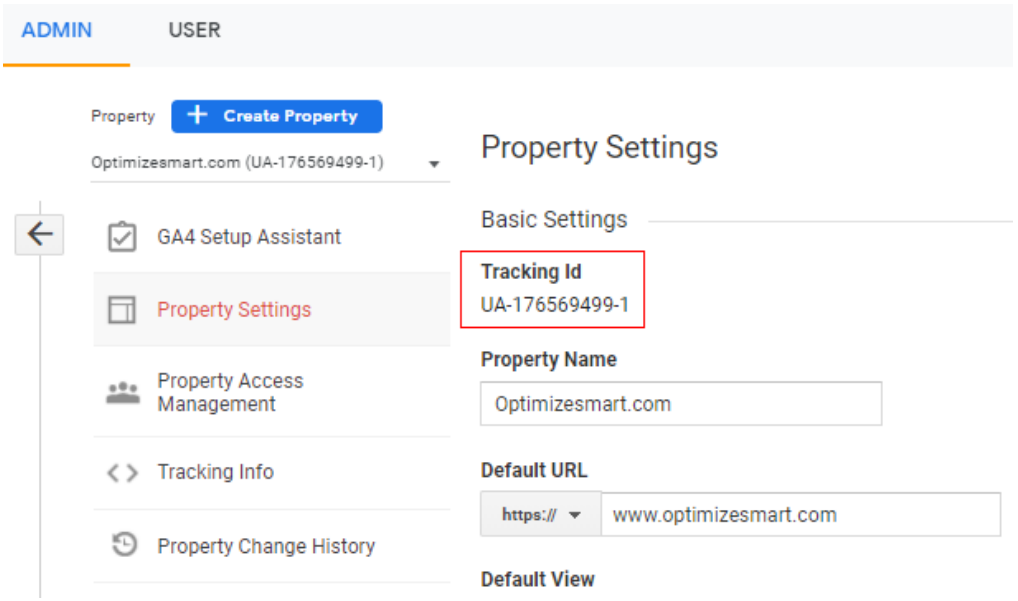
There are two types of mobile app data streams:

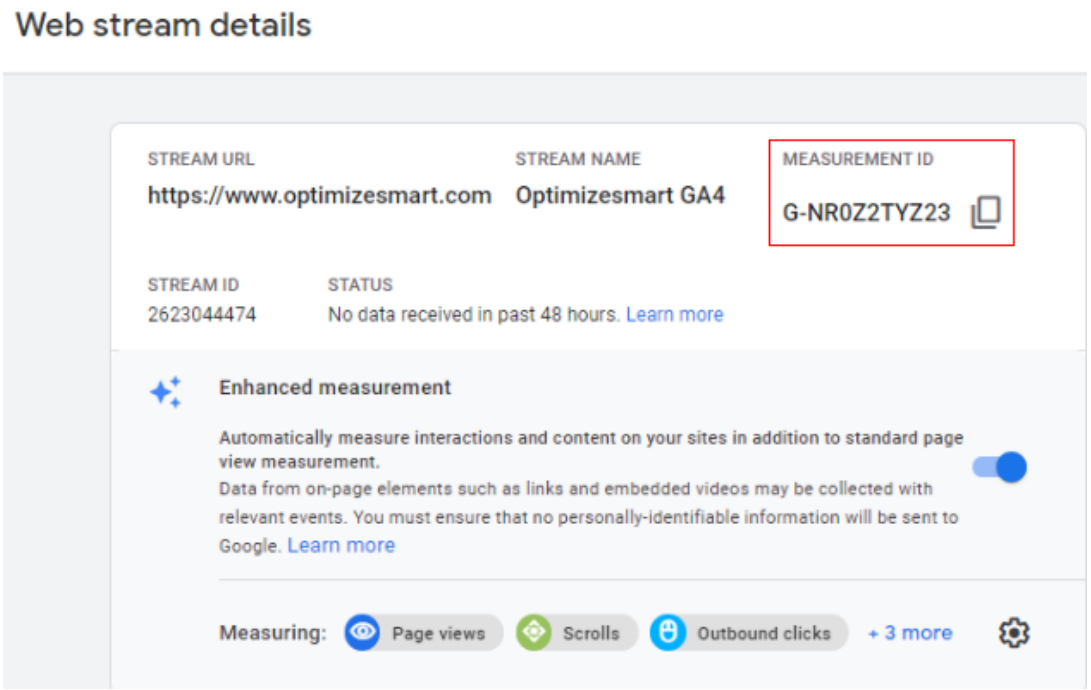
- IOS app data stream
- Android app data stream.

