



API Guide |

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Introduction

SendGrid's webhooks and application programming interfaces (APIs) extend the capabilities of our email platform, allowing users to quickly integrate with our system, measure delivery effectiveness, and expand the management of their email.

After implementing our APIs and webhooks, users can have their applications parse emails, retrieve account statistics, see email events occurring in real-time, and specify custom-handling instructions for messages.

This API Guide will describe how to maximize the capabilities of a SendGrid account. By using one, or even a combination, of our APIs and webhooks, users can tailor SendGrid to meet their specific business needs.

This guide provides:

- » Overviews of each API and webhook
- » Metrics, analytics, and use cases
- » Hacks, tips, and tricks
- » Additional resources and tools for extra learning

We allow everyone to test, hack, and experiment with our entire Webhook and API library through our free accounts.



What's an API? API stands for Application Programming Interface, which is essentially a language and message that allows a program to retrieve information from a web application. Learn More: [Webhook vs API: What's the Difference Between Them?](#)

[Sign Up for Your Free Account and Start Experimenting Today](#)

Event Webhook

With the Event Webhook, users can set up real-time notifications based on a variety of parameters and categories. Depending on how users configure the Event Webhook, they can view detailed information such as who opened which email or who clicked a specific link, as far back as their records go.

This means that users can now see what happens to their messages AFTER they send them, rather than just know they've been sent out. The events that the Event Webhook can track include:

Event	Criteria
Processed	Message has been received and is ready to be delivered.
Dropped	Recipient exists in one or more of your Suppression Lists: Bounces, Spam Reports, Unsubscribes.
Delivered	Message has been successfully delivered to the receiving server.
Deferred	Recipient's email server temporarily rejected message.
Bounce	Receiving server could not or would not accept message.
Open	Recipient has opened the HTML message.
Click	Recipient clicked on a link within the message.
Spam Report	Recipient marked email message as spam.
Unsubscribe	Recipient clicked on message's unsubscribe link.

When implemented, SendGrid will notify a URL of the user's choice about the above events. Through customized reporting and relevant category and unique argument information, the Event Webhook potentially gives users the entire sending activity of their account and is not restricted by SendGrid's internal storage limitations.



What's a Webhook? A webhook is an API concept that is also called a web callback, HTTP push API, or reverse API. Webhooks enable apps to push data to other applications as it happens in real-time.

Learn More: [What's a Webhook?](#)



Learn More: [The Event Webhook Guide](#) provides more detailed information about how senders can use the Event Webhook in your application.

Additionally, as events are posted in real-time, users can have automated systems on their end take action. The Event Webhook enables users to:

- » Automatically remove unsubscribes from the master mailing list.
- » Associate a spam report with a specific campaign and user in an application.
- » Know real-time when a user has clicked on a confirmation email.
- » Get the specific link clicked on in an email.
- » Get the browser version used by a customer.
- » Know the specific MTA response for a customer.



Quick Tip: The Event Webhook is great for accessing ongoing email activity data for reporting or trending purposes. Due to SendGrid's volume, our Email Activity page holds records for 7 days.

For a more technical breakdown of how the Event Webhook works and how to implement it, visit the [Event Webhook Documentation](#).

See it in Action



The Ladders

TheLadders use the Event Webhook to see which job seekers are engaged with each of their email streams to make sure they're sending the best content possible. Learn more in their case study: [TheLadders Have Found that SendGrid "Just Works."](#)



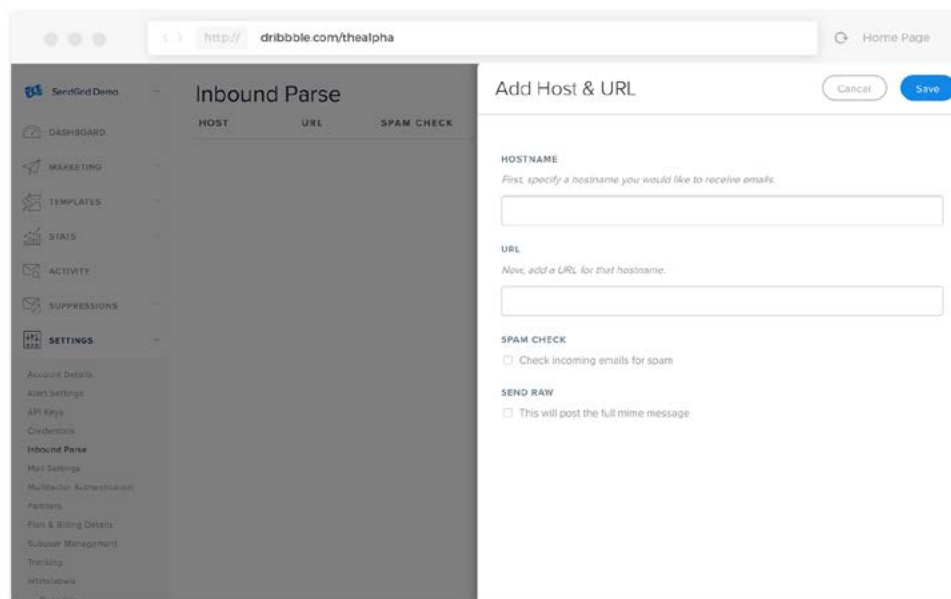
Implement Faster: The open source [EventKit Rails](#) project on GitHub can be deployed to a rails server to quickly deploy to Heroku and allows you to receive notifications for SendGrid's Event Webhook.

