

---

# Amazon Pinpoint

## User Guide



## **Amazon Pinpoint: User Guide**

Copyright © Amazon Web Services, Inc. and/or its affiliates. All rights reserved.

Amazon's trademarks and trade dress may not be used in connection with any product or service that is not Amazon's, in any manner that is likely to cause confusion among customers, or in any manner that disparages or discredits Amazon. All other trademarks not owned by Amazon are the property of their respective owners, who may or may not be affiliated with, connected to, or sponsored by Amazon.

# Table of Contents

What is Amazon Pinpoint?	1
Amazon Pinpoint features	1
Define audience segments	1
Engage your audience with messaging campaigns	1
Create user journeys	1
Provide consistent messaging with templates	1
Deliver personalized content	2
Analyze user behavior	2
Send test messages	2
Regional availability	2
Get started	2
Getting started	3
About this tutorial	3
Step 1: Create a project	4
Step 2: Import data and create a segment	6
Step 2.1: Download and modify the sample file	6
Step 2.2: Import a file that contains customer data	7
Step 2.3: Create a targeted segment	7
Step 3: Create a campaign	8
Step 3.1: Create the campaign and choose a segment	8
Step 3.2: Create the campaign message	8
Step 3.3: Schedule the campaign	9
Step 4: View campaign analytics	10
Step 4.1: Interact with your campaign	10
Step 4.2: View metrics for the campaign	10
Next steps	11
Projects	12
Managing projects	12
Creating a project	12
Editing a project	13
Deleting a project	14
Channels	15
Push notifications	15
Setting up	15
Monitoring	16
Managing	16
Best practices	18
Email	19
Choosing between Amazon Pinpoint and Amazon SES	19
Email sandbox	20
Setting up	20
Monitoring	25
Managing	26
Sending email	31
Using dedicated IP addresses	33
Deliverability dashboard	39
Best practices	52
SMS	56
SMS sandbox	57
Setting up	58
Originating identities	60
Limits and restrictions	63
Requesting SMS support	68
Monitoring	79

Managing .....	81
Two-way SMS messaging .....	83
Country capabilities and limitations .....	85
Best practices .....	98
Voice .....	101
Voice sandbox .....	101
Setting up .....	102
Managing .....	103
Supported countries and regions .....	106
Custom channels .....	109
Setting up and managing custom channels .....	109
Segments .....	110
Building segments .....	110
Segment groups .....	110
Creating a dynamic segment .....	111
Managing segments .....	116
Importing segments .....	117
Imported segment considerations .....	118
Segment files .....	118
Importing a segment .....	120
Supported attributes .....	122
Exporting segments .....	125
Campaigns .....	126
Step 1: Create a campaign .....	126
Step 2: Specify the segment .....	127
Step 3: Write the message .....	128
Set up the campaign .....	128
Use message variables .....	132
Test the message .....	133
Step 4: Choose when to send the campaign .....	135
Sending the campaign immediately .....	135
Sending the campaign at a specific date and time .....	135
Sending the campaign on a recurring basis .....	136
Sending the campaign when events occur .....	136
Step 5: Launch the campaign .....	137
Managing campaigns .....	137
Journeys .....	139
Take a tour of journeys .....	139
Journeys terminology .....	139
Parts of the journeys interface .....	140
Create a journey .....	142
Step 1: Configure the journey .....	142
Step 2: Set up the journey entry activity .....	145
Step 3: Add activities to the journey .....	149
Review and test a journey .....	166
Reviewing a journey .....	167
Testing a journey .....	167
Publish a journey .....	168
Pause, resume, or stop a journey .....	169
Pausing a journey .....	169
Resuming a journey .....	169
Stopping a journey .....	170
View journey metrics .....	170
Journey-Level Execution Metrics .....	171
Activity-Level Execution Metrics .....	173
Journey-Level Engagement Metrics .....	175
Activity-Level Engagement Metrics .....	176

Tips and best practices .....	182
Scope and settings .....	182
Segments .....	184
Activities .....	184
Email messages .....	185
Reviewing and testing .....	186
Analytics .....	186
Lifecycle management .....	187
Test messages .....	189
Sending an email message .....	189
Sending a push notification .....	190
Sending an SMS message .....	191
Analytics .....	193
Chart reference .....	193
Endpoints and users in Amazon Pinpoint analytics .....	194
Exporting dashboards .....	194
Overview charts .....	194
Usage charts .....	197
Revenue charts .....	200
Events charts .....	202
Demographics charts .....	203
Campaign charts .....	204
Transactional messaging charts .....	210
Creating funnel charts .....	215
Enabling funnels .....	216
Creating funnels .....	216
Streaming event data .....	216
About Amazon Kinesis .....	217
Streaming to Kinesis .....	217
Message templates .....	219
Creating email templates .....	220
Creating push notification templates .....	221
Creating SMS templates .....	224
Creating voice templates .....	225
Adding personalized content .....	226
Adding message variables .....	227
Supported attributes .....	229
Using message template helpers .....	232
Using variables with message template helpers .....	251
Using nested helpers .....	251
Managing templates .....	251
Viewing your collection of message templates .....	252
Opening a message template .....	252
Editing a message template .....	253
Copying a message template .....	253
Deleting a message template .....	254
Managing template versions .....	254
How versioning works .....	255
Viewing template versions .....	256
Viewing the active template version .....	257
Designating the active template version .....	257
Editing the active template version .....	258
Machine learning models .....	260
How recommendations work .....	261
Preparing to use recommendations .....	262
Amazon Personalize campaigns .....	262
AWS Identity and Access Management roles and policies .....	264

AWS Lambda functions .....	264
Setting up recommendations .....	265
Before you begin .....	265
Step 1: Set up the model .....	265
Step 2: Add attributes to the model .....	266
Step 3: Review and publish the model .....	267
Using recommendations in messages .....	267
Adding recommendations to messages .....	268
Removing recommendations from messages .....	270
Managing machine learning models .....	270
Viewing your collection of models .....	271
Viewing the settings for a model .....	271
Changing the settings for a model .....	271
Copying a model .....	272
Deleting a model .....	273
Settings .....	274
General settings .....	274
Configuring default settings for a project .....	274
Deleting a project .....	276
Email settings .....	277
Viewing details about email usage .....	277
Enabling and disabling the email channel .....	277
Verifying identities .....	278
SMS and voice settings .....	281
Number purchase types .....	281
US phone number capabilities .....	282
SMS and voice sandboxes .....	282
10DLC .....	282
Requesting a number .....	291
Managing SMS and voice settings .....	294
Push notification settings .....	298
Updating push notification settings .....	298
Managing APNs settings .....	298
Mobile and web app analytics settings .....	300
Event stream settings .....	300
Monitoring .....	302
Exported metrics .....	302
Metrics related to message delivery .....	302
Metrics related to endpoints .....	304
Metrics related to import jobs .....	304
Metrics related to events .....	304
View Amazon Pinpoint metrics .....	305
Create CloudWatch alarms .....	305
Document history .....	307
Earlier updates .....	309

# What is Amazon Pinpoint?

Amazon Pinpoint is an AWS service that you can use to engage with your customers across multiple messaging channels. You can use Amazon Pinpoint to send push notifications, emails, SMS text messages, and voice messages.

The information in this user guide is intended for all Amazon Pinpoint users, including marketers, business users, and developers. This guide contains information that's especially helpful for users who mainly interact with Amazon Pinpoint by using the AWS Management Console. If you're new to Amazon Pinpoint, start by reading [Getting started \(p. 3\)](#).

If you're an application developer, also refer to the [Amazon Pinpoint Developer Guide](#) and the [Amazon Pinpoint API Reference](#). These documents provide information about using the features of Amazon Pinpoint programmatically. They also contain information about integrating Amazon Pinpoint features into your applications.

## Amazon Pinpoint features

This section describes the major features of Amazon Pinpoint and the tasks that you can perform by using them.

### Define audience segments

Reach the right audience for your messages by [defining audience segments \(p. 110\)](#). A segment designates which users receive the messages that are sent from a campaign or journey. You can define dynamic segments based on data that's reported by your application, such as operating system or mobile device type. You can also import static segments that you define outside of Amazon Pinpoint.

### Engage your audience with messaging campaigns

Engage your audience by [creating a messaging campaign \(p. 126\)](#). A campaign sends tailored messages on a schedule that you define. You can create campaigns that send push notifications, email, SMS text messages, and voice messages.

To experiment with alternative campaign strategies, set up your campaign as an A/B test, and analyze the results with Amazon Pinpoint analytics.

### Create user journeys

Create custom, multi-step experiences for your customers by [designing and building journeys \(p. 139\)](#). With journeys, you can send messages to your customers based on their attributes, behaviors, and activities. When you build a journey, you design an automated workflow of activities that perform a variety of different actions—for example, sending an email message to participants, waiting for a certain period of time, or splitting participants based on actions that they take, such as clicking a link in a message.

### Provide consistent messaging with templates

Design consistent messages and reuse content more effectively by [creating and using message templates \(p. 219\)](#). A message template contains content and settings that you want to reuse in

messages that you send for any of your Amazon Pinpoint projects. You can use message templates in email messages, push notifications, SMS messages, and voice messages.

## Deliver personalized content

Send content that's customized for each recipient of a message. Using message variables and attributes, you can deliver dynamic, personalized content in messages that you send from campaigns and journeys.

To streamline development, you can also use message variables and attributes to [add personalized content to message templates \(p. 226\)](#). With message templates, this content can come from attributes that you create directly in Amazon Pinpoint or a machine learning model that you create in Amazon Personalize. By connecting message templates to models in Amazon Personalize, you can [use machine learning \(p. 260\)](#) to send relevant promotions or recommendations to each recipient of a message.

## Analyze user behavior

Gain insight into your audience and the effectiveness of your campaigns and messaging activities by [using the analytics \(p. 193\)](#) that Amazon Pinpoint provides. You can view trends in your users' level of engagement, purchase activity, demographics, and more. You can also monitor your message traffic by viewing metrics such as the total number of messages that you sent for a campaign or project. Through the Amazon Pinpoint API, your application can also report custom data, which Amazon Pinpoint makes available for analysis.

To analyze or store analytics data outside Amazon Pinpoint, configure Amazon Pinpoint to [stream the data \(p. 216\)](#) to Amazon Kinesis.

## Send test messages

Test the design and deliverability of your messages by [sending test messages \(p. 189\)](#) before you send messages to your customers.

## Regional availability

Amazon Pinpoint is available in several AWS Regions in North America, Europe, Asia, and Oceania. In each Region, AWS maintains multiple Availability Zones. These Availability Zones are physically isolated from each other, but are united by private, low-latency, high-throughput, and highly redundant network connections. These Availability Zones enable us to provide very high levels of availability and redundancy, while also minimizing latency.

To learn more about AWS Regions, see [Managing AWS Regions](#) in the *Amazon Web Services General Reference*. For a list of all the Regions where Amazon Pinpoint is currently available and the endpoint for each Region, see [AWS service endpoints](#) in the *Amazon Web Services General Reference*. To learn more about the number of Availability Zones that are available in each Region, see [AWS global infrastructure](#).

## Get started

Get started with Amazon Pinpoint by [creating a new project \(p. 3\)](#).



# Getting started with Amazon Pinpoint

To start sending targeted messages in Amazon Pinpoint, you have to complete a few steps. For example, you have to add customer contact information into Amazon Pinpoint, and then create segments that target certain customers. Next, you have to create your messages and schedule your campaigns. Finally, after you send your campaigns, you can use the analytics dashboards that are built into Amazon Pinpoint to see how well the campaigns performed.

This tutorial includes procedures for all steps involved in sending an email campaign to a segment of customers with the Amazon Pinpoint console.

## Note

As soon as you set up a new Amazon Pinpoint account, it is placed in a sandbox for email, SMS, and voice message channels until you request production access. In the sandbox, you can access all of Amazon Pinpoint's features, with the following restrictions on your email, SMS, and voice messages:

- For email sandbox restrictions, see [Amazon Pinpoint email sandbox \(p. 20\)](#).
- For SMS sandbox restrictions, see [Amazon Pinpoint SMS sandbox \(p. 57\)](#).
- For voice sandbox restrictions, see [Amazon Pinpoint voice sandbox \(p. 101\)](#).
- There are no Amazon Pinpoint sandbox restrictions for push notifications.

To move to production access from the sandbox, create an AWS Support case for a **Service limit increase** request for each channel you want to move.

## About this tutorial

This section contains an overview of this tutorial.

### Intended Audience

This tutorial is designed for marketing and business users.

If you're a software developer or system administrator, you might also find the [tutorials](#) in the *Amazon Pinpoint Developer Guide* to be useful.

### Features Used

This tutorial shows you how to complete all of the following steps by using the Amazon Pinpoint console:

- Importing customer data from a file.
- Creating a segment that targets specific users based on their attributes.
- Creating an email campaign and scheduling it to be sent at a specific time.
- Viewing email delivery and response data by using the analytics dashboards that are built into Amazon Pinpoint.

### Time Required

It should take about 30–45 minutes to complete this tutorial.

### Regional Restrictions

There are no regional restrictions associated with using this solution.

### Resource Usage Costs

There's no charge for creating an AWS account. However, by implementing this solution, you might incur some or all of the costs that are listed in the following table.

Description	Cost (US dollars)
Message sending costs	You pay \$0.0001 for each email that you send through Amazon Pinpoint.
Monthly targeted audience costs	You pay \$0 for the first 5,000 endpoints that you target in Amazon Pinpoint each month. (An <i>endpoint</i> is a destination that you can send messages to, such as a user's email address or mobile phone number.) After that, you pay \$0.0012 per endpoint that you target.

If you use this tutorial to send 5 messages to 5 separate endpoints in one month, you incur charges of \$0.0005.

For detailed information about the costs that you might incur using Amazon Pinpoint, see [Amazon Pinpoint pricing](#).

**Next:** [Create and Configure a Project \(p. 4\)](#)

## Step 1: Create and configure a project

In Amazon Pinpoint, a *project* is a collection of settings, customer information, segments, and campaigns. If you're new to Amazon Pinpoint, the first step you should take is to create a project.

### Note

If you've used the Amazon Pinpoint API, you may have seen references to "applications." In Amazon Pinpoint, a *project* is the same as an *application*.

This section shows you how to create a project. As part of this procedure, you also verify an email address. You use this address to send email when you create your email campaign later in this tutorial.

If you've never created a project in your Amazon Pinpoint account, complete the steps in [Option 1: Create and configure a project \(New Amazon Pinpoint Users\) \(p. 4\)](#). If your Amazon Pinpoint account already contains one or more projects, complete the steps in [Option 1: Create and Configure a Project \(Existing Amazon Pinpoint Users\) \(p. 5\)](#) instead.

### Option 1: Create and configure a project (new Amazon Pinpoint users)

The procedures in this section show you how to create a project and verify an email address. If you've never created a project in Amazon Pinpoint, complete the procedures in this section.

If your Amazon Pinpoint account includes one or more existing projects, you should complete the steps in [Option 2: Create and configure a project \(existing Amazon Pinpoint users\) \(p. 5\)](#) instead.

### To create a project and verify an email address

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. If this is your first time using Amazon Pinpoint, you see a page that introduces you to the features of the service.

In the **Get started** section, enter a name for your project, and then choose **Create a project**.

#### Note

The project name can contain up to 64 characters.

3. On the **Configure features** page, next to **Email**, choose **Configure**.
4. For **Email address**, type an email address that you want to use to send email. For example, you can use your personal email address, or your work email address. Choose **Verify**.
5. Wait for 1–2 minutes, and then check the inbox for the email address that you specified in step 4. You should see an email from *Amazon Web Services (no-reply-aws@amazon.com)* with the subject line "Amazon Web Services – Email Address Verification Request in region *RegionName*", where *RegionName* is the name of the AWS Region that you're configuring Amazon Pinpoint in.
6. Open the email, and then click the link in the body of the email.
7. Return to the Amazon Pinpoint console in your browser. On the **Set up email** page, choose **Save**.

## Option 2: Create and configure a project (existing Amazon Pinpoint users)

The procedures in this section show you how to create a project and verify an email address. If your Amazon Pinpoint account includes one or more existing projects, complete the procedures in this section.

If you've never created a project in Amazon Pinpoint, you should complete the steps in [Option 1: Create and configure a project \(new Amazon Pinpoint users\)](#) (p. 4) instead.

### To create a project and verify an email address

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose **Create a project**.
3. On the **Create a project** window, for **Project name**, enter a name for your project, and then choose **Create**.

#### Note

The project name can contain up to 64 characters.

4. On the **Configure features** page, next to **Email**, choose **Configure**.
5. For **Email address**, type an email address that you want to use to send email. For example, you can use your personal email address, or your work email address. Choose **Verify**.
6. Wait for 1–2 minutes, and then check the inbox for the email address that you specified in step 4. You should see an email from *Amazon Web Services (no-reply-aws@amazon.com)* with the subject line "Amazon Web Services – Email Address Verification Request in region *RegionName*", where *RegionName* is the name of the AWS Region that you're configuring Amazon Pinpoint in.
7. Open the email, and then click the link in the body of the email.
8. Return to the Amazon Pinpoint console in your browser. On the **Set up email** page, choose **Save**.

Your account is now ready to send email from the email address that you verified. You can add additional email addresses later.

You can also verify entire domains. When you verify a domain, you can send email from any address on that domain. For more information, see [the section called "Verifying a domain"](#) (p. 21).

**Next:** [Import customer data and create a segment \(p. 6\)](#)

## Step 2: Import customer data and create a segment

A *segment* is a group of your customers that share certain attributes. For example, a segment might contain all of your customers who use version 2.0 of your app on an Android device, or all customers who live in the city of Los Angeles.

When you create a campaign, you have to choose a segment to send the campaign to. You can send multiple campaigns to a single segment, and you can send a single campaign to multiple segments.

There are two types of segments that you can create in Amazon Pinpoint:

- **Dynamic segments** – Segments that are based on attributes that you define. Dynamic segments can change over time. For example, if you add new endpoints to Amazon Pinpoint, or if you modify or delete existing endpoints, the number of endpoints in that segment may increase or decrease. For more information about dynamic segments, see [Building segments \(p. 110\)](#).
- **Imported segments** – Segments that are created outside of Amazon Pinpoint and saved in CSV or JSON format. Imported segments are static—that is, they never change. When you create a new segment, you can use an imported segment as a base segment, and then refine it by adding filters. For more information about importing segments, see [Importing segments \(p. 117\)](#).

In this tutorial, you create an imported segment by uploading a file from your computer. Next, you create a dynamic segment that is based upon the imported segment.

### Step 2.1: Download and modify the sample file

In this section, you download a file that contains fictitious customer data. You also modify the data to include your own contact information. Later in this tutorial, you use this data to create a segment.

1. In a web browser, download the sample file from [https://raw.githubusercontent.com/awsdocs/amazon-pinpoint-user-guide/master/examples/Pinpoint\\_Sample\\_Import.csv](https://raw.githubusercontent.com/awsdocs/amazon-pinpoint-user-guide/master/examples/Pinpoint_Sample_Import.csv). Save the file to your computer.

**Tip**

You can quickly save this file to your computer by right-clicking the link, and then choosing **Save Link As**.

2. Open the file in a text editor or spreadsheet application. On the last row of the file, replace the items in angle brackets (<...>) with your own contact information.

In the `Address` column, provide the same email address that you verified in [Step 1 \(p. 4\)](#).

In the `User.UserAttributes.Company` column, specify a company name that's different from the fictitious company names in the file. You'll use this unique company name when you define the criteria for your targeted segment in the next section.

**Note**

You don't have to provide your information for each column in the file. However, at a minimum, you have to provide information for the `ChannelType`, `Address`, and `User.UserAttributes.Company` columns. The email that you create later in this tutorial uses several of these fields to create a personalized message.

3. When you finish, save the file.

**Note**

If you used a spreadsheet application to modify the file, make sure that you save the modified file in Comma-Separated Values (.csv) format. Amazon Pinpoint can only import .csv and .json files.

## Step 2.2: Import a file that contains customer data

Now that you have a file that contains customer data, you can import it into Amazon Pinpoint. To import customer data, you have to create a new segment.

**To create an imported segment**

1. In the Amazon Pinpoint console, in the navigation pane, choose **Segments**.
2. Choose **Create a segment**.
3. On the **Create a segment** page, choose **Import a segment**.
4. In the **Specifications** section, under **Import method**, choose **Upload files from your computer**.
5. Select **Choose files**. Navigate to the `Pinpoint_Sample_Import.csv` file that you downloaded and modified in the previous section.
6. Choose **Create segment**. Amazon Pinpoint copies the file from your computer and creates a segment. Wait for about 1 minute while the import completes.

## Step 2.3: Create a targeted segment

Your Amazon Pinpoint project now contains some customer data, as well as a segment that contains your entire customer list. It also contains your contact information.

In this section, you create a targeted segment. You add segment criteria that filter the segment so that you're the only member of the segment.

**To create the segment**

1. On the **Segments** page, choose **Create a segment**.
2. On the **Create a segment** page, choose **Build a segment**.
3. For **Name**, enter a name for the segment.
4. Under **Segment group 1**, do the following:
  - a. Next to **Include endpoints that are in any of the following segments**, choose the **Pinpoint\_Sample\_Import** segment that you created in the previous step.
  - b. Under **Add filters to refine your segment**, from the menu, choose **Filter by channel**.
  - c. Next to **Endpoints that match**, choose **all**.
  - d. For **Channel**, choose **EMAIL**.
  - e. Under **Add filters to refine your segment**, from the menu, choose **Filter by user**.
  - f. In the **User** filter, use the menu to choose **Company**. Next, use the **Choose values** menu to choose the unique company name that you specified for your own contact record in [Step 2.1 \(p. 6\)](#).
  - g. Choose **Add an attribute or metric**.
  - h. In the new filter, use the menu to choose **First Name**. Next, use the **Choose values** menu to choose your first name.
  - i. Choose **Create segment**.

**Next:** [Create and schedule a campaign \(p. 8\)](#)

## Step 3: Create and schedule a campaign

A *campaign* is a messaging initiative that engages a specific audience segment. A campaign sends tailored messages on the days and times that you specify. You can use the console to create a campaign that sends messages through the email, push notification, or SMS channels.

In this section, you create an email campaign. You create a new campaign, choose your target segment, and create a responsive email message for the campaign. When you finish setting up the message, you choose the day and time when you want the message to be sent.

### Step 3.1: Create the campaign and choose a segment

When you create a segment, you first give the segment a name. Next, you choose the segment that the campaign applies to. In this tutorial, you choose the segment that you created in [Step 2.3 \(p. 7\)](#).

#### To create the campaign and choose segment

1. In a web browser, download the sample file from [https://raw.githubusercontent.com/awsdocs/amazon-pinpoint-user-guide/master/examples/Pinpoint\\_Sample\\_Email.html](https://raw.githubusercontent.com/awsdocs/amazon-pinpoint-user-guide/master/examples/Pinpoint_Sample_Email.html). Save the file to your computer.

#### Tip

You can quickly save this file to your computer by right-clicking the link, and then choosing **Save Link As**.

2. Open the file that you just downloaded in a text editor, such as Notepad (Windows) or TextEdit (macOS). Press **Ctrl+A** (Windows) or **Cmd+A** (macOS) to select all of the text. Then, press **Ctrl+C** (Windows) or **Cmd+C** (macOS) to copy it.
3. In the Amazon Pinpoint console, in the navigation pane, choose **Campaigns**.
4. Choose **Create a campaign**.
5. Under **Campaign details**, for **Campaign name**, enter a name for the campaign.
6. For **Campaign type**, choose **Standard campaign**.
7. For **Choose a channel for this campaign**, choose **Email**.
8. Choose **Next**.
9. On the **Choose a segment** page, choose **Use an existing segment**. Then, for **Segment**, choose the targeted segment that you created in [Step 2.3 \(p. 7\)](#). Choose **Next**.

### Step 3.2: Create the campaign message

After you specify a campaign name and choose a segment, you can create your message. This tutorial includes a link to an HTML file that you can use to create your message.

This sample file uses responsive HTML to create a message that renders properly on both computers and mobile devices. It uses inline CSS to provide compatibility with a wide variety of email clients. It also includes tags that are used to personalize the message with the recipient's name and other personal information.

#### To create the message

1. On the **Create your message** page, under **Message content**, choose **Create a new message**.

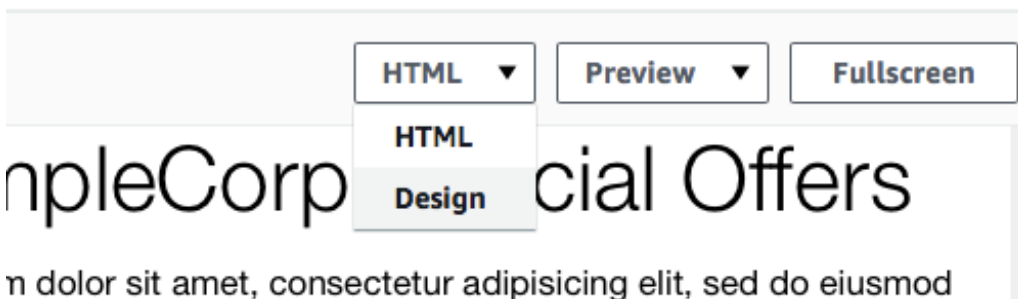
2. For **Subject**, enter a subject line for the email.
3. Under **Message**, erase the sample HTML code that's shown in the editor. Paste the HTML code that you copied in the first step in this section.
4. (Optional) Modify the content of the message to include a message that you want to send.

You can personalize the message for each recipient by including the name of an attribute inside two sets of curly braces. For example, the sample message includes the following text: `{{User.UserAttributes.FirstName}}`. This code represents the `User.UserAttributes.FirstName` attribute, which contains the recipient's first name. When you send the campaign, Amazon Pinpoint removes this attribute name and replaces it with the appropriate value for each recipient.

You can experiment with other attribute names. Refer to the column headers in the spreadsheet that you imported in [Step 2.2 \(p. 7\)](#) for complete list of attribute names that you can specify in your message.

**Tip**

You can use Design view to edit the content of the message without having to edit the HTML code. To use this view, choose **Design** from the view selector above the message editor, as shown in the following image.



5. Choose **Next**.

## Step 3.3: Schedule the campaign

The last step in creating the campaign is to choose when to send it. In Amazon Pinpoint, you can set up your campaigns so that they're sent immediately after you launch them. You can also schedule them to be sent in the future—anywhere from 15 minutes from the current time, to six months into the future. Finally, you can schedule your messages to be sent on a recurring basis (that is, hourly, daily, weekly, or monthly). Recurring campaigns are a great way to send account or status updates where the appearance of the campaign message stays the same over time, but is populated with information that changes dynamically.

In this section, you schedule your campaign to be sent immediately after you launch it.

### To schedule the campaign

1. On the **Choose when to send the campaign** page, choose **At a specific time**. Then, under **Choose when the campaign should be sent**, choose **Immediately**. Finally, choose **Next**.
2. On the **Review and launch** page, review all of the details of the campaign. When you're ready to send it, choose **Launch campaign**.

Congratulations—you've created your first campaign with Amazon Pinpoint! Because you're the only member of the segment that you created in [Step 2.3 \(p. 7\)](#), you should receive the message in your inbox within a few seconds.

**Next:** [View campaign analytics \(p. 10\)](#)

## Step 4: View campaign analytics

At this point, you've created a segment that you're a member of. You've also created an email campaign and sent it to yourself. In this section, you look at the delivery and response metrics for the campaign.

### Step 4.1: Interact with your campaign

Before you can view the delivery and response metrics for your campaign, you have to interact with the message that you sent yourself in [Step 3 \(p. 8\)](#).

#### To interact with the email

1. In your email client, open the message that you sent yourself in [Step 3 \(p. 8\)](#).
2. If your email client automatically hides images by default, choose the **Download pictures** (or equivalent) button to load the images in the message.
3. Choose one or more of the links that are contained in the message.
4. Wait for a few minutes, and then proceed to the next section.

### Step 4.2: View metrics for the campaign

After you interact with the email that you sent from the campaign, you can view the metrics for the campaign.

#### To view the campaign metrics

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that you used to send the campaign.
3. In the navigation pane, under **Analytics**, choose **Campaigns**.
4. In the **Campaigns** section, choose the campaign that you created in [Step 3 \(p. 8\)](#).
5. (Optional) Use the date control to choose a date range for the reports on this page.

On the metrics page for your campaign, you see the following information:

- **Delivery count metrics** – This section provides information about the delivery of the messages that were sent from your campaign. It includes the following information:
  - **Messages sent** – The number of messages that were sent.
  - **Messages delivered** – The number of messages that were delivered to their recipients.
  - **Links clicked** – The number of times that links in the messages were clicked by recipients. If a single recipient clicks a link more than once, each click is represented in this section.
  - **Endpoint deliveries** – The average number of endpoints that the campaign was sent to, for each day in the chosen date range. The chart shows the number of endpoints that the campaign was delivered to, for each day in the chosen date range.
- **Delivery rate metrics** – This section shows the overall delivery and response rates for the messages that were sent from your campaign. It includes the following information:
  - **Delivery rate** – The percentage of messages that were delivered to recipients, of the total number of endpoints that you targeted in the segment that you sent this campaign to.
  - **Email open rate** – The percentage of messages that were opened by recipients, of the total number of messages that were delivered.
  - **Bounce rate** – The percentage of messages that weren't delivered to recipients because they bounced. This value includes only hard bounces—that is, messages that bounced because of



a permanent issue. For example, hard bounces could occur when the recipient's email address doesn't exist, or when the recipient permanently rejects email from your domain.

- **Campaign runs** – This section shows information that's specific to each time the campaign ran. Because you can use Amazon Pinpoint to create recurring campaigns, this section can show information for several campaign runs. However, if you completed the procedures in this tutorial, this section contains information for only one campaign run because you ran the campaign only once. This section contains the following metrics, in addition to the metrics that are defined in the preceding sections:
  - **Endpoints targeted** – The number of endpoints that were targeted by the segment that was associated with the campaign run. This number includes endpoints that were part of the segment, but didn't receive the message.
  - **Total email opened** – The total number of times that messages sent from the campaign run were opened. For example, if a message was opened two times by one recipient, both of those opens are counted.

**Next:** [Next steps \(p. 11\)](#)

## Next steps

We hope that you use this tutorial as a starting point as you discover the additional capabilities of Amazon Pinpoint. For example:

- You can improve the delivery of your email campaigns by making sure that your campaigns align with industry best practices. For more information, see [Best practices \(p. 52\)](#).
- You can verify an entire domain, which allows you to send email from any address on that domain. For more information about verifying domains, see [Verifying a domain \(p. 21\)](#).
- You can obtain dedicated IP addresses for sending your email. Dedicated IP addresses are a great option for sending email in certain use cases. For more information, see [Using dedicated IP addresses with Amazon Pinpoint \(p. 33\)](#).
- You can enable the Amazon Pinpoint Deliverability dashboard. The Deliverability dashboard helps you identify issues that could impact the delivery of your emails. For more information, see [The Amazon Pinpoint deliverability dashboard \(p. 39\)](#).
- You can send messages through other channels, such as SMS or push. Before you can use these channels, you have to enable and configure them on the Settings page. For more information about using the Settings page to enable and configure channels, see [Amazon Pinpoint settings \(p. 274\)](#).
- You can send data about your campaigns outside of Amazon Pinpoint. For example, you can send delivery and response data for your campaigns to Amazon S3 for long-term storage. You can also send data to Amazon Redshift to perform custom analyses. For more information about sending your data outside of Amazon Pinpoint, see [Event stream settings \(p. 300\)](#).
- You can integrate Amazon Pinpoint with your apps, or interact with Amazon Pinpoint programmatically, by using an AWS SDK. For more information, see the [Amazon Pinpoint Developer Guide](#).

# Amazon Pinpoint projects

In Amazon Pinpoint, a *project* is a collection of recipient information, segments, campaigns, and journeys. New Amazon Pinpoint users should start by creating a project. If you've used the Amazon Pinpoint API, you may have seen references to "applications." In Amazon Pinpoint, projects and applications are interchangeable terms.

This section contains information about creating and managing projects.

## Topics

- [Managing Amazon Pinpoint projects \(p. 12\)](#)

## Managing Amazon Pinpoint projects

You can use the Amazon Pinpoint console to create, view, edit, and delete projects. Within a project, you can also [import endpoints \(p. 117\)](#), [create segments \(p. 110\)](#), [create campaigns \(p. 126\)](#), [create journeys \(p. 142\)](#), and [view analytics data \(p. 193\)](#) for that project.

## Creating a project

The procedure for creating a new project differs depending on whether your account already contains projects in the current AWS Region.

### Option 1: Create and configure a project (new Amazon Pinpoint users)

The procedures in this section show you how to create a new project. If you've never created a project in Amazon Pinpoint, complete the procedures in this section.

If your Amazon Pinpoint account includes one or more existing projects, you should complete the steps in [Option 2: Create and configure a project \(existing Amazon Pinpoint users\) \(p. 13\)](#) instead.

### To create a project

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. If this is your first time using Amazon Pinpoint, you see a page that introduces you to the features of the service.

In the **Get started** section, enter a name for your project, and then choose **Create a project**. The project name that you specify can contain up to 64 characters.

#### Note

You can't rename a project after it's been created.

3. On the **Configure features** page, choose a channel to configure. For example, if you plan to use the project to send email, choose the **Configure** button in the **Email** section.

When you choose to set up a channel, you see options related to configuring that channel. For example, if you choose to [set up the email channel \(p. 20\)](#), you see options related to verifying an email address. If you choose to [set up the SMS channel \(p. 58\)](#), you see options related to setting

your spending limit and default message type. If you choose to [set up push notifications \(p. 15\)](#), you see options related to configuring your push notification service credentials.

**Note**

You can configure additional channels in this project later. You aren't limited to only sending messages through the channel that you configured during this process.

## Option 2: Create and configure a project (existing Amazon Pinpoint users)

The procedures in this section show you how to create a project if your Amazon Pinpoint account already includes one or more existing projects.

If your Amazon Pinpoint account doesn't contain any projects, you should complete the steps in [Option 1: Create and configure a project \(new Amazon Pinpoint users\) \(p. 12\)](#) instead.

### To create a project

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose **Create a project**.
3. On the **Create a project** window, for **Project name**, enter a name for your project, and then choose **Create**. The project name that you specify can contain up to 64 characters.
4. On the **Configure features** page, choose a channel to configure. For example, if you plan to use the project to send email, choose the **Configure** button in the **Email** section.

When you choose to set up a channel, you see options related to configuring that channel. For example, if you choose to [set up the email channel \(p. 20\)](#), you see options related to verifying an email address. If you choose to [set up the SMS channel \(p. 58\)](#), you see options related to setting your spending limit and default message type. If you choose to [set up push notifications \(p. 15\)](#), you see options related to configuring your push notification service credentials.

**Note**

You can configure additional channels in this project later. You aren't limited to only sending messages through the channel that you configured during this process.  
If you prefer to set up channels later, choose **Skip this step**.

## Editing a project

You can't edit the name of a project after it's been created, but you can edit some settings related to the project. This section includes procedures for changing these settings, as well as descriptions of the settings that you can change.

### To edit a project

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, in the list of projects, choose the project that you want to delete.
3. In the navigation pane, under **Settings**, choose **General settings**.
4. Choose **Edit**.
5. On the **Edit general settings** page, change any of the following settings:

#### Quiet time hours

Use these settings to prevent Amazon Pinpoint from sending messages during specific hours. When you configure these settings, you provide a **Start time** and an **End time**. If a message would be sent between the start and end times in an endpoint's local time zone, Amazon Pinpoint doesn't attempt to send the message to that endpoint.

**Note**

In order for this setting to observe local time zones, the endpoint definition for a recipient has to include a properly-formatted `Demographic.Timezone` attribute.

The times that you specify have to use 24-hour notation and be in *HH:MM* format. For example, for 9:30 PM, enter **21:30**.

**Maximum number of daily messages per endpoint**

Use this setting to specify the maximum number of messages that can be sent to a single endpoint during a 24-hour period by all the campaigns and journeys in the project. The value that you specify can't be larger than 100.

**Maximum number of messages per endpoint**

Use this setting to specify the maximum number of messages that can be sent to a single endpoint by each campaign or journey. If a campaign recurs, this setting applies to all runs of the campaign. The value that you specify can't be larger than 100.

**Note**

This setting considers the number of messages that *target* an endpoint, as opposed to the number of messages that are actually *delivered* to an endpoint. For example, if a campaign is configured to automatically send a message when a customer creates a new account, but the endpoint isn't able to receive the message (for example, if the quiet time setting applies to the endpoint), then the endpoint is still counted as having been targeted. In this situation, the endpoint would be removed from subsequent runs of the campaign.

**Maximum number of messages per second**

Use this setting to specify the maximum number of messages that can be sent each second by a campaign or journey. The value that you specify has to be a number between 50 and 20,000. If you define a messages per second parameter, we try to match it. Otherwise, if this is not defined, we attempt to deliver the message as fast as possible. Note that delivery speed, however, is dependent on channel latency at any given time.

**Maximum amount of time for a campaign run**

Use this setting to specify the maximum amount of time, in seconds, that a campaign can attempt to deliver a message after the scheduled start time. The minimum value for this setting is 60 seconds.

6. When you finish, choose **Save**.

## Deleting a project

You can delete projects. When you do, all of the endpoint data, segments, campaigns, journeys, and analytics data are deleted too.

**Warning**

You can't restore a project after it's been deleted.

**To delete a project**

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, in the list of projects, choose the project that you want to delete.
3. In the navigation pane, under **Settings**, choose **General settings**.
4. Choose **Delete project**.
5. On the confirmation window, in the text field, enter **delete**. Choose **Delete**.

# Amazon Pinpoint channels

A *channel* represents the platform through which you engage your audience segment with messages. For example, to send push notifications to users of your apps, you must have an Amazon Pinpoint project in which the *push notifications* channel is enabled. Amazon Pinpoint supports the following channels:

- [Push notifications \(p. 15\)](#)
- [Email \(p. 19\)](#)
- [SMS \(p. 56\)](#)
- [Voice \(p. 101\)](#)

In addition to these channels, you can also extend the capabilities to meet your specific use case by creating [custom channels \(p. 109\)](#).

Before you can use Amazon Pinpoint to engage your audience, you have to create an Amazon Pinpoint project. After you create a project, you can use it to send campaigns. To engage your customers using campaigns, start by [defining the audience segment \(p. 110\)](#) that you want to engage. Next, [define that campaign \(p. 126\)](#) that you want to send to the segment.

## Topics in this section

- [Amazon Pinpoint push notification channels \(p. 15\)](#)
- [Amazon Pinpoint email channel \(p. 19\)](#)
- [Amazon Pinpoint SMS channel \(p. 56\)](#)
- [Amazon Pinpoint voice channel \(p. 101\)](#)
- [Custom channels in Amazon Pinpoint \(p. 109\)](#)

## Amazon Pinpoint push notification channels

With Amazon Pinpoint, you can engage your mobile app users by sending push notifications through a push notification channel. You can send push notifications to Android and iOS apps using separate channels for the following push notification services:

- Firebase Cloud Messaging (FCM)
- Apple Push Notification service (APNs)
- Baidu Cloud Push
- Amazon Device Messaging (ADM)

## Topics

- [Setting up Amazon Pinpoint mobile push channels \(p. 15\)](#)
- [Monitoring push notification activity with Amazon Pinpoint \(p. 16\)](#)
- [Managing mobile push channels with Amazon Pinpoint \(p. 16\)](#)
- [Best practices \(p. 18\)](#)

## Setting up Amazon Pinpoint mobile push channels

Before you can use Amazon Pinpoint to send push notifications to your app, you first have to create a project and enable the push notifications channel. After you create a project in Amazon Pinpoint, you can

update your push notification credentials on the **Push notifications** settings page. For more information, see [Push notification settings \(p. 298\)](#).

### To create a new Amazon Pinpoint project and enable the push notifications channel

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose **Create a project**.
3. For **Project name**, enter a name, and then choose **Create**.

#### Note

The project name can contain up to 64 alphanumeric characters. It can also include the following characters: comma (,), period (.), at sign (@), underscore (\_), equals sign (=), and plus sign (+).

4. Under **Push notifications**, choose **Configure**.
5. Under **Push notification services**, choose the push notification services that you want to enable for this project. Provide the required credentials for the services you selected.
6. When you finish, choose **Save**.

## Monitoring push notification activity with Amazon Pinpoint

For push notifications that you send as part of a campaign, Amazon Pinpoint provides options for monitoring your push notification activity.

#### Note

To monitor push notification activity, you must use a campaign. You can't monitor push notification activity outside a campaign.

## Amazon Pinpoint analytics

The Analytics pages on the Amazon Pinpoint console provide charts and metrics that show trends related to user engagement, campaign outreach, revenue, and more. For example, you can view the number of endpoints that you can send push notifications to, the number of endpoints that you've already sent push notifications to, and the open rates for push notifications that you've already sent. You can view these charts and metrics across all of your campaigns, or for individual campaigns.

### To view campaign analytics in the Amazon Pinpoint console

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that you want to view analytics data for.
3. In the navigation pane, under **Analytics**, choose **Campaigns**.
4. (Optional) Choose a campaign from the **Campaigns** table to view metrics that are specific to that campaign.

For more information, see [Amazon Pinpoint analytics \(p. 193\)](#).

## Managing mobile push channels with Amazon Pinpoint

Using the console, you can update the credentials that allow Amazon Pinpoint to send push notifications to iOS and Android devices. You can provide credentials for the following push notification services, each of which is supported by an Amazon Pinpoint channel:

- Apple Push Notification service (APNs)
- Firebase Cloud Messaging (FCM)
- Baidu Cloud Push
- Amazon Device Messaging (ADM)

### To update push notification settings

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that you want to manage push notification settings for.
3. In the navigation pane, under **Settings**, choose **Push notifications**.
4. Next to **Push notifications**, choose **Edit**.
5. On the **Edit push notifications** page, you can update your credentials for the following services:
  - **APNs** – Requires an authentication token signing key or a TLS certificate, which you get from your Apple developer account. For more information, see the next section, *Managing APNs Settings*.
  - **FCM** – Requires a Web API Key (also referred to as an *API\_KEY* or *server key*), which you get from the Firebase console. For more information about obtaining FCM credentials, see [Credentials](#) in the Firebase documentation.
  - **Baidu Cloud Push** – Requires an API key and a secret key, which you get from your Baidu Cloud Push project.
  - **Amazon Device Messaging** – Requires the OAuth credentials (Client ID and Client Secret) from your Amazon Developer account. For more information, see [Obtain credentials](#) in the Amazon Device Messaging developer documentation.
6. When you finish, choose **Save**.

## Managing APNs settings

On the **Push notifications** settings page for APNs, you can authorize Amazon Pinpoint to send push notifications to your iOS app by providing information about your APNs *key* or *certificate*:

### Key

A private signing key used by Amazon Pinpoint to cryptographically sign APNs authentication tokens. You obtain the signing key from your Apple developer account.

If you provide a signing key, Amazon Pinpoint uses a token to authenticate with APNs for every push notification that you send. With your signing key, you can send push notifications to APNs production and sandbox environments.

Unlike certificates, your signing key doesn't expire. You only provide your key once, and you don't need to renew it later. You can use the same signing key for multiple apps. For more information, see [Communicate with APNs using authentication tokens](#) in *Xcode Help*.

### Certificate

A TLS certificate that Amazon Pinpoint uses to authenticate with APNs when you send push notifications. An APNs certificate can support both production and sandbox environments, or it can support only the sandbox environment. You obtain the certificate from your Apple developer account.

A certificate expires after one year. When this happens, you must create a new certificate, which you then provide to Amazon Pinpoint to renew push notification deliveries. For more information, see [Communicate with APNs using a TLS certificate](#) in *Xcode Help*.

