Advanced Google Analytics (and other) integrations with Google Tag Manager

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I hope you like TLAs (Three Letter Acronyms)…

What are we talking about today?

Key concepts

- Tags
- Google Tag Manager (GTM)
- Google Analytics (GA)
- Drupal
- The data layer

What's a tag?

- Piece of code served by a website to collect data about visitor activity or provide other functionality
- Usually JavaScript and/or tracking pixels
- Examples:
    - Web analytics (e.g. Google Analytics, Kissmetrics, Mixpanel)
    - Advertising / remarketing (e.g. Google Ads, Facebook Pixel)
    - A/B testing (e.g. Google Optimize, Optimizely)
    - GDPR cookie compliance banners
    - Chatbots / customer support overlays

Google Tag Manager (GTM)

- GTM is a tag management service (TMS)
- Provides organization and versioning of tags
- Allows marketers self-service options to implement/change the serving of tags
- Once GTM is implemented for a website
  - Marketers don't need developer support!
  - … unless a tag requires information that isn't already available to it
- One tag to rule them all!
  - GTM has its own tag that needs to be served by a website
  - Then GTM serves the rest of the tags

Google Tag Manager (GTM)

- Only collects the data you actually care about
- Facilitates performance
    - Asynchronous implementation
    - Allows data collected to be routed by GTM (in the cloud) to multiple services
- Main disadvantage
    - Takes more work to implement than directly integrating your website with GA

Google Analytics (GA)

- Extremely popular free analytics service
- Originally for measuring activity on websites
- Universal Analytics (UA) introduced in 2014
  - Can also / separately support mobile apps
  - "Web", "Apps", and "Apps and Web" properties
  - Was the latest incarnation until...

Google Analytics 4 (GA4)

- Announced and <u>began</u> rollout TWO DAYS AGO
- Rebranding and upgrade of UA "Apps and Web" property
- Does not require that there's a mobile app
- Requires creating a new GA4 property
- Can run alongside an existing pre-GA4 property
- The default for new properties
- Measurement Protocol is not supported
  - Measurement Protocol facilitates measurements sourced from a server
- Out of scope today

Google Analytics (GA)

- Existing and new Universal Analytics (UA) properties are still supported (phew!)
- UA requires one of the following tags be served:
  - Universal Analytics   "analytics.js"
  - Global site tag (Gtag)   "gtag.js"
    - Newer
    - Supports GA and other Google product tags
    - Don't bother upgrading from the UA tag if the only Google tag you need is for GA
- GTM's UA integration serves the UA tag
- GTM's new GA4 integration serves the Gtag

The data layer

- W3C specification: Customer Experience Digital Data Layer (CEDDLA)
  - The basis for different companies' data layer implementations
- The virtual layer of a website that contains data
- A JavaScript array or object that temporarily stores information that can be easily accessed by scripts such as GTM
  - Page content metadata
  - Visitor information
  - Events happening on the page

The data layer

- Google's "dataLayer" is an array of objects that Google calls "variables"

```
<script>
  dataLayer = [{
    'pageCategory': 'signup',
    'visitorType': 'high-value'
  }];
</script>
```

Source: https://developers.google.com/tag-manager/devguide

The data layer

- The dataLayer acts as a queue into which information is pushed

```
dataLayer.push({'color': 'red'});
```

```
dataLayer.push({
    'color': 'red',
    'conversionValue': 50,
    'event': 'customizeCar'
});
```

Drupal!