A web data stream has got: **Stream URL**, **Stream name**, **Measurement ID**, and **Stream ID**:



A measurement ID is just like a tracking ID. However, unlike a tracking ID, the measurement ID begins with the characters ‘G-’. For example G-SV0HS12BXZ





To set up any type of tracking in GA4, you need to use the measurement ID.

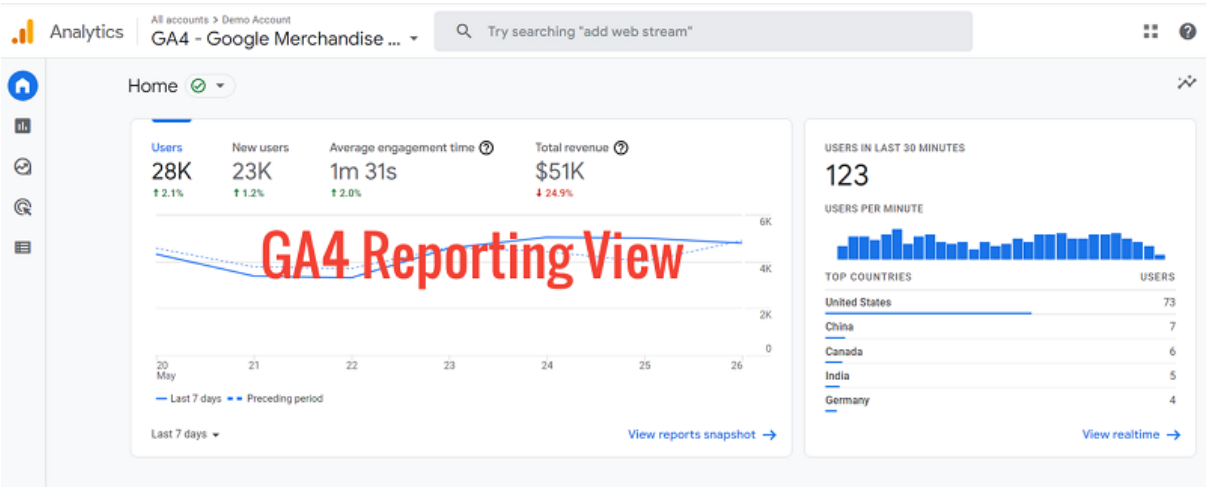
This makes understanding the measurement ID so important.

> ***If you want to learn more about the measurement ID, then check out this article: Understanding Google Analytics Measurement ID (GA4).***

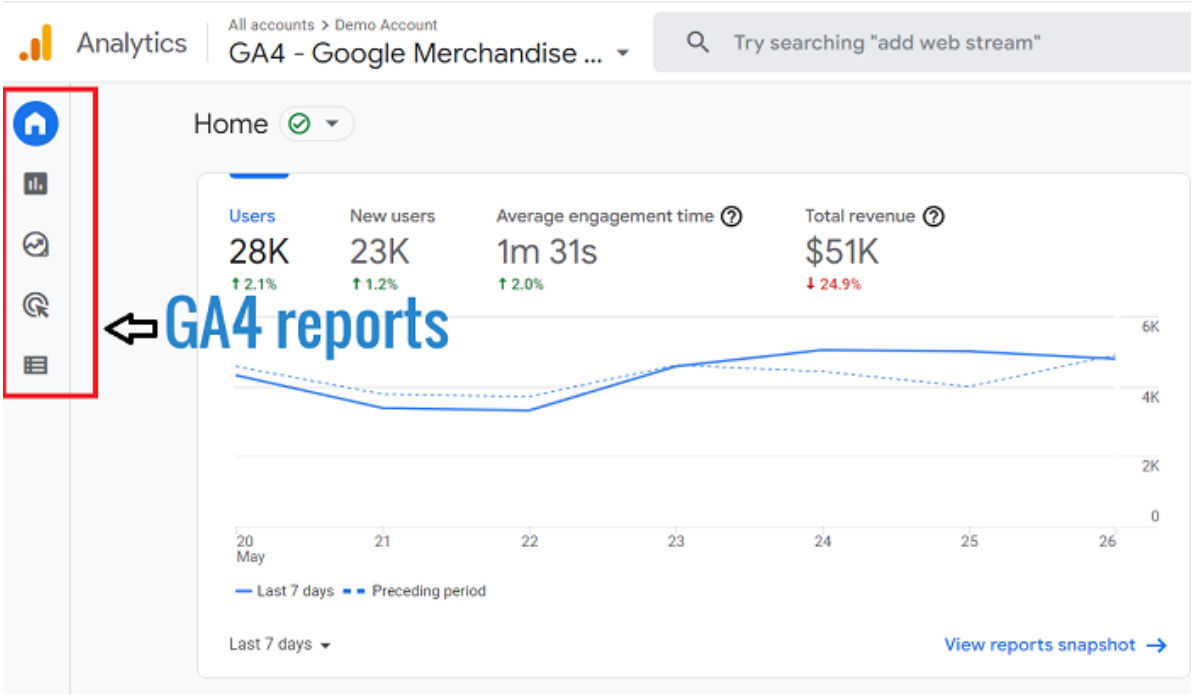
A **Google Analytics 4 property** is made up of only one reporting view.