### To manage APNs settings

1. For **Authentication type**, choose **Key credentials** or **Certificate credentials** to manage the settings for that type.
  - If you choose **Key credentials**, provide the following information from your Apple developer account. Amazon Pinpoint requires this information to construct authentication tokens.
    - **Key ID** – The ID that's assigned to your signing key. To find this value, choose **Certificates, IDs & Profiles**, and choose your key in the **Keys** section.
    - **Bundle identifier** – The ID that's assigned to your iOS app. To find this value, choose **Certificates, IDs & Profiles**, choose **App IDs** in the **Identifiers** section, and choose your app.
    - **Team identifier** – The ID that's assigned to your Apple developer account team. This value is provided on the **Membership** page.
    - **Authentication key** – The .p8 file that you download from your Apple developer account when you create an authentication key. Apple allows you to download your authentication key only once.
  - If you choose **Certificate credentials**, provide the following information:
    - **SSL certificate** – The .p12 file for your TLS certificate. You can export this file from Keychain Access after you download and install your certificate from your Apple developer account.
    - **Certificate password** – If you assigned a password to your certificate, specify it here.
2. For **Production support**, choose **Yes** if your certificate supports sending push notifications to the APNs production environment.

**Important**  
Don't enable this option if your certificate only supports the sandbox environment.
3. For **Default authentication type**, choose whether Amazon Pinpoint authenticates with APNs using your signing **key** or your TLS **certificate** by default. Amazon Pinpoint uses this default for every APNs push notification that you send using the console. You can override the default when you send a message programmatically by using the Amazon Pinpoint API, the AWS Command Line Interface (AWS CLI), or an AWS SDK. If your default authentication type fails, Amazon Pinpoint doesn't attempt to use the other authentication type.
4. When you finish, choose **Save**.

## Best practices

Even when you have your customers' best interests in mind, you may still encounter situations that impact the deliverability of your messages. The following sections contain recommendations to help ensure that your push communications reach your intended audience.

### Sending a high volume of push notifications

Before you send a high volume of push notifications, make sure that your Amazon Pinpoint account is configured to support your throughput requirements. By default, all Amazon Pinpoint accounts are configured to send 25,000 messages per second. If you need to be able to send more than 25,000 messages in one second, you can request a quota increase. For more information, see [Requesting a quota increase](#) in the *Amazon Pinpoint Developer Guide*.

Make sure that your Amazon Pinpoint account is correctly configured with the credentials for each of the push notification providers that you plan to use, such as FCM or APNs.

Finally, devise a way to handle exceptions. Each push notification service provides different exception messages. For transactional sends, you receive a main status code of 200 for the API call, with a per endpoint status code of 400 permanent failure if the corresponding platform token (for example, FCM)



or certificate (for example, APN) is determined to be invalid during message sends. For campaigns, you will see fewer than expected deliveries corresponding to the campaign activities. See [Streaming Amazon Pinpoint events to Kinesis](#) in the *Amazon Pinpoint Developer Guide* for more information on setting up streaming events.

## Amazon Pinpoint email channel

Use the Email channel in Amazon Pinpoint to send email messages to your end users.

If you haven't used Amazon Pinpoint to send email, your account is in the [email sandbox \(p. 20\)](#) by default. When your account is in the email sandbox, you can only send email to addresses that you verify. Additionally, you can only send 200 emails in a 24-hour period, at a maximum throughput rate of one message per second. You can request to have your account removed from the sandbox by [requesting production access for email \(p. 28\)](#).

You can [monitor your email activity \(p. 25\)](#) by viewing analytics in the Amazon Pinpoint console or by streaming email events to Kinesis.

As your email needs change, you can manage the email channel by [updating your email address or domain \(p. 26\)](#), or [requesting an increase to your sending quotas \(p. 26\)](#).

## Choosing between Amazon Pinpoint and Amazon Simple Email Service (Amazon SES)

AWS also offers an email-only service called Amazon SES. Both Amazon SES and Amazon Pinpoint use the same highly scalable email infrastructure. The two services offer different features and are intended for different audiences and use cases.

Amazon SES has an API and an SMTP interface, both of which are well suited to sending email from your applications or services. You can also use the Amazon SES SMTP interface to integrate with existing third-party applications, such as Customer Relationship Management (CRM) applications. Amazon SES also offers email features not included in Amazon Pinpoint, including email receiving capabilities, dedicated IP pools, and cross-account sending authorization capabilities.

Amazon Pinpoint is well-suited to users who want to send orchestrated communications, including scheduled campaigns and multi-step customer journeys. Amazon Pinpoint also includes features not included with Amazon SES, such as audience segmentation, campaign and journey analytics, and a web-based console that is accessible to less technical users.

For more information about sending email using Amazon SES, see the [Amazon Simple Email Service Developer Guide](#).

### Topics

- [Amazon Pinpoint email sandbox \(p. 20\)](#)
- [Setting up the Amazon Pinpoint email channel \(p. 20\)](#)
- [Monitoring email activity with Amazon Pinpoint \(p. 25\)](#)
- [Managing the Amazon Pinpoint email channel \(p. 26\)](#)
- [Sending email in Amazon Pinpoint \(p. 31\)](#)
- [Using dedicated IP addresses with Amazon Pinpoint \(p. 33\)](#)
- [The Amazon Pinpoint deliverability dashboard \(p. 39\)](#)
- [Best practices \(p. 52\)](#)

## Amazon Pinpoint email sandbox

We use a sandbox environment to help protect our customers from fraud and abuse. The sandbox environment also helps you establish your sender reputation with ISPs and email recipients. New Amazon Pinpoint email user accounts are placed in the sandbox environment. While your account is in the sandbox, you have full access to Amazon Pinpoint email sending methods, with the following restrictions:

- You can send email only from verified addresses and domains.
- You can send email only to addresses that you have verified or addresses that are associated with the mailbox simulator.
- You can send a maximum of 200 messages within 24 hours.
- You can send a maximum of one message per second.

To learn how to remove these restrictions, see [Requesting a quota increase \(p. 28\)](#).

## Setting up the Amazon Pinpoint email channel

To set up the Amazon Pinpoint email channel, you start by verifying the email address or domain that you want to use when you send email from that project. Next, you create a project, enable the email channel in that project, and choose an email address or domain to use.

When you enable the email channel for the first time, Amazon Pinpoint doesn't immediately provide production access for email messaging. Instead, your AWS account has access only to the email sandbox, which imposes restrictions on your email traffic. To gain production access, [submit a request \(p. 20\)](#) to AWS Support.

### Topics

- [Verifying email identities \(p. 20\)](#)
- [Creating an Amazon Pinpoint project with email support \(p. 23\)](#)
- [Tracking open and click events in email \(p. 25\)](#)

## Verifying email identities

In Amazon Pinpoint, an *identity* is an email address or domain that you use to send email. Before you can send email by using Amazon Pinpoint, you must verify each identity that you plan to use as a From, Source, Sender, or Return-Path address to prove that you own it. If your account is still in the Amazon Pinpoint sandbox, you also need to verify the identities that you plan to send email to.

Before you verify an identity, you have to create a project and enable the email channel for the project. For more information, see [Creating an Amazon Pinpoint project with email support \(p. 23\)](#).

### Topics in this section

- [Verifying an email address \(p. 20\)](#)
- [Verifying a domain \(p. 21\)](#)

## Verifying an email address

If you've already created a project for sending email, you probably already verified an email address. You can verify a different email address by using the Amazon Pinpoint console.

## To verify an email address

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, under **Email**, choose **Email identities**.
3. Choose **Verify email identity**.
4. Under **Identity type**, choose **Email address**.
5. For **Verify a new email address**, enter the email address that you want to verify.
6. Choose **Verify email address**.
7. Check the inbox of the address that you entered and look for an email from *no-reply-aws@amazon.com*. Open the email and click the link in the email to complete the verification process for the email address.

### Note

You should receive the verification email within five minutes. If you don't receive the email, do the following:

- Make sure you typed the address correctly.
- Make sure the email address that you're attempting to verify can receive email. You can test this by using another email address to send a test email to the address that you want to verify.
- Check your junk mail folder.

The link in the verification email expires after 24 hours. To resend the verification email, choose **Send verification email again**.

When you verify an email address, consider the following:

- Amazon Pinpoint has endpoints in multiple AWS Regions and the verification status of an email address is separate for each Region. If you want to send email from the same identity in more than one Region, you must verify that identity in each Region. You can verify as many as 10,000 identities (email addresses and domains, in any combination) in each AWS Region.
- The *local part* of the email address, which is the part that precedes the at sign (@), is case sensitive. For example, if you verify *user@example.com*, you can't send email from *USER@example.com* unless you verify that address too.
- Domain names are case insensitive. For example, if you verify *user@example.com*, you can also send email from *user@EXAMPLE.com*.
- You can apply labels to verified email addresses by adding a plus sign (+) followed by a string of text after the local part of the address and before the at sign (@). For example, to apply *label1* to the address *user@example.com*, use *user+label1@example.com*. You can use as many labels as you want for each verified address. You can also use labels in the "From" and "Return-Path" fields to implement Variable Envelope Return Path (VERP).

### Note

When you verify an unlabeled address, you are verifying all addresses that could be formed by adding a label to the address. However, if you verify a labeled address, you can't use other labels with that address.

## Verifying a domain

When you verify a domain, you verify all the email addresses that are associated with that domain. Therefore, you don't need to verify individual email addresses from the domain. For example, if you verify the *example.com* domain, you can send email from *carlos@example.com*, *jane@example.com*, and any other address from the *example.com* domain.

Before you can use Amazon Pinpoint to send email from a domain, you have to verify the domain to confirm that you own it and to prevent others from using it.

**Note**

To complete the verification process, you have to be able to modify the DNS settings for the domain. The procedures for modifying the DNS settings for a domain vary depending on the DNS or web hosting provider. For information about changing the DNS settings for your domain, see the documentation for your provider.

**To verify a domain**

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, under **Email**, choose **Email identities**.
3. Choose **Verify email identity**.
4. Under **Identity type**, choose **Domain**, and then choose **Verify a new domain**.
5. For **Domain**, enter the domain that you want to verify.
6. Choose **Verify domain**.
7. Under **Record set**, copy the three CNAME records and save them to a location on your computer. Or, to download and save the values in a .csv file, choose **Download record set**.
8. Log in to the management console for your DNS or web hosting provider, and then create three new CNAME records that contain the values that you saved in the previous step. See the next section for links to the documentation for several common providers.
9. When Amazon Pinpoint detects all three of these CNAME records in the DNS configuration of your domain, the verification process is complete. You can check the verification status by returning to the **Email identities** page. In the **All identities** table, locate the domain that you attempted to verify. If the value in the **Status** column for that domain is *Active*, the verification process is complete.

**Note**

In some cases, it can take 72 hours or more for DNS changes to propagate across the internet. You can't send email from a domain until the verification process is complete.

When you verify a domain, consider the following:

- You can send email from any subdomain of the verified domain, without verifying the subdomain specifically. For example, if you verify *example.com*, you don't need to verify *a.example.com* or *a.b.example.com*.
- As specified in [RFC 1034](#), each DNS label can have up to 63 characters. In addition, the whole domain name must not exceed a total length of 255 characters.
- Amazon Pinpoint is available in multiple AWS Regions, and the verification status of a domain is separate for each Region. If you want to send email from the same identity in more than one Region, you must verify that identity in each Region. You can verify as many as 10,000 identities (domains and email addresses, in any combination) in each AWS Region.

**Instructions for configuring DNS records for various providers**

The procedures for updating the DNS records for a domain vary depending on which DNS or web hosting provider you use. The following table lists links to the documentation for several common providers. This list isn't exhaustive and inclusion in this list isn't an endorsement or recommendation of any company's products or services. If your provider isn't listed in the table, you can probably use the domain with Amazon Pinpoint.

DNS/hosting provider	Documentation link
Amazon Route 53	<a href="#">Working with records</a>
GoDaddy	<a href="#">Add a CNAME record</a> (external link)
Dreamhost	<a href="#">How do I add custom DNS records?</a> (external link)
Cloudflare	<a href="#">Managing DNS records in cloudflare</a> (external link)
HostGator	<a href="#">Manage DNS records with HostGator/eNom</a> (external link)
Namecheap	<a href="#">How do I add TXT/SPF/DKIM/DMARC records for my domain?</a> (external link)
Names.co.uk	<a href="#">Changing your domains DNS settings</a> (external link)
Wix	<a href="#">Adding or Updating CNAME Records in Your Wix Account</a>

### Domain verification tips and troubleshooting

If you completed the preceding steps but your domain isn't verified after 72 hours, check the following:

- Make sure that you entered the values for the DNS records in the correct fields. Some providers refer to the **Name/host** field as *Host* or *Hostname*. In addition, some providers refer to the **Record value** field as *Points to* or *Result*.
- Make sure that your provider didn't automatically append your domain name to the **Name/host** value that you entered in the DNS record. Some providers append the domain name without indicating that they've done so. If your provider appended your domain name to the **Name/host** value, remove the domain name from the end of the value. You can also try adding a period to the end of the value in the DNS record. This period indicates to the provider that the domain name is fully qualified.
- The underscore character (`_`) is required in the **Name/host** value of each DNS record. If your provider doesn't allow underscores in DNS record names, contact the provider's customer support department for additional assistance.
- The validation records that you have to add to the DNS configuration for your domain are different for each AWS Region. If you want to use a domain to send email from multiple AWS Regions, you have to verify the domain in each of those Regions.

## Creating an Amazon Pinpoint project with email support

To send email with Amazon Pinpoint, you start by creating an Amazon Pinpoint project. When you create a project, you can enable the email channel for it, and then choose the email identity that you want to use as the sender address. If you haven't already verified an identity to use with Amazon Pinpoint, you can verify an email address when you create the project.

In Amazon Pinpoint, an *identity* is an email address or domain that you use to send email. Before you can send email using Amazon Pinpoint, you must verify each identity that you plan to use as a From, Source, Sender, or Return-Path address to prove that you own the identity. For more information about verifying identities, see [Verifying email identities](#) (p. 20).

#### Note

If your account is still in the Amazon Pinpoint email sandbox, you also need to verify the identities that you plan to send email to. For more information about the email sandbox, see [Increasing your sending quotas](#) (p. 27).

## Topics

- [Creating an email project when you haven't yet verified an identity \(p. 24\)](#)
- [Creating an email project when you've already verified an identity \(p. 24\)](#)

## Creating an email project when you haven't yet verified an identity

If you haven't used Amazon Pinpoint to send email in the past, you probably haven't verified any identities. The procedure in this section describes the process of creating a project and verifying a single email address at the same time.

If you've already verified an identity, or if you want to verify an entire domain instead of a single address, use the procedures in [Verifying a domain \(p. 21\)](#) instead.

### To create a new email project and verify an email address

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose **Create a project**.
3. For **Project name**, enter a name, and then choose **Create**.

#### Note

The project name can contain up to 64 alphanumeric characters. It can also include the following characters: comma (,), period (.), at sign (@), underscore (\_), equals sign (=), and plus sign (+).

4. On the **Configure features** page, under **Email**, choose **Configure**.
5. On the **Set up email** page, for **Email address**, enter the email address that you want to use to send email from this project. Amazon Pinpoint sends an email to the address that you entered. Open the email, and then click the link in the message to verify the email address.

## Creating an email project when you've already verified an identity

If you've already verified an email identity, you can use that identity with your new project.

### To create a new email project and choose an existing identity

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose **Create a project**.
3. For **Project name**, enter a name, and then choose **Create**.

#### Note

The project name can contain up to 64 alphanumeric characters. It can also include the following characters: comma (,), period (.), at sign (@), underscore (\_), equals sign (=), and plus sign (+).

4. On the **Configure features** page, choose **Skip this step**.
5. In the navigation pane, under **Settings**, choose **Email**.
6. Next to **Identity details**, choose **Edit**.
7. Choose **Enable the email channel for this project**.
8. For **Identity type**, choose either **Email address** or **Domain**, depending on the type of verified identity that you want to use.
9. Choose **Use an existing email address** if you chose **Email address** in the preceding step, or choose **Use an existing domain** if you chose **Domain**.
10. From the list, choose the verified email address or domain that you want to use.

11. If you're setting up a domain, specify the **Default sender address** for that domain.
12. (Optional) For **Friendly sender name**, enter the name that you want to appear in your recipients' email clients.
13. When you finish, choose **Save**.

## Tracking open and click events in email

Amazon Pinpoint automatically tracks how many of your emails were opened or clicked by their recipients. In order to track the number of opens and clicks, Amazon Pinpoint makes minor changes to the emails that you send.

First, Amazon Pinpoint adds a tiny, transparent image to the end of each email that you send. This image is hosted on an AWS server. The file name of this image is unique for each recipient. When a recipient opens an email, their email client downloads this file from our servers. When an email client downloads a tracking image from our servers, we count it as an open event.

Second, Amazon Pinpoint replaces all links in your emails with links that refer to a domain that is hosted by AWS. This link includes a parameter that is unique for each recipient. When a recipient clicks one of these links, they are first sent to the AWS-hosted domain, and then immediately redirected to their intended destination. When a recipient visits one of these redirect links, we count it as a click event.

If a user opens an email multiple times or clicks the same link in an email multiple times, we count each open or click separately. In other words, if a recipient opens an email three times, we count three separate open events.

In order to view open and click events, you have to set up event streaming. For more information about creating event streams, see [Event stream settings \(p. 300\)](#).

## Monitoring email activity with Amazon Pinpoint

For email that you send for a project, Amazon Pinpoint provides options for monitoring your email activity.

### Amazon Pinpoint analytics

The **Analytics** pages on the Amazon Pinpoint console provide many email-related metrics for the campaigns and transactional messages that you send for a project. For example, you can view the number of email endpoints that you can send messages to, and the number of endpoints that you've already sent messages to. Also, you can view the open, click, and opt-out rates for messages that you've already sent. For campaign messages, you can view these metrics across all of your campaigns or for individual campaigns. To learn more about these metrics and how to view them, see [Analytics \(p. 193\)](#).

Amazon Pinpoint provides similar metrics for email that you send for a journey. For example, you can view the number of messages that were opened by participants in each activity of a journey. After you publish a journey, you can view the data for these metrics by using the **Journey metrics** pane in the journey workspace. To learn more about these metrics, see [the section called "View journey metrics" \(p. 170\)](#).

### Streaming email event data

To monitor data, such as successful and failed email deliveries, configure Amazon Pinpoint to stream email event data to Amazon Kinesis Data Streams or Amazon Kinesis Data Firehose. Then, you can use the Kinesis platform to analyze this email data. For more information, see [Streaming Amazon Pinpoint events to Kinesis \(p. 217\)](#).

For examples of the event data that Amazon Pinpoint streams to Kinesis, see [Email events](#) in the *Amazon Pinpoint Developer Guide*.

## Managing the Amazon Pinpoint email channel

You have the following options for managing your email channel with Amazon Pinpoint:

- To enable the email channel for an existing project, or to update your email address or domain, you can use the Amazon Pinpoint console.
- To increase your email sending quotas, you can open a quota increase case with AWS Support.

### Topics

- [Updating email settings \(p. 26\)](#)
- [Managing email sending quotas \(p. 26\)](#)
- [Removing email addresses from the global suppression list \(p. 29\)](#)
- [Managing configuration sets \(p. 30\)](#)

## Updating email settings

You can use the Amazon Pinpoint console to update the email settings for a project. For example, you can change the verified identity that's associated with the project or verify a new identity for the project.

### To update your email settings

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that you want to update email settings for.
3. In the navigation pane, under **Settings**, choose **Email**.
4. On the **Identities** tab, choose **Edit**.
5. Under **Identity type**, choose the type of identity that you want to add or update: **Email address** or **Domain**.
6. Choose whether you want to update an existing identity or verify a new identity.
7. Enter the email address or domain, and then choose **Verify**.

If you enter an email address, Amazon Pinpoint sends a verification email to the address that you entered. Follow the instructions in the email to complete the verification process.

If you enter an email domain, the console displays a TXT record that you have to add to the DNS settings for your domain.

8. Follow the instructions shown on the console. For more information about verifying an email address or domain, see [Verifying email identities \(p. 20\)](#).
9. When you finish, choose **Save**.

## Managing email sending quotas

To regulate the number of email messages that you can send and the rate at which you can send them, your AWS account has sending quotas. These quotas benefit all Amazon Pinpoint users because they help to maintain the trusted relationship between Amazon Pinpoint and Internet service providers (ISPs). They help you gradually ramp up your sending activity. They decrease the likelihood that ISPs will block your emails because of sudden, unexpected spikes in your email sending volume or rate.

Amazon Pinpoint provides the following sending quotas for email:



### Daily sending quota

The maximum number of emails that you can send during a 24-hour period. This quota reflects a rolling time period. Every time you try to send an email, Amazon Pinpoint checks how many emails you sent during the previous 24 hours. If the total number of emails that you have sent is less than your quota, your send request is accepted and your email is sent. If you have already sent your full quota, your send request is rejected with a throttling exception. For example, if your daily sending quota is 50,000, and you sent 15,000 emails during the previous 24 hours, then you can send another 35,000 emails right away. If you have already sent 50,000 emails during the previous 24 hours, you cannot send more emails until some of the previous sending rolls out of its 24-hour window.

The sending quota, sending rate, and sandbox limits are shared between the two services in the same region. If you use Amazon SES in us-east-1, and you've been removed from the sandbox and had your sending quota/rate increased, then those changes all apply to your Pinpoint account in us-east-1.

### Maximum sending rate

The maximum number of emails that Amazon Pinpoint can accept from your account per second. You can exceed this quota for short bursts, but not for a sustained period of time.

#### Note

The rate at which Amazon Pinpoint accepts your messages might be less than the maximum sending rate.

When your account is in the Amazon Pinpoint sandbox, your sending quota is 200 messages per 24-hour period and your maximum sending rate is one message per second. To increase these values, you can [request production access for email \(p. 20\)](#). After your account moves out of the sandbox and you start sending emails, you can increase your quotas further by submitting a quota increase request to AWS Support.

## Increasing your sending quotas

When your account is out of the sandbox, your sending quotas increase if you are sending high-quality content and we detect that your utilization is approaching your current quotas. Often, the system automatically increases your quotas, and no further action is needed.

If your existing quotas are not adequate for your needs and the system did not increase your quotas automatically, you can open an Amazon Pinpoint quota increase case in AWS Support Center.

### Important

- Plan ahead. Be aware of your sending quotas and try to stay within them. If you anticipate needing higher quotas than the system allocated, open an Amazon Pinpoint quota increase case well before the date when you need the higher quotas.
- If you anticipate needing to send more than one million emails per day, you must open an Amazon Pinpoint quota increase case.

For Amazon Pinpoint to increase your sending quotas, use the following guidelines:

- **Send high-quality content** – Send content that recipients want and expect.
- **Send real production content** – Send your actual production email. This enables Amazon Pinpoint to accurately evaluate your sending patterns, and verify that you are sending high-quality content.
- **Send near your current daily quota** – If your volume stays close to your daily sending quota without exceeding it, Amazon Pinpoint detects this usage pattern and can automatically increase your quota.
- **Have low bounce and complaint rates** – Try to minimize the numbers of bounces and complaints. High numbers of bounces and complaints can adversely affect your sending quotas.

### Important

If you send test emails to your own email addresses, they may adversely affect your bounce and complaint metrics, or appear as low-quality content to our filters. Whenever possible, use the Amazon Simple Email Service (Amazon SES) mailbox simulator to test your system. Emails that are sent to the mailbox simulator do not count toward your sending metrics or your bounce and complaint rates. For more information, see [Testing email sending in Amazon SES](#).

## Requesting a quota increase

To request higher sending quotas for Amazon Pinpoint, open a case in AWS Support Center by using the following instructions.

### To request a sending quota increase

1. Sign in to the AWS Management Console at <https://console.aws.amazon.com/>.
2. On the **Support** menu, choose **Support Center**.
3. On the **Open support cases** tab, choose **Create case**.
4. Choose **Service limit increase**.
5. Under **Case details**, for **Limit type**, choose **Pinpoint Email**.
6. (Optional) Complete the following information:
  - For **Mail Type**, choose the type of email that you send. If multiple values apply, choose the option that applies to the majority of the email that you send.
  - For **Website URL**, enter the URL of your website. Providing this information helps us better understand the type of content that you send.
  - For **Describe, in detail, how you will only send to recipients who have specifically requested your mail**, explain how you ensure that you send email only to recipients who want to receive email from you.
  - For **Describe in detail the process that you will follow when you receive bounce and complaint notifications**, explain how you process bounces and complaints about the email that you send.
  - For **Will you comply with AWS Service Terms and AUP**, choose the option that applies to your use case.
7. Under **Requests**, for **Region**, choose the AWS Region that you use to send email.
8. For **New quota value**, enter the new amount that you are requesting for the quota. Request only the amount that you think you'll need. We can't guarantee that you'll receive the amount that you request. The larger your request, the more justification you need to provide to have your request granted.

### Note

Your request applies only to the AWS Region that you chose at the beginning of this step. To request a quota increase for another AWS Region, choose **Add another request**. Then complete the **Region**, **Quota**, and **New quota value** fields for the additional Region. Repeat this process for each Region that you want to request a quota increase for.

9.
  - For **Region**, choose the AWS Region that your request applies to.
  - For **Limit**, choose one of the following options:
    - To increase the number of messages that you can send per day, choose **Desired Daily Email Sending Quota**.
    - To increase the number of messages you can send per second, choose **Desired Maximum Email Send Rate**.
  - For **New limit value**, enter the new amount that you are requesting for the quota. Request only the amount that you think you'll need. We can't guarantee that you'll receive the amount that you

request. The larger your request, the more justification you need to provide to have your request granted.

**Note**

Your request applies only to the AWS Region that you chose at the beginning of this step. To request a quota increase for another AWS Region, choose **Add another request**. Then complete the **Region**, **Limit**, and **New limit value** fields for the additional Region. Repeat this process for each Region that you want to request a quota increase for.

10. Under **Case description**, for **Use case description**, describe how you send email using Amazon Pinpoint, in as much detail as possible. For example, describe the type of emails that you send and how they fit into your business. The more you indicate that you send high-quality email messages to recipients who want and expect them, the more likely we are to approve your request.
11. Under **Contact options**, for **Preferred contact language**, choose whether you want to receive communications for this case in **English** or **Japanese**.
12. When you finish, choose **Submit**.

The AWS Support team provides an initial response to your request within 24 hours.

In order to prevent our systems from being used to send unsolicited or malicious content, we have to consider each request carefully. If we're able to do so, we'll grant your request within this 24-hour period. However, if we need to obtain additional information from you, it might take longer to resolve your request.

We might not be able to grant your request if your use case doesn't align with our policies.

## Checking the status of your request

After you submit your request, we review your case. To check the status of your request, complete the following steps.

### To check the status of your quota increase request

1. Sign in to the AWS Management Console at <https://console.aws.amazon.com/>.
2. On the **Support** menu, choose **Support Center**.
3. On the **Open support cases** tab, choose **View all cases**.
4. Under **Case history**, choose the sending quota increase request case.
5. Review the messages in the **Correspondence** section. The messages in this section tell you if your request was accepted or rejected. If your request was accepted, the message specifies your daily and per-second sending quotas.

If your account is in the email sandbox and you are granted a sending quota increase, your account is automatically taken out of the sandbox. After your account is out of the sandbox, you can send email to non-verified addresses. However, you must still verify your sending addresses and domains.

Over time, we will gradually increase your sending quotas. If your needs exceed the gradual increase, you can open another request to increase your sending quotas.

## Removing email addresses from the global suppression list

When an Amazon Pinpoint customer sends an email, and that email results in a hard bounce, Amazon Pinpoint adds the destination email address to a suppression list. This suppression list is *global* because it applies equally to all Amazon Pinpoint accounts in all AWS Regions.

When you attempt to send a message to an address that's on the suppression list, Amazon Pinpoint accepts the message, but immediately counts it as a hard bounce, and doesn't attempt to send it.

If an email address is on the global suppression list, but you know that the address is valid, you can complete the procedure in this section to remove the address from the suppression list.

**Note**

This capability isn't available in the Amazon Pinpoint console in the Asia Pacific (Mumbai) and Europe (Frankfurt) AWS Regions. However, because the same suppression list applies to all Regions, you can sign in to the Amazon Pinpoint console in a different Region, and then use the following steps to remove email addresses from the suppression list.

**To remove an address from the suppression list**

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, under **Email**, choose **Suppression list**.
3. Choose **Submit a removal request**.
4. For **Email address to remove**, enter the email address that you want to remove from the suppression list.
5. Complete the verification test, and then choose **Submit**.

When you submit your request, the address is immediately removed from the suppression list in all AWS Regions where Amazon Pinpoint is available. However, the email address can be added to the suppression list again if it produces a hard bounce in the future.

## Managing configuration sets

Configuration sets are groups of rules that you can apply to the emails that you send. When you apply a configuration set to an email, all of the rules in that configuration set are applied to the email. For example, you can configure a configuration set so that emails are only sent using a group of IP addresses (known as an *IP pool*) that you specify.

You can use configuration sets in both Amazon Pinpoint and Amazon Simple Email Service (Amazon SES). Configuration sets rules that you configure in Amazon SES are also applied to email messages that you send using Amazon Pinpoint.

You can view a list of configuration sets for your account in the Amazon Pinpoint console. However, you must use Amazon SES to setup and manage configuration sets. For more information about creating configuration sets, see [Creating configuration sets](#) in the *Amazon Simple Email Service Developer Guide*.

## Viewing a list of configuration sets

**To view a list of configuration sets in the Amazon Pinpoint console**

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, under **Email**, choose **Configuration sets**.

## Applying a configuration set to an email identity

To use configuration sets with Amazon Pinpoint, you have to specify a default configuration set for the email identity (that is, the email address or domain) that you use to send email through Amazon Pinpoint. You can set up default configuration sets in the Amazon SES console.

When you set a default configuration set for an identity, all emails that you send through that identity are sent using that configuration set, unless you specify a different one. Currently, Amazon Pinpoint doesn't allow you to specify a different configuration set, so the only way to use configuration sets is to specify a default configuration set.

### Note

The following procedure assumes that you've already verified an identity. Identities that you verify in Amazon SES are available in Amazon Pinpoint, and vice-versa. For more information, see [Verifying email identities \(p. 20\)](#).

This procedure also assumes that you've

### To specify a default configuration set for an identity

1. Open the Amazon SES console at <https://console.aws.amazon.com/ses/>.
2. In the navigation pane, under **Configuration**, choose **Verified identities**.
3. In the list of identities, choose the identity that you want to specify a default configuration set for.
4. On the **Configuration set** tab, choose **Edit**.
5. Select **Assign a default configuration set**.
6. For **Default configuration set**, choose the configuration set that you want to use for this identity, and then choose **Save changes**.

## Sending email in Amazon Pinpoint

There are several types of email that you can send using Amazon Pinpoint: campaign-based email, journey-based email, and transactional email. *Campaign-based emails* are messages that are sent either one time or on a recurring schedule, and that target customers based on their attributes. *Journey-based emails* are messages that are sent when participants in a journey arrive at an email activity as part of a larger workflow. *Transactional emails* are sent one time only, and are typically sent in response to another action occurring. For example, you can use transactional messages to send an email when a customer chooses the "Forgot my password" link in your app, or to send a confirmation when a customer places an order on your site.

In Amazon Pinpoint, you typically use the web-based management console to send campaign-based emails and journey-based emails, whereas transactional emails are usually sent from applications that use an AWS SDK or call the Amazon Pinpoint API directly.

When you send a campaign-based email, you first create a [segment \(p. 110\)](#). A segment is a group of recipients for the campaign. Next, you create a campaign. In Amazon Pinpoint, a campaign consists of one or more target segments, a message, and a delivery schedule for that message. To learn about creating campaigns, see [Campaigns \(p. 126\)](#).

When you send a journey-based email, you also start by creating a [segment \(p. 110\)](#). A segment is a group of participants in the journey. Next, you create an email template for each message that you want activities in the journey to send. Then, you create the journey. To learn about creating journeys, see [Journeys \(p. 139\)](#).

To send a transactional email, you can use the `SendMessage` operation of the Amazon Pinpoint API. To learn more about using the Amazon Pinpoint API, see the [Amazon Pinpoint API Reference](#). You can also send transactional email by using the [Amazon Pinpoint SMTP interface \(p. 31\)](#).

## Sending email by using the Amazon Pinpoint SMTP interface

The Amazon Pinpoint SMTP interface allows you to send email by using any application or library that can use the SMTP protocol to send email.

For example, you can use common programming libraries, such as the `System.Net.Mail` library in .NET or the `smtpplib` library in Python, to send email using the SMTP interface. This solution is useful in situations where you want to be able to send email from an application, but you don't want to integrate an AWS SDK into your app.

You can also configure email server applications, such as Postfix or Sendmail, to send email through the Amazon Pinpoint SMTP interface. This solution can be useful if you want to use your existing email server, but you also want to use the features of Amazon Pinpoint, such as bounce and complaint event publishing or the analytics charts in the Amazon Pinpoint console.

You might also be able to configure desktop email applications, such as Mozilla Thunderbird, to send email using the Amazon Pinpoint SMTP interface. However, this solution is only useful in certain situations, because most email clients require you to set up an incoming mail server, which Amazon Pinpoint doesn't offer. See the documentation for your email client to determine if it requires you to enter the address of an incoming mail server, also referred to as an *IMAP server*.

## Obtaining SMTP credentials

To send email using the SMTP interface, you need to create a set of SMTP credentials. These credentials are the user name and password that you use to connect to an Amazon Pinpoint SMTP endpoint. You can quickly create these credentials by using the Amazon SES console.

### To create SMTP credentials

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose any project.
3. In the navigation pane, under **Settings**, choose **Email**.
4. On the **Sending methods** tab, choose **Send email by using the SMTP interface**.
5. Under **SMTP credentials**, choose **Generate SMTP credentials**.
6. For **IAM User Name**, enter the user name for the SMTP user, or use the default name. Choose **Create**.
7. Choose **Show User SMTP Security Credentials**. Copy the SMTP Username and SMTP Password and save it on your computer. Alternatively, choose **Download Credentials** to download the user name and password to your computer.

#### Note

This is the only opportunity that you'll have to view these credentials. If you close this page without saving these credentials, you have to use the IAM console to delete the SMTP user, and then repeat steps 1–7 above.

8. When you finish, choose **Close**.

## Connecting to the SMTP interface

To send email using the SMTP interface, you have to connect your application to an SMTP endpoint. You can use the endpoints shown in the following table to send email.

Region name	SMTP endpoint
US East (N. Virginia)	email-smtp.us-east-1.amazonaws.com
US West (Oregon)	email-smtp.us-west-2.amazonaws.com
Asia Pacific (Mumbai)	email-smtp.ap-south-1.amazonaws.com
Asia Pacific (Sydney)	email-smtp.ap-southeast-2.amazonaws.com
Europe (Frankfurt)	email-smtp.eu-central-1.amazonaws.com
Europe (Ireland)	email-smtp.eu-west-1.amazonaws.com
AWS GovCloud (US)	email-smtp.us-gov-west-1.amazonaws.com

The Amazon Pinpoint SMTP endpoint requires all connections to be encrypted using Transport Layer Security (TLS). Amazon Pinpoint supports two mechanisms for establishing a TLS-encrypted connection: STARTTLS and TLS Wrapper. Check the documentation for your software to determine whether it supports STARTTLS, TLS Wrapper, or both.

If you use STARTTLS authentication, you can connect to the Amazon Pinpoint SMTP interface on port 25, 587, or 2587. If you use TLS Wrapper authentication, you can connect to the Amazon Pinpoint SMTP interface on port 465 or 2465.

When you connect your application or library to the SMTP interface, use the SMTP user name and password that you created in [Obtaining SMTP credentials \(p. 32\)](#).

## Using dedicated IP addresses with Amazon Pinpoint

When you create a new Amazon Pinpoint account, your emails are sent from IP addresses that are shared with other Amazon Pinpoint users. For [an additional monthly charge](#), you can lease dedicated IP addresses that are reserved for your exclusive use. Both of these options offer unique benefits and drawbacks, which are summarized in the following table.

Benefit	Shared IP addresses	Dedicated IP addresses
<a href="#">Ready to use with no additional setup (p. 34)</a>	Yes	No
<a href="#">Reputation managed by AWS (p. 34)</a>	Yes	No
<a href="#">Good for customers with continuous, predictable sending patterns (p. 34)</a>	Yes	Yes
<a href="#">Good for customers with less predictable sending patterns (p. 34)</a>	Yes	No
<a href="#">Good for high-volume senders (p. 34)</a>	Yes	Yes
<a href="#">Good for low-volume senders (p. 34)</a>	Yes	No
<a href="#">Additional monthly costs (p. 34)</a>	No	Yes
<a href="#">Complete control over sender reputation (p. 35)</a>	No	Yes
<a href="#">Isolates reputation by email type, recipient, or other factors (p. 35)</a>	No	Yes
<a href="#">Provides known IP addresses that never change (p. 35)</a>	No	Yes

### Important

If you don't plan to send large volumes of email on a regular and predictable basis, we recommend that you use shared IP addresses. If you use dedicated IP addresses in use cases that

involve sending low volumes of mail, or if your sending patterns are highly irregular, you might experience deliverability issues.

## Ease of setup

If you choose to use shared IP addresses, then you don't need to perform any additional configuration. Your Amazon Pinpoint account is ready to send email as soon as you verify an email address and move out of the sandbox.

If you choose to lease dedicated IP addresses, you have to determine how many dedicated IP addresses you need, submit a request, and optionally [create dedicated IP pools \(p. 39\)](#).

## Reputation managed by AWS

IP address reputations are based largely on historical sending patterns and volume. An IP address that sends consistent volumes of email over a long period of time usually has a good reputation.

Shared IP addresses are used by several Amazon Pinpoint customers. Together, these customers send a large volume of email. AWS carefully manages this outbound traffic in order to maximize the reputations of the shared IP addresses.

If you use dedicated IP addresses, it's your responsibility to maintain your sender reputation by sending consistent and predictable volumes of email.

## Predictability of sending patterns

An IP address with a consistent history of sending email has a better reputation than one that suddenly starts sending out large volumes of email with no prior sending history.

If your email sending patterns are irregular—that is, they don't follow a predictable pattern—then shared IP addresses are probably a better fit your needs. When you use shared IP addresses, you can increase or decrease your email-sending patterns as the situation demands.

If you use dedicated IP addresses, you have to warm up those addresses by sending an amount of email that gradually increases every day. The process of warming up new IP addresses is described in [Warming up dedicated IP addresses \(p. 38\)](#). After your dedicated IP addresses are warmed up, you must then maintain a consistent sending pattern.

## Volume of outbound email

Dedicated IP addresses are best suited for customers who send large volumes of email. Most internet service providers (ISPs) only track the reputation of a given IP address if they receive a significant volume of mail from that address. For each ISP with which you want to cultivate a reputation, you should send several hundred emails within a 24-hour period at least once per month.

In some cases, you may be able to use dedicated IP addresses if you don't send large volumes of email. For example, dedicated IP addresses may work well if you send to a small, well-defined group of recipients whose mail servers accept or reject email using a list of specific IP addresses, rather than IP address reputation.

## Additional costs

The use of shared IP addresses is included in the standard Amazon Pinpoint pricing. Leasing dedicated IP addresses incurs an extra monthly cost beyond the standard costs that are associated with sending email using Amazon Pinpoint. Each dedicated IP address incurs a separate monthly charge. For pricing information, see the [Amazon Pinpoint pricing page](#).



## Control over sender reputation

When you use dedicated IP addresses, your Amazon Pinpoint account is the only one that is able to send email from those addresses. For this reason, the sender reputation of the dedicated IP addresses that you lease is determined by your email-sending practices.

## Ability to isolate sender reputation

By using dedicated IP addresses, you can isolate your sender reputation for different components of your email program. If you lease more than one dedicated IP address for use with Amazon Pinpoint, you can create *dedicated IP pools*—groups of dedicated IP addresses that can be used for sending specific types of email. For example, you can create one pool of dedicated IP addresses for sending marketing email, and another for sending transactional email. To learn more, see [Creating dedicated IP pools \(p. 39\)](#).

## Known, unchanging IP addresses

When you use dedicated IP addresses, you can find the values of the addresses that send your mail in the **Dedicated IPs** page of the Amazon Pinpoint console. Dedicated IP addresses don't change.

With shared IP addresses, you don't know the IP addresses that Amazon Pinpoint uses to send your mail, and they can change at any time.

## Requesting and relinquishing dedicated IP addresses

This section describes how to request and relinquish dedicated IP addresses by submitting a request in the [AWS Support Center](#). We charge your account an additional monthly fee for each dedicated IP address that you lease for use with Amazon Pinpoint. For more information about the costs associated with dedicated IP addresses, see [Amazon Pinpoint pricing](#).

### Best practices for working with dedicated IP addresses

Although there's no minimum commitment, we recommend that you lease more than one dedicated IP address in each AWS Region where you use Amazon Pinpoint. Each AWS Region consists of multiple physical locations, called *Availability Zones*. When you lease more than one dedicated IP address, we distribute those addresses as evenly as possible across the Availability Zones in the AWS Region that you specified in your request. Distributing your dedicated IP addresses across Availability Zones in this way increases the availability and redundancy of your dedicated IP addresses.

For a list of all the Regions where Amazon Pinpoint is currently available, see [Amazon Pinpoint endpoints and quotas](#) in the *Amazon Web Services General Reference*. To learn more about the number of Availability Zones that are available in each Region, see [AWS global infrastructure](#).

### Requesting dedicated IP addresses

The following steps show how to request dedicated IP addresses by creating a case in the AWS Support Center. You can use this process to request as many dedicated IP addresses as you need.

#### To request dedicated IP addresses

1. Sign in to the AWS Management Console at <https://console.aws.amazon.com/>.
2. On the **Support** menu, choose **Support Center**.
3. On the **My support cases** tab, choose **Create case**.
4. Under **Create case**, choose **Service quota increase**.
5. Under **Case classification**, complete the following sections:
  - For **Quota type**, choose **Pinpoint Email**.

- For **Mail Type**, choose the type of email that you plan to send using your dedicated IP addresses. If multiple values apply, choose the option that applies to the majority of the email that you plan to send.
  - For **Website URL**, enter the URL of your website. Providing this information helps us better understand the type of content that you plan to send.
  - For **Describe in detail how you will only send to recipients who have specifically requested your mail**, explain how you will ensure that you use your dedicated IP addresses to send email only to recipients who want to receive email from you.
  - For **Describe in detail the process that you will follow when you receive bounce and complaint notifications**, explain how you will process bounces and complaints about the email that you plan to send using your dedicated IP addresses.
  - For **Will you comply with AWS Service Terms and AUP**, choose the option that applies to your use case.
6. Under **Requests**, complete the following sections:
- For **Region**, choose the AWS Region that your request applies to.
  - For **Quota**, choose **Desired Maximum Email Send Rate**.
  - For **New quota value**, enter the maximum number of messages that you need to be able to send per second. We use this value to calculate the number of dedicated IP addresses that you need to implement for your use case. For this reason, the estimate that you provide should be as accurate as possible.

**Note**

A single dedicated IP address can be used only in the AWS Region that you choose in this step. If you want to request dedicated IP addresses for use in another AWS Region, choose **Add another request**. Then complete the **Region**, **Quota**, and **New quota value** fields for the additional Region. Repeat this process for each Region that you want to use dedicated IP addresses in.

7. Under **Case description**, for **Use case description**, state that you want to request dedicated IP addresses. If you want to request a specific number of dedicated IP addresses, mention that as well. If you don't specify a number of dedicated IP addresses, we provide the number of dedicated IP addresses that are necessary to meet the sending rate requirement that you specified in the previous step.

Next, describe how you plan to use dedicated IP addresses to send email using Amazon Pinpoint. Include information about why you want to use dedicated IP addresses instead of shared IP addresses. This information helps us better understand your use case.

8. Under **Contact options**, for **Preferred contact language**, choose whether you want to receive communications for this case in **English** or **Japanese**.
9. When you finish, choose **Submit**.

After you submit the form, we evaluate your request. If we grant your request, we reply to your case in Support Center to confirm that your new dedicated IP addresses are associated with your account.

## Relinquishing dedicated IP addresses

If you no longer need dedicated IP addresses that are associated with your account, you can relinquish them by completing the following steps.

**Important**

The process of relinquishing a dedicated IP address can't be reversed. If you relinquish a dedicated IP address in the middle of a month, we prorate the monthly dedicated IP usage fee, based on the number of days that have elapsed in the current month.

