

# The definitive guide: **RudderStack vs. Segment**



### The Definitive Guide: RudderStack vs Segment

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#### Introduction: Our core differentiator – we're building RudderStack for you

This document is full of detailed direct comparisons between RudderStack and Segment, but before we dive in, let's step back and look at the big picture. First, Segment is a good product—we didn't write this document to sling mud. In fact, many of our technical employees ran Segment in previous jobs or even worked at Segment!

The purpose of this document is to share the vision (and the details!) of why those people left Segment to join RudderStack and why many of our customers migrated from Segment. At a fundamental level, RudderStack is building on a different set of beliefs, namely that **you should have full ownership and control of your data in your own data store and that data tooling should be built for data teams**.

In short, data professionals, we are building RudderStack for *you*. That's why we don't store your data. That's why we don't focus on UIs for marketing automation. And that's why we're building out technical features for technical users on their terms.

The detailed comparison is below, but we thought it would be helpful to start with a list of the features data teams love most about RudderStack:

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- Programmatically access event metadata via API
- Run transformations on device mode destinations
- Get support from other users in our developer Slack community
- Stream data directly into Kafka topics in real-time
- Sync data to your warehouse or data lake every 30 min, or faster
- Check out the open-source code for all our destination integrations (or build your own)
- Test transformation and delivery of events via API

And with that, let's dive in!

#### The fundamental question: Who should own the CDP?

Since the Twilio acquisition, our view is that Segment has pivoted to becoming an all-in-one customer engagement suite and doubled down on catering to non-technical users. That means increasingly less technical flexibility and control – limiting innovation and compromising many use cases altogether.

As we've mentioned, at RudderStack we believe in a fundamentally different approach to customer data-one centered around the data warehouse and owned by the data team. We believe the CDP is more than a marketing platform, and, as such, should be owned by engineers who are equipped to build the infrastructure required to serve the *whole* business with data. This approach drives two key benefits for Marketing teams- they no longer carry the burden of managing data infrastructure (or creating a burdensome relationship with dev), and they can unlock more powerful use cases in partnership with the data team.

But the Engineering–Marketing relationship has a storied history. To build a strong partnership, it's important to understand what's behind the tension and how to address it. In this section we'll articulate:

- Why Engineering is best equipped to own the CDP
- What creates the tension between Engineering and Marketing
- How Engineering can leverage RudderStack to support Marketing

#### Why Engineering is best equipped to own the CDP

Historically, Marketing has driven CDP implementation and management, often leaving Engineering teams out of the strategic conversation. The problem is, that without key insight and expertise from Engineering, CDP projects don't meet expectations or fail altogether.

#### How we got here

When the Internet achieved mass adoption, everything in the customer data world changed. It became easier to track transactions and all sorts of granular data points. These data points provided a treasure trove for anyone trying to optimize the customer experience, but tracking was complex and expensive to implement, so it was out of reach for most companies.

#### SaaS and cloud change everything

With the advent of SaaS and Cloud technologies, IT and Engineering teams went from implementing and developing innovative technology, to desperately trying to catch up as organizations underwent seismic changes in digitization.

Business leaders got impatient, and departments rapidly "SaaS-ified," often going around Engineering and IT teams. This happened for a good reason: these new systems were state-of-the-art, cheaper, and more stable. But they created a huge problem: **data silos.** Much of the customer data was now out of Engineering's domain and locked into individual team (and vendor) ecosystems.

#### CDP to the Rescue?

The pain businesses, most profoundly, marketers, felt due to data silos helped birth the customer data platform. CDP vendors promised to bring customer data from all of these SaaS systems into a single place. After this, they would give marketers the tools they needed to activate campaigns on different channels based on that data.

Because these solutions were cloud SaaS tools, marketers could bypass conversations with Engineering to avoid slowdowns. Marketing teams spent huge amounts of money to purchase and deploy CDPs, but their problems persisted.

#### The disconnect between CDPs and Engineering

In bypassing Engineering to increase velocity, Marketing teams failed to recognize that the Engineering teams still controlled key business systems like mobile and web experiences, eCommerce applications, backend systems, and the databases that power all of those components. This created three major problems:

- 1. CDPs lacked integration with core infrastructure and apps
- 2. Sending sensitive internal data to multiple third-party systems introduced serious privacy and security concerns
- 3. Teams outside of Marketing had no access to the valuable data now locked in the CDP

#### Engineering is equipped to unlock customer data for every team

While Marketing was following the CDP frenzy, Engineering teams were busy re-inventing every piece of tech in the organization. Today, Engineering teams are equipped to partner with teams organization-wide to help them get full value from their customer data because they can:

- Provision of infinitely scalable infrastructure
- Centralize all customer data in modern data warehouses or data lakes
- Connect every tool in the stack
- Enable real-time use cases

Today's Engineering teams can deliver what Marketing has been looking for all along– a single customer view that can be leveraged throughout the tech stack. This is why the most innovative companies are creating a competitive advantage by building their CDP on top of their data warehouse and positioning Data Engineering as a strategic partner with teams across the organization.

#### How Engineering can leverage RudderStack to support Marketing

There is cause for optimism around the relationship between Engineering and Marketing. Not only are marketers becoming more technical, enabling them to understand and collaborate more effectively with developers, but the tooling available to engineers has also improved significantly. With the right tooling, Engineering can work with Marketing to unlock the full value of the organization's customer data.

