



GA4 Implementation

Technical Guide

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PROGRAM DIRECTORIES | STUDY EVENTS

The Basics

On it's face, GA4 is a very different product than Universal Analytics (GA3). However, from an implementation perspective many of the options remain the same.

There are three way to implement tracking on a newly created GA4 Property, plus we have the option to upgrade an existing Universal Analytics property to GA4.

- Manual Installation.
- Google Tag Manager.
- Installation with a (supported) website builder.

The Basics - The Google Tag

At the heart of GA4 tracking, we have the Google Tag.

“The Google tag (gtag.js) is a single tag you can add to your website to use a variety of Google products and services. Instead of managing multiple tags for different Google product accounts, you can use the Google tag across your entire website and connect the tag to multiple destinations.”

Essentially, the Google Tag is a single ID that is used to connect to multiple Google Services, such as GA4 and Google Ads.

When you create your first GA4 property, Google will automatically generate a Google Tag.

Upgrading a Universal Analytics Property to GA4



Upgrading a Universal Analytics Property

Upgrading a Universal Analytics property to GA4 is very simple but does come with caveats.

To upgrade a property, navigate to the Universal Analytics Property that you would like to upgrade in the Admin section of Google Analytics. At the top of the property settings menu, you will see **'Ga4 Setup Assistant'**. Click on this and then choose the **'I want to create a new Google Analytics 4 property'** option.

The tool will then copy over all of the settings, business information and user access rights from your Universal Analytics property to your new GA4 property.

Google Analytics 4 Property Setup Assistant Not Connected

You're currently using a Universal Analytics property. To join the future of Analytics, set up a Google Analytics 4 property below. [Learn more about GA4](#)

This Universal Analytics property remains unchanged and continues to collect data.



I want to create a new Google Analytics 4 property

We'll create a new Google Analytics 4 property based on this Universal Analytics property.

Get Started



I want to connect to an existing Google Analytics 4 property

Connect an existing Google Analytics 4 property to take advantage of future tools to help complete your property configuration. You'll be responsible for tagging your site.

Select an existing Google Analytics 4 property ▾

Connect Properties

Upgrading a Universal Analytics Property

This process should be seamless for those who have the Universal Analytics tag installed directly on their website. However, there are two scenarios where additional configuration may be required.

If your website uses a website builder or CMS (e.g. HubSpot, Magento, Weebly etc.), you will need to follow the instructions [highlighted here](#).

If you deploy your current Google Analytics tags using Google Tag Manager, please follow the instructions [highlighted here](#).

Reach out to your web development team if you are unsure on any of these points.

Upgrading a Universal Analytics Property

There are a few things to note when upgrading a property in this manner.

- 1) You new GA4 property will collect data from your old Universal Analytics site tag. While this works now, you may in future need to upgrade this tag to benefit from new GA4 features.
- 2) GA4 will only collect data from the point that you upgrade and will not back-fill data from the upgraded Universal Analytics property.
- 3) If you also require GA4 to collect data from an Android or iOS app, these will need to be configured separately.

Create a new Google Analytics 4 property



This setup assistant will:

- **Create a GA4 property.** This will keep your original Universal Analytics property unchanged.
- **Copy basic settings from your UA property.** You can then configure additional settings in your GA4 property as needed.
- **Turn on [enhanced measurement](#)** to measure interactions with your content. You must ensure that no [personally identifiable information](#) will be sent to Google.

Optional setup:

- Enable data collection using your existing global site tag(s).** Your tag customizations can't be migrated, which [may affect your data collection](#).