The reporting view that you create in a GA4 property is the GA4 view.

At present, it is not possible to create additional reporting views in GA4 unless you are using GA360.



A **Google Analytics 4 view** (also known as reporting view) is made up of several reports.



If you want to learn more about how to structure your GA account for GA4, then check out this article: **Google Analytics Account Hierarchy (structure explained).**

How to benefit the most from Google Analytics 4

To benefit from GA4 the most, learn and master **Google Sheets** and/or **BigQuery**.

Use **AI tools with Google Sheets** to automate and enhance data analysis without the need to memorise formulas and functions.

Google Sheets has many formulas and functions, and using the correct formula and function is a major issue.

It's hard to memorize and use them all. Correct usage is also a challenge. One mistake can break a formula or function. AI tools can help solve this problem.

You can use the **Google Cloud AI platform** (to perform tasks like data pre-processing, cleaning, and transformation) with Google Sheets.

Use Google Sheets Add-on (like supermetrics for Google Sheets Add-on, excelformulabot) and Google Apps Script (which allows you to automate tasks in Google Sheets) with Google Sheets.

Use **BigQuery BI Engine** to perform data analysis using a drag-and-drop interface.

The BI engine can respond to **natural language queries**.

It uses Google's natural language processing (NLP) technology to understand natural language inputs and then converts them into a SQL query that BigQuery can execute.

Another way to use natural language with BigQuery is by using an **NLP library like Google Cloud Natural Language API.**

This API allows you to extract insights from unstructured text by applying powerful machine learning models.

You can use this API to perform sentiment analysis, entity recognition, and other NLP tasks on text data stored in BigQuery.

> ***Using natural language makes it easier for non-technical users to perform data analysis in BigQuery, but it is still not the primary way of interacting with BigQuery.***

The primary way is still SQL.

However, this should all change with the advancement of technology within a year or two.

If you don't use AI tools, you will be replaced by one that does.

Google Analytics 4 Accounts and Properties

1. Google Analytics Account Hierarchy (Structure Explained)
2. GA4 Migration Guide – Learn to upgrade to GA4 from GA3 via checklist
3. Understanding Google Analytics Measurement ID (GA4)
4. Google Signals GA4 – See Demographics (Gender, Age) in Google Analytics 4
5. Using the GA4 (Google Analytics 4) Test Property
6. Google Analytics 4 Sub Properties Tutorial
7. Roll up Property in Google Analytics 4 (GA4) – Tutorial

Google Analytics 4 Integrations

1. How to connect GA4 (Google Analytics 4) with Google Data Studio
2. How to link GA4 (Google Analytics 4) with Google Ads
3. How to link Google Search Console to Google Analytics 4 (GA4)
4. How to Install Google Analytics 4 on Shopify
5. GA4 Firebase Integration – Correctly Add App Data Streams to GA4 Property