Modern tooling enables developers and data engineers to eliminate the pain points that plague marketing projects from a data perspective. Instead of being forced to use tools built for marketers, laboring through building internal tools, or dealing with the always-problematic Google Tag Manager, developers can easily manage infrastructure from the data layer and get Marketing the data they want in the tools they want.

Here's an overview of specific ways Engineering teams support Marketing from the data layer with RudderStack.

#### Step 1: Consolidate and standardize 1st-party data collection

One of the core challenges Marketing faces is different versions of the truth when it comes to 1st-party data. The symptoms often show up in comparing two different marketing/sales tools.

Data discrepancies almost always happen because various tools use different technical mechanisms for collecting data and each tool's definitions and formats are slightly different. As the number of tools in the stack continue to grow, this problem gets worse.

#### The solution is consolidating tracking into a single source and standardizing data collection.

The nature of this problem begs for standardization and simplification at the source, which is exactly what RudderStack's SDKs enable. With RudderStack, you only have to instrument tracking one time, and our simple JSON payloads follow standardized schemas.

For developers, this means a drastically simplified workflow for both instrumentation of 1st-party tracking and, more importantly, the standardization of the data that is being collected. This also means control—no more surprise tags being implemented in Google Tag Manager. In fact, you can eliminate Google Tag Manager altogether! Best of all, schemas can be version-controlled in your codebase, so you know exactly what data is being collected.

For the Marketing team, this means data consistency across tools and much faster turnaround times on data requests.

Step 2: Remove integrations work from the equation

Even if you standardize data collection, you still have to send it to all of the tools used by Marketing. Normally this means developers have to do a bunch of custom API work to send the standardized payloads.

RudderStack removes tedious integration work from the equation. The standardized events you instrument can be automatically sent to any destination in your stack, including marketing tools—no integration work is required.



#### Step 3: Streamline client and server-side conversion management for ad platforms

For developers, the only thing worse than working on custom integrations with Marketing's cloud tools is dealing with the gigantic mess of sending conversions to paid ad platforms.

Instrumenting dedicated conversion events across platforms like Facebook, Google, Pinterest, and Bing requires constant attention as Marketing runs experiments. It means either lots of custom code or painful troubleshooting and complex sequencing in Google Tag Manager. Yuck.

In RudderStack, your existing events can be sent directly to ad platforms as conversions, both on the client-side and server-side. Let's say Marketing wants to create a remarketing audience to serve ads to everyone who signs up for the newsletter. All you have to do is add your ad platforms as destinations, then map your existing `newsletter\_signup` event to the corresponding conversion in the platform.



#### Step 4: Customize and fix destination integrations on the fly with Transformations

No matter how streamlined you make your data flow to Marketing tools, Marketing's needs change as they learn through experiments that they run. This means data payloads will inevitably need to be updated and requirements will change, even on a destination-by-destination basis. With RudderStack, you can use simple JavaScript in a RudderStack Transformation to customize the payload for the destination, and because Transformations are written with JavaScript, the sky's the limit and our customers have found hundreds of uses, from customizations to on-the-fly fixes.

#### Finally, work on the fun stuff

Once you get the low-level data plumbing out of the way, you can collaborate with Marketing on the projects that can move the needle. Here are a few examples.

#### Send enriched data from the warehouse directly to Marketing's tools

It's becoming more common to build enriched customer views in the warehouse using tools like DBT, but getting those enriched data points to cloud tools is a huge pain. With RudderStack's Reverse ETL feature, you can turn tables into payloads and populate the same downstream tools.

#### Send audiences and cohorts directly to ad platforms

The Data Engineering team often has access to the data required to build the most interesting and valuable marketing audiences. Let's say you've enriched high lifetime value customers with third-party intent data and have that cohort in your warehouse. RudderStack can push that audience directly to ad platforms like Facebook Custom Audiences.

#### Enable more advanced marketing automation

Marketing teams are often limited to using custom fields or in-platform tracking to build marketing automation logic. With RudderStack, though, you can populate tools like Klaviyo, Salesforce Marketing Cloud, Marketo, and other marketing automation tools with real-time behavioral events, enabling much more advanced triggering and automation.

#### Competitive advantage, check

When marketers are willing to grow their technical muscles and data engineers are equipped with proper tooling, the relationship quickly moves from contentious to symbiotic, and the whole company benefits. We dare say marketers and engineers could even grow to appreciate each other and enjoy working together. If you're ready to help Marketing finally begin to reap the benefits of accurate, comprehensive customer data, forward our <u>RudderStack for Marketing</u> guide to get the conversation started.

#### Deep dive: Feature-by-feature comparison

Our team spent a huge amount of time combing through Segment's documentation, packaging, and product pages to build a complete picture of how RudderStack compares. Below is the richest set of information you'll find comparing key features. We are understandably biased towards RudderStack's focus on features for technical users, but we've worked hard to create a fair comparison.

Though similar in some ways, the two products are different and have varying methodologies on how to solve certain problems, making it hard to create a true 1-1 rubric for every single feature. Instead of pulling every last detail from each set of docs, we pulled a comprehensive list of features and functionalities, which we grouped into categories for clarity:

- Data Pipelines & Integrations
- <u>Real-time Event Transformations</u>
- Deployment & Management
- Data Governance & Privacy
- User Profiles & Audiences
- <u>Support</u>
- Marketing Automation

We've also provided handy charts that summarize each category, followed by detailed information for every feature and functionality, including links to helpful resources.