No, thanks

Create property



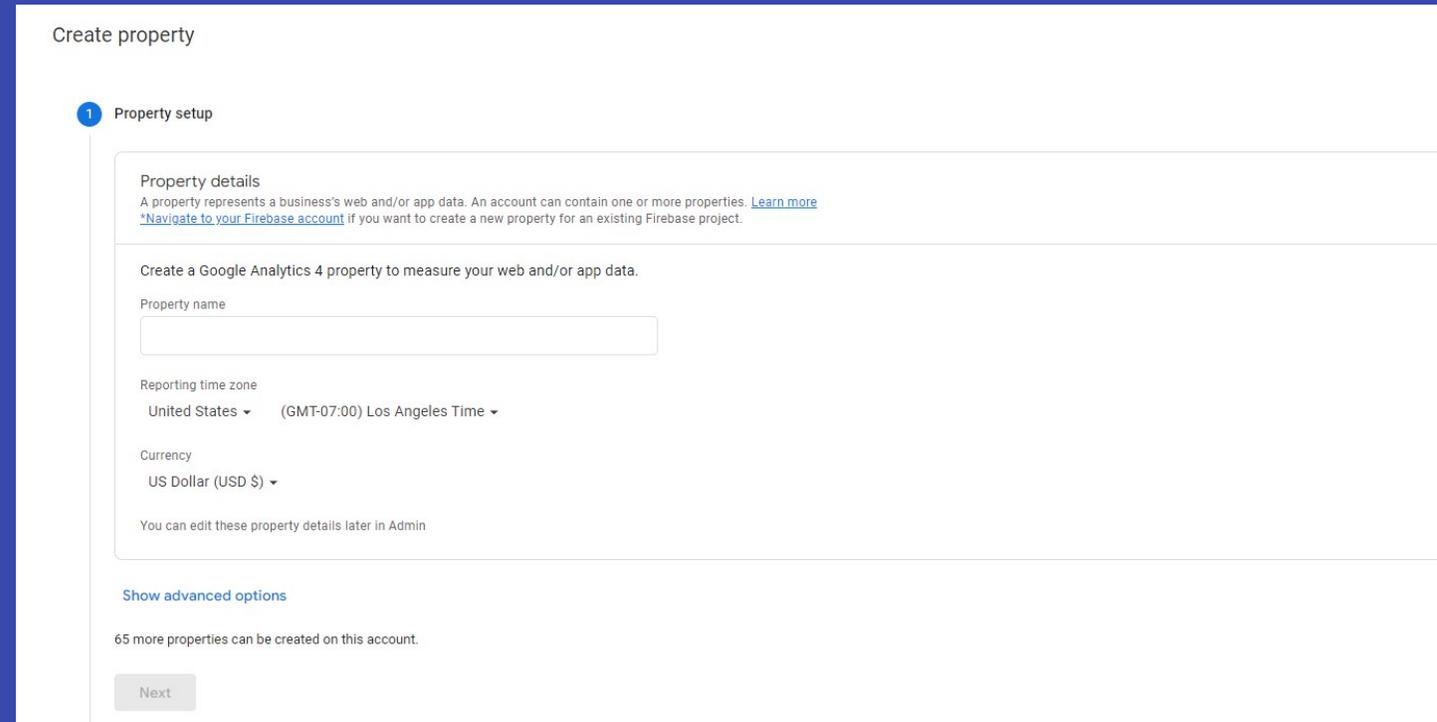
Creating a New GA4 Property From Scratch

Creating a GA4 Property

To create a new GA4 property, as with Universal Analytics, simply navigate to Google Analytics Admin, choose which Account that you would like to create the new property within, then select the '+ Create Property' button under the Property menu.

There is no longer an option to create new Universal Analytics properties, so all new created properties are GA4 properties by default.

From here, complete the 'Property Setup' and 'About your Business' sections as required.



The screenshot shows the 'Create property' interface in Google Analytics. It features a progress indicator for 'Property setup' (step 1 of 1). The main section is titled 'Property details' and includes a brief explanation of a property. Below this, there is a prompt to 'Create a Google Analytics 4 property to measure your web and/or app data.' The form contains three dropdown menus: 'Property name' (empty), 'Reporting time zone' (set to 'United States (GMT-07:00) Los Angeles Time'), and 'Currency' (set to 'US Dollar (USD \$)'). A note at the bottom of the form states 'You can edit these property details later in Admin'. Below the form, there is a 'Show advanced options' link, a status message '65 more properties can be created on this account.', and a 'Next' button.

Creating a GA4 Property

Once your new GA4 property is created, there are several settings which can or should be configured, depending on your business needs. Helpfully, Google include the 'Setup Assistant' section at the very top of the Property settings.

Here we can see our data collection status, as well as quick links to several of the key property settings. At this stage, while it isn't necessary to get things up and running, it would be a good time to manage a few important settings.

1) **Turn on Google Signals** – this allows Google to access user information from users logged in to a Google account. It is necessary for seeing user demographics information in GA4 reports (age, gender) as well as personalisation/remarketing in Google Ads.