Google Analytics 4 Events

1. GA4 (Google Analytics 4) Event Tracking Setup Tutorial
2. Understanding Event Parameters in Google Analytics 4 (GA4)
3. Recommended Events in Google Analytics 4 (GA4)
4. Enhanced Measurement Events in Google Analytics 4 (GA4)
5. Automatically Collected Events in Google Analytics 4 (GA4)
6. How to Set Up GA4 Custom Events via Google Tag Manager
7. Events Report in Google Analytics 4 (GA4)
8. How to Rename Events in Google Analytics 4 (GA4)
9. How to Use Google Analytics 4 Event Builder
10. GA4 Form Interactions Tracking – Enhanced Measurement

Google Analytics 4 Conversions

1. Google Analytics 4 Conversion Tracking Guide – GA4 Goals
2. How to Import Conversions from GA4 Property to Your Google Ads Account.
3. GA4 Conversion Rate – How to find it and use it

Google Analytics 4 Dimensions

1. GA4 (Google Analytics 4) Dimensions Tutorial
2. GA4 (Google Analytics 4) Custom Dimensions Tutorial
3. GA4 User Properties (User Scoped Custom Dimensions) – Tutorial
4. Event Scoped Custom Dimensions in GA4 – Tutorial
5. How to remove (other) in GA4 reports and avoid Cardinality.

Google Analytics 4 Metrics

1. GA4 (Google Analytics 4) Metrics Tutorial with Free Google Analytics 4 Ebook
2. GA4 (Google Analytics 4) Custom Metrics Tutorial
3. What are Predictive Metrics in Google Analytics 4 (GA4)

Google Analytics 4 Ecommerce

1. GA4 (Google Analytics 4) Ecommerce Tracking via GTM – Tutorial

Google Analytics 4 Specialized Tracking

1. GA4 (Google Analytics 4) Enhanced Measurement Tracking Tutorial
2. Cross Domain Tracking in GA4 (Google Analytics 4) Setup Guide
3. GA4 Site Search – Tracking Site Search in Google Analytics 4
4. GA4 (Google Analytics 4) Scroll Tracking Tutorial
5. Self-referral Google Analytics 4 – Referral exclusion GA4
6. GA4 (Google Analytics 4) Data Import Tutorial
7. Google Analytics 4 Content Grouping – Create Content Groups in GA4
8. How to Track Single Page Apps in Google Analytics 4 (GA4)
9. utm_source, utm_medium, utm_campaign Parameters – GA4 (Google Analytics 4)
10. GA4 Form Tracking via Google Tag Manager
11. How to Track Phone Calls in Google Analytics 4 – Call Tracking Tutorial.

Google Analytics 4 filters

1. GA4 filters – Understanding Data Filters in Google Analytics 4
2. How to Create and Test Filters in Google Analytics 4 (GA4)?
3. Exclude Internal Traffic in GA4 (Google Analytics 4) via IP Filter

Google Analytics 4 Explorations

1. Free Form Report in GA4 (Google Analytics 4) – Exploration Report
2. How to Use the User Lifetime Report in Google Analytics 4 (GA4)
3. How to Use Path Exploration Report in GA4 (Google Analytics 4) – Path Analysis
4. How to Use Segment Overlap Report in Google Analytics 4 (GA4)
5. How to Use the Funnel Exploration Report in GA4 (Google Analytics 4) – Funnel Analysis
6. Cohort Exploration Report in Google Analytics 4 (GA4)
7. How to Create Landing Pages Report in GA4 (Google Analytics 4)
8. How to Create Google Ads report in GA4 (Google Analytics 4)
9. How to Segment GA4 Data by Data Stream
10. Organic Search Traffic Analysis in GA4 – Complete Guide
11. Google Analytics 4 (GA4) Outbound Links Tracking

12. How to Track Email Campaigns and Traffic in GA4
13. How to view full page URLs in GA4?

Google Analytics 4 Advanced

1. Understanding Google Analytics 4 Sessions
2. GA4 (Google Analytics 4) Measurement Protocol Tutorial
3. How to Build Comparisons (Advanced Segments) in Google Analytics 4 (GA4)
4. Understanding Automated Insights in Google Analytics 4 (GA4)
5. Understanding Channel Groupings in Google Analytics 4 (GA4)
6. Understanding Data Sampling in Google Analytics 4 (GA4)
7. Google Analytics 4 Regex (Regular Expressions) Tutorial
8. Google analytics 4 GDPR compliance checklist
9. How to Exclude URL Query Parameters in Google Analytics 4
10. What is unassigned traffic in GA4 and how to fix it.
11. Google Analytics 4 (GA4) Channels, Source and Medium explained.

