

## **File Name: segment.txt**

Content:

### Segment Documentation

Learn how to use Segment to collect, responsibly manage, and integrate your customer data with hundreds of tools.

### Getting started with Segment

Learn about Segment, plan and work through a basic implementation, and explore features and extensions.

### How can Segment help you?

#### Simplify data collection

Integrate the tools you need for analytics, growth, marketing, and more.

#### Protect data integrity

Prevent data quality issues with a tracking schema and enforcement with Protocols.

#### Personalize experiences

Build audiences and journeys from real-time customer data to personalize experiences on every channel.

#### Respect users' privacy

Keep customer data private with Segment's data discovery and policy enforcement tools.

### Get Data into Segment

The Segment Spec helps you identify, capture, and format meaningful data for use with Segment libraries and APIs as well as downstream tools.

### Segment calls

Use Track, Page, Identify, and other Segment tracking calls.

## Common traits

Save time by letting Segment calls collect information for you.

## Use case specs

Use our business-case specs to ensure that your tools get the most from your data.

## Learning about Segment

### Segment for Developers

The basics of your Segment implementation.

### How-To Guides

Over a dozen how-to guides that help you accomplish common tasks.

### Connect your app to Segment

#### JavaScript

#### Swift

### All other Sources

### Additional Resources

### Totally new to Analytics?

Segment's Analytics Academy walks you through the wide world of analytics, including best practices, an overview of the most popular tools, and case studies of how other developers have achieved success.

### Want more hands-on guidance?

For a more hands-on tutorial of Segment, check out Segment University. It offers step-by-step instructions, starting with first steps and going through some of our more advanced features.

[Home](#)

[/](#)

[What is Segment?](#)

[What is Segment?](#)

With Segment, you can collect, transform, send, and archive your first-party customer data. Segment simplifies the process of collecting data and connecting new tools, allowing you to spend more time using your data, and less time trying to collect it. You can use Segment to track events that happen when a user interacts with the interfaces. Interfaces is Segments generic word for any digital properties you own: your website, mobile apps, and processes that run on a server or OTT device.

When you capture interaction data in Segment, you can send it (often in real-time) to your marketing, product, and analytics tools, as well as to data warehouses. In most cases, you wont even need to touch your tracking code to connect to new tools.

[next](#)

[Ready to get started?](#)

Let's walk through the steps to get up and running on Segment. Let's go!

This page was last modified: 14 Dec 2021

[How Segment Works](#)

In a nutshell, the Segment libraries (Sources) generate messages about whats happening in your site or app, and send them to the Segment servers. Segment then translates the content of those messages into different formats for use by other tools (which Segment calls Destinations), and sends the translated messages to those tools. The Segment servers also archive a copy of the data, and can send data to your storage systems (such as databases, warehouses, or bulk-storage buckets).

## Overview

Diagram showing that data is routed from your sources, through Segment, and downstream to your destinations.

Segment Spec methods are how you collect interaction data from your interfaces, and the Sources are what you package with your interfaces to collect and route the data.

Once you've collected your interaction data, there are several different actions you can take:

Send it to Destinations, which receive the data from any number of sources in real time

Send it to Warehouses and other bulk storage tools, which hold your raw event schemas and update on regular intervals

Enrich the customer data you collect by connecting data from your other tools, and then collect it in a warehouse to monitor performance, inform decision-making processes, and create uniquely customized user experiences.

Use Engage, Twilio's marketing automation tool, to build marketing campaigns personalized to your audience.

### Sources for collecting data

You can collect data by implementing Segments tracking libraries as your Sources:

Analytics.js, the Segment JavaScript source, is the most powerful way to track customer data from a website. Segment recommends it as the default installation for any website.

The Segment Mobile SDKs are the best way to simplify tracking in your iOS, Android, and Xamarin apps. Segment recommends them over server-side sources as the default installation for any mobile app.

Server-side sources let you send analytics data directly from your servers when client-side tracking doesn't work, or when you're sending mission-critical data like revenues.

### Sources for unique cases

Segment also offers these other source libraries to cover less straightforward cases:

Use the HTTP Tracking API if Segment doesn't offer a library for your specific environment yet.

The Pixel Tracking API lets you track events from environments where you can't execute code - for example, tracking when an email was opened.

The Querystring API lets you use querystrings to load API methods when a user first visits a Segment-enabled site. Use this API for tracking events like email clicks and identifying users associated with those clicks on the destination page.

## Cloud App Sources

Segment also offers Cloud App Sources to integrate data from your third-party tools:

Object Cloud Sources can import third party tool data directly into your Segment warehouse, but can't stream that data into your other Segment destinations. Make sure you enable a Segment warehouse before you enable an object cloud source.

Event Cloud Sources don't just import third party tool data into your Segment warehouse, they also send event data in real-time to your other Segment destinations. You don't need to set up a data warehouse to send Event Cloud Source data to your destinations.

## How you can track data

Segment supports several ways to implement tracking. The two most common are to use device-based or server-based libraries. You can use Segments device-based libraries, such as JavaScript, iOS, and Android, to make calls on users' browsers or mobile devices. You can also track data with Segments server-based libraries, such as Node, Python, or PHP, where the calls are triggered on your own servers and then sent to the Segment servers.

When you collect data using device-based libraries, you can choose between these two different connection modes:

Cloud-mode is where the library sends the data directly to the Segment servers which then translate and forward it.

Device-mode is where the library sends the data both directly to the Segment servers, and also to the servers for the destination tool. Device-mode sometimes requires some additional set-up steps, but can unlock rich device data.

Although there are some tradeoffs between the two approaches, neither is better than the other, and Segment recommends that you implement a mix of both. In general, more direct interaction data is available using a device-based library, but server-based collection is more secure, reliable, and can't be blocked by ad blockers.

## The Segment Methods

The Segment libraries generate messages about what happens on your interface, translate those messages into different formats for use by destinations, and transmit the messages to those tools.

There are several tracking API methods, that you can call to generate messages. The four most important methods are:

Identify: Who is the user?

Page and Screen: What web page or app screen are they on?

Track: What are they doing?

Every call shares the same common fields. When you use these methods as intended, it allows Segment to detect a specific type of data and correctly translate it to send it on to downstream destinations.

## Where you can send data

Segment maintains a catalog of destinations where you can send your data.

"""

[back](#)

[Getting Started Overview](#)

[next](#)

[A simple Segment installation](#)

Walk through a disposable, demo implementation.

This page was last modified: 21 Apr 2023

[Getting Started Guide](#)

Welcome to Segment! This doc mirrors Segments in-product guide, and walks you through each of the tasks to level up your workspace strength and become familiar with Segment.

The guide is broken into three categories of tasks:

**Basics:** These tasks allow you to send and debug your first data through Segment.

**Instrumentation:** These tasks allow you to send additional types of data (track & identify) and give you an introduction to creating a data strategy.

**Optimization:** These tasks guide you to expand your data coverage and optimize your workspace.

## Basics

The tasks included in Basics help you send and debug your very first data from a Source (a library that sends data to Segment), and into a Destination (tools you use to analyze or act on your data).

The Basic tasks include:

Invite teammates

Add a Source

Add page or screen tracking

Add a Destination

Testing and Debugging

Invite Teammates

Segment allows you to invite team members to your workspace. To decide who on your team should be added to Segment, think about who might be responsible for implementing, owning, or using your data in downstream tools.

For example, as a developer, you might invite:

Marketing colleagues to inform what data might be needed to power campaigns or better understand conversion

metrics,

A data scientist or analyst to help inform data strategy and property structuring,

Product managers to help debug data flow, and to connect product analytics tools

To invite team members to your workspace:

Go to Settings > Workspace Settings and click the Access Management tab.

Click + Invite Team Member.

Enter the email addresses of the team members you want to invite separated by a comma.

(Optional) You can choose to Add Members to User Groups so that members inherit roles from user groups, or Add

Individual Roles to bulk assign individuals roles to all invites.

Click Invite.

Add a Source

A Source is a website, server library, mobile SDK, or cloud application which can send data into Segment. Its where your data originates. Add a Source to collect data to understand who your customers are and how theyre using your product. Create a source for each website or app you want to track.

To add a Source:

Go to Connections.

Click Add Source.

Click the Source youd like to add. Note: More than 80% of workspaces start by adding their JavaScript website.

Click Add Source.

Enter a name for your source as well as any information on the setup page.

Click Add Source.

Learn More

What is a Source?



Create a Source

Sources Catalog

Add page or screen tracking

Once you've added your Segment Source, you're ready to send data into Segment. The simplest data to send into Segment is a Page call (for website Sources) or Screen call (for mobile Sources). Page and screen calls send automatically once you install the Segment snippet or SDK on your website or mobile app. Page and screen calls allow you to record whenever a user sees a page of your website or screen of your app, along with any optional properties about the page or screen.

Learn how to install the Segment snippet or SDK on your website or mobile app to start sending data.

Learn More

Install Segment

Spec: Page

Spec: Screen

Add a Destination

Destinations are the business tools or apps that Segment forwards your data to. Adding Destinations allow you to act on your data and learn more about your customers in real time.

To add a Destination:

Navigate to Connections.

Click Add Destination.

Choose the Destination you want to add and click Configure. Most users eventually add destinations for: Analytics, Advertising, Email Marketing, and/or Live Chat.

Select the Source you want to connect to your Destination.

Click Next.

Give your Destination a name.

Click Save.

Configure the settings and enable your destination on the destination settings page.

[Learn More](#)

[Sending data to destinations](#)

[Destination compatibility](#)

[Destination connection modes](#)

[Testing and Debugging](#)

The Source Debugger is a real-time tool that helps you validate that API calls made from your website, mobile app, or servers arrive at your source. You can use the Source Debugger to make sure that your source functions properly and your events actively send.

The Debugger shows a live stream of events that flow through your Segment Source, so that you can check that your events send in the correct format. When you click on a specific event, you'll be able to see these two views of an event:

The Pretty view is a recreation of the API call you made that was sent to Segment.

The Raw view is the complete JSON object Segment receives from the calls you send. These calls include all the details about what is tracked: timestamps, properties, traits, ids, and contextual information Segment automatically collects the moment the data is sent.

To access your Source Debugger:

Navigate to **Connections > Sources** and choose your source.

Click on the **Debugger** tab.

[Learn More](#)

Testing and Debugging

Using the Source Debugger

Segment University: Testing and Debugging

Instrumentation

The tasks in this phase help you create a data strategy and send additional types of data (identify and track calls) to get a clearer picture of who your users are and what actions they're taking.

The Instrumentation tasks include:

Basics

Invite Teammates

Add a Source

Add page or screen tracking

Add a Destination

Testing and Debugging

Instrumentation

Send an Identify call

Send a Track call

Choose what to track

Event anatomy and naming standards

Add a data warehouse

Add more destinations

Optimization

Add more sources

Add a cloud source

Explore Protocols

Explore Engage

## Send an Identify call

The Identify call allows you to tie a user to their actions and record traits about them. It includes a unique User ID and any optional traits you know about the user, like their email, name, and address. Sending an Identify call is your first step towards understanding who your users are.

An example of the types of details you might want to learn and track about your users in an Identify call are:

Name

Email

Address

Company

Lifetime Value

[Learn More](#)

Spec: Identify

Plan your identify and group calls

Segment University: Identify

## Send a Track call

The Segment Track call allows you to record any actions your users perform, along with any properties that describe the action. Sending a track call is your first step towards understanding what your users are doing.

Each action that a user takes is known as an event. Each event has a name and properties. For example, the User Registered event might have properties like plan or accountType.

To save time on instrumentation, be sure to check if one of Segments Business Specs meets your needs.

[Learn More](#)

Spec: Track

Best practices for event calls

Analytics Academy: The anatomy of a track call

Segment University: The Track Method

Choose what to track

Segment recommends you to create and maintain a Tracking Plan to have data clarity and team alignment about what customer data you need to collect and why. Its best to think about the measurable business outcomes youre trying to track or improve, and then drill down to track the events needed for each business outcome.

For example, if youre looking to reduce cart abandonment, you may want to engage cart abandoners by sending emails and in-app messaging to them using Customer.io and Intercom. You also might want to track events like Product Added or Cart Viewed along this customer journey.

Segment maintains a number of industry or product-specific specs to help you get started:

B2B

Ecommerce

Video

Mobile

Learn More

Data Collection Best Practices

Analytics Academy: How to create a successful data tracking plan

Segment University: Planning your implementation

Event anatomy and naming standards

When it comes to data collection, the best way to set your company up for success is to establish consistent naming

conventions. This makes your code easier to read, and it helps everyone at your company understand what your events mean.

Segment recommends the best practice of using an Object Action (Noun Verb) naming convention for all Track events (for example, Menu Clicked) and using noun\_noun snake case for property names (for example, property\_name). You can view all the event names you're currently tracking in the Schema view to ensure you're using consistent conventions and casing.

To view your event names in the Source Schema:

Navigate to Connections > Sources.

Click on the Source you want to view.

Click on the Schema tab. Your event names are listed in the table.

[Learn More](#)

Event naming best practices

[Analytics Academy: Naming conventions for clean data](#)

Add a data warehouse

A data warehouse is a central location where you can store your raw customer data from multiple sources. A data warehouse gives you flexibility to query your data, which allows you to answer analytical questions that may not be possible with a standard analytics tool.

A data warehouse also allows you to collect and compile data from third party tools as Cloud Sources in Segment, to help you gain a 360 view of your customer touchpoints.

[Learn More](#)

Whats a warehouse?

Warehouse FAQs

Analytics Academy: Why you should own your data

Add more destinations

Adding more destinations allows you to connect all your business tools to run through Segment. This gives you the confidence that they are all acting on the same data. Most users connect a variety of marketing, advertising, product, and analytics tools.

With all your tools acting on the same set of customer data, you can personalize your customer engagement and deliver a consistent message across multiple channels

To add more destinations:

Navigate to Connections.

Click Add Destination.

Choose the Destination you want to add and click Configure. Most users eventually add destinations for: Analytics, Advertising, Email Marketing, and/or Live Chat.

Select the Source you want to connect to your Destination.

Click Next.

Give your Destination a name.

Click Save.

Configure the settings and enable your destination on the destination settings page.

Repeat steps 1-7 for each destination you want to add.

[Learn More](#)

Segment Blog: Recipes

Automating Multi-Channel Re-Engagement Campaigns

## Optimization

The tasks in this phase help you to optimize your Segment implementation and take it to the next level.

The optimization tasks include:

Add more sources

Add a cloud source

Explore Protocols

Explore Engage

Add more sources

Adding any additional data sources that you might have, like a mobile app, marketing website, server, or cloud tool will give you a more complete view of your customer. Each touchpoint you have with your customers is a potential area to gain a better understanding of them.

To add more sources:

Go to Connections.

Click Add Source.

Click the Source youd like to add.

Click Add Source.

Enter a name for your source as well as any information on the setup page.

Click Add Source.

Repeat steps 1-6 for all the other sources you want to add.

Learn More

Tracking users across channels and devices

Sources catalog



## Add a cloud source

Cloud sources allow you to pull in customer data from third-party tools (like Twilio or Stripe) into a data warehouse for complex querying. Consolidating your customer data enables you to eliminate data silos to get a single view of your customer.

Before adding a cloud source, you need to make sure you:

Get cloud source credentials.

Get warehouse credentials.

Choose your preferred sync time.

Once you have the necessary credentials, to add a cloud source:

Navigate to Connections and click Add Source.

Click on the cloud source you want to add and click Add Source.

Give your cloud source a name and click Authenticate.

Enter your credentials or log in using OAuth.

Enable the source.

Navigate to Connections > Destinations and select your warehouse.

On the Settings tab of your warehouse, enter the credentials for your warehouse if you don't already have one connected to Segment.

[Learn More](#)

## Cloud sources

### Comparing Cloud Sources

### Explore Protocols

Protocols automate and scale the data quality best practices developed over years of helping users implement Segment. Investing in data quality improves trust in your data, reduces time spent by your engineering and business

teams navigating and validating data, and allows your business to grow faster.

There are steps to take when you use Protocols:

Align teams with a Tracking Plan

Validate data quality with violations

Enforce data standards with controls

Resolve data issues with transformations

[Learn More](#)

[Protocols Overview](#)

[Protocols FAQs](#)

[Intro to Protocols](#)

[Explore Engage](#)

Engage is a powerful personalization platform that enables you to create unified customer profiles in Segment, to build and enrich audiences, and to activate audiences across marketing tools.

Engage allows you to enrich user profiles with custom traits, allowing you to create granular audiences for campaigns, advertising, and analysis.

This page was last modified: 24 Jan 2023

[A Basic Segment Installation](#)

When you implement Segment, you add Segment code to your website, app, or server. This code generates messages based on specific triggers you define.

In a basic implementation, the code can be a snippet of JavaScript that you copy and paste into the HTML of a website

to track page views. It can also be as complex as Segment calls embedded in a React mobile app to send messages when the app is opened or closed, when the user performs different actions, or when time based conditions are met (for example ticket reservation expired or cart abandoned after 2 hours).

The best way to learn about how Segment works is to see it in action. This tutorial walks you through an installation using one of Segments libraries: JavaScript, PHP, or the iOS library.

Before you begin

Before you start your Segment implementation, you need:

A Segment user account and a workspace. If you're not already part of an organization with a Segment Workspace, you can sign up for a free account and workspace.

Access to the code for a basic website, PHP website, or an iOS app.

Tip! If you don't have any of those things, consider creating a simple GitHub Pages website.

Create separate dev and prod sources

When you develop and test sources, Segment recommends you to create and use separate sources for each of your environments (production, development, staging) to prevent testing and development activities from filling production systems with invalid data.

You can give each source an environment label when you create it, and Segment strongly suggests that you use these labels to sort your sources. When you create a source during the steps below, make sure you enter an environment label.

Double-check when you enter write keys for dev and production environments to make sure that you send the right data to the right place.

## Create a Segment source

To create a Segment source:

Go to your Segment workspace, and navigate to the Sources catalog.

Select your source. You can choose from either the Javascript source, the PHP source, or the iOS source.

Click Add Source.

Enter a name for the source. Segment recommends that you include the word demo, test, or quickstart in the name so you can easily find and delete this source later.

(Optional) Add an Environment label of dev to the source in the Labels field. Segment recommends you do this so that you know this demo source isn't part of a production installation.

(Optional) Add the website URL. Segment provides this field so that you can flag the website being tracked to the source. Segment does not use this URL anywhere else.

### Find your write key

The write key is a unique identifier for a source that tells Segment which source the data comes from, to which workspace the data belongs, and which destinations should receive the data.

To find your write key:

Go to Connections > Sources and select your source.

Click the Settings tab for the source and click API Keys.

Make note of or write down your write key, as you'll need it in the next steps.

Any time you change a library's settings in the Segment App, the write key regenerates.

Screenshot of a source's settings page, with the API Keys tab selected.

Cloud-sources do not have write keys, as they use a token or key from your account with that service. Cloud-sources

have other considerations and aren't part of this tutorial.

## Installing Segment

Click a tab below to see the tutorial content for the specific library you chose.

JavaScript quickstart

iOS Mobile quickstart

PHP quickstart

### Step 1: Copy the Snippet

Navigate **Connections > Sources > JavaScript** in the Segment app and copy the snippet from the JavaScript Source overview page and paste it into the `<head>` tag of your site.

That snippet loads `Analytics.js` onto the page asynchronously, so it won't affect your page load speed. Once the snippet runs on your site, you can turn on destinations from the destinations page in your workspace and data starts loading on your site automatically.

**Note:** If you only want the most basic Google Analytics setup you can stop reading right now. You're done! Just toggle on Google Analytics from the Segment App.

The Segment snippet version history is available on GitHub. Segment recommends that you use the latest snippet version whenever possible.

### Step 2: Identify Users

The identify method is how you tell Segment who the current user is. It includes a unique User ID and any optional traits you know about them. You can read more about it in the [identify method reference](#).

Note: You don't need to call identify for anonymous visitors to your site. Segment automatically assigns them an `anonymousId`, so just calling `page` and `track` works just fine without identify.

Here's an example of what a basic call to identify might look like:

```
analytics.identify('f4ca124298', {  
  
  name: 'Michael Brown',  
  
  email: 'mbrown@example.com'  
  
});
```

This identifies Michael by his unique User ID (in this case, `f4ca124298`, which is what you know him by in your database) and labels him with name and email traits. When you put that code on your site, you need to replace those hard-coded trait values with the variables that represent the details of the currently logged-in user.

To do that, Segment recommends that you use a backend template to inject an identify call into the footer of every page of your site where the user is logged in. That way, no matter what page the user first lands on, they will always be identified. You don't need to call identify if your unique identifier (`userId`) is not known.

Depending on your templating language, your actual identify call might look something like this:

```
analytics.identify('{{user.id}}', {  
  
  name: '{{user.fullname}}',  
  
  email: '{{user.email}}'  
  
});
```

With that call in your page footer, you successfully identify every user that visits your site.

Note: If you only want to use a basic CRM set up, you can stop here. Just enable Salesforce, Intercom, or any other CRM system from your Segment workspace, and Segment starts sending all of your user data to it.

### Step 3: Track Actions

The track method is how you tell Segment about the actions your users are performing on your site. Every action triggers what Segment calls an event, which can also have associated properties. You can read more about track in the [track method reference](#).

Here's an example of what a call to track might look like when a user signs up:

```
analytics.track('Signed Up', {  
  
  plan: 'Enterprise'  
  
});
```

This example shows that your user triggered the Signed Up event and chose your hypothetical 'Enterprise' plan.

Properties can be anything you want to record, for example:

```
analytics.track('Article Bookmarked', {  
  
  title: 'Snow Fall',  
  
  subtitle: 'The Avalanche at Tunnel Creek',  
  
  author: 'John Branch'  
  
});
```

If you're just getting started, some of the events you should track are events that indicate the success of your site, like Signed Up, Item Purchased or Article Bookmarked. Segment recommends that you track a few important events as you can always add more later.

Once you add a few track calls, you're done with setting up Segment. You successfully installed Analytics.js tracking. Now you're ready to turn on any destination you like from the Segment App.

Test that it's working

Once you've set up your Segment library, and instrumented at least one call, you can look at the Debugger tab for the Source to check that it produces data as you expected.

The Source Debugger is a real-time tool that helps you confirm that API calls made from your website, mobile app, or servers arrive at your Segment Source, so you can quickly see how calls are received by your Segment source, so you can troubleshoot quickly without having to wait for data processing.

Screenshot of a source's Debugger, with a Track call selected and the Pretty view for a sample event.



The Debugger is separate from your workspaces data pipeline, and is not an exhaustive view of all the events ever sent to your Segment workspace. The Debugger only shows a sample of the events that the Source receives in real time, with a cap of 500 events. The Debugger is a great way to test specific parts of your implementation to validate that events are being fired successfully and arriving to your Source.

Tip: To see a more complete view of all your events, you might consider setting up either a warehouse or an S3 destination.

The Debugger shows a live stream of sampled events arriving at the Source, but you can also toggle from Live to Pause to stop the stream and prevent it from displaying new events. Events continue to arrive to your Source while you Pause the stream, they just are not displayed.

You can search on any information you know is available in an event payload to search in the Debugger and show only matching payloads. You can also use advanced search options to limit the results to a specific event.

Screenshot of the Event Debugger Advanced settings.

Two views are available when viewing a payload:

The Pretty view is a recreation of the API call you made that was sent to Segment.

The Raw view is the complete JSON object Segment received from the calls you sent. These calls include all the details about what is being tracked: timestamps, properties, traits, ids, and contextual information Segment automatically collects the moment the data is sent.

Set up your first destination

Once youre satisfied that data is arriving from your new source, its time to set up your first destination! As long as you have page or screen data coming from the source, you can quickly enable Google Analytics to look at the page view statistics.

If you don't have a Google Analytics account, you can either set up a free account, or look at the Destination Catalog for a different destination to enable.

You'll need a tracking ID for Google Analytics (either a website or serverside tracking ID), or another API key if you're substituting another destination. Make a note of this ID or key as you'll need it to connect your destination.

To set up your first destination:

Go to your Segment workspace, click Destinations, and click Add Destination to go to the Catalog.

Search for the destination you want to add. In this case, search for Google Analytics.

Click the tile for the destination to see information about it.

Click Configure Google Analytics.

Select the source that you set up earlier in this quickstart, then click Confirm Source.

On the settings page, locate the setting line for the tracking ID or other API key to connect to your destination.

Enter the ID or API key and click Save.

Click Back to Destination, then click the toggle to enable the destination.

Congratulations! Data is now flowing from the source you set up, to the first destination. Do some test browsing on your site or app, then log in to your downstream tool to see the data in place.

You can click around and load pages to see your Segment calls in action, watch them arrive in the Debugger, and see them arrive in the destination tool.

Note: When you're done with this test source and destination, you can delete them. This prevents you from getting unplanned demo data in your production environment later.

[back](#)

## What is Segment

The basics of the Segment platform and what you can do with it.

next

## Planning a Full Installation

Think through your goals, plan your calls, and set yourself up for success.

This page was last modified: 13 Aug 2024

## Planning a Full Installation

Now that you've seen Segment in action, step back and think through what a full implementation of Segment for your organization would look like. Figuring out what events to track in Segment can feel overwhelming. You should expect this planning process to have the following steps:

### Define Business Objectives

Decide what to collect

Shortcut: Check if a Business Spec meets your needs

B2B Spec

Ecommerce Spec

Mobile Spec

Video Spec

Create naming conventions

Develop a Tracking Plan

Plan your Identify and Group calls

Plan your Track events

Define your Track event properties

Plan for destination tools

Be prepared to invest time deciding with stakeholders how to track your data, and planning how you'll analyze it. The time you spend here will save you lots of time in the future, as following Segments best practices allows you to easily change your tracking later.

## Define Business Objectives

Tracking is about learning and taking action. Think about what you want to know about your product or customers. Think about what assumptions need to be tested and what theories need to be proven true or false. Think about the unknowns. Here are some helpful questions to get started:

What kind of events or data best illustrate or explain how your customers use your product?

How do people discover, start using, and paying for your product?

What are the most important steps in a customer's journey?

While it may seem obvious, we highly recommend documenting your high-level business objectives. More specifically, ask yourself: what are the measurable business outcomes you want to achieve this year? Do you want to acquire new customers? Generate more new sign-ups, drive more incremental revenue among your current customer base?

The best way to answer this question is to interview stakeholders in your organization who will consume the data.

With your business goals documented, the next step is to map user actions to those business goals. For example, if one of your goals is to activate new signups, you want to think about which activities are related to a signup. Ask yourself, what actions do people take before signing up? Do specific actions predict a user signing up?

As an example, you might end up with a list like this:

Ad Campaign Clicked

Link Clicked

Article Completed

Campaign Opened

Form Initiated

Form Submitted

User Signed Up

While this list represents a tiny fraction of the user actions you could track, it gives a list focused on your top business objectives. This helps break up the huge project of data collection into smaller chunks.

Decide what to collect

With your business objectives documented and mapped to user actions, its time to build standards that you can use when deciding what to track. With your stakeholders, make a list of the actual events (page or screen views, and user actions) that you want to track. Think about all of the ways your users can interact with your site or app

When youre first starting out, we recommend that you limit your tracking plan to a few core events, but add lots of properties to provide context about them. We generally see more success with the less is more philosophy of tracking data, but you might also decide to take a more liberal track more and analyze later approach. Like everything, each alternative has pros and cons that are important to consider especially as it relates to your companys needs.

Shortcut: Check if a Business Spec meets your needs

Segment maintains several Business Specs, which are recommendations based on your type of business that give recommendations on what to track, what additional traits or properties to collect, and how to format them. The two most common are the B2B (business-to-business) Spec, Ecommerce Spec, and Mobile and Video specs.

If these specs meet your business needs, youre in luck. These specs are built into Segment tracking plan templates, so you dont need to start from a blank slate.

B2B Spec

If your organization sells a product or services to other businesses, you might have different analytics and marketing

needs than most companies. You need to understand your customer behaviors both at the user-level, and also at the company or team-level. You can read more about how Segment thinks about B2B tracking, and read more about the B2B Spec.

## Ecommerce Spec

If your organization sells products online, the E-commerce Spec covers the customers journey as they browse your store, click on promotions, view products, add those products to a cart, and complete a purchase. It also provides recommendations about off-page interactions, including interactions with email promotions, coupons, and other systems. You can read more about why companies need an Ecommerce Spec, read more about Ecommerce tracking plans, and dive directly into our Ecommerce Spec.

## Mobile Spec

The native Mobile Spec is a common blueprint for the mobile user lifecycle. The Spec outlines the most important events for mobile apps to track, and automatically collects many of these events when you use the Segment Android and iOS SDKs. Read more about the benefits of the native mobile spec, or read through the Native Mobile Spec directly.

## Video Spec

Segments video spec helps you understand how customers engage with your video and ad content, including playback events, types of media displayed, and performance metrics. You can read more about our Video Spec.

## Create naming conventions

Regardless of approach, here are some important best practices to keep in mind:

Pick a casing convention: We recommend Title Case for event names and snake\_case for property names. Make sure you pick a casing standard and enforce it across your events and properties.

Pick an event name structure: As you may have noticed from our specs, were big fans of the Object (Blog Post) + Action

(Read) framework for event names. Pick a convention and stick to it.

Dont create event names dynamically: Avoid creating events that pull a dynamic value into the event name (for example, User Signed Up (11-01-2019)). If and when you send these to a warehouse for analysis, you end up with huge numbers of tables and schema bloat.

Dont create events to track properties: Avoid adding values to event names when they could be a property. Instead, add values as a property. For example, rather than having an event called Read Blog Post - Best Tracking Plans Ever, create a Blog Post Read event and with a property like "blog\_post\_title":"Best Tracking Plans Ever".

Dont create property keys dynamically: Avoid creating property names like "feature\_1":"true", "feature\_2":"false" as these are ambiguous and very difficult to analyze

An image comparing good and bad naming and collection standards

Got all that? Great. You're now ready to develop a Tracking Plan.

Develop a tracking plan

A tracking plan clarifies what events to track, where those events live in the code base, and why you're tracking those events (from a business perspective). A good tracking plan represents the single source of truth about what data you collect, and why.

Your tracking plan is probably maintained in a spreadsheet (unless you use Segments tracking-plan tool, Protocols), and serves as a project management tool to get your organization in agreement about what data to use to make decisions. A tracking plan helps build a shared understanding of the data among marketers, product managers, engineers, analysts, and any other data users.