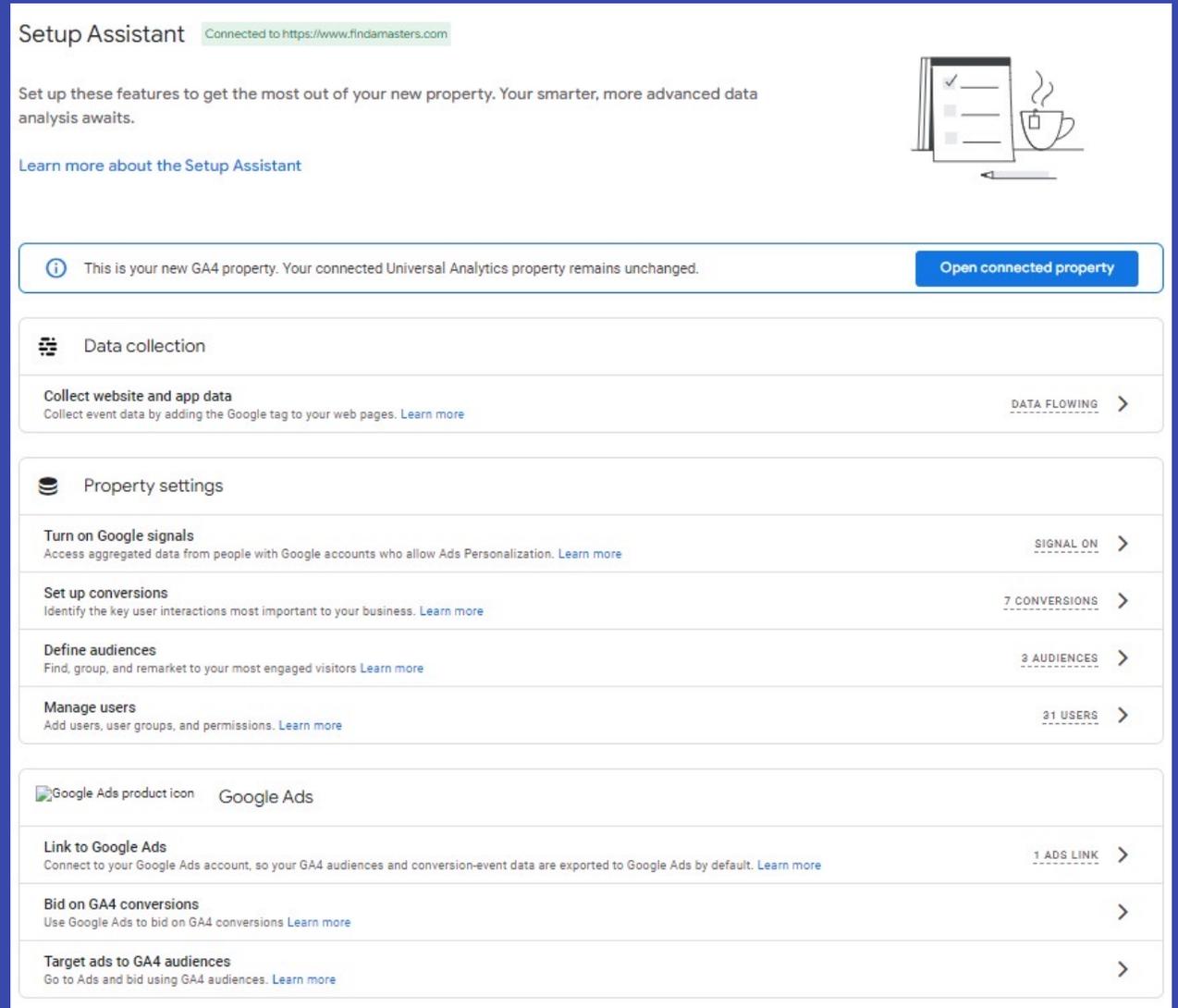
The screenshot displays the 'Setup Assistant' section of the Google Analytics GA4 Property settings. It features four main sections, each with a toggle switch and a checkmark icon in the top right corner:

- Google signals data collection:** The toggle is turned on. Below the header, there is explanatory text: "By activating Google signals, you enable Google Analytics to collect data about your traffic in addition to data collected through a standard Google Analytics implementation in order to provide additional features like cross-device audiences and insights." A second paragraph explains that when enabled, Google Analytics will collect visitation information and associate it with Google information from accounts of signed-in users who have consented to this association for the purpose of ads personalization. This Google information may include end user location, search history, YouTube history, and data from sites that partner with Google—and is used to provide aggregated and anonymized insights into your users' cross device behaviors. By enabling these features, you acknowledge you adhere to the [Google Advertising Features Policy](#), including rules around sensitive categories, have the necessary privacy disclosures and rights from your end users for such association, and that such data may be accessed and/or deleted by end users via [My Activity](#). A light blue bar below this text states: "Google signals data collection is allowed in 306 of 306 regions." A note at the bottom of this section reads: "Note: Enabling the above toggle causes Google Analytics to automatically collect additional data about your traffic. If you don't want to collect data for Google signals, you should disable the toggle above as well as ensure that you have not [manually enabled](#) any Advertising Features data collection in your Google Analytics tags."
- Granular location and device data collection:** The toggle is turned on.
- Advanced Settings to Allow for Ads Personalization:** The toggle is turned on.
- User Data Collection Acknowledgement:** The status is "Acknowledged" with a green checkmark icon.

Creating a GA4 Property

2) **Manage Users** – be sure to add any users who will need to access the GA4 property. Any users who have been granted analytics access at the Account level will automatically be inherited by the new GA4 property, so it is worth checking that these people require access and at what permission level.

3) **Link to Google Ads** – if you use Google Ads, now is a good time to link the account. GA4 is much more well integrated with Google Ads than Universal Analytics. For example, conversion events in GA4 are automatically accessible in Google Ads, and any Audiences in GA4 can be used for remarketing in Google Ads without any manual intervention.



The screenshot shows the 'Setup Assistant' interface for a new GA4 property. At the top, it says 'Connected to https://www.findamasters.com'. Below this, there's a message: 'Set up these features to get the most out of your new property. Your smarter, more advanced data analysis awaits.' There's a link to 'Learn more about the Setup Assistant' and an illustration of a checklist and a coffee cup. A blue bar contains the message: 'This is your new GA4 property. Your connected Universal Analytics property remains unchanged.' with a button 'Open connected property'. The main content is organized into sections: 'Data collection' with 'Collect website and app data' (DATA FLOWING); 'Property settings' with 'Turn on Google signals' (SIGNAL ON), 'Set up conversions' (7 CONVERSIONS), 'Define audiences' (3 AUDIENCES), and 'Manage users' (31 USERS); and 'Google Ads' with 'Link to Google Ads' (1 ADS LINK), 'Bid on GA4 conversions', and 'Target ads to GA4 audiences'.

