



Example #2 of the GA4 Implementation  
instructions: dataLayers for GA4 Enhanced  
E-commerce tracking

# Case: Google Analytics 4 Enhanced E-commerce Implementation

## The business goal

We have worked with this client for more than 4 years and previously configured Enhanced E-commerce tracking for their Universal Analytics.

Then it came time to migrate to Google Analytics 4. Before implementation, we created a [Measurement Strategy](#).

## The solution

After finishing with the [Strategy](#), we started the implementation phase, based on it:

- We created this document with instructions for the client's developers.
- We created all necessary tags, triggers, and variables in the client's Google Tag Manager.
- We conducted all the necessary testing.

After GA4 implementation, we began working on the client's Google Ads campaign optimization, utilizing all the power of the collected GA4 E-commerce data.

## Want Google Analytics 4 properly configured for your website?

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- Submit any contact form on our website: <https://triodox.com/contact/>
- Or simply send an email to [ceo@triodox.com](mailto:ceo@triodox.com).

# Implementation of Google Analytics 4 on clientdomain.com

## Introduction

This guide outlines the implementation of new dataLayers on the website.

We will categorize tracked events into two main types:

- E-commerce Events: These events are directly related to e-commerce activities;
- Non-E-commerce Events: These events include other user interactions on the website that are not directly tied to e-commerce.

For each event, we have its dataLayer with a unique event name and set of parameters.

## E-commerce events that we will use

- view\_promotion
- select\_promotion
- view\_item
- add\_to\_cart
- remove\_from\_cart
- view\_cart
- add\_payment\_info
- add\_shipping\_info
- begin\_checkout
- purchase
- refund

## Other events that we will use

- login
- sign\_up
- share

## View Promotion

**Event code:** view\_promotion

We need to run JavaScript code below when a user *views* some internal promotion on the website: for example, the banner "Begin 2024 with Exceptional Savings".

dataLayers

```
dataLayer.push({
  event: 'view_promotion',
  ecommerce: {
    promotion_id: 'P_12345',
    promotion_name: 'Summer Banner'
  }
});
```

Parameters

Parameter	Example Value	Meaning
event	view_promotion	Identifies the event as a promotion view.
promotion_id	P_12345	The unique identifier for the promotion.
promotion_name	Summer Banner	The name of the promotion as shown to the user.

## User Selects a Promotion

**Event code:** select\_promotion

We need to run JavaScript code below when a user *clicks* on some internal promotion/banner on the website.

### Notes:

- We need to use this JavaScript code after any redirects that may happen after the click. The reason is that we need to have enough time for code execution and sending data to GTM and GA4.

### dataLayers

```
dataLayer.push({
  event: 'select_promotion',
  ecommerce: {
    promotion_id: 'P_12345',
    promotion_name: 'Summer Banner'
  }
});
```

### Parameters

Parameter	Example Value	Meaning
event	select_promotion	Identifies the event as a promotion selection.
promotion_id	P_12345	The unique identifier for the promotion.
promotion_name	Summer Banner	The name of the promotion as shown to the user.

## User Views Item Details

**Event code:** view\_item

We need to run the JavaScript code below when a user *views* a certain item on the website.

dataLayers

```
dataLayer.push({
  event: 'view_item',
  ecommerce: {
    currency: 'USD',
    value: 1.50,
    items: [{
      item_id: 'product_abcd1234',
      item_name: 'Bottle | 13.5 x 2',
      item_variant: '100x1',
      discount: 3.5,
      item_category: 'Bottles',
      item_category2: 'BLS',
      price: 25.00,
      quantity: 1
    }]
  }
});
```

## Parameters

Event parameters

Parameter	Example Value	Meaning
event	view_item	Identifies the event as an item view.
currency	USD	The currency of the item. <b>Note:</b> We need use only USD currency and all values should be converted into USD.

value	10.00	The price of the item in the specified currency.
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#### Item parameters

Parameter	Example Value	Meaning
item_id	product_abcd1234	The unique identifier for the item.
item_name	Bottles	The name of the item.
item_variant	100x1	The variant of the item, quantity, and sets.
discount	3.5	The monetary discount value is associated with the item.
item_category	Bottles	The main category of the item.
item_category2	SIML	The subcategory of the item.
price	5.00	The price of the item.
quantity	1	The quantity of bundles.  We use quantity as the number of bundles, instead of the actual "Quantity" field(which is used in the <i>item_variant</i> field)



## User Adds Item to Cart

Event code: add\_to\_cart

We should run the JavaScript code below when a user *adds a product to the cart*.