## Plan your Identify and Group calls

The Identify call updates all records of the user with a set of traits, and so is extremely important for building your understanding of your users. But how do you choose which traits to include? The example below shows an Identify call using analytics.js) for Segment:

```
analytics.identify({  
  
  name: 'Jane Kim',  
  
  email: 'janekim@example.com',  
  
  login: 'janekay',  
  
  type: 'user',  
  
  created: '2016-11-07T16:40:52.238Z',  
  
});
```

The traits represent dimensions in your data that you can group or pivot on. For example, in the above, you can easily create cohorts of all types that are users or accounts created within a time window of your choosing.

When you plan your deployment, think about what information you can collect as traits that would be useful to you when grouping users together, and plan how you will collect that information.

The Group call is similar to the Identify call, but it adds traits associated with a parent account to the users profile. If your organization is a B2B company, you should also plan the group traits to collect, and how you'll use them once they're applied to a user account.

## Plan your Track events

We recommend starting with fewer events that are directly tied to one of your business objectives, to help avoid becoming overwhelmed by endless number of possible actions to track. As you get more comfortable, you can add more events to your tracking plan that can answer more specialized questions.



At Segment, we started out tracking these events:

User Signed Up

Source Data Sent

Subscription Started

Then we added some peripheral events to to better understand how were performing, for the following reasons:

User Invited When users invite more people to their organization, its a good indicator that theyre engaged and serious about using the product. This helps us measure growth in organizations.

Destination Enabled Turning on a destination is a key value driver for our customers.

Debugger Call Expanded When we see that a certain customer has used the live event stream feature a number of times, we can contact see if we can help them debug.

For an Ecommerce company, however, the main events might be something like:

Account Created

Product Added

Order Completed

Tip: As mentioned above, Segment has a set of reserved event names specifically for ecommerce, called the Ecommerce Spec. Check it out to see which events Segment covers and how they are used in downstream destinations.

An online community, on the other hand, has an entirely different set of actions that indicate engagement, as listed below. For example, a community might want to track actions like:

Content Viewed

Content Shared

Comment Submitted

Content Produced

Content Curated

With these actions tracked, the community can develop metrics around engagement, and understand how users move towards their ultimate conversion events. You can read more in this article from the online community GrowthHackers about the events they track and why.

Define your Track event properties

Each Track call can accept an optional dictionary of properties, which can contain any key-value pair. These properties act as dimensions that allow destination tools to group, filter, and analyze the events. They give you additional detail on broader events.

Events should be generic and high-level, but properties should be specific and detailed. For example, at Segment, Business Tier Workspace Created is a horrible event name. Instead, we used Workspace Created with a property of account\_tier and value of business :

```
analytics.track('Workspace Created', {  
  
  account_tier: 'business'  
  
})
```

Similar to the traits in the Identify call, the properties provide a column that you can pivot against or filter on in your analytics tools or allow you to create a cohort of users in email tools.

Dont create dynamically generated property names in the properties dictionary. Each key creates a new column in your downstream tools, and dynamically generated keys clutter your tools with fragmented data that makes it difficult and confusing to use later.

Here is Segments Lead Captured Track call:

```
analytics.track(userId, 'Lead Captured', {  
  
  email: 'email',  
  
  location: 'header navbar'  
  
  url: 'https://segment.com/'  
  
});
```

The high-level event is Lead Captured, and all of the details appear in the properties dictionary. Because of this, we can easily see in our downstream tools how many leads were captured, and from which parts of the site.

If you want to learn more about how properties are used by downstream tools, check out [The Anatomy of a Track Call](#).

## Plan for destination tools

Once you've completed your tracking plan, there's one more step you might want to do before you move on to actually implementing Segment. The Segment destination catalog contains hundreds of tools, many of which you'll be familiar with already.

If your organization has an established set of analytics tools, look for those tools in the catalog and bookmark their documentation pages. These docs pages contain important information about how Segment transforms data for the destination tool, and they also contain useful details about troubleshooting, set-up, and implementation considerations.

Once you have an initial list of the destination tools your organization uses, you can also check which Segment methods those tools accept. This helps you at implementation time to ensure that the calls you use can be consumed by the tools they're intended for.

Additionally, you should check which connection modes each tool supports, so you know ahead of time which destinations may need to be bundled.

**Tip:** If you know you're looking for a tool for a specific purpose, but haven't chosen one yet, you can also check the

Connection Modes by category page to see which tools might be compatible with the least implementation changes.

[back](#)

[A simple Segment installation](#)

Walk through a disposable, demo implementation.

[next](#)

[A full Segment implementation](#)

Take your plans, and make them real.

This page was last modified: 30 Mar 2023

[A Full Segment Implementation](#)

Before you start implementing from your tracking plan, lets review the Segment methods, what they do, and when you should use each.

[Segment methods in detail](#)

Segments libraries generate and send messages to our tracking API in JSON format, and provide a standard structure for the basic API calls. We also provide recommended JSON structure (also known as a schema, or Spec) that helps keep the most important parts of your data consistent, while allowing great flexibility in what other information you collect and where.

There are six calls in the basic tracking API, which answer specific questions:

Identify: Who is the user?

Track: What are they doing?

Page: What web page are they on?

Screen: What app screen are they on?

Group: What account or organization are they part of?

Alias: What was their past identity?

Among these calls, you can think of Identify, Group, and Alias as similar types of calls, all to do with updating our understanding of the user who is triggering Segment messages. You can think of these calls as adding information to, or updating an object record in a database. Objects are described using traits, which you can collect as part of your calls.

The other three, Track, Page, and Screen, can be considered as increasingly specific types of events. Events can occur multiple times, but generate separate records which append to a list, instead of being updated over time.

A Track call is the most basic type of call, and can represent any type of event. Page and Screen are similar and are triggered by a user viewing a page or screen, however Page calls can come from both web and mobile-web views, while Screen calls only occur on mobile devices. Because of the difference in platform, the context information collected is very different between the two types of calls.

Segment recommends that you always use the Page and Screen calls when recording a page-view, rather than creating a Page Viewed Track event, because the Page/Screen calls automatically collect more contextual information.

### Anatomy of a Segment message

The most basic Segment message requires only a userID or anonymousID; all other fields are optional to allow for maximum flexibility. However, a normal Segment message has three main parts: the common fields, the context object, and the properties (if its an event) or traits (if its an object).

The common fields include information specific to how the call was generated, like the timestamp and library name and version. The fields in the context object are usually generated by the library, and include information about the environment in which the call was generated: page path, user agent, OS, locale settings, etc. The properties and traits are optional and are where you customize the information you want to collect for your implementation.

Another common part of a Segment message is the integrations object, which you can use to explicitly filter which destinations the call is forwarded to. However this object is optional, and is often omitted in favor of non-code based filtering options.

## Identify calls

```
analytics.identify (user_id: "12345abcde",  
  
  traits: {  
  
    email: 'michael.phillips@segment.com',  
  
    name: 'Michael Phillips',  
  
    city: 'New York',  
  
    state: 'NY',  
  
    internal: True })
```

The Identify call allows Segment to know who is triggering an event.

## When to call Identify

Call Identify when the user first provides identifying information about themselves (usually during log in), or when they update their profile information.

When called as part of the login experience, you should call Identify as soon as possible after the user logs in. When possible, follow the Identify call with a Track event that records what caused the user to be identified.

When you make an Identify call as part of a profile update, you only need to send the changed information to Segment.

You can send all profile info on every Identify call if that makes implementation easier, but this is optional.

## Learn More

## Best Practices for Identifying Users

## Traits in Identify calls

These are called traits for Identify calls, and properties for all other methods.

The most important trait to pass as part of the Identify call is `userId`, which uniquely identifies a user across all applications.

You should use a hash value to ensure uniqueness, although other values are acceptable; for example, email address isn't the best thing to use as a `userId`, but is usually acceptable since it will be unique, and doesn't change often.

Beyond that, the Identify call is your opportunity to provide information about the user that can be used for future reporting, so you should try to send any fields that you might want to report on later.

Consider using Identify and traits when:

Gathering user profile data (for example, company, city/state, job title, or other user-level data)

Gathering company-level data (for example, company size, number of seats, etc)

## How to Call Identify

You can call Identify from any of Segment's device-based or server-based libraries, including Javascript, iOS, Android, Ruby, and Python.

Here are two examples of calling Identify from two different libraries:

### JavaScript Identify call

### Ruby Identify call

```
analytics.identify("12345abcde", {  
  
  "email": "michael.phillips@segment.com",
```

```
"name": "Michael Phillips",  
  
"city": "New York",  
  
"state": "NY",  
  
"internal": True  
  
});
```

Using analytics.reset()

When a user explicitly signs out of one of your applications, you can call analytics.reset() to stop logging further event activity to that user, and create a new anonymousId for subsequent activity (until the user logs in again and is subsequently identify-ed). This call is most relevant for client-side Segment libraries, as it clears cookies in the users browser.

Make a reset() call as soon as possible after sign-out occurs, and only after it succeeds (not immediately when the user clicks sign out). For more info on this call, see the JavaScript source documentation.

## Page and Screen

The Page and Screen calls tell Segment what web page or mobile screen the user is on. This call automatically captures important context traits, so you dont have to manually implement and send this data.

Page context auto-captured   Screen context auto-captured

title window.location.title   app build, name, namespace, version

url window.location.url   device adTrackingEnabled, advertisingId (IDFA/AAID), device ID, manufacturer, model, type  
(android/ios)

path window.location.path   library name, version

referrer window.document.referrer   locale window.document.referrer

search window.location.search   network cellular, wifi

ip address ip address

userAgent string   os name, version



campaign utm\_source, utm\_medium, utm\_campaign, utm\_content screen height, width

## Page and Screen call properties

You can always override the auto-collected Page/Screen properties with your own, and set additional custom page or screen properties.

Some downstream tools (like Marketo) require that you attach specific properties (like email address) to every Page call.

This is considered a destination-specific implementation nuance, and you should check the documentation for each destination you plan to use and make a list of these nuances before you start implementation.

## Named Page & Screen Calls

You can specify a page Name at the start of the page or Screen call, which is especially useful to make list of page names into something more succinct for analytics. For example, on an ecommerce site you might want to call analytics.page( "Product" ) and then provide properties for that product:

### Named Page Call for Javascript

### Named Screen Call for iOS

```
analytics.page("Product", {  
  
  "category": "Smartwatches",  
  
  "sku": "13d31"  
  
});
```

### When to Call Page

Segment automatically calls a Page event whenever a web page loads. This might be enough for most of your needs, but if you change the URL path without reloading the page, for example in single page web apps, you must call Page manually .

If the presentation of user interface components dont substantially change the users context (for example, if a menu is

displayed, search results are sorted/filtered, or an information panel is displayed on the exiting UI) measure the event with a Track call, not a Page call.

Note: When you trigger a Page call manually, make sure the call happens after the UI element is successfully displayed, not when it is called. It shouldn't be called as part of the click event that initiates it.

For more info on Page calls, review Page spec and Analytics.js docs.

### When to call Screen

Segment Screen calls are essentially the Page method, except for mobile apps. Mobile Screen calls are treated similarly to standard Page tracking, only they contain more context traits about the device. The goal is to have as much consistency between web and mobile as is feasible.

### Track calls

The Track call allows Segment to know what the user is doing.

### When to call Track

The Track call is used to track user and system events, such as:

The user interacting with a UI component (for example, Button Clicked)

A significant UI component appearing, other than a page (for example, search results or a payment dialog)

### Events and Properties

Your Track calls should include both events and properties. Events are the actions you want to track, and properties are the data about the event that are sent with each event.

Properties are powerful. They enable you to capture as much context about the event as you'd like, and then cross-tabulate or filter your downstream tools. For example, let's say an eLearning website is tracking whenever a user

bookmarks an educational article on a page. Heres what a robust analytics.js Track call could look like:

```
analytics.track('Article Bookmarked', {  
  
  "title": 'How to Create a Tracking Plan',  
  
  "course": 'Intro to Data Strategy',  
  
  "author": 'Dr. Anna Lytics',  
  
  "publish_year": '2019',  
  
  "publish_month": '03',  
  
  "length": 'Medium - 1000-2000 words',  
  
  "assets": {'Infographics', 'Interactive Charts'},  
  
  "topics": {'Data Planning', 'Segment', 'Data Flow'},  
  
  "button_location": 'Subheader - 3rd Column'  
  
});
```

With this Track call, we can analyze which authors had the most popular articles, which months and years led to the greatest volume of bookmarking overall, which button locations drive the most bookmark clicks, or which users gravitate towards infographics related to Data Planning.

## Event Naming Best Practices

Each event you track must have a name that describes the event, like Article Bookmarked above. That name is passed in at the beginning of the Track call, and should be standardized across all your properties so you can compare the same actions on different properties.

Segments best practice is to use an Object Action (Noun<>Verb) naming convention for all Track events, for example, Article Bookmarked.

Segment maintains a set of Business Specs which follow this naming convention around different use cases such as eCommerce, B2B SaaS, and Mobile.

Lets dive deeper into the Object Action syntax that all Segment Track events should use.

## Objects are Nouns

Nouns are the entities or objects that the user or the system acts upon.

Its important to be thoughtful when naming objects so that they are referred to consistently within an application, and so that you refer to the same objects that might exist in multiple applications or sites by the same name.

Use the following list of objects to see if there is a logical match with your application. If you have objects that arent in this list, name it in a way that makes sense if it were to appear in other applications, and/or run it by Product Analytics.

## Some suggested Nouns

Menu

Navigation Drawer (the Hamburger menu in the upper left corner of a UI)

Profile

Account

Video

## Actions are Verbs

Verbs indicate the action taken by either a user on your site. When you name a new Track event, consider if you can describe the current interaction using a verb from the list below.

If you cant, choose a verb that describes what the user is trying to do in your specific case, but try to be flexible enough so that you could use it in other scenarios.

## Some suggested Verbs

Applied - Applying a new format to the UI results.

Clicked - Catch-all for events where a user activated some part of the UI but no other verb captures the intent.

Created/Deleted - The user- or system-initiated action of creating or deleting an object (e.g., new search, favorite, post)

Displayed/Hidden - The user- or system-initiated action of hiding or displaying an element

Enabled/Disabled - Enabling or disabling some feature (e.g., audible alarms, emails, etc).

Refreshed - When a set of search results is refreshed.

Searched - When an app is searched

Selected - User clicked on an individual search result.

Sorted - The user or UI action that causes data in a table, for example, to be sorted

Unposted - Making a previously publicly-viewable posting private.

Updated - The user action that initiates an update to an object (profile, password, search, etc.; typically be making a call to the backend), or the they system having actually completed the update (often this tracking call will be made in response to a server-side response indicating that the object was updated, which may or may not have an impact on the UI).

Viewed - (exactly what it says on the tin)

Property naming best practices

Segment recommends that you record property names using snake case (for example `property_name`), and that you format property values to match how they are captured. For example, a username value would be captured in whatever case it the user typed it in as.

Ultimately, you can decide to use a casing different from our recommendations; however, the single most important aspect is that youre consistent across your entire tracking with one casing method.

You can read more about best practices for Track calls, .

All of the basic Segment methods have a common structure and common fields which are automatically collected on every call. You can see these in the common fields documentation.

## Common properties to send with a Track call

The following properties should be sent with every Track call:

### Event Context Property Name Description

Any Track call initiator States whether the event was initiated by the user or the system.

Any Track call display\_format Responsive or not (or some other indicator of the current page layout template)

Search Initiated or Search Results Displayed [Search Parameters] All search parameters, with the names being the snake case version of the internal names.

Search Results Displayed total\_result\_count The total number of results returned that match the search parameters. This number represents the number of results that could be returned to the user even if only a subset of those were actually returned (for example, if the results are paginated).

Paginated List Displayed total\_items\_pages The total number of pages of items available to be viewed by the user.

Paginated List Displayed items\_per\_page The number of possible items in each page of items (for example, if the UI is showing 50 search results per page). The actual number of items in the current page may be less than this number if, for example, the system is displaying the last page of results and there aren't enough results to fill to the page's maximum (for example, if there are 27 results when the page could display as many as 50).

Paginated List Displayed current\_item\_page The current page number displayed to the user.

External Link Clicked destination\_url The URL that the user is taken to when clicked. Ideally, this will be the final destination (for example, after any redirects), but only the immediate destination is likely in most cases.

Item List Sorted sort\_column The internal name of the column that was sorted.

Item List Sorted sort\_direction Whether the items sort in ascending or descending order.

## How to call Track

You can make a Track call from any of Segment's client-side or server-side libraries, including JavaScript, iOS, Android, Ruby, and Python. Here are two examples of calling Track from two different libraries:

### JavaScript Track call

### Ruby Track call

```
analytics.track('Article Bookmarked', {  
  
  "title": 'How to Create a Tracking Plan',  
  
  "course": 'Intro to Data Strategy',  
  
  "author": 'Dr. Anna Lytics',  
  
});
```

[back](#)

## Planning a Full Installation

Think through your goals, plan your calls, and set yourself up for success.

[next](#)

## Sending data to Destinations

Unlock the power of Segment with Destinations.

This page was last modified: 07 Nov 2023

## Further reading

[Best Practices for Event Calls](#)

[Best Practices for Identifying Users](#)

[Need support?](#)

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Segment is the easiest way to integrate your websites & mobile apps data to over 300 analytics and growth tools.

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[Sending data to destinations](#)

Once youve got data flowing into Segment, what do you do with it? The Segment Destination catalog lists all of the places we can send your data.

[Routing data to destinations](#)

When you enable a destination in the Segment App, you link it to a specific source (or sources). By default, Segment first processes the data from the selected source(s), then translates it and routes it from the Segment servers to the API endpoint for that destination.

This means that if you previously had loaded code or a snippet for that tool on your website or app, you should remove it once you have Segment implemented so you dont send duplicate data.

You might also want to enable tools that need to be loaded on the users device (either a computer or mobile device) in order to function properly. For our Analytics.js library, you can make these changes from the Segment App, and the Segment systems then update the bundle of code served when users request the page to include code required by the destination. You can read more about this in our documentation on Connection Modes.

[Adding new destinations](#)

Adding a destination is quick and easy from the Segment App. Youll need a token or API key for the tool, or some way to confirm your account in the tool.



From your Segment workspace, click Add destination. You can find this option on the Connections home page, from the Destinations list, or from a Source overview page.

Search for the destination in the Catalog, and click the destinations tile.

From the destination summary page that appears, click Configure.

Choose which source should send data to this destination, and click Confirm source.

In the Connection Settings that appear, enter any required fields. These might be an API key, an account ID, a token, or you might be prompted to log in to the tool.

If needed, click the toggle to enable the destination so it begins receiving data.

### Recommended destinations

If you're just starting out, we know the catalog can be really overwhelming. How do you choose from all of the available destinations?

We've written a lot about how to choose your tools, but as a start, we recommend that you have one tool from each of the following categories:

Analytics

Email marketing

Live-chat

If you're adding more destinations after you've done your Segment instrumentation, you might want to check that the destinations you choose can accept the methods you're already using, and that they can use the Connection Modes you're already using.

We also feel that it's really important to have a data warehouse, so you can get a clearer view of all of your data for analytics purposes. More on that just below.

### Adding a warehouse

Warehouses are a special type of destination which receive streaming data from your Segment sources, and store it in a

table schema based on your Segment calls. This allows you to do a lot of interesting analytics work to answer your own questions about what your users are doing and why.

All customers can connect a data warehouse to Segment. Free and Team customers can connect one, while Business customers can connect as many as needed.

You should spend a bit of time considering the benefits and tradeoffs of the warehouse options, and then choose one from our warehouse catalog.

When you choose a warehouse, you can then use the steps in the documentation to connect it. This may require that you create a new dedicated user (or service user) to allow Segment to access the database.

Once your warehouse is configured and running, you can connect to it using a Business Intelligence (BI) tool (such as Looker, Mode, Tableau, or others) to analyze your data in-depth.

There are also a number of Business tier features you can then use with your warehouse, including selective sync and Replay.

Segment University: Warehouses

Check out our course on warehouses in Segment University. (Must be logged in to access.)

[back](#)

A full Segment implementation

Take your plans, and make them real.

[next](#)

Testing and Debugging

Test your implementation and see where your data is and isn't arriving.

This page was last modified: 09 Aug 2022

## Testing and Debugging

One of the most important questions you'll ask early on is How do I know if Segment is working?

There are several ways to check if your data is flowing. One is the Debugger tab in each Source in the Segment web app, where you can see data coming from a source into Segment. Another is the Event Delivery tool which shows which data is arriving at specific destinations.

For monitoring purposes, you'll also see alerts in the Workspace Health tool if your sources or destinations produce repeated errors.

Segment University: Debugging and Troubleshooting

Want more? Check out our course on debugging and troubleshooting. (Must be logged in to access.)

## The Source Debugger

The Source Debugger is a real-time tool that helps you confirm that API calls made from your website, mobile app, or servers arrive to your Segment Source, so you can troubleshoot your Segment set up even quicker. With the Debugger, you can check that you're sending calls in the expected format, without having to wait for any data processing.

## Debugger view

The Debugger is separate from your workspace's data pipeline and is not an exhaustive view of all the events ever sent to your Segment workspace. The Debugger only shows a sample of the events that the Source receives in real time, with a cap of 500 events. The Debugger is a great way to test specific parts of your implementation to validate that events are being fired successfully and arriving to your Source.

To see a more complete view of all your events, we recommend that you set up either a warehouse or an S3 destination.

The Debugger shows a live stream of sampled events arriving into the Source, but you can also pause the stream from displaying new events by toggling Live to Pause. Events continue to arrive to your Source while you Pause the stream.

You can search in the Debugger to find a specific payload using any information you know is available in the events raw payload. You can also use advanced search options to limit the results to a specific event.

#### Debugger search options

Two views are available when viewing a payload:

The Pretty view is a recreation of the API call you made that was sent to Segment.

The Raw view is the complete JSON object Segment received from the calls you sent. These calls include all the details about what is being tracked: timestamps, properties, traits, ids, and contextual information Segment automatically collects the moment the data is sent.

#### Event Delivery

The Event Delivery tool helps you see if Segment is encountering issues delivering your data from your sources to their connected destinations.

Segment sends billions of events to destinations every week. If our systems encounter errors when trying to deliver your data, we report them in the Event Delivery tool.

Here is an example of what the Event Delivery tool looks like:

## Event Delivery tool example

Event Delivery is most useful when:

When data seems to be missing in your destination. For example, you have Google Analytics set up as a destination and your recent data looks incomplete

When setting up a destination for the first time. For example, you are connecting Google Analytics to your Node Source. Once you've entered your credentials and turned the destination on, you can use this feature to see whether events are successfully making it to GA in near realtime.

You can access the Event Delivery tool from the destination Settings tab in any supported destination.

## Access the Event Delivery tool

Event Delivery is only available for cloud-mode destinations, which receive data through the Segment servers. Device-mode destinations receive data through an API endpoint outside the Segment servers, where we cannot monitor or report on it. Event delivery is not available for Warehouses or Amazon S3 destinations.

## Using Event Delivery

The UI shows three parts that report on Segments ability to deliver your source data: Key Metrics, Error Details, and Delivery Trends.

Before you begin, select a time period from the drop down menu at the right. The Event Delivery display updates to show only information about your selected time period.

Select a time period from the dropdown menu

## Key metrics

This panel displays quantitative information about the destinations data flow:

**Delivered:** The number of messages Segment successfully delivered to the destination in the selected time period.

**Not Delivered:** The number of messages Segment was unable to deliver. If this number is greater than zero, the reasons for these failures appear in the errors table below.

**P95 Latency:** The time it takes for Segment to deliver the slowest 5% of your data (known as P95 latency). The latency reported is end-to-end: from the event being received through the Segment API, to the event being delivered to partner API. This helps tell you if there is a delay in your data pipeline, and how severe it is.

Error details

The Error details table displays a summary of the errors in a given period, and the most important information about them. You can click any row in the table to expand it to show more information.

Error details table

The Error Details view gives you as much information as possible to help you resolve the issue. The example below shows an example Error Details panel.

Error details panel example

This view includes:

**Description** The event delivery UI provides a human-friendly summary of the error, based on the payload Segment received back from the partner.

**Actions** These are actions you can take, based on what Segment knows about the issue.

More Info Links to any documentation that might be helpful to you.

Sample payloads To help you debug, Segment provides sample payloads from every step of the data's journey:

You Sent - the data you sent to Segment's API.

Request to Destination - the request Segment made to the Partner API. This payload will likely be different from what you sent it because Segment is mapping your event to the partner's spec to ensure the message is successfully delivered.

Response from Destination - the response Segment received from the Partner API. This will have the raw partner error.

If you need to troubleshoot an issue with a Partner's Success team, this is usually something they'll want to see.

View Segment's list of Integration Error Codes for more information about what might cause an error.

## Trends

When debugging, it's helpful to see when issues start, stop and how they trend over time.

The Event Delivery view shows a graph with the following information:

Delivered: The number of events that were successfully delivered in the time period you selected.

Not delivered: The number of events that were not successfully delivered in the time period you selected.

The Latency view shows the end-to-end P95 latency during the time period you selected.

Latency view displaying the end-to-end P95 latency for selected time period

[back](#)

Sending data to Destinations

Unlock the power of Segment with Destinations

next

What's next?

Learn about what you can do next with Segment

This page was last modified: 06 Jul 2022

What's Next

You're just getting started with Segment, but there's so much more to explore!

Privacy tools and filtering

Segment includes a free suite of Privacy tools to help your organization comply with regulations like the GDPR and the CCPA.

The Privacy Portal allows you to easily audit, monitor, and enforce privacy rules against your Segment data, to proactively protect your customers.

Improve data quality with Protocols

You had a taste of the planning needed to set up clear, consistent, reliable and extensible data schemas in Planning a Full Install.

Business tier customers can use Segments Protocols package to help with this process, to keep track of what data is being collected where, and to normalize their data as it flows through Segment. Clean, consistent data helps you move faster to build marketing campaigns and act on analytics insights.

With Protocols, you can use Tracking Plans to build consensus in your organization about which events and property



you intend to collect across your web, mobile or server-side data sources. Once defined, you can connect the Tracking Plan to your Sources to automatically validate the data is flowing correctly. You can also turn on enforcement to block bad data, and even fix incorrect data with Transformations.

### Single view of the customer with Engage

Engage is a powerful personalization platform that enables you to create unified customer profiles in Segment, to build and enrich audiences, and to activate audiences across marketing tools.

With Engage, you can create unified customer profiles, enrich those profiles with new traits, build Audiences using those profiles, and sync audiences to marketing tools to power personalized experiences, and better understand and market to your customers.

### More learning resources

#### Segment University

Segment University is Segments free, online classroom for learning the basics of Segment.

#### Analytics Academy

Analytics Academy is a series of lessons designed to help you understand the value of analytics as a discipline, and to help you think through your analytics needs, and get started creating robust and flexible analytics systems to help you grow.

#### Recipes

Need ideas or prior art? Segment Recipes are some cool things you can do by hooking your Segment workspace up to different Destination tools. Everything from sending tailored onboarding emails, to joining and cleaning your data with third party tools

#### Other Resources

Still hungry for more? Check out our list of other Segment Resources!

## Technical Support

If you're experiencing problems, have questions about implementing Segment, or want to report a bug, you can fill out our support contact form here and our Product Support Engineers will get back to you.

You need a Segment.com account in order to file a support request. Don't worry! You can always sign up for a free workspace if you don't already have one.

[Back to the index](#)

[Back to the Getting Started index](#)

This page was last modified: 27 Sep 2022

## Use Cases Overview

Use Cases are pre-built Segment setup guides tailored to common business goals.

Use Cases eliminate guesswork with a structured approach to onboarding, helping you configure Segment correctly and align its features to your business objectives.

You can onboard to Segment with a Use Case if you're a new Business Tier customer or haven't yet connected a source and destination.

## Onboard to Segment with Use Cases

### Choosing a Use Case

Not sure where to start? Read through Segment's Choosing a Use Case guide, which breaks down the available business goals and their associated use cases.

## Step-by-Step Use Cases Setup Guide

Follow the steps in the Use Cases Setup guide to get up and running with Segment.

## Use Cases Reference

Looking for something more technical? View the Use Cases Reference, which lists the tracking events, connections, and destinations Segment recommends for each use case.

## Take the next step

Explore the following core Segment features, all of which power Use Cases.

### Connections

Collect event data from your mobile apps, websites, and servers.

### Destinations

Forward your data to the business tools and apps your business uses.

### Unify

Track user interactions, resolve their identities, and explore Profiles.

### Engage

Build, enrich, and activate audiences with Segment's personalization platform.

This page was last modified: 08 Oct 2024

## Choosing a Use Case

Segment built Use Cases to streamline the process of implementing Segment for specific business objectives.

This guide will help you navigate through the available use cases and select the one that best aligns with your business goals.

You can onboard to Segment with a Use Case if you're a new Business Tier customer or haven't yet connected a source and destination.

## Understanding business goals and use cases

Segment supports 25 use cases, organized into 4 main business goals:

Optimize advertising

Personalize first conversion

Boost retention, upsell, and cross-sell

Personalize communications and product experiences

These goals represent key ways businesses often use customer data for improved performance and growth.

Looking for a technical breakdown of each use case? [View the Use Cases Reference](#).

## Selecting your use case

Follow these steps to identify which use case to implement:

Identify your primary business challenge or goal from the four business goals.

Review the use cases associated with that goal, considering how each aligns with your specific needs.

Evaluate your current data collection capabilities and the resources you have available.

Consider your long-term business strategy and how different use cases might support your future goals.

If you're unsure, start with a use case that addresses your most pressing current need.

The use case you select will guide your Segment setup, including the events you'll track and the integrations you'll implement. However, Segments flexibility allows you to adapt and expand your strategy over time as your business

needs evolve.

The following sections explore each business goal and associated use cases in detail.

## Optimize advertising

The Optimize advertising business goal focuses on improving the efficiency and effectiveness of your advertising efforts.

By using your customer data effectively, you can create more targeted campaigns, reduce wasted ad spend, and increase your return on investment (ROI).

Key considerations for this goal:

Are you looking to expand your customer base with similar high-value customers?

Do you need to drive app installations?

Are you trying to increase signups or prevent cart abandonment?

Do you want to retain high-value customers or optimize your ad spend?

Use cases in this category include:

### Use Case Description

**Build high-value lookalikes** Identify and target potential customers who share characteristics with your most valuable existing customers.