Installing the GA4 Tag

Manual Installation

Manual Installation

Manual installation of you Google Tag requires that it be added to the <head> section of every page on your website, something that will require web developer.

If you wish to manually install the Google Tag, head into the property settings of the new GA4 property and click on the '**Data Streams**' setting. If you do not see any Data Streams, click on 'Add Stream' and choose whether it is for web(site) or mobile app.

Open the Data Stream and select 'View Tag Instructions' in the Google Tag menu. If you are installing on a website builder or CMS, select from the options presented. If you are installing manually, select the 'Install Manually' tab. Copy the code provided and give this to your web development team.

Install your Google tag

You can use a website builder to finish set up automatically, or install your tag manually. To ensure you get accurate measurement, make sure your tag is installed on every page of your site.



Install with a website builder

Install manually

If you manage your site using one of the website builders listed below, you can finish setting up your Google tag without making changes to your code.

1. Select your website builder



Don't see your website builder? Click here to [learn more](#) or [install manually](#).

A person is holding a smartphone, looking at the screen. The image is overlaid with a blue gradient. The text "Installing the GA4 Tag" is prominently displayed in white, bold font. Below it, "Google Tag Manager" is written in a smaller white font. In the bottom right corner, the logo for "KEYSTONE EDUCATION GROUP" is visible, featuring a stylized 'K' icon.

Installing the GA4 Tag

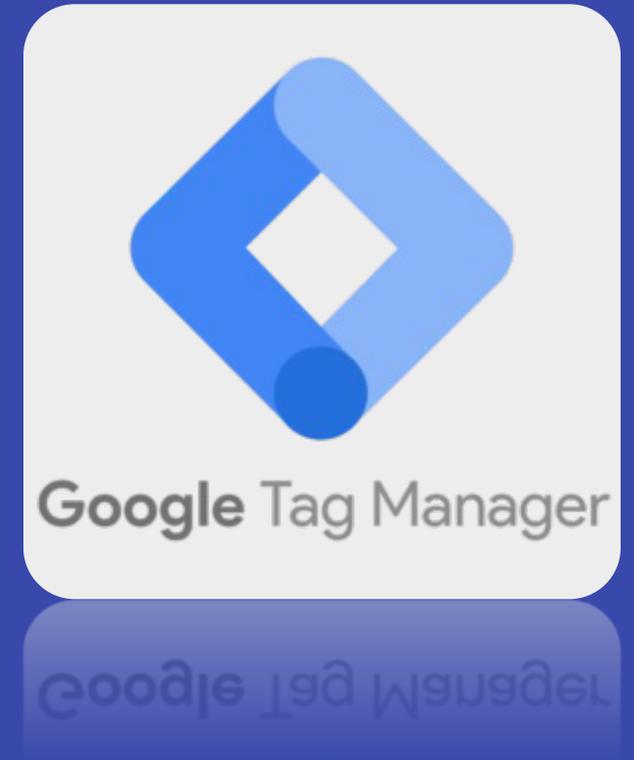
Google Tag Manager

Google Tag Manager Installation

Installing GA4 using Google Tag Manager (GTM) is a great option. It offers lots of flexibility and makes adding new GA4 events a breeze.

There are a couple of options when it comes to GTM. We have the traditional implementation known as client-side, and the new option of server-side. For now, we will focus on a client-side setup as this is what most people will be familiar with, but we will touch on server-side shortly.

The first step is to head over to your GMT Account and Container for the website you would like to configure.