### Notes:

- If we have any redirects after the user adds something to the cart - the code should be used after them.

dataLayers

```
dataLayer.push({
  event: 'add_to_cart',
  ecommerce: {
    currency: 'USD',
    value: 1.50,
    items: [{
      item_id: 'product_abcd1234',
      item_name: 'Bottle | 13.5 x 2',
      item_variant: '100x1',
      discount: 3.5,
      item_category: 'Bottles',
      item_category2: 'BLS',
      price: 25.00,
      quantity: 1
    }]
  }
});
```

## Parameters

Event parameters

Parameter	Example Value	Meaning
event	add_to_cart	Identifies the event as an add-to-cart action.
currency	USD	The currency of the item.

		<b>Note:</b> We need use only USD currency and all values should be converted into USD.
value	10.00	The price of the item in the specified currency.

#### Item parameters

Parameter	Example Value	Meaning
item_id	product_abcd1234	The unique identifier for the item.
item_name	Bottles	The name of the item.
item_variant	100x1	The variant of the item: quantity and sets.
discount	3.5	The monetary discount value associated with the item.
item_category	Bottles	The main category of the item.
item_category2	SIML	The subcategory of the item.
price	5.00	The price of the item.
quantity	1	The quantity of bundles.  We use quantity as the number of bundles, instead of the actual "Quantity" field(which is used in the <i>item_variant</i> field)

## User Removes Item from Cart

**Event code:** remove\_from\_cart

We should run the JavaScript code below when a user *removes a product from the cart*.

### Notes:

- If we have any redirects after the user adds something to the cart - the code should be used after them.

dataLayers

```
dataLayer.push({
  event: 'remove_from_cart',
  ecommerce: {
    currency: 'USD',
    value: 1.50,
    items: [{
      item_id: 'product_abcd1234',
      item_name: 'Bottle | 13.5 x 2',
      item_variant: '100x1',
      discount: 3.5,
      item_category: 'Bottles',
      item_category2: 'BLS',
      price: 25.00,
      quantity: 1
    }]
  }
});
```

## Parameters

### Event parameters

Parameter	Example Value	Meaning
event	remove_from_cart	Identifies the event as an item removal from a cart.
currency	USD	The currency of the item.

		<b>Note:</b> We need use only USD currency and all values should be converted into USD.
value	10.00	The price of the item in the specified currency.

#### Item parameters

Parameter	Example Value	Meaning
item_id	product_abcd1234	The unique identifier for the item.
item_name	Bottles	The name of the item.
item_variant	100x1	The variant of the item: quantity and sets.
discount	3.5	The monetary discount value associated with the item.
item_category	Bottles	The main category of the item.
item_category2	SIML	The subcategory of the item.
price	5.00	The price of the item.
quantity	1	The quantity of bundles.  We use quantity as the number of bundles, instead of the actual "Quantity" field(which is used in the <i>item_variant</i> field)

## User Views Cart Contents

**Event code:** view\_cart

We need to run the following JavaScript-code when a *user views the shopping cart*.

dataLayers

```
dataLayer.push({
  event: 'view_cart',
  ecommerce: {
    currency: 'USD',
    value: 1.50,
    items: [{
      item_id: 'product_abcd1234',
      item_name: 'Bottle | 13.5 x 2',
      item_variant: '100x1',
      discount: 3.5,
      item_category: 'Bottles',
      item_category2: 'BLS',
      price: 25.00,
      quantity: 1
    }]
  }
});
```

## Parameters

### Event parameters

Parameter	Example Value	Meaning
event	view_cart	Identifies the event as a cart view.
currency	USD	The currency of the items in the cart. <b>Note:</b> We need use only USD currency and all values should be converted into USD.
value	10.00	The total value of the items in the cart.

### Item parameters

<b>Parameter</b>	<b>Example Value</b>	<b>Meaning</b>
item_id	product_abcd1234	The unique identifier for the item.
item_name	Bottles	The name of the item.
item_variant	100x1	The variant of the item, quantity, and sets.
discount	3.5	The monetary discount value associated with the item.
item_category	Bottles	The main category of the item.
item_category2	SIML	The subcategory of the item.
price	5.00	The price of the item.
quantity	1	The quantity of bundles.  We use quantity as the number of bundles, instead of the actual "Quantity" field(which is used in the <i>item_variant</i> field)

## User Begins Checkout Process

**Event code:** begin\_checkout

We need to run the following code after the user starts the checkout process.

dataLayers

```
dataLayer.push({
  event: 'begin_checkout',
  ecommerce: {
    currency: 'USD',
    value: 1.50,
    items: [{
      item_id: 'product_abcd1234',
      item_name: 'Bottle | 13.5 x 2',
      item_variant: '100x1',
      discount: 3.5,
      item_category: 'Bottles',
      item_category2: 'BLS',
      price: 25.00,
      quantity: 1
    }]
  }
});
```

## Parameters

### Event parameters

Parameter	Example Value	Meaning
event	begin_checkout	Identifies the event as the beginning of the checkout process.
currency	USD	The currency of the items in the cart. <b>Note:</b> We need use only USD currency and all values should be converted into USD.
value	10.00	The total value of the items in the cart.