**Build lookalikes for app install** Find potential users who are likely to install your app. This is particularly useful for mobile app businesses looking to efficiently grow their user base.

**Increase signups with lookalikes** Target potential users who are likely to sign up for your service, based on the characteristics of your existing registered users.

**Mitigate cart abandonment** Identify users who have abandoned their carts and create targeted campaigns to encourage these users to complete their purchases.

**Mitigate high value churn** Focus on identifying high-value customers who are at risk of churning and create targeted

campaigns to retain them.

**Suppress based on time** Optimize your ad spend by suppressing ads to users who have recently converted or interacted with your brand, preventing unnecessary ad exposure.

**Suppress with purchase** Focus on suppressing ads to users who have recently made a purchase.

**Personalize first conversion**

The Personalize first conversion goal focuses on optimizing the initial interactions a potential customer has with your brand. By personalizing these early touchpoints, you can increase the likelihood of converting prospects into customers.

Key considerations for this goal:

Are you looking to increase app installations or user sign-ups?

Do you want to improve your onboarding process?

Are you trying to convert free users to paid subscribers?

Do you need to reduce cart abandonment rates?

Use cases in this category include:

**Use Case Description**

**Accelerate app install** Focus on optimizing the user journey to encourage app installation.

**Accelerate onboarding** Create a personalized onboarding experience once a user has signed up or installed your app.

**Accelerate signup** Optimize the signup process, reducing friction and personalizing the experience to encourage more users to complete registration.

**Acquire paid subscriptions** Focus on identifying the most effective strategies to convert free users to paid subscribers.

**Convert trials to paid subscriptions** Tailored for businesses offering free trials. This use case helps you identify the best times and methods to encourage trial users to convert to paid subscriptions.

**Mitigate cart abandonment** Identify users who have abandoned their carts and create targeted campaigns to encourage these users to complete their purchases.

**Boost retention, upsell, and cross-sell**

The Boost retention, upsell, and cross-sell business goal focuses on maximizing the value of your existing customer base. By analyzing customer behavior and preferences, you can create targeted strategies to encourage repeat purchases, introduce customers to higher-value products or services, and increase overall customer lifetime value.

Key considerations for this goal:

Do you want to find more customers who share traits with your most valuable existing customers?

Are you looking to increase the frequency of purchases from existing customers?

Do you need to prevent churn among your high-value customers?

Do you need to personalize your upsell or cross-sell efforts?

Use cases in this category include:

#### Use Case Description

**Build high value lookalikes** Identify characteristics of your most valuable customers to inform retention and upsell strategies.

**Increase repeat purchases** Analyze customer purchase history and behavior to create personalized recommendations and incentives that encourage repeat purchases.

**Mitigate high value churn** Focus on identifying high-value customers who are at risk of churning and create targeted campaigns to retain them.

**Nurture with content** Focus on creating and delivering personalized content to keep customers engaged with your brand between purchases, ultimately driving long-term loyalty.

**Personalize upsell content** Analyze customer behavior and purchase history to create targeted upsell recommendations, increasing the average order value and customer lifetime value.

**Personalize winback** Focus on re-engaging inactive customers, using personalized messaging and offers based on their past behavior and preferences.

#### Personalize communications and product experiences

The Personalize communications and product experiences business goal focuses on creating tailored experiences for

your customers across all touchpoints. With this business goal, you can create more relevant and engaging communications and product experiences, leading to increased satisfaction and loyalty.

Key considerations for this goal:

Do you want to personalize your onboarding process?

Do you want to increase customer engagement and repeat purchases?

Do you need to create targeted content for different user segments?

Are you trying to re-engage inactive customers?

Use cases in this category include:

#### Use Case Description

**Accelerate onboarding** Create a personalized onboarding experience that extends beyond initial signup, helping to drive long-term engagement.

**Increase repeat purchases** Focus on personalizing the overall customer experience to drive repeat purchases.

**Mitigate high value churn** Create personalized experiences and communications to retain high-value customers at risk of churning.

**Nurture with content** Deliver personalized content experiences based on individual user interests and behaviors, keeping customers engaged with your brand.

**Personalize upsell content** Focus on personalizing the entire product experience to facilitate upsells.

**Personalize winback** Create personalized re-engagement campaigns for inactive users, tailoring the messaging and offers based on their past interactions with your brand.

#### Next steps

Once you've selected a use case, follow the [Use Cases Setup Guide](#), which explains how to set up a use case.

This page was last modified: 08 Oct 2024

#### Use Cases Setup



Use Cases help you onboard quickly and efficiently to Segment by guiding you through specific steps tailored to your business needs.

This page walks you through the steps to set up a use case in your Segment instance.

## Permissions

To implement a use case, you'll need to be a Workspace Owner for your Segment account. See the [Roles documentation](#) for more information.

You can onboard to Segment with a Use Case if you're a new Business Tier customer or haven't yet connected a source and destination.

## Use case setup overview

From a high level, setting Segment up with a use case takes place in four stages:

Pick your business goal. What do you want to achieve? Choose from 4 common business goals like optimizing advertising, personalizing first conversions, boosting retention, and increasing customer retention.

Select a use case. After you pick your business goal, Segment shows you several potential use cases from which to choose.

Follow the in-app guide. With your use case chosen, Segment shows you an interactive checklist of events to track, as well as sources and destinations that Segment recommends you connect. You'll carry these steps out in a sandboxed development environment.

Test and launch your setup. Push your connections to a production environment and verify that events flow as expected through the debugger. After you're done, your Segment instance is up and running.

## Example setup: Personalize winback

This section provides a detailed, step-by-step guide to setting up the Personalize Winback use case from the

Personalize communications and product experiences business goal in your Segment account. All use cases follow this same setup flow.

## Step 1: Navigate to Use Cases

Log in to your Segment account.

If you see the Welcome to Segment screen, click Get Started. If logging in takes you to your Segment workspace, click Guided Setup.

## Step 2: Pick your business goal and select a use case

### Choosing a use case

Segment lets you implement one use case. If you're not sure which use case to choose, view [Choosing a Use Case](#).

In the What is your business goal? screen, select Personalize communications and product experiences, then click Next.

Segment moves you to the Which use case would you like to set up? screen. Choose Personalize winback, then click Next.

Segment shows you information about dev and prod labels. After you've read it, click Next.

Segment takes you to the Setup checklist page.

### Working with dev and prod environments

For most cases, you'll want to start with development or staging sources to test and debug your Segment implementation. This approach lets you verify that everything is working correctly before sending live data downstream. To facilitate this, Segment automatically creates development (dev) and production (prod) spaces for you and labels your sources accordingly to simplify tracking.

Segment strongly recommends beginning your setup in the dev environment. This allows for thorough testing and debugging of your configuration. Once you're confident in your dev setup, Segment will guide you on how to apply these configurations to your live production sources.

Step 3: Review suggested events

Changing your use case

Once you've reviewed the suggested events for a use case, you won't be able to change the use case. If you want to see a full breakdown of each use case before committing to one, click **Change use case** to begin the use case flow again. You can also view the [Use Cases Reference](#) guide to see what Segment recommends for each use case.

On the **Setup checklist** page, you'll see the full checklist for the use case you've chosen. This checklist applies to all use cases, though the suggested events, sources, and destinations differ between use cases.

In the **Review suggested events** list item, click **Review**.

Segment shows you the recommended events and properties typically tracked for your use case.

Set up event tracking based on the events and properties Segment shows.

This table shows Segment's recommended events and properties for the **Personalize winback** use case:

Events Properties

Page Viewed page\_category, page\_name

Page Scrolled pct\_scrolled, page\_category

Order Completed num\_items, order\_id, checkout\_id, total, revenue, shipping, tax, affiliation, products

Make sure that you're tracking these events to get the most of the **Personalize winback** campaign. For more information on event tracking, see [Data Collection Best Practices](#).

Step 4: Connect dev sources

You're now ready to connect sources to your dev environment.

In the **Connect dev sources** step, Segment shows you the recommended sources you should connect. For **Personalized**

winback, these include Website, Mobile, and Reverse ETL.

Review the recommended sources, then click Connect.

Segment takes you to the Add a source setup. Choose the source(s) you want to add, then click Next.

Name your source, then click Create source.

Carry out the source-specific steps, then click Next.

Test your connection and troubleshoot it, if necessary. Click Done.

(Optional:) Click Connect More and repeat steps 2 through 6 to add more sources.

Adding a warehouse as a source

If you connect a warehouse as a source, Segment automatically creates a Profiles destination that shows up in the Connect your data tab. Do not delete this destination, as Segment requires this destination to create profiles from your warehouse.

Cloud object sources

If you connect a cloud object source, you'll need to create a warehouse to sync profiles into Segment. For more information, see [Cloud Sources](#).

Step 5: Connect dev destinations

With sources connected, you can now connect destinations to your dev environment.

Under the Connect dev destinations step, Segment shows you the recommended sources you should connect. For Personalize winback, these include Reverse ETL, Personalization, and Analytics.

Review the recommended destinations, then click Connect.

Segment takes you to the Choose a Destination setup. Choose the destination(s) you want to add, then click Next.

Name your destination, then click Create Destination.

Choose a source to connect to the destination, then click Next.

Carry out the destination-specific steps, then click Done.

(Optional:) Click Connect More and repeat steps 2 through 6 to add more destinations.

#### Step 6: Publish your setup to a prod environment

Until this point, you've set up event tracking and connected sources and destinations to a development environment.

After you've confirmed that data is flowing from your sources into your destinations as expected, you're ready to publish your setup to a production environment.

On the Setup checklist page, click the Prod environment tab.

On the Connect 1 prod source radio button, click Connect.

Segment shows you the sources you previously connected in your dev environment. Click the source you want to connect to prod, then click Continue.

Carry out any additional steps in the Add a Source page, click Create Source, then click Next. Segment returns you to the Prod environment tab.

Publish the events set up in your dev environment sources to production. Check the debugger to verify that data is flowing into Segment correctly, then click Mark as complete.

On the Connect 1 prod destination bullet, click Connect.

Segment shows you the destinations you previously connected in your dev environment. Click the source you want to connect to prod, then click Continue.

Choose a source to connect to the destination, then click Next.

Name your destination, then click Create Destination.

Your data is now in production, and you've successfully configured Segment.

#### Activate your data with Unify and Engage

Now that you've successfully set up Connections and Destinations, you can build upon your Segment implementation with Unify and Engage.

## Accessing Unify and Engage

Unify and Engage may not yet be enabled for your account. To add Engage to your Segment workspace, click Request a demo in the Unify and Engage tabs on the Guided Setup page.

### Step 1: Set up identifiers with Unify

In the Guided Setup page, click Build profiles from your data.

Click Add default identifiers. Segment displays the Select Identifiers popup.

Select as many of the recommended identifiers that best fit your use case; Segment recommends selecting all identifiers. Click Save.

On the Guided Setup page, click Mark complete.

Your identifiers are now set up in your dev space, though it could take a few minutes for Segment to create profiles from your selected identifiers.

For more information, see the Unify documentation.

### Step 2: Create audiences with Engage

Click the Engage customers with your data tab, then click Create audience. Segment takes you to the New Audience Builder.

On the Select Audience Type page, select either Users or Accounts, then click Next.

Configure, preview, and create your audience.

Segment then begins sending your new audience(s) to the destinations in your dev environment. Verify in those destinations that the audiences are coming through as intended, then click Mark complete.

For more information on Audiences, see the Engage documentation.

### Step 3: Republish to a prod environment

At this point, you'll have already published your initial setup to a prod environment. Next, you'll publish your Unify and Engage setup to the same prod environment.

Return to the Prod environment tab.

In the Build profiles from your data tab, click Import rules.

Review the rules that Segment will import, then click Import.

In the Engage customers with your data tab, click Create audience

Configure, preview, and create your audience. Segment returns you to the Guided Setup page.

Segment then begins sending your new audience(s) to the destinations in your dev environment. Verify in those destinations that your audiences are coming through as intended, then click Mark complete.

Next steps

Use Cases pulls together a number of core Segment features, like Sources, Destinations, data collection, and Reverse ETL. View the documentation for each to learn how you can continue to expand and build on what you've already achieved.

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Use Cases Reference

This reference guide provides detailed information on the suggested events, sources, and destinations for each Segment use case. Use this guide to ensure you're tracking the right events and connecting the best sources and destinations for your specific needs.

Use Cases by business goal

The business goal you select during onboarding determines the use cases that Segment shows you.

This table lists each business goal and each of its corresponding use cases:

## Business Goal Use Cases

Optimize advertising Build high-value lookalikes

Build lookalikes for app install

Increase signups with lookalikes

Mitigate cart abandonment

Mitigate high value churn

Suppress based on time

Suppress with purchase

Personalize first conversion Accelerate app install

Accelerate onboarding

Accelerate signup

Acquire paid subscriptions

Convert trials to paid subscriptions

Mitigate cart abandonment

Boost retention, upsell, and cross-sell Build high value lookalikes

Increase repeat purchases

Mitigate high value churn

Nurture with content

Personalize upsell content

Personalize winback

Personalize communications and product experiences Accelerate onboarding

Increase repeat purchases

Mitigate high value churn

Nurture with content

Personalize upsell content

Personalize winback

Suggested events, sources, and destinations



This section contains tables for the different events, sources, and destinations that Segment recommends for each use case.

Optimize advertising

Click on each use case in this section to view Segments recommendations for the Optimize advertising business goal, which helps you improve return on ad spend.

Build high value lookalikes

Build lookalikes for app install

Increase signups with lookalikes

Mitigate cart abandonment

Mitigate high value churn

Suppress based on time

Suppress with purchase

Personalize first conversion

Click on each use case in this section to view Segments recommendations for the Personalize first conversion business goal, which helps you convert prospective or free customers.

Accelerate app install

Accelerate onboarding

Accelerate signup

Acquire paid subscriptions

Convert trials to paid subscriptions

Mitigate cart abandonment

Boost retention, upsell, and cross-sell

Click on each use case in this section to view Segments recommendations for the Boost retention, upsell, and cross-sell business goal, which helps you increase repeat visits or purchases.

Build high value lookalikes

Increase repeat purchases

Mitigate high value churn

Nurture with content

Personalize upsell content

Personalize winback

Personalize communications and product experiences

Click on each use case in this section to view Segments recommendations for the Personalize communications and product experiences business goal, which helps you engage your customers with relevant content.

Accelerate onboarding

Increase repeat purchases

Mitigate high value churn

Nurture with content

Personalize upsell content

Personalize winback

This page was last modified: 08 Oct 2024

An introduction to Segment

Welcome! This page is a high-level introduction to the Segment Platform, including what it does and how. (If you're looking for detailed information about architecture, setup, or maintenance, you can skip ahead.)

What is Segment?

Segment is a Customer Data Platform (CDP), which means that it provides a service that simplifies collecting and using data from the users of your digital properties (websites, apps, etc). With Segment, you can collect, transform, send, and archive your first-party customer data. Segment simplifies the process of collecting data and hooking up new tools, allowing you to spend more time using your data, and less time trying to collect it.

You can also enrich the customer data you collect by connecting data from your other tools, and then aggregate it to monitor performance, inform decision-making processes, and create uniquely customized user experiences. You can also use Unify, Segments identity resolution tool, to unify data from individual users to gain a wholistic understanding of their actions.

## Segment University: How Segment Works

Check out how to get started with Segment in Segment University! (Must be logged in to access.)

### What does it do?

In its very simplest form, Segment generates messages about whats happening in your site or app, then translates the content of those messages into different formats for use by other tools (called Destinations), and transmits messages to those tools. The Segment servers also archive a copy of the data, and can send data to your storage systems (such as databases, warehouses, or bulk-storage buckets).

### How does Segment work?

Segments libraries generate and send messages to the tracking API in JSON format. Segment provides a standard structure for the basic API calls, along with a recommended JSON structure (also known as the Spec, a type of schema) that helps keep the most important parts of your data consistent, while allowing great flexibility in what other information you collect and where.

## Segment Messages

When you implement Segment, you add the Segment code to your website, app, or server, which generates messages based on specific triggers you define. At its very simplest, this code can be a snippet that you copy and paste into the HTML of a website to track page views. It can also be as complex as Segment calls embedded in a React mobile app to send messages when the app is opened or closed, when the user performs different actions, or when time based conditions are met (for example ticket reservation expired or cart abandoned after 2 hours).

Segment has Sources and Destinations. Sources send messages into Segment (and other tools), while Destinations receive messages from Segment.

### Anatomy of a Segment message

The most basic Segment message requires only a `userID` or `anonymousID`; all other fields are optional to allow for maximum flexibility. However, a normal Segment message has three main parts: the common fields, the context object, and the properties (if its an event) or traits (if its an object).

The common fields include information specific to how the call was generated, like the timestamp and library name and version. The fields in the context object are usually generated by the library, and include information about the environment in which the call was generated: page path, user agent, OS, locale settings, etc. The properties and traits are optional and are where you customize the information you want to collect for your implementation.

Another common part of a Segment message is the integrations object, which you can use to explicitly filter which destinations the call is forwarded to. However this object is optional, and is often omitted in favor of non-code based filtering options.

### Segment Sources

Segment provides several types of Sources which you can use to collect your data, and which you can choose among based on the needs of your app or site. For websites, you can embed a library which loads on the page to create the Segment messages. If you have a mobile app, you can embed one of Segments Mobile libraries, and if youd like to create messages directly on a server (if you have, for example a dedicated .NET server that processes payments), there are several server-based libraries that you can embed directly into your backend code. (You can also use cloud-sources to import data about your app or site from other tools like Zendesk or Salesforce, to enrich the data sent through Segment.)

## Destinations

Once Segment generates the messages, it can send them directly to the Segment servers for translation and forwarding on to the Destinations you're using, or it can make calls directly from the app or site to the APIs of your Destination tools. Which of these methods you choose depends on which Destinations you're using and other factors. You can read more about these considerations in our [Connection Modes](#) documentation

## What happens next?

Messages sent to the Segment servers using the tracking API can then be translated and forwarded on to Destination tools, inspected to make sure that they're in the correct format or schema, inspected to make sure they don't contain any Personally Identifying Information (PII), aggregated to illustrate overall performance or metrics, and archived for later analysis and reuse.

## What are the other parts of the Segment platform?

In addition to Connections (our core message routing product) Segment offers additional features to help your organization do more with its data, and keep data clean, consistent, and respectful of end-user privacy. The following products are available:

**Privacy Portal** - available to all users - Inspect incoming messages to identify PII, classify it by its riskiness, and decide how it's handled and which tool may use it.

**Protocols** - create a unified schema for all the data you collect, coordinate implementation to keep it consistent with that schema, and make sure your data always arrives in the right format and block and alert when it doesn't.

**Engage** - identify groups of users (audiences) based on behavior or other metrics calculated from your data, and send these groups to Destinations, identity resolution

Where can I learn more?

[I'm a Segment Developer](#)

[I'm a Segment Data user](#)

Im a Segment Workspace administrator

Whats a Workspace?

A workspace is a group of sources that can be administered and billed together. Workspaces help companies manage access for multiple users and data sources. Workspaces let you collaborate with team members, add permissions, and share sources across your whole team using a shared billing account.

When you first log in to your Segment account, you can create a new workspace, or choose to log into an existing workspace if your account is part of an existing organization.

Whats a Source?

In Segment, you create a source (or more than one!) for each website or app you want to track. We highly recommend creating a Source for each unique source of data (each site, app, or server), though this isnt required.

Sources belong to a workspace, and the URL for a source looks something like this:

`https://segment.com/<my-workspace>/sources/<my-source-name>/`

You can create new sources using the button in the workspace view. Each source you create has a write key, which is used to send data to that source. For example, to load analytics.js, the Segment JavaScript library on your page, the snippet on the Quickstart Guide includes:

```
analytics.load("YOUR_WRITE_KEY");
```

Whats a Destination?

Destinations are business tools or apps that you can connect to the data flowing through Segment. Some of Segments most popular destinations are Google Analytics, Mixpanel, Kissmetrics, Customer.io, Intercom, and KeenIO.

All of these tools run on the same data: who are your customers and what are they doing? But each tool requires that you send that data in a slightly different format, which means that you'd have to write code to track all of this information, again and again, for each tool, on each page of your app or website.

Enter Segment. Do it once.

Segment eliminates this process by introducing an abstraction layer. You send your data to Segment, and Segment understands how to translate it so we can send it along to any destination. You enable destinations from the catalog in the Segment App, and user data immediately starts flowing into those tools. No extra code required!

Segment supports many categories of destinations, from advertising to marketing, email to customer support, CRM to user testing, and even data warehouses. You can view a complete list of available destinations or check out the destination page for a searchable list broken down by category.

What's a Warehouse?

A warehouse is a central repository of data collected from one or more sources. This is what commonly comes to mind when you think about a relational database: structured data that fits neatly into rows and columns.

In Segment, a Warehouse is a special type of destination. Instead of streaming data to the destination all the time, we load data to them in bulk at regular intervals. When we load data, we insert and update events and objects, and automatically adjust their schema to fit the data you've sent to Segment.

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Segment for Developers

This guide explains all you need to know to get started with your Segment implementation, and directs you to more resources depending on your specific needs.

If you haven't already, you should read the detailed explanation of Segment on the previous page!

Segment University: Segment in Action

See a quick example of Segment working on an ecommerce website. (Must be logged in to access.)

What does Segment do?

Segment sends messages about activities in your mobile apps, websites or servers, receives those messages, and translates and forwards the message content to Destination tools. It also can send the contents of those messages to a bulk storage destination for archiving. In more complicated implementations, Segment can serve as a wrapper to trigger messages directly to other APIs, and can inspect, correct, classify and block the message contents.

Types of Segment messages

Segment's libraries generate and send messages to our tracking API in JSON format, and provide a standard structure for the basic API calls. We also provide recommended JSON structure (also known as a schema, or Spec) that helps keep the most important parts of your data consistent, while allowing great flexibility in what other information you collect and where.

There are six calls in the basic tracking API, which answer specific questions:

Identify: Who is the user?

Track: What are they doing?

Page: What web page are they on?

Screen: What app screen are they on?

Group: What account or organization are they part of?

Alias: What was their past identity?

Among these calls, you can think of Identify, Group, and Alias as similar types of calls, all to do with updating our understanding of the user who is triggering Segment messages. You can think of these calls as adding information to, or



updating an object record in a database. Objects are described using traits, which you can collect as part of your calls.

The other three, Track, Page, and Screen, can be considered as increasingly specific types of events. Events can occur multiple times, but generate separate records which append to a list, instead of being updated over time.

A Track call is the most basic type of call, and can represent any type of event. Page and Screen are similar and are triggered by a user viewing a page or screen, however Page calls can come from both web and mobile-web views, while Screen calls only occur on mobile devices. Because of the difference in platform, the context information collected is very different between the two types of calls.

Tip! Segment recommends that you always use the Page and Screen calls when recording a page-view, rather than creating a Page Viewed event, because the Page/Screen calls automatically collect much better context information.

#### Anatomy of a Segment message

The most basic Segment message requires only a userID or anonymousID; all other fields are optional to allow for maximum flexibility. However, a normal Segment message has three main parts: the common fields, the context object, and the properties (if its an event) or traits (if its an object).

The common fields include information specific to how the call was generated, like the timestamp and library name and version. The fields in the context object are usually generated by the library, and include information about the environment in which the call was generated: page path, user agent, OS, locale settings, etc. The properties and traits are optional and are where you customize the information you want to collect for your implementation.

Another common part of a Segment message is the integrations object, which you can use to explicitly filter which destinations the call is forwarded to. However this object is optional, and is often omitted in favor of non-code based filtering options.

## Message schemas, Blocks, and Specs

The Segment Specs provide recommended message schemas - the information we recommend that you collect - for each type of call. These are recommendations not requirements, but if you follow these schema guidelines the Segment servers can more easily identify parts of your messages, and translate them to downstream tools.

In addition to the recommended message schemas, Segment also provides blocks: recommendations on what information to collect and how to format it, for different industries and use cases. These are recommendations only, but by collecting all of the information in these blocks, you can ensure that common tools used in that use-case have the information they need to function.

A third section of the Spec is the industry specs which provide recommendations that include an explicit translation or mapping in the Segment servers, to best power the downstream Destinations commonly used in these industries.

## Sources and Destinations

When you start out, you create a Workspace, which serves as a container for all of your Sources and Destinations.

Segment has Sources and Destinations. Sources send data into Segment, while Destinations receive data from Segment.

Segment has five types of sources: Web (Analytics.js), Mobile, Server, and Cloud App, plus a fifth type: User-created Source Functions. Web, Mobile, and Server sources send first-party data from your digital properties. Cloud-app sources send data about your users from your connected web apps, for example a ticketing system such as Zendesk, a payments system such as Stripe, or a marketing tool like Braze.

## Connection modes

Segment has several types of sources, and many destinations can accept data from all of them. However, some are only compatible with specific source types (for example, web only, or server only). To find out which source types a

specific destination can accept data from, check the documentation for that destination for a Supported Sources and Connection Modes section.

Segments web source (Analytics.js), and native client-side libraries (iOS, Android, React-native) allow you to choose how you send data to Segment from your website or app. There are two ways to send data:

Cloud-mode: The sources send data directly to the Segment servers, which then translate it for each connected downstream destination, and send it on. Translation is done on the Segment servers, keeping your page size, method count, and load time small.

Healthcare and Life Sciences (HLS) customers can encrypt data flowing into their destinations

HLS customers with a HIPAA eligible workspace can encrypt data in fields marked as Yellow in the Privacy Portal before they flow into an event stream, cloud-mode destination.

To learn more about data encryption, see the [HIPAA Eligible Segment documentation](#)

Device-mode: You include additional code on your website or mobile app which allows Segment to use the data you collect on the device to make calls directly to the destination tools API, without sending it to the Segment servers first. (You still send your data to the Segment servers, but this occurs asynchronously.) This is also called wrapping or bundling, and it might be required when the source has to be loaded on the page to work, or loaded directly on the device to function correctly. When you use Analytics.js, you can change the device-mode destinations that a specific source sends from within the Segment web app, without touching any code.

If you use Server source libraries, they only send data directly to Segment in Cloud-mode. Server library implementations operate in the server backend, and can't load additional destination SDKs.

To learn more about connection modes and when you should use each, see the details in the [Destinations docs](#).

## Planning your Segment implementation

The journey of a thousand miles begins, ideally, with a plan. Regardless of if you're a new company just implementing analytics for the first time, or a multinational corporation modernizing your analytics stack, it's a great idea to start with a Tracking Plan. For new implementations, this can be as simple as a document where you write down these four things for each item you track:

What am I tracking? (What is the event name or type?)

Why am I tracking it? (What questions does this data answer?)

For whom am I tracking it? (Who owns this question, tool, or business area?)

Where (which destination tools) do I want to send this data to?

If you're a large or long-established organization and you're replacing existing tools, you'll want to spend more time on this to maintain analytic parity and continuity of tooling. We highly recommend reading up on tracking plans and schemas for Protocols, our tool for managing and sharing tracking plans and enforcing schemas.

Regardless of your organization's size or age, you'll want to take an inventory of the destination tools you'll be using with Segment, and make a list of the connection modes each one accepts. This makes it easier to check off when you've implemented each one, so you're not missing anything.

How do I test if it's working?

There are several ways to check if your data is flowing. One is the Debugger tab in each Source in the Segment web app, where you can see data coming from a source into Segment. Another is the Event Delivery tool which shows which data is arriving at specific destinations.

For monitoring purposes, you'll also see alerts in the Workspace Health tool if your sources or destinations produce repeated errors.

How do I filter my data?

There are several different ways to ensure that you can collect your data once, but filter it out of specific destinations.

See [Filtering Data](#) for a list of the available methods and descriptions.

Troubleshooting

If you're seeing errors thrown by your destinations, you might have an implementation issue. See the [Integration Error Codes](#) list or contact our Success engineering team for help.

Have suggestions for things to add to this guide? Drop us a line.

Segment Terraform Provider

Segment has a Terraform provider, powered by the Public API, that you can use to manage Segment resources, automate cloud deployments, and change control. Take a look at the [Segment provider documentation on Terraform](#) to see what's supported.

This page was last modified: 09 Apr 2024

Segment for Data Users

If you aren't involved in setting up your Segment implementation, or are just starting to set up Destinations for your organization's workspace, this guide is for you.

What is Segment?

If you read the detailed explanation of Segment on the previous page, you can skip ahead!

Segment is a system for sending messages from your websites, mobile apps, and servers. These messages contain data about events on, or users of those systems, and these messages can be sent on to other tools, and gathered together in a warehouse for later analysis. Segment can also bring in information about your users from external systems, such

as helpdesks or CRM systems, and collate that information to help you analyze your data, build audiences of users, and personalize your users experiences.

Once you (or your organizations developers) have your Segment Sources set up and sending data, you can log in to the Segment App and set up Destinations, which are how Segment sends that data to other tools (like Google Analytics, Mixpanel, and many others).

## Environments and Labels

Depending on your organizations configuration and access settings, you might be able to see one or multiple Environments (for example, Production, Testing, Development), or one or multiple Labels, which control access to different parts of your organizations Segment system. If you see several environments, contact your Segment administrator for more details so you can make sure you make your changes in the right place.

## Data inside Segment

Data enters the Segment systems from Sources, but once data is in the system, your organization may have different tools configured to control and change it. This could change what data is available to you, or any destinations you set up.

For example, Protocols makes sure that data coming into Segment follows specific formats and patterns, and might block and discard malformed or unwanted data. The Privacy tool can be configured to remove Personally Identifiable Information (PII) from the data. And several different methods are available to filter data so that it doesnt send certain types of events, or reach specific destinations or warehouses.

## Set up a Destination

Depending on the access level you have in your organizations Segment workspace, you might be able to create new Destinations, or you might only be able to edit existing ones.

To add a new Destination, you'll usually need some information (such as a token or API key) from the destination tool to start. You'll enter that into the Segment App so we can connect to and send data to that tool. You'll also need to know which Source you'll be sending data from.

To set up a destination:

Log in to the Segment App, and click Add Destination to go to the catalog of available destinations.

Search for and select the destination you want to set up.

On the description page that appears, click Configure.

On the next page, select the source that you want the destination to get data from. You can only select one source at a time. The list displays only the sources that are compatible with the destination you chose. If you don't see a source that you expect, contact your administrator.

Click Confirm Source.

On the next page, configure your destination by entering the API key, token, and any other information. The configuration page shows both required information, and any extra settings.