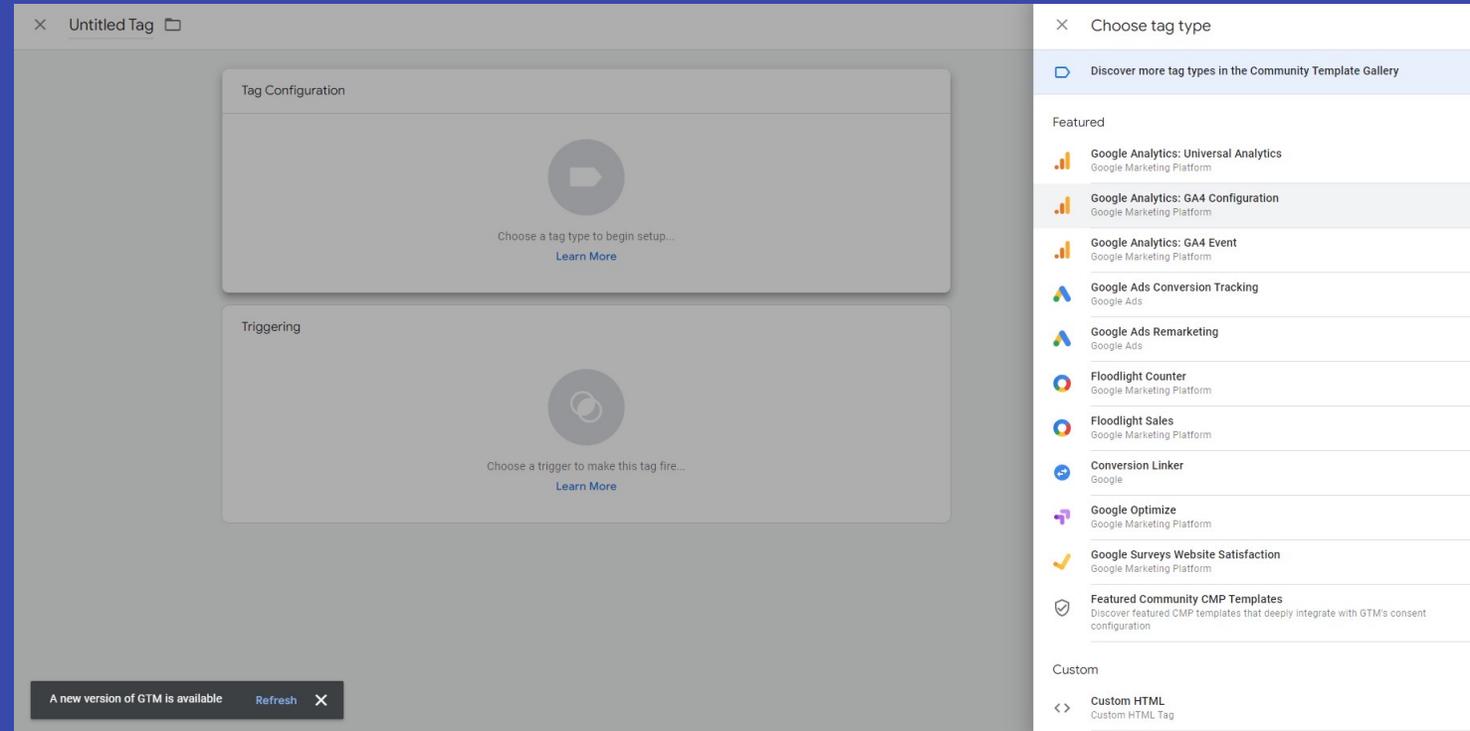


Google Tag Manager Installation

If you are not currently using GTM, or are not using it on the website in question, you will need to create a new client-side container and ask your web development team to add the GTM script tags. Instructions on how to do this can be [found here](#).

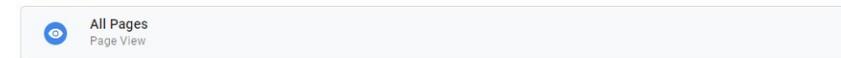
Below are the steps that you'll need to follow:

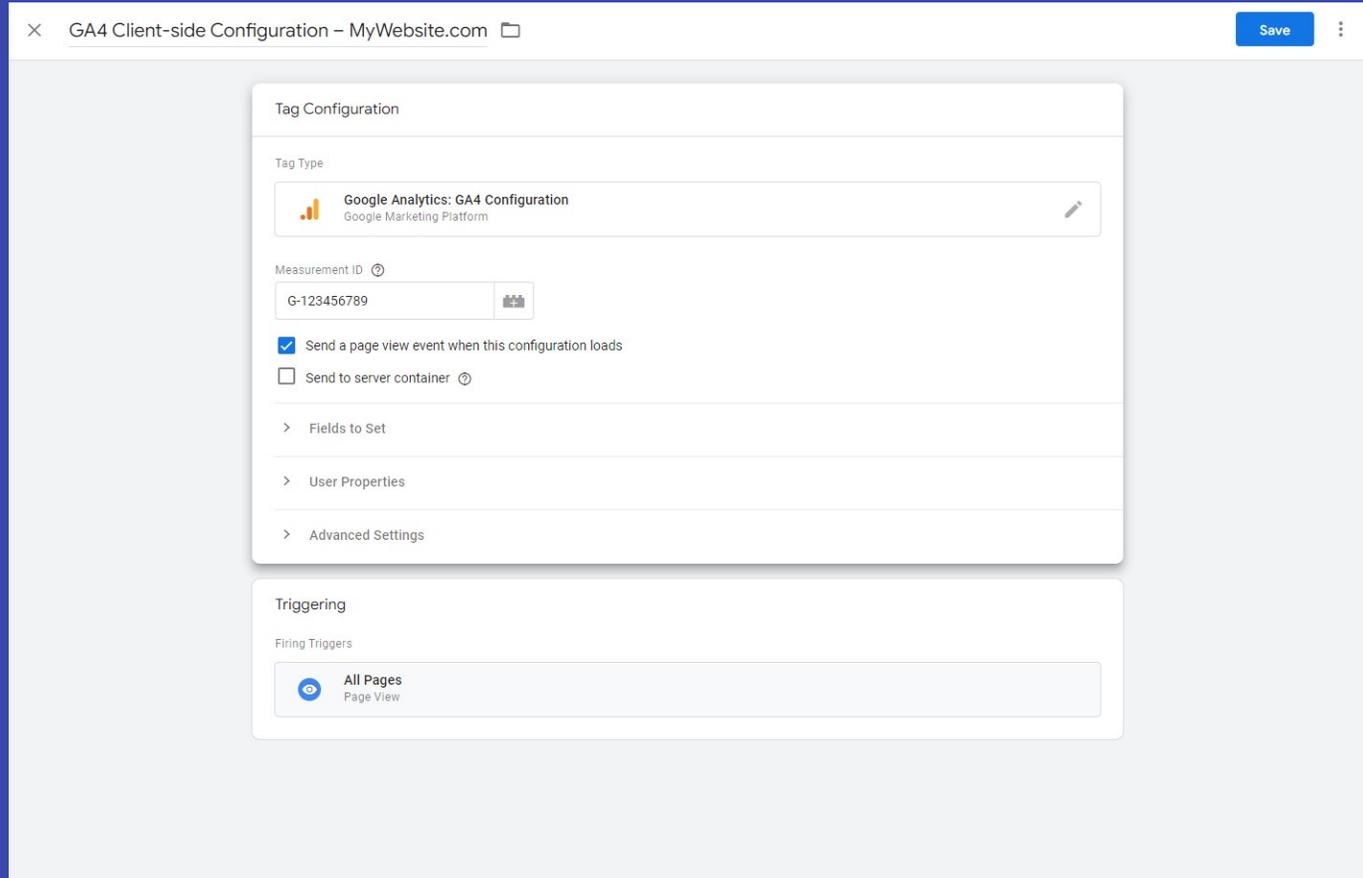
- 1) Once you have located / setup your client-side container, select the 'Tags' menu option and click 'New'.
- 2) Under 'Tag Configuration', select the tag type called 'Google Analytics: GA4 Configuration'.