### To relinquish dedicated IP addresses

1. Sign in to the AWS Management Console at <https://console.aws.amazon.com/>.
2. On the **Support** menu, choose **Support Center**.
3. On the **My support cases** tab, choose **Create case**.
4. Under **Create case**, choose **Service quota increase**.
5. Under **Case classification**, complete the following sections:
  - For **Quota type**, choose **Pinpoint Email**.
  - For **Mail Type**, choose any value.
  - For **Will you comply with the AWS Service Terms and AUP**, choose the option that applies to your use case.
6. Under **Requests**, complete the following sections:
  - For **Region**, choose the AWS Region that your request applies to.

**Note**  
Dedicated IP addresses are unique to each AWS Region, so it's important to select the Region that the dedicated IP address is associated with.
  - For **Quota**, choose **Desired Maximum Email Send Rate**.
  - For **New quota value**, enter any number. The number that you enter here isn't important—you specify the number of dedicated IP addresses that you want to relinquish in the next step.

**Note**  
A single dedicated IP address can be used in only a single AWS Region. If you want to relinquish dedicated IP addresses that you used in other AWS Regions, choose **Add another request**. Then complete the **Region**, **Quota**, and **New quota value** fields for the additional Region. Repeat this process for each dedicated IP address that you want to relinquish.
7. Under **Case Description**, for **Use case description**, indicate that you want to relinquish existing dedicated IP addresses. If you currently lease more than one dedicated IP address, include the number of dedicated IP addresses that you want to relinquish.
8. Under **Contact options**, for **Preferred contact language**, choose whether you want to receive communications for this case in **English** or **Japanese**.
9. When you finish, choose **Submit**.

After we receive your request, we send you a message that asks you to confirm that you want to relinquish your dedicated IP addresses. After you confirm that you want to relinquish the IP addresses, we remove them from your account.

## Viewing a list of dedicated IP addresses that are associated with your account

You can view a list of dedicated IP addresses that are associated with your Amazon Pinpoint account in the current AWS Region. These IP addresses are available for use with both Amazon Pinpoint and Amazon Simple Email Service (Amazon SES).

You can also use the Amazon Pinpoint console to quickly determine if any of your dedicated IP addresses have been listed on Domain Name System-based Blackhole Lists (*DNSBLs*). DNSBLs are also called *Realtime Blackhole Lists (RBLs)*, *deny lists*, *blocklists*, or *blacklists*. DNSBLs are lists of IP addresses that are suspected of sending spam, malicious content, or other unsolicited messages. Different DNSBLs have different impacts on email deliverability. The lists offered by Spamhaus have the most serious impact on email delivery.

## To view a list of dedicated IPs in your account

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, under **Email**, choose **Dedicated IPs**.

The list of IP addresses also includes the following information:

### Listing date

If the IP address is currently listed on a DNSBL, this field shows the date when it was most recently added.

### Reputation

A description of the health of the IP address.

### Blacklist name

If the IP address is currently listed on a DNSBL, this field shows the name of the list that it's listed on.

### Blacklist reason

If the IP address is currently listed on a DNSBL, this field displays the reason that the address was added to the list. This text is provided by the list providers themselves. Some providers offer detailed explanations, while others offer generic information.

## Warming up dedicated IP addresses

When determining whether to accept or reject a message, email service providers consider the reputation of the IP address that sent it. One of the factors that contributes to the reputation of an IP address is whether the address has a history of sending high-quality email. Email providers are less likely to accept mail from new IP addresses that have little or no history. Email sent from IP addresses with little or no history might end up in recipients' junk mail folders, or might be blocked altogether.

When you start sending email from a new IP address, you should gradually increase the amount of email you send from that address before using it to its full capacity. This process is called *warming up* the IP address.

The amount of time that's required to warm up an IP address varies between email providers. For some email providers, you can establish a positive reputation in around two weeks, while for others it might take up to six weeks. When warming up a new IP address, you should send emails to your most active users to ensure that your complaint rate remains low. You should also carefully examine your bounce messages and send less email if you receive a high number of blocking or throttling notifications.

## Automatically warm up dedicated IP addresses

When you request dedicated IP addresses, Amazon Pinpoint automatically warms them up to improve the delivery of emails you send. The automatic IP address warm-up feature is enabled by default.

The steps that happen during the automatic warm-up process depend on whether you already have dedicated IP addresses:

- When you request dedicated IP addresses for the first time, Amazon Pinpoint distributes your email sending between your dedicated IP addresses and a set of addresses that are shared with other Amazon Pinpoint customers. Amazon Pinpoint gradually increases the number of messages sent from your dedicated IP addresses over time.
- If you already have dedicated IP addresses, Amazon Pinpoint distributes your email sending between your existing dedicated IPs (which are already warmed up) and your new dedicated IPs (which aren't

warmed up). Amazon Pinpoint gradually increases the number of messages that are sent from your new dedicated IP addresses over time.

After you warm up a dedicated IP address, you should send around 1,000 emails every day to each email provider that you want to maintain a positive reputation with. You should perform this task on each dedicated IP address that you use with Amazon Pinpoint.

You should avoid sending large volumes of email immediately after the warm-up process is complete. Instead, slowly increase the number of emails you send until you reach your target volume. If an email provider sees a large, sudden increase in the number of emails being sent from an IP address, they might block or throttle the delivery of messages from that address.

## Creating dedicated IP pools

If you purchased several dedicated IP addresses to use with Amazon Pinpoint, you can create groups of those addresses. These groups are called *dedicated IP pools*. A common scenario is to create one pool of dedicated IP addresses for sending marketing communications, and another for sending transactional emails. Your sender reputation for transactional emails is then isolated from that of your marketing emails. In this scenario, if a marketing campaign generates a large number of complaints, the delivery of your transactional emails isn't impacted.

Dedicated IP pools are available for use in both Amazon Pinpoint and Amazon Simple Email Service (Amazon SES). When you create a dedicated IP pool, you have to choose a configuration set to associate it with. Currently, you can only manage configuration sets and IP pools using Amazon SES. For more information about setting up configuration sets, see [Creating configuration sets](#) in the *Amazon Simple Email Service Developer Guide*. For more information about setting up dedicated IP pools, see [Creating dedicated IP pools](#) in the *Amazon Simple Email Service Developer Guide*.

In order to use configuration sets (and therefore, dedicated IP pools) with Amazon Pinpoint, you must configure the configuration set as the default configuration set for the email identities that you use with Amazon Pinpoint. For more information, see [Applying a configuration set to an email identity](#) (p. 30).

## The Amazon Pinpoint deliverability dashboard

The Deliverability dashboard helps you identify and address issues that could impact the delivery of the emails that you send. By addressing the issues that the Deliverability dashboard identifies, you can increase the chances that the emails you send from Amazon Pinpoint and Amazon Simple Email Service (Amazon SES) arrive in your customers' inboxes, instead of their junk mail folders.

### Important

There are additional fees associated with using the Deliverability dashboard. To learn more about these fees, see the [Amazon Pinpoint pricing page](#).

You can access the Deliverability dashboard by using the Amazon Pinpoint console.

### To view the Deliverability dashboard

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, choose **Deliverability dashboard**.

**The Deliverability dashboard is made up of six parts, which are described in the following sections:**

- [Domain reputation](#) (p. 40)
- [IP reputation](#) (p. 43)
- [Bounce and complaint rates](#) (p. 45)

- [Campaign delivery metrics](#) (p. 48)
- [Inbox placement tests](#) (p. 49)
- [Dashboard settings](#) (p. 51)

## Domain reputation

The **Domain reputation** page contains information about the domains that you use to send email, including their engagement rates, inbox placement rates, and deny list activities.

Choose a domain from the **Domain** menu to see information about that domain, as shown in the following image.

The screenshot shows a user interface for selecting a domain. At the top, the heading "Domain" is followed by the instruction "Choose a domain to view inbox placement, engagement, and reputation data." Below this is a dropdown menu with the placeholder text "Choose a domain" and a downward arrow. To the right of the dropdown is a button labeled "Manage domains". Below the dropdown is a search bar with a magnifying glass icon. Under the search bar, there are two sections: "Subscribed domains" which lists "example.com", and "All other domains".

## Summary

This section contains information about the percentage of emails from a specific domain that arrived in your customers' inboxes. It also provides information about the percentage of emails that your customers engaged with by opening them or by clicking links in them. Finally, it shows the number of deny lists that the IP addresses associated with the domain are on.

### Note

The information in this section contains general guidance, as opposed to exact metrics. If you need precise metrics related to the delivery of your mail and engagement with it, you should set up [event streams](#) (p. 300).

To view data in this section, choose a subscribed domain, as shown in the following image. When you choose a domain, data appears in the **Summary**, **Inbox placement by email provider**, and **Deny list activities** sections.

When you choose a domain and a date range, the **Deliverability overview** section shows the following information:

- **Engagement rate** – The percentage of email sent from the selected domain that recipients opened or clicked links in. When determining whether to deliver your email to recipient's inboxes, many email providers (especially larger ones) consider how often recipients engaged with email sent from your domain in the past month or two. For this reason, you should try to maintain an engagement rate of at least 25%.
- **Inbox placement rate** – The percentage of email sent from the selected domain that arrived in recipients' inboxes. An inbox placement rate of around 80% is considered average.
- **Deny list activities** – The number of deny lists that IP addresses associated with the domain appear on. To learn more about deny lists, see [Deny list activities](#) (p. 42).

## Alarms

On the **Alarms** tab, you can create alarms that send you notifications for any of the metrics in the **Summary** section.

### To create an alarm

1. On the **Alarms** tab, choose **Create alarm**.
2. On the **Create alarm** page, do the following:
  - a. For **Alarm name**, enter a name that helps you easily identify the alarm.
  - b. For **Send notification when the**, choose one of the following options:
    - **Inbox placement rate** – When you choose this option, the alarm considers the inbox placement rate across all email providers.
    - **Inbox placement rate** – When you choose this option, the alarm considers the inbox placement rate for specific email providers, such as Gmail or Yahoo. When you choose this option, you also have to choose the email provider that the alarm applies to.
  - c. Configure the values that cause the alarm to be triggered. For example, if you want to be notified when the inbox placement rate for your account is 75% or less, choose **<=**. Then enter a value of **75**, as shown in the following image.

Send a notification when the

Inbox placement rate ▼

is **<=** **75** percent

- d. Specify the amount of time that has to elapse before the alarm is triggered. For example, you can configure the alarm so that it only sends a notification when the inbox placement rate goes below a certain rate and stays below that rate for more than 2 days. In this example, next to **for at least**, enter a value of **2**. Then, next to **consecutive period(s) of**, choose **1 day**, as shown in the following image.

for at least **2** consecutive period(s) of **1 day** ▼

- e. Under **Notification method**, choose one of the following options:
  - **Use an existing SNS topic** – Choose this option if you've already created an Amazon SNS topic and subscribed endpoints to it.
  - **Create a new topic** – Choose this option if you haven't yet created an Amazon SNS topic, or if you want to create a new topic.

#### Note

When you create a new topic, you have to subscribe one or more endpoints to it. For more information, see [Subscribing an endpoint to a topic](#) in the *Amazon Simple Notification Service Developer Guide*.

- f. (Optional) You can choose or create more than one Amazon SNS topic. To add a topic, choose **Notify an additional SNS topic**.
- g. When you finish, choose **Create**.

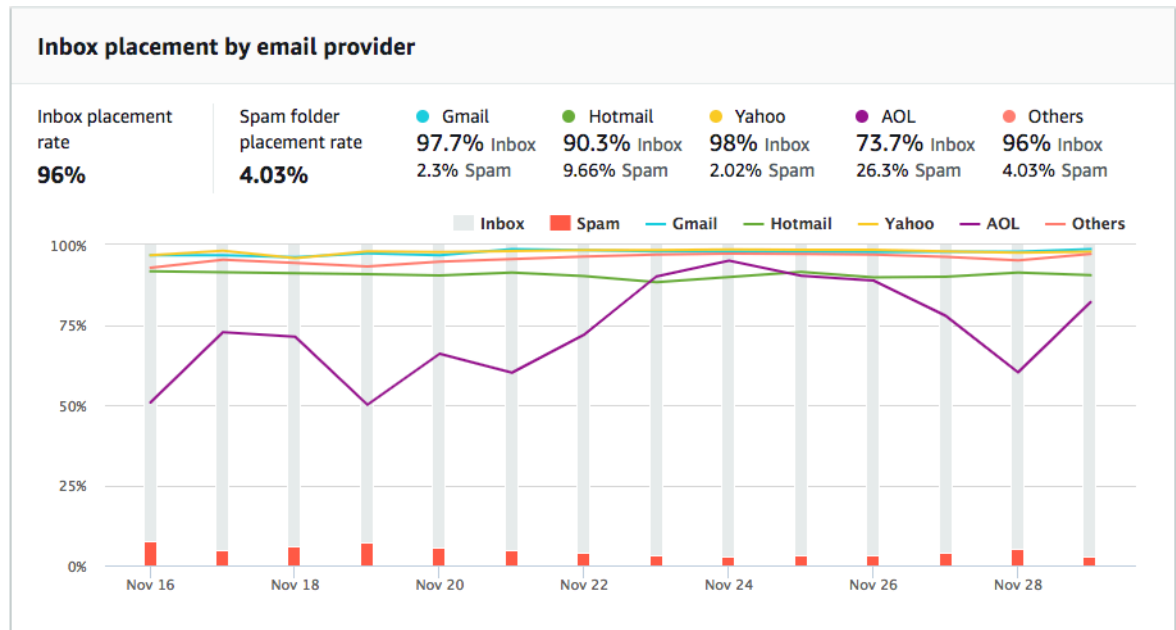
## Inbox placement by email provider

This section shows you how different email providers handled the email that was sent from your domain during the selected time period. The email providers analyzed in this section include Gmail, Hotmail, Yahoo, and AOL. This section also contains a category called **Others**. This category includes internet service providers and regional providers. When combined, the delivery metrics in this section represent a vast majority of all consumer email sent worldwide.

This section includes average rates for inbox placement and spam folder placement for each email provider. It also includes a chart, shown in the following image, that displays the inbox placement rate for each provider for every day in the analysis period. You can use the information in this chart to help identify campaigns that resulted in poor delivery rates.

### Note

You can use the date filter to choose a date range that contains up to 30 days.



## Deny list activities

This section helps you to quickly identify deny list events that could impact the delivery of emails sent from your domain. A *deny list* is a list of IP addresses that are suspected of sending unsolicited or malicious email. Different deny list providers have different criteria for adding IP addresses to their lists, and for removing ("delisting") IP addresses from their lists. Additionally, each email provider uses a different deny list or set of deny lists. Also, each provider weighs deny listing events differently. If one of your dedicated IP addresses is listed in this section, it doesn't necessarily mean that there will be any impact on the delivery of your email.

If one of your dedicated IP addresses appears in this section, you should contact the organization that manages the deny list, and request that your IP address be removed. The following table includes a list of deny list operators that are considered in this section, and includes links to their procedures for delisting an IP address.

Deny list operator	Link to delisting procedures
Spamhaus	<a href="#">Spamhaus website</a>
Barracuda	<a href="#">Barracuda website</a>



Deny list operator	Link to delisting procedures
Cloudmark Sender Intelligence (CSI)	<a href="#">Cloudmark sender intelligence website</a>
Composite Blocking List (CBL)	<a href="#">Composite blocking list website</a>
LashBack	<a href="#">LashBack website</a>
Passive Spam Block List (PSBL)	<a href="#">Passive spam block list website</a>
SORBS	<a href="#">SORBS website</a>
SpamCop	<a href="#">SpamCop website</a>

## Domain authentication

This section contains information about the various methods that you can use to authenticate your domains. To configure DKIM or SPF authentication for a domain, you need to add specific records to the DNS configuration for the domain. To view these records, choose **View the DNS record**.

The procedures for updating the DNS records for a domain vary depending on which DNS or web hosting provider you use. See your provider's documentation for more information about adding DNS records.

## IP reputation

The **IP address reputation** page contains information about the deny list activities for the dedicated IP addresses that you use to send email by using Amazon Pinpoint and Amazon Simple Email Service (Amazon SES).

### Overview

The **Overview** tab lists every dedicated IP address that's associated with your Amazon Pinpoint and Amazon SES accounts, as shown in the following image.

Dedicated IP addresses (2)

Request more dedicated IP addresses

The following section contains information about the dedicated IP addresses that are associated with your Amazon Pinpoint account. [Info](#)

Q Search

< 1 >

IP address	▲	Listing date	▼	Reputation	▼	Blacklist name	▼	Blacklist reason
198.51.100.42		-		High		-		-
198.51.100.43		-		High		-		-

If the value in the **Reputation** column is *High*, then there are no deny list activities that impact the reputation of that IP address. If the IP address does appear on a deny list, the name of that deny list is shown in the **Blacklist name** column.

If one of your dedicated IP addresses appears in this section, you should contact the organization that manages the deny list, and request that your IP address be removed. The following table includes a list of deny list operators that are considered in this section, and includes links to their procedures for delisting an IP address.

Deny list operator	Link to delisting procedures
Spamhaus	<a href="#">Spamhaus website</a>

Deny list operator	Link to delisting procedures
Barracuda	<a href="#">Barracuda website</a>
Invaluement	<a href="#">Invaluement website</a>
LashBack	<a href="#">LashBack website</a>
Passive Spam Block List (PSBL)	<a href="#">Passive spam block list website</a>
SORBS	<a href="#">SORBS website</a>

## Alarms

On the **Alarms** tab, you can create alarms that send you notifications when your dedicated IPs are added to major deny lists.

### To create an alarm

1. On the **Alarms** tab, choose **Create alarm**.
2. On the **Create alarm** page, do the following:
  - a. For **Alarm name**, enter a name that helps you easily identify the alarm.
  - b. Configure the values that cause the alarm to be triggered. For example, if you want to be notified when the deny listed IP rate for your account is 5% or greater, choose **>=**. Then enter a value of **5**, as shown in the following image.

Send a notification when the

Blacklisted IP rate ▼

is **>=** **5** percent

- c. Specify the amount of time that has to elapse before the alarm is triggered. For example, you can configure the alarm so that it only sends a notification when the deny listed IP rate exceeds a certain rate and stays at that rate for more than 2 hours. In this example, next to **for at least**, enter a value of **2**. Then, next to **consecutive period(s) of**, choose **1 hour**, as shown in the following image.

for at least **2** consecutive period(s) of **1 hour** ▼

- d. Under **Notification method**, choose one of the following options:
  - **Use an existing SNS topic** – Choose this option if you've already created an Amazon SNS topic and subscribed endpoints to it.
  - **Create a new topic** – Choose this option if you haven't yet created an Amazon SNS topic, or if you want to create a new topic.

#### Note

When you create a new topic, you have to subscribe one or more endpoints to it. For more information, see [Subscribing an endpoint to a topic](#) in the *Amazon Simple Notification Service Developer Guide*.

- e. (Optional) You can choose or create more than one Amazon SNS topic. To add a topic, choose **Notify an additional SNS topic**.
- f. When you finish, choose **Create**.

## Bounce and complaint rates

On the **Bounce and complaint rates** page, you can find important metrics related to the bounce and complaint rates for your combined Amazon Pinpoint and Amazon Simple Email Service (Amazon SES) account.

A *bounce* occurs when an email that you send can't be delivered because of a permanent issue. For example, a bounce might occur if the recipient's address doesn't exist, or the recipient's email provider is blocking email from your domain or IP address. Email providers consider a high bounce rate to be a negative sign. This is because it indicates that you're sending email to people who haven't explicitly opted to receive messages from you. A high bounce rate could have a negative impact on the delivery of your emails.

A *complaint* occurs when a customer receives an email from you and reports it to their email provider as an unwanted email (for example, by using the *Report Spam* feature in their email client). Email providers consider complaints to be a serious sign that your domain is sending unsolicited email. For this reason, a high complaint rate can have a very negative impact on the delivery of your email.

High bounce and complaint rates often indicate that a sender is sending unsolicited email to their recipients. For this reason, email providers carefully consider your bounce and complaint rates when they determine whether to send your email to the inbox or to the junk mail folder.

You can use the **Bounce and complaint rates** page to keep track of these account-wide metrics. On this page, you can also create alarms that notify you when your bounce or complaint rates reach certain thresholds.

### Overview

The **Overview** tab contains information about the bounce and complaint rates for account.

#### Note

This page shows bounce and complaint metrics for your entire AWS account in the current AWS Region. If you use both Amazon Pinpoint and Amazon SES to send email, this page shows the combined bounce and complaint metrics for both services.

### Summary

This section shows the status of your account. The following is a list of possible values:

- **Healthy** – There are no issues currently impacting your account.
- **Under review** – Your account is under review. If the issues that caused us to place your account under review aren't resolved by the end of the review period, we might pause your account's ability to send email.
- **Pending end of review decision** – Your account is under review. Because of the nature of the issues that caused us to place your account under review, we need to perform a manual review of your account before we take any further action.
- **Sending paused** – We've paused your account's ability to send email. While your account's ability to send email is paused, you aren't able to send email using Amazon Pinpoint or Amazon SES. You can request that we review this decision.
- **Pending sending pause** – Your account is under review. The issues that caused us to place your account under review haven't been resolved. In this situation, we typically pause your account's ability to send email. However, because of the nature of your account, we need to review your account before any further action is taken.

The number that's shown under **Emails sent** is the number of emails that we considered in making this determination. The number under **Sent over period** is the period of time during which you sent those emails.

To learn more about each status value and how we work with you to address issues that impact your account, see the [sending review process FAQs](#) in the *Amazon Simple Email Service Developer Guide*.

### Bounce rate

This section shows the current bounce rate for your account. The bounce rate for your account should remain below 5%. If the bounce rate for your account exceeds 10%, we might temporarily pause your account's ability to send email.

This section contains the following information:

- **Eligible emails sent** – The number of emails that were considered in calculating the bounce rate.
- **Sent over period** – The time period that we considered to calculate the bounce rate.
- **Bounce rate** – The percentage of emails you sent during the analysis period that bounced.
- **Overall status** – Indicates the health of the metric. The status could be one of the following:
  - **Healthy** – The bounce rate for your account is within normal levels.
  - **Almost healed** – Your account was placed under review because the bounce rate was too high. Since the review period began, the bounce rate has stayed below the maximum rate. If the bounce rate remains below the maximum rate, the status of this metric changes to **Healthy** at the end of the review period.
  - **Under review** – Your account was placed under review because the bounce rate was too high. Since your account was placed under review, the bounce rate hasn't improved. If the issue that caused the bounce rate to exceed 5% isn't resolved by the end of the review period, we might pause your account's ability to send email.
  - **Sending pause** – Your account's ability to send email was paused because the bounce rate was too high. While your account's ability to send email is paused, you can't send email. You can request that we review this decision.
  - **Pending sending pause** – The metric caused us to place your account under review. The issues that caused this review period haven't been resolved. These issues might cause us to pause your account's ability to send email. A member of our team has to review your account before we take any further action.

To learn more about each status value and how we work with you to address issues that impact your account, see the [sending review process FAQs](#) in the *Amazon Simple Email Service Developer Guide*.

### Complaint rate

This section shows the current complaint rate for your account. The complaint rate for your account should remain below 0.1%. If the complaint rate for your account exceeds 0.1%, we might temporarily pause your account's ability to send email.

This section contains the following information:

- **Eligible emails sent** – The number of emails that were considered in calculating the complaint rate.
- **Sent over period** – The time period that we considered to calculate the complaint rate.
- **Complaint rate** – The percentage of emails you sent during the analysis period that resulted in complaints.
- **Overall status** – Indicates the health of the metric. The status could be one of the following:
  - **Healthy** – The complaint rate for your account is within normal levels.
  - **Almost healed** – Your account was placed under review because the complaint rate was too high. Since the review period began, the complaint rate has stayed below the maximum rate. If the

complaint rate remains below the maximum rate, the status of this metric changes to **Healthy** at the end of the review period.

- **Under review** – Your account was placed under review because the complaint rate was too high. Since your account was placed under review, the complaint rate hasn't improved. If the issue that caused the complaint rate to exceed 0.1% isn't resolved by the end of the review period, we might pause your account's ability to send email.
- **Sending pause** – Your account's ability to send email was paused because the complaint rate was too high. While your account's ability to send email is paused, you can't send email. You can request that we review this decision.
- **Pending sending pause** – Your account was placed under review because the complaint rate was too high. The issues that caused this review period haven't been resolved. These issues might cause us to pause your account's ability to send email. A member of our team has to review your account before we take any further action.

To learn more about each status value and how we work with you to address issues that impact your account, see the [sending review process FAQs](#) in the *Amazon Simple Email Service Developer Guide*.

## Alarms

On the **Alarms** tab, you can create alarms that send you notifications when the bounce or complaint rates for your account exceed certain levels.

### To create an alarm

1. On the **Alarms** tab, choose **Create alarm**.
2. On the **Create alarm** page, do the following:
  - a. For **Alarm name**, enter a name that helps you easily identify the alarm.
  - b. For **Send a notification when the**, choose one of the following options:
    - **Bounce rate**
    - **Complaint rate**
  - c. Configure the values that cause the alarm to be triggered. For example, if you want to be notified when the bounce rate for your account is 5% or greater, choose **>=**. Then enter a value of **5**, as shown in the following image.

Send a notification when the

Bounce rate

is **>=** **5** percent

- d. Specify the amount of time that has to elapse before the alarm is triggered. For example, you can configure the alarm so that it only sends a notification when the bounce rate exceeds a certain rate and stays at that rate for more than 2 hours. In this example, next to **for at least**, enter a value of **2**. Then, next to **consecutive period(s) of**, choose **1 hour**, as shown in the following image.

for at least **2** consecutive period(s) of **1 hour**

- e. Under **Notification method**, choose one of the following options:
  - **Use an existing SNS topic** – Choose this option if you've already created an Amazon SNS topic and subscribed endpoints to it.

- **Create a new topic** – Choose this option if you haven't yet created an Amazon SNS topic, or you want to create a new topic.

**Note**

When you create a new topic, you have to subscribe one or more endpoints to it. For more information, see [Subscribing an Endpoint to a Topic](#) in the *Amazon Simple Notification Service Developer Guide*.

- (Optional) You can choose or create more than one Amazon SNS topic. To add a topic, choose **Notify an additional SNS topic**.
- When you finish, choose **Create**.

## Campaign delivery metrics

The **Campaign delivery metrics** section contains information about inbox placement rates for the email that you sent from your domains. However, unlike the [Domain reputation \(p. 40\)](#) page, the **Campaign delivery metrics** page contains information about specific email campaigns, as opposed to information for entire domains.

When you choose a domain and a date range, you see a table that contains the following information:

- **Preview** – A small image that shows the content of the email. Pause on the image to see a larger preview.
- **Last send date** – The date and time when the message was last sent.
- **Subject** – The subject line of the email.
- **Sender address** – The sender ("From") address for the message.
- **ESP** – The email provider (such as Gmail or Yahoo) that the metrics apply to.
- **Inbox rate** – The percentage of emails sent from the campaign that arrived in recipients' inboxes (as opposed to their junk mail folders).
- **Open rate** – The percentage of emails sent from the campaign that were opened by their recipients.

When you choose a campaign in this table, you see a details page for the campaign. Campaign details pages contain two sections: **Details** and **Sending IP addresses**.

### Details

This section contains the following information about the campaign:

- **Latest sent date** – The date and time when the message was last sent.
- **First sent date** – The date and time when the message was first sent.
- **Subject** – The subject line of the email.
- **Sender address** – The sender ("From") address for the message.
- **Sender domain** – The domain that the message was sent from.
- **ESP** – The email provider (such as Gmail or Yahoo) that the metrics apply to.
- **Estimated volume** – The approximate number of recipients that were sent this campaign.
- **Inbox placement** – The percentage of emails sent from the campaign that arrived in recipients' inboxes (as opposed to their junk mail folders).
- **Spam placement** – The percentage of emails sent from the campaign that arrived in recipients' junk mail folders.
- **Read** – The percentage of emails that were opened by their recipients.
- **Read and deleted** – The percentage of emails that were opened by their recipients and then deleted.
- **Deleted** – The percentage of emails that were deleted by their recipients without being read.

The campaign details page also includes a larger preview of body of the email. Amazon Pinpoint automatically removes identifying information from this preview image.

## Sending IP addresses

This section lists all the IP addresses that Amazon Pinpoint and Amazon SES used when sending the selected message to your recipients.

## Inbox placement tests

On the **Inbox placement tests** page of the Deliverability dashboard, you can perform tests that can help you predict how specific messages are handled by over 95 major email providers around the world. When you perform an inbox placement test, you provide a sample message that contains the content that you plan to send to your customers. Amazon Pinpoint then sends that message to special email addresses on several major email domains. After about 24 hours, the test is complete, and you can view the results.

### Important

When you perform an inbox placement test, we send your message to a third party for delivery testing and analysis. We impose our standard security requirements on this third party, and the contents of your emails are encrypted during transfer. However, because it isn't necessary to use real data when you perform these tests, we recommend that you avoid sending sensitive, confidential, or personally identifiable information in the messages that you use in these tests.

Inbox placement tests show you how different email providers handle specific messages. The test results tell you how many of your messages arrived in test recipients' inboxes on the various email providers. It also tells you how many messages were sent to recipients' junk mail folders, and how many weren't delivered at all. Performing inbox placement tests help you identify deliverability problems that could arise as a result of the content of your email.

Your monthly Deliverability dashboard subscription includes 25 inbox placement tests per month. You can purchase more tests for an additional fee. For more information, see [Amazon Pinpoint pricing](#).

### To create a new email placement test

1. In the navigation pane of the Deliverability dashboard, choose **Inbox placement tests**.
2. Choose **Create a test**.
3. For **Name**, enter a name that helps you easily identify this specific test.
4. For **From address**, choose either an **Email address** or a **Domain**, and then specify the email address that you plan to use to send the email.
5. For **Subject**, enter the subject line for the email.
6. For **HTML content**, enter the HTML-formatted content of the message.
7. Choose **Create**.

It takes approximately 24 hours for the test to complete. When the test is finished, complete the following steps to view the results.

### To view the results of an inbox placement test

1. In the navigation pane of the Deliverability dashboard, choose **Inbox placement tests**.
2. Confirm that the value in the **Test status** column is **Complete** for the test that you want to review. If it is, choose the test, and then choose **View test results**, as shown in the following image.

Predictive inbox placement tests (1)					View test results	Create a test
Perform predictive inbox placement tests to see how different email providers handle your emails. <a href="#">Info</a>						
<input type="text" value="Search"/>					< 1 > ⚙	
Creation date	Test name	Email subject line	From address	Test status		
11/21/2018 11:42 am	Black Friday Kickoff - High engagement customers	Black Friday deals are here!	sender@example.com	Completed		

Each inbox placement test contains two sections: **Deliverability overview** and **ISP overview**.

The **Deliverability overview** section contains the following information about the message that you sent in the inbox placement test:

- **Test name** – The name that you provided when you created the test.
- **Report ID** – A unique identifier for the test.
- **From identity** – The email address that the test email was sent from.
- **Subject** – The subject line of the test email.
- **Inbox** – The percentage of emails that arrived in test recipients' email inboxes.
- **Spam** – The percentage of emails that arrived in test recipients' spam folders.
- **Missing** – The percentage of emails that didn't reach the recipient.
- **DKIM rate** – The percentage of messages that were verified using DKIM.
- **SPF rate** – The percentage of messages that were verified using SPF.

You can view the contents of the test email by expanding the **View HTML content** section.

The **ISP overview** section contains a list of over 95 major email providers located in countries around the world. For each provider, this table includes the following metrics:

- **Inbox** – The percentage of emails that arrived in test recipients' email inboxes on the provider's domain.
- **Spam** – The percentage of emails that arrived in test recipients' spam folders on the provider's domain.
- **Missing** – The percentage of emails that didn't reach the recipient.
- **SPF** – The percentage of messages that were verified by the provider using SPF.
- **DKIM** – The percentage of messages that were verified by the provider using DKIM.

## Test results

Inbox placement tests contain two sections: a **Deliverability overview** and an **ISP Overview**.

### Deliverability Overview



Deliverability overview		
Test name	Inbox	DKIM rate
Black Friday Kickoff - High engagement customers	92.6%	42%
Report ID	Spam	SPF rate
1542829183706-fab51678-0471-4de3-a9ce-35a57dexample	5.7%	96.1%
From identity	Missing	
sender@example.com	1.7%	
Subject		
Black Friday deals are here!		
<a href="#">▶ View HTML content</a>		

This section contains a summary of the inbox placement test. It includes the following information:

- **From identity** – The sender email address for the test email.
- **Subject** – The subject line of the email.
- **Inbox** – The percentage of test messages that arrived in recipients' inboxes.
- **Spam** – The percentage of test messages that were sent to recipients' junk mail folders.
- **Missing** – The percentage of test messages that weren't delivered to recipients at all.
- **DKIM rate** – The percentage of test messages that were authenticated by the recipient's mail providers by using DomainKeys Identified Mail.
- **SPF rate** – The percentage of test messages that were authenticated by the recipient's mail provider by using Sender Policy Framework.

You can also view the body of the email by choosing **View HTML content**.

### ISP Overview

This section contains a list of all of the email providers that we sent your test message to during the test. For each provider in this list, we provide the same five metrics shown in the **Deliverability overview** section (**Inbox**, **Spam**, **Missing**, **SPF**, and **DKIM**).

## Dashboard settings

On the **Dashboard settings** page, you can change several settings that are related to the Deliverability dashboard. You can also find information that tells you about your usage of the Deliverability dashboard for the current month.

### Subscription overview

The **Subscription overview** section contains information about the status of your Deliverability dashboard subscription. It also tells you how many days remain in the current billing cycle.

Your subscription to the Deliverability dashboard is billed each month. We aren't able to offer subscriptions for a portion of a billing period. If you cancel your subscription before the end of a billing period, we continue to charge you for the remaining days in the billing period. However, we don't charge you for the next billing period. To cancel your subscription, choose **Cancel subscription**.

## Monthly usage

The **Monthly usage** section provides information about your usage of the Deliverability dashboard for the current month.

In the **Domain reputation tracking** section, you can choose which domains are monitored on the **Domain reputation** and **Deliverability by campaign** pages. Your subscription to the Deliverability dashboard lets you monitor up to five domains per month. You can monitor more than five domains for an additional monthly charge. To add or remove domains to the Deliverability dashboard, choose **Edit** in the **Subscribed domains** section.

### Note

You can only monitor domains that you've verified. For more information about verifying domains, see [Verifying a domain \(p. 21\)](#).

The **Predictive inbox placement tests** section shows you how many Predictive inbox placement tests you've performed in the current month. Your subscription includes 25 tests. You can purchase additional tests for an additional fee.

For more information about Deliverability dashboard pricing, see [Amazon Pinpoint pricing](#).

## Best practices

Even when you have your customers' best interests in mind, you may still encounter situations that impact the deliverability of your messages. The following sections contain recommendations to help ensure that your email communications reach your intended audience.

### Topics

- [General recommendations \(p. 52\)](#)
- [Domain and "from" address considerations \(p. 53\)](#)
- [Building and maintaining your lists \(p. 53\)](#)
- [Compliance \(p. 53\)](#)
- [Sending a high volume of email \(p. 54\)](#)
- [Bounces \(p. 54\)](#)
- [Complaints \(p. 55\)](#)
- [Message quality \(p. 55\)](#)

## General recommendations

- Put yourself in your customer's shoes. Ask yourself if the message you're sending is something you would want to receive in your own inbox. If the answer is anything less than an enthusiastic "yes!" then you probably shouldn't send it.
- Some industries have a reputation for poor quality or even malicious email practices. If you're involved in the following industries, you must monitor your reputation very closely and resolve issues immediately:
  - Home mortgage
  - Credit
  - Pharmaceuticals and supplements
  - Alcohol and tobacco
  - Adult entertainment
  - Casinos and gambling

- Work-from-home programs

## Domain and "from" address considerations

- Think carefully about the addresses you send email from. The "From" address is one of the first pieces of information your recipients see, and therefore can leave a lasting first impression. Additionally, some ISPs associate your reputation with your "From" address.
- Consider using subdomains for different types of communications. For example, assume you're sending email from the domain *example.com*, and you plan to send both marketing and transactional messages. Rather than sending all of your messages from *example.com*, send your marketing messages from a subdomain such as *marketing.example.com*, and your transactional messages from a subdomain such as *orders.example.com*. Unique subdomains develop their own reputations. Using subdomains reduces the risk of damage to your reputation if, for example, your marketing communications land in a spam trap or trigger a content filter.
- If you plan to send a large number of messages, don't send those messages from an ISP-based address such as *sender@hotmail.com*. If an ISP notices a large volume of messages coming from *sender@hotmail.com*, that email is treated differently than an email that comes from an outbound email sending domain that you own.
- Work with your domain registrar to ensure that the WHOIS information for your domain is accurate. Maintaining an honest and up-to-date WHOIS record demonstrates that you value transparency, and allows users to quickly identify whether or not your domain is legitimate.
- Avoid using a no-reply address, such as *no-reply@example.com*, as your "From" or "Reply-to" address. Using a *no-reply@* email address sends your recipients a clear message: that you aren't offering them a way to contact you, and that you're not interested in their feedback.

## Building and maintaining your lists

- Implement a double opt-in strategy. When users sign up to receive email from you, send them a message with a confirmation link, and don't start sending them email until they confirm their address by clicking that link. A double opt-in strategy helps reduce the number of hard bounces resulting from typographical errors.
- When collecting email addresses with a web-based form, perform minimal validation on those addresses upon submission. For example, ensure that the addresses you collect are well-formed (that is, they are in the format *recipient@example.com*), and that they refer to domains with valid MX records.
- Use caution when allowing user-defined input to be passed to Amazon SES unchecked. Forums registrations and form submissions present unique risks because the content is completely user-generated, and spammers can fill out forms with their own content. It's your responsibility to ensure that you only send email with high-quality content.
- It's highly unlikely that a standard alias (such as *postmaster@*, *abuse@*, or *noc@*) will ever sign up for your email intentionally. Ensure that you only send messages to real people who actually want to receive them. This rule is especially true for standard aliases, which are customarily reserved for email watchdogs.

## Compliance

- Be aware of the email marketing and anti-spam laws and regulations in the countries and regions you send email to. You're responsible for ensuring that the email you send complies with these laws. This guide doesn't cover these laws, so it's important that you research them. For a list of laws, see [Email spam legislation by country](#) on Wikipedia.
- Always consult an attorney to obtain legal advice.

## Sending a high volume of email

Consistency is important when sending email. When increasing email volume it is important to steadily increase sending volume each day, with similar types of messages being sent at around the same time every day. However, situations might arise that require you to send an especially large volume of email to your customers. One such example may be a Terms of Service update. There are several steps you can take to protect your sender reputation and achieve high deliverability rates when increasing volume. First, organize your recipient list to create segments of those customers who are most likely to open your email, as well as those who are most likely to mark your message as spam or unsubscribe. Build a foundation of trust with email providers by sending messages to the most engaged portion of the segment first. Second, spread out your campaign over several hours throughout the day, rather than sending all of your messages at once. Mimic your normal sending cadence when possible. For example, if on a normal day you send your list of 1M an email but split them into 2 distributions, one beginning at 8 AM and one at Noon, but if you needed to send 5M out one day, send in splits like your normal sending day. Finally, when you send volumes of email that are larger than your normal volumes, try to send in multiples of your typical volume. For example, if you send 250,000 emails on a normal day, try to limit higher-volume events to a multiple of that amount, such as 500,000 or 750,000. Limiting your sending volume in this way demonstrates to email providers that although you're sending more email than normal, you're still carefully maintaining your volume.

## Bounces

A *bounce* occurs when an email can't be delivered to the intended recipient. There are two types of bounces: *hard bounces* and *soft bounces*. A hard bounce occurs when the email can't be delivered because of a persistent issue, such as when an email address doesn't exist. A soft bounce occurs when a temporary issue prevents the delivery of an email. Soft bounces can occur when a recipient's inbox is full, or when the receiving server is temporarily unavailable. Amazon Pinpoint handles soft bounces by attempting to re-deliver soft bounced emails for a certain period of time.

It's essential that you monitor the number of hard bounces in your email program, and that you remove hard-bouncing email addresses from your recipient lists. When email receivers detect a high rate of hard bounces, they assume that you don't know your recipients well. As a result, a high hard bounce rate can negatively impact the deliverability of your email messages.

The following guidelines can help you avoid bounces and improve your sender reputation:

- Try to keep your hard bounce rate below 5%. The fewer hard bounces in your email program, the more likely ISPs will see your messages as legitimate and valuable. This rate should be considered a reasonable and attainable goal, but isn't a universal rule across all ISPs.
- Never rent or buy email lists. These lists may contain large numbers of invalid addresses, which could cause your hard bounce rates to increase dramatically. Furthermore, these lists could contain spam traps—email addresses specifically used to catch illegitimate senders. If your messages land in a spam trap, your delivery rates and sender reputation could be irrevocably damaged.
- Keep your list up to date. If you haven't emailed your recipients in a long time, try to validate your customers' statuses through some other means (such as website login activity or purchase history).
- If you don't have a method of verifying your customers' statuses, consider sending a *win-back* email. A typical win-back email mentions that you haven't heard from the customer in a while, and encourages the customer to confirm that they still want to receive your email. After sending a win-back email, purge all of the recipients who did not respond from your lists.

When you receive bounces, it's vital that you respond to them appropriately by observing the following rules:

- If an email address hard bounces, immediately remove that address from your lists. Don't attempt to re-send messages to hard-bouncing addresses. Repeated hard bounces add up, and ultimately harm your reputation with the recipient's ISP.

- Make sure that the address you use to receive bounce notifications is able to receive email.
- If your inbound email comes to you from an ISP, instead of through your own internal servers, an influx of bounce notifications can land in your spam folder or be dropped completely. Ideally, you shouldn't use a hosted email address to receive bounces. If you must, however, then check the spam folder often, and don't mark the bounce messages as spam. In Amazon Pinpoint, you can specify the address that bounce notifications are sent to.
- Usually, a bounce provides the address of the mailbox refusing delivery. However, if you need more granular data to map a recipient address to a particular email campaign, include an X-header with a value you can trace back to your internal tracking system.

## Complaints

A complaint occurs when an email recipient clicks the "Mark as Spam" (or equivalent) button in their web-based email client. If you accumulate a large number of these complaints, the ISP assumes that you are sending spam. This has a negative impact on your deliverability rate and sender reputation. Some, but not all, ISPs will notify you when a complaint is reported; this is known as a *feedback loop*. Amazon Pinpoint automatically forwards complaints from ISPs that offer feedback loops to you.

The following guidelines can help you avoid complaints and improve your sender reputation:

- Try to keep your complaint rate below 0.1%. The fewer complaints in your email program, the more likely ISPs will see your messages as legitimate and valuable. This rate should be considered a reasonable and attainable goal, but isn't a universal rule across all ISPs.
- If a customer complains about a marketing email, you should immediately stop sending that customer marketing emails. However, if your email program also includes other types of emails (such as notification or transactional emails), it may be acceptable to continue to send those types of messages to the recipient who issued the complaint.
- As with hard bounces, if you have a list that you haven't sent email to in a while, ensure that your recipients understand why they're receiving your messages. We recommend that you send a welcome message reminding them of who you are and why you're contacting them.

When you receive complaints, it's vital that you respond to them appropriately by observing the following rules:

- Make sure that the address you use to receive complaint notifications is able to receive email.
- Make sure that your complaint notifications aren't being marked as spam by your ISP or mail system.
- Complaint notifications usually contain the body of the email; this is different from bounce notifications, which only include the email headers. However, in complaint notifications, the email address of the individual who issued the complaint is removed. Use custom X-headers or special identifiers embedded in the email body so that you can identify the email address that issued the complaint. This technique makes it easier to identify addresses that complained so that you can remove them from your recipient lists.

## Message quality

Email receivers use *content filters* to detect certain characteristics of messages and determine whether a message is legitimate. These content filters automatically review the content of messages to identify common traits of unwanted to malicious messages. Amazon Pinpoint uses content filtering technologies to help detect and block messages that contain malware before they are sent.