Tip: Segment usually is able to translate data into a format that the destination expects, however some destinations (such as Adobe Analytics) may require manual mapping steps to configure properly. If you see additional fields for mapping configuration, read the documentation for that destination to learn more.

## Troubleshooting

If you're setting up a destination to use cloud-mode data (data that's sent through Segment, rather than directly from a user's device), you can use the Event Tester and Event Delivery tools to check that data is arriving, and being correctly delivered to the destination.

Have suggestions for things to add to this guide? Drop us a line!

This page was last modified: 14 Jul 2021

## Segment for Workspace Administrators

If your job is to set up or maintain a Segment Workspace for your organization, or assist other people using the Segment Web App, this guide is for you. If you're more interested in Segment implementation details, see the [developer intro guide](#).

### What is Segment?

If you've already read an [Introduction to Segment](#), you can skip ahead.

Segment is a system for sending messages from your websites, mobile apps, and servers. These messages contain event and user data that you can send to other tools or collect in warehouses for further analysis. Segment also gathers information about your users from external systems, like help desk software or CRMs. You can use this collated information to analyze data, build user audiences, and personalize your users' experiences.

### What's a Workspace?

A workspace is a group of sources that can be administered and billed together. Workspaces help companies manage access for multiple users and data sources. Workspaces let you collaborate with team members, add permissions, and share sources across your whole team using a shared billing account.

When you first log in to your Segment account, you can create a new workspace, or choose to log into an existing workspace if your account is part of an existing organization.

### The Workspace Administrators Role

You don't have to be a developer to be a Workspace administrator for an organization, and this guide only covers tasks specifically related to managing a Workspace in the Segment App.

However, many Workspace admins are also involved in the Segment implementation process as there are usually some tasks that must be performed in the Workspace to complete an implementation. If you think you might develop a



Segment implementation or help out other developers, first read Segment for developers.

Note: Workspace roles are only available to Business Tier customers. If you're on a Free or Team plan, all workspace members are granted workspace administrator access.

In addition, Workspace administrators set up and maintain the organization's workspace settings, which include:

Billing information and billing contacts

Incident contacts - the people who get notified in the event of an outage or incident

The Workspace name and slug - the display name and namespace of the workspace in the Segment system

Changing a workspace name and slug won't impact configured sources or destinations, which connect using an internal ID and writeKey.

Workspace administrators might also maintain:

The organization's authentication settings. This can include login settings, multi-factor authentication enforcement, Identity provider (IDP) settings (including SAML and OAuth), and other related settings.

Access Management settings. Business-tier plans include object-, group-, and role-based access management settings, Segment workspace environments and labels, roles and groups, and the general permissions model.

Billing information. If your Workspace is on a Team plan, you might have access to a billing page, where you can update the credit card on file or change other billing details.

Tasks in Connections

As an administrator, you might be asked to help other members of your organization with tasks related to setting up and troubleshooting your Segment implementation.

Setting up destinations

Destinations are the endpoints to which Segment sends data flowing from your Sources. Destinations can be third-party

external tools, like Google Analytics or Mixpanel, or bulk-storage resources, like warehouses.

You can set up a Destination from within the Segment App by navigating to the Destination Catalog and selecting the tool you want to set up. In most cases, you'll need an existing API key or token so that Segment can send the data to the correct account. If you're setting up a Warehouse or other storage destination, more steps might be required; see the Warehouses documentation for more details.

## Troubleshooting

Use these Segment features to keep tabs on your Workspace:

Workspace Health - if there are any problems with sources or destinations in your workspace, they'll show up here.

Event Tester - The Event tester allows you to troubleshoot your Sources, their configuration, and their downstream destinations. The Event Tester shows a sample of the data available, so you can check that it's being sent, and that it's in the correct format.

Event Delivery - Event Delivery is a bit like the Event Tester, but specifically for determining if rules or filters within Segment are preventing data from getting to a destination.

Check out Segment's list of integration error codes for insight into what might cause an error.

Still stumped? Contact support for more help troubleshooting.

Have suggestions for this guide? Reach out with your feedback.

This page was last modified: 07 Jun 2022

## Filtering your Segment Data

There are many ways you can use Segment to filter event and object based data to control which destinations it reaches. This document lists the most commonly used ways you can filter data in Segment, and explains when you'd use each.

Use Segment to filter event and object based data

### Filtering with the Integrations Object

The Integrations object is the only filtering method that cannot be edited using the Segment web app. As such, it is both the most reliable, and the most complicated filtering option to change. The integrations object is available to all customers regardless of Segment plan.

Use this option when you absolutely, for sure, 100% know that you always, or never want this data in a specific destination or set of destinations. You can also build logic in your app or site to conditionally enable or disable destinations by rewriting this object, however this is not recommended as it is time consuming to change, especially for mobile apps.

The Integrations object filters track, page, group, identify, and screen events from both client and cloud based sources, and routes or prevents them from getting to the listed destinations.

You can use the integrations JSON object as part of your Segment payloads to control how Segment routes your data to specific destinations. An example payload is below:

```
{  
  
  "anonymousId": "507f191e810c19729de860ea",  
  
  "context": {  
  
    "locale": "en-US",  
  
    "page": {  
  
      "title": "Analytics Academy",  
  
      "url": "https://segment.com/academy/"  
  
    }  
  
  },  
  
}
```

```
"integrations": {  
  
  "All": true,  
  
  "Mixpanel": false,  
  
  "Salesforce": false,  
  
  "My Destination Function (My Workspace)": true  
  
}
```

By default, the integrations object is set to 'All': true. You do not need to include this flag in the object to use this behavior, but if you'll be using the integrations object frequently to control destination filtering, you might want to do this to make it explicit for later readers. Change this to 'All': false to prevent any downstream destinations from receiving data, not including data warehouses. If you set 'Segment.io': false in the integrations object, Analytics.js 2.0 drops the event before it reaches your Source Debugger. You can also add destinations to the object by key, and provide a true or false value to allow or disallow data to flow to them on an individual basis. The Destination Info box at the top of each destination page lets you know how to refer to each destination in the Integrations object.

If you are using multiple instances of a destination, any settings you set in the integrations object are applied to all instances of the destination. You cannot specify an instance of a destination to apply Integrations object settings to.

Note that destination flags are case sensitive and match the destinations name in the docs (for example, AdLearn Open Platform, awe.sm, or MailChimp).

The syntax to filter data to a data warehouse is different. Refer to the Warehouse FAQs for more details.

## Destination filters

Destination filters allow you to control the data flowing into each specific destination, by examining event payloads, and conditionally preventing data from being sent to destinations. You can filter out entire events, or just specific fields in the properties, in the traits, or in the context of your events. Destination filters support cloud-based (server-side),

actions-based, and mobile and web device-mode destinations. Destination filters aren't available for, and don't prevent data from reaching your warehouse(s) or S3 destinations.

Destination filters are only available in workspaces that are on a Business Tier plan.

Keep these limitations in mind when using destination filters.

## Configuring a destination filter

To set up destination filters from the Segment web app for the destination from which you want to exclude data:

(For web device-mode destinations only) Enable device mode destination filters for your Analytics.js source. To do this, go to your Javascript source and navigate to Settings > Analytics.js and turn the toggle on for Destination Filters.

NOTE: Destination filters for web device-mode only supports the Analytics.js 2.0 source.

Navigate to Connections > Destinations and select the destination you want to set up filters for.

Go to the Filters tab and click + New Filter to create a destination filter. See the Destination Filters documentation for more details.

You can set up destination filters using the options presented in the Segment web app, or using Segments Filter Query Logic (FQL). If you use FQL, your query syntax is limited to 5KB per query.

## Per-Source schema integrations filters

Integration filters allow you to quickly change which destinations receive specific Track, Identify, or Group events. Access this tool in any Source that is receiving data by navigating to the Schema tab. Schema integration filters are available to workspaces that are on a Business Tier plan only.

You can apply Integrations filters to specific events regardless of whether the source is connected to a Tracking Plan. To update which destination an event can be sent to, click the Integrations dropdown menu to see a list of the destinations

each call is sent to. You can turn those destinations on or off from within the dropdown menu.

The Integrations dropdown menu displays a list of destinations each call is sent to

The events filtered out of individual destinations using this method still arrive in your data warehouse(s). Warehouses do not appear in the integration filters dropdown, and you cannot prevent data from flowing to Warehouses using this feature - to do that use Warehouse Selective Sync.

Integration filters are all-or-nothing for each event. If you require more detailed control over which events are sent to specific destinations, you can use Destination Filters to inspect the event payload, and conditionally drop the data or forward it to the destination.

Integration filters won't override an existing value in the integrations object. If the integration object already has a value for the integration, the per source schema integration filters will not override this. For example, if you're sending events to AppsFlyer with the appsflyerId passed into the integration object:

```
integrations: {  
  AppsFlyer: {  
    appsflyerId: 'xxxxxx'  
  }  
}
```

For the same event you have AppsFlyer turned off using the per source schema integrations filter, this filter won't override the above object with a false value, and events still send downstream. In this scenario, you can use destination filters to drop the event before it sends downstream.

## Schema event filters

You can use Schema Event Filters to discard and permanently remove Page, Screen and Track events from

event-based sources, preventing them from reaching any destinations or warehouses, as well as omit identify traits and group properties. Use this if you know that you'll never want to access this data again. This functionality is similar to filtering with the Integrations object, however it can be changed from within the Segment app without touching any code.

When you enable these filters, Segment stops forwarding the data to all of your Cloud- and device-mode destinations, including warehouses, and your data is no longer stored in Segments warehouses for later replay.

Use this when you need to disable an event immediately, but may need more time to remove it from your code, or when you want to temporarily disable an event for testing. In addition to blocking track calls, you can block all page and screen calls, as well as omit identify traits and group properties.

If the Source is not connected to a tracking plan, you'll find event filter toggles next to the Integration filters in the sources schema tab. When an event is set to block, the entire event is blocked. This means no destinations receive it, including data warehouses.

When you block an event using Schema filters, it won't be considered in the MTU count unless blocked event forwarding is enabled.

## Event filter toggles

When an event is blocked, the name of the event or property appears on your Schema page with a counter which shows how many times it has been blocked. By default, data from blocked events and properties is not recoverable. You can always re-enable the event to continue sending it to downstream destinations.

In most cases, blocking an event immediately stops that event from sending to destinations. In rare cases, it can take up to 6 hours for an event to completely stop arriving in all Destinations.

This feature is only available if the Source is not connected to a Tracking Plan, and is only available in workspaces that are on a Business Tier plan.

### Protocols Tracking Plan blocking and property omission

If you're using Protocols, and you're confident that your tracking plan includes exactly the events and properties you want to record, you can tell Segment to block unplanned events or malformed JSON. When you do this, Segment discards any data coming from the Source that doesn't conform to the tracking plan.

By default, the blocked events are permanently discarded: they do not flow to Destinations, and cannot be Replayed (similar to Schema Controls). However, you can opt to send data in violation of the tracking plan to a new Segment Source so you can monitor it. (This source can affect your MTU count.)

If you have Protocols in your workspace, and have a tracking plan associated with the Source, you'll see additional options in the Schema Configuration section of the Sources Settings page. From this page you can choose how to handle data violations across different types of calls and properties, whether that be blocking events entirely or omitting violating properties.

### Schema Configuration section of a source's Settings page

#### Destination Insert Function

A customizable way to filter or alter data going from a source to a cloud-mode destination is to use Insert Functions). This feature gives you the ability to receive data from your Segment source, write custom code to alter or block it, and then pass that altered payload to a downstream cloud-mode destination.

#### Warehouse Selective Sync

Warehouse Selective Sync allows you to stop sending specific data to specific warehouses. You can use this to stop syncing specific events or properties that aren't relevant, and could be slowing down your warehouse syncs. See the



Warehouse Selective Sync documentation to learn more.

This feature is only available to Business Tier customers, and you must be a Workspace Owner to change Selective Sync settings.

### Privacy Portal filtering

The Privacy Portal is available to all Segment customers, because Segment believes that data privacy is a right, and that anyone collecting data should have tools to help ensure their users privacy. More enhancements are available to BT customers who may need tools for managing complex implementations.

The Privacy Portal tools allow you to inspect your incoming calls and their payloads, detect potential Personally Identifiable Information (PII) in properties using matchers, classify the information by different categories of risk, and use those categories to determine which Destinations may or may not receive the data. Learn more about these features in the Privacy Portal documentation.

### Add a new matcher with the Privacy Portal tools

This page was last modified: 02 Feb 2024

### Handling Duplicate Data

Segment guarantees that 99% of your data won't have duplicates within an approximately 24 hour look-back window. Warehouses and Data Lakes also have their own secondary deduplication process to ensure you store clean data.

### 99% deduplication

Segment has a special deduplication service that sits behind the `api.segment.com` endpoint and attempts to drop 99% of duplicate data. Segment stores at least 24 hours worth of event messages, which allows Segment to deduplicate any data that appears with the same message ID within the stored values.

Segment deduplicates on the events messageid, not on the contents of the event payload. Segment doesn't have a built-in way to deduplicate data for events that don't generate messageids. The message de-duplication is not scoped to a specific source or a workspace, and applies to all events being received by Segment.

Keep in mind that Segments libraries all generate messageids for each event payload, with the exception of the Segment HTTP API, which assigns each event a unique messageid when the message is ingested. You can override these default generated IDs and manually assign a messageid if necessary. The messageid field is limited to 100 characters.

### Warehouse deduplication

Duplicate events that are more than 24 hours apart from one another deduplicate in the Warehouse. Segment deduplicates messages going into a Warehouse (including Profiles Sync data) based on the messageid, which is the id column in a Segment Warehouse.

### Data Lake deduplication

To ensure clean data in your Data Lake, Segment removes duplicate events at the time your Data Lake ingests data. The Data Lake deduplication process dedupes the data the Data Lake syncs within the last 7 days with Segment deduping the data based on the messageid.

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### Internet Bots

What's a bot?

If you stumbled onto this page by accident and don't know what a bot is or are just curious to learn more, the following Wikipedia article provides an awesome summary: [https://en.wikipedia.org/wiki/Internet\\_bot](https://en.wikipedia.org/wiki/Internet_bot).

Surprisingly, more than half of all web traffic is made up of bots. While a fraction of them are good bots with a regulated pattern, and therefore beneficial to all online businesses, the majority of them have malicious intents and are mostly

unregulated.

Is it possible to ignore bad bots?

Segment doesn't offer an out-of-the-box solution to filter or ignore bot traffic.

As such, you generally have two options:

Handle the filtering at a destination-level: Some of Segment's destination partners, like Mixpanel, filter bots automatically. Whereas others such as Hubspot allow you to set up bot filtering manually. The advantage of filtering bots at a destination level is that it allows you to implement a robust, easy-to-maintain solution. However, as it pertains to Segment, the downside is that bot traffic will still make it to Segment, affecting your MTU count.

Write custom logic that suppresses bot activity from being sent to Segment: if you want to prevent bot traffic from making it to Segment in the first place, another option is to write your own custom code. The logic, in pseudo-code, would look something like this if you know a particular characteristic of the bot traffic to filter out, such as the userAgent:

```
var robots = [useragent1, useragent2]

if ! window.navigator.userAgent in robots

  // send analytics calls

  analytics.track
```

The benefit here is that you would be able to limit the impact that bots have on your MTU count. On the flip side, it's much harder to implement and maintain a custom filter.

If I see a massive MTU spike because of bots, can I apply for a refund?

As a matter of policy, Segment doesn't provide refunds for bot-related MTU spikes, as bot traffic is out of Segment's control. However for extenuating circumstances, you can petition for a refund, assuming you're able to provide proof of the bots effect.

Im seeing a lot of browser traffic from Boardman; is that from Segment or a bot?

Segment uses Amazons hosting services, which are based in Boardman, Oregon. However many bots also originate from AWS in Boardman as well.

One way you can confirm whether or not traffic is coming from Segment vs. a bot is to check the userAgent of the inbound call. Segments is:

```
'Mozilla/5.0 (' + deviceModel.slice(0, -3) + '; CPU ' + osName + ' ' +  
osVersion.replace(/\.g, '_') + ' like Mac OS X) AppleWebKit/600.1.4 (KHTML,  
like Gecko) Version/' + osVersion.charAt(0) + '.0 Mobile/10B329 Safari/8536.25'
```

This page was last modified: 28 Oct 2022

## Segment vs. Tag Managers

Tag managers, also known as Tag Management Systems (TMS), were a popular solution before the mainstream adoption of mobile apps. They primarily helped Digital Analytics and Online Marketers manage web tags or beacons on a website.

Built on an older technology, tag managers inject either a piece of JavaScript or an ad pixel into a website. They carry out rules that marketers create for each tag, like firing an ad channel pixel when that network refers a website visitor. Every tag requires users to create rules. No data is stored, and no code is eliminated.

In addition to ad networks, todays data-driven businesses use a variety of tools to optimize their product and marketing spends. In order to a/b test copy, nurture sales leads, email customers, and provide fast support, businesses integrate variety of analytics and marketing tools. Segment makes it easy to install, try, and use them all. Tag managers primarily focus on ad networks, and cant support modern tools without extensive customization.

Rather than firing and forgetting, Segment takes a data-centric, deliberate approach to destinations. You dont need to

set up special parameters for each tool Segment does that for you. Segment structures your data so we can understand what it is, and can translate it correctly for each destination we send it to. Segment works because all of these tools operate on the same customer data: who is on your app and what are they doing. Segment collects this data once, then translates and sends it to every tool you use. Because Segment also archives the data, Segment can replay your historical data into new tools, and send your raw data to a data storage solution for later analysis.

## Segment Tag Managers

**Core Competency** Integrates complex tools with minimal effort, stores a complete copy of clickstream data, exports data to SQL databases  
**Loads JavaScript** into webpages, inserts advertising pixels based on rule settings

**Data Storage** Stores clickstream data in one comprehensive set; replays historical data into new tools; exports data into SQL databases and internal systems  
**Does not store data**; cannot load historical data into new tools; cannot translate and load historical data into SQL databases

**Device Compatibility** Tracks user events in mobile, web, and server environments. Server libraries include Python, Node, Ruby, PHP, .NET, Java, Clojure, Go, Rust and Xamarin  
**Operates on web**; limited functionality on mobile; does not support server destinations

**User Interface** Delivers sleek user experience; automatically translate data for new tools when you enable a destination  
**Requires that you configure settings and rules for each pixel to fire**

**Tool Integrations** Fully integrates analytics, advertising, email, customer support, marketing automation, usability tracking, error testing, and CRM tools with the flick of a switch  
**Manages ad pixels**; requires custom engineering work to integrate any other complex tool

Every organizations data stack and business requirements are unique. Segment also works well in tandem with a tag manager. For example, Segment sends data directly to the Google Tag Manager (GTM) destination.

While you can use Segments Analytics.js library through a tag manager, Segment doesnt recommended this for a few reasons:

A hybrid approach makes it difficult to determine the root cause of technical problems, and complicates troubleshooting.

Segment cannot guarantee destination compatibility in a hybrid Segment-tag-manager installation, and cannot guarantee support on these installations. All QA and regression testing assumes a native installation of Analytics.js on the page.

One of Segments main charters is to not lose data. Our system and cloud infrastructure is designed to ensure that data loss does not happen. If you implement the entry point of data capture (Segments libraries) using a Tag Manager, you introduce risk of data loss and make it difficult or impossible to troubleshoot.

This implementation behind a tag manager can introduce major delays and performance issues, which can cause delays with events that need to occur early in your funnel.

The biggest challenge is around triggering cascading events. Browsers are notorious for dropping calls. When you use a TMS to initiate Segment events you are introducing a second point of failure for those events.

This page was last modified: 16 Feb 2023

Replay

Free x

Team x

Business

Add-on x

?

Replay takes an archived copy of your Segment data, and re-sends it to new or existing tools providing huge benefits to mature data systems. By archiving and replaying data, you can avoid vendor lock-in, and protect your system against data loss.

## Replays for tooling changes

With Replays, you can send your existing data to new tools. This means you can send a limited sample of your data to a new tool to test it out, and run similar tools in parallel to verify the data format or accuracy of the output. Finally, when you're ready to switch to a new tool, you can replay a full set of your data to the new tool to backfill it with data that extends before you set up the tool - no warm-up time or operational gap to disrupt your work.

## Note

Any destinations which accept cloud-mode data (meaning data from Segment, and not directly from users devices) can use replay, however they must also process timestamps on the data for replay to be useful.

## Replays for resilience

With Replays, you're protected from outages and errors. If a destination which you rely on experiences an outage, or is temporarily unable to accept incoming data, you can use Replays to re-send data to that tool once the service recovers. You can also use Replays to recover from errors caused by misconfigurations in your Segment systems. For example, if you send data in the wrong format, or want to apply destination filters. In this case, you can change your mapping using a destination filter, clear out the bad data, and replay it to that destination. You can also use this to update the schema in your data warehouse when it changes.

For more information, Contact us and our Success Engineers will walk you through the process.

## Replays considerations

Replays are currently only available for Business Tier customers, and due to their complex nature are not self-serve. Contact us to learn more, or to request a replay for your workspace. When requesting a replay, include the workspace, the source to replay from, the destination tool or tools, and the time period.

Replays can process unlimited data, but they're rate limited to respect limitations in downstream partner tools. If you're also sending data to the destination being replayed to in real time, then, when determining your replays limit, you'll want to take into account the rate limit being used by real-time events. You should also account for a small margin of your rate limit to allow events to be retried.

Replay time depends both on the tool Segment replays to and the amount of data included in the replay.

Replays do not affect your MTU count, unless you are using a Repeater destination. Notify your team before initiating a Replay if you're using a Repeater destination.

Once a replay starts, you will not see replayed events in the Event Delivery tab.

You can initiate replays for some or all events, but you can't apply conditional filters that exclude certain rows of data from being replayed. You can set up destination filters to conditionally filter replayed events.

The destination is not required to be enabled in order for a replay to be successful, including Destination Functions.

The destination must be connected to the source, but can remain disabled while the replay is running.

Destination filters are still considered when you run replays on disabled destinations.

There are a few exceptions for destinations that must be enabled for the replay to be successful : Amazon S3 and Google Cloud Source (GCS).

Replay-eligible destinations

Replays are available for any destinations which support cloud-mode data (meaning data routed through Segment) and which also process timestamps. Destinations that are only available in device-mode (meaning where data is sent directly from the user's devices to the destination tool) cannot receive Replays.

Not all destinations support data deduplication, so you may need to delete, archive, or remove any older versions of the



data before initiating a replay. contact Segment support if you have questions or want help.

## Replays & Destination Filters

Replays are subject to the Destination Filters you've configured on that destination. For example, if you request that Identify calls be included in the replay, but your destination has a Destination Filter that blocks Identify events, the filter then blocks all Identify events from making it to the destination. In this case, Segment recommends that you avoid including Identify events in the replay if you know they'll be blocked by the destination filter.

When you request a replay, Segment asks you to provide a list of the events (type and/or name) that you want included in the replay. If you specify a list of events, then Segment only includes those specified events in the replay. If you need to exclude events in your replay, contact Segment support. The Segment team can help you handle filtering you're unable to do in the replay.

## Replays & Engage

There are two types of replays with Engage.

Replay a Profile Sources data into Engage Space, (sending a standard sources data into an Engage Space), which can be configured to send over a specified timeframe as well as the ability to specify all or only a specific subset of events by type or name.

Replay from an Engage Space to its connected destination, (sending data from an Engage Output Source to its connected destination), which includes all the computational data (Audiences, Computed Traits, Journeys) that destination is currently configured to receive, which can be configured to send over a specified timeframe as well as the ability to specify all or only a specific subset of events by type or name.

## Nuances to Consider for Engage Replays

### 1. Replay a Profile Sources data into Engage Space

When a new Profile Source is connected to an Engage Space, the default option to replay the sources data seen over the past 30 days can be selected. To request a sources additional historical data be replayed to the Engage Space, contact Segment Support at [friends@segment.com](mailto:friends@segment.com) or create a ticket. Please see this documentation on further details of this process and what to include in your support request.

## 2. Replay from an Engage Space to its connected destination

Since each instance of a destination is connected to its own Engage Output source, that source contains events for all of the computations that destination is connected to received data from, the list of output sources can be found under Unify > Unify Settings > Debugger. Because of this, its not possible to replay only a specific computations data to the destination, you should instead consider reaching out to Segment support to request a resync of that computation to its destination instead. However, if you would like to replay all failed events seen by that destination, which will encompass all connected computations, that can be achieved with a replay.

Note: The replay will be sending historical data to the destination, potentially overwriting the destination with outdated data if more recent data has been sent from the computation to the destination. In this case, a resync of the computation might also be more advantageous to get the most up-to-date data resent to the destination.

Rate limits for replays are configurable and can be increased or decreased upon request. However, there are some destinations which have strict rate limits and cannot be configured to send data at a higher rate than whats stated within the table on Rate limits on Engage Event Destinations.

### Engage : Replay versus Resync

Replay : A replay resends all events, specific events by type or name, or failed events over a specified period of time to the destination.

Resync : A resync sends events for a computations (Audience, Computed Trait, Journey) entire current user base to its connected destination.

This page was last modified: 05 Jun 2024

Regional Segment

Free x

Team x

Business

Add-on x

?

On July 10, 2023, the European Commission adopted the Adequacy Decision for the EU-US Data Privacy Framework (DPF). This concludes that EU personal data transferred to the United States under the DPF is adequately protected when compared to the protection in the EU. With this adequacy decision in place, personal data can safely flow from the EU to US companies participating in the DPF without additional safeguards in place.

Twilio is certified under the DPF and relies on the DPF as its primary personal data transfer mechanism for EU-US personal data transfer. Twilio will rely on the DPF for any Swiss-US personal data transfers as soon as a corresponding Swiss adequacy decision is made. Twilio understands that interpretations of data residency are multi-faceted and some customers might still want their data to reside in the EU. Twilio Segment therefore offers a data residency solution outside of the DPF.

Segment offers customers the option to lead on data residency by providing regional infrastructure in both Europe and the United States. The default region for all users is in Oregon, United States. You can configure workspaces to use the EU West Data Processing Region to ingest (for supported sources), process, filter, deduplicate, and archive data through Segment-managed archives hosted in AWS S3 buckets located in Dublin, Ireland. The regional infrastructure has the same rate limits and SLA as the default region.

#### Existing Workspaces

To ensure a smooth transition from a US-based Segment workspace to an EU workspace, Segment will provide additional support and tooling to help with the transition later this year. Use the form link below to provide more information about your current setup and goals for transitioning.

The Segment UI doesn't support moving workspaces between regions. To request help with this move, complete the Data Residency Workspace Provisioning Flow form.

[Click to access the form](#)

## Regional Data Ingestion

Regional Data Ingestion enables you to send data to Segment from both Device-mode and Cloud-mode sources through regionally hosted API ingest points. The regional infrastructure can fail-over across locations within a region, but never across regions.

### Cloud-event sources

The following cloud sources are supported in EU workspaces:

Amazon S3

Factual Engine

Iterable

### Client-side sources

You can configure Segments client-side SDKs for JavaScript, iOS, Android, and React Native sources to send data to a regional host after you've updated the Data Ingestion Region in that source's settings. Segments EU instance only supports data ingestion from Dublin, Ireland with the `events.eu1.segmentapis.com/` endpoint. If you are using the Segment EU endpoint with an Analytics-C# source, you must manually append `v1` to the URL. For instance, `events.eu1.segmentapis.com/v1`.

For workspaces that use the EU West Data Processing region, the Dublin Ingestion region is preselected for all sources.

To set your Data Ingestion Region:

Go to your source.

Select the Settings tab.

Click Regional Settings.

Choose your Data Ingestion Region.

If you're in the US West data processing region, you can select from: Dublin, Singapore, Oregon, and Sydney.

If you're in the EU West data processing region, Segments EU instance only supports data ingestion from Dublin with the `events.eu1.segmentapis.com/` endpoint.

All regions are configured on a per-source basis. You'll need to configure the region for each source separately if you don't want to use the default region.

All Segment client-side SDKs read this setting and update themselves automatically to send data to new endpoints when the app reloads. You don't need to change code when you switch regions.

#### Server-side and project sources

When you send data from a server-side or project source, you can use the host configuration parameter to send data to the desired region:

Oregon (Default) `https://events.segmentapis.com/v1`

Dublin `https://events.eu1.segmentapis.com/`

If you are using the Segment EU endpoint with an Analytics-C# source, you must manually append `v1` to the URL. For instance, `events.eu1.segmentapis.com/v1`.

Here is an example of how to set the host:

```
Analytics.Initialize("<YOUR_WRITEKEY_HERE>", new Config().SetHost("https://events.eu1.segmentapis.com  
(https://events.eu1.segmentapis.com/)"));
```

Create a new workspace with a different region

Use this form if you need to transition from your existing US-based workspace to an EU workspace.

To create a workspace with a different data processing region, reach out your Segment account executive, and they will assist you with enabling the feature. Once the feature has been enabled, you'll be able to self-serve and create a new workspace in a different data processing region by following these steps:

Log in to your Segment account.

Click New Workspace.

Select your Data processing region. This determines the location in which Segment collects, processes, and stores data that's sent to and from your workspace. You can choose from US West or EU West.

Click Create workspace.

Once you create a workspace with a specified data processing region, you can't change the region. You must create a new workspace to change the region.

## EU Storage Updates

### Segment Data Lakes (AWS)

Regional Segment in the EU changes the way you configure the Segment Data Lakes (AWS) environment

### Warehouse Public IP Range

Use Segments custom CIDR 3.251.148.96/29 while authorizing Segment to write in to your Redshift or Postgres port.

BigQuery doesn't require you to allow a custom IP address.

## Known Limitations

Regional Segment is currently limited to the EU. Future expansion of Regional Segment beyond the EU is under evaluation by Segment Product and R&D.

Edge proxies are deprecated. Customers using Regional Endpoints may see US-based IP addresses in event payloads, Segment recommends using the US-based endpoint (api.segment.io) to preserve client IP addresses. For EU customers, Segment recommends using a Regionalized EU workspace.

Destination support and Regional endpoint availability

Don't see a regional endpoint for a tool you're using?

As more of the partner tools you use (Sources, Destinations, and Warehouses) start to support a regional endpoint, Segment will update this list. Your contact for that tool should have a timeline for when they're hoping to support regional data ingestion. You can also visit Segments support page for any Segment-related questions.