As always, if you have questions, notice we missed something, or want to share your opinion, please <u>reach out</u>!

#### Data Pipelines & Integrations

Both RudderStack and Segment offer a variety of data pipelines and integration types. This section breaks down the comparison across all major features and functionalities in this category. Below the chart, you'll find additional details and links to resources on each feature or functionality.

	Notes	RudderStack	Segment
Sources			
SDK sources	There's 80% crossover for the most popular languages and frameworks	16 generally available RudderStack supports Rust, Unity and Flutter (Segment doesn't)	16 generally available, 1 beta, 1 alpha Segment supports Kotlin, Xamarin and Clojure (RudderStack doesn't)
SDK Session tracking	RudderStack includes configurable session data in each event payload		×
High-performance JS SDK	Both RudderStack and Segment's JavaScript SDKs are performance-optimized for web		
SDK ad blocker detection	RudderStack's SDK can automatically detect ad blockers and send event flags through.		×
Cloud event sources	Segment has more cloud event sources than RudderStack	20 generally available	31 generally available, 9 in beta
HTTP API Source	Both RudderStack and Segment have HTTP endpoint sources (and RudderStack's is API compatible with Segment!)		
ETL sources	RudderStack has about twice the number of ETL sources compared to Segment (with a growing library)	30 generally available	13 generally available, 1 in beta

Custom sources	Custom sources in RudderStack are built with Webhook Sources and Transformations, whereas Segment charges for their dedicated, UI-based Functions feature	Webhooks + real-time Transformations <i>Included in every plan</i>	Source Functions
Destinations			
Total destinations	Segment has more generally available destinations and a large number in beta.	161 generally available, shipping ~30/quarter	210 generally available, 153 in beta
Warehouse & data store destinations	RudderStack supports additional data stores like Redis	8	6
Data lake destinations	RudderStack supports Databricks (Delta Lake)	4	3
Streaming destinations	RudderStack supports additional streaming services like Kafka and Azure Event Hub	8	4
Custom destinations	Custom destinations in RudderStack are built with Webhook Destinations and Transformations, whereas Segment charges for their dedicated, UI-based Functions feature	Webhooks + real-time Transformations <i>Included in every plan</i>	Destination Functions
Cloud & device mode	Both RudderStack and Segment support cloud and device mode destinations		
Event filtering	RudderStack supports allowlisting, denylisting, sampling and other reusable filtering logic on all plans, while Segment charges for more limited functionality	Dedicated allowlisting and denylisting for select destinations, flexible custom logic via Transformations <i>Included in every plan</i>	Primarily UI-configured filtering, custom logic available via proprietary language ("FQL") Only available in Business Tier
Hybrid mode	RudderStack supports running select destinations in both cloud and device mode simultaneously		×

Warehouse sync frequency	For all users, RudderStack can load data every 30 minutes or faster, whereas hourly syncs are only available in Segment's highest paid tier	Configurable from <b>30</b> <b>minutes</b> (or faster) up to 24 hours. Included in every plan.	24 hours (Free plan), 12 hours (Team plan) Hourly (Business plan) Segment cannot sync faster than hourly
Reverse ETL			
Reverse ETL pipelines	Reverse ETL pipelines send data from your warehouse to downstream tools	Generally available, fully-featured reverse ETL functionality	Public beta due December 2022
Testing & Troubleshooting			
Live event viewer	Both RudderStack and Segment offer live event viewers for testing and debugging		
Event & integration testing	RudderStack has an API-based approach for testing events and integrations whereas Segment takes a less flexible UI approach	Test API	UI dashboard
Event Audit API	Access the data catalog and rich event diagnostics via API		×
Health Dashboard	Comprehensive dashboard for tracking data flow, error logs, and system performance		
Configurable Alerts	Alerting capabilities that let you set up timely notifications for critical data issues, helping you take necessary actions before they escalate into major problems		

Additional details & resources

#### Sources

#### SDK Sources

Comparing the actual number of SDKs can be a bit tricky as Segment 'double counts' a few SDK components (like AMP). Either way, both RudderStack and Segment support all of the major

languages and frameworks, with 80% crossover across all SDK sources. For the delta, RudderStack supports more modern frameworks like Rust and Flutter.

RudderStack resources:

- SDK documentation
- <u>SDK FAQ</u>

#### SDK Session Tracking

It can be difficult to build sessionization models in your warehouse using timestamps or customize sessions in various analytics tools. While both RudderStack and Segment track timestamps on events, RudderStack takes it a step further and provides both default and configurable session tracking data that makes analyzing user sessions significantly easier.

Specifically, RudderStack captures sessionID and sessionStart and allows you to configure both session length as well as a specific sessionEnd if desired.

#### RudderStack resources:

• Session Tracking documentation

#### High-performance JS SDK

Both RudderStack and Segment's default JavaScript SDKs are optimized for high performance on the web. As we've noted, RudderStack is API compatible with Segment, so you can replace your SDK and use existing event instrumentation.

#### RudderStack resources:

- JavaScript SDK documentation
- High performance JavaScript SDK launch post

#### SDK ad blocker detection

It can be very helpful to know if a user is running an ad blocker, especially that means they might not see important content. RudderStack's JavaScript SDK can automatically detect many ad blockers and send through a flag. Segment does not have this functionality in their JavaScript SDK.