If an email receiver's content filters determine that your message has characteristics of spam or malicious email, your message will most likely be flagged and diverted from recipients' inboxes.

Remember the following when designing your email:

- Modern content filters are intelligent, continuously adapting and changing. They don't rely on a predefined set of rules. Third-party services such as [ReturnPath](#) or [Litmus](#) can help identify content in your email that may trigger content filters.
- If your email contains links, check the URLs for those links against deny lists, such as those found at [URIBL.com](#) and [SURBL.org](#).
- Avoid using link shorteners. Malicious senders may use link shorteners to hide the actual destination of a link. When ISPs notice that link shortening services—even the most reputable ones—are being used for nefarious purposes, they may deny lists those services altogether. If your email contains a link to a deny listed link shortening service, it won't reach your customers' inboxes, and the success of your email campaign suffers.
- Test every link in your email to ensure that it points to the intended page.
- Make sure your website includes Privacy Policy and Terms of Use documents, and that these documents are up to date. It's a good practice to link to these documents from each email you send. Providing links to these documents demonstrates that you have nothing to hide from your customers, which can help build a relationship of trust.
- If you plan to send high-frequency content (such as "daily deals" messages), ensure that the content of your email is different with each deployment. When you send messages with high frequency, you must ensure that those messages are timely and relevant, rather than repetitive and annoying.

## Amazon Pinpoint SMS channel

You can use the SMS channel in Amazon Pinpoint to send SMS messages (text messages) to your customers' mobile devices. Amazon Pinpoint can send SMS messages to recipients in [over 200 countries and regions \(p. 85\)](#). In some countries and regions, you can also receive messages from your customers by using the two-way SMS feature. When you create a new Amazon Pinpoint account, your account is placed in an SMS sandbox. This initially limits your monthly spending and who you can send messages to. For more information, see [Amazon Pinpoint SMS sandbox \(p. 57\)](#).

To send text messages using Amazon Pinpoint, you must [enable the SMS channel in your project \(p. 58\)](#). Depending on how you use Amazon Pinpoint to send SMS messages, you might also need to [initiate a request with AWS Support \(p. 68\)](#) to enable or modify certain SMS options for your account. For example, you can request to increase your SMS spending quota, to move from the sandbox to production, or you can request a short code to use when sending and receiving messages.

To receive text messages using Amazon Pinpoint, you should first obtain a dedicated [short code \(p. 71\)](#) or [long code \(p. 74\)](#). When you have a dedicated number, you can [enable two-way SMS for it \(p. 83\)](#). Finally, you can [specify the messages that Amazon Pinpoint sends to customers when it receives incoming messages \(p. 281\)](#).

In the [SMS and voice settings section \(p. 281\)](#) of the Amazon Pinpoint console, you can manage SMS channel settings for your use case and budget. For example, you can set your monthly SMS spending quota, or change your default message type.

### Note

When you configure SMS channel settings in Amazon Pinpoint, your changes apply to other AWS services that send SMS messages, such as Amazon SNS.

### Topics

- [Amazon Pinpoint SMS sandbox \(p. 57\)](#)
- [Setting up the Amazon Pinpoint SMS channel \(p. 58\)](#)
- [Originating identities for SMS messages \(p. 60\)](#)
- [SMS limits and restrictions in Amazon Pinpoint \(p. 63\)](#)
- [Requesting support for SMS messaging with Amazon Pinpoint \(p. 68\)](#)

- [Monitoring SMS activity with Amazon Pinpoint \(p. 79\)](#)
- [Managing the Amazon Pinpoint SMS channel \(p. 81\)](#)
- [Using two-way SMS messaging in Amazon Pinpoint \(p. 83\)](#)
- [Country capabilities and limitations for SMS with Amazon Pinpoint \(p. 85\)](#)
- [Best practices \(p. 98\)](#)

## Amazon Pinpoint SMS sandbox

To help protect customers from fraud and abuse, we place your account in a sandbox environment when you first create it. The sandbox creates a safe environment for testing and development accounts. A notification banner appears in the Amazon Pinpoint console while you're in the sandbox environment. In the sandbox, you have full access to Amazon Pinpoint SMS sending methods, with the following restrictions:

- You have a monthly limit of \$1.00 (USD).
- You can send SMS to verified destination phone numbers only. You must provide at least one verified phone number. You can add up to 10.
- Per-country restrictions apply. For example, if you want to send to a US destination, you must first purchase a US number.
- To verify that you own a phone number, we send a verification code to that number. While the standard per-message SMS fees typically apply, we waive the fee for up to five verification codes per phone number. For more information about SMS pricing, see the [Amazon Pinpoint Pricing](#) page.
- Before you can delete a verified destination phone number, you must wait 24 hours after adding it. Unverified numbers can be deleted at any time.
- When you're sending a test message, or using campaigns and journeys, you can only send messages to your verified destination numbers.

When you've done sufficient testing in the sandbox and are confident in your messaging, you can remove these restrictions by requesting production access. For more information, see [Moving from the Amazon Pinpoint SMS sandbox to production \(p. 78\)](#).

## Adding destination numbers to your Amazon Pinpoint sandbox account

To use the SMS sandbox, you must provide at least one destination phone number that you verify for testing purposes. You can add up to 10 verified destination numbers. These numbers are only used in the SMS sandbox.

### To add destination numbers

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. Under **Account Settings, SMS and voice**, choose **Destination phone numbers**.

Add up to 10 phone numbers. A counter displays the phone number count, verification status, and verification date.

3. Choose **Add phone number**.
4. In the **Phone number** field, enter the phone number to add, and then choose **Send verification code**.

A randomly generated six-digit code is sent to the destination number. The receiver must reply with the verification code within 15 minutes, before it expires. The number displayed on the

recipient's device is selected from one of the numbers in your account. Number selection occurs in the following order: short code, 10DLC, long code, toll-free number. If you have multiple types of numbers—for example, if you have multiple long codes—Amazon Pinpoint randomly selects a long code to use.

5. In the **Verification code** field, enter the received code, and then choose **Submit verification code**.

If 15 minutes pass and you do not receive the code, choose **Resend verification code**. You can attempt to resend a code up to five times within 24 hours.

Your **Destination phone numbers** are updated to include the newly added **Phone number**, its **Verification status**, and the **Verification date**. Any phone numbers that are not yet verified appear with an **Unverified** status and no verification date.

## Verifying destination numbers

You can verify any destination number that has not yet been verified. You can verify up to one number at a time.

### To verify a destination number

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. Under **Account Settings, SMS and voice**, choose **Destination phone numbers**.
3. Choose a number with an **Unverified** status.
4. Choose **Verify phone number**.
5. For **Verify 206-555-0100**, choose **Send verification code**.
6. Enter the received code in the **Verification code** field, and then choose **Verify 206-555-0100**.

If 15 minutes pass and you do not receive the code, choose **Resend verification code**. You can attempt to resend a code up to five times within 24 hours.

## Deleting destination numbers from your Amazon Pinpoint sandbox account

You can delete verified and unverified phone numbers. Unverified numbers can be deleted at any time. For verified numbers, you must wait 24 hours after adding them before you can delete them.

### To delete destination numbers

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. Under **Account Settings, SMS and voice**, choose **Destination phone numbers**.
3. Choose one or more destination numbers to delete.
4. Choose **Delete phone number(s)**.
5. Choose **Delete**.

## Setting up the Amazon Pinpoint SMS channel

To send SMS messages with Amazon Pinpoint, you need an Amazon Pinpoint project in which the SMS channel is enabled.



You can also enable the SMS channel for an existing project by using the **SMS and voice** settings page on the Amazon Pinpoint console. For more information, see [Managing the Amazon Pinpoint SMS channel \(p. 81\)](#).

## Creating a new project by using the Amazon Pinpoint console

The first step in setting up the SMS channel in Amazon Pinpoint is to create a new project. Next, you enable the SMS channel for that project.

### To create a new Amazon Pinpoint project and enable the SMS channel

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose **Create a project**.
3. For **Project name**, enter a name, and then choose **Create**.

#### Note

The project name can contain up to 64 alphanumeric characters. It can also include the following characters: comma (,), period (.), at sign (@), underscore (\_), equals sign (=), and plus sign (+).

4. Under **Project features**, in the **SMS and voice** section, choose **Configure**.
5. Choose **Enable the SMS channel for this project**.
6. Under **Account-level settings**, you can optionally change the following settings:
  - **Default message type** – The category of messages that you plan to send. Choose **Transactional** for time-sensitive content, such as alerts and one-time passwords, or choose **Promotional** for marketing-related content.
  - **Account spending limit** – The maximum amount of money, in US Dollars, that you want to spend sending SMS messages per calendar month. If your monthly spending exceeds this value, Amazon Pinpoint and other AWS services stop sending SMS messages from your account.

#### Note

If you haven't used Amazon Pinpoint or Amazon SNS to send SMS messages from your AWS account, your account will have a default spending quota of \$1.00 (USD). You can request an increase to this account-wide quota. For more information, see [Requesting increases to your monthly SMS spending quota for Amazon Pinpoint \(p. 69\)](#).

- **Default sender ID** – The identity that appears on recipients' devices when they receive messages. Support for sender ID capabilities varies by country or region.

#### Important

These settings apply to your entire AWS account. When you change these settings, they apply to all other Amazon Pinpoint projects in your account, and to other AWS services that you use to send SMS messages, such as Amazon SNS.

7. When you finish, choose **Save changes**.

## Next steps

You've created a project that's enabled for SMS messaging. Now you can use Amazon Pinpoint to send SMS messages.

Some SMS options, such as dedicated origination numbers or sender IDs, are unavailable until you contact AWS Support. For more information, see [Requesting support for SMS messaging with Amazon Pinpoint \(p. 68\)](#).

To engage an audience segment with an SMS campaign, see [Amazon Pinpoint campaigns \(p. 126\)](#).

To send an SMS message directly to a limited audience without creating a campaign, see [Send test messages with Amazon Pinpoint \(p. 189\)](#).

## Originating identities for SMS messages

When you send SMS messages using Amazon Pinpoint, you can identify yourself to your recipients in one of three ways: by using a sender ID, by using a long code, or by using a short code. These methods of identifying yourself to your customers are known as *originating identities*. Each of these types of originating identities has its own advantages and disadvantages, which are discussed in the following sections. Dedicated origination numbers are country-specific. You can't request a dedicated origination number for one country but then use it as an originator for another country.

### Sender IDs

A sender ID is an alphabetic name that identifies the sender of an SMS message. When you send an SMS message using a sender ID, and the recipient is in an area where sender ID authentication is supported, your sender ID appears on the recipient's device instead of a phone number. A sender ID provides SMS recipients with more information about the sender than a phone number or short code provides.

Sender IDs are supported in several countries and regions around the world. In some places, if you're a business that sends SMS messages to individual customers, you must use a sender ID that's pre-registered with a regulatory agency or industry group. For a complete list of countries and regions that support or require sender IDs, see [Supported countries and regions \(SMS channel\) \(p. 85\)](#).

#### Advantages

Sender IDs provide the recipient with more information about the message sender. It's easier to establish your brand identity by using a sender ID than by using a short or long code. There's no additional charge for using a sender ID.

#### Disadvantages

Support and requirements for sender ID authentication aren't consistent across all countries or regions. Several major markets (including Canada, China, and the United States) don't support sender ID. In some areas, you must have your sender IDs pre-approved by a regulatory agency before you can use them.

### Long codes

Long codes are phone numbers that use the number format of the country or region where your recipients are located. Long codes are also referred to as long numbers or virtual mobile numbers. For example, in the United States and Canada, long codes contain 11 digits: the number 1 (the country code), a three-digit area code, and a seven-digit phone number.

If you're using the two-way SMS feature to send and receive SMS messages, you can request up to five dedicated long codes per country. For more information about requesting long codes, see [Requesting dedicated long codes for SMS messaging with Amazon Pinpoint \(p. 74\)](#). If you want to use local long codes in the United States to send SMS messages you'll need to request a 10DLC, which is a ten-digit long code dedicated only for use in the United States. For more information about 10DLC, see [10DLC \(p. 282\)](#).

#### Advantages

Dedicated long codes are reserved for use by your Amazon Pinpoint account only—they aren't shared with other users. When you use dedicated long codes, you can specify which long code you want to use when you send each message. If you send multiple messages to the same customer, you can ensure that each message appears to be sent from the same phone number. For this reason, dedicated long codes can be helpful in establishing your brand or identity.

#### Disadvantages

If you send several hundred messages per day from a dedicated long code, mobile carriers might identify your number as one that sends unsolicited messages. If your long code is flagged, your messages might not be delivered to your recipients.

Long codes also have limited throughput. In the United States and Canada, where long codes are most commonly used, you can send a maximum of one message per second. The maximum sending rates for other countries vary. Contact AWS Support for more information. If you plan to send large volumes of SMS messages, or you plan to send at a rate greater than one message per second, you should purchase a dedicated short code.

In the United States, local long codes cannot be used for A2P SMS messages.

Many jurisdictions have restrictions related to using long codes to send Application-to-Person (A2P) SMS messages. An A2P SMS is a message that's sent to a customer's mobile device when that customer submits his or her mobile number to an application. A2P messages are one-way conversations, such as marketing messages, one-time passwords, and appointment reminders. If you plan to send A2P messages, you should purchase a dedicated short code (if your customers are in the United States or Canada), request a 10DLC (only if your customers are in the United States), or use a sender ID (if your recipients are in a country or region where sender IDs are supported).

A 10DLC number is used only for sending messages within the US. Using a 10DLC number requires that you register your company brand and the campaign that you want to associate the number with. Once approved you can request a 10DLC phone number on the **SMS and voice** page of the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>. Once requested, the time to receive approval is 7-10 days. The number can't be used with any other campaigns.

## Toll-free numbers

Toll-free numbers are typically used for transactional messaging, such as registration confirmation or for sending one-time passwords and only used within the US. They can be used for both voice messaging and SMS. Average throughput is three message parts per second (MPS); however, this throughput is affected by character encoding. For more information about how character encoding affects message parts, see [SMS character limits in Amazon Pinpoint \(p. 63\)](#).

When using a toll-free number as an originator, it's best to follow these guidelines:

- Don't use shortened URLs created from third-party URL shorteners, as these messages are more likely to be filtered as spam. If you want to use a shortened URL consider using a 10LDC phone number or short code. Using either of these number types require that you register your message template, which can then include a shortened URL in the message.
- Keyword opt-out and opt-in responses are set at the carrier level, using STOP and UNSTOP. These keywords can't be modified, and no other keywords can be used. Response messages when a user replies with STOP and UNSTOP are also carrier-managed and can't be modified.
- Don't send the same or similar message contents using multiple toll-free numbers. This is considered "snowshoeing", and is typically used by spammers to avoid number rate and volume limitations.
- Toll-free numbers are subject to content filtering. The following table describes the types of restricted content:

Category	Examples
High-risk financial services	<ul style="list-style-type: none"><li>• Payday loans</li><li>• Short-term high-interest loans</li><li>• Auto loans</li><li>• Mortgage loans</li><li>• Student loans</li><li>• Debt collection</li></ul>

Category	Examples
Debt forgiveness	<ul style="list-style-type: none"><li>• Debt consolidation</li><li>• Debt reduction</li><li>• Credit repair programs</li></ul>
Get-rich-quick schemes	<ul style="list-style-type: none"><li>• Work-from-home programs</li><li>• Risk-investment opportunities</li><li>• Pyramid or multi-level marketing schemes</li></ul>
Illegal substances	<ul style="list-style-type: none"><li>• Cannabis</li></ul>
Phishing	<ul style="list-style-type: none"><li>• Attempts to get users to reveal personal information or website login information.</li></ul>
S.H.A.F.T.	<ul style="list-style-type: none"><li>• Sex</li><li>• Hate</li><li>• Alcohol</li><li>• Firearms</li><li>• Tobacco</li></ul>

### Advantages

Toll-free originators have higher MPS over long codes as well as good deliverability. Because there's no message template registration, you can purchase a toll-free number for use instantly on the **SMS and voice** page of the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.

### Disadvantages

There's no control over opt-outs and opt-ins as these are managed at the carrier level.

You should neither include shortened URLs in your message, nor use the number to send a promotional message. Instead use a 10DLC or short code. When using a short code or 10DLC, you'll need to register your template, which can contain a shortened URL and/or be a promotional message. Additional information about short codes is described below. For more information about 10DLC see [10DLC \(p. 282\)](#).

## Short codes

Short codes are numeric sequences that are shorter than a regular phone number. For example, in the United States and Canada, standard phone numbers (long codes) contain 11 digits, while short codes contain five or six digits. If you send a large volume of SMS messages to recipients in the United States or Canada, you can purchase a short code. This short code is reserved for your exclusive use.

### Note

Shared short codes are no longer supported by U.S. carriers and are no longer available through Amazon Pinpoint.

### Advantages

Using a memorable short code can help build trust. If you need to send sensitive information, such as one-time passwords, it's a good idea to send it using a short code so that your customer can quickly determine whether a message is actually from you.

If you're running a new customer acquisition campaign, you can invite potential customers to send a keyword to your short code (for example, "Text 'FOOTBALL' to 10987 for football news and

information"). Short codes are easier to remember than long codes, and it's easier for customers to enter short codes into their devices. By reducing the amount of difficulty that customers encounter when they sign up for your marketing programs, you can increase the effectiveness of your campaigns.

Because mobile carriers must approve new short codes before making them active, they are less likely to flag messages sent from short codes as unsolicited.

When you use short codes to send SMS messages, you can send a higher volume of messages per 24-hour period than you can when you use other types of originating identities. In other words, you have a much higher *sending quota*. You can also send a much higher volume of messages per second. That is, you have a much higher *sending rate*.

### Disadvantages

There are additional costs to acquire short codes, and they can take a long time to implement. For example, in the United States, there's a one-time setup fee of \$650.00 (USD) for each short code, plus an additional recurring charge of \$995.00 per month for each short code. It can take 8–12 weeks for short codes to become active on all carrier networks. To find the price and provisioning time for a different country or region, complete the procedure described in [Requesting short codes for SMS messaging with Amazon Pinpoint](#) (p. 71).

## SMS limits and restrictions in Amazon Pinpoint

The SMS protocol is subject to several limitations and restrictions. For example, there are technical limitations that limit the length of each SMS message. There are also restrictions on the type of content that you can send using SMS. This topic discusses several of these limitations and restrictions.

When you send SMS messages using Amazon Pinpoint, you should consider these limitations and restrictions. For best results, you should also implement the techniques discussed in [Best practices](#) (p. 98).

### Topics

- [SMS character limits in Amazon Pinpoint](#) (p. 63)
- [Message parts per second \(MPS\)](#) (p. 66)
- [Message routes](#) (p. 67)
- [Message fallback](#) (p. 67)
- [Opting out](#) (p. 67)

## SMS character limits in Amazon Pinpoint

A single SMS message can contain up to 140 bytes of information. The number of characters you can include in a single SMS message depends on the type of characters the message contains.

If your message only uses [characters in the GSM 03.38 character set](#) (p. 64), also known as the GSM 7-bit alphabet, it can contain up to 160 characters. If your message contains any characters that are outside the GSM 03.38 character set, it can have up to 70 characters. When you send an SMS message, Amazon Pinpoint automatically determines the most efficient encoding to use.

When a message contains more than the maximum number of characters, the message is split into multiple parts. When messages are split into multiple parts, each part contains additional information about the message part that precedes it. When the recipient's device receives message parts that are separated in this way, it uses this additional information to ensure that all of the message parts are displayed in the correct order. Depending on the recipient's mobile carrier and device, multiple messages might be displayed as a single message, or as a sequence of separate messages. As a result of number of characters in each message part is reduced to 153 (for messages that only contain GSM 03.38

characters) or 67 (for messages that contain other characters). You can estimate how many message parts your message contains before you send it by using SMS length calculator tools, several of which are available online. The maximum supported size of any message is 1600 GSM characters or 630 non-GSM characters. If a message is split into multiple parts, and the message size is greater than the supported size, the message is truncated to exclude any characters past the supported limit. For more information about throughput and message size, see [Message parts per second \(MPS\) \(p. 66\)](#).

To view the number of message parts for each message that you send, you should first enable [event streaming \(p. 300\)](#). When you do, Amazon Pinpoint produces an `_SMS.SUCCESS` event when the message is delivered to the recipient's mobile provider. The `_SMS.SUCCESS` event record contains an attribute called `attributes.number_of_message_parts`. This attribute specifies the number of message parts that the message contained.

### Important

When you send a message that contains more than one message parts, you're charged for the number of message parts contained in the message.

## GSM 03.38 character set

The following table lists all of the characters that are present in the GSM 03.38 character set. If you send a message that only includes the characters shown in the following table, then the message can contain up to 160 characters.

GSM 03.38 standard characters												
A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
a	b	c	d	e	f	g	h	i	j	k	l	m
n	o	p	q	r	s	t	u	v	w	x	y	z
à	Å	å	Ä	ä	Ç	É	é	è	ì	Ñ	ñ	ò
Ø	ø	Ö	ö	ù	Ü	ü	Æ	æ	ß	0	1	2
3	4	5	6	7	8	9	&	*	@	:	,	¤
\$	=	!	>	#	-	i	¿	(	<	%	.	+
£	?	"	)	§	;	'	/	_	¥	Δ	Φ	Γ
Λ	Ω	Π	Ψ	Σ	Θ	Ξ						

The GSM 03.38 character set includes several symbols in addition to those shown in the preceding table. However, each of these characters is counted as two characters because it also includes an invisible escape character:

- ^
- {
- }
- \
- [
- ]
- ~

- |
- €

Finally, the GSM 03.38 character set also includes the following non-printed characters:

- A space character.
- A line feed control, which signifies the end of one line of text and the beginning of another.
- A carriage return control, which moves to the beginning of a line of text (usually following a line feed character).
- An escape control, which is automatically added to the characters in the preceding list.

## Example messages

This section contains several example SMS messages. For each example, this section shows the total number of characters, as well as the number of message parts for the message.

### Example 1: A long message that only contains characters in the GSM 03.38 alphabet

The following message only contains characters that are in the GSM 03.38 alphabet.

Hello Carlos. Your Example Corp. bill of \$100 is now available. Autopay is scheduled for next Thursday, April 9. To view the details of your bill, go to <https://example.com/bill1>.

The preceding message contains 180 characters, so it has to be split into multiple message parts. When a message is split into multiple message parts, each part can contain 153 GSM 03.38 characters. As a result, this message is sent as 2 message parts.

### Example 2: A message that contains multi-byte characters

The following message contains several Chinese characters, all of which are outside of the GSM 03.38 alphabet.

##### • #####1994#7#####

The preceding message contains 71 characters. However, because almost all of the characters in the message are outside of the GSM 03.38 alphabet, it's sent as two message parts. Each of these message parts can contain a maximum of 67 characters.

### Example 3: A message that contains a single non-GSM character

The following message contains a single character that isn't part of the GSM 03.38 alphabet. In this example, the character is a closing single quote ('), which is a different character from a regular apostrophe ('). Word processing applications such as Microsoft Word often automatically replace apostrophes with closing single quotes. If you draft your SMS messages in Microsoft Word and paste them into Amazon Pinpoint, you should remove these special characters and replace them with apostrophes.

John: Your appointment with Dr. Salazar's office is scheduled for next Thursday at 4:30pm. Reply YES to confirm, NO to reschedule.

The preceding message contains 130 characters. However, because it contains the closing single quote character, which isn't part of the GSM 03.38 alphabet, it's sent as two message parts.

If you replace the closing single quote character in this message with an apostrophe (which is part of the GSM 03.38 alphabet), then the message is sent as a single message part.

## Message parts per second (MPS)

Message parts per second (MPS) is determined by the type of originating identifier used in the message. Character encoding can also affect how many message parts your message is split into. For more information on how character encoding affects message parts, see [SMS character limits in Amazon Pinpoint \(p. 63\)](#). The following sections describe the MPS for each of the originating identifiers.

### Short codes

The following table shows general MPS limits for dedicated short codes.

Geographic area	MPS
United States (US)	100 MPS
Canada (CA)	100 MPS
All other countries and regions	Varies by country.

### Long codes

The following table shows general MPS limits for dedicated long codes.

Geographic area	MPS
United States (US) (10DLC)	Varies. Carrier-dependent, based on the campaign type or brand level.
Canada (CA)	1 MPS
All other countries and regions	10 MPS

### Toll-free numbers

The following table shows general MPS limits for toll-free numbers.

Geographic area	MPS
United States (US) (10DLC)	3 MPS
Canada (CA)	N/A
All other countries and regions	N/A

### Sender IDs

The following table shows general MPS limits for sender IDs.

Sender ID type	MPS
Customer-defined using the Amazon Pinpoint API or from the Amazon Pinpoint console	10 MPS
Shared routes/customer-owned number	10 MPS



## Message routes

The route your message uses is dependent on the type set for the message, either **promotional** or **transactional**. When purchasing a new number using the Amazon Pinpoint console you'll be prompted to choose the route type. A promotional route are typically marketing or sales-related messages. Some countries or regions have quiet time hours when you're not permitted to send promotional messages. A transactional route is for more time-sensitive, such as password resets or one-time passwords. This can be applied to the number when you're purchasing a new number or can be passed as an optional parameter in the `SendMessage` operation of the Amazon Pinpoint API. When sending a message using that number as the originator, Amazon Pinpoint then chooses the applicable promotional or transactional route.

You pass the route type as an optional parameter using the [SendMessage](#) operation of the Amazon Pinpoint API. In some cases you might use a `SenderId` as the originator, or you might you might have a shared pool of numbers. If you have both transactional and promotional numbers associated with your account for the destination country, Amazon Pinpoint chooses a transactional number by default. Delivery receipts and the Delivery dashboard show the route as either promotional or transactional, based on the chosen number.

## Message fallback

When sending a message using the Amazon Pinpoint API, three optional parameters can be passed in the request: `originationNumber`, `registeredKeyword`, and `senderID`. If Amazon Pinpoint encounters an `originationNumber` error – for example, an invalid character – and the error is retrievable, Amazon Pinpoint uses a fallback process for choosing a valid number for the request. Fallback checks for a valid number in the order below. At any point during this process Amazon Pinpoint will choose the first valid number it finds as the originating number.

1. Origination number. Any other valid origination numbers are checked.
2. Keyword. Registered keywords are scanned and matched against any dedicated number.
3. Sender ID. Any other valid sender IDs are checked.

### Note

If send a message with an `originationNumber` that does not exist in your account, there is no fallback process, and an exception message returned instead.

If none of the previous parameters are passed in the request, Amazon Pinpoint looks at your account and checks for a valid number in this order:

1. Dedicated numbers. Any dedicated numbers associated with y our account are checked in this order: short code, 10DLC, long code/toll-free number. Domestic numbers are checked before international numbers. If you have both transactional and promotional long codes in your account, Amazon Pinpoint chooses a transational number by default.
2. Default sender IDs
3. Shared routes.

### Note

Amazon Pinpoint will make a best effort to deliver messages in countries where an origination identity is not required.

## Opting out

You might have a combination of numbers on your account that are AWS-managed or self-managed. Opt-out options are controlled on the **SMS settings** page of the Amazon Pinpoint console. Here you can

set any of your number to self-manage your own process outside of Amazon Pinpoint. See [the section called “Self-managed opt-outs” \(p. 297\)](#) for the steps to self-manage opt outs.

## Supported opt-out keywords

Where required by local laws and regulations (such as in the US and Canada), SMS recipients can use their devices to opt out by replying to the message with any of the following:

- ARRET
- CANCEL
- END
- OPT-OUT
- OPTOUT
- QUIT
- REMOVE
- STOP
- TD
- UNSUBSCRIBE

To opt out, the recipient must reply to the same long code or short code that Amazon Pinpoint used to deliver the message. After opting out, the recipient no longer receives SMS messages from your AWS account.

### Note

For toll-free numbers, opt-out is carrier-managed. The only supported opt-out keyword for a toll-free number is STOP. You will be unable to change or edit this keyword. This is only applicable for the U.S.

## Requesting support for SMS messaging with Amazon Pinpoint

Certain SMS options with Amazon Pinpoint are unavailable until you contact AWS Support. Open a case in the [AWS Support Center](#) to request any of the following:

- **An increase to your monthly SMS spending threshold**

By default, the monthly spending threshold is \$1.00 (USD). Your spending threshold determines the volume of messages that you can send with Amazon Pinpoint. Request a spending threshold that meets the expected monthly message volume for your SMS use case.

- **A dedicated short code**

Your dedicated origination number is assigned to your AWS account, and it's available exclusively to you. If you don't have a dedicated number, Amazon Pinpoint assigns a number to your messages. This number is shared with other Amazon Pinpoint users, and it varies based upon destination and message type (transactional or promotional). By reserving a short code, you can send your messages with a persistent origination number. This makes it easier for your audience to recognize that your organization is the source of your messages. A dedicated short code is required if you want to enable two-way SMS with Amazon Pinpoint.

- **A dedicated sender ID**

A *sender ID* is a custom ID that is shown as the sender on the recipient's device. For example, you can use your business brand to make the message source easier to recognize. Support for sender

IDs varies by country or region. For more information, see [Supported countries and regions \(SMS channel\)](#) (p. 85).

When you create your case in the AWS Support Center, include all the information that's required for the type of request you're submitting. Otherwise, AWS Support contacts you to obtain this information before proceeding. By submitting a detailed case, you help ensure that your case is fulfilled without delays. For the details that are required for specific types of SMS requests, see the following topics.

The following number type doesn't require you to contact AWS Support. You can request this type of number directly through the Amazon Pinpoint console.

- **A long code or 10DLC**

A *long code* is a phone number up to 12 digits used for SMS and voice messaging. that is shown as the sender on the recipient's device. *10DLC* is a 10-digit number used only in the U.S. for SMS and voice. Before requesting a 10DLC however, you'll need to register your company and messaging campaign.

Both number types can be requested through the Console at <https://console.aws.amazon.com/pinpoint/>. For more information, see [Requesting dedicated long codes for SMS messaging with Amazon Pinpoint](#) (p. 74).

10DLC throughput supports up to 100 message parts per second, although the exact throughput you get is determined by a combination of The Campaign Registry and your carrier. Amazon Pinpoint has no control over what throughput you will receive.

## Requesting increases to your monthly SMS spending quota for Amazon Pinpoint

Your spending quota determines how much money you can spend sending SMS messages through Amazon Pinpoint each month. When Amazon Pinpoint determines that sending an SMS message would incur a cost that exceeds your spending quota for the current month, it stops publishing SMS messages within minutes.

### **Important**

Because Amazon Pinpoint is a distributed system, it stops sending SMS messages within minutes of the spending quota being exceeded. During this period, if you continue to send SMS messages, you might incur costs that exceed your quota.

We set the spending quota for all new accounts at \$1.00 (USD) per month. This quota is intended to let you test the message-sending capabilities of Amazon Pinpoint. This quota also helps to reduce the risk of sending large campaigns before you're actually ready to use Amazon Pinpoint for your production workloads. Finally, this quota is necessary to prevent malicious users from abusing Amazon Pinpoint.

You can request an increase to the SMS spending quota for your account by opening a quota increase case in the AWS Support Center. Note that spending limits are region-specific as they vary by region. Because of this you must specify the regions where you require an increase.

### Step 1: Open an Amazon Pinpoint SMS case

You can request an increase to your monthly spending quota by opening a quota increase case in the AWS Support Center.

### **Note**

Some of the fields on the request form are marked as "optional." However, AWS Support requires all of the information that's mentioned in the following steps in order to process your request. If you don't provide all of the required information, you may experience delays in processing your request.

### To request a spending quota increase

1. Sign in to the AWS Management Console at <https://console.aws.amazon.com/>.
2. On the **Support** menu, choose **Support Center**.
3. On the **Open support cases** tab, choose **Create case**.
4. Under **Create case**, choose **Service limit increase**.
5. Under **Case details**, complete the following sections:
  - For **Limit type**, choose **Pinpoint SMS**.
  - (Optional) For **Provide a link to the site or app which will be sending SMS messages**, provide information about the website, application, or service that will send SMS messages.
  - (Optional) For **What type of messages do you plan to send**, choose the type of message that you plan to send using your long code:
    - **One Time Password** – Messages that provide passwords that your customers use to authenticate with your website or application.
    - **Promotional** – Noncritical messages that promote your business or service, such as special offers or announcements.
    - **Transactional** – Important informational messages that support customer transactions, such as order confirmations or account alerts. Transactional messages must not contain promotional or marketing content.
  - (Optional) For **Which AWS Region will you be sending messages from**, choose the region that you'll be sending messages from.
  - (Optional) For **Which countries do you plan to send messages to**, enter the country or region that you want to purchase short codes in.
  - (Optional) In the **How do your customers opt to receive messages from you**, provide details about your opt-in process.
  - (Optional) In the **Please provide the message template that you plan to use to send messages to your customers** field, include the template that you will be using.
6. Under **Requests**, complete the following sections:
  - For the **Region**, choose the Region from which you'll be sending messages.

**Note**  
The Region is required in the **Requests** section. Even if you provided this information in the **Case details** section you must also include it here.
  - For **Resource Type**, choose **General Limits**.
  - For **Limit**, choose **Account Spend Threshold Increase**.
7. For **New limit value**, enter the maximum amount (in USD) that you can spend on SMS each calendar month.
8. Under **Case description**, for **Use case description**, provide the following details:
  - The website or app of the company or service that's sending SMS messages.
  - The service that's provided by your website or app, and how your SMS messages contribute to that service.
  - How users sign up to voluntarily receive your SMS messages on your website, app, or other location.

If your requested spending quota (the value you specified for **New quota value**) exceeds \$10,000 (USD), provide the following additional details for each country that you're messaging:

- Whether you're using a sender ID or short code. If you're using a sender ID, provide:

- The sender ID.
  - Whether the sender ID is registered with wireless carriers in the country.
  - The maximum expected transactions-per-second (TPS) for your messaging.
  - The average message size.
  - The template for the messages that you send to the country.
  - (Optional) Character encoding needs, if any.
9. (Optional) If you want to submit any further requests, choose **Add another request**. If you include multiple requests, provide the required information for each. For the required information, see the other sections within [Requesting support for SMS messaging with Amazon Pinpoint \(p. 68\)](#).
  10. Under **Contact options**, for **Preferred contact language**, choose whether you want to receive communications for this case in **English** or **Japanese**.
  11. When you finish, choose **Submit**.

The AWS Support team provides an initial response to your request within 24 hours.

In order to prevent our systems from being used to send unsolicited or malicious content, we have to consider each request carefully. If we're able to do so, we'll grant your request within this 24-hour period. However, if we need to obtain additional information from you, it might take longer to resolve your request.

We might not be able to grant your request if your use case doesn't align with our policies.

## Step 2: Update your SMS settings on the Amazon Pinpoint console

After we notify you that your monthly spending quota has been increased, you have to adjust the spending quota for your account on the Amazon Pinpoint console.

### To adjust your spending quota on the console

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose a project that uses the SMS channel.
3. In the navigation pane, under **Settings**, choose **SMS and voice**.
4. In the **SMS and voice** section, choose **Edit**.
5. Under **Account-level settings**, for **Account spending limit**, enter the maximum amount, in US Dollars, that you want to spend on SMS messages each calendar month. You can specify a value that's less than or equal to the total monthly spending quota provided by AWS Support. By setting a lower value, you can control your monthly spending while still retaining the capacity to scale up if necessary.
6. Choose **Save changes**.

## Requesting short codes for SMS messaging with Amazon Pinpoint

A short code is a number that you can use for high-volume SMS message sending. Short codes are often used for application-to-person (A2P) messaging, two-factor authentication (2FA), and marketing. A short code typically contains between three and seven digits, depending on the country or region that it's based in.

You can only use short codes to send messages to recipients in the same country where the short code is based. If your use case requires you to use short codes in more than one country, you have to request a separate short code for each country that your recipients are located in.

For information about short code pricing, see [Amazon Pinpoint pricing](#).

## Important considerations

Before you request a short code, consider the following information:

- If you plan to use the short code to send messages that contain Protected Health Information (PHI), you should identify this purpose in the **Case description** field of your support case.
- Amazon Pinpoint currently only supports standard short codes. Free-to-End-User (FTEU) short codes aren't supported.
- If you're new to SMS messaging with Amazon Pinpoint, you should request a monthly SMS spending threshold that meets the expected demands of your SMS use case. By default, your monthly spending threshold is \$1.00 (USD). You can request to increase your spending threshold in the same support case that includes your request for a short code. For more information, see [Requesting increases to your monthly SMS spending quota for Amazon Pinpoint](#) (p. 69).

## Step 1: Open a support case

### To request a short code

1. Sign in to the AWS Management Console at <https://console.aws.amazon.com/>.
2. On the **Support** menu, choose **Support Center**.
3. On the **Open support cases** tab, choose **Create case**.
4. Choose **Service limit increase**.
5. Under **Case details**, complete the following sections:
  - For **Limit type**, choose **Pinpoint SMS**.
  - (Optional) For **Provide a link to the site or app which will be sending SMS messages**, provide information about the website, application, or service that will send SMS messages.
  - (Optional) For **What type of messages do you plan to send**, choose the type of message that you plan to send using your short code:
    - **One Time Password** – Messages that provide passwords that your customers use to authenticate with your website or application.
    - **Promotional** – Noncritical messages that promote your business or service, such as special offers or announcements.
    - **Transactional** – Important informational messages that support customer transactions, such as order confirmations or account alerts. Transactional messages must not contain promotional or marketing content.
  - (Optional) For **Which AWS Region will you be sending messages from**, choose the region that you'll be sending messages from.
  - (Optional) For **Which countries do you plan to send messages to**, enter the country or region that you want to purchase short codes in.
  - (Optional) In the **How do your customers opt to receive messages from you**, provide details about your opt-in process.
  - (Optional) In the **Please provide the message template that you plan to use to send messages to your customers** field, include the template that you will be using.
6. Under **Requests**, complete the following sections:
  - For the **Region**, choose the Region from which you'll be sending messages.

#### Note

The Region is required in the **Requests** section. Even if you provided this information in the **Case details** section you must also include it here.

- For **Resource Type**, choose **Dedicated SMS Short Codes**.
  - For **New limit value**, enter the number of short codes that you want to purchase.
7. Under **Case description**, for **Use case description**, provide details about your use case.
  8. (Optional) If you want to submit any further requests, choose **Add another request**. For the required information, see the other sections within [Requesting support for SMS messaging with Amazon Pinpoint \(p. 68\)](#).
  9. Under **Contact options**, for **Preferred contact language**, choose whether you want to receive communications for this case in **English** or **Japanese**.
  10. When you finish, choose **Submit**.

#### **Important**

Mobile carriers require us to provide all of the information listed above in order to provision short codes. We can't process your request until you provide all of this information.

11. After we receive your request, we will evaluate your requirements and reply back with a Short Code registration form within 24 hours for an initial response. This form is dependent on your location.
12. Complete the registration form that is sent to you in its entirety. Incomplete or insufficient information might result in a delay processing your request.
13. Once you complete the form, you should reply back to the support case you just filed and attach the form for review.

After we receive your request, we provide an initial response within 24 hours. We might contact you to request additional information. If we're able to provide you with a short code, we send you information about the costs associated with obtaining a short code in the country or region that you specified in your request. We also provide an estimate of the amount of time that's required to provision a short code in your country or region. It usually takes several weeks to provision a short code, although this delay can be much shorter or much longer depending on the country or region where the short code is based.

#### **Note**

The fees associated with using short codes begin immediately after we initiate your short code request with carriers. You're responsible for paying these charges, even if the short code hasn't been completely provisioned yet. In order to prevent our systems from being used to send unsolicited or malicious content, we have to consider each request carefully. We might not be able to grant your request if your use case doesn't align with our policies.

## **Step 2: Update your SMS settings in the Amazon Pinpoint console**

After we notify you that your short code has been provisioned, complete the following steps.

#### **Note**

You can't complete this steps until we've obtained the short code and associated it with your account.

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose a project that the SMS channel is enabled in.
3. In the navigation pane, under **Settings**, choose **SMS and voice**.
4. Under **Number settings**, choose the short code.
5. Under **Default keywords**, verify that the responses for the *HELP* and *STOP* keywords match the values that you specified in your request.
6. Under **Registered keyword**, verify that the opt-in keyword and response match the values that you specified in your request.
7. (Optional) If you want to specify additional keyword responses, or if you want to process inbound messages outside of Amazon Pinpoint, you can enable two-way SMS. For more information, see [Two-way SMS settings \(p. 296\)](#).

8. When you finish, choose **Save**.

## Next steps

You've registered a short code with wireless carriers and reviewed your settings in the Amazon Pinpoint console. Now you can use Amazon Pinpoint to send SMS messages with your short code as the origination number.

To engage an audience segment with an SMS campaign, see [Amazon Pinpoint campaigns \(p. 126\)](#).

## Requesting dedicated long codes for SMS messaging with Amazon Pinpoint

A long code (also referred to as a long virtual number, or LVN) is a standard phone number that contains up to 12 digits, depending on the country that it's based in. Long codes are typically meant for low-volume, person-to-person communication. However, you can also use long codes for sending test messages, or for sending low volumes of messages to your customers. You cannot request a long code for A2P messaging within the United States. Instead you'll need to request a 10DLC. For more information on 10DLC and how to request one, see "10DLC" in [SMS and voice settings \(p. 281\)](#).

### Note

In the United States and Canada, sending rates for long codes are restricted to 1 message per second. This restriction is set by the phone carriers, and isn't a limitation of Amazon Pinpoint. This restriction might be higher or lower in other countries and regions. If you send a large volume of messages from a long code, wireless carriers might begin to block your messages. If you [send SMS messages programmatically](#), your applications should limit the number of messages that they send each second. See [Best practices \(p. 98\)](#) for more information on ways to help you improve your customer engagement.

Depending on your location, the steps to request a long code are different. If you're located in the United States or Canada you can request a long code using the Amazon Pinpoint Console. For all other countries and territories you'll need to first file a Support request, described below.

### Note

If you're new to SMS messaging with Amazon Pinpoint, you should also request a monthly SMS spending threshold that meets the expected demands of your SMS use case. By default, your monthly spending threshold is \$1.00 (USD). For more information, see [Requesting increases to your monthly SMS spending quota for Amazon Pinpoint \(p. 69\)](#).

## Requesting a long code in the U.S. and Canada

If you're in the United States or Canada, you can purchase long codes directly through the Amazon Pinpoint console. For the steps to request a long code using the Amazon Pinpoint console, see [Requesting a number \(p. 291\)](#).

## Requesting a long code outside of the U.S. and Canada

If you're located outside of the United States or Canada, you need to create a ticket in the AWS Support Center requesting any long codes.

### To request a dedicated long code by opening a case in the AWS Support Center

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **Support** menu, choose **Support Center**.
3. On the **Open support cases** tab, choose **Create case**.
4. Under **Create case**, choose **Service limit increase**.



5. Under **Case details**, complete the following sections:
  - For **Limit type**, choose **Pinpoint SMS**.
  - (Optional) For **Provide a link to the site or app which will be sending SMS messages**, provide information about the website, application, or service that will send SMS messages.
  - (Optional) For **What type of messages do you plan to send**, choose the type of message that you plan to send using your long code:
    - **One Time Password** – Messages that provide passwords that your customers use to authenticate with your website or application.
    - **Promotional** – Noncritical messages that promote your business or service, such as special offers or announcements.
    - **Transactional** – Important informational messages that support customer transactions, such as order confirmations or account alerts. Transactional messages must not contain promotional or marketing content.
  - (Optional) For **Which AWS Region will you be sending messages from**, choose the region that you'll be sending messages from.
  - (Optional) For **Which countries do you plan to send messages to**, enter the country or region that you want to purchase short codes in.
  - (Optional) In the **How do your customers opt to receive messages from you**, provide details about your opt-in process.
  - (Optional) In the **Please provide the message template that you plan to use to send messages to your customers** field, include the template that you will be using.
6. Under **Requests**, complete the following sections:
  - For the **Region**, choose the Region from which you'll be sending messages.