Google Tag Manager Installation

- 3) Give the tag a meaningful name, such as 'GA4 Client-side Configuration – MyWebsite.com'.
- 4) Within the GA4 Data Stream that you set up earlier, copy the **'Measurement ID'** and paste it into the Measurement ID field of the configuration tab. For GA4 properties, this should start with 'G-'.

- 5) In the tag **'Triggering'** section, add a new trigger and select the **'All Pages (Page View)'** type, then save the configuration tag.

- 6) We are now ready to publish the new tag. In the upper right of GTM click on the **'Publish'** button. Select **'Publish and Create Version'** and give it a name. You should see the new tag that you created in the **'Workspace Changes'** preview. Once you are happy, click publish.



The screenshot shows the 'Tag Configuration' interface in Google Tag Manager. The browser tab is titled 'GA4 Client-side Configuration – MyWebsite.com'. A 'Save' button is visible in the top right corner. The configuration panel includes the following details:

- Tag Type:** Google Analytics: GA4 Configuration (Google Marketing Platform)
- Measurement ID:** G-123456789
- Event Settings:**
 - Send a page view event when this configuration loads
 - Send to server container
- Fields to Set:** (Expanded)
- User Properties:** (Expanded)
- Advanced Settings:** (Expanded)

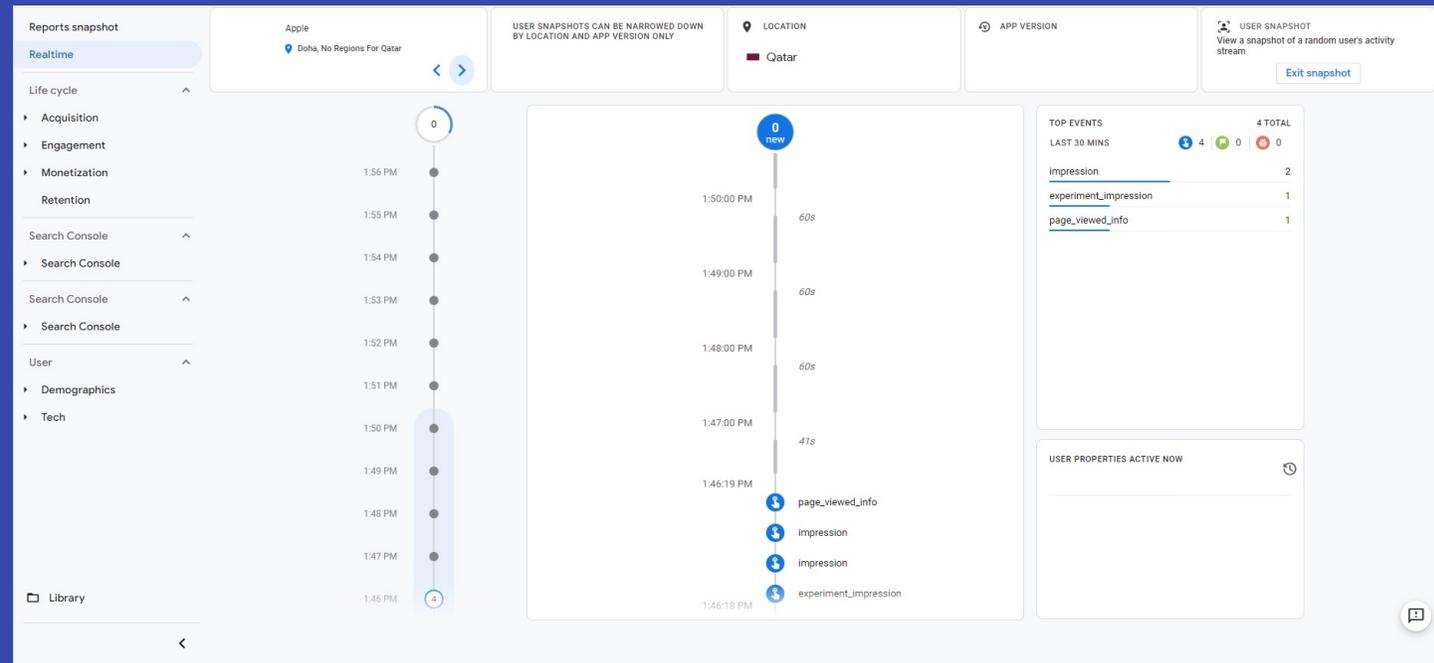
The **Triggering** section shows a single firing trigger: 'All Pages Page View'.