#### RudderStack resources:

• Detecting ad-blocked pages documentation

#### Cloud event sources

Both RudderStack and Segment support cloud event sources, which stream events from cloud apps themselves, as opposed to events instrumented and sent with SDKs. These sources can be very helpful for capturing important events like emails sent, opened and clicked. Over the past decade Segment has built over 30 cloud event sources, with 9 in beta. RudderStack has built 20 cloud event sources in 3 years and we are actively growing the list.

RudderStack resources:

• <u>Cloud app source documentation</u>

#### HTTP API Source

Both RudderStack and Segment can receive events sent directly to their HTTP API endpoints. The HTTP source can be helpful when you need to send specific types of events from systems that can't run an SDK (like internal or legacy applications).

RudderStack resources:

HTTP API documentation

#### ETL sources

RudderStack 30 generally available ETL sources compared with Segment's 13 (and one in beta). Segment calls these "cloud object sources" and includes them with cloud event sources in their "cloud sources" category (yes, this is confusing), but under the hood they are basic ETL pipelines. RudderStack doesn't want to be a pure ETL company, but we do have a dedicated team for these pipelines because they contain key data points for building a complete view of the customer in your warehouse.

RudderStack resources:

• <u>Cloud Extract (ETL) documentation</u>

#### Custom sources

Both RudderStack and Segment enable you to create custom sources, but the approaches are very different. Note that RudderStack's methodology for custom sources are available for all users, whereas Segment charges for their Functions feature.

Here's a high level overview:

**RudderStack's** goal is to give you as much flexibility as possible, so our users build custom sources using our Webhook Source, which can receive any generic payload, and custom code in real-time Transformations, which can shape that payload with unlimited flexibility, ultimately

translating it into a valid payload for the RudderStack data plane and downstream destinations. Because Webhook Sources and Transformations are part of RudderStack's core product, error handling, retry logic work out of the box.

**Segment** has a dedicated feature for building custom sources called Functions, which requires you to hand-roll code in Segment's UI, including handlers for all event types, error handling and retry logic.

RudderStack resources:

- Webhook source documentation
- <u>Transformations documentation</u>
- Knowledge base: <u>using Webhooks and Transformations to create custom integrations</u>
- Tech Session: RudderStack Transformations vs Segment Functions

#### **Reverse ETL**

#### Reverse ETL pipelines

RudderStack has been building reverse ETL functionality for almost 2 years, whereas Segment's reverse ETL pipeline is brand new (with the beta made available in December 2022). RudderStack's reverse ETL product allows you to set up syncs by configuring JSON, mapping columns to fields in our UI or even writing SQL directly. You can also orchestrate RudderStack reverse ETL jobs with Airflow!

RudderStack resources:

- <u>Reverse ETL documentation</u>
- <u>Airflow provider documentation</u>
- Reverse ETL case study: <u>5 Million Users a Day From Snowflake to Iterable</u>

#### Destinations

#### Total destinations

Sorting through Segment's destination integration library in detail takes a bit of time, but don't worry, we tackled the hard work for you. The most interesting thing about Segment's destination catalog is that a huge number of integrations are in beta—over 40% of their total catalog. From what we understand many of these were created by and are 'maintained' by the destination vendor, which practically translates to "mileage may vary."

Our main concern at RudderStack is generally available destinations, which are fully supported and maintained. In the last decade, Segment has developed ~210 generally available destinations. In the last 3 years, RudderStack has developed 161 generally available destinations and our current pace of developing new destinations is ~10/month.

Perhaps the biggest difference is emphasis on destinations—RudderStack supports multiple key data infrastructure destinations that Segment doesn't, which reflects a larger trend of building for data teams versus Marketing teams, but more on that later.

#### RudderStack resources:

Destination documentation

#### Warehouse & data store destinations

Both RudderStack and Segment support multiple warehouses and data stores, but RudderStack supports several unique integrations that are key for data teams. Clickhouse is a big one on the warehouse side, while Redis and MinIO are well loved on the key-value and object storage front.

#### RudderStack resources:

- <u>Warehouse destination documentation</u>
- Redis destination documentation

#### Data lake destinations

Both RudderStack and Segment support data lake destinations. The big difference here is that RudderStack supports Databricks (Delta Lake) and Segment doesn't. We've worked with customers like Acorns to ensure our Databricks integration is extremely performant.

#### RudderStack resources:

Databricks Delta Lake documentation

#### Streaming destinations

Both RudderStack and Segment support streaming destinations, but RudderStack boasts several key integrations that Segment doesn't, including Kafka, Confluent, BigQuery Stream and Azure Event Hub.

#### RudderStack resources:

- Kafka documentation
- <u>Confluent documentation</u>

- BigQuery Stream documentation
- Azure Event Hub documentation

#### Custom destinations

If you read the section above, you already know the drill: both RudderStack and Segment enable you to create custom destinations, but the approaches are very different.

RudderStack enables all users to leverage Webhook Destinations and Transformations to quickly send data to any destination, whereas Segment has a dedicated paid feature called Functions which requires you to hand roll authentication, error handling, retry logic and handlers for all event types.