**Note**  
The Region is required in the **Requests** section. Even if you provided this information in the **Case details** section you must also include it here.
  - For **Resource Type**, choose **Dedicated SMS Long Codes**.
  - For **New limit value**, enter the number of long codes that you want to purchase.
7. Under **Case description**, for **Use case description**, provide details about your use case.
8. (Optional) If you want to submit any further requests, choose **Add another request**. For the required information, see the other sections within [Requesting support for SMS messaging with Amazon Pinpoint \(p. 68\)](#).
9. Under **Contact options**, for **Preferred contact language**, choose whether you want to receive communications for this case in **English** or **Japanese**.
10. When you finish, choose **Submit**.

After we receive your request, we provide an initial response within 24 hours. We might contact you to request additional information. Once approved, you can add keywords and response messages to your long code. See [Managing SMS and voice settings \(p. 294\)](#).

If we're able to provide you with a long code, we send you information about the costs associated with obtaining it. We also provide an estimate of the amount of time that's required to provision the long code. In many countries, we can provide you with a dedicated long code within 24 hours. However, in some countries and regions, it can take several weeks to obtain a dedicated long code for the SMS channel.

In order to prevent our systems from being used to send unsolicited or malicious content, we have to consider each request carefully. We might not be able to grant your request if your use case doesn't align with our policies.

## Next steps

You've registered a long code and updated your settings in the Amazon Pinpoint console. Now you can use Amazon Pinpoint to send SMS messages with your long code as the origination number.

To engage an audience segment with an SMS campaign, see [Amazon Pinpoint campaigns \(p. 126\)](#).

To send an SMS message directly to a limited audience without creating a campaign, see [Sending a test SMS message \(p. 191\)](#).

## Requesting sender IDs for SMS messaging with Amazon Pinpoint

In SMS messaging, a *sender ID* is a name that appears as the message sender on recipients' devices. Sender IDs are a useful way to identify yourself to the recipients of your messages.

Support for sender IDs varies by country. For example, carriers in the United States don't support sender IDs at all, but carriers in India require senders to use sender IDs. For a complete list of countries that support sender IDs, see [Supported countries and regions \(SMS channel\) \(p. 85\)](#).

### Important

Some countries require you to register sender IDs before you use them to send messages. Depending on the country, this registration process might take several weeks. The countries that require pre-registered sender IDs are indicated in the table on the [Supported Countries \(p. 85\)](#) page.

If you're sending messages to recipients in a country where sender IDs are supported, and that country doesn't require you to register your sender ID, you don't have to perform any additional steps. You can start sending messages that include sender ID values immediately.

You only need to complete the procedures on this page if you plan to send messages to a country where registration of sender IDs is required.

### Note

If you plan to send messages to recipients in a country where sender IDs are allowed but not required, you don't need to open a case in the Support Center. You can start sending messages that use sender IDs immediately.

## Step 1: Open an Amazon Pinpoint SMS case

If you plan to send messages to recipients a country where sender IDs are required, you can request a sender ID by creating a new case in the AWS Support Center.

### Important

If you need to register a sender ID in India, complete the procedures in [Special requirements for India \(p. 95\)](#) before you open a case in Support Center.

### To request a sender ID

1. Sign in to the AWS Management Console at <https://console.aws.amazon.com/>.
2. On the **Support** menu, choose **Support Center**.
3. On the **Open support cases** tab, choose **Create case**.
4. Choose **Service limit increase**.
5. Under **Case details**, complete the following sections:
  - For **Limit type**, choose **Pinpoint SMS**.

- (Optional) For **Provide a link to the site or app which will be sending SMS messages**, provide information about the website, application, or service that will send SMS messages.
  - (Optional) For **What type of messages do you plan to send**, choose the type of message that you plan to send using your long code:
    - **One Time Password** – Messages that provide passwords that your customers use to authenticate with your website or application.
    - **Promotional** – Noncritical messages that promote your business or service, such as special offers or announcements.
    - **Transactional** – Important informational messages that support customer transactions, such as order confirmations or account alerts. Transactional messages must not contain promotional or marketing content.
  - (Optional) For **Which AWS Region will you be sending messages from**, choose the region that you'll be sending messages from.
  - (Optional) For **Which countries do you plan to send messages to**, enter the country or region that you want to purchase short codes in.
  - (Optional) In the **How do your customers opt to receive messages from you**, provide details about your opt-in process.
  - (Optional) In the **Please provide the message template that you plan to use to send messages to your customers** field, include the template that you will be using.
6. Under **Requests**, complete the following sections:
- For the **Region**, choose the Region from which you'll be sending messages.
- Note**  
The Region is required in the **Requests** section. Even if you provided this information in the **Case details** section you must also include it here.
- For **Resource Type**, choose **Sender ID Registration**.
  - For **New limit value**, enter the number of sender IDs that you're requesting. Typically, this value is 1.
7. Under **Case description**, for **Use case description**, provide the following information:
- The sender ID that you want to register.
  - The template that you plan to use for your SMS messages.
  - The number of messages that you plan to send to each recipient per month.
  - Information about how your customers opt in to receiving messages from you.
  - The name of your company or organization.
  - The address that's associated with your company or organization.
  - The country where your company or organization is based.
  - A phone number for your company or organization.
  - The URL of the website for your company or organization.
8. (Optional) If you want to submit any further requests, choose **Add another request**. For the required information, see the other sections within [Requesting support for SMS messaging with Amazon Pinpoint](#) (p. 68).
9. Under **Contact options**, for **Preferred contact language**, choose whether you want to receive communications for this case in **English** or **Japanese**.
10. When you finish, choose **Submit**.

---

After we receive your request, we provide an initial response within 24 hours. We might contact you to request additional information.

If we're able to provide you with a Sender ID, we send you an estimate of the amount of time that's required to provision it. In many countries, we can provide you with a Sender ID within 2–4 weeks. However, in some countries, it can take several weeks to obtain a Sender ID.

In order to prevent our systems from being used to send unsolicited or malicious content, we have to consider each request carefully. We might not be able to grant your request if your use case doesn't align with our policies.

## Step 2: Update your SMS settings in the Amazon Pinpoint console

When we complete the process of obtaining your sender ID, we respond to your case. When you receive this notification, complete the steps in this section to configure Amazon Pinpoint to use your sender ID.

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose a project that uses the SMS channel.
3. In the navigation pane, under **Settings**, choose **SMS and voice**.
4. Next to **SMS settings**, choose **Edit**.
5. Under **Account-level settings**, for **Default sender ID**, type your sender ID.
6. Choose **Save changes**.

## Moving from the Amazon Pinpoint SMS sandbox to production

After fully testing your SMS environment in the SMS sandbox, you can choose to move to production. To do so, create an AWS Support case for a **Service limit increase** request.

Alternatively, you can request production access from the sandbox environment. To do so, choose **Request production access** under **Account tier** on the **SMS and voice** page.

### Note

If your account is in multiple regions, you must submit a support request for each region.

### To move from the SMS sandbox

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **Support** menu, choose **Support Center**.
3. On the **Open support cases** tab, choose **Create case**.
4. Choose **Service limit increase**.
5. Under **Case details**, complete the following sections:
  - For **Limit type**, choose **Pinpoint SMS**.
  - (Optional) For **Provide a link to the site or app which will be sending SMS messages**, provide information about the website, application, or service that will send SMS messages.
  - (Optional) For **What type of messages do you plan to send**, choose the type of message that you plan to send using your long code:
    - **One Time Password** – Messages that provide passwords that your customers use to authenticate with your website or application.
    - **Promotional** – Noncritical messages that promote your business or service, such as special offers or announcements.
    - **Transactional** – Important informational messages that support customer transactions, such as order confirmations or account alerts. Transactional messages must not contain promotional or marketing content.
  - (Optional) For **Which AWS Region will you be sending messages from**, choose the region that you'll be sending messages from.

- (Optional) For **Which countries do you plan to send messages to**, enter the country or region that you want to purchase short codes in.
  - (Optional) In the **How do your customers opt to receive messages from you**, provide details about your opt-in process.
  - (Optional) In the **Please provide the message template that you plan to use to send messages to your customers** field, include the template that you will be using.
6. Under **Requests**, complete the following sections:
- For the **Region**, choose the Region from which you'll be sending messages.
- Note**  
The Region is required in the **Requests** section. Even if you provided this information in the **Case details** section you must also include it here.
- For **Resource Type**, choose **General Limits**.
  - For the Limit, choose **SMS Production Access**.
  - For **New limit value**, enter a new limit value.
7. Under **Case description**, for **Use case description**, enter any relevant details about this request.
8. (Optional) If you want to submit any further requests, choose **Add another request**. For the required information, see the other sections within [Requesting support for SMS messaging with Amazon Pinpoint](#) (p. 68).
9. Under **Contact options**, for **Preferred contact language**, choose whether you want to receive communications for this case in **English** or **Japanese**.
10. When you finish, choose **Submit**.

After we receive your request, we provide an initial response within 24 hours. We might contact you to request additional information.

## Monitoring SMS activity with Amazon Pinpoint

Amazon Pinpoint provides the following options for monitoring your SMS activity.

### Streaming SMS event data

To monitor your SMS activity, such as the number of successful and failed message deliveries, you can configure Amazon Pinpoint to stream SMS event data to Amazon Kinesis Data Streams or Amazon Kinesis Data Firehose. Then, you can use the Kinesis platform to analyze your SMS data. For more information, see [Streaming Amazon Pinpoint events to Kinesis](#) (p. 217).

For examples of the event data that Amazon Pinpoint streams to Kinesis, see [SMS events](#) in the *Amazon Pinpoint Developer Guide*.

### Amazon Pinpoint analytics

You can also use the **Analytics** pages on the Amazon Pinpoint console to view charts and data for metrics related to the SMS channel for a project. For example, you can see the number of SMS messages that you've sent and the number of active endpoints that you can send SMS messages to. For more information, see [Analytics](#) (p. 193).

### Monitoring SMS spending activity with Amazon Pinpoint

This topic provides information about viewing SMS spending metrics in Amazon CloudWatch. It also explains how to set up a CloudWatch alarm that sends you a notification when your monthly SMS spending exceeds a certain amount.

## View your monthly SMS spending by using CloudWatch

To quickly determine how much money you've spent sending SMS messages during the current month, you can use the Metrics section of the CloudWatch console. CloudWatch retains metrics data for 15 months, so you can view real-time data and analyze historical trends.

For more information about viewing metrics in CloudWatch, see [Using Amazon CloudWatch metrics](#) in the *Amazon CloudWatch User Guide*.

### To view SMS spending metrics in CloudWatch

1. Open the CloudWatch console at <https://console.aws.amazon.com/cloudwatch/>.
2. In the navigation pane, choose **Metrics**.
3. On the **All metrics** tab, choose **SNS**.
4. Choose **Metrics with no dimensions**.
5. Select **SMSMonthToDateSpentUSD**. The graph updates to display the amount of money that you've spent sending SMS messages during the current month by using Amazon Pinpoint and Amazon Simple Notification Service (Amazon SNS).

#### Note

The **SMSMonthToDateSpentUSD** metric doesn't appear until you send at least one SMS message by using Amazon Pinpoint or Amazon SNS.

## Create an SMS spending alarm by using CloudWatch

In addition to viewing your monthly SMS spending metrics, you can create CloudWatch alarms that notify you when your SMS spending exceeds a certain amount. You can set up CloudWatch to deliver these notifications to you by sending them to an Amazon SNS topic.

For more information about creating alarms in CloudWatch, see [Using Amazon CloudWatch alarms](#) in the *Amazon CloudWatch User Guide*.

### To create an SMS spending alarm in CloudWatch

1. If you haven't already done so, create an Amazon SNS topic and subscribe an endpoint to it. The endpoint that you subscribe to the topic should be the location where you want to receive spending notifications. For example, if you want to receive spending notifications by email, subscribe your email address to the Amazon SNS topic. If you want to receive spending notifications by text message, subscribe an SMS endpoint to the topic.

For information about creating and subscribing to topics, see [Getting started with Amazon SNS](#) in the *Amazon Simple Notification Service Developer Guide*.

2. Open the CloudWatch console at <https://console.aws.amazon.com/cloudwatch/>.
3. In the navigation pane, under **Alarms**, choose **Billing**.
4. Next to **Billing alarms**, choose **Create alarm**.
5. Choose **Select metric**.
6. On the **All metrics** tab, choose **SNS**, and then choose **Metrics with no dimensions**.
7. Select **SMSMonthToDateSpentUSD**.

#### Note

The **SMSMonthToDateSpentUSD** metric doesn't appear until you send at least one SMS message by using Amazon Pinpoint or Amazon SNS.

8. Choose the **Graphed metrics** tab, and then complete the following steps:
  - Under **Statistic**, choose the statistic or predefined percentile that you want to monitor, or specify a custom percentile—for example, **p99** or **p45**.

- Under **Period**, choose the evaluation period for the alarm. When evaluating the alarm, each period is aggregated into one datapoint.
9. Choose **Select metric**. The **Specify metric and conditions** page appears, showing a graph and other information about the metric and statistic for the alarm.
  10. Under **Conditions**, complete the following steps:
    - For **Threshold type**, choose **Static**.
    - For **Whenever SMSMonthToDateSpentUSD is**, specify whether you want the metric to be greater than, greater than or equal to, or equal to the threshold in order to trigger the alarm. Then, under **than**, enter the threshold value, which is the dollar amount (in US Dollars) that you want to trigger the alarm.
  11. Under **Additional configuration**, complete the following steps:
    - For **Datapoints to alarm**, enter the number of evaluation periods (datapoints) during which the spending amount must exceed the threshold to trigger the alarm.
    - For **Missing data treatment**, choose **Treat missing data as ignore (maintain the alarm state)**.
  12. Choose **Next**.
  13. Under **Notification**, complete the following steps:
    - For **Whenever this alarm state is**, choose **in Alarm**.
    - For **Select an SNS topic**, choose the Amazon SNS topic that you want the alarm notification to be sent to.
  14. Choose **Next**.
  15. Enter a name and, optionally, a description for the alarm, and then choose **Next**.
  16. Under **Preview and create**, review and confirm that the alarm settings are what you want, and then choose **Create alarm**.

## Managing the Amazon Pinpoint SMS channel

You can manage SMS settings, such as your default message type (transactional or promotional) and your monthly spending quota, directly in the Amazon Pinpoint console.

### Updating SMS channel settings

You can change several SMS-related settings. Most of these settings apply to your entire AWS account, but some apply to specific projects.

#### To edit SMS settings for a project

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that you want to edit SMS settings for.
3. In the navigation pane, under **Settings**, choose **SMS and voice**.
4. In the **SMS settings** section, choose **Edit**.
5. Change the SMS settings for your project as needed. You can change the following settings:

#### Enable the SMS channel for this project

Select this option to enable or disable the SMS channel for the project. If this setting is not enabled, you can't send SMS messages from this project. This setting only applies to the current project.

### Default message type

Choose the category of SMS messages that you plan to send from this account. If you send account-related messages or time-sensitive messages such as one-time passcodes, choose **Transactional**. If you plan to send messages that contain marketing material or other promotional content, choose **Promotional**. This setting applies to your entire AWS account.

### Account spending limit

The maximum amount of money (in US Dollars) that you can spend sending messages each month. You can use this setting to ensure that your SMS sending doesn't exceed your budget, or as a way to prevent unexpected increases in spending. The price to send an SMS message varies depending on the destination country for that message. For current prices, see [Amazon Pinpoint Pricing](#). This setting applies to your entire AWS account.

### Account sender ID

The alphabetic sender ID that you want to use when you send messages from your account. This setting applies to your entire AWS account.

#### Note

Alphabetic sender IDs are only supported in certain countries. If you don't send messages to countries where sender ID is supported by the mobile carriers in that country, you don't need to specify anything in this field. Sender IDs aren't supported in common messaging destinations such as the United States, Canada, and Brazil. Additionally, some countries require sender IDs to be pre-registered with government agencies or industry organizations.

For a list of countries that support alphabetic sender IDs, see [Country capabilities and limitations for SMS with Amazon Pinpoint \(p. 85\)](#).

6. When you finish, choose **Save changes**.

## SMS opt out

Where required by local laws and regulations (such as in the US and Canada), SMS recipients can use their devices to opt out by replying to the message with any of the following:

- ARRET (French)
- CANCEL
- END
- OPT-OUT
- OPTOUT
- QUIT
- REMOVE
- STOP
- TD
- UNSUBSCRIBE

To opt out, the recipient must reply to the same long code or short code that Amazon Pinpoint used to deliver the message. After opting out, the recipient no longer receives SMS messages from your AWS account.

#### Note

For toll-free numbers, opt-out is carrier-managed. The only supported opt-out keyword for a toll-free number is STOP. You will be unable to change or edit this keyword.



## Using two-way SMS messaging in Amazon Pinpoint

Amazon Pinpoint includes support for *two-way SMS*, which allows you to receive messages from your customers. You can configure Amazon Pinpoint to automatically send responses to your customers based on the content of the messages they send you.

### Note

Two-way SMS is only available in certain countries and regions. For more information about two-way SMS support by country or region, see [Supported countries and regions \(SMS channel\)](#) (p. 85).

## Two-way SMS use cases

Businesses in a wide variety of industries can use two-way SMS to keep their customers informed and engaged.

For example, medical practices can send messages to their patients asking them to confirm their appointments. Patients can respond, indicating whether they're able to keep their appointments. Patients who respond that they can't keep their appointments are sent a list of available times, and can reply to the message to reschedule. This use case can be applied to several other types of businesses, such as restaurants or salons.

Another use case for two-way SMS is the verification of certain real-world actions. For example, banks or credit card providers can send a verification message when they notice unusual charges on a customer's account. The customer can respond to the message authorizing the charge. When the provider receives the authorization, they can allow the transaction to proceed.

## Configuring two-way SMS in Amazon Pinpoint

You can set up two-way SMS by using the Amazon Pinpoint console. Complete the procedures in this section to enable and set up two-way SMS messaging for your account.

### Prerequisite

Before you can enable and set up two-way SMS in Amazon Pinpoint, you have to request a dedicated number. If you're testing your two-way SMS program, you can request a long code. However, the laws and regulations of some countries and regions might require you to use a short code when you send messages to your customers and receive messages from them.

For more information about requesting numbers, including dedicated short codes and long codes, see [Requesting support for SMS messaging with Amazon Pinpoint](#) (p. 68).

### Setting up two-way SMS

After you receive a dedicated number from AWS Support, you can enable and configure two-way SMS.

#### To set up two-way SMS

1. On the **All projects** page, choose the project that you want to manage two-way SMS settings for.
2. In the navigation pane, under **Settings**, choose **SMS and voice**.
3. Under **Number settings**, choose the phone number that you want to configure two-way SMS for.

### Note

You can enable two-way SMS for a phone number only if the value in the **SMS** column is *Enabled*.

- Under **Two-way SMS**, choose **Enable 2-way SMS**.
- Under **Incoming messages destination**, specify the Amazon SNS topic that receives your SMS messages by choosing one of the following options:

- **Create a new Amazon SNS topic** – Amazon Pinpoint creates a topic in your account.
- **Choose an existing Amazon SNS topic** – Specify the ARN of a topic in your account.

**Note**

Amazon Pinpoint currently doesn't support the use of encrypted Amazon SNS topics for two-way SMS messaging. You have to choose a topic that isn't encrypted.

- Under **Two-way SMS keywords**, you can add or edit keywords and response messages. When your number receives an SMS message that contains one of these keywords, Amazon Pinpoint does the following:
  - Sends the message to your Amazon SNS topic.
  - Responds with the keyword response message, if you specified one.

To add a keyword, choose **Add another keyword**.

- When you finish making changes, choose **Save**.

## Example of a two-way SMS message payload

When your number receives an SMS message that begins with a keyword that you define for two-way SMS, Amazon Pinpoint sends a JSON payload to an Amazon SNS topic that you designate. The JSON payload contains the message and related data, as in the following example:

```
{
  "originationNumber":"+14255550182",
  "destinationNumber":"+12125550101",
  "messageKeyword":"JOIN",
  "messageBody":"EXAMPLE",
  "inboundMessageId":"cael73d2-66b9-564c-8309-21f858e9fb84",
  "previousPublishedMessageId":"wJalrXUtnFEMI/K7MDENG/bPxRfiCYEXAMPLEKEY"
}
```

The incoming message payload contains the following information:

Property	Description
originationNumber	The phone number that sent the incoming message to you (in other words, your customer's phone number).
destinationNumber	The phone number that the customer sent the message to (your dedicated phone number).
messageKeyword	The registered keyword that's associated with your dedicated phone number.
messageBody	The message that the customer sent to you.
inboundMessageId	The unique identifier for the incoming message.
previousPublishedMessageId	The unique identifier of the message that the customer is responding to.

## Country capabilities and limitations for SMS with Amazon Pinpoint

Amazon Pinpoint includes support for *two-way SMS*, which allows you to receive messages from your customers. You can configure Amazon Pinpoint to automatically send responses to your customers based on the content of the messages they send you. Amazon Pinpoint is currently unable to send SMS messages to a small number of countries, including Cuba, Iran, North Korea, Syria, and Sudan. For a complete list of countries and regions that you can send SMS messages to, see [Supported countries and regions \(SMS channel\)](#) (p. 85).

Most countries and regions place restrictions on the type of content that you can send using SMS. These restrictions vary, but the following types of content are restricted in most countries or regions:

- Pornographic content
- Content that is profane or hateful
- Content that depicts or endorses violence
- Content that endorses illegal drugs

In many countries and regions, if a customer receives restricted content and complains to a mobile carrier or regulatory agency, the sender might be subject to fines and penalties. Governments of a few countries and regions actively filter all incoming messages to remove content that they deem offensive or inappropriate. Always familiarize yourself with the laws and regulations about sending commercial SMS messages for the countries and regions where your customers are located.

Each country might also have additional capabilities and limitations when using SMS with Amazon Pinpoint. These capabilities and limitations are described in the following topics.

### Topics

- [Supported countries and regions \(SMS channel\)](#) (p. 85)
- [Special requirements for sending SMS messages to recipients in India](#) (p. 95)

## Supported countries and regions (SMS channel)

You can use Amazon Pinpoint to send SMS messages to the countries and regions listed in the following table. This table also lists the countries and regions that support sender IDs and [two-way SMS messaging](#) (p. 83).

Before you can use two-way SMS messaging to receive messages, you have to obtain either a dedicated short code or a dedicated long code for the SMS channel. For more information about requesting short and long codes, see [Requesting support for SMS messaging with Amazon Pinpoint](#) (p. 68).

### Note

You can purchase long codes directly through the Amazon Pinpoint console. The long codes that you purchase through the console are intended for use with the [voice channel](#) (p. 101). However, if you purchase a long code that is based in the United States (including Puerto Rico) or Canada, you can also use it to send SMS messages. If you need a long code for sending SMS messages in a different country or region, complete the procedures at [Requesting dedicated long codes for SMS messaging with Amazon Pinpoint](#) (p. 74).

The following table explains which ID is displayed when you send SMS messages to countries or regions where sender ID is supported, compared to those where sender ID isn't supported.

Country or region	ISO code	Dialing code	Supports short codes	Supports long codes	Supports sender IDs	Supports two-way SMS
<b>A</b>						
Afghanistan	AF	93	No	No	Yes	No
Albania	AL	355	No	No	Yes	No
Andorra	AD	376	No	No	Yes	No
Anguilla	AI	1-264	No	No	Yes	No
Antigua and Barbuda	AG	1-268	No	No	Yes	No
Argentina	AR	54	Yes	No	No	No
Armenia	AM	374	No	No	Yes	No
Aruba	AW	297	No	No	Yes	No
Australia	AU	61	No	Yes	Yes	Yes
Austria	AT	43	Yes	Yes	Yes	Yes
Azerbaijan	AZ	994	No	No	Yes	No
<b>B</b>						
Bahamas	BS	1-242	No	No	No	No
Bahrain	BH	973	No	No	Yes	No
Bangladesh	BD	880	No	No	Yes	No
Barbados	BB	1-246	No	No	Yes	No
Belarus	BY	375	No	No	Registration required <sup>1</sup> (p. 95)	No
Belgium	BE	32	No	Yes	No	Yes
Belize	BZ	501	No	No	Yes	No
Bermuda	BM	1-441	No	No	Yes	No
Bhutan	BT	975	No	No	Yes	No
Bosnia and Herzegovina	BA	387	No	No	Yes	No
Botswana	BW	267	No	No	Yes	No
Brazil	BR	55	Yes	Yes	No	Yes
Brunei	BN	673	No	No	Yes	No
Bulgaria	BG	359	Yes	No	Yes	Yes
Burkina Faso	BF	226	No	No	Yes	No

Country or region	ISO code	Dialing code	Supports short codes	Supports long codes	Supports sender IDs	Supports two-way SMS
Burundi	BL	257	No	No	Yes	No
<b>C</b>						
Cambodia	KH	855	No	No	Yes	No
Cameroon	CM	237	No	No	Yes	No
Canada	CA	1	Yes	Yes	No	Yes
Cape Verde	CV	238	No	No	Yes	No
Cayman Islands	KY	1-345	No	No	No	No
Central African Republic	CF	236	No	No	Yes	No
Chile	CL	56	Yes	Yes	No	Yes
China	CN	86	Yes	No	No <sup>2 (p. 95)</sup>	Yes
Colombia	CO	57	No	Yes	No	Yes
Comoros	KM	269	No	No	Yes	No
Cook Islands	CK	682	No	No	Yes	Yes
Costa Rica	CR	506	No	No	No	No
Croatia	HR	385	No	No	Yes	No
Cyprus	CY	357	No	No	Yes	No
Czechia (Czech Republic)	CZ	420	No	Yes	Yes	Yes
<b>D</b>						
Democratic Republic of the Congo	CD	243	No	No	Yes	No
Denmark	DK	45	Yes	Yes	Yes	Yes
Djibouti	DJ	253	No	No	Yes	No
Dominica	DN	1-767	No	No	Yes	No
Dominican Republic	DO	1-809, 1-829, 1-849	Yes	No	No	Yes
<b>E</b>						
Ecuador	EC	593	Yes	No	No	Yes

Country or region	ISO code	Dialing code	Supports short codes	Supports long codes	Supports sender IDs	Supports two-way SMS
Egypt	EG	20	Yes	No	Registration required <sup>1</sup> (p. 95)	Yes
El Salvador	SV	503	No	No	No	No
Equatorial Guinea	GQ	240	No	No	Yes	No
Eritrea	ER	291	No	No	Yes	No
Estonia	EE	372	No	Yes	Yes	Yes
Ethiopia	ET	251	No	No	Yes	No
<b>F</b>						
Faroe Islands	FO	298	No	No	Yes	No
Fiji	FJ	679	No	No	Yes	No
Finland	FI	358	Yes	Yes	Yes	Yes
France	FR	33	Yes	Yes	Yes	Yes
French Guiana	GF	594	No	No	Yes	No
French Polynesia	PF	689	No	No	Yes	No
<b>G</b>						
Gabon	GA	241	No	No	Yes	No
Gambia	GM	220	No	No	Yes	No
Georgia	GE	995	No	No	Yes	No
Germany	DE	49	Yes	Yes	Yes	Yes
Ghana	GH	233	No	No	Yes	No
Gibraltar	GL	350	No	No	Yes	No
Greece	GR	30	No	No	Yes	No
Greenland	GL	299	No	No	Yes	No
Grenada	GD	1-473	No	No	Yes	No
Guadeloupe	GP	590	No	No	Yes	No
Guam	GU	1-671	No	No	No	No
Guatemala	GT	502	No	No	No	No
Guernsey	GG	44-1481	No	No	Yes	No

Country or region	ISO code	Dialing code	Supports short codes	Supports long codes	Supports sender IDs	Supports two-way SMS
Guinea	GN	224	No	No	Yes	No
Guinea-Bissau	GW	245	No	No	Yes	N/A
Guyana	GY	592	No	No	Yes	No
<b>H</b>						
Haiti	H	509	No	No	Yes	No
Honduras	HN	504	No	No	Yes	No
Hong Kong	HK	852	No	Yes	Yes	Yes
Hungary	HU	36	No	Yes	No	Yes
<b>I</b>						
Iceland	IS	354	No	No	Yes	No
India	IN	91	Yes	Yes	Registration required <sup>3</sup> (p. 95)	Yes
Indonesia	ID	62	No	No	Yes	No
Iraq	IQ	964	No	No	Yes	No
Ireland	IE	353	No	Yes	Yes	Yes
Isle of Man	IM	44-1624	No	No	Yes	No
Israel	IL	972	No	Yes	Yes	Yes
Italy	IT	39	Yes	Yes	Yes	Yes
Ivory Coast	CL	225	No	No	Yes	No
<b>J</b>						
Jamaica	JM	1-876	No	No	Yes	No
Japan	JP	81	Yes	Yes	Yes	Yes
Jersey	JE	44-1434	No	Yes	Yes	Yes
Jordan	JO	962	No	No	Registration required <sup>1</sup> (p. 95)	No
<b>K</b>						
Kazakhstan	KZ	7	No	No	Yes	No
Kenya	KE	254	No	No	Yes	No
Kosovo	XK	383	No	No	Yes	No

Country or region	ISO code	Dialing code	Supports short codes	Supports long codes	Supports sender IDs	Supports two-way SMS
Kuwait	KW	965	No	No	Registration required <sup>1</sup> (p. 95)	No
Kyrgyzstan	KG	996	No	No	Yes	No
<b>L</b>						
Laos	LA	856	No	No	Yes	No
Lebanon	LB	961	No	No	Yes	No
Lesotho	LS	266	No	No	Yes	No
Liberia	LR	231	No	Yes	No	
Libya	LY	218	No	No	Yes	No
Liechtenstein	LI	423	No	No	Yes	No
Lithuania	LT	370	No	Yes	Yes	Yes
Luxembourg	LU	352	No	Yes	Yes	Yes
<b>M</b>						
Macau	MO	853	No	No	Yes	No
Macedonia	MK	389	No	No	Yes	No
Madagascar	MG	261	No	No	Yes	No
Malwai	MW	265	No	No	Yes	No
Malaysia	MY	60	No	Yes	No	Yes
Maldives	MV	960	No	No	Yes	No
Mali	ML	223	No	No	Yes	No
Malta	MT	356	No	No	Yes	No
Marshall Islands, The	MH	692	No	No	No	No
Martinique	MQ	596	No	No	Yes	No
Mauritania	MR	222	No	No	Yes	No
Mauritius	MU	230	No	No	Yes	No
Mayotte	YT	262	No	No	Yes	No
Mexico	MX	52	Yes	Yes	Yes	Yes
Micronesia (Federated States of)	FM	691	No	No	No	No



Country or region	ISO code	Dialing code	Supports short codes	Supports long codes	Supports sender IDs	Supports two-way SMS
Moldova	MD	373	No	No	Yes	No
Monaco	MC	377	No	No	No	No
Mongolia	MN	976	No	No	Yes	No
Montenegro	ME	382	No	No	Yes	No
Montserrat	MS	1-664	No	No	Yes	No
Morocco	MA	212	Yes	No	Yes	Yes
Mozambique	MS	258	No	No	No	No
Myanmar	MM	95	No	Yes	Yes	Yes
<b>N</b>						
Namibia	NA	264	No	No	Yes	No
Nepal	NP	977	No	No	Yes	No
Netherlands	NL	31	Yes	Yes	Yes	Yes
Netherlands Antilles	AN	599	No	No	Yes	No
New Caledonia	NC	687	No	No	Yes	No
New Zealand	NZ	64	Yes	No	No	NO
Nicaragua	NI	505	No	No	No	No
Niger	NE	227	No	No	Yes	No
Nigeria	NG	234	No	No	Yes	No
Niue	NU	683	No	No	Yes	No
Norway	NO	47	No	Yes	Yes	Yes
<b>O</b>						
Oman	OM	968	No	No	Yes	N/A
<b>P</b>						
Pakistan	PK	92	No	No	Yes	N/A
Palestine	PS	970	No	No	Yes	No
Panama	PA	507	No	No	Yes	No
Papua New Guinea	PG	675	No	No	Yes	No
Paraguay	PY	595	No	No	No	No

Country or region	ISO code	Dialing code	Supports short codes	Supports long codes	Supports sender IDs	Supports two-way SMS
Peru	PE	51	Yes	No	No	Yes
Philippines	PH	63	No	Yes	Registration required <sup>1</sup> (p. 95)	Yes
Poland	PL	48	No	Yes	Yes	Yes
Portugal	PT	351	No	Yes	Yes	Yes
Puerto Rico	PR	1-797, 1-939	No	Yes	No	Yes
<b>Q</b>						
Qatar	QA	974	No	No	Registration required <sup>1</sup> (p. 95)	No
<b>R</b>						
Republic of the Congo	CG	242	No	No	No	No
Rèunion (France)	RE	262	No	No	Yes	No
Romania	RO	40	No	Yes	Yes	Yes
Russia	RU	7	Yes	No	Registration required <sup>1</sup> (p. 95)	Yes
Rwanda	RW	250	No	No	Yes	No
<b>S</b>						
Saint Kitts and Nevis	KN	1-869	No	No	No	No
Saint Lucia	LC	1-758	No	No	No	No
Samoa	WS	685	No	No	Yes	No
San Marino	SM	378	No	No	Yes	No
Sao Tome and Principe	ST	239	No	No	Yes	No
Saudi Arabia	SA	966	No	Yes	Registration required <sup>1</sup> (p. 95)	No
Senegal	SN	221	No	No	Yes	No
Serbia	RS	381	No	No	Yes	No
Seychelles	SC	248	No	No	Yes	No
Sierra Leone	SL	232	No	No	Yes	No

Country or region	ISO code	Dialing code	Supports short codes	Supports long codes	Supports sender IDs	Supports two-way SMS
Singapore	SG	65	Yes	Yes	Yes	Yes
Slovakia	SK	421	No	Yes	Yes	No
Slovenia	SI	386	No	No	Yes	No
Solomon Islands	SB	677	No	No	Yes	No
Somalia	SO	252	No	No	Yes	No
South Africa	ZA	27	Yes	Yes	No	Yes
South Korea	KR	82	No	No	No	No
South Sudan	SS	211	No	No	Yes	No
Spain	ES	34	Yes	Yes	Yes	Yes
Sri Lanka	LK	94	No	No	Registration required <sup>1</sup> (p. 95)	No
Suriname	SR	597	No	No	Yes	No
Swaziland	SZ	268	No	No	Yes	No
Sweden	SE	46	Yes	Yes	Yes	Yes
Switzerland	CH	41	No	Yes	Yes	Yes
<b>T</b>						
Taiwan	TW	886	No	Yes	Yes	Yes
Tajikistan	TJ	992	No	No	Yes	No
Tanzania	TX	255	No	No	Yes	No
Thailand	TH	66	No	Yes	Registration required <sup>1</sup> (p. 95)	Yes
Timor-Leste	TL	670	No	No	Yes	No
Togo	TG	228	No	No	Yes	No
Tonga	TO	676	No	No	Yes	No
Trinidad and Tobago	TT	1-868	No	No	Yes	No
Tunisia	TN	216	No	No	Yes	No
Turkey	TR	90	Yes	No	Registration required <sup>1</sup> (p. 95)	Yes
Turkmenistan	TM	993	No	No	No	No

Country or region	ISO code	Dialing code	Supports short codes	Supports long codes	Supports sender IDs	Supports two-way SMS
Turks and Caicos Islands	TC	1-649	No	No	Yes	No
Tuvalu	TC	688	No	No	Yes	No
<b>U</b>						
Uganda	UG	256	No	No	Yes	No
Ukraine	UA	380	No	Yes	Yes	Yes
United Arab Emirates (UAE)	AE	971	Yes	Yes	Registration required <sup>1</sup> (p. 95)	Yes
United Kingdom	GB	44	Yes	Yes	Yes	Yes
United States	US	1	Yes	Yes	No	Yes
Uruguay	UY	598	Yes	No	No	Yes
Uzbekistan	UZ	998	No	No	Yes	No
<b>V</b>						
Vanuatu	VU	678	No	No	Yes	No
Venezuela	VE	58	No	No	No	No
Vietnam	VN	84	No	No	Registration required <sup>1</sup> (p. 95)	No
Virgin Islands, British	VG	1-284	No	No	Yes	No
Virgin Islands, US	VI	1-340	No	No	No	No
<b>W</b>						
<b>X</b>						
<b>Y</b>						
Yemen	YE	967	No	No	Yes	No
<b>Z</b>						
Zambia	ZM	260	No	No	Yes	No
Zimbabwe	ZW	263	No	No	Yes	No

## Notes

1. Senders are required to use a pre-registered alphabetic sender ID. To request a sender ID from AWS Support, see [the section called “Requesting sender IDs” \(p. 76\)](#). Some countries require senders to meet specific requirements or abide by certain restrictions in order to obtain approval. In these cases, AWS Support might contact you for additional information after you submit your sender ID request.
2. Senders are required to use a pre-registered template for each type of message that they plan to send. If a sender doesn't meet this requirement, their messages will be blocked. To register a template, open an Amazon Pinpoint SMS case with AWS Support. When you create the case, provide the same information that you would provide to request a sender ID. For more information, see [the section called “Requesting sender IDs” \(p. 76\)](#). Some countries require senders to meet additional, specific requirements or abide by certain restrictions in order to obtain approval. In these cases, AWS Support might ask you for additional information.
3. Senders are required to use a pre-registered alphabetic sender ID. Additional registration steps are required. For more information, see [Special requirements for sending SMS messages to recipients in India \(p. 95\)](#).

## Sender ID support

The following table explains which ID is displayed when you send SMS messages to countries or regions where sender ID is supported, compared to those where sender ID isn't supported.

If the recipient is located...	And your SMS message...	The message displays...
In a country or region where sender ID is supported	Specifies a sender ID	The sender ID.
	Does not specify a sender ID	<ul style="list-style-type: none"><li>• A long code in countries and regions where an alphabetic sender ID is not required.</li><li>• The word <i>NOTICE</i> in countries and regions where an alphabetic sender ID is required.</li></ul>
In a country or region where sender ID is not supported	Specifies a sender ID	A long code.
	Does not specify a sender ID	A long code.

## Special requirements for sending SMS messages to recipients in India

By default, when you send messages to recipients in India, Amazon Pinpoint uses International Long Distance Operator (ILDO) connections to transmit those messages. When recipients see a message sent over an ILDO connection, it appears to be sent from a random numeric ID.

### Note

The price for sending messages using local routes is shown on the [Amazon Pinpoint Pricing](#) page. The price for sending messages using ILDO connections is higher than the price for sending messages through local routes.

If you prefer to use an alphabetic sender ID for your SMS messages, you have to send those messages over local routes rather than ILDO routes. To send messages using local routes, you must first register

your use case and message templates with the Telecom Regulatory Authority of India (TRAI) through Distributed Ledger Technology (DLT) portals. These registration requirements are designed to reduce the number of unsolicited messages that Indian consumers receive and to protect consumers from potentially harmful messages. This registration process is managed by Vodafone India through its Vilpower service.

To complete the registration process, provide the following information:

- Your organization's Permanent Account Number (PAN).
- Your organization's Tax Deduction Account Number (TAN).
- Your organization's Goods and Services Tax Identification Number (GSTIN).
- Your organization's Corporate Identity Number (CIN).
- A letter of authorization that gives you the authority to register your organization with Vilpower. The Vilpower website includes a template that you can download and modify to fit your needs.

Vilpower charges a fee for completing the registration process. The current fee is shown on the Vilpower website.

To send SMS messages to India, follow these steps:

#### Topics

- [Step 1: Register with the TRAI \(p. 96\)](#)
- [Step 2: File an AWS Support request \(p. 96\)](#)
- [Step 3: Ensure your SMS are delivered successfully \(p. 97\)](#)

## Step 1: Register with the TRAI

### To register your organization with the TRAI

1. In a web browser, go to the Vilpower website at <https://www.vilpower.in>.
2. Choose **Signup** to create another account. During the registration process, do the following:
  - When you're asked to specify the type of entity that you want to register as, choose **As Enterprise**.
  - For **Telemarketer Name**, choose **Infobip Private Limited - ALL**. When prompted, start typing **Infobip** and then choose **Infobip Private Limited - ALL** from the dropdown list.
  - For **Enter Telemarketer ID**, enter **110200001152**.
  - When prompted to provide your Header IDs, enter the sender IDs that you want to register.
  - When prompted to provide your Content Templates, enter the message content that you plan to send to your recipients. Include a template for every message that you plan to send.

#### Note

The Vilpower website is not maintained by Amazon Web Services. Steps on their website are subject to change by Vilpower.

## Step 2: File an AWS Support request

### To file an AWS Support request

- Complete the steps at [Requesting sender IDs \(p. 76\)](#). In your request, provide the following required information:
  - Which AWS region the user will be calling our API/service from.

- The Company name as it was registered through DLT.
- The Principal Entity ID (PEID) that you received after successful DLT entity registration.
- The estimated monthly volumes.
- An explanation of your use case.
- A description of the end user opt-in flow.
- Confirmation that end user opt-ins are collected and registered.

### Step 3: Ensure your SMS are delivered successfully

To make sure your SMS messages are delivered successfully using local routes, you need to complete the following two steps: providing values for two Send Message API parameters and choosing the route type.

#### To ensure your SMS are delivered successfully

1. In the Send Message API, provide values for the following parameters:
  - `EntityId` – The entity ID or Principal Entity (PE) ID received from the regulatory body for sending SMS in your country.
  - `TemplateId` – The template ID received from the regulatory body for sending SMS in your country.
2. Choose one of the following route types:
  - **Promotional** – Choose this type for promotional messages, which use a numeric sender ID.
  - **Transactional** – Choose this type for transactional messages, which use a case-sensitive alphabetic sender ID.

#### Note

You can use both numeric sender IDs (promotional messages) and alphabetic sender IDs (transactional messages) for an account within the same region. For additional content guidelines, see the Vilpower website at <https://www.vilpower.in>.

3. When you add content to your message, review your content thoroughly to ensure that it matches the content in the DLT registered template exactly. If you include additional character returns, spaces, punctuation, or mismatched sentence case, carriers will block your SMS messages. Variables in a template – for example, `{#var#}` – can't exceed 30 characters for each variable. The following are some common use cases for message rejection:

- **No template was found that matched the content sent.**

Content sent: `<#> 12345 is your OTP to verify mobile number. Your OTP is valid for 15 minutes -- ABC Pvt. Ltd.`

Matched template: None

Issue: There are no DLT templates that include `<#>` or `{#var#}` at the beginning of the DLT registered template.

- **The value of a variable exceeds 30 characters.**

Content sent: `12345 is your OTP code for ABC (ABC Company - India Private Limited) - (ABC 123456789). Share with your agent only. - ABC Pvt. Ltd.`

Matched template: `{#var#} is your OTP code for {#var#} ({#var#}) - ({#var#} {#var#}). Share with your agent only. - ABC Pvt. Ltd.`

Issue: The value of "ABC Company - India Private Limited" in the content sent exceeds a single `{#var#}` character limit of 30.

- **The message sentence case does not match the sentence case in the template.**

Content sent: 12345 is your OTP code for ABC (ABC Company - India Private Limited) - (ABC 123456789). Share with your agent only. - ABC Pvt. Ltd.

Matched template: {#var#} is your OTP code for {#var#} ({#var#}) - ({#var#} {#var#}). Share with your agent only. - ABC PVT. LTD.

Issue: The company name appended to the DLT matched template is capitalized while the content sent has changed parts of the name to lowercase ("ABC Pvt. Ltd." versus "ABC PVT. LTD.").

#### Note

Two-way SMS is only available in certain countries and regions. For more information about two-way SMS support by country or region, see [Supported countries and regions \(SMS channel\)](#) (p. 85).

## Best practices

Mobile phone users tend to have a very low tolerance for unsolicited SMS messages. Response rates for unsolicited SMS campaigns will almost always be low, and therefore the return on your investment will be poor.

Additionally, mobile phone carriers continuously audit bulk SMS senders. They throttle or block messages from numbers that they determine to be sending unsolicited messages.

Sending unsolicited content is also a violation of the [AWS acceptable use policy](#). The Amazon Pinpoint team routinely audits SMS campaigns, and might throttle or block your ability to send messages if it appears that you're sending unsolicited messages.

Finally, in many countries, regions, and jurisdictions, there are severe penalties for sending unsolicited SMS messages. For example, in the United States, the Telephone Consumer Protection Act (TCPA) states that consumers are entitled to \$500–\$1,500 in damages (paid by the sender) for each unsolicited message that they receive.