Inbound Parse Webhook

The Inbound Parse Webhook allows users to accept incoming emails from recipients, eliminating “no-reply” in the from-address. This encourages recipients to communicate with senders and improves engagement.

SendGrid's Inbound Parse Webhook works in a simple three-part process:

1. Recipient(s) replies to an email at the SendGrid user's domain
2. SendGrid processes the email and extracts each part of the message
3. SendGrid POSTS each message part to a URL of the user's choice



Learn More: Our [Parse Webhook Guide](#) dives even deeper into the applications for this tool and provides additional examples of companies taking advantage of it.

Watch this [video tutorial](#) to learn how you can set up the Inbound Parse Webhook in just a few minutes.

Since the Inbound Parse Webhook can parse headers, subjects, body, attachments, and more from messages, it enables users to do a wide variety of things, including:

- » Post blog articles via email.
- » Process email replies and update mailing lists or databases.
- » Upload pictures to social media profiles via email.
- » Submit support requests via email.
- » Track changes in user data in real-time using custom code.
- » Automatically filter overtly “spammy” emails.

Learn more about the different capabilities of the Inbound Parse Webhook and how to integrate it into your email program by visiting the [Inbound Parse Webhook Documentation page](#).

See it in Action

The Inbound Parse Webhook can be used for a variety of applications. Read about how to use the Inbound Parse Webhook to have email replies read aloud in our blog post [Get Your Mac to Speak Incoming Emails](#).



Quick Tip: SendGrid automatically queues and retries unsuccessful POSTs that have responded with 4XX or 5XX statuses. This ensures that data isn't lost if there are configuration issues with customer websites or POST URLs. Please ensure you grant a 200 OK status on a successful POST.



Great Idea: Be practical. An expense-tracking system could allow users to email a list of purchased items to a specific email address. The Inbound Parse Webhook could extract the data and update the expense tracker seamlessly. Users don't have to log onto their system and can easily update their expenses from their mobile phone.

Web API

Currently, SendGrid has two versions of our Web API: [Web API v2](#) and [Web API v3](#). The largest difference between the two is:

The only way for users to send mail via API is through Web API v2. Since mail.send is only available with Web API v2, code examples and libraries for sending mail have been created for Web API v2 and NOT Web API v3. However, due to its improved functionality, we recommend users perform all other account functions through Web API v3.

As additional API endpoints and documentation about them are created, we encourage you to check [SendGrid Docs](#) to get the most up to date information about Web API v3 functionality.

Web API v3

Web API v3 is SendGrid's preferred method for retrieving account information without logging into your SendGrid dashboard. Web API v3 features much different behaviors and capabilities in comparison to the Web API v2, in addition to being much more secure with the addition of [API keys](#), which is why we recommend you use it to perform most account functions.

Within Web API v3, there are a host of other APIs and endpoints designed to make your SendGrid account easier to use and more customizable. These features include:

- » **Bounces API** - View and delete email bounces by timestamp or by email address.
- » **Subuser API** - Create, list, enable, disable, delete, monitor settings, retrieve reputations, and update IPs of subusers.
- » **Users API** - View, create, or edit user profile information such as address or name.
- » **Cancel Scheduled Sends** - If you set the SMTPAPI header batch_id, you can then cancel or pause a scheduled send based on that batch_id by calling the [Cancel Scheduled Send](#) endpoint.



Learn More: To learn more about how to retrieve important information like bounces, blocks, and unsubscribes, or to see how our unsubscribe groups can be implemented, visit the following pages:

- » [Web API Overview Documentation](#)
- » [Web API v3 Overview Documentation](#)

- » **Marketing Campaigns API** - Create, manage, and segment lists from the [Contacts API](#), or build and send email through the [Campaigns API](#).
- » **Categories API** - Once you've created categories, you can use this API to retrieve a list of emails under that topic.
- » **IP Management API** - Create [IP pools](#), assign [IP addresses](#) to them, and enable [IP warmup](#) for the pools and IP addresses you've created.
- » **Settings** - In addition to the settings available in the Web API, Web API v3 allows you to set and check the status of user settings like enforced TLS and partner settings.
- » **Stats** - The statistics available to users in Web API v3 are very advanced, and can provide you with almost any information you need for any recipient or category.
- » **Suppression Management** - Allows your recipients to unsubscribe from groups of emails rather than globally from your email list.
- » **Transactional Templates API** - Programmatically create and send templates for your transactional email.
- » **Whitelabel API** - View, create, or edit domain, link, and IP whitelabels to improve your deliverability.