#### RudderStack resources:

- <u>Webhook destination documentation</u>
- <u>Transformations documentation</u>
- Knowledge base: <u>using Webhooks and Transformations to create custom integrations</u>
- Tech Session: <u>RudderStack Transformations vs Segment Functions</u>

#### Cloud & device mode

RudderStack and Segment support both cloud mode integrations, which send data server-to-server (i.e., from RudderStack directly to the destination API) as well as device mode integrations, which load the destination SDK onto the device and send data directly to the service.

RudderStack resources:

<u>Connection mode documentation</u>

#### Event filtering

RudderStack offers multiple ways of filtering data. All device mode destinations offer dedicated allowlisting and denylisting and our JavaScript, iOS and Android SDKs can filter out destinations in cloud and device mode. For all other kinds of filtering, including sampling, blocking based on properties or traits, or any other custom logic, our users leverage Transformations. A huge win when using Transformations to filter events is that they are *reusable across multiple destinations*, meaning you don't have to create the same filter over and over for different destinations.

Segment offers destination filters only in their highest level paid plan (their Business tier). Filters apply only to a single source-destination connection, meaning you can't reuse them. Their

UI-based filter creation flow has a lot of functionality, but if you want to write custom logic you'll have to use their proprietary Filter Query Language (FQL).

RudderStack resources:

- Guide: how to filter events with RudderStack
- <u>Transformations documentation</u>

#### Hybrid mode

For certain use cases, it can be extremely helpful to run a single destination in both cloud and device mode. One example is a tool like Leanplum: most customers want to send events via cloud mode (to take advantage of Transformations, data governance, etc.), but they also might need specific functionality from the native Leanplum SDK for things like in-app or push notifications. In many cases, users of both RudderStack and Segment would either have to manage separate native instrumentation, which is problematic, or run 2 destinations, one in cloud mode, one in device mode, and whitelist/blacklist events.

RudderStack offers Hybrid mode for select destinations and will continually roll out new, optional Hybrid mode for all relevant destinations.

Segment does not offer dedicated Hybrid mode.

RudderStack resources:

• Hybrid mode documentation

#### Warehouse sync frequency

Because RudderStack is warehouse native, we place a high priority on our warehouse sync functionality. Out of the box, all of our users can sync data to their warehouse every 30 minutes, but we have customers who run syncs every 5 minutes to drive real-time analytics. Sync schedules are fully configurable up to 24 hours and can be configured to run on an interval or as a CRON job.

Segment syncs data at different intervals depending on which tier you purchase: 24 hours for the Free tier, 12 hours for the Team tier and hourly for the Business tier. Segment makes it clear in their documentation that they cannot sync data faster than an hourly interval.

RudderStack resources:

Warehouse FAQ documentation

#### Testing & Troubleshooting

#### Live event viewer

Both RudderStack and Segment offer live event viewers for testing and debugging.

RudderStack resources:

• Live viewer documentation

#### Event & integration testing

When you're setting up new data flows or troubleshooting existing ones, it can be extremely helpful to test events and integrations to see if data is flowing properly. Segment favors a UI-based approach, which gives you a dashboard with data about event delivery and the ability to send test events from their UI to a destination.

RudderStack offers an API-based approach, which allows you to send test events through the entire flow, from Transformations to the destination integration and finally to the final destination itself (to get a response). Our technical users find this approach works really well with their existing dev workflows.

#### RudderStack resources:

• Test API documentation

#### Real-time Event Transformations

One of RudderStack's most powerful and embraced features also happens to be one that Segment users can misunderstand. Sometimes RudderStack Transformations get compared to Segment Functions, but the truth is that they are distinctly different features built for very different purposes.

While Segment functions are essentially (and literally, under the hood) lambda functions that run on data before or after ingestion, specifically in place of a *single* source or destination, RudderStack Transformations allow you to modify data in real-time, on a per event basis and then process to a downstream destination or destinations (which can be existing destinations OR custom destinations).

RudderStack Transformations are designed to operate on payloads and can be applied to multiple destinations. With RudderStack Transformations, you can enrich data, reshape payloads, split single events, re-case keys in an entire payload, implement custom logic for PII, and more, then send the transformed payloads to multiple destinations using custom logic—none of which is possible with Segment.

		Notes	RudderStack	Segment
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Real-time Event Transformations		
JavaScript	RudderStack lets you operate on event payloads in real time, then send the transformed payloads to multiple destinations.	×
Python	RudderStack supports transformations in Python and JavaScript	×
Device mode	Transform events before they are sent directly to device mode destinations	×
Libraries	Write custom functions, then store them in a library and call them in other Transformations.	×
Transformations Templates	Quickly operate on data and customize integrations with pre-built code templates for things like hashing PII, enriching user profiles, dynamically setting HTTP headers, parsing user agents and more.	×
Transformations API	Write and manage Transformations code in your own version-controlled Github repo.	×

#### Additional details & resources

#### JavaScript and Python Transformations

Transformations is our most loved feature because they help data engineers drastically simplify data cleansing, payload enrichment, customization of any kind of integration and so much more. Our Libraries make your code reusable, extensible and enable custom logic across multiple destinations. Perhaps best of all, our Transformations API allows you to keep version-controlled Transformations in a Github repo and push them to RudderStack programmatically.

Segment does allow you to transform events with code, but only in the context of a completely different product functionality, which is building a custom source or destination through Functions, meaning you have to create a completely custom integration simply to transform

events, and even then the code can't be re-used across destinations or on existing, supported cloud destinations.