Validating the Installation

Once the web tag has been manually installed, or the Google Tag Manager changes have been published, head over to the GA4 **Reports** section and select the **Realtime** report.

If the tag has been correctly installed, you should start to see data populating this report. You can click on the 'View User Snapshot' option in the upper right to see individual users interacting with your site in real time.

If using Google Tag Manager, you can also use the container preview option to check if the GA4 Configuration Tag is firing correctly.



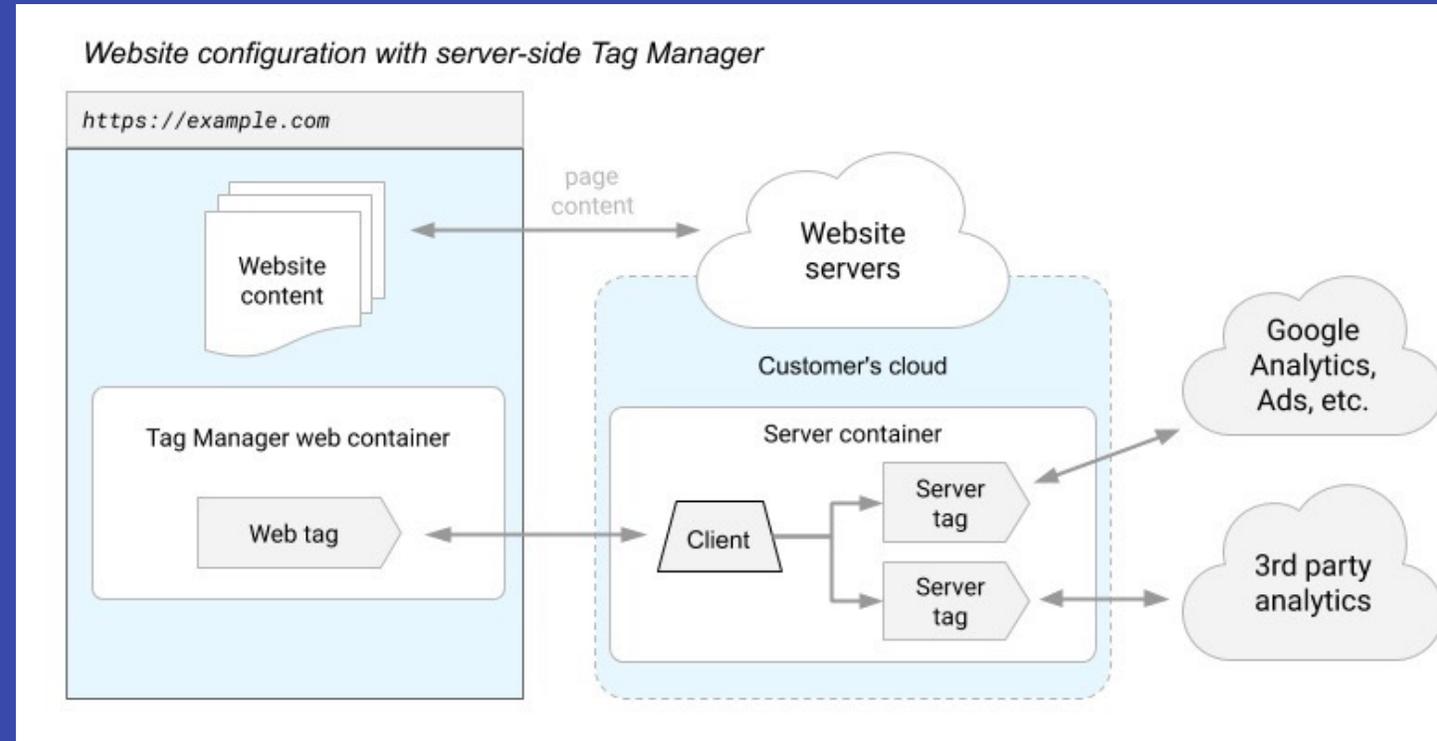
Server-side GTM

Deploying Google Tag Manager server-side has many added benefits over a client-side only solution. However, it does come at an additional cost, it will require further input from a web developer, and it might not work for all of your GTM requirements.

The process of implementing server-side GTM is too complex to outline in this guide. Fortunately, GTM wizard, Simo Ahava has a fantastic and [highly detailed guide](#) on what it is, how it works and how to set it up.

Briefly, the major benefits are:

- Web page speed improvements and reduced client load.
- Added security and privacy featured.
- More resilience to browser tracking blockers.