The following integrations marked with a Supports EU regional endpoints (checkmark) support EU Regional endpoints.

Integrations available in EU workspaces do not guarantee data residency

Before you configure an integration, you should check directly with the integration partner to determine if they offer EU endpoints.

Search for an integration..

All				
Destinations				
Warehouses				
Integration	US Workspace	EU workspace w/ US Endpoint	EU workspace w/ EU Endpoint	
Destinations				
1Flow				
1Flow Mobile Plugin				

1Flow Web (Actions)

2mee

Aampe

AB Smartly

AB Tasty client side

ABsmartly (Actions)

Accoil Analytics

Acoustic (Actions)

Actable Predictive

Actions Pipedrive

ActiveCampaign

Adikteev

Adjust

AdLearn Open Platform

Adobe Analytics

Adobe Target Cloud Mode

Adobe Target Web

AdQuick

AdRoll

Adtriba

Aggregations.io (Actions)

Airship

Airship (Actions)

Akita Customer Success

Alexa

Algolia Insights (Actions)

Amazon Ads DSP and AMC



Amazon EventBridge

Amazon Kinesis

Amazon Kinesis Firehose

Amazon Lambda

Amazon Personalize

Ambassador

Amberflo

Amplitude

Amplitude (Actions)

Angler AI

Anodot

Appcues

Appcues Mobile

AppFit

AppNexus

AppsFlyer

Apptimize

Asayer

Astrolabe

Atatus

Attentive Mobile

Attio (Actions)

Attribution

Auryc

AutopilotHQ

Avo

AWS S3

Azure Function

Batch

Beamer

Bing Ads

Blackbaud Raiser's Edge NXT

Blend Ai

Blendo

Blitzllama

Bloomreach Engagement

Blueshift

Branch Metrics

Braze

Braze Cloud Mode (Actions)

Braze Cohorts

Braze Web Device Mode (Actions)

Breyta CRM

Bronto

Bucket

BugHerd

Bugsnag

Button

BuzzBoard

ByteGain

BytePlus

Calixa

Callingly

Candu

Canny (Actions)

Castle

Chameleon

Chartbeat

ChartMogul

Churned

ChurnZero

Clearbit Enrichment

Clearbit Reveal

ClearBrain

CleverTap

CleverTap (Actions)

Clicky

ClientSuccess

Cliff

Close

CommandBar

comScore

Contentstack Cloud

Contentstack Web

ConvertFlow

Convertly

Convertro

Cordial (Actions)

Correlated

Countly

Courier

Crazy Egg

Crisp

Criteo App & Web Events

Criteo Audiences

Crittercism

Crossing Minds

CrowdPower

Cruncher

Custify

Customer.io

Customer.io (Actions)

Data Lakes

Delighted

Delivr.ai Resolve

Display and Video 360 (Actions)

DoubleClick Floodlight

Dreamdata

Drip

Drip (Actions)

Dynamic Yield by Mastercard Audiences

Elevio

Eloqua

Email Aptitude

Emarsys

Emarsys (Actions)

EMMA

Encharge (Actions)

Engage Messaging

EnjoyHQ

EPICA

Equals

Errorception

events.win

Everflow

Experiments by GrowthHackers

Extole Platform

Facebook App Events

Facebook Conversions API (Actions)

Facebook Custom Audiences (Actions)

Facebook Offline Conversions

Facebook Pixel

FactorsAI

Firebase

FL0

Flagship.io

Flurry

FoxMetrics

Freshmarketer

Freshsales

Freshsales Suite - CRM

Friendbuy (Cloud Destination)

Friendbuy (Legacy)

Friendbuy (Web Destination)

FullStory

Fullstory (Actions)

Fullstory Cloud Mode (Actions)

FunnelEnvy

FunnelFox

Gainsight

Gainsight PX

Gainsight Px Cloud (Actions)

Gameball (Actions)

Gauges

Gist

Gleap (Action)

Google Ads (Classic)

Google Ads (Gtag)

Google Ads Conversions

Google Ads Remarketing Lists

Google Analytics 4 Cloud

Google Analytics 4 Web

Google Cloud Function

Google Cloud PubSub

Google Cloud Storage

Google Sheets

Google Tag Manager

GoSquared

GraphQLJSON

Groundswell

GWEN (Actions)

HasOffers

Hawkei

Heap

Hello Bar

Help Scout

HitTail

Hotjar

Houseware

Hubble (Actions)

HubSpot

HubSpot Cloud Mode (Actions)

HubSpot Web (Actions)

Humanic AI

hydra

IBM UBX

Impact Partnership Cloud

Improvely

Indicative

Inflection

Inkit

Inleads AI

InMoment (formerly Wootric)

Innovid

Insider Audiences

Insider Cloud Mode (Actions)

Inspectlet

Intercom

Intercom Cloud Mode (Actions)

Intercom Web (Actions)

Iron.io

Iterable

Iterable (Actions)

Iterate Web (Actions)

Jimo

Jimo (Actions)

Jivox

journy io

June

June (Actions)

Kable

Kafka

Kahuna

Kameleoon (Actions)

Kana

Keen

Kevel

Kissmetrics

Kitemetrics

Klaviyo

Klaviyo (Actions)

Koala

Koala (Cloud)

Kochava

Kubit

Kustomer



LaunchDarkly (Actions)

LaunchDarkly Audiences

Leanplum

Learndot

Librato

LinkedIn Audiences

LinkedIn Conversions API

LinkedIn Insight Tag

Listrak (Actions)

LiveChat

LiveIntent Audiences

LiveLike

LiveRamp Audiences

Localytics

LogRocket

Loops (Actions)

Lou

Lucky Orange

Lumen

Lytics

mabl

Madkudu

MailChimp

Mailjet

Mailmodo

Mammoth

Marketo Static Lists (Actions)

Marketo V2

Markettailor

Matcha

Matomo

MediaMath

Metronome (Actions)

Millennial Media

Mixpanel (Actions)

Mixpanel (Legacy)

MoEngage

Moengage (Actions)

Moesif API Analytics

Moloco MCM

Monetate

Moosend

Mouseflow

MouseStats

Movable Ink (Actions)

Mutiny

Nanigans

Nat

Natero

Navilytics

New Relic

Nielsen DCR

Ninetailed by Contentful

Noora

Nudgespot

Olark

OneSignal (New)

Optimizely Advanced Audience Targeting

Optimizely Data Platform

Optimizely Feature Experimentation (Actions)

Optimizely Full Stack

Optimizely Web

Orb

Ortto

Pardot (Actions)

Parsely

Peaka

Pendo

Pendo Web (Actions)

Perfect Audience

Perkville

PersistIQ

Personas Facebook Custom Audiences

Personyze

Pingdom

Pinterest Audiences

Pinterest Conversions API

Pinterest Tag

Planhat

PlayerZero Web

Plotline

Podscribe (Actions)

Podsights

Pointillist

PostHog

Postscript

ProductBird

ProfitWell

Proof Experiences

ProsperStack

Pushwoosh

Qualaroo

Qualtrics

Quantcast

QuanticMind

Quora Conversion Pixel

Rabble AI

RadiumOne Connect

Ramen

Recombee AI

Reddit Conversions API

Refersion

Refiner

Regal.io

Rehook

Repeater

Responsys

Retina

RevX Cloud (Actions)

Richpanel

Ripe Cloud Mode (Actions)

Ripe Device Mode (Actions)

Rockerbox

Rokt

Rokt Audiences (Actions)

Rollbar

Rupt

SaaSquatch v2

Sailthru v2

Salescamp CRM

Salesforce (Actions)

Salesforce Marketing Cloud (Actions)

Salesmachine

Saleswings (Actions)

SatisMeter

Savio

Schematic

ScopeAI

Screeb

Screeb Web (Actions)

Scuba Analytics

Segment Connections

Segment Data Lakes (Azure)

Segment Profiles

SegMetrics

Selligent Marketing Cloud

SendGrid

Sentry

Serenytics

ShareASale

Sherlock

SIGNAL4 Alerting

SimpleReach

SingleStore

Singular

Skalin

Slack

Slack (Actions)

SlicingDice

Smartlook

Snapboard

Snapchat Audiences

Snapchat Conversions API

SnapEngage

Spideo

Spinnakr

Split

Sprig (Actions)

Sprig Cloud

StackAdapt

Startdeliver

Startdeliver-v2

Statsig

Stitch Data

Stonly

Stories

Stormly

Strikedeck

Survicate

Survicate (Actions)

Swrve

Taboola (Actions)

Talkable

Talon.One

Talon.One (Actions)

Tamber

Taplytics

Tapstream

The Trade Desk Crm

TikTok Audiences

TikTok Conversions

Tiktok Offline Conversions

TikTok Pixel

Toplyne Cloud Mode (Actions)

Topsort

Totango

Track JS

Trackier

Tractionboard

TrafficGuard

tray.io

Treasure Data

Trustpilot

TUNE

Twitter Ads

Unwaffle

Upcall

Upollo

Upollo Web (Actions)

User.com

UserGuiding

UserIQ

Userlist

Usermaven (Actions)

UserMotion (Actions)

Userpilot Cloud (Actions)

Userpilot Web (Actions)

Userpilot Web Plugin

UserVoice

Variance

Vero

Vespucci

Vidora

Visual Website Optimizer

Vitally

Voucherify



Voucherify (Actions)

VWO Cloud Mode (Actions)

VWO Web Mode (Actions)

WalkMe

WebEngage

Webhooks (Actions)

Whale Alerts

Whale Watch

Wigzo

Windsor

Wisepops

Wishpond

Woopra

Xplenty

Xtremepush

Xtremepush (Actions)

Yahoo Audiences

Yandex Metrica

Yellowhammer

Youbora

Zaius

Zapier

Zendesk

Zopim

Warehouses

Amazon S3

AWS S3

Azure Synapse Analytics Warehouse

BigQuery

Databricks

IBM Db2 Warehouse

Postgres

Redshift

Segment Data Lakes

Snowflake

Source Regional support

Don't see regional support for a source you're using?

As more of the partner Sources start to support posting data to our regional endpoint, Segment will update this list. Your contact for that tool should have a timeline for when they're hoping to support regional data ingestion. You can also visit [Segments support page](#) for any Segment-related questions.

The following Sources marked with a Supports EU regional endpoints (checkmark) are supported in EU workspaces.

Search for an source..

Integration US Workspace EU workspace

Sources

.NET

ActiveCampaign

Aircall

Airship

Alloy Flow

Amazon S3

Amplitude Cohorts

Antavo

Apple

Authvia

AutopilotHQ

Beamer

Blip

Bluedot

Blueshift

Braze

Candu

Chatlio

CleverTap

Clojure

CommandBar

ConfigCat

Customer.io

Delighted

Drip

Elastic Path

Elastic Path CX Studio

Facebook Ads

Facebook Lead Ads

Factual Engine

Flutter

Foursquare Movement

Freshchat

Friendbuy

Gladly

Go

Google Ads

GWEN Webhooks

Herow

HTTP API

HubSpot

IBM Watson Assistant

Inflection

Insider

Intercom

Iterable

Java

Javascript

Jebbit

Klaviyo

Klenty

Kotlin

Kotlin (Android)

LaunchDarkly

Leanplum

Listrak

LiveLike (Source)

Looker

Mailchimp

Mailjet

Mailmodo

Mandrill

Marketo

Mixpanel Cohorts

MoEngage (Source)

Moesif API Analytics

Navattic

Nudgespot

One Creation

OneSignal

OneTrust

Paytronix

Pendo

PHP

Pixel Tracking API

ProveSource

Pushwoosh Source

Python

Qualtrics

Quin AI

Radar

React Native

Refiner

Roku (alpha)

Ruby

Salesforce

Salesforce Marketing Cloud

Selligent Marketing Cloud

SendGrid

SendGrid Marketing Campaigns

Shopify (by Littledata)

Shopify - Powered by Fueled

Statsig

Stripe

Synap

Twilio

Unity

Upollo

UserGuiding

Vero

Voucherify

White Label Loyalty

WorkRamp

Xamarin

Yotpo

Zendesk

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Audiences, Journeys, and Broadcasts

Free x

Team x

Business

+

Engage Foundations

?

Audiences, Journeys, and Broadcasts are fundamental to Twilio Engage and let you segment your users, send them personalized content, and show them ads from platforms like Facebook or Google.

In this guide, you'll learn how to choose between an Audience, a Journey, and a Broadcast for a number of marketing use cases across the customer lifecycle.

## Back to basics

First, consider the following definitions for an Audience, Journey, and Broadcast.

### Audience

In Engage, an Audience is a group of users that share certain characteristics. When you create an Audience, you group users who meet certain conditions, like having performed an event or having a Computed Trait.

Once you've created an Audience, you can sync it to marketing automation tools, ads platforms, analytics tools, or data warehouses. Depending on the Audiences conditions and connected Destination(s), Segment syncs the Audiences users in batches or in real time, as they meet the Audiences conditions.

### Journey

A Journey is a logic-driven workflow that progresses users through steps based on conditions and time delays. You add users to a Journey with an entry condition, then users progress through the Journeys steps based on conditions you define during Journey setup.

As with Audiences, Segment can sync users to Destinations at designated points in the Journey. Unlike an Audience, a Journey can send users to Twilio Engages native email and SMS channels.

Broadcast

A Broadcast is a one-time SMS or email campaign sent to a group of users. Whereas Segment continuously updates Audience membership, Segment only calculates the users who will receive your Broadcast once. Marketers commonly use Broadcasts for newsletters, promotional campaign, and events.

Engage and the customer lifecycle

The customer lifecycle provides a helpful framework for thinking about Audiences, Journeys, and Broadcasts.

A flow chart of the digital marketing lifecycle

Audiences and Broadcasts tend to be most effective at the top of the customer lifecycle funnel, where brand awareness and discovery occurs.

A Journey becomes a better option as customers progress down the funnel, where a more complex strategy involving messaging, social ads, and newsletters helps move customers closer to conversion.

Choosing between Audiences, Journeys, and Broadcasts

With the customer lifecycle in mind, use the following table as a starting point for selecting an Audience or Journey for common marketing use cases:

Use Case Audience, Journey, or Broadcast

I want to send email and SMS campaigns. Journey or Broadcast

I want to send a one-time email or SMS campaign. Broadcast

I only have one intended touchpoint. Audience or Broadcast

I need branching logic. Journey

I want to run A/B tests. Journey



I want to re-target customers with the same ad. Audience

While these suggestions will work for most use cases, you may need to consider other factors before you implement your own campaign. Asking the following questions will help you identify the right approach.

Over the course of a campaign, how many touchpoints do I want to create?

Audiences and Broadcasts work best for single, one-off messages or touchpoints. If you need a campaign with time delays and branching logic, opt for a Journey.

For example, an Audience works well if you want to show a single ad when a user abandons a cart. If, however, you want to show an ad, wait several days, then send the user an email if they've not completed their purchase, go with a Journey.

Do I want to use Engage Premier Channels like SMS and email?

You can message users with Engage Premier Channels. If you'd like to send an SMS or email campaign to a customer, use a Journey.

Do I need branching logic?

Create a Journey if you want to incorporate branching logic into your campaign.

Do I want to conduct an A/B test or create a holdout group?

A number of Journeys step types, like randomized splits, let you run experiments and test your campaigns. If you want to experiment with different groups, use a Journey.

Do I want my customers to receive the same campaign more than once?

With Journeys, you can allow customers to re-enter a Journey they've exited or restrict them to a one-time Journey.

Audiences, on the other hand, admit users whenever they meet the Audiences criteria. For example, you may want to

retarget a user with an ad whenever they view a page on your website. In this case, an Audience works well since the user can re-enter the Audience regardless of how many times they've already done so.

## Putting it together

With this guidance in mind, take your next steps with Engage by learning how to build a Journey, work with Engage Audiences, and send a Broadcast.

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## How to Guides Index

Segments How-to Guides provide an in-depth walk through and examples of the many things you can do to implement, automate, engage with, and begin analyzing your data. We've also got a series of Quickstart Guides for each of our Source libraries.

## Implementation

What are best practices for identifying users?

Should I collect data on the client or server?

How do I collect page views on the server side?

How do I import historical data?

How do I join user profiles?

How do I migrate code from other analytics tools?

## Engagement and Automation

What role does Segment play in Attribution?

How do I automate multi-channel re-engagement campaigns?

How do I create a push notification?

How do we track customers across channels and devices?

How do I set up a dynamic coupon program to reward loyal customers?

How do we set up event-triggered notifications or alerts?

Analytics

How do I forecast Long Term Value with SQL and Excel for e-commerce?

How do I measure my advertising funnel?

How do I measure the ROI of my Marketing Campaigns?

Quickstart Guides

Analytics.js (Javascript) Quickstart Guide

.NET Quickstart Guide

Go Library Quickstart Guide

Python Library Quickstart Guide

Java Library Quickstart Guide

PHP Library Quickstart Guide

Node.js Library Quickstart Guide

Ruby Library Quickstart Guide

iOS Quickstart Guide

Android Quickstart Guide

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Automating Multi-Channel Re-Engagement Campaigns

Compelling and engaging brands delight their customers at every interaction. As customers move seamlessly across channels such as email, push notifications, display ads brands must similarly meet them with tailored and consistent messages.

With Segment, you can craft a tailored message while using a combination of AdRoll, Customer.IO, and other tools to dynamically switch between channels.

Talk to a product specialist today about using data to tailor your brand experience.

## Tools used

Retargeting with AdRoll: AdRoll is a retargeting and prospecting tool that allows you to show display ads to a behaviorally-defined cohort

Push notifications with Braze: Braze is a multi-channel marketing campaign focused on the mobile experience

Emails with Customer.io: Customer.io is a flexible email provider that allows you to create cohorts based on customer actions. You can build complex onboarding emails, nurture email campaigns, as well as marketing automation workflows.

There are other email tools on Segments platform, such as Bronto, SendGrid, and Mailchimp. Check out the full list of email tools.

It's important to register for these tools and enable them on your Segment source project. When Segment collects tracking data, it'll also route it to all of your enabled tools. Then your tools, especially ones like Customer.io, Braze, and AdRoll, where you can define cohorts of your users, will be working off a dynamic, yet consistent data set. This is paramount in getting the dynamic messaging to update accordingly.

## Set it up

Diagram showing tracking data moving from your source, to Segment, and then to Braze, customer.io, and AdRoll.

When you send tracking data from your app or website to Segment, Segment will send the same data to all of your tools. Segment also collects key messaging events like Push Notification Opened and Email Opened from Braze and Customer.io, respectively, and sends that to other tools. By defining cohorts based on these events, you can create dynamic campaign audiences, to which customers can add and remove themselves.

In each of your destinations Braze, Facebook, Customer.io, AdRoll you can create custom campaigns to show display

ads or send emails to a specific segment of users who have performed (or not performed) a given action, or event. In this cross-channel re-engagement example, we'll start with push notifications.

#### 1st line of defense: the push notification

In Braze, create a segment of customers who added a product to their cart, but did not check out. The segment definition, in this case, should be people who have performed Product Added, but have not performed Order Completed. Send a push notification to these customers with a message that the cart was abandoned and that they can complete the transaction with, for example, a 10% coupon.

An Apple iPhone with a push notification from Toastmates that says Oh no! You left something in your basket.

#### 2nd line of defense: the email reminder

Because Segment automatically collects second-party data from Braze, you now also have push notification event data, like Push Notification Opened and Push Notification Received in Segment. You can use the properties on each of these events to define a property called campaign\_name so you can tie these activities to a given campaign.

Screenshot of an email from Toastmates reminding the customer that they have a toast in their cart and giving them a coupon and a direct link to their cart.

This is helpful because now, you can define segments in Customer.io for customers who have triggered Push Notification Received, but not Push Notification Opened. You've now automated the process of targeting customers who don't open your push notifications. In Customer.io, you can create a campaign that sends an email to those people asking them to check their push notifications and offering them a coupon to complete their order.

#### 3rd line of defense: paid advertising

Since Segment collects email event data, like Email Opened, from Customer.io, you can similarly create segments in Facebook Ads and AdRoll for when customers don't open your email. Create a segment where users have an Email

Delivered event, but no Email Opened event. When users meet these criteria, they'll get automatically added to your retargeting campaigns. You can then serve them custom creatives about them neglecting to open your emails and, again, perhaps offer them a coupon to complete the transaction.

An ad for Toastmates with a frowning face on a piece of toast and a link for a coupon.

When users do not open an activation email, add them to a specific retargeting campaign that contains messaging to remind them to activate.

With Segment, automate not just switching across channels, but also the messaging in each channel so that the entire experience is cohesive. The added benefit is that we can create specifically targeted retargeting campaigns for people who no longer open our emails or push notifications. Automating these processes with Segment makes channel-switching more seamless for your customers.

Create an engaging and consistent brand experience

This is just a simple cart abandonment example that dynamically follows customers as they switch between channels. Because Segment collects and routes the second party data of emails and push notifications being opened, you can create specific campaigns with messaging that targets your customers as they interact with your brand.

With over 200+ different tools on Segments platform, you can take this idea and create other tailored shopping experiences to re-engage your customers.

Talk to a product specialist today about using data to tailor your brand experience.

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Collecting Data on the Client or Server

One of the most common questions Segment receives is: Should I use one of your client-side libraries or one of your server-side libraries?

This is such an important topic that you'll find an in-depth article in Segments Analytics Academy: [When to Track on the Client vs Server](#). It's worth a read. Below, you can also read some quick logic around why you may want to choose either option.

## Client-side

### Not stored in your database

Good things to send from the client-side are things that you wouldn't usually store in your database. Things like page views, button clicks, page scroll length, mouse movements, social shares, and likes.

### Easier to send client-side

Things like UTM tags, operating system, device type, or cookie data like returning visitors are all easiest to track client-side. Of course, some things like mouse movements are only available on the client-side so you should definitely track that there.

### Events needed for client-side only destinations

Some destinations can only accept data when the event is sent from the browser. They require events on the client since they rely on cookies and most of those tools do not have an API that Segment can send server-side data to. More on this in [Segments Analytics.js docs](#).

## Server-side

### Payment events

Charging customers often happens when they aren't online, and accuracy for payments is so important. Server-side tracking tends to be more accurate than user devices since it's a more controlled environment.

## Accuracy

In general client-side data is fine for watching general trending, but its never going to be perfect. Especially if your customers are likely to use things like adblock or old/non-standard browsers.

For example, if youre sending triggered emails based on events, its probably a good idea to make sure your user profiles are sent through Segments servers so no one gets left out or mis-emailed.

## Calculated from your database

Another good type of data to send server-side are things that need to be calculated from a database query. This might be something like Friend Count if your site or app is a social network.

## Sensitive information

Sensitive information is also best kept out of browsers. Any data you dont want exposed to users should be sent server-side.

## Selecting Destinations

Each Segment library allows an integrations object either as a top level object or nested in options object.

This flag may be especially useful in Legacy source types, where an event might be triggered on both the client and server for various reasons. The following will cause the payload to be sent to all enabled tools except Facebook Pixel:

```
analytics.identify('user_123', {  
  email: 'jane.kim@example.com',  
  name: 'Jane Kim'  
}, {  
  integrations: {  
    'Facebook Pixel': false
```



```
}
```

```
});
```

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## Collecting Pageviews on the Server Side

Segment believes that client-side collection is appropriate for collection of basic pageviews.

If you'd like to track page calls from your server to Segment, Segment recommends doing it in addition to any client side tracking you're doing with analytics.js, and doing it in a separate source so that you can configure where to send the (probably redundant, albeit higher-fidelity) data.

With this approach, you might use a request middleware to log a pageview with every page load from your server.

There are a few things to be mindful of if you want to make sure you can attribute these (anonymous) page views to the appropriate user in your client-side source (eg, for effectively joining these tables together to do down-funnel behavioral attribution). You'll want to ensure they share an anonymousId by respecting one if it's already there, and setting it yourself if not. To do that, you can read and modify the `ajs_anonymous_id` cookie value in the request.

Be sure to pass through as many fields as you can in Segments Page and Common spec, so that you get full functionality in any downstream tools you choose to enable. Segment recommends specifically ensuring you pass the url, path, host, title, search, and referrer in the message properties and ip and user-agent in the message context .

Here's an example of an express middleware function that covers all those edge cases:

If you have any questions or would like help generally adopting this method for other languages and frameworks, be sure to get in touch.

```
import express from 'express'
```

```
import Analytics from 'analytics-node'
```

```
import { stringify } from 'qs'
```

```
const app = express()
```

```
const analytics = new Analytics('write-key')
```

```
app.use((req, res, next) => {
```

```
  const { search, cookies, url, path, ip, host } = req
```

```
  // populate campaign object with any utm params
```

```
  const campaign = {}
```

```
  if (search.utm_content) campaign.content = search.utm_content
```

```
  if (search.utm_campaign) campaign.name = search.utm_campaign
```

```
  if (search.utm_medium) campaign.medium = search.utm_medium
```

```
  if (search.utm_source) campaign.source = search.utm_source
```

```
  if (search.utm_term) campaign.keyword = search.utm_term
```

```
  // grab userId if present
```

```
  let userId = null
```

```
  if (cookies.ajs_user_id) userId = cookies.ajs_user_id
```

```
  // if no anonymousId, send a randomly generated one
```

```
  // otherwise grab existing to include in call to segment
```

```
  let anonymousId
```

```
  if (cookies.ajs_anonymous_id) {
```

```
    anonymousId = cookies.ajs_anonymous_id
```

```
} else {

  anonymousId = = uuid.v4()

  res.cookie('ajs_anonymous_id', anonymousId )

}


const referrer = req.get('Referrer')

const userAgent = req.get('User-Agent')


const properties = {

  search: stringify(query)

  referrer,

  path,

  host,

  url

  /* ++ any custom props (eg. title) */

}


const context = {

  campaign,

  userAgent,

  ip

}


// send a call to segment

analytics.page(

  anonymousId, // either random (matching cookie) or from client

  userId, // might be null
```

```
properties,  
  
context  
  
)  
  
// proceed!  
  
next()  
  
})
```

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## Creating a Push Notification

Like emails, push notifications are an extremely powerful way to re-engage customers on mobile apps. Push notifications are personal, so targeting them precisely using customer behavioral data (from Segment) is crucial.

For example, Wanelo accepts direct product feeds from retailers. For any of these retailers, when a product goes on sale, they can send a push notification to the people who have saved that product in their profile.

Push messaging focuses around three key features:

**Content:** Diversify your messaging just as you would with an investment portfolio. you want to target your consumers with right content and avoid opt out for push. For example, Netflix uses push notifications to let users know when their favorite shows are available. Rather than sending every user a notification every time any new show or season is released.

**Frequency:** Consider your App Store Category. News/Sports apps send push notifications daily or multiple times a day if its game day. So do Social Networking/Messaging apps. However, apps that are utilitarian, for example, food and drink, health and fitness, or productivity only message when necessary.

Timing: Always send push notifications to users in their local timezone. In general, mobile usage peaks between 6pm - 10pm.

Choose a destination

Self evaluate when trying to choose a destination that suits your needs.

Whats your user base size? Is it more than 10k? If not, you can try demo versions of mobile marketing automation libraries.

Are you looking for a tool only to support push notification or provide an entire marketing suite?

How do push notifications create an impact in your app (engagement, retargeting, or social impact)?

How can deep links in push notifications fit into your app needs?

You will find many alternatives, but choosing the right one for your app is important!

Key metrics for a successful push

Build trust with your user

Ask users to opt in to push notifications upon app install or after the first time they use an app, so its easier to be transparent about how users can opt out later.

Give users control

Let your customers decide what notifications they want to receive. It may help to break up your notifications into categories so you can empower your customers with this decision.

Create user segments

Creating lists of your app users based on characteristics or events that align to specific campaigns will help you better target your mobile marketing efforts.

Personalize messages

Make sure to use deep linking to guide users to the specific screen relevant to that offer.

### Control timing

Pay attention to user time zones and customize messages based on time of year (holidays) to make brand personable.

### Right frequency

The ideal frequency depends on the type of app you have.

### A/B test push messages

Test different action words, phrases, message lengths, and more.

### Marketing automation

To auto-enroll new users into existing campaigns.

### Measure the right metrics

Dont silo the success of your campaign to just app opens.

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### Tracking Customers Across Channels and Devices

The paths consumers take to your app or website are more complex than ever, often involving a variety of online communities and multiple devices. Your next repeat customer might stumble across your display ad on a newsletter youve never heard about, or receive a recommendation from a co-worker in a Slack channel.

But these off-domain and cross-device brand interactions are equally, if not more, important to track and understand.

With this data, you can identify more sources of qualified traffic and determine the best shopping experiences for conversion.

In this guide, you'll learn where and how to track these critical events so that you can understand your customers journey before they even get to your storefront, as well as their preferred shopping experiences.

If you're interested in learning about what to track, check out Segments guide on creating an e-commerce tracking plan.

Talk to a product specialist today about building a clean, high-quality data spec so you can focus on brand engagement and sales growth.

Where are they coming from? Off-domain tracking

Digital marketing consists of owned marketing, earned marketing, and paid marketing.

Type of marketing	How to track
Owned (domain, app)	First-party data sources (on-page or in-app analytics)
Owned (email, push notifications)	Second-party data sources
Earned (blogs, PR, partners, news)	UTM params, deep links on mobile
Paid acquisition	UTM params, deep links on mobile

Owned marketing encompasses all activities you have full control over. It can be further split into first- and second-party data. First-party data is customer data generated on your site or in your app. Second-party data is customer data generated when your customers interact with your email or push notifications (for example, Email Opened or Push Notification Received).

Earned marketing is when publications, newsletters, or blogs organically create some content that refers to, or promotes you.

Paid acquisition, like display ads or embedded advertorials, don't exist on your domain. To track the inbound traffic from both earned and paid acquisition sources, Segment uses UTM parameters (and deep links if you're directing a customer

to a specific screen in your mobile app that has the product to purchase).

## Track engagement on your email channels

While these are still under owned marketing, they happen off your domain. An example is sending an engagement email to your customer base with a call-to-action to visit your store. If you're using Segment and an email or push notification tool on Segments platform, you can easily collect second-party data such as Email Sent and Push Notification Opened.

Learn more about which email and push notification tools Segment supports.

Here are some of the most commonly used and popular events tracked through email and push notifications on Segment:

Email Delivered

Email Opened

Push Notification Received

Push Notification Opened

Deep Link Clicked

If your email tool is not supported on Segment, you can still track email opens with Segments tracking pixel. This pixel functions like an advertising pixel in that it embeds an image onto pages where JavaScript and POST requests are disabled.