RudderStack resources:

RudderStack Transformations documentation

#### Device-mode transformations

As Segment users know, device mode destinations load the destination SDK and send data directly to the downstream API from the device itself. This is critical for certain ad platforms, A/B testing tools and situations where native code needs to run to deliver messages, etc. It's often the case, though, that shipping certain use cases or customizations for device mode destinations is only possible if you can transform the payload.

RudderStack's Device Mode Transformations allow you to operate on payloads that are being sent via device mode, enabling all kinds of custom logic and integration use cases.

RudderStack resources:

Device mode Transformations documentation

#### Transformations Templates

RudderStack's Transformations feature includes over a dozen pre-built code Transformations that can save you significant time in rolling out changes to both event payloads and customization of integrations. The current list includes Allowlisting, Denylisting, Geolocation Enrichment, IP anonymization, Parsing User Agents, Replacing PII, Hashing PII, Event Sampling, Dynamically setting HTTP Headers, Dynamically Appending Paths to Webhook URLs, Removing Null Properties, Enriching Events with User Data and Renaming Event Properties.

These templates will be live before the end of December, 2022, so you can <u>create a RudderStack</u> account to try them out.

#### Transformations Libraries

Transformations libraries allow you to write functions, store them in a library, then call them in other Transformations. This means your Transformations code can be extensible, DRY and enable all kinds of custom logic across destinations.

#### RudderStack resources:

• <u>Transformation Libraries documentation</u>

#### Deployment & Management

When it comes to deployment, RudderStack and Segment differ significantly. Segment users all run in a multi-tenant cloud environment. While most RudderStack customers (even in high security industries) run RudderStack's cloud product because we don't store data, we offer multiple additional deployment options for enterprises with specific security needs (more detail below). Both companies offer EU data centers.

RudderStack and Segment both offer functionality for system health observability, notifications and managing configs, but take different approaches. RudderStack prioritizes tools already used by and familiar to developers, like Grafana and Terraform.

	Notes	RudderStack	Segment
Deployment & Management			
SSH Tunneling for data stores	Securely send data to your data store via SSH tunneling.		×
Single-tenant cloud deployment option	RudderStack enterprise customers can choose a single-tenant cloud deployment.		×
Managed VPC deployment option	RudderStack and Segment support VPC deployments.		×
System health & alerting	RudderStack and Segment both offer system health and notification functionality, but take different approaches.	Basic email notifications System health and custom alerts via dedicated Grafana dashboards & your alerting system of choice	Basic email notifications Basic system health via the Segment UI
Connection config management	RudderStack and Segment allow you to manage your connections config via API, but take different approaches.	Via Terraform	Via Segment's config API
EU data center	Both RudderStack and Segment offer		

		Frankfurt	Dublin
Data Catalog	Collaborative, centralized event catalog where data teams, business users, and software developers can maintain a single source of truth for event, property, and trait definitions		
Audit Logs API	Programmatically access audit logs for running your security audits.		×
Multiple Workspaces and Environments	Use the multiple workspaces feature to separate your development and production pipeline workflows and switch seamlessly between them		

#### Additional details & resources

#### SSH tunneling for data stores

RudderStack offers support for sending data to their warehouse via SSH tunneling. SSH tunneling in RudderStack is currently available for Postgres, Redshift, Clickhouse, and Microsoft SQL.

Reach out to our team to learn more about SSH tunneling.

#### Single-tenant and VPC deployments

Because RudderStack doesn't store data, a majority of our customers, even in high-security industries, use RudderStack's cloud platform. For specific needs in the enterprise, though, we offer the option to use RudderStack in a single-tenant cloud environment or, when necessary, as a managed VPC deployment.

Reach out to our team to learn more about our enterprise deployment options.

#### System health & alerting

While RudderStack and Segment both offer system health and alerting functionality, Segment has taken a basic, UI-based approach, whereas RudderStack provides technical users with rich, customizable Grafana dashboards for system health that can be wired to their alerting system of choice.

RudderStack resources:

- Grafana dashboard documentation
- Notifications documentation

#### Connection config management

RudderStack's Terraform provider gives you access to RudderStack's control plane where you can manage select Event Stream source-destination configurations programmatically.

Segment offers their own config API for managing connections.

RudderStack resources:

• Terraform provider documentation (via Terraform's site)

#### EU data centers

Both RudderStack and Segment offer EU data centers. RudderStack's data center is in Frankfurt while Segment's is in Dublin. Both use AWS data centers.

<u>Reach out to our team</u> to learn more about EU data centers.

#### Data Governance & Privacy

As with many features, RudderStack and Segment both offer features to help you manage data governance and privacy, but take different approaches. You'll see lots of checks below since RudderStack and Segment can do similar things in this category, but the devil is in the details.

	Notes	RudderStack	Segment
Data Governance & Privacy			
Tracking plans	Both RudderStack and Segment's offer tracking plans.		✓ ▲ Via Protocols (paid add-on)
Fixing bad data	RudderStack and Segment both allow you to fix bad data, but take different approaches.	Mind Implemented via	M Implemented via UI

		code	
Event replay	Both Segment and RudderStack offer event replay features, but with RudderStack, you can replay events from your own data store.		Available only in Segment's Business Tier
Event metadata reporting	Access rich event metadata, including versioning, key counts and more, via API		×
Code linting for instrumentation	RudderStack's RudderTyper is very similar to Segment's Typewriter. The only difference is that RudderTyper is available on all plans.		✓ ▲ Via Protocols (paid add-on)
GDPR	Both Segment and RudderStack support GDPR compliance and user deletion, but RudderStack doesn't store data.		
HIPAA	RudderStack has been HIPAA-compliant since 2020 as no customer data is stored. Segment announced their HIPAA feature in November 2022 - currently in beta.		<b>∨</b> Beta
SSO	Both Segment and RudderStack offer SSO.	V	

#### Additional details & resources

#### Tracking plans

Both RudderStack and Segment offer Tracking plans. Segment's tracking plan feature is heavily integrated in the UI and is part of their Protocols product, which is a paid add-on.