Advance Configuration

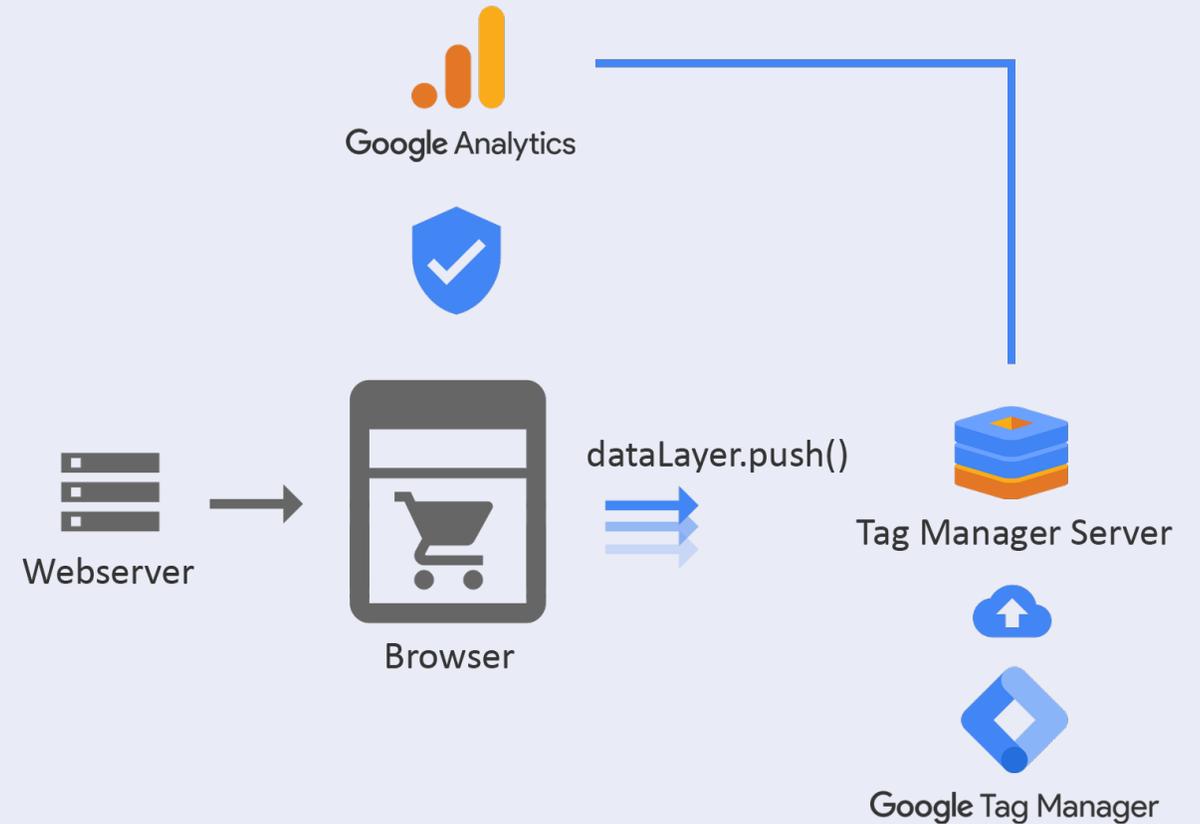
Custom Events and Google BigQuery

Custom Events

Unlike Universal Analytics, GA4 uses an event-based data model where all interactions between the user and the website are recorded as events. Each event can have multiple properties which define when, where and how the event happened – these are called event **parameters**.

The power of GA4 comes from the fact that it is not limited to the preconfigured events that are fired out-of-the-box, rather it can record custom events, tailored to the needs of each company.

Setting up custom event tracking will require website development to surface the required information in the **Data Layer**. However, once this is done, everything else can be done in Google Tag Manager.



Custom Events

Most websites have conversion metrics and KPIs that they wish to track. In GA4, all conversions are based on events. Any event captured in GA4, be it standard or custom, can be marked as a conversion within GA4 itself.

For more information on how to set up custom event tracking for GA4 using the Data Layer and Google Tag Manager, Dev.to have a great guide which you can [find here](#).

The screenshot shows the 'Tag Configuration' interface for a 'Google Analytics: GA4 Event' tag. The 'Tag Type' is 'Google Analytics: GA4 Event' from the 'Google Marketing Platform'. The 'Configuration Tag' is set to 'Select Configuration Tag...'. The 'Event Name' is 'Programme_Viewed'. Under 'Event Parameters', three parameters are listed: 'Programme_Name' with value '{{programme_name}}', 'Faculty' with value '{{faculty}}', and 'Programme_Type' with value '{{programme_type}}'. There are also sections for 'User Properties', 'More Settings', and 'Advanced Settings'.

Parameter Name	Value
Programme_Name	{{programme_name}}
Faculty	{{faculty}}
Programme_Type	{{programme_type}}

Google BigQuery

Google BigQuery is cloud data warehousing tool available in Google Cloud Platform. GA4 brings the new* functionality to export and backup all of your Google Analytics data to BigQuery for free**.

The advantage of backing up your GA4 data are:

- Unsampled and complete data with no cardinality.
- Ability to join and blend with other data sources.
- Security of a back-up of historical data if you transition away from GA.

* This was available with Universal Analytics, but only on a premium GA360 subscription.

** While the integration is free, storage is chargeable in BigQuery, as is analysis.





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Any questions? Contact us at
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