## Item parameters

<b>Parameter</b>	<b>Example Value</b>	<b>Meaning</b>
item_id	product_abcd1234	The unique identifier for the item.
item_name	Bottles	The name of the item.
item_variant	100x1	The variant of the item: quantity and sets.
discount	3.5	The monetary discount value associated with the item.
item_category	Bottles	The main category of the item.
item_category2	SIML	The subcategory of the item.
price	5.00	The price of the item.
quantity	1	The quantity of bundles.  We use quantity as the number of bundles, instead of the actual "Quantity" field(which is used in the <i>item_variant</i> field)



## User Adds Shipping Information

**Event code:** add\_shipping\_info

We need to run this JavaScript code *after a user is submitted shipping details*.  
If we have some redirects after that - we need to execute the code after the redirect.

dataLayers

```
dataLayer.push({
  event: 'add_shipping_info',
  ecommerce: {
    currency: 'USD',
    value: 1.50,
    shipping_tier: 'Expedited Service',
    items: [{
      item_id: 'product_abcd1234',
      item_name: 'Bottle | 13.5 x 2',
      item_variant: '100x1',
      discount: 3.5,
      item_category: 'Bottles',
      item_category2: 'BLS',
      price: 25.00,
      quantity: 1
    }]
  }
});
```

## Parameters

Parameter	Example Value	Meaning
event	add_shipping_info	Identifies the event as adding shipping information.
currency	USD	The currency of the items in the cart. <b>Note:</b> We need use only USD currency and all values should be converted into USD.
value	10.00	The total value of the items in the cart.

shipping_tier	Expedited Service	The shipping tier selected by the user.
---------------	-------------------	---

#### Item parameters

Parameter	Example Value	Meaning
item_id	product_abcd1234	The unique identifier for the item.
item_name	Bottles	The name of the item.
item_variant	100x1	The variant of the item: quantity and sets.
discount	3.5	The monetary discount value associated with the item.
item_category	Bottles	The main category of the item.
item_category2	SIML	The subcategory of the item.
price	5.00	The price of the item.
quantity	1	The quantity of bundles.  We use quantity as the number of bundles, instead of the actual "Quantity" field(which is used in the <i>item_variant</i> field)

## User Adds Payment Information

**Event code:** add\_payment\_info

We should run this JavaScript code *after a user is submitted payment information*.  
If we have some redirects after that - we need to execute the code after the redirect.

dataLayers

```
dataLayer.push({
  event: 'add_payment_info',
  ecommerce: {
    currency: 'USD',
    value: 1.50,
    coupon: 'SALE15',
    payment_type: 'Paypal',
    items: [{
      item_id: 'product_abcd1234',
      item_name: 'Bottle | 13.5 x 2',
      item_variant: '100x1',
      discount: 3.5,
      item_category: 'Bottles',
      item_category2: 'BLS',
      price: 25.00,
      quantity: 1
    }]
  }
});
```

## Parameters

Event parameters

Parameter	Example Value	Meaning
event	add_payment_info	Identifies the event as adding payment information.
currency	USD	The currency of the items in the cart.

		<b>Note:</b> We need use only USD currency and all values should be converted into USD.
value	10.00	The total value of the items in the cart.
coupon	SALE15	The code of the coupon used.
payment_type	Paypal	The type of payment selected by the user.

#### Item parameters

Parameter	Example Value	Meaning
item_id	product_abcd1234	The unique identifier for the item.
item_name	Bottles	The name of the item.
item_variant	100x1	The variant of the item: quantity and sets.
discount	3.5	The monetary discount value associated with the item.
item_category	Bottles	The main category of the item.
item_category2	SIML	The subcategory of the item.
price	5.00	The price of the item.
quantity	1	The quantity of bundles.  We use quantity as the number of bundles, instead of the actual "Quantity" field(which is used in the <i>item_variant</i> field)

## User Completes a Purchase

**Event code:** purchase

We need to run the JavaScript code below after the user makes a purchase(payment was successful).