RudderStack offers tracking plan templates for every plan and custom tracking plans in our Enterprise tier.

RudderStack resources:

• <u>Tracking plan documentation</u>

#### Event replay

RudderStack and Segment both offer event replay services, but in different ways. Segment offers event replay as an ad-hoc service in their highest tier and replays data from their own servers. Because RudderStack doesn't store your data, we enable event replay from *your* data store. Our customers can replay data on their own with our reverse ETL pipeline and Transformations or leverage our dedicated event replay feature (available on our Enterprise plan).

RudderStack resources:

• Event replay documentation

#### Event metadata reporting

RudderStack's event metadata API (also called the data governance API) allows you to access rich information about events flowing through the platform, including event versions, key counts, and more.

RudderStack resources:

• Event metadata API documentation

#### Code linting for instrumentation

RudderTyper and Typewriter are similar features that let you use an event from your tracking plan and generate an analytics call in the supported languages. Segment's tool is an extension of their Protocols product, whereas RudderStack's is open source.

RudderStack resources:

• <u>RudderTyper documentation</u>

#### GDPR and HIPAA

RudderStack and Segment both support GDPR compliance, but companies running RudderStack have significantly decreased risk because RudderStack doesn't store data.

RudderStack has been HIPAA compliant since 2020, while Segment just announced their HIPAA option, in beta, in November of 2022.

Reach out to our team if you have specific questions about GDPR or HIPAA compliance.

#### SSO

RudderStack and Segment both support SSO.

RudderStack resources:

- Okta SSO documentation
- <u>OneLogin SSO documentation</u>

#### User Profiles & Audiences

The biggest differentiator in this section is that RudderStack builds and stores your user profile and audience data **in your warehouse**, where Segment offers profile and audience creation as packaged, black-box SaaS solutions accessed via their UI.

So, while RudderStack and Segment may enable you to accomplish similar things on a basic level, the foundational approach and, most importantly, level of flexibility and control, are drastically different.

	Notes	RudderStack	Segment
User Profiles & Audiences			
User identification	Both RudderStack and Segment offer user identification via SDKs and the identify method		
Identity resolution	Both RudderStack and Segment offer identity resolution functionality. Again, RudderStack enables this in the warehouse and Segment does this behind the scenes in their platform.	Varehouse-based	☑ Black-box with UI
User profiles	Both RudderStack and Segment offer user profile creation. RudderStack enables this on the warehouse, whereas Segment forces users into a UI.	Varehouse-based	<b>∨</b> UI-based
Computed user traits	RudderStack can activate any trait you compute in your warehouse. Segment primarily leverages their UI, with limited warehouse trait creation functionality.	Built by you in your warehouse	Must buy Engage and build in Segment
Audience building	RudderStack and Segment both offer audience creation capability. RudderStack does this on top of your warehouse, where Segment requires you to build in their UI.	Built directly on your warehouse data	Must buy Engage and build in Segment

#### Additional details & resources

#### User identification

RudderStack and Segment both support tracking anonymous users, then identifying them via SDKs, associating previously anonymous events with known users.

RudderStack resources:

Identify event spec documentation

#### Identity resolution

RudderStack and Segment both offer identity resolution capabilities, but they differ significantly. Segment runs identity resolution behind the scenes on their platform, but RudderStack runs fully configurable, transparent identity stitching, profile creation and user feature generation on your warehouse.

Identity resolution is part of RudderStack Profiles. You can <u>learn more on our website</u>. If you're interested in accessing the product, <u>reach out to our team</u>.

#### User profiles

RudderStack and Segment both support the creation of user profiles. As with many features, RudderStack focuses on helping users build in their own warehouse via a fully customizable config and transparent queries, whereas Segment forces you to build profiles in their UI.

Identity resolution is part of RudderStack Profiles. You can <u>learn more on our website</u>. If you're interested in accessing the product, <u>reach out to our team</u>.

#### Computed user traits

The only limit to creating custom traits with RudderStack is your team's SQL or dbt capabilities. By doing the work directly in your warehouse, you can compute traits across any and all of your data (not just RudderStack data) and update any combination of users, then activate those traits via our reverse ETL pipeline. You can also create computed traits directly on your warehouse via RudderStack's Models feature, which stores and runs SQL queries as reverse ETL jobs.

Segment offers the creation of computed traits via a drag-and-drop interface as well as the ability to use warehouse data via a feature called SQL traits, which is also accessible through their UI. Both are part of their paid Engage product, which is a suite of marketing tools (see more below).

RudderStack also supports more complex user feature generation via RudderStack Profiles feature.

RudderStack resources:

- RudderStack Reverse ETL documentation
- RudderStack Models documentation
- Replacing Segment Computed & SQL Traits With dbt & RudderStack Reverse ETL
- Migrating from Segment Part 2: Personas & SQL Traits in RudderStack

#### Audience building

You might notice a theme here...RudderStack enables you to build audiences in your warehouse, where Segment's audience creation happens in their UI, with the computation happening in a black box on the back end.