This section describes several best practices that might help you improve your customer engagement and avoid costly penalties. However, note that this section doesn't contain legal advice. Always consult an attorney to obtain legal advice.

#### Topics

- [Comply with laws and regulations](#) (p. 98)
- [Obtain permission](#) (p. 99)
- [Audit your customer lists](#) (p. 99)
- [Keep records](#) (p. 100)
- [Respond appropriately](#) (p. 100)
- [Adjust your sending based on engagement](#) (p. 100)
- [Send at appropriate times](#) (p. 100)
- [Avoid cross-channel fatigue](#) (p. 101)
- [Maintain independent lists](#) (p. 101)
- [Use dedicated short codes](#) (p. 101)

## Comply with laws and regulations

You can face significant fines and penalties if you violate the laws and regulations of the places where your customers reside. For this reason, it's vital to understand the laws related to SMS messaging in each country or region where you do business.



The following list includes links to key laws that apply to SMS communications in major markets around the world.

- **United States:** The Telephone Consumer Protection Act of 1991, also known as TCPA, applies to certain types of SMS messages. For more information, see the [rules and regulations](#) at the Federal Communications Commission website.
- **United Kingdom:** The Privacy and Electronic Communications (EC Directive) Regulations 2003, also known as PECR, applies to certain types of SMS messages. For more information, see [What are PECR?](#) at the website of the UK Information Commissioner's Office.
- **European Union:** The Privacy and Electronic Communications Directive 2002, sometimes known as the ePrivacy Directive, applies to some types of SMS messages. For more information, see the [full text of the law](#) at the Europa.eu website.
- **Canada:** The Fighting Internet and Wireless Spam Act, more commonly known as Canada's Anti-Spam Law or CASL, applies to certain types of SMS messages. For more information, see the [full text of the law](#) at the website of the Parliament of Canada.
- **Japan:** The Act on Regulation of Transmission of Specific Electronic Mail may apply to certain types of SMS messages. For more information, see [Japan's countermeasures against spam](#) at the website of the Japanese Ministry of Internal Affairs and Communications.

As a sender, these laws may apply to you even if you don't reside in one of these countries. Some of the laws in this list were originally created to address unsolicited email or telephone calls, but have been interpreted or expanded to apply to SMS messages as well. Other countries and regions may have their own laws related to the transmission of SMS messages. Consult an attorney in each country or region where your customers are located to obtain legal advice.

## Obtain permission

Never send messages to customers who haven't explicitly asked to receive them.

If customers can sign up to receive your messages by using an online form, add a CAPTCHA to the form to prevent automated scripts from subscribing people without their knowledge.

When you receive an SMS opt-in request, send the customer a message that asks them to confirm that they want to receive messages from you. Don't send that customer any additional messages until they confirm their subscription. A subscription confirmation message might resemble the following example:

Text YES to join Example Corp. alerts. 2 msgs/month. Msg & data rates may apply.  
Reply HELP for help, STOP to cancel.

Maintain records that include the date, time, and source of each opt-in request and confirmation. This might be useful if a carrier or regulatory agency requests it, and can also help you perform routine audits of your customer list.

Finally, note that transactional SMS messages, such as order confirmations or one-time passwords, typically don't require explicit consent as long as you tell your customers that you're going to send them these messages. However, you should never send marketing messages to customers who only provided you with permission to send them transactional messages.

## Audit your customer lists

If you send recurring SMS campaigns, audit your customer lists on a regular basis. Auditing your customer lists ensures that the only customers who receive your messages are those who are interested in receiving them.

When you audit your list, send each opted-in customer a message that reminds them that they're subscribed, and provides them with information about unsubscribing. A reminder message might resemble the following example:

You're subscribed to Example Corp. alerts. Msg & data rates may apply.  
Reply HELP for help, STOP to unsubscribe.

## Keep records

Keep records that show when each customer requested to receive SMS messages from you, and which messages you sent to each customer. Many countries and regions around the world require SMS senders to maintain these records in a way that can be easily retrieved. Mobile carriers might also request this information from you at any time. The exact information that you have to provide varies by country or region. For more information about record-keeping requirements, review the regulations about commercial SMS messaging in each country or region where your customers are located.

Occasionally, a carrier or regulatory agency asks us to provide proof that a customer opted to receive messages from you. In these situations, AWS Support contacts you with a list of the information that the carrier or agency requires. If you can't provide the necessary information, we may pause your ability to send additional SMS messages.

## Respond appropriately

When a recipient replies to your messages, make sure that you respond with useful information. For example, when a customer responds to one of your messages with the keyword "HELP", send them information about the program that they're subscribed to, the number of messages you'll send each month, and the ways that they can contact you for more information. A HELP response might resemble the following example:

HELP: Example Corp. alerts: email help@example.com or call XXX-555-0199. 2 msgs/month.  
Msg & data rates may apply. Reply STOP to cancel.

When a customer replies with the keyword "STOP", let them know that they won't receive any further messages. A STOP response might resemble the following example:

STOP: You're unsubscribed from Example Corp. alerts. No more messages will be sent.  
Reply HELP, email help@example.com, or call XXX-555-0199 for more info.

## Adjust your sending based on engagement

Your customers' priorities can change over time. If customers no longer find your messages to be useful, they might opt out of your messages entirely, or even report your messages as unsolicited. For these reasons, it's important that you adjust your sending practices based on customer engagement.

For customers who rarely engage with your messages, you should adjust the frequency of your messages. For example, if you send weekly messages to engaged customers, you could create a separate monthly digest for customers who are less engaged.

Finally, remove customers who are completely unengaged from your customer lists. This step prevents customers from becoming frustrated with your messages. It also saves you money and helps protect your reputation as a sender.

## Send at appropriate times

Only send messages during normal daytime business hours. If you send messages at dinner time or in the middle of the night, there's a good chance that your customers will unsubscribe from your lists in order to avoid being disturbed. Furthermore, it doesn't make sense to send SMS messages when your customers can't respond to them immediately.

## Avoid cross-channel fatigue

In your campaigns, if you use multiple communication channels (such as email, SMS, and push messages), don't send the same message in every channel. When you send the same message at the same time in more than one channel, your customers will probably perceive your sending behavior to be annoying rather than helpful.

## Maintain independent lists

When customers opt in to a topic, make sure that they only receive messages about that topic. Don't send your customers messages from topics that they haven't opted into.

## Use dedicated short codes

If you use short codes, maintain a separate short code for each brand and each type of message. For example, if your company has two brands, use a separate short code for each one. Similarly, if you send both transactional and promotional messages, use a separate short code for each type of message. To learn more about requesting short codes, see [Requesting short codes for SMS messaging with Amazon Pinpoint](#) (p. 71).

# Amazon Pinpoint voice channel

You can use the voice channel to create voice messages from a text script, and then send those messages to your customers over the phone. The voice channel is a great way to reach customers whose phone numbers aren't able to receive SMS messages—for example, customers who use landlines or VoIP services.

To send voice messages using Amazon Pinpoint, you first have to enable the voice channel in your project and lease a dedicated phone number for sending the messages. Depending on how you use Amazon Pinpoint to send voice messages, you might also want to change certain settings for your account. For example, you might want to request production access to increase the number of voice messages that you can send.

### Topics

- [Amazon Pinpoint voice sandbox](#) (p. 101)
- [Setting up the Amazon Pinpoint voice channel](#) (p. 102)
- [Managing the Amazon Pinpoint voice channel](#) (p. 103)
- [Supported countries and regions \(voice channel\)](#) (p. 106)

## Amazon Pinpoint voice sandbox

To help protect our customers from fraud and abuse, we place your account in a sandbox environment when you first create it. The sandbox environment also helps you test the channel to help establish your reputation. While your account is in the sandbox, you have full access to Amazon Pinpoint voice messaging, with the following restrictions:

- You have a daily limit of 20 messages.
- You can send a maximum of five voice messages to a single recipient during a 24-hour period.
- You can send a maximum of 20 calls per minute.
- The maximum voice message length is 30 seconds.
- You can send voice messages only to specific countries. For more information, see [Voice quotas](#) in the *Amazon Pinpoint Developer Guide*.

When you're ready to move your account out of the voice sandbox, create an AWS Support case for a **Service limit increase** request. For more information, see [Requesting production access \(p. 103\)](#).

## Setting up the Amazon Pinpoint voice channel

To send voice messages by using Amazon Pinpoint, start by creating a new Amazon Pinpoint project. Then, enable the voice channel for the project and request a dedicated phone number, referred to as a *long code*, for sending voice messages. A *long code* is a standard telephone number that contains up to 15 digits, depending on the country or region that it's based in. These phone numbers are *dedicated*—that is, they're reserved for use only by your Amazon Pinpoint account. You can lease local phone numbers that are based in a variety of countries or regions.

### Tip

You can also enable the voice channel for an existing project. To do this, use the **SMS and voice** settings page on the Amazon Pinpoint console. For more information, see [Managing the Amazon Pinpoint voice channel \(p. 103\)](#).

Note that the settings that you choose for the voice channel also apply to the SMS channel for the project. If you want to send both voice and SMS messages from the project, choose settings that support your goals for both channels. To learn more about enabling and using the SMS channel, see [Amazon Pinpoint SMS channel \(p. 56\)](#).

### To set up the voice channel for a new project

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose **Create a project**.
3. For **Project name**, enter a name, and then choose **Create**.

### Note

The project name can contain up to 64 alphanumeric characters. It can also include the following characters: comma (,), period (.), at sign (@), underscore (\_), equals sign (=), and plus sign (+).

4. Under **Project features**, in the **SMS and voice** section, choose **Configure**.
5. Select **Enable the SMS channel for this project**.
6. Expand the **Advanced configurations** section, and then choose **Request phone number**.
7. On the **Define your phone numbers** page, for **Country**, choose the country where your recipients are located. You can choose only one country at a time, but you can add more countries later if necessary.
8. Specify the use case for the phone number. You can choose one of the following options:
  - **Promotional** – Choose this option for sending marketing messages or messages promoting your business or service.
  - **Transactional** – Choose this option for sending time-sensitive messages, such as password resets or transaction alerts.

In some countries and regions, the value that you choose may determine the price that you pay for each message that you send. Transactional messages are optimized for high deliverability, resulting in a higher cost in many countries. Promotional messages are optimized for cost-effectiveness. For more information about SMS pricing, see [Amazon Pinpoint Pricing](#).

9. The **Summary** section displays information about the number. The **Price per month** shows the cost for a single number.
10. For **Quantity**, choose the quantity of numbers you want to purchase. You can purchase up to 10 numbers in a single request. You can purchase additional numbers later. The **Subtotal** updates to display the total monthly cost for the quantity of phone numbers that you're purchasing.

11. (Optional) If you want to purchase additional phone numbers, choose **Add a country or region**, and repeat the previous steps until you've defined requests for all of the countries where you need long codes.
12. When you're done purchasing phone numbers, choose **Next**.
13. The **Review and request** page displays the number request details for each destination country.
14. The **Total cost** displays the total cost for all numbers for all countries you've chosen.
15. Choose **Request** if you're ready; otherwise, choose **Previous** to go to back and make any changes. Once you choose **Request** you can no longer make changes.

## Managing the Amazon Pinpoint voice channel

You can use the Amazon Pinpoint console to enable the voice channel for a project and to manage settings that apply to the voice channel for your Amazon Pinpoint account. For example, you can request production access for your account, or request dedicated phone numbers for sending voice messages.

### Topics

- [Enabling the voice channel \(p. 103\)](#)
- [Requesting production access \(p. 103\)](#)
- [Requesting phone numbers \(p. 105\)](#)
- [Relinquishing phone numbers \(p. 106\)](#)

## Enabling the voice channel

Before you can use Amazon Pinpoint to send voice messages, you have to enable the voice channel for one or more projects. To learn how to create a new project and enable the voice channel for it, see [Setting up the Amazon Pinpoint voice channel \(p. 102\)](#). To enable the voice channel for an existing project, complete the following steps.

Note that the settings that you choose for the voice channel also apply to the SMS channel for the project. If you want to send both voice and SMS messages from the project, choose settings that support your goals for both channels. To learn more, see [Amazon Pinpoint SMS channel \(p. 56\)](#).

### To enable the voice channel for an existing project

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that you want to enable the voice channel for.
3. In the navigation pane, under **Settings**, choose **SMS and voice**.
4. On the **SMS and voice** page, next to **SMS settings**, choose **Edit**.
5. Select **Enable the SMS channel for this project**.
6. Choose **Save changes**.
7. On the **SMS and voice** page, under **Number settings**, refer to the table to determine whether any phone numbers that are already associated with your account can be used to send voice messages. If there are, the **Voice** column displays **Enabled** next to each phone number that you can use to send voice messages. If there aren't, [request a phone number for the voice channel \(p. 105\)](#).

## Requesting production access

When you first start using the voice channel, your account is in the *sandbox*.

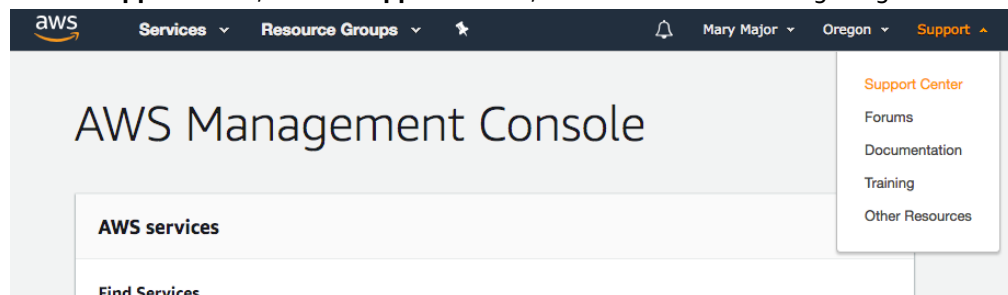
To remove these quotas from your account, you can request to have your account removed from the sandbox. When your account is removed from the sandbox, it has *production access*.

### Note

Before you request production access, you must send at least one voice message from your Amazon Pinpoint account. You can send a voice message on the [Test Messaging \(p. 189\)](#) page, or by using the [SendMessage](#) API.

### To request production access

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **Support** menu, choose **Support Center**, as shown in the following image.



3. Under **Open support cases**, choose **Create case**.
4. Choose **Service limit increase**.
5. Under **Case details**, for **Limit type**, choose **Pinpoint Voice**.
6. (Optional) Complete the following information:
  - What's the maximum number of voice messages that you plan to send per day?
  - What will be the average length of each call that you send?
  - How do you obtain the phone numbers that you plan to send voice messages to?
  - How many dedicated phone numbers will you use to send your messages? Why did you choose this number?
  - How many calls do you expect to make from each phone number? (1 to X) messages per (day/week/month/other)
  - How do you obtain consent to send voice messages to your customers?
  - How can customers opt out of receiving messages from you? How will you process these requests?
7. Under **Requests**, for **Region**, choose the AWS Region that you use to send voice messages.
8. For **Limit**, verify that **Production Access** is selected.
9. For **New limit value**, enter the maximum amount, in US Dollars, that you want to spend sending voice messages each calendar month.
10. Under **Case description**, for **Use case description**, provide the following details:
  - The website or app of the company or service that will send voice messages.
  - The service that's provided by your website or app, and how your voice messages contribute to that service.
11. Under **Contact options**, for **Preferred contact language**, choose whether you want to receive communications for this case in **English** or **Japanese**.
12. When you finish, choose **Submit**.

The AWS Support team provides an initial response to your request within 24 hours.

In order to prevent our systems from being used to send unsolicited or malicious content, we have to consider each request carefully. If we're able to do so, we'll grant your request within this 24-hour period.

However, if we need to obtain additional information from you, it might take longer to resolve your request.

We might not be able to grant your request if your use case doesn't align with our policies.

## Requesting phone numbers

You can use the Amazon Pinpoint console to request and lease phone numbers for sending voice messages. These phone numbers are referred to as *long codes*. A *long code* is a standard telephone number that contains up to 15 digits, depending on the country or region that it's based in. When you lease a long code, the code is *dedicated*—that is, it's reserved for use only by your Amazon Pinpoint account. You can lease local long codes that are based in a variety of countries or regions.

### To request a dedicated long code for sending voice messages

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, under **Settings**, choose **SMS and voice**.
3. Under **Phone numbers**, choose **Request phone number**.
4. On the **Define your phone numbers** page, for **Country**, choose the country where your recipients are located. You can choose only one country at a time, but you can add more countries later if necessary.
5. Specify the use case for the phone number. You can choose one of the following options:
  - **Promotional** – Choose this option for sending marketing messages or messages promoting your business or service.
  - **Transactional** – Choose this option for sending time-sensitive messages, such as password resets or transaction alerts.

In some countries and regions, the value that you choose may determine the price that you pay for each message that you send. Transactional messages are optimized for high deliverability, resulting in a higher cost in many countries. Promotional messages are optimized for cost-effectiveness. For more information about SMS pricing, see [Amazon Pinpoint Pricing](#).

6. The **Summary** section displays information about the number. The **Price per month** shows the cost for a single number.
7. For **Quantity**, choose the quantity of numbers you want to purchase. You can purchase up to 10 numbers in a single request. You can purchase additional numbers later. The **Subtotal** updates to display the total monthly cost for the quantity of phone numbers that you're purchasing.
8. (Optional) If you want to purchase additional phone numbers, choose **Add a country or region**.
9. When you're done purchasing phone numbers, choose **Next**.
10. The **Review and request** page displays the number request details for each destination country.
11. The **Total cost** displays the total cost for all numbers for all countries you've chosen.
12. Choose **Request** if you're ready; otherwise, choose **Previous** to go to back and make any changes. Once you choose **Request** you can no longer make changes.
13. Typically, the request is approved instantaneously, and a confirmation appears at the top of the page noting that the phone numbers were added successfully. You can now access those numbers on the Phone numbers tab of the **SMS and voice** page.

If the request encounters any errors, an error message displays at the top of the page. Common errors might be that there were no long codes available for one of your selected countries or an error occurred while trying to provision a long code. In some cases, your account might require additional review prior to approving your request. Should this message appear, you'll need to create a support ticket providing further information about your request.

## Relinquishing phone numbers

If you don't need a dedicated phone number (long code) for your account anymore, you can relinquish and end your lease for it. When you relinquish a dedicated long code, we stop charging you for it in your bill for the next calendar month.

### Important

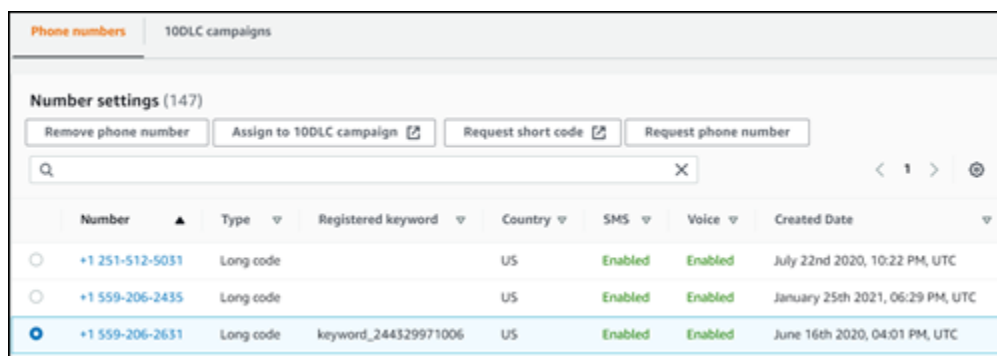
If you relinquish a dedicated long code, you might not be able to obtain the same long code again in the future.

### To relinquish a dedicated long code

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, under **Settings**, choose **SMS and voice**.
3. In the navigation pane, under **Settings**, choose **SMS and voice**.
4. On Phone numbers, select the long code that you want to relinquish, as shown in the following image. Choose **Remove phone number**.

### Note

You can also remove a phone number by choosing the phone number link, and then choosing **Remove phone number** from the number details page.



5. In the **Remove number confirmation** window, confirm that you want to relinquish the long code by entering **delete**, and then choose **Delete**.

## Supported countries and regions (voice channel)

You can use the voice channel to send voice messages to recipients all around the world. However, in some countries and regions, you have to use a local phone number in order to make automated calls, such as the calls that you make by using the Amazon Pinpoint voice channel. You can obtain local phone numbers, also referred to as *long codes*, directly from AWS for several countries and regions.

## Countries and regions where you can obtain local phone numbers

The following table lists the countries that you can obtain local phone numbers in. If a country or region isn't listed in this table, you might still be able to send voice messages to recipients in that country or region.

If the value in the **Supports SMS** column is *Yes*, then you can send both voice and SMS messages from the same phone number. If the value in the **Supports SMS** column is *No*, but your use case requires that you use a long code to send SMS messages, see [Requesting dedicated long codes for SMS messaging with Amazon Pinpoint](#) (p. 74).



If the value in the **Local address required** column is *Yes*, then you have to provide a local address in that country or region in order to lease a local phone number. If the value in the **Local address required** column is *No*, you can lease local phone numbers directly through the Amazon Pinpoint console.

Country or Region	Local address required?	Supports SMS?
Argentina	Yes	No
Australia	Yes	No
Austria	No	No
Bahrain	Yes	No
Barbados	No	No
Brazil	No	No
Bulgaria	Yes	No
Burkina Faso	No	No
Canada	No	Yes
Cayman Islands	No	No
Chile	No	No
Colombia	No	No
Cambodia	Yes	No
Croatia	Yes	No
Cyprus	No	No
Dominican Republic	No	No
Ecuador	No	No
El Salvador	No	No
Finland	Yes	No
Germany	Yes	No
Greece	Yes	No
Grenada	No	No
Guatemala	No	No
Hungary	Yes	No
Iceland	Yes	No
Indonesia	No	No
Ireland	Yes	No
Israel	No	No
Italy	Yes	No

Country or Region	Local address required?	Supports SMS?
Jamaica	No	No
Japan	No	No
Kazakhstan	Yes	No
Kenya	No	No
Latvia	Yes	No
Lithuania	No	No
Luxembourg	Yes	No
Malaysia	No	No
Mali	Yes	No
Mexico	Yes	No
Moldova	Yes	No
New Zealand	No	No
Nicaragua	Yes	No
Norway	Yes	No
Pakistan	Yes	No
Panama	Yes	No
Peru	No	No
Philippines	No	No
Poland	Yes	No
Puerto Rico	No	Yes
Romania	Yes	No
Slovakia	Yes	No
Slovenia	Yes	No
South Africa	Yes	No
Switzerland	Yes	No
Taiwan	Yes	No
Tajikistan	Yes	No
Thailand	Yes	No
Trinidad and Tobago	No	No
United Kingdom	No	No
United States	No	Yes

Country or Region	Local address required?	Supports SMS?
Uruguay	Yes	No
Venezuela	Yes	No
Vietnam	No	No

## Custom channels in Amazon Pinpoint

You can extend the capabilities of Amazon Pinpoint by creating custom channels. You can use custom channels to send messages to your customers through any service that has an API—including third-party services. For example, you can use custom channels to send messages through third-party services such as WhatsApp or Facebook Messenger.

### Note

Amazon Web Services isn't responsible for any third-party service that you use to send messages with custom channels. Third-party services may be subject to additional terms. You should review these terms before you send messages with custom channels.

You can configure your campaigns to send messages through custom channels by using the Amazon Pinpoint console. For more information, see [Campaigns \(p. 126\)](#).

## Setting up and managing custom channels

You can create custom channels by using a webhook, or by calling a service's API through an AWS Lambda function. For more information about creating custom channel functions in Lambda, see [Creating custom channels](#) in the *Amazon Pinpoint Developer Guide*.

Unlike other channels in Amazon Pinpoint, you don't have to enable the custom channels feature. Custom channels are enabled by default in all Amazon Pinpoint projects. You don't have to request production access to use custom channels.

# Amazon Pinpoint segments

When you create a campaign, you choose a *segment* to send that campaign to. A segment is a group of your customers that share certain attributes. For example, a segment might contain all of your customers who use version 2.0 of your app on an Android device, or all customers who live in the city of Los Angeles. You can send multiple campaigns to a single segment, and you can send a single campaign to multiple segments.

There are two types of segments that you can create in Amazon Pinpoint:

- **Dynamic segments** – Segments that are based on attributes that you define. Dynamic segments can change over time. For example, if you add new endpoints to Amazon Pinpoint, or if you modify or delete existing endpoints, the number of endpoints in that segment may increase or decrease. For more information about dynamic segments, see [the section called “Building segments”](#) (p. 110).
- **Imported segments** – Segments that are created outside of Amazon Pinpoint and saved in CSV or JSON format. When you create an imported segment, you upload your files to Amazon Simple Storage Service (Amazon S3). Amazon Pinpoint retrieves the files from Amazon S3 and creates new endpoints based on the contents of those files. Imported segments are static—they never change. When you create a new segment, you can use an imported segment as a base segment, and then refine it by adding filters. For more information about importing segments, see [the section called “Importing segments”](#) (p. 117).

## Building segments

After you integrate your apps with Amazon Pinpoint, you can create dynamic segments that are based on the data your apps provide to Amazon Pinpoint. When you create a dynamic segment, you choose the type of segment you want to create, create a segment group, and then refine that segment group by choosing the segments and the criteria that define those segments. For example, you could create a dynamic segment group, and then choose an audience segment and criteria of all customers who use version 2.0 of your app on an Android device and who have used your app within the past 30 days. Amazon Pinpoint continuously re-evaluates your segments as your app records new customer interactions. As a result, the size and membership of each segment changes over time. For information about integrating your apps with Amazon Pinpoint, see [Integrating Amazon Pinpoint with your application](#) in the *Amazon Pinpoint Developer Guide*.

## Segment groups

When you create a dynamic segment, you create one or more *segment groups*. A segment group consists of these components:

- **Base segments** – The segments that define the initial user population. You can specify a single base segment, several base segments, or all of the segments in your Amazon Pinpoint project.
- **Criteria** – Categories of audience information that you apply on top of the base segments. You can add multiple groups of criteria and then create relationships between those criteria.
- **Filters** – Filters reduce the audience number that belong to the segment. You can add as many filters as you want in order to tailor the segment to your needs.

You have to create at least one segment group, but you can optionally create a second segment group, and then create a relationship between the two groups.

## Creating a dynamic segment

The following steps describe creating and configuring a segment:

- [Step 1: Build a new segment or import an existing segment \(p. 111\)](#)
- [Step 2: Configure segment group 1 \(p. 111\)](#)
- [Step 3: Choose the segments to include in the group \(p. 112\)](#)
- [Step 4: Choose and configure the segment criteria \(p. 113\)](#)
- [Step 5: Add a second criteria group \(p. 114\)](#)
- [Step 6: Add segment group 2 \(p. 115\)](#)

### Step 1: Build a new segment or import an existing segment

#### To build a segment

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project to which you want to add the segment.
3. In the navigation pane, choose **Segments**. The **Segments** page opens and displays segments that you previously defined.
4. Choose **Create a segment**.
5. Under **Create a segment**, choose **Build a segment**.

#### Create a segment

<input checked="" type="radio"/> <b>Build a segment</b> Create a dynamic segment based on the attributes of your customers.	<input type="radio"/> <b>Import a segment</b> Import a CSV or JSON file that contains a list of specific recipients.
--	---

6. For **Segment name**, enter a name for the segment to make it easy to recognize later.

### Step 2: Configure segment group 1

You'll first choose how you want to define the audience segments for the segment group.

#### To configure segment group 1

- Under **Segment group 1**, for **Base segments**, choose one of the following options:
  - **Include any audiences** – If you use more than one segment as a base segment, your new segment contains endpoints that are in at least one of the segments you choose. For example, you might have two dynamic segments, *Older than 18* and *Lives in New York City*. Your target audience when choosing this option is any audience older than 18 or who live in New York City.
  - **Include all audiences** – If you use more than one segment as a base segment, your new segment only contains endpoints common to all of the selected segments. For example, you might have two dynamic segments, *Older than 18* and *Lives in New York City*. Your target audience when choosing this option is all audience older than 18 and who live in New York City.

**Segment group 1** [Info](#)

A segment group contains filters that you apply to base segments. If you choose an imported segment as a base segment, you can't use other imported segments as base segments nor add an additional segment group.

**Base segments** [Info](#)

☒ Include any audiences  
☐ Include all audiences

Include audiences that are in any of the following: All segments ▼

**Criteria - optional** [Info](#)

Add criteria

## Step 3: Choose the segments to include in the group

The next step is to choose which segments you'll include in the group. These segments are composed of the audience you want to target in the segment group.

1. For the dropdown list, select one or more segments to include in the segment group. Each segment you add displays in the section.

### Note

The segments drop-down list doesn't close when you choose a segment. It remains open, with a check mark by each segment you're including in the group. You can clear the check mark by any segment that you want to remove. When you're done choosing segments, choose an area outside of the dropdown to close it.

**Segment details**

**Name**

Name must be between 1 and 64 characters.

**Segment group 1** [Info](#)

A segment group contains filters that you apply to base segments. If you choose an imported segment as a base segment, you can't use other imported segments as base segments nor add an additional segment group.

**Base segments** [Info](#)

☒ Include any audiences  
☐ Include all audiences

Include audiences that are in any of the following: All segments ▲

Pizza Lovers X Whole Food Members X

**Criteria - optional** [Info](#)

Add criteria

- ☐ Loyalty Dynamic
- ☐ Price Sensitive Group (Push) Dynamic
- ☒ Pizza Lovers Dynamic
- ☐ All Users Dynamic
- ☒ Whole Food Members Dynamic
- ☐ Deal of the Day Dynamic
- ☐ Inactive Users Dynamic
- ☐ pizza lovers in us Dynamic

2. As you add or remove segments, the Segment estimate section updates to display the eligible and total endpoints set to receive the campaign. Eligible endpoints are those endpoints determined by the any/and relationship for the segment group, while the total is the sum of all endpoints regardless of the relationship connector.

Segment estimate <a href="#">Info</a>	
Eligible endpoints The number of customers who will receive campaigns that target this segment.	Total endpoints The number of recipients who meet the criteria for this segment.
1,029 endpoints	1,037 endpoints

## Step 4: Choose and configure the segment criteria

After you've chosen your segments, you can further refine the target audience by applying attributes, operators, and values to those segments.

### To choose and configure the segment criteria

1. For Attribute, you can choose from the following types:
  - **Standard attributes** – Filter the audience based one of its default attributes.
  - **Channel Types** – Filter the audience based on the recipient's endpoint type: EMAIL, SMS, PUSH, or CUSTOM.
  - **Activity** – Filters the audience on whether they've been Active or Inactive.
  - **Custom Endpoint Attributes** – Filter the audience based on an endpoint-specific attribute. For example, this might be a list of your customers who have opted out of a distribution list or a list of customers who signed up for a distribution list.
  - **Customer User Attributes** – Filter the audience based on a user-specific attributes. For example, this might be *LastName* or *FirstName*.
  - **Metrics** – Filter the audience based on a quantitative evaluation. For example, you might have a metric, *Visits*, that you can choose if you want to target an audience who have visited a specific location *x* number of times.
2. Choose the **Operator** and enter a **Value**. Operators determine the relationship of the attribute to a value you enter. Values can be no longer than 100 characters and you can have no more than 100 total values between all groups, criteria, and filters. The following describes the available operators. Each attribute has its own set of supported operators.

#### Note

The Channel Types attributes do not use operators or values.

- **After** – Filters the audience after a specific date.
- **Before** – Filters the audience before a specific date.
- **Between** – Filters the audience based on a date range.
- **Contains** – Use this to filter the audience based on a substring within a string. For example, if you have a city metric, you could pass the *ew* to return *New York City* or Newcastle. The passed value is case-sensitive, so *ew* returns different results than *EW*.
- **During** – Only used for the Activity attribute. Filters the audience by one of the following time frames: **the last day**, **the last 7 days**, **the last 14 days**, or **the last 30 days**.
- **Equals** – Used for Metrics attributes only, this operator filters the results by a numerical value. For example, you might have a metric, *Visits*, that you can use to filter results by only those customers who visited a location *3* times.
- **Greater than** – Used for Metrics attributes only, this operator filters results that are greater than the number passed. For example, you might have a metric, *Visits*, that you can use to filter results by only those customers who visited a location greater than *3* times.
- **Greater than or equal** – Used for Metrics attributes only, this operator filters results that are greater than or equal to the number passed. For example, if you have a metric, *Visits*, you might use this operator to filter results by only those customers who visited a location *3* or more times.

- **Is** – Use this option to filter by endpoint-specific attributes. When you select this option, you specify how recently the endpoint was active, or how long it's been inactive. After that, you can optionally specify additional attributes associated with that endpoint.
- **Is not** – Use this option if you want to filter out results that match the passed value. For example, you might have a **city** customer user endpoint that you can use to filter out results that include a specific city. Use this operator and **New York City** for the value to ignore any results that include this city.
- **Less than** – Used for Metrics attributes only, this operator filters results that are less than the number passed. For example, you might have a metric, **Visits**, that you can use to filter results by only those customers who visited a location less than **3** times.
- **Less than or equal** – Used for Metrics attributes only, this operator filters results that are greater than or equal to the number passed. For example, you might have a metric, **Visits**, that you can use to filter results by only those customers who visited a location **3** times or less.
- **On** – Use this metric for filtering results. For example, you might have a metric, **OptOut**, that you can use to filter results by only those customers who opted out of a distribution list on **2020/11/09**.

#### Note

The Amazon Pinpoint console uses a default time of 00:00:00 UTC for all time-based filters. If you enter a date of **2020-12-31**, the console passes the time as **2020-12-31T12:00:00Z**. Therefore, if you have multiple segments that pass the date, 2020-12-31 with different times, the Amazon Pinpoint console records the date and time for any of those segments as **2020-12-31T12:00:00Z**.

3. (Optional) To apply additional attributes to this criteria, choose **Add filter**. To create another group of segment criteria, choose **Add criteria**. To create a second segment group, choose **Add another segment group**. For information about adding a second segment group, see [Step 6: Add segment group 2 \(p. 115\)](#).
4. If you're finished setting up this segment, choose **Create segment**.

## Step 5: Add a second criteria group

Optionally add criteria groups to further refine your results. You'll create a relationship between this group of criteria and the group before it.

### To add a second criteria group

1. Choose **Add criteria**.
2. Create the relationship between this group and the group previous to it by choosing one of the following:
  - **AND** – The segment contains only that audience who meet the criteria for both criteria groups.
  - **OR** – The segment contains audience who meet the criteria in either one of the criteria groups.
  - **NOR** – The segment excludes the audience that fits the criteria from the results.



Base segments [Info](#)

☒ Include any audiences  
☐ Include all audiences

Include audiences that are in any of the following: All segments

dates ×  
Dynamic channels ×  
Dynamic

Criteria - optional [Info](#)

Attribute	Operator	Values	
<span>SMS</span>	<span>Select an operator</span>	<span>Q Enter a value</span>	<span>Remove</span>
<span>Country</span>	<span>Is</span>	<span>Q Enter a value</span>	<span>Remove</span>
		<span>US <span>×</span></span>	

Add filter

Attribute	Operator	Values	
<span>Select an attribute</span>	<span>Select an operator</span>	<span>Q Enter a value</span>	<span>Remove</span>

Add filter

Add criteria

3. (Optional) To add another group of criteria, choose **Add criteria** or, to add a second segment group, choose **Add another segment group**. For more information, see [Step 6: Add segment group 2](#) (p. 115).
4. If you're finished setting up the segment group, choose **Create segment**.

## Step 6: Add segment group 2

You can optionally create a second segment group and create a relationship with segment group 1. When you create a segment by using the Amazon Pinpoint console, you can have a maximum of two segment groups per segment. If you add a second segment group to your segment, you can choose one of two ways to specify how the two segment groups are connected:

- **By using AND logic** – If you use AND logic to connect two segment groups, your segment contains all endpoints who meet all of the criteria in both of the segment groups.
- **By using OR logic** – If you use OR logic to connect two segment groups, your segment contains all endpoints who meet all of the criteria in either one of the segment groups.

### Note

If you use an imported segment as the base segment for your first segment group, you can't create a second segment group.

### To configure second segment group

1. Choose **Add another segment group**.
2. Create the relationship with the first segment group. If you choose **AND**, the segment contains only those customers who meet the criteria for both segment groups. If you choose **OR**, the segment

contains those customers who meet the criteria in either one of the segment groups. Within segment group 2 you have a third option to **Exclude audiences**. Segments that are excluded will not be included in the results. You can only exclude audiences in segment group 2.

AND ▲  
AND  
OR

**Segment group 2** [Info](#) Delete

A segment group contains filters that you apply to base segments. If you choose an imported segment as a base segment, you can't use other imported segments as base segments nor add an additional segment group.

**Base segments** [Info](#)

☒ **Exclude audiences**  
☐ Include any audiences  
☐ Include all audiences

Include audiences that are in **none** of the following: All segments ▼

**Criteria - optional** [Info](#)

Add criteria

3. Choose the segments you want to include in segment group 2. See [Step 3: Choose the segments to include in the group](#) (p. 112).
4. (Optional ) Choose the criteria by which you want to filter your segments. See [Step 4: Choose and configure the segment criteria](#) (p. 113).
5. (Optional) Add additional groups of criteria. See [Step 5: Add a second criteria group](#) (p. 114).
6. When you finish setting up the segment, choose **Create segment**.

## Managing segments

You can use the Amazon Pinpoint console to create, view, copy, and perform other management tasks for a project's segments. If you open a segment to view its settings, you can also quickly create a campaign that uses the segment.

### To manage a segment

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that contains the segment that you want to manage.
3. In the navigation pane, choose **Segments**.
4. In the list of segments, select the segment that you want to manage.
5. On the **Actions** menu, choose one of the following options:
  - **View details** – Choose this option to show information about the segment, including the date and time when the segment was created, and the date and time when the segment was last updated.

When you view the details of a dynamic segment, you also see the approximate number of endpoints that meet the segment criteria, and the segment groups and filters that define the

segment. When you view the details of an imported segment, you also see the number of records that were imported for the segment. If you imported the segment from an Amazon S3 location, you also see details about that location and the name of the IAM role that was used to import the segment from that location.

- **Edit** – Choose this option to change the settings for a dynamic segment or a segment that you imported from an Amazon S3 location. If you edit a dynamic segment, you can change the segment groups that define the segment. If you edit an imported segment, you can change the Amazon S3 location that the segment is imported from, and the IAM role that's used to import the segment.
- **Copy to new** – Choose this option to create a new segment that's a copy of the selected segment. You can then modify any settings in the new segment, without changing the original segment.
- **Export** – Choose this option to export the segment to a file on your computer. For more information, see [Exporting segments \(p. 125\)](#).
- **Delete** – Choose this option to delete the segment permanently. You can't recover a segment after you delete it.

#### **Important**

If you delete a segment, any active campaigns that use the segment will fail and stop running. Similarly, any active journeys that use the segment might fail and stop running. If a journey does continue to run, any participants who were part of the segment might be removed from the journey prematurely. Before you delete a segment, it's a good idea to first verify that a segment isn't being used by any active campaigns or journeys.

## Importing segments

With Amazon Pinpoint, you can define a user segment by importing a file that contains information about the users who belong to the segment. Importing segments is useful if you define user segments outside of Amazon Pinpoint but you want to engage your users with Amazon Pinpoint campaigns.

Unlike the dynamic segments that you create with the segment builder in the console, an imported segment is an unchanging set of *endpoints* or *user IDs*:

#### **Endpoint**

A destination that you can send messages to, such as an email address, mobile device identifier, or mobile phone number. An endpoint definition can include attributes that describe the user or device that you send messages to. It can also include a user ID.

You can define a segment by importing a list of endpoint definitions. Amazon Pinpoint creates the segment, and it updates any endpoints that you previously added to Amazon Pinpoint with the new information.

#### **User ID**

An ID that represents an individual user in your audience. This ID must be assigned to one or more endpoints. For example, if a person uses your app on more than one device, your app could assign that person's user ID to the endpoint for each device.

You can define a segment by importing user IDs only if you've added the endpoints that are associated with the user IDs to Amazon Pinpoint.

An imported segment consists of endpoints, user IDs, or a combination of both. When you use Amazon Pinpoint to send a message to the segment, the potential destinations include:

- Each endpoint that you list in the imported file.



Each row in this table represents an individual endpoint. Note that the user IDs `example-user-id-2` and `example-user-id-3` are assigned to two endpoints each.

## Example File with endpoint definitions

### CSV

You can import endpoints that are defined in a CSV file, as in the following example:

```
ChannelType,Address,Location.Country,Demographic.Platform,Demographic.Make,User.UserId
SMS,2065550182,CA,Android,LG,example-user-id-1
APNS,1a2b3c4d5e6f7g8h9i0j1a2b3c4d5e6f,US,iOS,Apple,example-user-id-2
EMAIL,john.stiles@example.com,US,iOS,Apple,example-user-id-2
GCM,4d5e6f1a2b3c4d5e6f7g8h9i0j1a2b3c,CN,Android,Google,example-user-id-3
EMAIL,wang.xiulan@example.com,CN,Android,OnePlus,example-user-id-3
```

The first line is the header, which contains the endpoint attributes. For a complete list of possible attributes, see [Supported attributes \(p. 122\)](#).

The subsequent lines define the endpoints by providing values for each attribute in the header.

To include a comma or double quote in a value, enclose the value in double quotes, as in `"aaa,bbb"`.

Line breaks are not supported within a value in the CSV.

### JSON

You can import endpoints that are defined in a newline-delimited JSON file. In this format, each line is a complete JSON object that contains an individual endpoint definition, as in the following example:

```
{ "ChannelType": "SMS", "Address": "2065550182", "Location": { "Country": "CA" }, "Demographic": {
  "Platform": "Android", "Make": "LG" }, "User": { "UserId": "example-user-id-1" } }
{ "ChannelType": "APNS", "Address": "1a2b3c4d5e6f7g8h9i0j1a2b3c4d5e6f", "Location": {
  "Country": "US" }, "Demographic": { "Platform": "iOS", "Make": "Apple" }, "User": {
  "UserId": "example-user-id-2" } }
{ "ChannelType": "EMAIL", "Address": "john.stiles@example.com", "Location": {
  "Country": "US" }, "Demographic": { "Platform": "iOS", "Make": "Apple" }, "User": {
  "UserId": "example-user-id-2" } }
{ "ChannelType": "GCM", "Address": "4d5e6f1a2b3c4d5e6f7g8h9i0j1a2b3c", "Location": {
  "Country": "CN" }, "Demographic": { "Platform": "Android", "Make": "Google" }, "User": {
  "UserId": "example-user-id-3" } }
{ "ChannelType": "EMAIL", "Address": "wang.xiulan@example.com", "Location": {
  "Country": "CN" }, "Demographic": { "Platform": "Android", "Make": "OnePlus" }, "User": {
  "UserId": "example-user-id-3" } }
```

For a complete list of possible attributes, see [Supported attributes \(p. 122\)](#).

## Example File with user IDs

### CSV

You can also import user IDs that are listed in a CSV file. To include a comma or double quote in a value, enclose the value in double quotes, as in `"aaa,bbb"`.

Line breaks are not supported within a value in the CSV. Multiple user IDs for a single endpoint must be entered on a single line with each ID separated with a space, as in the following example.

```
User.UserId  
example-user-id-1 example-user-id-2 example-user-id-3
```

The first line is the header, which must contain only the `User.UserId` attribute.

The subsequent line lists each user ID that belongs to the segment.

As you can see in the example endpoint definitions, the user ID `example-user-id-1` is associated with one endpoint. The user IDs `example-user-id-2` and `example-user-id-3` are associated with two endpoints each. Therefore, the segment that's created by importing this file could be used to message up to five endpoints.

## JSON

You can also import user IDs that are listed in a newline-delimited JSON file, as in the following example:

```
{"User":{"UserId":"example-user-id-1"}}  
{"User":{"UserId":"example-user-id-2"}}  
{"User":{"UserId":"example-user-id-3"}}
```

As you can see in the example endpoint definitions, the user ID `example-user-id-1` is associated with one endpoint. The user IDs `example-user-id-2` and `example-user-id-3` are associated with two endpoints each. Therefore, the segment that's created by importing this file could be used to message up to five endpoints.