Google Analytics 4 Reports

1. How to Create Custom Insights in Google Analytics 4 (GA4)

2. How to Use Debug View Report in Google Analytics 4 (GA4)

Google Analytics 4 Attribution

1. Guide to Attribution Models in GA4 (Google Analytics 4)
2. How to Change Attribution Models in GA4 (Google Analytics 4)?
3. GA4 (Google Analytics 4) Conversion Paths Report in Attribution
4. GA4 (Google Analytics 4) Model Comparison Report in Attribution
5. Advertising Snapshot in GA4 (Google Analytics 4) Attribution
6. GA4 Attribution Modelling Tutorial

Google Analytics 4 Audiences

1. GA4 Audiences – Creating Custom Audience in Google Analytics 4
2. How to Create a Remarketing Audience in Google Analytics 4 (GA4)
3. Understanding Audience Triggers in Google Analytics 4 (GA4)
4. Google Analytics 4 (GA4) Predictive Audiences – Tutorial

Google Analytics 4 BigQuery

1. GA4 BigQuery – Connect Google Analytics 4 with BigQuery
2. BigQuery GA4 Schema – Send Custom GA4 Data to BigQuery
3. How to Backfill GA4 Data in BigQuery
4. How to Connect and Export Data from GA4 to BigQuery
5. Query GA4 data in BigQuery without understanding SQL.

You are doing Google Analytics all wrong. Here is why...

I have dealt with hundreds of Google Analytics accounts in my career.

I have seen many issues, from incorrect tracking code, and selecting the wrong KPIs, to analyzing data without using custom reports or advanced segments.

But do you know the biggest issue of all in Google Analytics?....

It is the “misinterpretation of analytics data”.

Many marketers make the mistake of crediting conversions to the wrong marketing channel.

And they seem to be making this mistake over and over again.

They give the credit for conversions to the last touchpoint (campaign, ad, search term...).

They can’t help themselves because they believe that the Google Analytics reports are ‘what you see is what you get’.

But they are actually ‘what you interpret is what you get’.

This has resulted in marketers making wrong business decisions and losing money.

All the data you see in Google Analytics reports today lies to you unless you know exactly how to interpret it correctly.

For example, let's talk about direct traffic.

All untagged or incorrectly tagged marketing campaigns, from display ads to emails, could be reported as direct traffic by Google.

Whenever a referrer is not passed, the traffic is reported as direct traffic by Google.

Mobile applications don’t send a referrer. Word/PDF documents don’t send a referrer.

‘302 redirects’ sometimes cause the referrer to be dropped. Sometimes browsers don’t pass the referrer.

During an HTTP to HTTPS redirect (or vice versa), the referrer is not passed because of security reasons.

All such traffic is reported as direct traffic by Google.

So on the surface, it may look like most people are visiting your website directly, but this is not usually the case.

But this analysis does not end here because you are still not looking at the complete picture.

People do not always access your website directly and then make a purchase straight away.

They are generally exposed to multiple marketing channels (display ads, social media, paid search, organic search, referral websites, email, etc.) before they access your website directly.

Before they make a purchase.

So if you are unaware of the role played by prior marketing channels, you will credit conversions to the wrong marketing channels.

Like in the present case, to direct traffic.

To get this type of understanding, you need to understand and implement web analytics.

But **you learn data analysis and data interpretation from web analytics and not from Google Analytics.**

The direction in which your analysis will move will determine the direction in which your marketing campaigns will move.

You get that direction from ‘web analytics’ and not from ‘Google Analytics’.

Web/digital analytics is not about Google Analytics (GA) or Google Tag Manager (GTM). It is about analyzing and interpreting data, setting up goals, strategies and KPIs.

It’s about creating a strategic roadmap for your business.

That's why the knowledge of web/digital analytics is so important.

So, what I have done is put together some completely free training for you.

This training will teach you what digital analytics really is and how I have been able to leverage it to generate floods of new sales and customers.

I will also show you how you can copy what I have done to get similar results.

You can sign up for the free training here:

Reserve My Seat Now

I hope you find it helpful.

All the best,
Himanshu