- Base modules we could use for GA

	machine name	# of D8/9 sites reporting use
○ **Google Analytics**	**google_analytics**	**79,000**
○ Googalytics (previously GAnalytics)	ga	5,000
○ **GoogleTagManager**	**google_tag**	**28,000**
○ GoogleTag Manager	gtm	800

- The first two integrate Drupal with GA directly
- The GoogleTagManager module provides the GTM integration we seek
- Key additional module we'll use

○ **dataLayer**	**datalayer**	**5,000**

- We're covering Drupal 8/9 today
  - The GoogleTagManager and dataLayer modules are also available for Drupal 7

More Drupal modules we won't cover

- Commerce Google Tag Manager (commerce_google_tag_manager)
  - Provides support for GA Enhanced Ecommerce
- Domain Google Tag Manager (domain_gtm)
  - Domain Access integration: different GTM container per domain
- Context Datalayer (context_datalayer)
  - Context integration: conditions and reactions

What's our goal today?

Integrate Drupal and Google Analytics using Google Tag Manager

Key steps

- Create Google Analytics account and properties
- Create GTM account and container
- Disable Google Analytics module
- Install and configure GoogleTagManager module
- Configure GTM to pass data to GA

BAD vs. NYC

- We'll use DrupalCampNYC 2020 website as our case study
- 2020.drupalcamp.nyc
- Drupal 8 site with no previous Google Analytics (worth using)
- Developed locally using Lando
- Hosted by Pantheon (Dev, Test, and Live environments)

- Join us November 12-14 (free general admission!) for the last North American DrupalCamp until mid-2021

Create Google Analytics account

- Usually one account per organization
- Large organizations might have one account per business unit, logical group of websites/apps, or even per website/app
- Also creates the account's first property

Create Google Analytics properties

- One property for Live environment
- One (or more) properties for the other environments
- Helps ensure that your live analytics data is as accurate as possible
- Facilitates testing
- DrupalCampNYC's properties:
  - Live
  - Test
  - Dev, Local
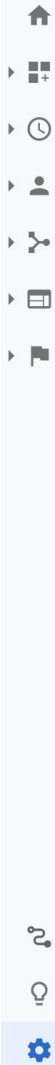
1 **What do you want to measure?**

Web
Measure your website

- Understand where your users are coming from and turn data into insights
- Analyze user behavior and optimize for your business
- Discover trends with performance and conversion analysis

Apps
Measure your iOS or Android apps

- Understand user growth and get insights into app behavior
- Automatically capture key events or define your own
- Add web stream later to measure cross-platform behavior BETA

*Navigate to your Firebase account if you want to create a new property for an existing Firebase project

Apps and web BETA
Measure your users across app and web

- Explore cross-platform user-centric analytics
- Get started quickly with codeless event configuration and out-of-the-box reports
- Implement without retagging if you already use gtag.js or Tag Manager on your site

*Navigate to your Firebase account if you want to create a new property for an existing Firebase project
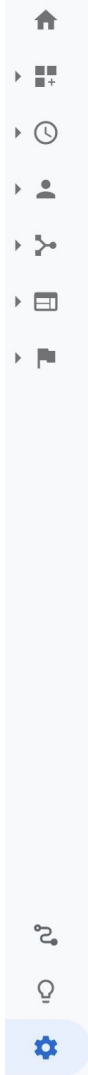
Create property

✓ **What do you want to measure?**   Edit

(2) **Property setup**

Property details

Website Name

Camp (Live)

Website URL

https:// ▾   2020.drupalcamp.nyc

Industry Category

Computers and Electronics ▾

Reporting Time Zone

United States ▾   (GMT-04:00) New York Time ▾

Create   Cancel

96 more properties can be created on this account.

Cancel

Analytics

Try searching for "acquisition overview"

ADMIN   USER

Property   **+ Create Property**

Camp (Dev, Local) (UA-155062877-2)

	Property Settings
	Tracking Info
	Property Change History
Dd	Data Deletion Requests

PRODUCT LINKING

	Google Ads Linking
	AdSense Linking
	Ad Exchange Linking
	All Products
	Postbacks
	Audience Definitions
Dd	Custom Definitions
	Custom Dimensions
	Custom Metrics