### Notes:

- We need to run the code **only once per unique order**.  
Even if a user reloads the thank-you page, or opens it from bookmarks later - **we should not execute this code**.  
Otherwise, orders will be duplicated(as well as Revenue and other numbers).

dataLayers

```
dataLayer.push({
  event: 'purchase',
  ecommerce: {
    currency: 'USD',
    transaction_id: '12345ABC',
    value: 52.5,
    coupon: 'SALE15',
    shipping: 20.00,
    tax: 10.00,
    items: [{
      item_id: 'product_abcd1234',
      item_name: 'Bottle | 13.5 x 2',
      item_variant: '100x1',
      discount: 3.5,
      item_category: 'Bottles',
      item_category2: 'BLS',
      price: 25.00,
      quantity: 15
    }]
  }
});
```

## Parameters

### Event parameters

Parameter	Example Value	Meaning
event	purchase	Identifies the event as a completed purchase.
currency	USD	The currency of the purchase. <b>Note:</b> We need use only USD currency and all values should be converted into USD.
transaction_id	12345ABC	A unique identifier for the purchase.
value	52.5	The total value of the purchase, including shipping and cost.
coupon	SALE15	The code of the coupon used.
shipping	20.00	The shipping cost of the purchase.
tax	10.00	The tax charged on the purchase.

### Item parameters

Parameter	Example Value	Meaning
item_id	product_abcd1234	The unique identifier for the item.
item_name	Bottles	The name of the item.
item_variant	100x1	The variant of the item: quantity and sets.
discount	3.5	The monetary discount value associated with the item.
item_category	Bottles	The main category of the item.
item_category2	SIML	The subcategory of the item.

price	5.00	The price of the item.
quantity	1	The quantity of bundles.  We use quantity as the number of bundles, instead of the actual "Quantity" field(which is used in the <i>item_variant</i> field)

## User Makes a Refund

**Event code:** refund

The code below should be executed when a user **makes a refund**.

dataLayers

```
dataLayer.push({
  event: 'refund',
  ecommerce: {
    currency: 'USD',
    transaction_id: '12345ABC',
    value: 1.50,
    coupon: 'SALE15',
    shipping: 5.00,
    tax: 2.00,
    items: [{
      item_id: 'product_abcd1234',
      item_name: 'Bottle | 13.5 x 2',
      item_variant: '100x1',
      discount: 3.5,
      item_category: 'Bottles',
      item_category2: 'BLS',
      price: 25.00,
      quantity: 1
    }]
  }
});
```

## Parameters

Event parameters

Parameter	Example Value	Meaning
event	refund	Identifies the event as a refund.
currency	USD	The currency of the refund. <b>Note:</b> We need use only USD currency and all values should be converted into USD.
transaction_id	12345ABC	The ID of the purchase that was refunded.



value	52.5	The total value of the purchase, including shipping and cost.
coupon	SALE15	The code of the coupon used for the purchase.
shipping	20.00	The shipping cost of the purchase.
tax	10.00	The tax is charged on the purchase.

Item parameters

Parameter	Example Value	Meaning
item_id	product_abcd1234	The unique identifier for the item.
item_name	Bottles	The name of the item.
item_variant	100x1	The variant of the item, quantity, and sets.
discount	3.5	The monetary discount value associated with the item.
item_category	Bottles	The main category of the item.
item_category2	SIML	The subcategory of the item.
price	5.00	The price of the item.
quantity	1	The quantity of the item.

## User Logs In

**Event code:** login

The code below should be executed when a user *logs in to the website*.

dataLayers

```
dataLayer.push({  
  event: 'login',  
  method: 'Google'  
});
```

### Parameters

Parameter	Example Value	Meaning
event	login	Identifies the event as user login.
method	Google	The method that the user used to log in. For example, Google, Facebook, or Email.

## User Signs Up

**Event code:** sign\_up

The code below should be executed when a user *user signs up for a website*.

dataLayers

```
dataLayer.push({  
  event: 'sign_up',  
  method: 'Email'  
});
```

### Parameters

Parameter	Example Value	Meaning
event	sign_up	Identifies the event as a user sign-up.
method	Email	The method that the user used to log in. For example, Google, Facebook, or Email.

## User Shares Content

**Event code:** share

We should run this code when *a user shares website content*.

dataLayers

```
dataLayer.push({  
  event: 'share',  
  method: 'Facebook'  
});
```

Parameters

Parameter	Example Value	Meaning
event	share	Identifies the event as a content share.
method	Facebook	The method that the user used to share content. For example, Facebook, Twitter, or Email.

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- Or simply send an email to [ceo@triodox.com](mailto:ceo@triodox.com)