View a list of tools Segment supports.

In your email template HTML, include an image tag where the src is a URL that is carefully constructed to hit Segments appropriate endpoint with a JSON payload that is base64 encoded.

An example of the payload that will be sent to Segment upon an email open is:

```
{  
  
  "writeKey": "YOUR_WRITE_KEY",  
  
  "userId": "025waflo3d65",  
  
  "event": "Email Opened",  
  
  "properties": {  
  
    "subject": "Try Our New $10 Toast",  
  
    "email": "andy@segment.com"  
  
  }  
}
```

Then, you would base64 encode that and append it to the Segment endpoint:

<https://api.segment.io/v1/pixel/track?data=<base64-ENCODED-JSON>>

Add the complete URL as the src in the image tag.

```

```

Learn more about Segments Pixel API.

## Track earned traffic with UTM Parameters

UTM parameters are types of query strings added to the end of a URL. When clicked, they let the domain owners track where incoming traffic is coming from and understand what aspects of their marketing campaigns are driving traffic.

Diagram showing how different UTM parameters redirect to your site and then are displayed in Traffic analytics.

UTM parameters are only used when linking to your site from outside of your domain. When a visitor arrives to your site using a link containing UTM parameters, Segments client-side analytics.js library will automatically parse the URLs query strings, and store them within the context object as outlined in the Spec: Common docs. These parameters do not persist to subsequent calls unless you pass them explicitly.

UTM parameters contain three essential components:

**utm\_campaign:** This is the name of your campaign. All marketing activities that support this campaign, needs to have the same utm\_campaign so that downstream analysis to measure performance for this specific campaign can be done off this primary key. (Example: national-toastday)

**utm\_medium:** How the traffic is coming to your site. Is it through email, a display ad, or an online forum? This ensures Segments downstream analysis can easily see which channel performs the best. (Examples: email, paid-display, paid-social, organic-social)

**utm\_source:** Where the traffic is specifically coming from. You can be specific here. This ensures Segments downstream analysis can measure which specific source brings the most conversions. (Examples: twitter, customer.io (email tool), facebook, adroll)

With these being optional:

utm\_content: For multiple calls to action on a single page, utm\_content indicates which one. For example, on a website, there may be three different display ads. While the link on each display ad will have the same utm\_campaign, utm\_medium, and utm\_source, the utm\_content will be different. (Examples: banner, left-side, bottom-side)

utm\_term: This is the parameter suggested for paid search to identify keywords for your ad. If you're using Google Adwords and have enabled autotagging, then you don't need to worry about this. Otherwise, you can manually pass the keywords from your search terms through this parameter so that you can see which keywords convert the most. Note that this parameter is reserved explicitly for search. (Examples: toast, butter, jam)

If you'd like UTM parameters to persist in subsequent calls, you'll need to manually add those fields in the context.campaign object of your event call. For example:

```
analytics.page("97980cfea0067", {}, { campaign: {  
  name: "TPS Innovation Newsletter",  
  source: "Newsletter",  
  medium: "email",  
  term: "tps reports",  
  content: "image link"  
},  
});
```

You can also store the values in cookies and/or localStorage and use Analytics.js Middleware to enrich the payload for subsequent calls.

Learn more about the semantics with each UTM parameter. The key isn't to stick with the definitions that closely, but to be consistent within your own analytics system.

Proper UTMs use

A marketing campaign is a single marketing message across several platforms, media, and channels, with a consistent and clear call-to-action.

Since the marketing campaign is from off-domain to your storefront (on your property or domain), then its critical to use the proper and consistent UTM params across all of your channels:

Emails

Paid acquisition

Guest blog post in partners newsletter

Article in the news

Offline events / in real life / meat space

Your UTM parameters would match a pattern such as:

Having the same utm\_campaign across all channels

Different utm\_source and utm\_medium depending on the channel

If you were on paid acquisition, the placement of the display ad would determine what goes in utm\_content

If you were using paid search, the term would be utm\_term

An example would be a National Toast Day campaign. This campaign would include emails, paid acquisition (with AdRoll and Facebook Ads), organic social (Twitter), and promotional content on partners blogs.

Channel	UTM Campaign	UTM Medium	UTM source
---------	--------------	------------	------------

Email	national-toastday	email	customer.io
-------	-------------------	-------	-------------

News	national-toastday	news	toastnation
------	-------------------	------	-------------

AdRoll	national-toastday	display	adroll
--------	-------------------	---------	--------

Facebook	national-toastday	paid-social	facebook
----------	-------------------	-------------	----------

Twitter	national-toastday	organic-social	twitter
---------	-------------------	----------------	---------

Having the consistent UTM parameters naming convention simplifies the downstream analysis and the ease of querying across dimensions, such as within the campaign, which medium or source was the best. Or which placement of the display ad led to the most conversions.

Learn more about measuring ROI of marketing campaigns with SQL and UTM parameters.

What device are they using? Cross-device tracking

Its common for customers to discover you on their desktop before making the purchase much later on their phone. How do you tie all of these events back to the same customer so you can understand which marketing activities on what screens are responsible for conversions?

Track server-side when possible

Tracking with JavaScript in the browser has its benefits, such as using browser technologies to automatically track things like UTM parameters, referring domain, IP address, and user agent. But here are a few reasons why it might make sense for your store to track on the server side.

Are your customers technically savvy and use ad blockers? Ad blockers restrict requests from a list of blocklisted domains to your browser, which means that none of your event tracking will work properly. If you sell to a technical audience, it is possible that you may be underreporting your analytics by a material amount.

Do you have multiple devices? If you have multiple devices with the same customer check out flow, moving those events to the server-side will reduce your surface area of your code base. This means less maintenance and faster changes.

Learn more about client vs server tracking.

If you do move key checkout events to the server side, you will have to manually send the data automatically collected by Segments client-side JavaScript library to your server. These pieces of tracking data are still important for the following reasons:

UTM parameters: Collecting the UTM params will allow you to tie conversion events to your marketing campaign or activities. This is valuable in that you can immediately measure performance and calculate ROI on your campaigns.

IP address: The IP address can provide location intelligence for your customers. This means you can personalize your shopping experience or engagement emails with inventory that might be more relevant depending on your customers locations.

User Agent: The User Agent will inform you of your customers preferred device and shopping experience. Are they converting on a mobile web browser? Native app? Or on their laptop?

Learn how to usecontext to manually send this information on the server side.

Track the same user across devices

If your store allows user registration and users are logged in when they shop on your site or app, then you can track them across devices.

This works by using a `userId` instead of an `anonymousId` to track key events and where they occur. This `userId` serves as the primary key in your downstream tools and data warehouse, allowing you to join all of a profiles anonymous activities with logged in activities. You also can get a complete picture of a profiles location, and what device they are on while using your app or website.

Learn more about pulling the entire user journey for a single user given a `userId`.

Unfortunately, tracking the same user across devices only works if they log in to each device. Anonymous browsing in each distinct experience (for example, mobile safari, native iPhone, browser on laptop) generates its own unique `anonymousId`. Each `anonymousId` is limited to the scope of that browser or app, only measuring activities in those sessions. Its not until the user logs in when the `userId` is generated (if registering for a new account) or the `userId` is retrieved from your database, and then mapped to the `anonymousId` of that session. Segment keeps a table of `anonymousIds` mapped to a single `userId` so you can analyze a users activity across multiple devices.

If a user logs in on multiple devices, then you would be able to analyze even the anonymous activity across those devices. Consequently, its important to encourage your users to log in so that you have this capability.

### Attribute offline conversions to online impressions

One of the biggest challenges for brick-and-mortar stores is to measure the impact of their online advertising campaigns on their in-store purchases. Attributing offline conversions has traditionally been difficult to achieve, due to the lack of offline data and robust infrastructure to route that data.

For Facebook advertisers, Facebook Offline Conversions allow you to tie offline conversions to your campaigns. Its

important to note that the offline data is labeled to an event set that has been assigned to a Facebook campaign. Here are the two ways to attribute offline conversions to Facebook advertisements:

Uploading offline event data about actions that aren't captured with Facebook Pixel or App Events to Facebook for them to match actions to your Facebook ads

Enable and configure Segments Facebook Offline Conversions destination, which automates attributing offline events to your Facebook ads in real-time

Learn more about the benefits of Segments Facebook Offline Conversions destination.

Most other advertising networks provide some functionality of manually uploading offline data to match with their online advertising data. Here is a short list of other services:

Google Adwords provides the functionality to attribute offline conversions to your ads.

Attributing in-store purchases to an impression from a display ad online is critical to help marketers and advertisers understand which campaigns or creatives are driving sales. The more real-time the data and insights, the more nimble your business can be in altering course so that additional resources can be put towards the right marketing actions.

Learn about the funnel before your website or app

The internet has made it easy for customers to come from nearly anywhere to your digital storefront. But there are ways to track and collect data to better understand these complicated paths so you can be intentional with your marketing efforts to tap into these communities.

By tracking in these locations with the above mentioned techniques, your downstream analysis will also be simpler. With UTM params, you'll be able to quickly measure the performance of a campaign or a particular channel. By properly tracking on multiple devices, you can understand which shopping experiences are most preferred. These tracking



techniques are invaluable to understanding the source of your highest quality customers.

Talk to a product specialist today about building a clean, high-quality data spec so you can focus on brand engagement and sales growth.

This page was last modified: 12 Aug 2024

## Setting Up a Dynamic Coupon Program to Reward Loyal Customers

One component of building a successful and engaging e-commerce brand is rewarding your most loyal customers. With Segment Warehouses and SQL, you can retrieve a table of your most valuable customers, then reward them.

This guide will walk you through setting up a dynamic and automated coupon program based on conditions that define your most valuable customers, as well as how to measure the programs performance.

Talk to a product specialist today about using data to tailor your brand experience.

### Tools used

**Emails with Customer.io:** Customer.io is a flexible email provider that allows you to create cohorts based on customer actions. You can build complex onboarding emails, nurture email campaigns, as well as marketing automation workflows.

**Retention Analytics with Amplitude:** Amplitude is an analytics tool that focuses on understanding retention and funnel analysis.

Its important to register for these tools and enable them on your Segment source project. When Segment collects tracking data, it routes it to all of your enabled tools, meaning that they get a single consistent data set. Most importantly, the data generated by users interacting with emails is sent through Segment so you can analyze email performance,

and how it impacts conversion with Amplitude.

Not using Customer.io or Amplitude? Check out the other Segment Supported Email Marketing and Analytics tools.

## The Loyalty Program

Say, as the marketing manager of our fictitious, on-demand artisanal toast company, Toastmates, you want to experiment with a coupon program to retain your best customers.

Through a combination of SQL and statistical analysis on a set of historical data, you've identified the conditions for our most valuable customers as:

shops over twice a month

pays over \$20 per order

Learn how to define these conditions in [How to Forecast LTV for e-commerce with Excel and SQL](#).

Will rewarding a \$5 coupon to this cohort after they make the second purchase a month lead to higher engagement and LTV? Set up this program using Customer.io as the email provider and measure its performance on engagement and LTV with Amplitude.

Conduct a split test (half of the cohort will represent the control group and will not receive any emails; the other half will receive an email with the \$5 coupon) for one month. After which, use Amplitude to see if there were any correlations between the coupon email and conversions.

## Set it up

First, register for an account with Customer.io and Amplitude. Then, enable Customer.io and enable Amplitude on your Segment project. Finally, go into your Customer.io account and enable sending data to Segment:

Screenshot of the Streaming Data Out page in Customer.io, with an enabled Segment.com option.

You can find those destination settings in Customer.io [here](#).

When everything is enabled, customer event data such as Order Completed and Product Added, as well as their properties, will all be sent to your configured destinations, including Customer.io and Amplitude. Then you can define cohorts based on these events in Customer.io to add to email campaigns or conduct funnel analytics in Amplitude.

Talk to a product specialist to learn what else you can accomplish with these tools.

Define the cohort in Customer.io

Now define the specific cohort in Customer.io as per our conditions listed earlier: someone who spends over \$20 per order and shops over twice a month. In Customer.io, go to Segments and Create Segment:

Screenshot of the Segment builder in Customer.io, with the title "Coupon Loyalty Experiment".

After this cohort is created, then when a customer makes the third purchase in a month and its over \$20, they will be added to this segment.

Next, create a segment trigger campaign, where Customer.io will send a message the first time someone enters a segment. The segment in this case will be the one you just created: Coupon Loyalty Experiment.

Screenshot of the Segment Trigger Campaign page in Customer.io, with a sample email ready to send to customers in the segment.

Save the changes and enable the campaign. Then, make sure that your e-commerce backend is set up properly to handle the coupons. If its available in your system, create a coupon that only works for a specific set of customers.

## Measure performance

After a month has passed for the split test, you can measure the performance of the email coupon program to see whether its making a material impact on conversions.

In Amplitude, create a funnel that compares the two cohortsone who received this coupon email vs. the control group who did notand see its impact on conversions and revenue generated.

First, define a behavioral cohort with the conditions of being loyal customers so you can use it when analyzing the conversion funnel:

Screenshot of a Loyal Customers segment in Amplitude, comprised of users who spent at least \$20 and purchased more than two times in the last 30 days

Youll also have to create a second identical cohort, except with the only difference that these customers did not receive the coupon email. You need this cohort to create the conversion funnel with the control group.

Screenshot of a Loyal Customers (Control) segment in Amplitude, comprised of users who spent at least \$20 and purchased more than two times in the last 30 days, but did not get the loyal customer email.

After youve created these two cohorts, create two funnel charts. The first funnel will look at the control group. The second funnel will look at the group that received the coupon email.

Screenshot of the Funnel Analysis page in Amplitude showing the Loyal Customers (Control) segment.

Resulting in:

A bar chart showing 233 visits to the main landing screen, 98 products added to cart, and 66 purchases.

The control group that did not receive the email for the coupon resulted in 233 people visiting the store, with 66 conversions.

The funnel for the group who did receive the emails can be created with these parameters:

Screenshot of the Funnel Analysis page in Amplitude showing the Loyal Customers segment.

Resulting in:

A bar chart showing 758 emails delivered, 560 emails opened, 168 visits to the main landing screen, 134 products added to cart, and 95 purchases.

The email itself drove 168 customers to the store, which also saw higher conversions to Product Added and ultimately Order Completed.

Note that this funnel is only looking customers who went through these events in this specific order. This analysis doesn't consider customers who are part of the emailed cohort, yet didn't open the email, but still visited the site and/or made a purchase.

At first glance, it appears that the group that was emailed did receive an absolute number of more conversions. However, these funnels are still inconclusive, given that you haven't explored the impact on the top line revenue, as well as overall engagement with the brand. Fortunately, you can continue to use Amplitude to analyze impact on revenue itself.

Find new ways and channels to retain your most valuable customers

Retaining and rewarding your customers is paramount to a strong and engaging brand. This example is just one of millions that you can employ to find new ways to delight and excite your customer base.

Other ideas can be to send messages to your customers with a referral code to invite their friends. Or set up a coupon for customers who are just shy of entering your most valuable customers cohort. Or, if you're hosting a pop up shop event, sending a special and personalized invite to your strongest users first, as a way to thank them for their business.

The possibilities are endless when you use your customer data to drive sales.

Talk to a product specialist today about using data to tailor your brand experience.

This page was last modified: 25 Oct 2023

## Forecasting LTV with SQL and Excel for E-Commerce

Customer Lifetime Value (LTV) is the amount of money that an individual customer will spend with a given business in the future. It's often used to value cohorts in your customer base, determine how much to spend in acquiring or retaining new users in a given cohort, rank customers, and measure the success of marketing activities from a baseline LTV forecast.

The LTV calculation is not straightforward for e-commerce businesses, since future payments are not contractual: at any moment, a customer may never make a single purchase again. Additionally, forecasting future purchases requires statistical modeling that many current LTV formulas lack.

This guide shows how to calculate forward-looking LTV for non-contractual businesses using SQL and Excel. This analytical approach allows you to accurately rank your highest value customers, as well as predict their future purchase sizes to help focus your marketing efforts.

This guide assumes you're using the tracking schema described in [How to implement an e-commerce tracking plan](#) and are storing data in a Segment Warehouse.

Talk to a product specialist to learn how companies like Warby Parker and Crate & Barrel use a data warehouse to increase engagement and sales.

### Calculating LTV: Buy Til You Die

In a non-contractual setting, you can't use a simple retention rate to determine when customers terminate their relationship. This is because the retention rate is a linear model that doesn't accurately predict whether a customer has ended her relationship with the company or is merely in the midst of a long hiatus between transactions.

The most accurate non-contractual LTV model, named Buy Til You Die (BTYD), focuses on calculating the discounted estimation of future purchases based on recency of last purchase, frequency of purchases, and average purchase value. This model uses non-linear modeling to predict whether or not a user is alive or dead given historic transactions to forecast future probability and size of purchases.

Since LTV is a critical metric for e-commerce companies, it's important that this model, instead of simpler linear formula that is based on retention rates, is used for its calculation.

Use SQL to build the necessary table, which will be exported as a CSV and opened in Google Sheets. Then, use Solver to estimate the predictive model parameters, which ultimately calculates the future purchases of each customer. Finally, the LTV calculation is simply the net present value of each customer's future purchases. Rank them by LTV, then find behavioral patterns across the top 10 or 50 customers to figure out how best to target or retain this cohort.

Recency, frequency, and average size

As a growth analyst at the fictitious on-demand artisanal toast company, Toastmates, its important to know which customers are worth more to the business than others. Most important, you should understand what similarities these customers all have to help guide the marketing team in their efforts.

The first step in creating the BTYD model is to get historic purchasing data of at least a month. In your analysis, you can use data from the past six months. The data must include the columns `userId` (email is fine too), number of purchases within the specified time window, days since last purchase, and days since first purchase.

Then, use this Google Sheet, which provides all of the complex calculations for estimating the model parameters, as well as forecasting the future sales of each customer. This sheet is View Only, so be sure to copy it entirely so you can use it.

To retrieve a table with the right columns for analysis, use the follow SQL query:

```
with  
  
first_transaction as (  
  
    select u.email,  
  
           datediff('day', min(oc.received_at)::date, current_date) as first  
  
    from toastmates.order_completed oc  
  
    left join toastmates.users u  
  
        on oc.user_id = u.email  
  
    where oc.received_at > dateadd('month', -6, current_date)  
  
    group by 1  
  
),  
  
frequency as (  
  
    select u.email,  
  
           count(distinct oc.checkout_id) as frequency
```



```

        from toastmates.order_completed oc

left join toastmates.users u

        on oc.user_id = u.email

        where oc.received_at > dateadd('month', -6, current_date)

group by 1

),

last_transaction as (

        select u.email,

                datediff('day', max(oc.received_at)::date, current_date) as last

        from toastmates.order_completed oc

left join toastmates.users u

        on oc.user_id = u.email

        where oc.received_at > dateadd('month', -6, current_date)

group by 1

),

average_transaction_size as (

        select u.email,

                avg(oc.total) as avg

        from toastmates.order_completed oc

left join toastmates.users u

        on oc.user_id = u.email

        where oc.received_at > dateadd('month', -6, current_date)

group by 1

order by 2 desc

)

select distinct

        u.email,

```

```

    nvl(f.frequency, 0) as frequency,

    nvl(z.last, 0) as days_since_last_transaction,

    nvl(a.first, 0) as days_since_first_transaction,

    t.avg as average_transaction_size

from toastmates.users u

left join first_transaction a

    on u.email = a.email

left join frequency f

    on u.email = f.email

left join last_transaction z

    on u.email = z.email

left join average_transaction_size t

    on u.email = t.email

order by 2 desc

```

This returns a table where each row is a unique user and the columns are email, number of purchases within the time window, number of discrete time units since last purchase, and average purchase order.

Screenshot of a spreadsheet with columns email, frequency, days\_since\_last\_transaction, days\_since\_first\_transaction, and average\_transaction\_size.

Here is a screenshot of the first twelve rows returned from the query in Mode Analytics.

Export this data to a CSV, then copy and paste it in the first sheet of the Google Sheet where the blue type is in the below screenshot:

Screenshot of the Segment Tracking Plan Google Spreadsheet, with 11 user records.

Also be sure to add the total time in days in cell B6. This is important as the second sheet uses this time duration for calculating net present value of future payments.

#### How to use the Google Spreadsheet

After you paste in the CSV from the table into the first tab of the sheet, the next step is to estimate the model parameters (the variables on the top left of the sheet). In order to do this, we need to use a feature of Microsoft Excel called Solver.

You can export your Google Sheet as an Excel document. Then, use Excel Solver to minimize the log-likelihood number in cell B5, while keeping the parameters from B1:B4 greater than 0.0001.

Screenshot of the Solver Parameters popup in Google Sheets, with the cells B1:B4 set greater than or equal to  $1 \times 10^{-5}$ .

After Solver runs, cells B1:B4 will be updated to represent the models estimates. Now, you can hard code those back into the sheet on Google Sheets. The next sheet relies on these model estimates to calculate the expected purchases per customer.

#### Model and predict future customer purchases

The model requires four pieces of information about each customers past purchasing history: her recency (how many time units her last transaction occurred), frequency (how many transactions she made over the specified time period), the length of time over which we have observed her purchasing behavior, and the average transaction size.

In the example, you have the purchasing behavior data over the course of six months with each unit of time being a single day.

You can apply both a beta-geometric and a negative binomial distribution (BG/NBD) to these inputs and then use Excel to estimate the model parameters (an alternative would be the Pareto/NBD model). These probability distributions

are used because they accurately reflect the underlying assumptions of the aggregation of realistic individual buying behavior. (Learn more about these models).

After estimating the model parameters, you can predict a particular customers conditional expected transactions by applying the same historic purchasing data to Bayes Theorem, which describes the probability of an event based on prior knowledge of conditions related to the event.

### Estimating the model parameters

The top left part of the first sheet represent the parameters of the BG/NBD model that must be fitted to the historic data you paste in. These four parameters ( $r$ ,  $\alpha$ ,  $a$ , and  $b$ ) will have starting values of 1.0, since you'll use Excel Solver to determine their actual values.

The values in columns F to J represent variables in the BG/NBD model. Column F, in particular, defines a single customers contribution to a the overarching function, on which we'll use Solver to determine the parameters. In statistics, this function is called the likelihood function, which is a function of the parameters of a statistical model.

In this particular case, this function is the log-likelihood function, which is B5, as calculated as the sum of all cells in column F. Logarithmic functions are easier to work with, since they achieve its maximum value at the same points as the function itself. With Solver, find the maximum value of B5 given the parameters in B1:B4.

With the new parameter estimates, you can now predict a customers future purchases.

### Predicting a customers future purchases

In the next sheet, you can apply Bayes Theorem to the historic purchasing information to forecast the quantity of transactions in the next period. Multiply the expected quantity with the average transaction size to calculate the expected

revenue for that period, which you can extrapolate as an annuity, of which you can find the present discounted value (assuming discount rate is 10%).

Central to the Bayes Theorem formula is the Gaussian hypergeometric function, which is defined by  ${}_2F_1$  in column M. Evaluate the hypergeometric function as if it were a truncated series: by adding terms to the series until each term is small enough that it becomes trivial. In the spreadsheet, we sum the series to its 50th term.

The rest of the variables in Bayes Theorem is in columns I through L, which use the inputs from the customers historic purchasing information, as well as the model parameter estimates as determined from Solver (cells B1:B4).

The expected quantity of purchases in the next time period is calculated in column H.

Finally, multiply that with the average transaction size and you can get the expected revenue for the next time period.

### Rank your customers

This exercise allows you to rank your customers from most valuable to least by ordering column F in descending order. You can take the userIDs of the top several customers and look across their shopping experiences to identify any patterns that they share, to understand what behaviors are leading indicators to becoming high value customers.

Below is a simple query to get a table of a users actions in rows. Just replace the user\_id with the user in question.

```
with anonymous_ids as (  
  select anonymous_id from toastmates.tracks  
  where user_id = '46X8VF96G6'  
  group by 1  
)
```

```

page_views as (

    select *

    from toastmates.pages p

    where p.user_id = '46X8VF96G6'

        or anonymous_id in (select anonymous_id from anonymous_ids)

    order by p.received_at desc

),

```

```

track_events as (

    select *

    from toastmates.tracks t

    where t.user_id = '46X8VF96G6'

        or anonymous_id in (select anonymous_id from anonymous_ids)

    order by t.received_at desc

)

```

```

select url,

        received_at

from page_views

union

select event_text,

        received_at

from track_events

order by received_at desc

```

This above query for user whose user\_id is "46X8VF96G6" returns the below table:

A table with two columns: event\_or\_page\_viewed and received\_at.

At Toastmates, most of the highest forward-looking expected LTV customers share one thing in common: averaging two orders per month with an average purchase size of \$20.

With that in mind, you can define a behavioral cohort in our email tool, Customer.io, as well as create a trigger workflow so we can send an email offer to these customers.

Learn how to use email tools to target this cohort of high value customers.

### Reward your best customers

This exercise is useful not only as a forward looking forecasting model for customer LTV, but also as a quality ranking system to see which customers are worth more to your business. Coupled with the ability to glance across the entire shopping experience of a given customer, you can identify broad patterns or specific actions that may be an early signal for a high value shopper. Recognizing these high value shoppers means being proactive in nurturing, rewarding, and retaining them.

And this is just the beginning. Having a rich set of raw customer data allows you to create accurate projection models for LTV so you know not only how much you can spend to acquire them, but also how to rank your customers by value. Ultimately, these insights lead to the right actions that can build an engaging shopping experience and drive sales.

Talk to a product specialist to learn how companies like Warby Parker and Crate & Barrel use a data warehouse to increase engagement and sales.

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When transitioning over to Segment, customers commonly want to import historical data into tools they are migrating to or evaluating.

Note: Historical imports can only be done into destinations that can accept historical timestamped data. Most analytics tools like Mixpanel, Amplitude, or Kissmetrics can handle that type of data just fine. One common destination that doesn't accept historical data is Google Analytics, since their API cannot accept historical data.

## Method 1: Using a Custom Solution

### General Instructions

Use any server-side library, which sends requests in batches to improve performance. Once you have data to import, follow the steps below:

Export or collect the data to be imported.

Include timestamp data in your export if the data needs to appear in end tools in a historical reference. For instance, if you're importing emails and it's relevant to know when someone joined your email list, you may need to export the timestamp. If no timestamp is specified when importing, the data will show a timestamp from the time the data was received.

Decide which destinations need to receive the data.

By default, data coming into Segment will be forwarded to all destinations connected to a given source. To limit data to specific destinations, the integrations object must be modified. With historical data, you often only want to send the data to a specific destination or into your data warehouse. For example, in Node.js set the integrations object as follows.

```
analytics.track({  
  
  event: 'Upgraded Membership',
```



```
userId: '97234974',  
  
integrations: { 'All': false, 'Vero': true, 'Google Analytics': false }  
  
}))
```

Once you've done that, you'll need to write an application or worker to send the data to Segment.

You will need to cycle through each set of data and map it to a Segment server-side library method or build an array matching the HTTP Import API format.

Tip: Segment recommends using a Segment library for this process, as they set contextual message fields like `message_id` (used for deduping) and `sent_at` (used for correctly client clock skew) that Segments API uses to correct behavior upon ingestion.

Tip: The server-side libraries will automatically batch requests to optimize for performance and prevent linear request volume. This batching behavior is modifiable, and some of the underlying libraries implement a configurable max queue size that may discard messages if you enqueue requests much faster than the client can flush them. We recommend overriding the max queue size parameter for the library to a high value you're comfortable you can remain under in your batch job.

## Demo projects

The following projects are open-source and do not have official Segment support. If you encounter issues, the best way to get help is by opening an issue on the projects GitHub page. Feel free to clone the repository and adjust the code to suit your unique needs.

One of Segments Success Engineers wrote an alpha prototype Node.js app for importing data utilizing the HTTP API, which we've included below:

## Example Node.js import application

Additionally, one of Segments Software Engineers developed a React App with more out of the box functionality for importing events. The features include a modern UI, transformations, and event format checking prior to import:

Desktop React CSV uploader

MarketLytics has documented their experience using the alpha prototype importer and offer some helpful visuals and tips.

Alternative solution

If a server-side library doesnt meet your needs, you can use the Segment bulk import HTTP API directly.

Note: When you use the HTTP API to export historical data to upload to Segment, remove all the original sent\_at, message\_id, and project\_id fields from the archived message before forwarding them back to Segment.

Method 2: Using Reverse ETL

Please refer to the Reverse ETL guide for more details.

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Joining User Profiles

One of the first questions we get when our customers start querying all of their data is, how do I join all this data together? For example, lets say youd like to know if support interactions in Zendesk increase revenue in Stripe, or which percentage of users opened your email campaign and visited your website or mobile app? The key to answering these advanced questions is tying your data together across these sources. To do that, you need a common user identifier.

What is the user ID problem?

Each SaaS tool you use has its own way of identifying users with a unique primary key. And, you will find each of these different IDs across different collections of tables in your database. So, when you want to start matching Joe Smith who entered a ticket in Zendesk and also clicked through a campaign in Mailchimp, it starts to get tricky.

A graphic with a header (Production Database) and six tiles with the name of a source and the unique primary key that source assigns to a user.

For example, Stripe keeps track of users with a `customer_id`, Segment requires `userid`, and Marketo uses email to uniquely identify each person.

To effectively join across these sources, you need to understand how each id maps to each other. The best way to do this is to create a common identifier across tools.

Use a common identifier when possible

When you install a new tool (or use Segment to install all of them at once), you need to choose what you will put in the ID field. There are lots of different options for this: emails, twitter handles, usernames, and more.

However, we suggest using the same ID you generate from your production database when you create a new user. Database IDs never change, so they are more reliable than emails and usernames that users can switch at their leisure. If you use this same database ID across as many tools as possible, it will be easier to join identities down the road. (In MongoDB, it would look something like this `507f191e810c19729de860ea`.)

```
analytics.identify('1e810c197e', { // that's the user ID from the database

  name: 'Jane Kim',

  email: 'jane.kim@example.com' // also includes email

});
```

Though we wish you could use a database ID for everything, some tools force you to identify users with an email. Therefore, you should make sure to send email along to all of your other tools, so you can join on that trait as a fallback.

#### For Segment Destination Users

Integrating as many tools as possible through Segment will make your joins down the road a little easier. When you use Segment to identify users, we'll send the same ID and traits out to all the destinations you turn on in our interface. (More about Segment destinations.