+ NEW CUSTOM DIMENSION

Custom Dimension Name	Index ↓	Scope
Drupal Entity Bundle	1	Hit
Drupal Entity ID	2	Hit
Drupal Entity Title	3	Hit
Drupal Entity Type	4	Hit
Drupal Entity VID	5	Hit
Drupal User Roles	6	Hit
Drupal User UID	7	Hit

Edit Filter

Filter Information

Filter Name

Include Anonymous

Filter Type

Predefined | Custom

- ( ) Exclude
- (•) Include

    Filter Field

    Drupal User UID ▼

    Filter Pattern

    0

    [ ] Case Sensitive

- ( ) Lowercase
- ( ) Uppercase
- ( ) Search and Replace
- ( ) Advanced
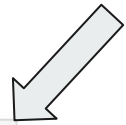
(•) Include

Filter Field

Drupal User UID ▼
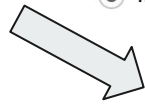
🔍 Search

Cellular Radio?

WiFi Support?

Mobile brand name

Mobile model name

Mobile marketing name

Mobile Pointing Method

SOCIAL

Social Network

Social Action

Social Action Target

CUSTOM DIMENSIONS

Drupal Entity VID!

Drupal Entity Bundle!

✓ *Drupal User UID!*

Drupal Entity Type!

Drupal Entity ID!

Drupal User Roles!

Drupal Entity Title!

( ) Lo

( ) Up

( ) Se

( ) Ad

Learn m

Filter V

Analytic
Country

Save

Try searching for "acquisition overvi...

ADMIN　　　**USER**

View　　**+ Create View**

01 Anonymous Visitors

📄　View Settings

🚩　Goals

🏃　Content Grouping

▽　Filters

+ ADD FILTER

Rank	↓	Filter Name	Filter Type
1		Include Anonymous	Include

Create GTM account and container

- GTM accounts should probably map to GA accounts
- Creating an account also creates the account's first container
- A container is a set of macros, rules, and tags
- Containers support multiple environments
- Generally one container per website

← Add a New Account

Account Setup

Account Name

DrupalNYC

Country

United States ▾

☐ Share data anonymously with Google and others ⊙

Container Setup

Container name

2020.drupalcamp.nyc

Target platform

🌐	**Web** For use on desktop and mobile web pages	✓
iOS	**iOS** For use in iOS apps	
🤖	**Android** For use in Android apps	
⚡	**AMP** For use in Accelerated Mobile Pages	
☁	**Server** For server-side instrumentation and measurement	BETA

Default GTM environments

Default Environments

Environment Name ↑	Version Name	Version ID	Actions
Live	Tito GA auto link domain	18	Actions ⌄
Latest	Tito GA auto link domain	18	Actions ⌄

Create our missing environments in GTM

✕ Dev

<div align="right">Create Environment</div>

Environment Configuration

Description

Click here to add description.

🚫 Enable Debugging by Default

Destination URL ⓘ

https://dev-drupalcampnyc.pantheonsite.io

← Environments   New

Custom Environments

Environment Name ↑	Version Name	Version ID	Actions
Test	Tito GA auto link domain	18	Actions ⌄
Dev	Tito GA auto link domain	18	Actions ⌄
Other	Tito GA auto link domain	18	Actions ⌄

Default Environments

Environment Name ↑	Version Name	Version ID	Actions
Live	Tito GA auto link domain	18	Actions ⌄
Latest	Tito GA auto link domain	18	Actions ⌄

Note gtm_auth and gtm_preview values for each environment

Share Preview   ✕

Share a preview of **Other**, which currently points to **Version 18**.

Description: Local environments, Pantheon MultiDev environments, etc.