# Importing a segment

There are two ways to import segments into Amazon Pinpoint: you can upload files directly from your computer, or you can import files that are stored in an Amazon S3 bucket.

Uploading files from your computer is generally the easier method of importing segments, especially if you already have the customer data on your computer. However, you can import only 10 files at a time, and you can only upload files that are smaller than 1 gigabyte (GB).

If you need to import more than 10 files at one time, or if you need to upload files that are larger than 1 GB, then you should import files from Amazon S3. The Amazon S3 import option is also useful if you already have processes that send customer data files to Amazon S3 for storage.

This section includes procedures for importing segments by using both of these methods.

## Importing a segment by uploading a file from your computer

You can create segments by uploading up to 10 files directly from your computer. The files that you upload can be in CSV or JSON format. You can upload files in any combination of formats. For example, you can upload one JSON file and three CSV files.

### To import a segment

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that you want to add the segment to.
3. In the navigation pane, choose **Segments**.
4. Choose **Create a segment**.
5. Under **Create a segment**, choose **Import a segment**.

- Under **Import method**, choose **Upload files from your computer**.
- Under **Files to import**, select **Choose files**. Select the file or files that you want to import.

**Note**

You can also drag files from your computer's file explorer and drop them directly on the **Drop files here** area.

- When you upload files to Amazon Pinpoint, you have to provide a segment name for each file that you import. Under **Segment names**, enter a segment name for each file that you want to import, as shown in the following image.

**Segment names**

Amazon Pinpoint creates a new segment for each file that you import. Specify the segment names below.

**High Value Customers.csv (614 Bytes)**

Name



High Value Customers

**Top Users by Activity.json (977 Bytes)**

Name



Top Users by Activity

**Note**

By default, Amazon Pinpoint provides a segment name that is equal to the name of the imported file, but without the file name extension. You can change these default values to any name.

You can use the same name for multiple segments. If you do, Amazon Pinpoint creates a distinct segment for each file, and assigns a unique ID to each file. The creation date is also slightly different for each file that you import. You can use these factors to distinguish between segments that have the same name.

- When you finish, choose **Create segment**.

## Importing a segment from a file stored in Amazon S3

Before you use this procedure to import a segment, you first have to create an Amazon S3 bucket and upload your file to that bucket. You can organize the files for different segments into separate folders. When Amazon Pinpoint imports the endpoints or user IDs for a segment, it includes the files within all folders and subfolders that belong to the Amazon S3 location you specify.

For an introduction to creating buckets and uploading objects, see the [Amazon Simple Storage Service Getting Started Guide](#).

Amazon Pinpoint can import only one file format (CSV or JSON) per segment, so the Amazon S3 path that you specify should only contain files of a single type.

### To import a segment

- Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
- On the **All projects** page, choose the project that you want to add the segment to.
- In the navigation pane, choose **Segments**.
- Choose **Create a segment**.

5. Under **Create a segment**, choose **Import a segment**.
6. For **Segment name**, enter a name for your segment to make it easy to recognize later.
7. For **Amazon S3 URL**, enter the location of the Amazon S3 bucket that contains the file for your segment. The address of the bucket must be in the following format:

```
s3://bucket-name/folder-name
```

Amazon Pinpoint imports the files from the path that you specify, and from any subfolders in that path.

8. For **IAM role**, complete one of the following steps:
  - If you want to have Amazon Pinpoint create a role that allows it to read from an Amazon S3 bucket, choose **Automatically create a role**. Then, for **IAM role**, enter a name for the role that you're creating.
  - If you've already created an IAM role that allows Amazon Pinpoint to read from an Amazon S3 bucket, choose **Choose an existing role**. Then, for **IAM role**, choose a role that contains the appropriate permissions.

If you want to create the IAM role yourself, see [IAM role for importing endpoints or segments](#) in the *Amazon Pinpoint Developer Guide*. After you create the role, specify it in the Amazon Pinpoint console.

9. Under **What type of file are you importing**, choose either **JavaScript Object Notation (JSON)** or **Comma-Separated Values (CSV)**, depending on the format the file that you uploaded to Amazon S3.
10. Choose **Create segment**.

## Supported attributes

The table in this section lists and describes the attributes that you can specify in endpoint definitions that you import into Amazon Pinpoint. If you import segments by using CSV files, the headers in the file should match the names shown in the **Attribute** column.

For JSON files, a period in the attribute name indicates that the name following the period is an object that's nested in a parent object with a name that's equal to the value preceding the period. For example, a JSON file that contains the `Demographic.Make` and `Demographic.Model` attributes has the following structure:

```
{
  ...
  "Demographic": {
    ...
    "Make": "Apple",
    "Model": "iPhone"
    ...
  }
  ...
}
```

The full JSON structure closely resembles the [example endpoint request](#) in the *Amazon Pinpoint API Reference*. However, not all attributes in the Endpoint request schema are supported when you import segments, including `EndpointStatus` and `EffectiveDate`.

You can replace attribute names that are shown as *custom\_attribute* with any value. For example, if you want to store users' first and last names in attributes named `FirstName` and



LastName, you can create custom attributes named `User.UserAttributes.FirstName` and `User.UserAttributes.LastName`, respectively. An attribute name can contain up to 50 characters. An attribute value can contain up to 100 characters. Attribute names are case sensitive.

Attribute	Description
Address	The unique destination address for messages or push notifications that you send to the endpoint—for example, an email address, phone number, or device token.
Attributes. <i>custom_attribute</i>	A custom attribute that describes the endpoint. You can use this type of attribute as selection criteria when you create a segment. You can replace <i>custom_attribute</i> with any value.
ChannelType	The channel to use when sending messages or push notifications to the endpoint. For example: <ul style="list-style-type: none"> <li>APNS – For an endpoint that can receive push notifications that you send through the Apple Push Notification service (APNs) channel to apps that are running on iOS devices.</li> <li>EMAIL – For an endpoint that can receive email messages.</li> <li>GCM – For an endpoint that can receive push notifications that you send through the Firebase Cloud Messaging (FCM) channel to apps that are running on Android devices.</li> <li>SMS – For an endpoint that can receive SMS text messages.</li> </ul>
Demographic.AppVersion	The version number of the application that's associated with the endpoint.
Demographic.Locale	The locale of the endpoint, in the following format: the <a href="#">ISO 639-1 alpha-2</a> code, followed by an underscore (_), followed by an <a href="#">ISO 3166-1 alpha-2</a> value. For example, en_US is the English language locale for the United States.
Demographic.Make	The manufacturer of the endpoint device, such as apple or samsung.
Demographic.Model	The model name or number of the endpoint device, such as iPhone or SM-G900F.
Demographic.ModelVersion	The model version of the endpoint device.
Demographic.Platform	The operating system on the endpoint device, such as ios or android.
Demographic.PlatformVersion	The version of the operating system on the endpoint device.
Demographic.Timezone	The endpoint's time zone, as a <a href="#">tz database</a> value. For example, America/Los_Angeles for Pacific Time (North America).

Attribute	Description
<code>EffectiveDate</code>	The date and time when the endpoint was last updated, in <a href="#">ISO 8601 format</a> . For example, <code>2019-08-23T10:54:35.220Z</code> for 10:54 AM UTC August 23, 2019.
<code>Id</code>	A unique identifier for the endpoint.
<code>Location.City</code>	The city where the endpoint is located.
<code>Location.Country</code>	The two-character code, in <a href="#">ISO 3166-1 alpha-2 format</a> , for the country or region where the endpoint is located. For example, <code>US</code> for the United States.
<code>Location.Latitude</code>	The latitude coordinate of the endpoint's location, rounded to one decimal place.
<code>Location.Longitude</code>	The longitude coordinate of the endpoint's location, rounded to one decimal place.
<code>Location.PostalCode</code>	The postal or ZIP code for the area where the endpoint is located.
<code>Location.Region</code>	The name of the region, such as a state or province, where the endpoint is located.
<code>Metrics.custom_attribute</code>	<p>A custom numeric metric that your application reports to Amazon Pinpoint for the endpoint—for example, the number of sessions or number of items left in a cart—to use for segmentation purposes. You can replace <code>custom_attribute</code> with any value.</p> <p>These custom values can only be numeric. Because they're numeric, Amazon Pinpoint can perform arithmetic operations, such as average or sum, on them.</p>
<code>OptOut</code>	Indicates whether a user opted out of receiving messages and push notifications from you. Acceptable values are: <code>ALL</code> , the user opted out and doesn't want to receive any messages or push notifications; or, <code>NONE</code> , the user hasn't opted out and wants to receive all messages and push notifications.
<code>RequestId</code>	The unique identifier for the most recent request to update the endpoint.
<code>User.UserAttributes.custom_attribute</code>	A custom attribute that describes the user. You can replace <code>custom_attribute</code> with any value, such as <code>FirstName</code> or <code>Age</code> .
<code>User.UserId</code>	A unique identifier for the user.

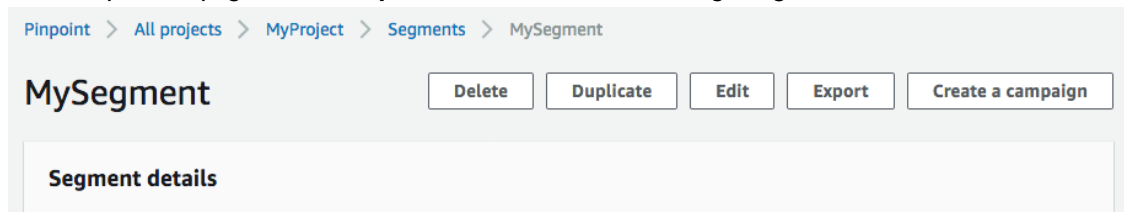
You can create as many as 40 custom attributes for endpoints and users in each project. For more information, see [Amazon Pinpoint quotas](#) in the *Amazon Pinpoint Developer Guide*.

# Exporting segments in the Amazon Pinpoint console

From the **Segments** page in the Amazon Pinpoint console, you can export an existing segment to a file on your computer. When you do, Amazon Pinpoint exports all of the information that's associated with the endpoints in the segment to a file.

This feature is useful if you want to share a list of segment members with somebody else in your organization who doesn't use Amazon Pinpoint. It's also helpful in situations where you want to modify the segment by using a different application.

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that contains the segment that you want to export.
3. In the navigation pane, choose **Segments**.
4. In the list of segments, choose the segment that you want to export.
5. At the top of the page, choose **Export**, as shown in the following image.



6. Amazon Pinpoint creates a new export job, and you see the **Recent exports** tab on the **Segments** page.

Note the value in the **Export status** column for the segment that you exported. When you first create the export job, the status is **In progress**.

Wait a few minutes, and then choose the **refresh**

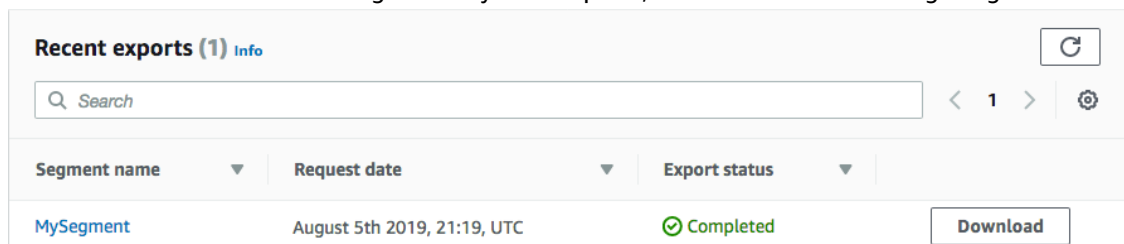


button. If the status is still **In progress**, wait another minute, and then repeat this step. Otherwise, if the status is **Complete**, proceed to the next step.

## Note

If a segment requires more than 10 minutes to complete, the export process times out. If you need to export very large segments, you should use the [CreateExportJob](#) operation in the Amazon Pinpoint API.

7. Choose **Download** to save the segment to your computer, as shown in the following image.



# Amazon Pinpoint campaigns

A *campaign* is a messaging initiative that engages a specific audience [segment](#) (p. 110). A campaign sends tailored messages according to a schedule that you define. You can use the console to create a campaign that sends messages through any single channel that is supported by Amazon Pinpoint: mobile push, email, or SMS.

For example, to help increase engagement between your mobile app and its users, you could use Amazon Pinpoint to create and manage push notification campaigns that reach out to users of that app. Your campaign might invite users back to your app who haven't run it recently or offer special promotions to users who haven't purchased recently.

Your campaign can send a message to all users in a segment, or you can allocate a holdout, which is a percentage of users who receive no messages. The segment can be one that you created on the **Segments** page or one that you define while you create the campaign.

You can set the campaign's schedule to send the message once or at a recurring frequency, such as once per week. You can also set up your campaign to send messages when specific events occur. For example, you can send a campaign when a user creates a new account, or when a customer adds an item to their shopping cart, but doesn't complete their purchase. To prevent users from receiving your messages at inconvenient times, you can also configure your campaigns so that they don't send messages during specific quiet hours.

To experiment with alternative campaign strategies, set up your campaign as an A/B test. An A/B test includes two or more treatments of the message or schedule. Treatments are variations of your message or schedule. As your users respond to the campaign, you can view campaign analytics to compare the effectiveness of each treatment.

If you want to send a one-time message without engaging a user segment or defining a schedule, you can simply [send a direct message](#) (p. 189) instead of creating a campaign.

## Topics

- [Step 1: Create a campaign](#) (p. 126)
- [Step 2: Specify the audience for the campaign](#) (p. 127)
- [Step 3: Write the message](#) (p. 128)
- [Step 4: Choose when to send the campaign](#) (p. 135)
- [Step 5: Review and launch the campaign](#) (p. 137)
- [Managing campaigns](#) (p. 137)

## Step 1: Create a campaign

The first step in setting up a campaign is to create a new campaign. When you create a new campaign, you give the campaign a name, specify whether the campaign should be a standard campaign or an A/B test campaign, and choose the channel that you want to use to send the campaign.

### To begin creating a campaign

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that you want to create the campaign in.
3. In the navigation pane, choose **Campaigns**.

4. Choose **Create a campaign**.
5. For **Campaign name**, enter a descriptive name for the campaign. Using a descriptive name makes it easier to find or search for the campaign later.
6. For **Campaign type**, choose one of the following options:
  - **Standard campaign** – Sends a message to a segment on a schedule that you define.
  - **A/B test campaign** – Behaves like a standard campaign, but enables you to define different treatments for the campaign's message or schedule. In an A/B test campaign, you create several versions of a message or schedule to compare their performance.
7. Under **Choose a channel for this campaign**, choose the channel that you want to use to send the campaign.

**Note**

You can only choose a single channel. This section only shows the channels that are enabled for the current project. The **Custom** channel is enabled for all projects by default.

8. Choose **Next**.

**Next**

[Step 2: Specify the audience for the campaign \(p. 127\)](#)

## Step 2: Specify the audience for the campaign

When you create a campaign, you choose a *segment* to send that campaign to. A segment is a group of your customers that share certain attributes. For example, a segment might contain all of your customers who use version 2.0 of your app on an Android device, or all customers who live in the city of Los Angeles.

**Prerequisite**

Before you begin, complete [Step 1: Create a campaign \(p. 126\)](#).

**To specify a segment**

1. On the **Choose a segment** page, choose one of the following options:
  - **Use an existing segment** – Choose this option if you've already created a segment and you're ready to send your campaign to it.
  - **Create a segment** – Choose this option if you haven't created any segments yet, or if you want to create a new segment for this campaign. If you choose this option, create a segment by completing the procedures in [Building segments \(p. 110\)](#).

**Note**

If you want to send your campaign when certain events occur (as opposed to sending it at a specific time), you have to use a dynamic segment (as opposed to an imported segment). To learn more, see [Building segments \(p. 110\)](#).

2. (Optional) Under **Segment hold-out**, specify the percentage of segment members who shouldn't receive this campaign. Amazon Pinpoint chooses the appropriate number of segment members at random, and omits them from the campaign.

You can use this feature to perform hold-out testing. In a hold-out test, you omit a sample group of random recipients, and then compare their behaviors (for example, the number of purchases they make) against the behaviors of the customers who received the campaign. In this way, you can determine the effectiveness of your campaigns.

## Next

[Step 3: Write the message \(p. 128\)](#)

# Step 3: Write the message

After you specify the target segment for the campaign, you can write the message for the campaign.

If you set up the campaign as a standard campaign, you write a single message. If you set up the campaign as an A/B test campaign, you define two or more *treatments*. A *treatment* is a variation of your message that the campaign sends to different portions of the segment.

## Prerequisite

Before you begin, complete [Step 2: Specify the audience for the campaign \(p. 127\)](#).

## Set up the campaign

1. If you created this campaign as an A/B test campaign (as opposed to a standard campaign), specify the percentage of segment members who should receive each treatment. An A/B test campaign can include up to five treatments. Choose **Add another treatment** to add additional treatments.
2. On the **Create your message** page, configure the message for the campaign. The message options vary depending on the channel that you chose for the campaign.

If you're creating an email campaign, see [Writing an email message \(p. 128\)](#).

If you're creating an SMS campaign, see [Writing an SMS message \(p. 129\)](#).

If you're creating a push notification campaign, see [Writing a push notification \(p. 130\)](#).

If you're creating a campaign that sends messages through a custom channel, see [Configuring a custom channel message \(p. 131\)](#).

## Writing an email message

This section contains information about writing an email message.

1. Choose the priority level for the **Create your message** page, do one of the following:
  - To design and write a new message for the campaign, select **Create a new email message**.
  - To create a message that's based on an email template:
    1. Select **Choose an existing email template**, and then select **Choose a template**.
    2. Browse for the template that you want to use. When you select a template from the list, Amazon Pinpoint displays a preview of the active version of the template. (The active version is usually the version of a template that's been reviewed and approved for use, depending on your workflow.)
    3. When you find the template that you want, select it, and then select **Choose template**.
    4. Under **Template version**, specify whether you want Amazon Pinpoint to automatically update the message to include any changes that you might make to the template before the message is sent. To learn more about these options, see [Managing versions of message templates \(p. 254\)](#).
    5. When you finish choosing template options for the message, skip to step 5.
2. For **Subject**, enter the subject line for your email message.
3. For **Message**, enter the email body.

### Tip

You can enter the email body by using either HTML or Design view. In HTML view, you can manually enter HTML content for the email body, including features such as formatting and links. In Design view, you can use a rich text editor with a formatting toolbar to apply formatting features such as links. To switch views, choose **HTML** or **Design** from the view selector above the message editor.

4. (Optional) In the field below the message editor, enter the content that you want to display in the body of messages that are sent to recipients whose email applications don't display HTML.
5. If you created this campaign as an A/B test campaign (as opposed to a standard campaign), repeat the steps in this section for each treatment. You can switch between treatments by using the tabs at the top of the **Email details** section.
6. For **Sender email address**, choose the verified email address used to set up the email channel.
7. Choose where you want to send the test message to. This can be an existing segment of up to ten email addresses or endpoint IDs.
8. Choose **Next**.

## Writing an SMS message

This section contains information about writing an SMS message.

1. On the **Create your message** page, do one of the following:
  - To design and write a new message for the campaign, select **Create a new SMS message**.
  - To create a message that's based on an SMS template:
    1. Select **Choose an existing SMS template**, and then select **Choose a template**.
    2. Browse for the template that you want to use. When you select a template from the list, Amazon Pinpoint displays a preview of the active version of the template. (The active version is typically the version of a template that's been reviewed and approved for use, depending on your workflow.)
    3. When you find the template that you want, select it, and then select **Choose template**.
    4. Under **Template version**, specify whether you want Amazon Pinpoint to automatically update the message to include any changes that you might make to the template before the message is sent. To learn more about these options, see [Managing versions of message templates](#) (p. 254).
    5. When you finish choosing template options for the message, skip to step 5.
2. For **Message type**, choose one of the following:
  - **Promotional** – Noncritical messages, such as marketing messages. If you choose this option, Amazon Pinpoint optimizes delivery of the message to incur the lowest cost.
  - **Transactional** – Critical messages that support customer transactions, such as one-time passwords for multi-factor authentication. If you choose this option, Amazon Pinpoint optimizes delivery of the message to achieve the highest reliability.

This campaign-level setting overrides your default message type, which you set on the SMS settings page for the project.

3. (Optional) For the **Origination phone number**, choose the number to use as the originator. The originator can be any of your numbers: short code, 10DLC, or long code/toll-free. If you have multiple numbers associated with your account, and you do not choose an originator, Amazon Pinpoint will choose an originator for you based on the following order: short code, 10DLC, long code/toll-free.
4. For **Message**, type the message body. The message can have up to 160 characters.

5. Depending on which environment you're in, you can do one of the following:
  - **In the SMS sandbox environment** – Choose the verified destination numbers that you want to send messages to. If the number you want isn't shown, add that number and then verify it. For more information, see [Amazon Pinpoint SMS sandbox \(p. 57\)](#).
  - **(Optional) In a production environment** – For **Sender ID**, enter a custom ID of up to 11 alphanumeric characters, including at least one letter, and no spaces. The sender ID displays as the message sender on the recipient's device. For example, you can use your business brand to make the message source easier to recognize. Support for sender IDs varies by country or region. For more information, see [Supported countries and regions \(SMS channel\) \(p. 85\)](#).

This message-level sender ID overrides your default sender ID, which you set on the SMS settings page for the project.
6. If you created this campaign as an A/B test campaign (as opposed to a standard campaign), repeat the steps in this section for each treatment. You can switch between treatments by using the tabs at the top of the **SMS details** section.
7. Choose **Next**.

## Writing a push notification

This section contains information about writing a push notification and setting up the action that occurs when a recipient taps the notification.

1. On the **Create your message** page, do one of the following:
  - To design and write a new message for the campaign, select **Create a new push notification**.
  - To create a message that's based on a push notification template:
    1. Select **Choose an existing push notification template**, and then select **Choose a template**.
    2. Browse for the template that you want to use. When you select a template from the list, Amazon Pinpoint displays a preview of the active version of the template. (The active version is typically the version of a template that's been reviewed and approved for use, depending on your workflow.)
    3. When you find the template that you want, select it, and then select **Choose template**.
    4. Under **Template version**, specify whether you want Amazon Pinpoint to automatically update the message to include any changes that you might make to the template before the message is sent. To learn more about these options, see [Managing versions of message templates \(p. 254\)](#).
    5. If you created this campaign as an A/B test campaign (as opposed to a standard campaign), repeat the steps in this section for each treatment. You can switch between treatments by using the tabs at the top of the **Push notification details** section.
    6. When you finish, choose **Next**.
2. For **Notification type**, specify the type of message that you want to send:
  - **Standard notification** – A push notification that has a title, a message body, and other content and settings. Recipients are alerted by their mobile devices when they receive the message.
  - **Silent notification** – A custom JSON attribute-value pair that Amazon Pinpoint sends to your app without producing notifications on recipients' devices. Use silent notifications to send data that your app is designed to receive and handle. For example, you can use silent notifications to update the app's configuration or to show messages in an in-app message center.
  - **Raw message** – A push notification that specifies all of a notification's content and settings as a JSON object. Use raw messages for cases such as sending custom data to an app for processing by that app, instead of the push notification service.



If you choose the **Raw message** option, the message editor displays an outline of the code to use for the message. In the message editor, enter the content and settings that you want to use for each push notification service, including any optional settings—such as images, sounds, and actions—that you want to specify. For more information, see the documentation for the push notification services that you use. After you enter all the raw message content, repeat this step for each treatment, if you created this campaign as an A/B test campaign. When you finish, choose **Next**.

### To create a standard notification

#### To create a standard notification

1. For **Title**, enter the title that you want to display above the message.
2. For **Body**, enter the message body. Your push notification can have up to 200 characters. A character counter below the field counts down from 200 as you add characters to the message.
3. For **Action**, select the action that you want to occur when a recipient taps the notification:
  - **Open your app** – Your app launches, or it becomes the foreground app if it was sent to the background.
  - **Go to a URL** – The default mobile browser on the recipient's device launches and opens a web page at the URL that you specify. For example, this action can be useful for sending users to a blog post.
  - **Open a deep link** – Your app opens to a specific page or component in the app. For example, this action can be useful to direct users to special promotions for in-app purchases.
4. (Optional) Under **Media URLs**, enter the URLs for any media files that you want to display in the push notification. The URLs must be publicly accessible so that the push notification services for Android or iOS can retrieve the images.
5. If you created this campaign as an A/B test campaign (as opposed to a standard campaign), repeat the steps in this section for each treatment. You can switch between treatments by using the tabs at the top of the **Push notification details** section.
6. Choose **Next**.

### To create a silent notification

#### To create a silent notification

1. For **Message**, enter the content of the message in JSON format. The exact content of the message varies depending on the notification service that you use and the values that your app expects to receive.
2. If you created this campaign as an A/B test campaign (as opposed to a standard campaign), repeat the steps in this section for each treatment. You can switch between treatments by using the tabs at the top of the **Push notification details** section.
3. Choose **Next**.

## Configuring a custom channel message

This section contains information about configuring a campaign to send messages by using a custom channel. You can use custom channels to send messages to your customers through any service that has an API or web hook functionality, including third-party services.

## Sending a custom message using a Lambda function

To send messages through a service that has an API, you have to create an AWS Lambda function that calls the API. For more information about creating these functions, see [Creating custom channels](#) in the *Amazon Pinpoint Developer Guide*.

### To configure a custom channel that uses a Lambda function to call an API

1. On the **Create your message** page, for **Choose your custom message channel type**, choose **Lambda function**.
2. For **Lambda function**, choose the name of the Lambda function that you want to execute when the campaign runs.
3. For **Endpoint options**, choose the endpoint types that you want Amazon Pinpoint to send to the Lambda function or webhook that's associated with the custom channel.

For example, if the segment you chose for this campaign contains several endpoint types, but you only want to send the campaign to endpoints that have the Custom endpoint type attribute, choose **Custom**. You aren't required to choose the Custom endpoint type. For example, you could choose to only send the custom channel campaign to endpoints with the Email endpoint type attribute.

4. Choose **Next**.

## Sending a custom message using a webhook

You can also create custom channels that send information about your segment members to services that use webhooks.

### To configure a custom channel that uses webhooks

1. On the **Create your message** page, for **Choose your custom message channel type**, choose **URL**.
2. For **Enter your custom message channel URL**, enter the URL of the webhook.

The URL that you specify has to begin with "https://". It can only contain alphanumeric characters, plus the following symbols: hyphen (-), period (.), underscore (\_), tilde (~), question mark (?), slash or solidus (/), pound or hash sign (#), and semicolon (;). The URL has to comply with [RFC3986](#).

3. For **Endpoint options**, choose the endpoint types that you want Amazon Pinpoint to send to the Lambda function. For example, if the segment you chose for this campaign contains several endpoint types, but you only want to send the campaign to endpoints that have the "Custom" endpoint type attribute, choose **Custom**.
4. Choose **Next**.

## Use message variables

To create a message that's personalized for each recipient, use message variables. Message variables refer to specific user attributes. These attributes can include characteristics that you create and store for users, such as the user's name, city, device, or operating system. When Amazon Pinpoint sends the message, it replaces the variables with the corresponding attribute values for the recipient. For information about the attributes that you can use, see [Endpoint properties](#) in the *Amazon Pinpoint API Reference*.

To include a variable in your message, add the name of an existing attribute to the message. Enclose the name in two sets of curly braces, and use the exact capitalization of the name—for example, `{{Demographic.AppVersion}}`.

Often, the most useful attributes for message variables are custom attributes that you create and store for users. By using custom attributes and variables, you can send personalized messages that are unique for each recipient.

For example, if your app is a fitness app for runners and it includes custom attributes for each user's first name, preferred activity, and personal record, you could use variables in the following message:

```
Hey {{User.UserAttributes.FirstName}}, congratulations  
on your new {{User.UserAttributes.Activity}} record of  
{{User.UserAttributes.PersonalRecord}}!
```

When Amazon Pinpoint sends this message, the content varies for each recipient after the variables are replaced. Possible final messages are:

Hi Jane Doe, congratulations on your new half marathon record of 1:42:17!

Or:

Hi John Doe, congratulations on your new 5K record of 20:52!

## Test the message

Amazon Pinpoint can display a preview of an email message that you can view before you schedule the message to be sent. For email and other types of messages, you can also send a test message to a small group of recipients for testing purposes. You can send test messages for any type of message—email, push notification, SMS, or voice.

### Previewing an email message without sending it

The Design view in the Amazon Pinpoint message editor shows a preview of an email message as it would appear if it was rendered by your web browser.

If you're working in HTML view, instead of Design view, you can display a preview of an email message next to the HTML content of the message. This feature is helpful when you want to verify that a message renders as you expect, before you send a test.

Note that this preview only shows how the message would appear if it was rendered by your web browser. As a best practice, you should still send test emails to several recipients and view those test messages by using a variety of devices and email clients.

#### To preview an email

1. In the area above the HTML view of the message editor, choose **No preview**, and then choose **Preview**. Amazon Pinpoint displays a preview pane next to the HTML editor.
2. (Optional) To display the HTML content and the preview in a larger window, choose **Fullscreen** in the area above the message editor.

## Sending a test message

It's often helpful to send a test message to actual recipients in order to make sure that your message appears correctly when your customers receive it. By sending a test version of a message, you can test incremental improvements to the content and appearance of your message without impacting the status of your campaign.

When you send test messages, consider the following factors:

- You're charged for sending test messages as if they were regular campaign messages. For example, if you send 10,000 test emails in a month, you're charged \$1.00 (USD) for sending the test emails. For more information about pricing, see [Amazon Pinpoint pricing](#).
- Test messages count toward your account's sending quotas. For example, if your account is authorized to send 10,000 emails per 24-hour period, and you send 100 test emails, you can send up to 9,900 additional emails in the same 24-hour period.

- When you send a test message to specific users, you can specify up to 10 addresses. Use commas to separate multiple addresses.

**Note**

The word "address" (as it's used in this section) can refer to any of the following: an email address, a mobile phone number, an endpoint ID, or a device token.

- When you send a test SMS message to specific phone numbers, the numbers must be listed in E.164 format. That is, they must include a plus sign (+), the country code without a leading zero, and the complete subscriber number, including area code—for example, +12065550142. E.164-formatted numbers shouldn't contain parentheses, periods, hyphens, or any symbols other than the plus sign. E.164 phone numbers can have a maximum of 15 digits.
- When you send a test push notification, the addresses must be either endpoint IDs or device tokens.
- When you send a test message to a segment, you can only choose one segment. Additionally, you can only choose segments that contain 100 endpoints or fewer.
- When you send a test message to a segment, Amazon Pinpoint creates a campaign for that test. The name of the campaign contains the word "test", followed by four random alphanumeric characters, followed by the name of the campaign. These campaigns aren't counted toward the maximum number of active campaigns that your account can contain. Amazon Pinpoint doesn't create a new campaign when you send a test message to specific recipients.
- Events that are associated with test messages are counted in the metrics for the parent campaign. For example, the **Endpoint deliveries** chart on the **Campaigns** analytics page includes the number of test messages that were successfully delivered.

There are two ways to send a test message. You can send it to an existing segment or you can send it to a list of addresses that you specify. The best method depends on your use case. For example, if you have a regular group of people who test your messages, you might find it helpful to create a segment that contains all of their endpoints. If you need to send test messages to a group of testers that changes regularly, or to a dynamically generated address, you might find it easier to specify your recipients manually.

### To send a test message to a segment

1. Under the message editor, choose **Send a test message**.
2. In the **Send a test message** dialog box, under **Send a test message to**, choose **A segment**.
3. Use the drop-down list to choose the segment that you want to send the test message to.

**Note**

Amazon Pinpoint automatically excludes all segments that contain 100 endpoints or more from this list.

4. Choose **Send message**.

### To send a test message to specific recipients

1. Under the message editor, choose **Send a test message**.
2. In the **Send a test message** dialog box, under **Send a test message to**, choose one of the options in the following table.

If you're sending...	Choose...	And then enter...
An email	Email addresses	A comma-separated list of valid email addresses.

If you're sending...	Choose...	And then enter...
An SMS message	<b>Phone numbers</b>	A comma-separated list of E.164-formatted phone numbers.
A mobile push notification	Either <b>Endpoint IDs</b> or <b>Device tokens</b>	A comma-separated list of endpoint IDs or device tokens, depending on the type of address you chose.

3. Choose **Send message**.

#### Next

[Step 4: Choose when to send the campaign \(p. 135\)](#)

## Step 4: Choose when to send the campaign

After you write your message, you can specify when the campaign should be sent. You can choose to send the campaign immediately, at a scheduled date and time, on a recurring basis, or when certain events occur.

Before you can complete the procedures in this section, you have to complete [Step 3 \(p. 128\)](#).

#### Topics in this section:

- [Sending the campaign immediately \(p. 135\)](#)
- [Sending the campaign at a specific date and time \(p. 135\)](#)
- [Sending the campaign on a recurring basis \(p. 136\)](#)
- [Sending the campaign when events occur \(p. 136\)](#)

### Sending the campaign immediately

If you want to send the campaign as soon as you finish creating it, you can choose to send the campaign immediately.

#### To send the campaign immediately

1. Under **When should the campaign be sent**, choose **At a specific time**.
2. Under **How often should the campaign be sent**, choose **Immediately**.
3. Choose **Next** to continue to the final step.

### Sending the campaign at a specific date and time

If you want to send a campaign only once, you can schedule it to be sent at a specific date and time.

#### To send the campaign at a specific date and time

1. Under **When should the campaign be sent**, choose **At a specific time**.
2. Under **How often should the campaign be sent**, choose **Once**.

3. For **Start date and time**, choose the date and time when Amazon Pinpoint should send the message.
4. Under **Time zone**, choose the time zone that you want to use to schedule the campaign. Optionally, choose **Use recipient's local time** to base the delivery time on each recipient's local time zone.
5. Choose **Next** to continue to the final step.

## Sending the campaign on a recurring basis

You can also schedule the campaign to be sent on a recurring basis. You can specify the frequency, as well as the start and end dates for the campaign.

### To send the campaign on a recurring basis

1. Under **When should the campaign be sent**, choose **At a specific time**.
2. Under **How often should the campaign be sent**, choose how often Amazon Pinpoint should send the recurring campaign. For example, to send the campaign once per week, choose **Weekly**.
3. For **Start date and time**, choose the date and time when Amazon Pinpoint should send the first message in the recurring series.
4. For **End date and time**, choose the date and time when Amazon Pinpoint should stop sending recurring messages.
5. Under **Time zone**, choose a time zone to base the start and end times on. Optionally, choose **Use recipient's local time** to base the delivery time on each recipient's local time zone.
6. Choose **Next** to continue to the final step.

## Sending the campaign when events occur

If you want to send the campaign when customers take certain actions, you can configure the campaign to be sent when a specific event occurs. For example, you can configure the campaign to be sent when a customer registers a new account, or when a customer adds an item to their shopping cart but doesn't purchase it. To learn more about sending events from your apps to Amazon Pinpoint, see [Reporting events in your application](#) in the *Amazon Pinpoint Developer Guide*.

### Note

You can send event-based messages only if your campaign uses dynamic segments (as opposed to imported segments). In addition, if you integrate your app with Amazon Pinpoint by using an AWS Mobile SDK, messages from event-based campaigns are sent only to customers whose apps are running AWS Mobile SDK for Android version 2.7.2 or later, or AWS Mobile SDK for iOS version 2.6.30 or later.

### To configure a campaign to be sent when an event occurs

1. Under **When should the campaign be sent**, choose **When an event occurs**.
2. For **Events**, choose the name of the event that triggers the execution of the campaign.
3. (Optional) For **Attributes** and **Metrics**, choose the specific characteristics that trigger the execution of the campaign.

### Tip

The more event data you capture from your users, the more options you have when you set up event triggers. Event attributes and metrics are available only if you've provided those values to Amazon Pinpoint. To learn more about capturing event data, see [Reporting events in your application](#) in the *Amazon Pinpoint Developer Guide*.

4. Under **Campaign Dates**, for **Start date and time**, choose a start date. Amazon Pinpoint sends the campaign only if the event that you specified earlier occurs after the start date.

**Note**

The **Start date and time** that you choose has to be at least 15 minutes in the future.

5. For **End date and time**, choose an end date. Amazon Pinpoint sends the campaign only if the event that you specified earlier occurs before the end date.
6. Under **Time zone**, choose a time zone to base the start and end dates on.
7. Choose **Next** to continue to the final step.

## Best practices for using event-based campaigns

There are a few restrictions and best practices that you should consider when you create event-based campaigns:

- You can create an event-based campaign only if you chose a dynamic segment (as opposed to an imported segment) in [Step 2 \(p. 127\)](#).
- If you integrate your app with Amazon Pinpoint by using an AWS Mobile SDK, your app should use the following versions of the SDK in order to work properly with event-based campaigns:
  - AWS Mobile SDK for Android version 2.7.2 or later
  - AWS Mobile SDK for iOS version 2.6.30 or later

Because of this restriction, we recommend that you set up your segments to only include customers who use a version of your app that runs a compatible version of the SDK.

- Choose your events carefully. For example, if you send an event-based campaign every time a `session.start` event occurs, you might quickly overwhelm your users with messages. You can limit the number of messages that Amazon Pinpoint sends to a single endpoint in a 24-hour period. For more information, see [General settings \(p. 274\)](#).

**Next**

[Step 5: Review and launch the campaign \(p. 137\)](#)

## Step 5: Review and launch the campaign

At this point, you're almost ready to send the campaign to your audience segment. Before you launch the campaign, you should review your settings and make changes if needed.

**Prerequisite**

Before you begin, complete [Step 4: Choose when to send the campaign \(p. 135\)](#).

**To review and launch a campaign**

1. On the **Review and launch** page, review the settings for the campaign. If you need to make changes, use the navigation section on the left side of the window to go directly to the page that contains the content that you want to edit.
2. If all of the settings are correct, choose **Launch campaign**.

## Managing campaigns

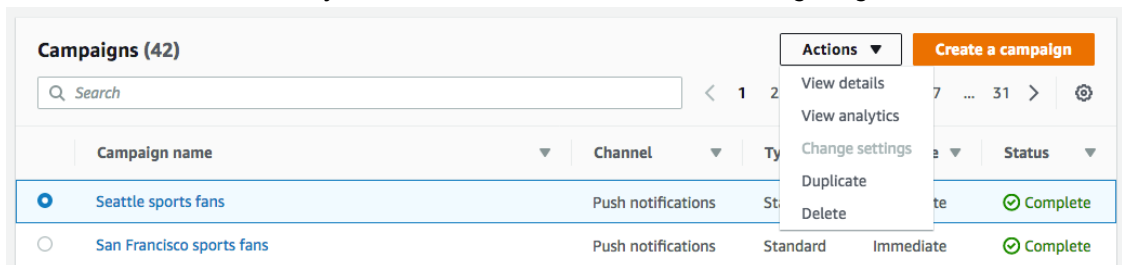
In the Amazon Pinpoint console, you update the settings for a campaign, delete a campaign, or copy an existing campaign to a new campaign.

**Note**

Because 10DLC campaigns exist outside of a specific project, information about these campaigns can be found on the **10DLC campaigns** tab on the **SMS and voice** page of the Amazon Pinpoint console.

**To manage a campaign**

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project for which you want to manage campaigns.
3. In the navigation pane, choose **Campaigns**.
4. On the **Campaigns** page, choose the campaign that you want to manage. Then, on the **Actions** menu, select the action that you want to take, as shown in the following image.



On the **Actions** menu, you can do the following:

- **View details** – Shows the details page for the selected campaign. On this page, you can see information about the campaign, such as the campaign type, the status of the campaign, and the number of endpoints targeted by the campaign.
- **View analytics** – Shows the analytics page for the selected campaign. For more information about campaign analytics, see [Campaign charts \(p. 204\)](#).
- **Change settings** – Change the settings for the campaign, including the target segment, the message content, and the delivery time. You can choose this option only for campaigns that haven't been sent yet.
- **Duplicate** – Copy the campaign to use its settings as a template for a new campaign, in which you can change or keep any of the original settings.
- **Delete** – Remove the campaign from Amazon Pinpoint and stop sending messages through the campaign.



# Amazon Pinpoint journeys

In Amazon Pinpoint, a *journey* is a customized, multi-step engagement experience. When you create a journey, you start by choosing a segment that defines which customers will participate in the journey. After that, you add the activities that customers pass through on their journeys. Activities can include sending messages or splitting customers into groups based on their attributes or behaviors.

There are several different types of journey activities, each with its own specific purpose. For example, you can add a **Send email** activity to your journey. When a customer arrives on this type of activity, they receive an email message. Another type of journey activity is the **Multivariate split** activity. When customers arrive on this type of activity, they are separated into multiple paths based on their segment membership or their interactions with previous journey activities. You can learn more about journey activities in [Take a tour of journeys \(p. 139\)](#).

This chapter contains conceptual information about journeys in Amazon Pinpoint. It also contains information about creating, managing, testing, and publishing your journeys.

## Topics in this section:

- [Take a tour of journeys \(p. 139\)](#)
- [Create a journey \(p. 142\)](#)
- [Review and test a journey \(p. 166\)](#)
- [Publish a journey \(p. 168\)](#)
- [Pause, resume, or stop a journey \(p. 169\)](#)
- [View journey metrics \(p. 170\)](#)
- [Tips and best practices for journeys \(p. 182\)](#)

## Take a tour of journeys

Journeys includes some new concepts and terminology that you might not be familiar with. This topic explores these concepts in detail.

## Journeys terminology

### Journey workspace

The area of the journey page where you create your journey by adding activities.

### Activity

A step in a journey. Different things can happen when participants arrive on different types of activities. In Amazon Pinpoint, you can create the following types of activities:

#### Send an email

When a participant arrives on a **Send an email** activity, Amazon Pinpoint sends them an email. When you create a **Send an email** activity, you specify an [email template \(p. 220\)](#) to use for the email. Email templates can include message variables, helping you to create a more personalized experience.

### Send a push notification

When a participant arrives on a **Send a push notification** activity, Amazon Pinpoint immediately sends a push notification to the user's device. When you create a **Send a push notification** activity, you'll choose the [push notification template \(p. 221\)](#) to use. Push notification templates can include messages variables, helping you to create a more personalized experience.

### Send an SMS message

When a participant arrives on a **Send an SMS message** activity, Amazon Pinpoint immediately sends an SMS notification to the user's device. When you create a **Send an SMS notification** activity, you'll choose the [SMS template \(p. 224\)](#) to use. SMS templates can include messages variables, helping you to create a more personalized experience.

### Send through a custom channel

Send your message through one of your custom channels. For example, you can use custom channels to send messages through third-party services such as WhatsApp or Facebook Messenger. Amazon Pinpoint immediately sends a notification using that service to the user's device using either an AWS Lambda function or a webhook. For more information on creating custom channels, see [Custom channels in Amazon Pinpoint \(p. 109\)](#).

### Wait

When a participant arrives on a **Wait** activity, they remain on that activity until a certain date or for a specific amount of time.

### Yes/No split

Sends participants down one of two paths based on criteria that you define. For example, you can send all participants who read an email down one path, and send everyone else down the other path.

### Multivariate split

Sends participants down one of up to four paths, based on criteria that you define. Participants who don't meet any of the criteria proceed down an "Else" path.

### Holdout

Ends the journey for a specified percentage of participants.

### Random split

Randomly sends participants down one of up to five paths.