[Web API v2](#)

For users learning about our mail send functionality and our API endpoints, refer to the [Web API v2 documentation](#).

Marketing Campaigns

SendGrid's Marketing Campaigns allows you to eliminate the need for multiple email vendors to manage both transactional and marketing email streams. Marketing Campaigns makes managing contacts, building campaigns, and tracking recipient engagement easier than ever.

The Marketing Campaigns feature set was built for developers and designed for marketers. Some of the features Marketing Campaigns offers include:

- » **Custom Fields** - To automatically generate substitution tags for emails and segment contacts.
- » **Email Templates** - Upload your preferred template code into our editor and save it for later use or use one of the pre-designed, responsive templates within the library.
- » **Drag & Drop Editor** - Quickly and easily create a custom, responsive email template with our drag & drop email editor.
- » **A/B Testing** - Test different versions of your email to determine what your recipients are engaging with and improve the performance of future sends.
- » **Create and Send Campaigns** - Easily create new email campaigns, add contacts, add groups, and add custom categories for stats tracking before sending right away or scheduling a time to send in the future.

Once you've sent your emails through Marketing Campaigns, you can use the dashboard to view aggregate stats about the status of those messages:



Learn More: Create and send your next marketing emails through the Marketing Campaigns feature set by visiting the [Marketing Campaigns documentation](#).



Quick Tip: Use A/B testing (also called split testing) to add variations to drafted marketing emails. Learn more about A/B testing in our guide: [Why A/B Testing is Critical to Email Campaign Success](#) or visit the [A/B Testing Documentation](#) page.

See it in Action

PANDORA Pandora is just one of the great companies that sends their marketing email through SendGrid. See what we love about their messages in our post [Personalized Music Metrics from Pandora](#).

Contacts API

Manage your Marketing Campaigns contacts via the Contacts API. All contact list management functionality available within the user interface is made available via the API, providing developers with the ability to manage lists, contacts, and custom segments programmatically.

Through the Contacts API, users can programmatically:

- » Create or delete custom fields
- » Retrieve all custom fields, all lists, all segments, and recipient counts
- » Create, update, or delete lists
- » Retrieve the recipients included in a list or segment
- » Add or delete recipients to/from a list or segment
- » Create, update, or delete a segment



Learn More: For more information about the Contacts API and a more technical walkthrough of how to use it, visit the [Contacts API Documentation](#) page.

Campaigns API

Programmatically build and send your marketing campaigns. Create, save, review, schedule, and send campaigns within SendGrid's Marketing Campaigns feature set.

Rather than log into the Marketing Campaigns feature set, you can use the Campaigns API to programmatically accomplish many actions without the user interface, including:

- » Create, view, update, and delete a campaign
- » Retrieve all campaigns
- » Schedule or send a campaign
- » View, update, or unschedule a previously scheduled campaign time
- » Send a text campaign



Learn More: If you'd rather use the Campaigns API to create and send marketing emails instead of logging into the UI, visit the [Campaigns API Documentation](#) to learn how to start sending.

SMTP API

The SMTP API may be SendGrid's most robust API. It allows users to deliver custom-handling instructions for email through a header inserted into the message labeled X-SMTPAPI. This header is a JSON-encoded list of instructions and options for that message.

The X-SMTPAPI header can be added to any SMTP message sent to SendGrid so that the message can be interpreted and applied. Handling instructions that can be included in the X-SMTPAPI header are:

- ⌘ [Apps](#) - Also called filters, can be used to override filter settings already set up for the account.
- ⌘ [Categories](#) - Allows you to track emails based on your own categorization system.
- ⌘ [Scheduling Parameters](#) - Delay sending to improve mail flow and mail delivery time.
- ⌘ [Section Tags](#) - Specific to the message, but not the recipient, these tags can be used to create extremely customizable emails for recipients.
- ⌘ [Substitution Tags](#) - Specific for each recipient, these tags allow you to deliver dynamic content, like inserting the first name of a recipient in the greeting.
- ⌘ [Unique Arguments](#) - Allow for even more detailed email tracking, like specific password resets or newsletter dates.
- ⌘ [IP Pools](#) - Control the IP address that messages are sent from to dynamically segment mail streams.



Learn More: For a walkthrough of the SMTP API, and some additional requirements and limitations of the API, just visit the Documentation page [Using the SMTP API](#).