Destination URL ⓘ

```
https://drupalcampnyc.lndo.site
```

S... the following preview link to whomever you want to preview ... container environment:

```
https...assistant.google.com/?waffles#source=TAG_MA...ER&id=GTM-
KJVG3No&gtm_auth=RCeOkCkKhSzZumh-hhqhUw&gtm_preview=env-
7&url=https%3A%2F%2Fdrupalcampnyc.lndo.site
```

Close

Disable Google Analytics module

✔️

Install google_tag and datalayer modules

```
composer require drupal/google_tag drupal/datalayer

drush en google_tag datalayer
```

Edit *Default Container* container

Label *

Default Container   🪪   Machine name: default_container [Edit]

Container settings

General

Advanced

Container ID *

GTM-KJVG3N6

The ID assigned by Google Tag Manager (GTM) for this website container. To get a container ID, sign up for GTM and create a container for your website.

Weight

0 ▼

The settings affecting the snippet contents for this container.

Edit *Default Container* container

Label *

| Default Container | [icon] |

Machine name: default_container [Edit]

Container settings

| General |
| Advanced |

Data layer *

| dataLayer |

The name of the data layer. Default value is "dataLayer". In most cases, use the default.

☐ Add classes to the data layer

If checked, then the listed classes will be added to the data layer.

☑ Include an environment

If checked, then the applicable snippets will include the environment items below. Enable **only for development** purposes.

Environment ID *

| env-7 |

The environment ID to use with this website container. To get an environment ID, select Environments, create an environment, then click the "Get Snippet" action. The environment ID and token will be in the snippet.

Environment token *

| RCeOkCkKhSzZumh-hhq |

The authentication token for this environment.

The settings affecting the snippet contents for this container.

```php
if (defined( name: 'PANTHEON_ENVIRONMENT')) {
  switch ($_ENV['PANTHEON_ENVIRONMENT']) {
    case 'dev':
      // Google Tag Manager Container Environment "Dev".
      $config['google_tag.container.default_container']['environment_id'] = 'env-6';
      $config['google_tag.container.default_container']['environment_token'] = 'yTTLj
      break;

    case 'test':
      // Google Tag Manager Container Environment "Test".
      $config['google_tag.container.default_container']['environment_id'] = 'env-5';
      $config['google_tag.container.default_container']['environment_token'] = 'd_NFG
      break;

    case 'live':
      // Google Tag Manager Container Environment "Live".
      $config['google_tag.container.default_container']['environment_id'] = 'env-1';
      $config['google_tag.container.default_container']['environment_token'] = 'KwMHO
      break;

    default:
      // Google Tag Manager Container Environment "Other".
      $config['google_tag.container.default_container']['environment_id'] = 'env-7';
      $config['google_tag.container.default_container']['environment_token'] = 'RCeOk

}
```

Configure dataLayer module

Home » Administration » Configuration » Search and metadata
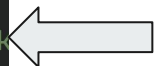
GLOBAL

■ Add entity meta data to pages

☐ Include taxonomy terms

☐ Include enabled field values
Exposes a checkbox on field settings forms to expose data.

☐ Include "data layer helper" library
Provides the ability to process messages passed to the dataLayer. See: data-layer-helper on GitHub.

▼ **ENTITY META DATA**

The meta data details to ouput for client-side consumption. Marking none will output everything available.

☐ created

☐ langcode

☐ name

☐ status

☐ uid

☐ uuid

■ vid

Configure dataLayer module

▼ PATH ARCHITECTURE

Settings for output of url path components.

☐ Enable IA
Output url path components as datalayer attributes.

Depth of paths

```
4
```

Define how many url path components get output in dataLayer.

Depth of paths

```
pathComponent0
```

Define the key for the primary path component.

Depth of paths

```
pathComponent
```

Define the key for sub-components (this value will get appended with numerical identifier).

▼ TAXONOMY

The vocabularies which should be output within page meta data. Marking none will output everything available.

☐ User - Accessibility needs

☐ User - Dietary restrictions

☐ Program item types

☐ Room

☐ Session - Helper add-ons

☐ Expertise Topics (Horizontal)

☐ Industry Tracks (Vertical)

Configure dataLayer module

▼ **USER DETAILS**

Details about the current user can be output to the dataLayer.