The biggest difference here is that RudderStack's goal is to help data teams control and maintain audiences that other teams can activate in best-of-breed downstream tools like Braze, Iterable, Customer.io and other platforms, whereas Segment's audience functionality is packaged as part of their own Engage marketing automation platform.

RudderStack offers several options for audience building. Existing audiences or new audiences you build yourself can easily be activated to any destination via our reverse ETL pipeline. We also offer a UI for building audiences that will be sent to specific advertising and marketing automation destinations.

If you are interested in accessing RudderStack's audience builder, reach out to our team.

RudderStack resources:

RudderStack reverse ETL documentation

#### Support

As a smaller, newer company compared to Segment, RudderStack is proudly delivering award-winning support to its customers (<u>check us out on G2!</u>). We offer web, email, and dedicated slack channels for support as well as dedicated customer success and technical account management in accordance with your payment tier.

Support			
Email			
Slack Community		Public, open to everyone	Private, customer-only
Dedicated Slack Channel	RudderStack provides dedicated slack channels for paid customers to get immediate and contextual support		×
Technical Account Manager			$\checkmark$
Customer Success Manager			$\checkmark$

#### Additional details & resources

RudderStack and Segment both offer support. Segment only offers dedicated support in their top-tier plan, but RudderStack offers dedicated support to all paid customers.

Also, while Segment does have a close Slack community for customers, RudderStack's community is open to everyone.

RudderStack resources:

- Join the RudderStack slack community—yes, we did miss the opportunity to call it the RudderSlack community. We'll do better next time.
- Get the breakdown of support offerings on our Pricing page.

#### Marketing Automation

Segment's marketing automation functionality is a suite solution called Twilio Engage. It's actually composed of Twilio, SendGrid, and Segment all in a single platform, with the goal to manage your customer engagement from end-to-end. It's also one of the more obvious signs that Segment has moved on from the vendor-agnostic, agile platform that developers knew and loved.

Of course, marketing automation is valuable and a critical tool for Marketing teams, but RudderStack is building tooling for data teams, not customer engagement functionality. **RudderStack gives you the freedom to choose the tools that work for you, and ensures your data is consistent and actionable without the vendor lock-in of Twilio Engage.**  We have a strong and ever-growing partner ecosystem of best-in-breed marketing automation tools that you can find in <u>our integrations catalog</u>. Have a tool in mind that isn't on there? Tell us what integration to add next at hello@rudderstack.com.

#### **Cost comparison**

Cost is a hot topic when it comes to Segment and we get asked all of the time whether RudderStack is cheaper. That's a fair question, but it's not the right one because our product architectures and pricing models are fundamentally different.

#### Product architectures and cost of ownership

The most important difference to understand when it comes to pricing between RudderStack and Segment is product architecture. Segment stores and processes your data, meaning they pay vendors for both storage and compute. Every business needs to cover their cost and drive margin, so Segment passes some of those costs on to their customers.

RudderStack, on the other hand, doesn't store your data. We collect it, process it and deliver it, then drop the data from our system. Any compute costs are incurred on your own warehouse, where you're already performing lots of compute.

At a foundational level, RudderStack's warehouse native architecture has a lower total cost of ownership built in.

#### **Pricing models**

Segment's starting point is charging based on Monthly Tracked Users (MTUs), or unique individuals using your website/app/etc. on a monthly basis. Each of those users is allotted a maximum of 250 distinct events that can be associated with them. This model often creates a dynamic where customers are paying a premium to track anonymous users they aren't monetizing. Beyond MTUs, Segment follows an add-on model where you can purchase additional functionality or features for an additional fee.

RudderStack has a simple approach and our primary pricing vector is charging based on event volume. We package additional features into plans that are aligned to what our customers are trying to accomplish, whether they are only concerned with event streaming (our Starter plan) or want to build out an end-to-end CDP on their warehouse (our Growth plan).

RudderStack and Segment both offer enterprise-grade security and management features in their top tiers—RudderStack's Enterprise plan, Segment's Business plan. (You can read about specific differences in the feature comparison below.)

#### So... is RudderStack cheaper?

That's impossible to answer because it depends wholly on the variables involved: how many MTUs would you have with Segment? Would you buy add-ons for Segment? How much event volume would you run through RudderStack?

We can say, however, that customers who migrate from Segment to RudderStack generally experience significant savings at scale, due both to our product architecture and simplified pricing model.

If you have more questions, our team would love to talk with you about pricing—just reach out.

#### Ready to take the next step? You're in good company.

Companies like Crate and Barrel, Acorns, Tonal, Joybird and others have migrated from Segment to RudderStack and they couldn't be happier (the feeling is mutual).

Here are a few ways to engage:

- Read our 3-step migration guide
- <u>Try RudderStack for free</u>
- Get a demo of the platform

RudderStack is the warehouse-first, customer data platform built for developers. We take a new approach to building and operating your customer data infrastructure, making it easy to collect, unify, transform, and store customer data as well as securely route it to a wide range of marketing, analytics, sales, and product tools. Over 18,000 sites and apps run RudderStack including Crate & Barrel, Acorns, Hinge, Stripe, Allbirds, and more.

www.rudderstack.com

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