Quick Tip: The custom X-SMTPAPI header added to messages will not be seen in the final email because it is an instruction header for SendGrid, and is stripped out of the final email.

Through the X-SMTPAPI header, users are able to accomplish a wide variety of things with their email:

- ④ Tag emails to get detailed statistics on each tag.
- ④ Send multiple customized emails in one request via a mail merge.
- ④ Configure each app on a per-email basis.
- ④ Deliver dynamic content to your recipients in each email.
- ④ Customize filtering instructions to control the amount and type of data you receive from each email stream.

See it in Action



See a great example of how to create a native app using Titanium Appcelerator and some SendGrid Apps (or filters) in the blog post [*Send Email with Titanium and SendGrid.*](#)

Subuser API & Reseller API

The SendGrid Subuser API and Reseller API are excellent [Partner Program](#) tools for users to set up child accounts for their customers to send email and view analytics, or to offer our delivery services to customers. Some of the partner programs these work well for include:

- ⌘ [Cloud Platform](#) - Ideal for IaaS, MBaaS, PaaS, hosting, or other cloud stack services that want to provide email delivery solutions to customers.
- ⌘ [Marketing Solution](#) - Build features or entire products on SendGrid's email platform and let us take care of the backend work.
- ⌘ [Agency](#) - Allow SendGrid to provide the robust email solution for client web and mobile applications.
- ⌘ [System Integrator](#) - Perfect for software consulting firms and developer shops that need a cloud-based email infrastructure solution.
- ⌘ [Affiliate](#) - The easiest way to partner with SendGrid and begin to leverage our industry-leading email delivery platform.
- ⌘ [Accelerate](#) - SendGrid is happy to work with startup accelerators to support early-stage companies.

To become a SendGrid partner, please visit the [SendGrid Partner Programs](#) page to learn more or [Contact Us](#).

See it in Action



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Read about how we've made it easier to deploy some of our main applications such as the SendGrid Event Webhook and Inbound Parse Webhook. Read the blog post [It's Now Easier to Deploy Some Demo Applications With the Heroku Button](#).



Great Idea: The Subuser API isn't limited to Partner Programs. Many of our higher-volume users take advantage of the Subuser API and create child accounts to segment various types of email they send. To learn more about how to implement the Subuser API, please contact SendGrid [Sales](#) or [Support](#).

Resources

The following resources are designed to help users take even more advantage of SendGrid's APIs and webhooks. Whether it's more information before implementing a new tool, or trying to troubleshoot a problem, the following links will help.

As always, if you have more technical or account-specific questions, you can [Contact SendGrid Support](#) any time to get answers.

[Blog](#) – The SendGrid Blog is the best place for staying up-to-date on everything email and SendGrid-related. Our posts range from email best practices tips, to technical tutorials for implementing new features, to announcements about product updates, or guest posts from partners. Check in often or [subscribe to stay informed](#).

[Code Workshop](#) – SendGrid's Code Workshop is designed to make implementing code and integrating with the SendGrid platform as easy as possible. The Code Workshop tool allows you to select one of five different coding languages (C#, Node.js, PHP, Python, or Ruby) and then generate example code. This tool is great for creating SMTP API headers, creating message examples for multiple recipients, or showing examples of how to make attachments for messages.

[Documentation](#) – SendGrid's Documentation is where you can find more technical information about everything surrounding SendGrid accounts, APIs, and products. Whether it's integration, determining what metrics mean, or definitions for email terms, our Documentation is where all this information lives, and it's being updated constantly.

[GitHub](#) – SendGrid is a great believer in Open Source, so all of our API Libraries, SDKs, Apps, and even our Documentation can be found on our GitHub profile. Extensive documentation for each API Library can also be found in each relevant repository.

[Guides](#) – Our other email best practice guides are excellent resources to have if you're working on an email campaign. Our topics cover calls-to-action, design, deliverability, and even A/B testing.

[Knowledge Base](#) – Our Knowledge Base is a collection of articles written and posted by SendGrid Support to answer common customer questions. This is a great place to look for answers for any account question, including those about IPs, apps, and even account billing.

[Support](#) – We're proud to have the best account and email support team in the industry. If you're having any issues with your SendGrid account, you can feel free to contact us 24/7 via phone, chat, or email.

Get Started with SendGrid

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[Read Our Customer Success Stories](#)

[Sign Up](#)

About SendGrid

SendGrid helps you focus on your business without the cost and complexity of owning and maintaining an email infrastructure. We manage all of the technical details, from scaling infrastructure, to ISP outreach and reputation monitoring, to whitelist services and real-time analytics. We offer world-class deliverability expertise to make sure your emails get delivered, handle ISP monitoring, DKIM, domain keys, SPF, feedback loops, whitelabeling, link customization, and more. To learn more, visit www.sendgrid.com.