Expose user details

```
*
```

Pages that should expose active user details to the dataLayer. Leaving empty will expose nothing.

Expose user roles

- ☐ Authenticated user
- ☐ Administrator
- ☐ Content editor
- ☐ User manager
- ☐ Track chair
- ☐ Speaker

Roles that should expose active user details to the dataLayer. Leaving empty will expose for all roles.

Current User Meta Data

- ☐ name
- ☐ mail
- ☑ roles
- ☐ created
- ☐ access

The meta data details to ouput for client-side consumption. Marking none will output everything available.

- ☐ Include enabled user field values

Configure dataLayer module

Define keys used in the datalayer output. Keys for field values are configurable via the field edit form.

Entity title

entityTitle

Key for the title of an entity, e.g. node title, taxonomy term name, or username.

Entity type

entityType

Key for the type of an entity, e.g. node, user, or taxonomy_term.

Entity bundle

entityBundle

Key for the bundle of an entity, e.g. page, my_things.

Entity identifier

entityId

Key for the identifier of an entity, e.g. nid, uid, or tid.

Drupal language

siteLanguage

Key for the language of the site.

Drupal country

siteCountry

Key for the country of the site.

Drupal site name

siteName

Key for the site name value.

Exposed field sub-key replacements

0|

For exposed fields with a sub-array of field data, enter a replacement key using the format: returned_value|replacement

Configure GTM to pass data to GA

Workspace   Versions   Ad

CURRENT WORKSPACE

Default Workspace >

Overview

Tags

Triggers

Variables

Folders

Templates

Built-In Variables ⑦   🔍   Configure

Configure Built-In Variables ⦾

Pages

☑ Page URL

☑ Page Hostname

☑ Page Path

☑ Referrer

Utilities

☑ Event

☑ Environment Name

☐ Container ID

☐ Container Version

☐ Random Number

☐ HTML ID

Built-In Variables ⑦

🔍 **Configure**

Name ↑	Type
Environment Name	Environment Name
Event	Custom Event
Page Hostname	URL
Page Path	URL
Page URL	URL
Referrer	HTTP Referrer

User-Defined Variables

	Name ↑	Type
☐	Drupal Entity Bundle	Data Layer Variable
☐	Drupal Entity ID	Data Layer Variable
☐	Drupal Entity Title	Data Layer Variable
☐	Drupal Entity Type	Data Layer Variable
☐	Drupal Entity VID	Data Layer Variable
☐	Drupal User Roles	Data Layer Variable

☐	Drupal User UID (exc. 0)	Lookup Table
☐	Drupal User UID (inc. 0)	Data Layer Variable
☐	Drupal Users Roles (comma separated)	Custom JavaScript
☐	GA Property from Environment	Lookup Table
☐	GA Settings	Google Analytics Settings
☐	GA Tracking ID - Dev, Local	Constant
☐	GA Tracking ID - Live	Constant
☐	GA Tracking ID - Test	Constant

Save

Tag Configuration

Tag Type

Google Analytics: Universal Analytics
Google Marketing Platform

Track Type

Page View

Google Analytics Settings ⓘ

{{GA Settings}}

☐ Enable overriding settings in this tag ⓘ

› Advanced Settings

Triggering

Firing Triggers

👁 **All Pages**
Page View

2020.drupalcamp.nyc ▾

Search workspace

| Workspace | Versions | Admin | | GTM-KJVG3N6 | Preview | Submit |

CURRENT WORKSPACE

Default Workspace ❯

- Overview
- **Tags**
- Triggers
- Variables
- Folders
- Templates

Tags

🔍 New

☐	Name ↑	Type	Firing Triggers	Last Edited
☐	GA Universal Analytics - Page View	Google Analytics: Universal Analytics	👁 All Pages	4 months ago

Thank you!