A few of our destination partners accept an external ID, where they will insert the same Segment user ID. Then you can join tables in one swoop. For example, Zendesk saves the Segment User ID as `external_id`, making a Segment-Zendesk join look like this:

```
SELECT zendesk.external_id, users.user_id
FROM zendesk.tickets zendesk
JOIN segment.users users
ON zendesk.tickets.external_id = segment.user_id
```

Here's a look at the Segment destinations that store the Segment User ID:

Tool Corresponding Trait Corresponding Sources Table

Zendesk `external_id` `zendesk.tickets.external_id`

Mailchimp `unique_email_id` `mailchimp.lists.unique_email_id`

Intercom `user_id` `intercom.users.user_id`

#### How to merge identities

Whether you're using Segment or not, we suggest creating a master user identities table that maps IDs for each of your sources.

This table will cut down on the number of joins you have to do because some IDs may only exist in one out of many

tables related to a source.

Heres sample query to create a master user identities table:

```
CREATE TABLE user_identities AS (
```

```
select
```

```
segment.id as segment_id,
```

```
segment.email as email,
```

```
zendesk.id as zendesk_id,
```

```
stripe.id as stripe_id,
```

```
salesforce.id as salesforce_id,
```

```
intercom.id as intercom_id
```

```
from segment.users segment
```

```
Zendesk
```

```
leftjoin zendesk.users zendesk on
```

```
( zendesk.external_id = segment.id if enabled through Segment
```

```
or zendesk.email = segment.email ) fallback if not enabled through Segment
```

```
Stripe
```

```
left join stripe.customers stripe on
```

```
stripe.email = segment.email
```

```
Salesforce
```

```
left join salesforce.leads salesforce on
```

```
salesforce.email = segment.email
```

Intercom

left join intercom.users intercom on

( intercom.user\_id = segment.id if enabled through Segment

or intercom.email = segment.email ) fallback if not enabled through Segment

group by 1,2,3,4,5,6

)

You'll spit out a user table that looks something like this:

segment\_id email zendesk\_id stripe\_id salesforce\_id intercom\_id

mYhgYcRBC7 ziggy@stardust.com 1303028105 cus\_6ll4iGAO7X8u7L 00Q31000014XGRcEAO 55c8923f67b8d6524600037f

mYhgYcRBC7 justin@biebs.com 1303028105 cus\_6ll3xVVSLIZomI 00Q31000014XGRcEAO 55c8923f67b8d6524600037f

7adt7XG27c queen@beyonce.com 1472230319 cus\_6u2ZcW3uC8VwZa 00Q31000014sKCqEAM 5626dfed2e028608710000ce

QZnP7cViH1 kanye@kimye.com 1486907299 cus\_6yrv9bwLgXN78s 00Q31000015G7kIEAS 55f6a142bd531ec6930005fa

While creating this table in SQL is a good strategy, we'd be remiss not to point out a few drawbacks to this approach. First, you need to run this nightly or at some regular interval. And, if you have a large user base, it might take a while to run. That said, it's probably still worth it.

How to run a query with your joined data

So what can you do once you have all of your IDs mapped? Answer some pretty nifty questions that is. Here are just a

few SQL examples addressing questions that incorporate more than one source of customer data.

#### Segment + Zendesk

-- Which referral source is sending us the most tickets?

```
SELECT segment.referral_source,  
  
COUNT(zendesk.ticket_id) AS count_of_tickets  
  
FROM zendesk.tickets zendesk  
  
LEFT JOIN segment.userssegment  
  
ON users.segment_id = segment.user_id  
  
GROUP BY 1  
  
ORDER BY 2 desc
```

#### Stripe + Zendesk

-- How many tickets do we receive across each pricing tier?

```
SELECT stripe.plan_name AS plan_name,  
  
COUNT(zendesk.ticket_id) AS count_of_tickets
```

-- Start with Zendesk

```
FROM zendesk.tickets zendesk
```

-- Merge Users

```
LEFT JOIN user_identities users  
  
ON zendesk.id = users.zendesk_id
```

-- Add Stripe

```
LEFT JOIN stripe.charges stripe
```

```
ON users.stripe_id = stripe.customer_id
```

```
-- Group by plan name, from most tickets to least
```

```
GROUPBY1
```

```
ORDERBY2desc
```

### Advanced Tips

An alternative to the lookup user table in SQL would be writing a script to grab user IDs across your third-party tools and dump them into your database.

You'd have to ping the APIs of each tool with something like an email, and ask them to return the key or id for the corresponding user in their tool.

A sample script, to run on a nightly cron job, would look something like this:

```
var request = require('superagent'); // https://www.npmjs.com/package/superagent
```

```
var username = '<your-username>';
```

```
var password = '<your-password>';
```

```
var host = 'https://segment.zendesk.com/api/v2/';
```

```
/**
```

```
 * Gets the user object in Zendesk by email address.
```

```
 *
```

```
 * @param {String} email
```

```
 * @param {Function} fn
```

```
 */
```



```
function getUserIds(email, fn) {  
  
  request  
  
  .get(host + 'users/search.json?query=' + email)  
  
  .auth(username, password)  
  
  .end(fn);  
  
}  
  
/**  
  
 * Get the first Zendesk user that matches 'kanye@kimye.com'  
  
 */
```

```
getUserIds('kanye@kimye.com', function(err, res) {  
  
  if (err) return err;  
  
  // res.body.users will be an Array  
  
  // res.body.users[0].id will return the `id` of the first user  
  
});
```

Here is the documentation for Zendesk's API for more information.

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## Measuring Your Advertising Funnel

It's surprisingly hard to answer questions about the ROI of your ad campaigns. What does a click actually result in? How much should I pay for it? We built our Sources for Facebook Ads and Google Adwords to help you understand the true performance and cost of your campaigns.

In this article, we dig into the nuances of data collection and potential gotchas around measuring clicks, pageviews, and

ultimately, conversions.

## Measuring Campaign Performance

Today, most marketing teams think about their paid acquisition funnel as three major steps...

Bar chart with three bars: Ad Impressions, Ad Clicks, and Conversion Event.

This makes sense when looking at overall campaign performance, but hides several crucial funnel steps that can make the difference between increasing a campaign's spend and shutting it off due to poor results.

Because page optimization and ad blockers can impact measurement of your funnel, it's important to look at the four additional steps happening between the ad click and conversions.

Bar chart with two headers: Ad Platform Servers, which covers Ad Impressions and Ad Clicks, and Your Servers, which covers Page Request Initiated, First Javascript Loaded, Page Fully Rendered, Third-Party Scripts Loaded, and Conversion Event.

Let's go through each true funnel step in a little more detail.

**Impressions & Clicks:** When a user views an ad, the ad platform increments the count of impressions for that ad. When an ad is clicked, the ad platform logs a click. This is all handled by the ad platform's servers. Facebook and Google work hard to filter invalid and fraudulent traffic, whether that's a mistaken click, a bot, or a competitor looking to drain your advertising budget. Any bad traffic is removed from both your reporting and your monthly bill.

**Page Request Initiated:** After an ad is clicked, a user's browser attempts to load your landing page. This request is the first contact your application has with the user, and the server responds with the content to render the landing page.

**First JavaScript Loaded:** The user's browser starts to download the landing page content, which includes the HTML, JavaScript, and CSS. The browser parses and renders this content, loading the JavaScript sequentially as it parses the page. By default, analytics.js uses the async tag, which means that the browser won't block the page and will load analytics.js once everything else is ready. Analytics.js wants to get out of the way where possible so you can create the best experience for your customers.

**Page Fully Rendered:** The page is fully rendered once all the HTML, CSS and scripts have been loaded on the page. This time can vary a lot based on the speed of the internet connection (how fast all the assets download) and the device itself (how fast the local computer can run all of the scripts).

**Third-Party Scripts Loaded:** Finally, third-party scripts are asynchronously loaded onto the page. The speed at which these scripts are loaded depends on a variety of factors, like the page size, network speed, and the size and number of the third-party scripts. Once these scripts are loaded, analytics.js triggers a page call to our API.

**Conversion Event:** From there, a user might fill out a form, sign up, or buy your product!

How does this impact my ad reporting?

There are three less-obvious contributors to fall-off across the paid acquisition funnel: slow loads, ad blockers, and bounces.

For the sake of illustration, this means that if you have 100 ad clicks, you will be able to count most but not all corresponding page views because some visitors may bounce (exit or hit the back button) before analytics.js is executed. Similarly, you may miss some attributable conversions due to slow load times (your page calls can't fire in time) and ad blockers (which often block analytics not just ads).

**Bar chart with three bars:** Ad Clicks, Pageviews, and Conversions. Pageviews and Conversions have three segments: a segment with a number value, indicating the successfully recorded events, one segment with a value of ?, indicating

events lost to Ad blockers, and one segment with a value of ?, indicating events lost to Bounces.

Heres how it works.

## Slow Loads

Slow loads can impact your attribution modeling, making campaigns appear to have worse performance than reality. In the general case, when a user hits your landing page, your tracking code loads and triggers a pageview event that you can use to attribute that user to a campaign.

But if third-party scripts take on the order of seconds to load (for example, on 1x or 3G networks), users may click off the page before your tracking code executes. In this case, the pageview never gets recorded and your ability to attribute that click to a conversion is lost.

This is generally not an issue for most companies because they are focused more on people who spend a good deal of time on their pages. However, it is a potential source of opaqueness, particularly for users with slow or bad network connection.

## Bounces

Bounces can occur at any stage of the funnel between an ad being clicked and third-party scripts loading on the page.

Some bounces are not tracked because the user doesnt even last the few seconds to request your HTML, render it, and execute tracking. If they quickly hit back or close the browser window, your ad platform will report clicks that dont show up in your analytics tracking.

## Ad blockers

It is likely the case that some percentage of your users are using ad blockers. It's estimated that 22% of mobile smartphones worldwide and 16% of US web traffic use ad blockers. Segment customers have reported ad blockers for as little as a few percentage points of their visitors, to upwards of 70% of traffic for companies with very tech-forward audiences.

But just because a user is using ad blockers doesn't mean that they aren't seeing and clicking on ads. Facebook recently announced that they would be suppressing ad blockers, and Adblock Plus, the most popular ad blocking and anti-tracking software, categorizes Google Search ads as acceptable ads.

That said, many ad blockers do block analytics tools like Google Analytics, Mixpanel and Segment. This means that there exists some percentage of your conversions that actually came through your paid acquisition channels, but are unattributable due to ad blockers.

What if I need more precise tracking?

Segment offers two ways of joining your user clickstream data to your paid acquisition channels: standard client-side tracking or advanced server-side page calls.

Bar chart with two headers: Ad Platform Servers, which covers Ad impressions and Ad Clicks, and Your Servers, which covers Page Request Initiated, First Javascript Loaded, Page Fully Rendered, Third-Party Scripts Loaded, and Conversion Event. The Page Request Initiated bar has a note, Serverside Page Call, and the Third-Party Scripts Loaded bar has a note, Recommended Client-Side Tracking.

Both options come with their own tradeoffs that are important to consider for your use case.

Client-side Tracking (Standard)

Analytics.js is loaded with the async tag by default, which means that the library and all its destinations are loaded near the end of the page rendering. The benefit is that analytics.js doesn't slow down page loads, but it does mean that tracking is not executed immediately on page load.

When you use standard client-side tracking, you'll lose pageview data for visitors who bounce or click off the page before analytics.js executes, and for visitors with ad blockers enabled.

### Server-side Page Calls (Advanced)

If you want to capture adblock, bounce, and slow load traffic, we recommend adding an additional `page()` call to the server-side. This allows you to avoid the browser altogether and see the total number of requests emanating from your paid acquisition channels. You'll get visibility on an extra step in that funnel.

The general approach is to use an arbitrary `anonymousId` (e.g. a UUID) in the server-side `page()` call and then also set the `anonymousId` as the `ajs_anonymous_id` cookie in the browser. You can read more about how to implement that here. This approach is tricky to implement, so we recommend that this is undertaken only for use cases in which bounce and/or adblock data is critical.

### Estimating the Impact of Moving Server-side

If you want to get a quick estimate for the number of additional clicks you'd track using server-side tracking, you can use redirect tracking with a URL shortener to estimate the number of clicks coming from Google Adwords or Facebook Ads. This will give you an estimate for the number of times an ad is clicked (minus some bounce in the few hundred milliseconds of the redirect), which will closely match server-side `page()` tracking should you choose to implement it.

Bar chart with two headers: Ad Platform Servers, which covers Ad impressions and Ad Clicks, and Your Servers, which covers Page Request Initiated, First Javascript Loaded, Page Fully Rendered, Third-Party Scripts Loaded, and Conversion Event. A line between the Ad Clicks and Page Request Initiated reads Bitly redirect.

Heres how it works...

Use a URL shortener like bit.ly to link to a landing page, with a custom parameter like ?ttg=2 .

Add the shortened link to your ad.

Measure total clicks from the bit.ly stats page. Screenshot of the bit.ly stats page, with a bar chart showing spikes in clicks at 3am.

In your warehouse, count the number of pages with that unique url parameter from step 1 (make sure youre looking at the same timeframe).

```
select received_at, url
from <site>.pages
where url like '%/warehouses%'
and search like '%ttg=2'
order by received_at
```

We hope this overview helps explain the technical nuances of measuring what happens when a customer finds you using an ad! If you have any other questions, feel free to share them in the Segment Community for discussion.

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## Measuring the ROI of Your Marketing Campaigns

The purpose of marketing campaigns is to drive traffic (and sales). But how do you know which campaigns yield the most conversions or what channel across the campaigns was most effective?

This guide provides you with the tools to answer these questions with SQL so that your marketing team can reproduce the hit campaigns and consistently generate loyal customers.

Talk to a product specialist to learn how companies like Warby Parker and Crate & Barrel use a data warehouse to increase engagement and sales.

Analyze campaign performance

The goal of marketing campaigns is to drive engagement and conversions. Most commonly performed by attracting traffic to the site, these campaigns use UTM parameters for attribution. In our analysis, we'll be heavily relying on UTM parameters to analyze not only campaign, but also channel performance.

Learn how to effectively use UTM parameters in your marketing campaign strategies.

For our analysis walkthrough, we'll use fictitious e-commerce and marketing data from on-demand artisanal toast company, Toastmates.

Toastmates is currently running these two campaigns:

National Toast Day, where \$5 off was applied if you made a purchase on that day

A Toast To Your Friend, where you can buy toast for a friend at \$5 off

Each of these campaigns used a combination of channels. Here is a table with the channels and corresponding UTM parameters so when we build the SQL query, we can make sure all of the traffic sources are accounted for.

Screenshot of two tables, one for the National Toast Day campaign and one for the A Toast to Your Friend campaign. Each table has columns for `utm_campaign`, `utm_medium`, and `utm_source`.

We'll use SQL below to measure the performance of each campaign and what that means for future marketing activities.



## Build the funnel

The following query creates a table where each row is a customer and the columns are the date time when a key funnel event happens that have the context\_campaign\_name to match that of the UTM\_campaign . The key funnel events in this analysis are Store Visited(based on a page view to the store URL), Product Viewed , and Order Completed . Given that each channel may have some key top of the funnel action that is unique to itself, lets save that analysis for when we were analyzing across channels.

Feel free to copy and paste the below query for your analysis so long as you replace national-toast-day with your own UTM campaign parameter.

with

users as (

select \*

from toastmates.users

),

page\_viewed as (

select p.received\_at as page\_viewed\_at,

p.context\_campaign\_name,

p.user\_id

from toastmates.pages p

left join users u

on u.id = p.user\_id

where p.context\_campaign\_name is not null

and p.url ilike '%toastmates.com/store%'

),

product\_viewed as (

select v.received\_at as product\_viewed\_at,

v.context\_campaign\_name,

v.user\_id

from toastmates.product\_viewed v

left join users u

on u.id = v.user\_id

),

order\_completed as (

select c.received\_at as order\_completed\_at,

c.context\_campaign\_name,

c.user\_id

from toastmates.order\_completed c

left join users u

on u.id = c.user\_id

)

select p.user\_id as user\_id,

page\_viewed\_at,

product\_viewed\_at,

order\_completed\_at,

p.context\_campaign\_name

from page\_viewed p

left join product\_viewed v

```
on p.user_id = v.user_id

left join order_completed c

on p.user_id = l.user_id

order by 5 desc
```

Here are the first four rows of the resulting table:

Screenshot of a table, with columns for user\_id, store\_visited, product\_viewed, order\_completed, and campaign. Four customer records are included.

Then, we can use tweak the query above into the one below to perform some simple COUNT and SUM on the previous table to get conversion metrics as well as total revenue derived from the campaign.

```
with
```

```
users as (
```

```
select *
```

```
from toastmates.users
```

```
),
```

```
page_viewed as (
```

```
select p.received_at as page_viewed_at,
```

```
p.context_campaign_name,
```

```
p.user_id
```

```
from toastmates.pages p
```

```
left join users u
```

```
on u.id = p.user_id
```

```
where p.context_campaign_name is not null
```

```
and p.url ilike '%toastmates.com/store%'

),
```

```
product_viewed as (

    select v.received_at as product_viewed_at,

           v.context_campaign_name,

           v.user_id

    from toastmates.product_viewed v

    left join users u

        on u.id = v.user_id

),
```

```
order_completed as (

    select c.received_at as order_completed_at,

           c.context_campaign_name,

           c.total,

           c.user_id

    from toastmates.order_completed c

    left join users u

        on u.id = c.user_id

),
```

```
select p.context_campaign_name,

       count(page_viewed_at) as store_visits,

       count(product_viewed_at) as product_views,

       count(order_completed_at) as orders_completed,

       sum(total) as total_revenue
```

```

from page_viewed p
left join product_viewed v
    on p.user_id = v.user_id
left join order_completed c
    on p.user_id = l.user_id

group by 5

order by 5 desc

```

Here is the resulting table:

A table with campaign, store\_visits, product\_views, orders\_completed, and total\_revenue columns.

This analysis not only gives us a great snapshot of the conversion points along each campaigns funnel, but also shows that weve generated \$3,100.37 from the National Toast Day campaign and \$3,824.68 from the Toast Your Friend campaign. Also we can see that the quality of the traffic from the National Toast Day is higher, but weve had more total traffic from Toast Your Friend, which makes sense since its an ongoing campaign.

But this is not yet ROI, since we havent incorporated the spendthe labor of your marketing team and the paid acquisition channels to source part of this traffictthat went into these channels.

Add campaign costs

The main costs that are incorporated in an ROI calculation are salaries (pro-rated by person-hour) and media spend. While we could conceivably create a custom, static table in SQL that contains the spend information over time, the faster and more practical way would be a back of the envelope calculation.

The costs associated with a given campaign consist of two major pieces: the person-hour cost and any associated media spend.

Calculating the pro-rated person-hour is an estimate of the number of hours and people used to set up and manage the campaign, then multiplied by the hourly rates based off their annual salaries.

The media spend is the advertising cost for distributing creatives to generate traffic to your store

Want to easily export advertising data from Google Adwords or Facebook Ads? Check out Segment Sources.

When we have the aggregate cost numbers, the formula for ROI is:

Campaign ROI = (Profit Attributed to Campaign - Campaign Cost) / Campaign Cost

Here is a spreadsheet to illustrate the ROI calculation for both campaigns:

Spreadsheet with campaign, type of cost, cost, revenue, and ROI information for both campaigns. The toast-your-friend campaign has a ROI of 27.49%, while the national-toast-day has a ROI of 24.01%.

Though ROI numbers are one success metric, its an important benchmark for comparing performance when launching new campaigns or comparing against past campaigns.

But how can we go one step further and see what worked and what didnt? One approach is to see which channels convert better, so you know how to adjust your marketing spend or media buys in your current campaigns or future ones.

Analyze channel performance

A single campaign can include a wide variety of channels: email, display ads, push notifications, forums, etc. all of which yields different engagement and conversion rates. Effective marketers will keep a pulse on each channel throughout the duration of the campaign to understand whether a target audience is being saturated, a creative refresh is needed (for

advertising), or how to efficiently allocate future spend towards a source that converts.

The analysis is similar to measuring the performance across a single campaign, with the only change being finding events where we focus on `context_campaign_medium` or `context_campaign_source` instead of `context_campaign_name`. The SQL below measures the conversion rates at key funnel events for `national-toast-day`, but broken down by `utm_medium`.

You can copy the below into your favorite editor, as long as you change out the `context_campaign_name` and `context_campaign_medium` parameters to ones that applies to your business.

with

users as (

select \*

from toastmates.users

),

page\_viewed as (

select p.received\_at as page\_viewed\_at,

p.context\_campaign\_name,

p.user\_id

from site.pages p

left join users u

on u.id = p.user\_id

where p.context\_campaign\_name = 'national-toast-day'

and p.context\_campaign\_medium is not null

and p.url ilike '%toastmates.com/store%'

),

product\_viewed as (

select v.received\_at as product\_viewed\_at,

v.context\_campaign\_medium,

v.user\_id

from toastmates.product\_viewed v

left join users u

on u.id = v.user\_id

),

order\_completed as (

select c.received\_at as order\_completed\_at,

c.context\_campaign\_medium,

c.user\_id,

c.total

from toastmates.order\_completed c

left join users u

on u.id = c.user\_id

)

select p.context\_campaign\_medium as utm\_medium,

count(page\_viewed\_at) as store\_visits,

count(product\_viewed\_at) as product\_views,

count(order\_completed\_at) as orders\_completed,

sum(c.total) as total\_revenue

from page\_viewed p



```
left join product_viewed_at v
    on p.user_id = c.user_id
left join order_completed c
    on p.user_id = c.user_id
group by 1
order by 1 desc
```

The resulting table:

Table with utm\_medium, store\_visits, product\_views, orders\_completed, and total\_revenue columns. The different types of utm\_mediums are paid-social, organic-social, display, news, and email.

Since the National Toast Day campaign is relatively new, the majority of the traffic is from the email and an article (news). But we can see that the social channels have a lower conversion from store visits to product views. Email has the best overall conversion to revenue, which may be attributed to the recipients already familiar with the Toastmates brand or having previously had a stellar end-to-end shopping experience.

We can further breakdown this analysis by seeing which email, display ads, and social channels performed the best, by adding utm\_source and utm\_content, assuming that you've properly added them in your earned and paid media links. Also note that this preliminary analysis in SQL doesn't account for double-counted users, who had impressions with our brand on multiple channels (e.g. someone seeing a display ad, yet converted on the email outreach). Fortunately, there are multi-touch attribution models that can be applied to better understand the weights of each activity towards conversion.

Learn more about multi-touch attribution models.

Build repeatable hit marketing campaigns

Measuring the ROI and performance of marketing campaigns and marketing channels tells a compelling story about

what types of campaigns resonate with your audience. How does your audience like to be engaged? Text, push notifications, email? What campaign messaging hooks work the best in getting them back at your store?

You can apply this analytical approach and performance measurement techniques to a wide variety of marketing activities, such as offline marketing, billboards, or sponsoring events. These insights can empower your team to focus on what works and eliminate what doesn't.

Talk to a product specialist to learn how companies like Warby Parker and Crate & Barrel use a data warehouse to increase engagement and sales.

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## Migrating Code From Other Analytics Tools

Switching from your current client-side JavaScript event tracking to Segment is easy. Below you can find migration guides for the following tools:

Google Analytics

Mixpanel

If you'd like us to add more tools or mobile/server-side examples to this guide let us know!

Google Analytics

Custom Events

Google Analytics Custom Events are simple to record in Segment. You'll record them with our track method and use the same properties you would when sending to Google Analytics directly.

The only mapping exception is the Event Action. That will automatically be populated by the Event Name you include in the track call.

Heres an example:

```
ga('send', {  
  
  'hitType': 'event',  
  
  'eventCategory': 'Account',  
  
  'eventAction': 'Signed Up',  
  
  'eventLabel': 'Premium',  
  
  'eventValue': 4  
  
});
```

Becomes:

```
analytics.track('Signed Up', {  
  
  category: 'Account',  
  
  label: 'Premium',  
  
  value: 4  
  
});
```

Since Event Category is required well populate it with All if you dont specify one. You can read more about this in our [Google Analytics docs](#).

## Ecommerce

Segment has full support for the Google Analytics E-Commere API and the Enhanced E-Commerce API as well. Make sure you follow our [e-commerce tracking plan](#) to make sure youll be able to use all e-commerce features in the tools we support.

For an e-commerce transaction to appear in Google Analytics youll need to enable e-commerce for your Google Analytics view and send an Order Completed event to Segment. This simplifies things a lot compared to the direct

Google Analytics code.

Heres an example:

```
ga('require', 'ecommerce');
```

```
ga('ecommerce:addTransaction', {  
  
  'id': '93745',  
  
  'revenue': '30',  
  
  'shipping': '3',  
  
  'tax': '2',  
  
  'currency': USD  
  
});
```

```
ga('ecommerce:addItem', {  
  
  'id': '23423',  
  
  'name': 'Monopoly: 3rd Edition',  
  
  'sku': 'J90-32',  
  
  'category': 'Games',  
  
  'price': '19.00',  
  
  'quantity': '1'  
  
});
```

```
ga('ecommerce:addItem', {  
  
  'id': '22744',  
  
  'name': 'Uno Card Game',  
  
  'sku': 'Q93-32',
```

```
'category': 'Cards',
```

```
'price': '3.00',
```

```
'quantity': '2'
```

```
});
```

```
ga('ecommerce:send');
```

Becomes:

```
analytics.track('Order Completed', {
```

```
  order_id: '93745',
```

```
  total: 46,
```

```
  shipping: 3,
```

```
  tax: 2,
```

```
  currency: USD,
```

```
  products: [{
```

```
    id: '23423',
```

```
    name: 'Monopoly: 3rd Edition',
```

```
    sku: 'J90-32',
```

```
    category: 'Games',
```

```
    price: 19,
```

```
    quantity: 1
```

```
  }, {
```

```
    id: '22744',
```

```
    name: 'Uno Card Game',
```

```
    sku: 'Q93-32',
```

```
    category: 'Cards',
```

```
    price: 3,
```

```
quantity: 2
```

```
  ]
```

```
})
```

At the very minimum you must include an `orderId` for each Order and for each product inside that order you must include an `id` and `name`. All other properties are optional.

## Custom Dimensions

Through Segment you can record user-scope custom dimensions using our `identify`, `page`, or `track` methods.

A full explanation can be found in our [Google Analytics docs page](#), but heres a quick example:

```
ga('set', 'dimension5', 'Male');
```

```
ga('send', 'pageview');
```

Becomes:

```
analytics.identify({
```

```
  gender: 'Male'
```

```
});
```

```
analytics.page();
```

(This example assumes you have already mapped Gender to the correct dimension in your Segment source settings for Google Analytics.)

## Everything Else

To see a full list of Google Analytics features and how they work through Segment read our [Google Analytics docs page](#).

## Mixpanel

## Event Tracking

Event tracking is Mixpanels bread and butter. Below are all the relevant Mixpanel functions and how you can map them to Segment functions.

Switching your event tracking from Mixpanel to Segment couldnt be easier. Our trackmethod maps directly to Mixpanels.

The event name is the first argument and the event properties are the second argument.

```
mixpanel.track('Registered',{  
  type: 'Referral'  
});
```

Becomes:

```
analytics.track('Registered', {  
  type: 'Referral'  
});
```

The identify method in Mixpanel is used to merge together events from multiple environments so your unique events number is accurate and your funnels dont break.

Since mixpanel.identify only takes a single argument (a userID) it maps directly to our identify method:

```
mixpanel.identify('123');
```

Becomes:

```
analytics.identify('123');
```

Mixpanel has the idea of Super Properties, which are user traits that get attached to every event that the user does. In Segment you can set Mixpanel Super Properties using our identify method. Super properties are only supported in client-side libraries Analytics.js, iOS, Android.

Heres an example:

```
mixpanel.register({  
  
  "gender": "male",  
  
  "hairColor": "brown"  
  
});
```

Becomes:

```
analytics.identify({  
  
  gender: 'male',  
  
  hairColor: 'brown'  
  
});
```

This also works when you include a `userId` argument in your `identify` call.

## Alias

Alias is necessary in Mixpanel to tie together an anonymous visitor with an identified one. The Mixpanel and Segment alias methods both work the same.

In client-side javascript passing a single argument will alias the current anonymous or identified visitor `distinct_id` to the `userId` you pass into it:

```
mixpanel.alias('1234');
```

Becomes:

```
analytics.alias('1234');
```

## Track Links

If you are tracking links with Mixpanels `track_links` helper you can switch that code to the Segment `trackLink` helper



function in Analytics.js.

And heres an example:

```
// track click for link id #nav  
  
mixpanel.track_links("#free-trial-link", "Clicked Free-Trial Link", {  
  
  plan: 'Enterprise'  
  
})
```

Becomes:

```
var link = document.getElementById('free-trial-link');  
  
analytics.trackLink(link, 'Clicked Free-Trial Link', {  
  
  plan: 'Enterprise'  
  
});
```

## Track Forms

If you are tracking forms with Mixpanels track\_forms helper you can switch that code to the Segment trackForm helper function in Analytics.js.

And heres an example:

```
// track submission for form id "register"  
  
mixpanel.track_forms("#register", "Created Account",  
  
  plan: 'Premium'  
  
});
```

Becomes:

```
var form = document.getElementById('register');
```

```
analytics.trackForm(form, 'Created Account',  
  
  plan: 'Premium'  
  
});
```

## People Tracking

Mixpanel people tracking is a separate database from the event tracking outlined above. For that reason there are separate API methods to record data to Mixpanel People.

This method sets people properties in Mixpanel People. In Segment you will use our `identify` method to accomplish this.

Heres an example:

```
mixpanel.people.set({  
  
  "$email": "jake.peterson@example.com",  
  
  "$name": "Jake Peterson"  
  
});
```

Becomes:

```
analytics.identify({  
  
  email: 'jake.peterson@example.com',  
  
  name: 'Jake Peterson'  
  
});
```

This also works when you include a `userId` argument in your `identify` call.

As you can see Segment also recognizes special traits like `email` and `name` and translates them to the keys that Mixpanel expects (we automatically add the dollar sign).

For more information check out our [Mixpanel docs](#).

## Increment

To use Mixpanel increment through Segment you won't even need anything in your code! All you have to do is list the events you'd like to increment automatically in your Mixpanel destination settings.

Read more in our [Mixpanel Increment Docs](#).

## Revenue

Mixpanel's Revenue report requires the use of a special function called `track_charge`. In Segment that special function becomes a simple track call. By using the event name `Order Completed` we'll also use that event for any tools you use that recognize our ecommerce spec.

```
mixpanel.people.track_charge(30.50,  
  
  'orderId': 'F9274'  
  
  });
```

Becomes:

```
analytics.track('Order Completed',  
  
  revenue: 30.50,  
  
  orderId: 'F9274'  
  
  );
```

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## Segment's Role in Attribution

At a higher level, attribution tools allow you to connect a specific campaign to user acquisition, giving you more visibility into campaign performance. See the [destination catalog](#) for a list of attribution tools that Segment supports.

There are three stages of mobile attribution as it relates to Segment.

Customer installs your app

The install is attributed by an attribution provider (Adjust, AppsFlyer, etc)

Attribution information is sent back to Segment

Here is a bit more information on what is happening at each of those stages.

Customer installs your app

When lifecycle events are enabled, the Application Installed and Application Opened events are triggered on the first app open after the app is installed. Note, if the app is deleted and then later reinstalled on the device, these events will be triggered again on first app open.

Situations where install counts look lower in Segment than in other tools.

Some tools, like iTunes or Google Play, count install on download rather than on app open like Segment. iTunes and Google Play is able to easily collect data on download but not as easily able to collect first-party data on app open. Whereas other tools, such as Segment, need their SDK to be loaded in app and initialized on app open before they are able to collect the install information. For example, if a user downloads your app but does not open it, the install will be counted in iTunes/Google Play but not counted in Segment or other tools.

Situations where install counts look higher in Segment than in other tools

Many tools deduplicate install data. Some tools only allow one install event per lifetime of deviceId. Others deduplicate by deviceId accepting only one install per UTC day. Each and every tool is different.

Segment, on the other hand, does not deduplicate. We don't believe our role in your data pipeline should be deduping particular events. In fact, there may be situations where you may want to account for multiple Application Installed events such as: user sells their phone, user uninstalls and later decides to reinstall, etc. It is better to think about the Application Installed data in your Segment warehouse as the raw source of data, giving you flexibility to query

For more information on how installs are counted in different tools, here are a few resources from our partners:

[Adjust - Discrepancies and Why Data Does not Always Match Up](#)

The install is attributed by an attribution provider

Device-Mode Connection

When you enable an attribution destination in device-mode, our integration code will also load that tool's SDK. Upon app launch, the destination's SDK will send install information which is then used to attribute that install to a campaign on their backend. Segment loads the destination's SDK, but attribution happens outside of Segment.

Cloud-Mode Connection

Destination receives the Application Installed event and attributes the installation on their backend.

Attribution information is sent back to Segment

Device-Mode Connection

For tools that support this, if you have enabled Track Attribution Data in your Segment dashboard, our integration listens to the attribution tool's SDK for a change in attribution state. Note: Not all device-mode attribution tools offer Track Attribution Data functionality. See the settings section for a particular tool in your Segment dashboard for confirmation.

When there is a change in attribution state, the integration code triggers an Install Attributed call to be sent back to your Segment source (and on to all other enabled destinations - in device and cloud-mode).

Here is an example of how that call is triggered in the AppsFlyer integration code. This is the similar for other attribution providers such as Adjust.

#### Cloud-Mode Connection

For tools that support server-side postback, after install is attributed, an Install Attributed event is triggered and sent server-side to your Segment source and forwarded on to all enabled cloud-mode destinations.

Example Install Attributed event:

```
analytics.track('Install Attributed', {  
  provider: 'Tune/Adjust/AppsFlyer',  
  campaign: {  
    source: 'Network/FB/AdWords/MoPub/Source',  
    name: 'Campaign Name',  
    content: 'Organic Content Title',  
    ad_creative: 'Red Hello World Ad',  
    ad_group: 'Red Ones'  
  }  
});
```

For more detailed information on a particular attribution destination and functionality, see our [Destinations docs](#).

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How do we set up event-triggered notifications or alerts?

Below you'll find a bunch of ways to set up notifications for yourself based on the data you're sending through Segment.

## Connections Alerting

Connections Alerting allows Segment users to receive in-app, email, and Slack notifications related to the performance and throughput of an event-streaming connection.

Connections Alerting allows you to create two different alerts:

**Source volume alerts:** These alerts notify you if your source ingests an abnormally small or large amount of data. For example, if you set a change percentage of 4%, you would be notified when your source ingests less than 96% or more than 104% of the typical event volume.

**Successful delivery rate alerts:** These alerts notify you if your destinations successful delivery rate falls outside of a percentage that you set. For example, if you set a percentage of 99%, you would be notified if your destination had a successful delivery rate of 98% or below.

For more information about Connections Alerting, see the [Connections Alerting documentation](#).

## Google Analytics custom alerts

You can use Google Analytics Custom Alerts to send yourself emails whenever a specific traffic segment drops below (or above) a threshold you set.

Learn how to set up email alerts in [Google's documentation](#).

## Analytics email summaries

With tools like Amplitude, Kissmetrics, and Mixpanel, you can set up email reports delivered to you on a daily basis. They are completely customizable, so you can keep an eye on as many events or other metrics you'd like.

## Mixpanel email reports

Amplitude email alerts

Realtime traffic monitoring

Chartbeat and GoSquared both offer awesome real-time dashboards to see what's happening right now on your site. They both include the option to get notified when your traffic hits a certain threshold. For example, if your on-site visitors is less than 100 people, or more than 1,000.

Chartbeat Spike Alerts

GoSquared Traffic Spike Alerts

GoSquared also offers in-depth historical and user analysis. Chartbeat sticks to realtime anonymous traffic, but offers some sweet features for publishers.

Webhook-based alerts

The last option Segment recommends is to use a monitoring tool like PagerDuty or Datadog and point Segments webhooks destination at them. That way you can set up custom alerts in their system.

Event-triggered emails

The last option for alerting based off of Segment events is to use one of the email tools available on the Segment platform that offers event-triggered emails. Your options there are Customer.io, Vero, Autopilot, Outbound, Klaviyo, or Threads.

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Account Management

What is the difference between an account and a workspace?

An account is associated to a single user and is attached to the email address you sign up with. A workspace houses all of your sources, and can have one or several user accounts as owners and/or read-only members.



What if I change my domain name?

You don't need to do anything if you change your domain name. If the new domain name will serve as the same Segment source, make sure you use the same Segment write key that you used with the old domain.

You may claim ownership of your domain for the purposes of single sign-on login association, but it currently has no bearing on data collection.

I'm on a legacy API plan. Why can't I add the integration I want?

Some of Segment's previous plans, including the legacy API plan, limited integration usage. If you want to add an integration that's not available on your current plan, move to a new Team plan. Team plans include all integrations, along with other additional features.

Will deleting my account cancel my subscription?

No. Deleting your account only stops you from accessing workspaces through your login. The workspace is where the subscription is managed, and it will not be deleted. Data will still flow into Segment and your Destinations, and you will still be charged if you delete your account but don't delete your workspace.

How do I delete my account?

To delete your account, go to the User Settings menu, and click Delete Account at the bottom of the page.

Once the account is deleted you will not have access to workspaces associated with your account that are attached to the email address you signed up with.

How do I delete my workspace entirely?

To delete your workspace, go to your Workspace Settings, click the General tab, then click Delete Workspace.

You should also change your write keys for each source and remove all Segment snippets from your codebase.

How do I change my account email address?

To update the email address associated with your Segment account:

Go to User Settings.

Update your email address in the Email field.

Click Update Profile.

You'll need to authenticate and verify your new email address for the change to take effect. Note that workspace owners can't make this change for other users.

What happens if I change my workspace name or slug?

Changing your workspace name or slug won't impact any sources or destinations you've already configured. If you're using Segments Public API, you'll need to change the slug in your request URLs.

We were unable to save your changes, please try again

If you see this error message when trying to change a workspace slug, it often means the slug is already taken.

Can I recover a source or workspace after I delete it?

No. Deleted sources and workspaces cannot be recovered.

Can I move a source from one workspace to another?

Though workspaces can't be merged, you can move an existing source to a single workspace to the same effect. For example, you might move existing sources to one workspace so that you can unify all of your data across teams and gain a broader view of your customer data tracking.

To move a source between workspaces, navigate to the source's Settings tab, then click Transfer to Workspace. Choose

the workspace you're moving the source to, then click Transfer Source.

When you transfer a source from one workspace to another, Segment migrates all connected non-storage destinations.

The person who transfers the source must be a workspace owner for both the origin and recipient workspaces, otherwise the recipient workspace won't appear in the dropdown list.

Image of the Transfer to Workspace tab in Segment's platform

Tracking Plans do not transfer

Segment recommends that you disconnect Tracking Plans from Sources before you initiate a workspace transfer. Once the transfer is complete, add and reconnect your Tracking Plans in the new workspace.

Sources can't be transferred to EU workspaces

Though transferring sources to the EU workspace is not blocked in the UI, the transfer will not work as expected. This feature is not supported for cross region migration. Segment recommends that you re-create the source in the new workspace.

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Billing and Account FAQs

What is a billing cycle?

On the Segment monthly Team plan, your billing cycle starts the day after your 14-day trial ends. You're billed on this day for each month while you're on this plan.

On the Segment annual Team plan, you're billed at the end of your 14-day trial for the amount of an entire year of service including a specific number of MTUs. Annual plan subscribers are billed for MTU overages at the end of each monthly cycle.

How do I change my plan?

If you already have a Segment workspace, you can change which plan your workspace is on by navigating to Settings > Usage & Billing > Plans.

If you cancel or downgrade your plan during the 2-week trial period, you don't incur any charges.

What if I cancel my paid plan before the end of the month?

Cancellation on the monthly Team plan

If you cancel your plan or downgrade to a free account before the end of your official billing period on the monthly Team plan, you'll receive a final bill for the prorated amount for the \$120 base + a charge for any MTUs you've used over the allotted 10,000 at the rates posted on the pricing page.

Cancellation on the annual Team plan

Segment doesn't issue refunds for the pre-paid portion of your annual bill after your trial ends.

Be aware that if you notify Segment of wanting to cancel your annual plan, but continue to send data to Segment's servers, you may incur overage charges in any given month. You should fully delete your workspace or cycle your write keys to stop all data flow into Segment to avoid future charges.

Will Segment charge sales tax on my invoice?

All Segment customers with a US business address may be subject to state and local sales taxes. The applicable tax law applies based on your business location address, which may be different from your billing address. Customers who purchase a taxable product or service, and are located in a jurisdiction where Segment currently charges sales tax, will

see the calculated sales tax on their invoice.

Segment collects Value Added Tax (VAT) and Goods and Services Tax (GST) on the services sold to its international customers located in certain foreign jurisdictions.

For more information about sales tax, VAT, and GST, see the Segment VAT/GST FAQs.

Do I qualify for a tax exemption?

If you believe your organization qualifies for a sales tax exemption (for example, because of a nonprofit or government status), you can contact [tax@segment.com](mailto:tax@segment.com) with the appropriate form.

I submitted a form for tax exemption, why am I still charged sales tax?

Tax might still be charged on your bill if either:

The exemption certificate was still in review while the invoice was issued; or

The exemption certificate covers a state that is different from the billing address

Do you offer refunds?

In most cases Segment doesn't offer refunds, as noted in the Terms of Service. Contact support if you feel that you're in a unique situation.

Is there a free trial for paid plans?

Segment offers a 2-week trial on the Team plan to let you try the plan before you purchase it.

Segment also offers the Free plan, which includes up to 1,000 MTUs, at no cost to you.

Find out more about the different plans and which one suits your needs best.

What happens when I exceed the Free plan limit?

The Free plan includes up to 1,000 MTUs at no cost. If you exceed the 1,000 MTU limit once in a 6-month period, Segment locks your account but data is still able to flow through Segment. To unlock your account, you can choose from these options:

Option 1: Wait for a full billing cycle (1 month) to go by with any overages. This will automatically unlock your account if the MTU numbers are able to go back down on their own.

Option 2: Upgrade to the Team plan. This starts a 2-week free trial that gives you 14 days to fix your implementation to decrease the traffic.

If you exceed the 1,000 MTU limit twice in a 6-month period, Segment locks your account and also stops sending and receiving data. You can unlock your account by following option 2 above to upgrade to the Team plan 2-week free trial.

## Team Trial FAQ

What is the Team trial?

The Team trial is a 14-day free trial of Segments Team plan, and it includes all the features associated with a Team plan, including unlimited sources, two warehouse syncs per day, 10 seats, and 10,000 MTUs (with the ability to track more MTUs as needed).

How do I get a two-week Team trial?

You automatically receive a 2-week trial when you sign up for a Team plan.

Do I have to be a new customer to receive the free Team trial?

The free trial is available to all customers who have never had a Team plan. This includes new customers as well as customers who have previously been on the Free plan.

Do you have to include your payment information when signing up for a Team trial?

If you're upgrading from a Free Plan to a Team Plan, you're required to add your payment information.

If you're signing up for a new Team plan, you don't have to add your payment information during sign up. If you would like to continue to use the Team plan after the 14-day trial, add your credit card information on the Payment Information page in your workspace before the trial ends.

What happens when the two-week trial ends?

If you added your payment information, your subscription automatically continues at the regular rate after the trial period expires. You can delete your workspace or downgrade to a Free plan any time during the trial to avoid charges.

To activate the free trial, add your payment information.

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## MTUs, Throughput and Billing

A description of MTU and throughput calculation

The graphic illustrates an example billing model with data flowing through Segment within a monthly period. Each event on the different touch points (for example, Sign-ups or Product Added) is calculated as one API call.

Segment detects that the user across two of the touch points is the same user based on their userID (userID 123) and deduplicates them, counting for one MTU.

With Engage, this user falls into one audience, has one computed trait, and falls into one Journeys step, accounting for three compute credits total. Compute credits are not tied to an individual user, so multiple people could fall into these buckets, still accounting for a single compute credit for each trait/audience/journey step.

Finally, the example sends some user events to a destination function, which is charged according to function execution time.

What is an MTU?

MTU stands for monthly tracked user. (Keep reading to learn how Segment counts MTUs.)

What is an API call?

When you use Segment to collect your data, you use the Segment tracking methods (Track, Page, Screen, Identify, Group, and Alias) which collect the data in a structured way, and then send it to [api.segment.io](https://api.segment.io). If you are using the Segment HTTP API, or sending batched data using a cloud-source, that data also goes through this Segment API endpoint.

Each data blob (with its properties or traits) goes through this endpoint, and is considered one API call.

What is throughput?

Depending on your Segment account type, your plan might include a throughput limit. The throughput limit tells you how many API calls and objects Segment allows you per MTU.

For example, if your workspaces throughput limit is set to 250, this means that you can send a combined total of 250 API calls and objects to Segment each month per MTU you've paid for in your plan. If you have a 10,000 MTU plan, this means you can send up to a total of 2.5 million API calls and objects each month.



These objects and API calls are not tied to a specific user, but are an aggregate number applied to your workspace.

Most customers never hit this limit, and Business tier plans often have custom limits.

### Batching and throughput limits

You can sometimes batch API calls to reduce send times, however batching doesn't reduce your throughput usage.

Batched calls are unpacked as they are received, and the objects and calls the batch contains are counted individually.

While batching does not reduce your throughput, it does reduce the possibility of rate limit errors.

### How does Segment calculate MTUs?

Segment counts the number of unique userIDs, and then adds the number of unique anonymousIDs that were not associated with a userID during the billing period. Segment counts these IDs over all calls made from all sources in your workspace, over a billing month. Segment only counts each user once per month, even if they perform more than one action or are active across more than one source.

### Example MTU counts

Imagine that you have both a website and a mobile app. Both the website and mobile app have pages that you can use without being logged in, and both send Identify calls when a user does log in.

### Deduplication across sources

As a simple example, imagine that a user is already logged in on both the website and the mobile app. When the user's activity generates events on the website, these events are sent using Analytics.js, and include the user's userID. When they do things on the mobile app, these events are sent from a mobile source, and also include the userID. When Segment counts the MTUs, all the events from the same userID only generate one MTU, regardless of the source it came from.

### Deduplication after log-in

Now imagine a new user, who has never logged in. At first, they have two anonymousIDs, one for the mobile app and

one for the website. However, if they log in during the course of the month, you now know who they are, and can attach their anonymousId to a userId.

If the user logs in on just the app, you would still see two MTUs: one anonymousId for the website source, and one anonymousId with an attached userId from the mobile app source. If the user logs in on both the app and website, they would count as one MTU: two different anonymousIds attached to one userId.

How do I see my usage data?

If you have questions about your data usage or how it relates to your bill, log into your Segment workspace, click Settings > Usage and Billing > Usage.

The Usage page shows what plan the workspace is on, what data volume that plan includes, and how much data you have already used in the current billing period. If you have used more data volume than your plan includes, the page shows information about how much data is in overage.

Click the billing period dropdown at the top of the page to see a cumulative daily report of data volumes (by source) for the current billing period. The last five billing periods are also available, along with an overview of the last twelve months of data volumes.

What is the difference between an event and an object?

Understanding the difference between events and objects helps you understand how MTUs are calculated.

An event is a data collection triggered in response to a user action: a Track call (or a Page/Screen call if the action was to navigate to a new page). Events take place in a single moment in time, and include a name, timestamp, and properties. When an event happens more than once, it creates a new Event record (with a new timestamp) rather than updating an existing one. For example, a user browsing a product catalog might generate several Product Viewed events, which might include the product name, price, and category.

This is in contrast to Objects which represent a single thing that persists over time and can be updated. Objects have traits (instead of properties) which record information about that object, and which can change over time. For example a user object could have a trait of email which doesn't change often, but could also have a computed trait like `logged_in_last_7_days` that changes between true and false based on how much they use your site.

How is object throughput calculated?

Object Cloud Sources retrieve records from integration partners on a scheduled basis. Segment processes these records before writing them out to connected Storage Destinations. Segment counts one object for each record retrieved from a Cloud Source. The number of objects ingested during a billing period has a direct impact on throughput, which is calculated as  $(\text{objects ingested} + \text{API calls received}) / \text{MTU allowance}$ .

Depending on the capabilities of the partners API, Segment may need to retrieve all available records and then deduplicate them prior to writing them out to a connected storage destination. In such cases, all retrieved records are still counted as ingested objects, even if the same records are retrieved multiple times in a given billing period. If you experience overages due to high object throughput, contact [friends@segment.com](mailto:friends@segment.com) to request a less frequent sync cadence.

MTUs, object throughput, and Cloud sources

If you use Cloud sources to pull in data from your third party services (in addition to tracking your users with Segment library sources), the data from these cloud apps can increase your MTU counts and object counts.

There are two types of cloud sources: object sources, and event sources. Object sources bring in information about entities, such as a person or company, which can change and have their properties updated over time. Events happen once in time, so while their properties don't change, they can also happen more than once over time. (See above for more on objects vs events.)

Object sources do not increase your MTU count because the data included doesn't usually contain an ID. Object sources can only send to Warehouses, and do affect the total object count which is used to calculate your throughput. Some examples of object-sources are Salesforce, Zendesk, and Stripe.

Event sources can create new MTUs because each event coming from this source includes either a `userId` or an `anonymousId` associated with the event. Some examples of event sources are Vero, Drip, and Youbora.

Tip! You can check the Collections section of a cloud-sources Segment documentation to see what type of data it sends. The Collections table lists each data type sent from the cloud source, and tells you if that data is an Object or an Event.

## MTUs and Protocols

Protocols is a Business Tier feature. If you are on a Free or Team plan, this section does not apply to you.

Segments Protocols product allows you to selectively filter and block your incoming data to prevent malformed data from reaching destinations including your data warehouses and other storage solutions.

Tracking plan blocking: Blocked events are blocked from sending to all Segment Destinations, including warehouses and streaming Destinations. They're blocked from reaching the entire Segment data pipeline. When you block an Event using a Tracking Plan, it does not count towards your MTU limit.

Blocked events (sometimes called violations) only count toward your MTU limit if you enable blocked event forwarding in your Source settings. You might do this to monitor issues with your incoming data as you continue to develop your tracking.

If you enable violation forwarding, it generates one (1) additional MTU in your workspace, total. If you are on an API billing plan, you are charged for the increased API volume generated by the forwarded violations. Forwarded violations might also generate costs in downstream destinations and data warehouses connected to the violations source.

## MTUs and Engage

Engage is a Business Tier add-on feature. If you are on a Free or Team plan, this section does not apply to you (because you do not have this feature).

All Engage data are omitted from billing MTU and API throughput calculations, including computed traits, SQL traits, and audiences.

## MTUs and Replays

Replay is a Business Tier feature. If you are on a Free or Team plan, this section does not apply to you.

Replays only affect your MTU count if you are using a Repeater destination, which might send data that hasn't yet been seen this month back through a source.

## MTUs and Reverse ETL

See the Reverse ETL usage limits to see how MTUs affect your Reverse ETL usage limits.

## Why is my MTU count different from what I see in my destinations and other tools?

Different tools count users under different conditions, so comparing numbers between any two tools, or between Segment and a tool, rarely produces the same number. Each tool accepts slightly different incoming data, and they often reject or process the incoming data differently. Included are some example explanations of why you might see differing numbers below.

Contact Segment Product Support if for more information about a specific tool, or if you're concerned that differing numbers might be due to an implementation error.

## Google Analytics

Google Analytics requires that you include a url in any Page calls from a Segment server library. If you don't include a url, Google Analytics silently rejects the call, which can reduce the number of users you see in GA.

Segment does not pass data from Identify calls to Google because it is against Google's terms of service to pass Personally Identifiable Information (PII) to the Google Analytics reporting interface. If you need to pass data from an Identify call, you can set up a Custom Dimension mapping to override this.

To pass the userId from your Identify calls to Google Analytics, go to the Google Analytics destination settings in the Segment web app, locate the Advanced Google Analytics settings, and enable Send User-ID to GA.

## Amplitude

By default, Segment doesn't send standard Page calls or Screen calls to Amplitude, which might reduce the number of unique users Amplitude sees.

To send Page and Screen calls to Amplitude, go to the Amplitude destination settings in the Segment web app, and locate the Advanced Options tab.

Amplitude can only automatically link an anonymous user to their logged-in userId if the events or traits come from a device-mode source (such as Analytics.js or a mobile library). If you use a server library or the Segment HTTP API, Amplitude can't automatically connect the anonymous user to their logged-in identity. To work around this so Amplitude can connect the anonymous and identified user, make your Identify call when the user logs in, and include both the anonymousId from before the user logged in and the userId the user provided at log-in.

For Amplitude to associate both client-side and server-side activity with the same user, you must pass the same deviceId to Amplitude. Otherwise, Amplitude creates two users - one associated with the user's deviceId and another user associated with the user's Segment anonymousId.

What might cause a spike in my MTU count?

There are several reasons why you might see a sudden increase in MTUs. Most of them are due to traffic fluctuations, however, some changes you make in code might also increase your MTU count, usually because you are (unexpectedly) generating a new anonymousId or userId for a single user.

If you think an implementation problem is causing an increase in your MTU count, contact Segment Product Support as soon as possible for help troubleshooting and resolving the issue.

#### Changes in traffic

MTU counts usually increase when the number users or visitors to parts of your site or application that use Segment tracking increase. Sometimes you'll see a spike when you post a big press release, or marketing campaign that leads to an influx of visitors. Another potential cause of big increases is adding tracking to parts of your site or app that didn't have tracking before.

#### Changes to imported sources

Another possibility is an increase in the number of interactions with your users outside your app (emails, help desk, push notifications, etc) that you are importing using cloud sources. Tracking users you weren't tracking before increases your MTU count unless you are able to pass a userId so they can be resolved with existing users. If you're already tracking those users elsewhere with Segment, they are not counted a second time.

#### User behavior

Users who are very privacy-conscious might cause your tracking to generate more MTUs; however in most cases these users are a fraction of a percentage of total traffic.

If the user visits the website from a different browser, each browser generates a different anonymousId. If these are not linked to a userId they continue to count as new MTUs.

If the user visits the page in Incognito mode, the browser generates a new anonymousId for each incognito session.

These IDs are discarded at the end of the session.

If the user manually clears their browser cookies, this removes any Segment tracking data they may have gathered, including the `userId` and `anonymousIds`. When they next visit your site they generate all new `anonymousIds` and tracking information. This new information isn't resolved with existing tracked user records until you can attach a `userId` to them.

#### Calling reset

Check to see if you changed how you call `analytics.reset()`. This utility method clears the old user identity information, and generates a new `anonymousId` each time you call it. This creates a user that Segment cannot resolve with an existing user until they are further identified.

#### Overwriting an existing identity

Segment's analytics libraries include methods that allow you to overwrite both the `userId` (using `identify(xxx)`) and `anonymousId` (using `analytics.user().anonymousId(xxx)`). Using these methods on a user whose tracking information already includes an ID can cause the user to be counted more than once.

If you find you need to use one of these overwrite methods, you should check to make sure that the field you are changing is null first. If the field is not null, you probably don't want to overwrite it and lose the user's original tracked identity.

#### Cross-domain issues

If the pages you track are on more than one domain (for example, `mydomain.com` and `mydomain.net`), the user generates a new `anonymousId` for each domain. However, if the domain is a subdomain (for example `mydomain.com` and `app.mydomain.com`), they can share a user cookie and so share identity data and count as only one MTU.

If the user goes from one page to another and the second page loads in an `iFrame`, the page in the `iFrame` generates its own `anonymousId`.

Where can I find information about Twilio Engage Channels billing?



Segment does not bill for SMS and Email sends from Engage Channels. For actual billed usage, refer to the Twilio and SendGrid accounts that you've linked to Engage.

This page was last modified: 28 Mar 2023

## Discounts or Coupons

Segment currently offers coupons on an ongoing basis for:

### Early-stage startups

Participants and alumni of our Accelerator partners

### Non-profits

Early-stage startups Segment offers a Startup Program to enable early startups to track data correctly and easily test the marketing and analytics tools necessary to grow their business. Participating startups receive \$25,000 in annual credit toward our monthly Team plan for as long as they meet our eligibility requirements (up to 2 years).

[Learn more about the Segment Startup Program and eligibility requirements here.](#)

**Participants and Alumni of Accelerator Partners** We currently partner with various accelerator programs around the globe to offer promotions for both current and alumni participants. Contact your accelerator administrator to see if they partner with Segment and for more information on how to redeem the coupon.

If your accelerator does not participate in our program, have them apply [here](#) or contact us with the details of your program and the best point of contact for consideration.

**Non-profits** We offer non-profit customers a \$120 per month discount on our monthly Team plan, which typically covers 10,000 MTUs per month. Contact us to our support team with proof of your non-profit status for more details.

**Special Promotions** We occasionally offer special promotions. Customers will be notified directly if they are eligible for a special promotion.

## Coupon FAQ

**How do coupons work?** Coupons are applied to your monthly (or annual) bill, which reduces the corresponding charge to your credit card. Coupons can either take the format of a percent-off or a dollar value-off your bill. If your coupon is a percentage-off your bill, the dollar value of the coupon may change as your bill may fluctuate month-to-month.

**How do I redeem a coupon?** Eligible startups can apply directly for the Segment Startup Program. Other coupons can be redeemed by reaching out to Segments support team, who will apply the promotion to your account.

**Where can I view which coupons are applied to my account?** The Startup Program credits are reflected in the Workspace usage and billing page. Other coupons applied to your workspace are not currently reflected in the Segment application. If you are curious about a promotion you are currently on, or if your workspace has a coupon applied, contact the Segment support team.

**Do I have to be a new customer to receive a coupon?** The Segment Startup Program is only for customers that have not previously received any other coupon. Both the non-profit and accelerator promotion can be redeemed regardless if you're a new customer or have been with us for years. A user/workspace can only receive any coupon once.

**What happens when my coupon expires?** When your promotion expires, your bill returns to the normal, non-discounted rate. Certain promotions may include a follow-up discount immediately after the promotion expires.

This page was last modified: 14 Jul 2021

## Segment Startup Program

Segment offers a Startup Program to enable early startups to track data and test the marketing and analytics tools

necessary to grow their business. The program is open to any early-stage startup that meets the following eligibility requirements:

Incorporated less than two years ago

Raised no more than \$5MM in total funding

Located in Google Cloud eligible territory

haven't previously received other Segment discounts

The Segment Startup Program includes three components:

Segments Startup Deal - Participating startups receive \$25,000\* in annual credit toward our monthly Team plan for as long as they meet our eligibility requirements (up to 2 years).

Partner Startup Deals - Segment partners with other technology companies that offer valuable tools for startups to offer exclusive deals and promotions from marketing, data warehouse, and analytics tools.

Startup Resources - Segment offers learning materials on topics like analytics, product-market fit, and more for founders to become experts on data analytics and making the most of Segments technology.

Interested companies can apply on the Startup Program site.

Application deadline

Effective January 6, 2025, Segment will no longer accept applications for the Segment Startup Program. Applications submitted before 11:59 PM PT on December 5, 2024 will be reviewed and honored. Any applications received after this deadline won't be accepted. There will be no exceptions.

\*Can vary based on affiliated accelerator and VC partners.

Frequently Asked Questions

How are the Segment credits applied? Credits are applied to your monthly bill, covering up to \$25,000\* in total usage

per year. Any additional usage costs are not covered by the program.

How do I redeem the Segment credits? Eligible startups can apply directly for the Segment Startup Program.

How do I find out if I've been accepted to the Segment Startup Program? If you've been accepted to the program, you'll receive an email with a welcome message and next steps. If you haven't received an email, you can also check in your Segment workspace and look for a Startup Program icon in the top right corner.

Where can I view the credits applied to my Segment account? The Startup Program credits are reflected in the Workspace usage and billing page.

Do I have to be a new customer to receive a coupon? New and current Segment users who have not previously received any other coupon are eligible to apply.

What happens if I go over my total credit applied? If you go over the total credit applied, you will be charged for the additional usage for that month.

What happens when my credits expire? Once you've used your total credits, you might be eligible to renew for another year at a discounted rate. Otherwise, we can talk about options for upgrading your plan.

How do I get the startup partner deals? Once you've been accepted to the Segment Startup Program, you can apply for the partner deals using this [Airtable form](#). (You can view a list of the available deals in a section of the [Airtable form](#).)

How do I know if my accelerator/incubator/VC firm has a relationship with Segment? Ask your program manager to see if they participate in the Segment Startup Program. If they do not, you can request that they apply to become a partner.