### Path

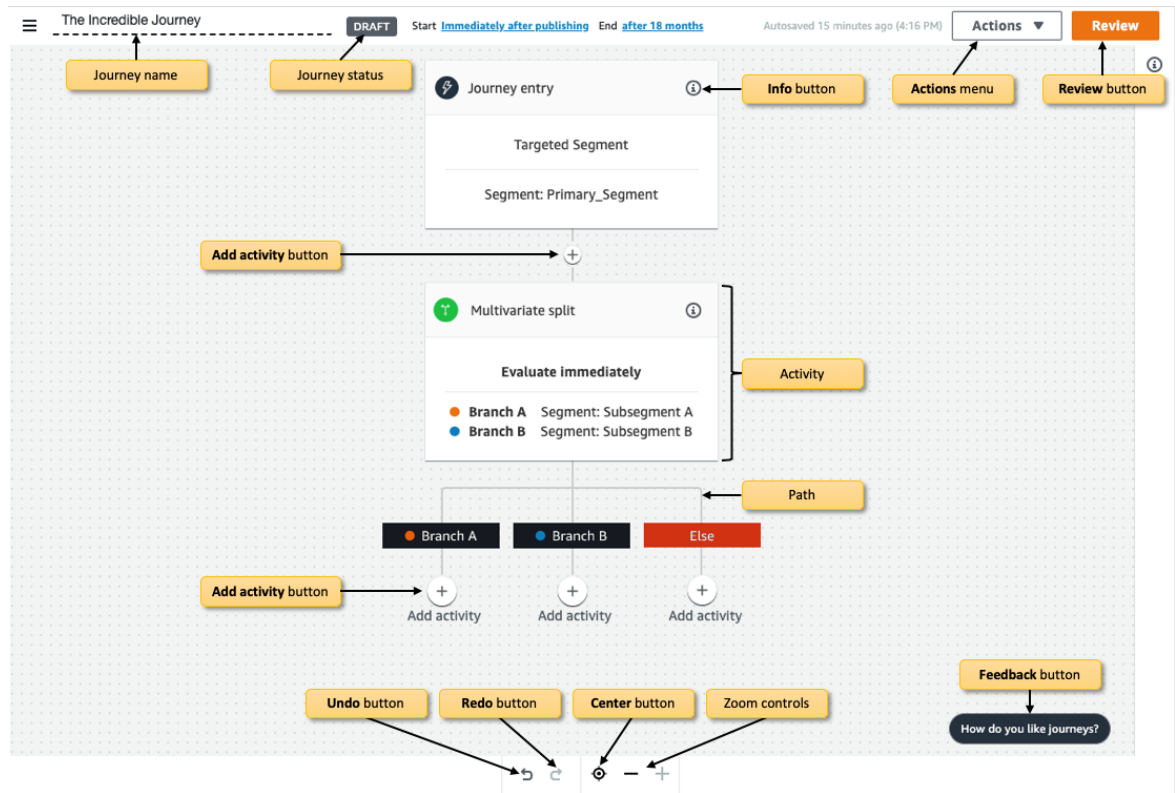
A connector that joins one activity to another. A split activity might have several paths.

### Participant







A person who is traveling through the activities in a journey.


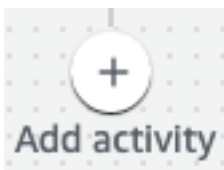
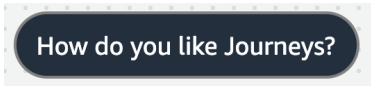
## Parts of the journeys interface

This section contains information about the components of the journeys interface. When you create or edit a journey, you see the journey workspace. The following image shows an example of the journey workspace.



The following table includes descriptions of several of the buttons that appear in the journey workspace.

Appearance	Button name	Description
	Info	Opens the help panel, which shows additional information about individual journey activities.
	Delete activity	Deletes the highlighted activity.
	Undo	Reverts the most recent action.
	Redo	Restores an action that was previously undone by using the <b>Undo</b> button.
	Center	Moves to the top of the journey and centers the <b>Journey entry</b> activity on the journey workspace.
	Zoom out	Reduces the size of objects in the journey workspace.

Appearance	Button name	Description
	Zoom in	Increases the size of objects in the journey workspace.
	Add activity	This button appears at every point where you can insert another step in the journey. When you choose this button, you see a menu that lets you choose an activity type.
	Feedback	A quick and easy way to provide feedback about your experience using journeys. We review all of the feedback that we receive through this button. We might contact you for additional information if we have any questions.

## Create a journey

The Amazon Pinpoint console lets you create powerful journeys through an easy-to-use graphical editor. This section contains information about planning your journey, as well as information about creating your journey by using the Amazon Pinpoint console.

### Step 1: Configure the journey

The first step in building your journey is to create and configure it. You can configure the journey to begin immediately, or at a certain date and time. You can also configure it to end at a specific date and time.

#### To configure a journey

1. On the **All projects** page, choose the Amazon Pinpoint project that you want to create a journey in.  
**Note**  
In Amazon Pinpoint, segments and endpoints are unique to each project. The project that you choose should contain the segments and endpoints that you want to engage with this journey.
2. In the navigation pane, choose **Journeys**.
3. Choose **Create journey**. The journey workspace appears.
4. On the **Actions** menu, choose **Settings**. The **Journey settings** dialog box appears. An example of this dialog box is shown in the following image.

**Journey settings**

**Journey title**  
Enter a name to help identify your journey.  
Untitled  
The journey name can contain up to 150 characters.

**Start date and time - optional**      **End date and time - optional**

YYYY/MM/DD 17:00      YYYY/MM/DD 17:00  
Reset      Reset

**Time zone**  
UTC-07:00 (MST, PDT) ☐ Use recipient's local time zone  
Endpoints that do not have local timezone set will not be entered into the journey. [Learn more](#)

► **Advanced settings - optional**

5. In the **Journey settings** dialog box, do the following:
- For **Journey title**, enter a name that describes the journey.
  - (Optional) For **Start date and time** and **End date and time**, enter the dates and times when the journey should start and end, respectively. If you don't enter a start date, customers enter the journey 5 minutes after you launch it. If you don't enter an end date, the journey runs continuously for up to 540 days (approximately 18 months).
  - (Optional) For **Time zone**, choose the time zone that the start date and end date should be based on. By default, Amazon Pinpoint chooses a time zone from this list based on your location. You need to complete this step only if you set a start date or end date.

Optionally, choose **Use recipient's local time zone** to use the time zone value in the endpoint record for each participant. Note, however, that a participant won't be included in the journey if you choose this option and the participant's endpoint record doesn't specify a time zone.

If you choose this option, you must specify a time zone for the participant's endpoint record in order for the participant to be included in the journey.

**Note**

**Use recipient's local time zone** is not supported for event-triggered journeys.

- Under **Advanced settings - optional**, further refine your scheduling and message parameters, such as including a start and end date for the journey or setting quiet hours in which no messages are sent:
  - **Quiet time settings** – Choose **Enable quiet time** to enable quiet time for message delivery for this journey. During quiet time, Amazon Pinpoint does not send messages to participants during the specified **Start time** and **End time** based on the end user's local timezone. Choose the **Resume sending after quiet times** option to send any messages that were held from being sent during quiet time along with new messages. If you do not choose **Resume sending after quiet time ends**, any messages held during quiet time are dropped and not sent. Only new messages are sent after quiet time ends.

**Note**

SMS messages might take up to 5 minutes to process. When configuring your quiet time hours, it's recommended to factor in a 5-minute buffer to the **Start time**.

**Quiet time settings**  
You can optionally specify the quiet time settings for messages that you send from this journey.

Start time  End time   
Specify times in HH:MM format using 24-hour notation. Specify times in HH:MM format using 24-hour notation.

☒ Resume sending after quiet time ends  
☐ Enable quiet time  
Enable this option to specify quiet time for this journey. By default, quiet time settings are not enabled.

- e. Under **Journey limits**, set options for message processing. For example, this might be changing the number of journey messages per second or changing the number of entries per endpoint. Endpoints will only re-enter a journey if allowed by limits.

- **Maximum daily messages per endpoint** – Choose **Override default setting** to override the maximum daily message setting for the project that contains this journey. If you specify a value in this section, Amazon Pinpoint limits the number of messages that are sent to each individual endpoint.

**Maximum daily messages per endpoint**  
The maximum number of messages that can be sent to an endpoint across all journeys in a 24-hour period. If you specify a maximum of 0, endpoints can receive an unlimited number of journey messages per day.

Specify a value of 0 or greater.

☒ Override default setting  
Enable this option to specify a maximum number of messages that a single endpoint can receive in a 24-hour period. The default value for this setting is 0 (no limit).

- **Maximum number of journey messages per second** – Choose **Override default setting** to override the maximum messages per second setting for the project that contains this journey. If you specify a value in this section, Amazon Pinpoint limits the number of messages that the journey can send each second. The value that you specify should be less than or equal to the maximum sending rate for your account. You can find the maximum sending rate for your account on the [Email settings \(p. 277\)](#) page on the Amazon Pinpoint console.

**Maximum number of journey messages per second**  
The maximum number of messages that the journey can send each second. The number that you specify has to be less than or equal to the maximum sending rate for your account.

Specify a value between 50 and 20,000.

☒ Override default setting  
Enable this option to specify a maximum number of messages per second for this journey. By default, the maximum number of messages per second is 50.

- **Maximum entries per endpoint** – Choose this setting to override the maximum entry setting for the project that contains this journey. If you specify a value in this section, Amazon Pinpoint limits the number of times that a participant can enter the journey. For example, if you specify a value greater than 1, a participant could enter a journey, complete several activities in the journey, arrive at an **End** activity, and start the journey again. If a participant is eligible for a journey, but they've already entered the journey the maximum number of times, they are prevented from entering the journey again. For example, if you have a maximum entry endpoint limit of 2, and a participant has already entered and exited the journey two times, they will not re-enter that journey again.

If you choose a value greater than 1 for the default, you can then choose and **Endpoint re-entry interval**, setting how long to wait before an endpoint re-enters a journey. For example, you might set a re-entry interval if you want to space out messages sent to your users, thus preventing your users from being spammed.

**Maximum entries per endpoint**  
The maximum number of times an endpoint can enter the journey. If you specify a maximum of 0, endpoints can enter the journey an unlimited number of times.

Specify a value greater than or equal to 0.

**Endpoint re-entry interval**  
The time to wait before re-entering an endpoint into a journey. The setting only applies if endpoint re-entry cap is not set to 1.

days ▼

☒ **Override default setting**  
Enable this option to specify a maximum number of re-entries for this journey. By default, the maximum number of re-entries is 1.

- f. Choose **Save**. You're next prompted to set up the journey entry activity.

## Step 2: Set up the journey entry activity


Now you can choose the type of journey you're going to create. You'll have one of two options for choosing the journey start:

### Add participants when they perform an activity

This event-triggered journey type adds participants based on a chosen event. You choose an event, such as music downloads, and then choose the event attributes to further define the journey event. This might be downloading music from a specific artist. When a user performs any of the activities described by the event, they become participants in the journey.

#### To add participants when they perform an activity

1. Choose **Add participants when they perform an activity** if it is not already chosen.

 Journey entry [Info](#)

Choose how to start the journey:

☒ Add participants when they perform an activity

☐ Add participants from a segment

Events


Event attributes - *optional*

Attribute	Value	
<input type="text" value="Attribute"/>	<input type="text" value="Value"/>	<button>Remove</button>
<button>Add new attribute</button>		

Event metrics - *optional*

Metric	Operator	Value	
<input type="text"/>	<input type="text" value=""/>	<input type="text"/>	<button>Remove</button>
<button>Add new metric</button>			

Segment - *optional*



[Reset](#)

This list only includes the most recently modified segments for the current project.

[Build a segment](#)

Description - *optional*

Total endpoints in segment

-

Save

2. For **Events**, choose an event from a list of events or type a new event to add it. For example, you might want to trigger a journey when a user downloads a particular artist from your music service. Let's call this event `artist.download`. A journey can include only one event.

Events can be submitted by using any of the following:

- The PutEvents API. See [Events](#) in the Amazon Pinpoint API Reference
- AWS Mobile SDK for Android: version 2.7.2 or later



- AWS Mobile SDK for iOS: version 2.6.30 or later

**Note**

If you're using either of the AWS Mobile SDKs you'll be limited to a set of events. For the list of supported events, see [App events](#) in the Amazon Pinpoint Developer Guide.

3. (Optional) An event attribute is a specific piece of information used to refine an event. It's composed of an attribute name and a value. We'll narrow down the `artist.download` by adding an `artistName` attribute. For **Attribute**, choose the attribute from the list. Since you want to add participants based on specific a specific artist, you'd choose `artistName` as the **Attribute**, and then choose a specific artist for the **Value** – for example, `Bruce Springsteen`. Your journey event now adds any participants from the `artist.download` event and the `artistName` is `Bruce Springsteen`.

If you want to refine the journey even further, add additional attributes and values by choosing **Add new attribute** for each attribute you want to add. If an attribute has multiple possible values, you must add each attribute and value pair separately. For `artist.download` event you now add in an additional `artistName` attribute, `Alicia Keys`. Choose **Add new attribute**, again choose `artistName` as the attribute, and then choose `Alicia Keys` for the **Value**. When you use the same attribute multiple times with different values, Amazon Pinpoint processes the journey attributes using "or" between the values. Your journey event now adds any participants from the `artist.download` event, and the `artistName` is either `Bruce Springsteen` or `Alicia Keys`.

You can add a combination of attributes with multiple values in addition to attributes with only a single value.

4. (Optional) Choose an event **Metric**. This is an event that typically uses a range of numbers, such as a duration or a cost. After entering the event, choose an **Operator**:
  - is equal to
  - is greater than
  - is less than
  - is greater than or equal to
  - is less than or equal to

Enter the **Value** for the operator. Only numeric values are supported. Participants are added based on the metric, operator, and value. For the `artist.download` event you might add a `songLength` metric where you add participants when they download any song by either `Bruce Springsteen` or `Alicia Keys` and where the `songLength` is greater than or equal to `500 seconds`.

**Note**

You can't use the same metric with multiple values.

5. (Optional) Select the dynamic segment to use for the journey. You can have only one previously defined segment per journey entry. In addition, for any endpoint to enter into the journey, that endpoint must be part of the chosen segment. If you want to build a new segment for this journey, you can build that segment through the Amazon Pinpoint console. For more information about segments, see [Building segments](#).

**Note**

Imported segments and dynamic segments based on an imported segment aren't supported. The dropdown list indicates the type of segment. While a segment displayed in the dropdown list might indicate it's dynamic, if it's based on an imported segment, you'll get an error

6. (Optional) For **Description**, enter text that describes the activity. When you save the activity, this text appears as its label.
7. Choose **Save**.

## Add participants from a segment

For this journey type you'll choose the segment that participates in the journey. You can optionally configure the Journey entry activity to add new journey participants by periodically searching for new segment participants.

### To add participants from a segment

1. Choose **Add participants from a segment**.

The screenshot shows the 'Journey entry' configuration window. At the top, there's a header with a lightning bolt icon and the text 'Journey entry Info'. Below this, the section 'Choose how to start the journey:' has two radio buttons: 'Add participants when they perform an activity' (unselected) and 'Add participants from a segment' (selected). Under the 'Segments' section, there is a dropdown menu labeled 'Choose a segment' with a downward arrow, and a refresh button with a circular arrow icon. Below the dropdown, a note states: 'This list only includes the most recently modified segments for the current project.' with a link 'Build a segment'. The 'Specify how often to add new segment members.' section has a dropdown menu currently set to 'Never'. Below that is a checkbox for 'Refresh on segment update' with an 'Info' link. The 'Description - optional' section has a text input field with the placeholder 'Enter a description for this step.' At the bottom, there is a section for 'Total endpoints in segment' showing a dash '-' and a 'Save' button.

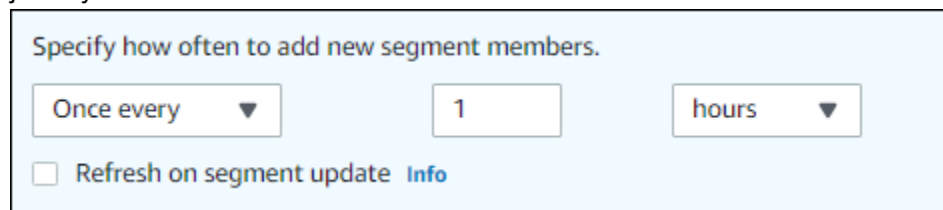
2. For **Segments**, choose the segment that you want to add to a journey. A segment can be dynamic or imported.

#### Tip

You can include only one segment in the **Journey entry** activity. If you need to add more segments, you can create a new segment that includes all of the segments that you want to add to the journey. Then, later in the journey, you can use a multivariate split activity to divide journey participants into separate groups based on their segment membership.

3. (Optional) For **Specify how often to add new segment members**, choose how often the segment membership should be evaluated and refreshed. You can choose **Never**, or you can choose to check

on a schedule you set. For example, if you choose **Once every 12 hours**, Amazon Pinpoint checks for new segment members every 12 hours. If Amazon Pinpoint finds any new segment members during one of these checks, it adds them to the journey. Existing endpoints will also be re-evaluated. If the **Maximum entries per interval** is greater than 1, then existing endpoints will also re-enter the journey.



Specify how often to add new segment members.

Once every ▼ 1 hours ▼

☐ Refresh on segment update [Info](#)

4. (Optional) Choose **Refresh on segment update** adds any new journey endpoint updates to the segment before the refresh interval set in the previous step. Any endpoints removed from the segment will not be processed if they do not enter the journey within 15 minutes. If this option is not chosen, then segments are refreshed based on the how often to add new segment members from the previous step.

The following describes the behavior of the refresh on segment update and refresh interval.

**Note**

A refresh interval and refresh on segment update applies to both dynamic and imported segments. For more information about these types of segments, see [Amazon Pinpoint segments \(p. 110\)](#).

- **Refresh on segment update is not chosen, and the refresh interval is set to Never**

Only endpoints present in the original segment are processed. Any endpoints added before the journey starts will be included. Any dynamic segment endpoints added or removed after the journey starts will not be processed.

- **Refresh on segment update is not chosen, and a refresh interval is set**

Any dynamic segment endpoints added, or are common across segment updates, are processed as long as it's allowed by other journey limits. Removed endpoints are not processed by the journey.

- **Refresh on segment update is chosen, and the refresh interval is set to Never**

If the journey is current processing endpoints, any changes to the segment are evaluated. However, if the journey has already finished processing, any endpoints that were added or removed after the journey started will not be included.

- **Refresh on segment update is chosen, and a refresh interval is set**

Any changes to the both dynamic and imported segments are evaluated and updated based on the refresh interval in addition to when any segment update occurs. Any segment endpoints added, or are common across segment updates, are processed as long it's allowed by other journey limits. Removed endpoints are not processed by the journey.

5. (Optional) For **Description**, enter text that describes the activity. When you save the activity, this text appears as its label.
6. Choose **Save**.

## Step 3: Add activities to the journey

Activities are the most important parts of any journey. Activities represent the steps that are applied to journey participants. You can use activities to send messages to journey participants across a variety of

channels, or to split them into smaller groups, or to wait for a period of time. There are several different types of activities that you can add to a journey. This section provides basic information about adding activities to a journey. For detailed information about setting up each type of activity, see [Setting up journey activities \(p. 150\)](#).

**Note**

An exit journey element is added to the journey flow after reviewing and publishing your journey.

**To add activities to a journey**

1. Choose **Add activity**.
2. For **Add an activity**, choose one of the following types of journey activities:
  - **Send an email** – When a participant arrives on this type of activity, Amazon Pinpoint sends them an email. When you create a **Send an email** activity, you specify an [email template \(p. 220\)](#).
  - **Send a push notification** – When a participant arrives on this type of activity, Amazon Pinpoint sends them a push notification. When you create a **Send a push notification** activity, you specify a [push notification template \(p. 221\)](#). Push notification templates can include standard or raw messages.
  - **Send an SMS message** – When a participant arrives on this type of activity, Amazon Pinpoint sends them an SMS message. When you create a **Send an SMS message** activity, you specify an [SMS message template \(p. 224\)](#).
  - **Send through a custom channel** – When a participant arrives on this type of activity, Amazon Pinpoint sends them a message through any service that has an API, including third-party services. When you create a **Send through a custom channel** activity, you specify a Lambda function or a webhook URL to send your message. Custom messages allow you to specify the endpoint types that will receive the message. For more information about custom channels, see [Creating Custom Channels \(p. 109\)](#) in the Amazon Pinpoint Developer Guide.
  - **Wait** – When a participant arrives on this type of activity, they remain on the activity until a certain date or for a specific amount of time.
  - **Yes/No split** – Sends customers down one of two paths based on certain criteria. For example, you can send all customers who opened an email down one path, and all other customers down the other path.
  - **Multivariate split** – Sends customers down one of up to four paths, based on certain criteria. Customers who don't meet any of the criteria that you define go down an "Else" path. Participants who meet the criteria in more than one branch will travel down the first branch that they qualify for.
  - **Holdout** – Ends the journey for a specified percentage of users.
  - **Random split** – Randomly sends customers down one of up to five paths.

**Tip**

Amazon Pinpoint automatically saves your journey every few minutes, and every time you configure an activity. The text in the upper right corner of the screen tells you when your journey was last saved. You can close the journey workspace at any time and return to it later.

For procedures for setting up each of these types of activities, see [Setting up journey activities \(p. 150\)](#).

## Setting up journey activities

Each type of journey activity has separate components that you have to configure. The following sections provide additional information about setting up each type of activity.

### Set up an email activity

When a journey participant arrives on a **Send email** activity, Amazon Pinpoint sends them an email immediately. Before you can configure an email activity, you have to create an email template. For more information about creating email templates, see [Creating email templates \(p. 220\)](#).

The screenshot shows the 'Send email' configuration dialog. At the top, there's a title bar with an envelope icon, the text 'Send email', and an 'Info' link. Below this, the main area has a light blue background. It starts with the instruction 'Select an email template to use for this activity.' followed by a 'Create template' link with an external link icon. There are two buttons: 'Choose an email template' and a refresh icon. Below these are 'Send a test message' and 'Preview message' buttons. The 'Sender email address' section has a dropdown menu showing 'sender@example.com' and a refresh icon. The 'Friendly sender name' is set to 'ExampleCorp'. The 'Description - optional' field contains the text 'Introduction email for ExampleCorp. special offers'. A 'Save' button is at the bottom right.

#### To set up an email activity

1. Choose the **Send email** activity that you want to configure.
2. For **Choose an email template**, choose the email template for the message that you want participants to receive. Then, under **Template version behavior**, specify whether you want Amazon Pinpoint to automatically update the message to include any changes that you might make to the template before the message is sent. To learn more about these options, see [Managing versions of message templates \(p. 254\)](#).

#### Tip

You can send yourself a preview of the message, even if your Amazon Pinpoint account doesn't contain an endpoint record for your email address. To send a preview, choose **Send a test message**.

3. For **Sender email address**, choose the email address that you want to send the message from. This list contains all the verified email addresses for your Amazon Pinpoint account in the current AWS Region. For information about verifying additional email addresses or domains, see [Verifying email identities \(p. 20\)](#).

**Tip**

To display a friendly sender name for the message, choose the default email address for the project. A *friendly sender name* is the name that appears in participants' email clients when they receive the message. To change the default email address for the project or the friendly sender name for that address, update the project's settings for the email channel. To do this, choose **Settings** in the left navigation pane, and then choose **Email**. Then, enter the settings that you want.

4. (Optional) For **Description**, enter text that describes the purpose of the activity. When you save the activity, this text appears as its label.
5. When you finish, choose **Save**.

### Set up a push notification activity

When a journey participant arrives on a **Send a push notification** activity, Amazon Pinpoint sends them a push notification immediately. Before you can configure a push notification activity, you have to create a push notification template. For more information about creating push notification templates, see [Creating push notification templates \(p. 221\)](#).

**Note**

To send push notifications to journey participants, your app has to be integrated with an AWS SDK. For more information, see [Handling Push Notifications](#) in the *Amazon Pinpoint Developer Guide*.

The screenshot shows a configuration window titled "Send a push notification" with a close button (X) in the top right corner. The window has a light blue background. Inside, the text "Choose a push notification template to use for this activity." is followed by a link "Edit template" with an external link icon. Below this is a template selection area showing "PushNotificationTest" with a close button (X) and a refresh button (circular arrow). The "Template version behavior" section has two radio buttons: "Use the version that's currently active" (selected) and "Use the version that was active when the journey was created". Below these are two buttons: "Send a test message" and "Preview message". The "Time to live - optional" section has a dropdown menu currently set to "Default for service". The "Description - optional" section has a text input field containing "Initial message to new users". At the bottom right is a "Save" button.

### To set up a push notification activity

1. Choose the **Send a push notification** activity that you want to configure.
2. For **Choose an push notification template**, choose the push notification template for the message that you want participants to receive. Then, under **Template version behavior**, specify whether you want Amazon Pinpoint to use the template version that is currently designated as active or the template version that was active when the journey was created. To learn more about these options, see [Managing versions of message templates](#) (p. 254).

#### Tip

You can send yourself a preview of the message, even if your Amazon Pinpoint account doesn't contain an endpoint ID or device token that you specify. To send a preview, choose **Send a test message**.



3. (Optional) For **Time to live**, specify whether you want Amazon Pinpoint to use the default time to live (TTL) value or a custom value for each push notification service. By default, Amazon Pinpoint uses the maximum TTL value of each respective push notification service. You can also specify a custom TTL value for all push notification services. If the message delivery fails, the push notification service attempts to deliver the message for the amount of time that you specify in this setting. For information about specific time to live values, see [Messages](#) in the *Amazon Pinpoint API Reference*.

4. (Optional) For **Description**, enter text that describes the purpose of the activity. When you save the activity, this text appears as its label.
5. When you finish, choose **Save**.


#### Set up an SMS message activity


When a journey participant arrives on a **Send an SMS message** activity, Amazon Pinpoint sends them an SMS message immediately. Before you can configure an SMS activity, you have to create an SMS template. For more information about creating SMS templates, see [Creating SMS templates \(p. 224\)](#).




 Send an SMS message [Info](#) 

Choose an SMS template to use for this activity.

[Edit template](#) 

SMSMessageTest 



Template version behavior [Info](#)

☒ Use the version that's currently active  
Active Version: 4

☐ Use the version that was active when the journey was created

Send a test message

Preview message


Message type

Choose the type of message that you want to send. [Info](#)

☐ Transactional  
Critical or time-sensitive messages

☒ Promotional  
Non-critical messages, including marketing messages

Origination phone number - *optional*

Choose the number to send the SMS message from. If you don't specify a long or short code, Amazon Pinpoint assigns based on an order described here: [Learn more](#) 

Select origination phone number ▼

Sender ID - *optional*

An alphanumeric identifier that appears on recipients' devices. Support varies by country. [Info](#)

EXAMPLE

Description - *optional*

Enter a description of this activity

Save

### To set up an SMS message activity

1. Choose the **Send an SMS message** activity that you want to configure.
2. For **Choose an SMS message template**, choose the SMS message template for the message that you want participants to receive. Then, under **Template version behavior**, specify whether you want Amazon Pinpoint to use the template version that is currently designated as active or the template version that was active when the journey was created. To learn more about these options, see [Managing versions of message templates \(p. 254\)](#).

#### Tip

You can send yourself a preview of the message, even if your Amazon Pinpoint account doesn't contain an endpoint record for your phone number. To send a preview, choose **Send a test message**.

3. Choose **Send a test message** if you want to first test this activity. Test messages don't count against your daily sending limits, but you are charged for each message. When sending a test message you're prompted to optionally choose the origination number but required to choose a destination number.

#### Note

If your account is in the SMS sandbox, you can only send a test message to one of your verified destination numbers. If the destination number doesn't appear in the list, choose **Manage numbers** to add that new number. See [Amazon Pinpoint SMS sandbox \(p. 57\)](#) for the steps to add and verify a destination number.

4. For **Message type**, choose the type of message that you want to send. You can choose transactional or promotional messages.
5. (Optional) For the **Origination phone number**, choose the number to use as the originator. The originator can be any of your numbers: short code, 10DLC, or long code/toll-free. If you have multiple numbers associated with your account, and you do not choose an originator, Amazon Pinpoint will choose an originator for you based on the following order: short code, 10DLC, long code/toll-free.
6. (Optional) For **Sender ID**, enter the alphanumeric ID that identifies the sender of the SMS message. The sender ID will appear on your recipients' devices only if the recipient is in an area where sender IDs are supported. It is important to note that if you specify a sender ID in your journey activity, it will override the default value on the **SMS and voice settings** page. To learn more about support for sender IDs, see [Supported countries and regions \(SMS channel\) \(p. 85\)](#).
7. (Optional) For **Description**, enter text that describes the purpose of the activity. When you save the activity, this text appears as its label.
8. When you finish, choose **Save**.

### Set up a custom message channel activity

When a journey participant arrives on a **Send through a custom channel** activity, Amazon Pinpoint sends information about the participant to an AWS Lambda function or webhook. A custom channel allows you to send messages to your customers through any service that has an API, including non-AWS services.

Before you can configure a custom channel activity, you need to decide whether to use a Lambda function or a webhook URL to send your message. For more information about creating custom message channels, see [Creating custom channels in Amazon Pinpoint](#) in the *Amazon Pinpoint Developer Guide*.

The screenshot shows a configuration window titled "Send through a custom channel" with a close button (X) in the top right corner. The window has a light blue header bar with the Amazon Pinpoint logo and the title. Below the header, the main content area is white. It starts with the instruction "Choose the method that you want to use to send messages". There are two radio buttons: "Execute a Lambda function" (which is selected) and "Specify a webhook URL". Below this is a section for "Lambda function" with a dropdown menu showing "TestLambdaFunction" and a refresh button (circular arrow). A link "Create a new Lambda function" is also present. The next section is "Specify the endpoint types that will receive this message", with "Custom" selected. A link "Choose endpoint types" is provided. Below that is a "Description - optional" section with a text input field containing "Send a WhatsApp message". At the bottom right is a "Save" button.

### To set up a custom message channel activity that calls a Lambda function

1. Choose the **Send through a custom channel** activity that you want to configure.
2. For **Choose the method that you want to use to send messages**, select **Execute a Lambda function**.
3. For **Lambda function**, choose the function that you want to execute.
4. For **Specify the endpoint types that will receive this message**, select the endpoint types that the custom channel applies to. By default, only the **Custom** endpoint type is selected. To add additional endpoint types, select **Choose endpoint types**.

#### Note

Other endpoint types that arrive at this activity are sent through it, but only the endpoint types that you specify are sent to the Lambda function or webhook.

5. (Optional) For **Description**, enter text that describes the purpose of the activity. When you save the activity, this text appears as its label.
6. When you finish, choose **Save**.

The screenshot shows a configuration window titled "Send through a custom channel" with an "Info" link and a close button. It contains two radio buttons: "Execute a Lambda function" (unselected) and "Specify a webhook URL" (selected). Below the radio buttons is a text field for "Webhook URL" containing the value "https://www.api.example.com/v2/message". Underneath is a section "Specify the endpoint types that will receive this message" with a "Custom" label and a link "Choose endpoint types". At the bottom is a text field for "Description - optional" containing the text "Send a WhatsApp message" and a "Save" button.

### To set up a custom message channel activity that uses a webhook URL

1. Choose the **Send through a custom channel** activity that you want to configure.
2. For **Choose the method that you want to use to send messages**, select **Specify a webhook URL**.
3. For **Webhook URL**, enter the address of the webhook that you want to execute. For more information about configuring webhooks, see [Creating custom channels in Amazon Pinpoint](#) in the *Amazon Pinpoint Developer Guide*.
4. For **Specify the endpoint types that will receive this message**, select the endpoint types that the custom channel applies to. By default, only the **Custom** endpoint type is selected. To add additional endpoint types, select **Choose endpoint types**.

#### Note

Other endpoint types that arrive at this activity are sent through it, but only the endpoint types that you specify are sent to the Lambda function or webhook.

5. (Optional) For **Description**, enter text that describes the purpose of the activity. When you save the activity, this text appears as its label.
6. When you finish, choose **Save**.

### Set up a wait activity

When a journey participant arrives on a **Wait** activity, they remain on that activity for a certain period of time or until a specific date and time. This type of activity is a useful way to schedule the sending of time-sensitive communications, or to give customers time to interact with messages that you sent earlier in the journey.

The screenshot shows the 'Wait' activity configuration window in Amazon Pinpoint. At the top, there's a header bar with a green circle icon containing a white hourglass, the word 'Wait', and two icons on the right: a trash can and an information icon. The main content area has a light blue background. It starts with the text 'Participants should wait on this activity:' followed by two radio button options: 'For a period of time' (unselected) and 'Until a specific date' (selected). Below this, it says 'Specify the date and time when participants should proceed to the next activity.' There are two input fields: a date field showing '01/20/2021' with a calendar icon to its right, and a time field showing '9:00' with a clock icon to its right. Underneath these is a section titled 'Description - optional' with a text input field containing the text 'Wait until the campaign begins'. At the bottom right, there is a 'Save' button.

### To set up a wait activity

1. Choose the **Wait** activity that you want to configure.
2. Choose one of the following options:
  - **For a period of time** – Choose this option if you want journey participants to remain on this activity for a certain amount of time. Then, enter the amount of time that you want journey participants to wait on this activity before they proceed to the next activity. You can specify a value that's as short as 1 hour or as long as 365 days.
  - **Until a specific date** – Choose this option if you want journey participants to remain on this activity until a specific date and time. Then, enter the date and time when journey participants should move to the next activity. You can choose any date and time that precedes the end date of the journey.
3. (Optional) For **Description**, enter text that describes the purpose of the activity. When you save the activity, this text appears as its label.
4. When you finish, choose **Save**.

### Set up a Yes/No split activity

When journey participants arrive on a **Yes/No split** activity, they're sent down one of two paths based on their attributes or behaviors. You can use this type of split activity to send journey participants down separate paths based on their membership in a segment. You can also send participants down separate paths based on their interactions with other journey activities. For example, you can divide journey participants based on whether they opened an email that was sent earlier in the journey.

**Note**

To create split activities that send participants down different paths based on push notification events (such as Open or Received events), your mobile app has to specify the User ID and Endpoint ID values. For more information, see [Integrating Amazon Pinpoint with your application](#) in the *Amazon Pinpoint Developer Guide*.

The screenshot shows the configuration interface for a 'Yes/no split' activity in Amazon Pinpoint. The interface is titled 'Yes/no split' with a green icon and a trash can icon. It contains several sections: 'Select a condition type' with a dropdown menu set to 'Event'; 'Events' with a dropdown menu set to 'Email open'; 'Choose an activity' with a dropdown menu set to 'Introduction email for ExampleCorp. special offers'; a '+ Add condition' link; 'Condition evaluation' with a dropdown menu set to 'Evaluate immediately' and a description 'The amount of time that Amazon Pinpoint waits before it evaluates the conditions.'; 'Description - optional' with a text input field containing 'Check to see if the first email was opened'; and a 'Save' button at the bottom right.

**To set up a yes/no split activity**

1. Choose the **Yes/No split** activity that you want to configure.
2. For **Select a condition type**, choose one of the following options:
  - **Segment** – Choose this option to send all members of the chosen segment down the "Yes" path. Then, for **Segments**, choose a segment.
  - **Event** – Choose this option to send users down the "Yes" path based on their interactions with a previous step in this journey. Then, complete the following steps:
    1. For **Events**, choose one of the following options:
      - **Email send** – Amazon Pinpoint accepted the message and will attempt to deliver it.
      - **Email delivered** – The message was successfully delivered to the recipient.

- **Email rejected** – Amazon Pinpoint rejected the message because it contained a virus or malware.
- **Email hard bounce** – The email wasn't delivered to the recipient because of a permanent issue. For example, the recipient's email address might not exist anymore. When a message generates a hard bounce, Amazon Pinpoint doesn't attempt to re-deliver it.
- **Email soft bounce** – The email wasn't delivered to the recipient because of a temporary issue. For example, the recipient's inbox could be full, or their email provider might be experiencing a temporary issue. When a soft bounce occurs, Amazon Pinpoint attempts to re-deliver the message for a certain period of time. If the message still can't be delivered, the message becomes a hard bounce.
- **Email complaint** – The recipient received the email, but used the "Report spam" or similar button in their email client to report the message as unwanted.

**Note**

Amazon Pinpoint relies on complaint reports from email providers to generate complaint events. Some email providers give us these reports on a regular basis, while others send them infrequently.

- **Email open** – The recipient received the email and opened it.

**Note**

For Amazon Pinpoint to capture an **Email open** event, the recipient's email client has to download the images contained in the message. Many common email clients, such as Microsoft Outlook, don't download email images by default.

- **Email click** – The recipient received the email and followed one of the links contained in the body of the message.
- **Email unsubscribe** – The recipient received the email and used the "Unsubscribe" link to opt out of future messages.

2. For **Choose an activity**, choose the activity that the split should be applied to.
3. For **Condition evaluation**, choose when Amazon Pinpoint should evaluate the condition. You can choose from the following options:
  - **Evaluate immediately** – If you choose this option, Amazon Pinpoint checks to see if the event condition that you specified has been met the moment when the journey participant arrives on the activity.
  - **Evaluate after** – If you choose this option, Amazon Pinpoint waits for a specified period of time. After the specified period of time has elapsed, Amazon Pinpoint checks to see if the event condition that you specified has been met.
  - **Evaluate on** – If you choose this option, Amazon Pinpoint waits until a specific date and time. When that date and time arrives, Amazon Pinpoint checks to see if the event condition that you specified has been met.
4. (Optional) For **Description**, enter text that describes the purpose of the activity. When you save the activity, this text appears as its label.
5. When you finish, choose **Save**.

### Set up a multivariate split activity

When journey participants arrive on a **Multivariate split** activity, they're sent down one of several paths based on their attributes or behaviors. This type of split is similar to a yes/no split. The advantage of using a multivariate split activity is that it can evaluate more than one condition. Additionally, every multivariate split activity contains an "Else" path. Journey participants who don't meet any of the conditions that you specified in other paths are automatically sent down the "Else" path.

You can use this type of split to send journey participants down separate paths based on their membership in a segment. You can also send participants down separate paths based on their




interactions with other journey activities. For example, you can divide journey participants based on whether they opened an email that was sent earlier in the journey.

**Note**

If a journey participant meets more than one condition in a conditional split, they are sent down the first condition that they meet, in alphabetical order. For example, if a participant meets the conditions in Branch A and Branch D, they're sent down the path that corresponds with Branch A.

To create split activities that send participants down different paths based on push notification events (such as Open or Received events), your mobile app has to specify the User ID and Endpoint ID values. For more information, see [Integrating Amazon Pinpoint with your application](#) in the *Amazon Pinpoint Developer Guide*.



 **Multivariate split**  

▼ ● **Branch A**

Choose a condition type  


Event ▼


Events  

Email click ▼

Choose an activity  

Second campaign message ▼

▶ ● **Branch B** 

▶ ● **Branch C** 

[+ Add another branch](#)

Condition evaluation

The amount of time that Amazon Pinpoint waits before it evaluates the conditions.

Evaluate immediately ▼

Description - *optional*

Check for interactions with previous messages

Save

### To set up a multivariate split activity

1. Choose the **Multivariate split** activity that you want to configure.
2. Determine how many different paths (branches) you want to create. Choose **Add another branch** to create additional paths.
3. On each branch, for **Select a condition type**, choose one of the following options:

- **Segment** – Choose this option to send all members of the chosen segment down the path. Then, for **Segments**, choose a segment.
- **Event** – Choose this option to send users down the path based on their interactions with a previous step in this journey. Then, complete the following steps:
  1. For **Events**, choose one of the following options:
    - **Email send** – Amazon Pinpoint accepted the message and will attempt to deliver it.
    - **Email delivered** – The message was successfully delivered to the recipient.
    - **Email rejected** – Amazon Pinpoint rejected the message because it contained a virus or malware.
    - **Email hard bounce** – The email wasn't delivered to the recipient because of a permanent issue. For example, the recipient's email address might not exist anymore. When a message generates a hard bounce, Amazon Pinpoint doesn't attempt to re-deliver it.
    - **Email soft bounce** – The email wasn't delivered to the recipient because of a temporary issue. For example, the recipient's inbox could be full, or their email provider might be experiencing a temporary issue. When a soft bounce occurs, Amazon Pinpoint attempts to re-deliver the message for a certain period of time. If the message still can't be delivered, the message becomes a hard bounce.
    - **Email complaint** – The recipient received the email, but used the "Report spam" or similar button in their email client to report the message as unwanted.

**Note**

Amazon Pinpoint relies on complaint reports from email providers to generate complaint events. Some email providers give us these reports on a regular basis, while others send them infrequently.

- **Email open** – The recipient received the email and opened it.

**Note**

For Amazon Pinpoint to capture an **Email open** event, the recipient's email client has to download the images contained in the message. Many common email clients, such as Microsoft Outlook, don't download email images by default.

- **Email click** – The recipient received the email and followed one of the links contained in the body of the message.
- **Email unsubscribe** – The recipient received the email and used the "Unsubscribe" link to opt out of future messages.

2. For **Choose an activity**, choose the activity that the split should be applied to.

Repeat this step for each path in the activity.

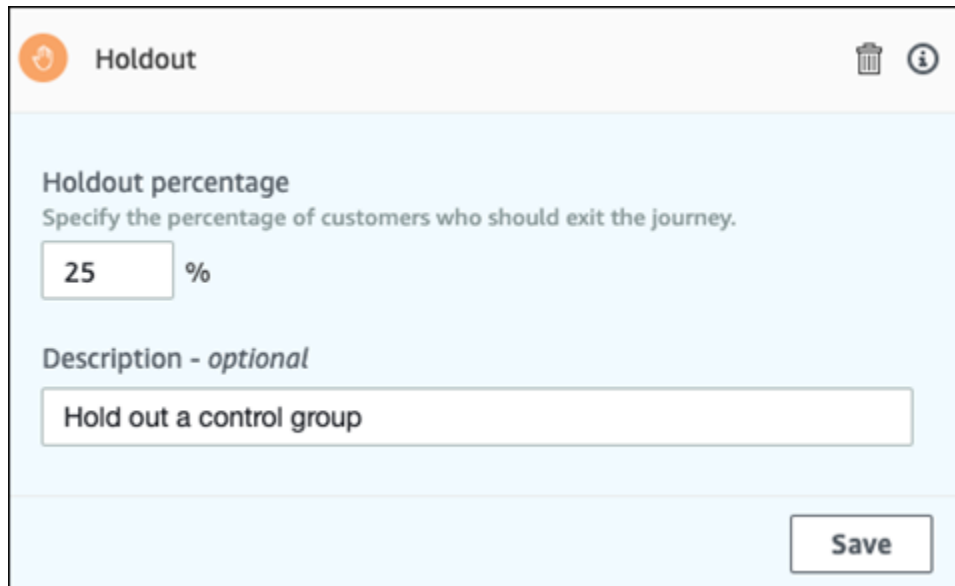
4. For **Condition evaluation**, choose when Amazon Pinpoint should evaluate the condition. You can choose from the following options:
  - **Evaluate immediately** – If you choose this option, Amazon Pinpoint checks to see if the event condition that you specified has been met at the moment the journey participant arrives on the activity.
  - **Evaluate after** – If you choose this option, Amazon Pinpoint waits for a specified period of time. After the specified period of time has elapsed, Amazon Pinpoint checks to see if the event condition that you specified has been met.
  - **Evaluate on** – If you choose this option, Amazon Pinpoint waits until a specific date and time. When that date and time arrives, Amazon Pinpoint checks to see if the event condition that you specified has been met.
5. (Optional) For **Description**, enter text that describes the purpose of the activity. When you save the activity, this text appears as its label.
6. When you finish, choose **Save**.

### Set up a holdout activity

When journey participants arrive on a **Holdout** activity, the journey ends for a random selection of participants. You can specify the percentage of total journey participants who are held out. Holdout activities can help you measure the impact of a journey by creating a control group that doesn't receive your messages. When a journey finishes running, you can compare the behaviors of the users who participated in the journey against those who were part of the control group.

#### Note

Amazon Pinpoint uses a probability-based algorithm to determine which journey participants are held out. The percentage of journey participants who are held out will be very close to the percentage that you specify, but it might not be perfectly equal.



The screenshot shows the 'Holdout' activity configuration window in Amazon Pinpoint. The window has a title bar with an orange circular icon and the text 'Holdout'. In the top right corner, there are icons for deleting (trash) and information (i). The main content area has a light blue background. It contains a section titled 'Holdout percentage' with the instruction 'Specify the percentage of customers who should exit the journey.' Below this is a text input field containing '25' followed by a '%' symbol. Another section is titled 'Description - optional' and contains a text input field with the text 'Hold out a control group'. At the bottom right of the window is a 'Save' button.

### To set up a holdout activity

1. Choose the **Holdout** activity that you want to configure.
2. For **Holdout percentage**, enter the percentage of journey participants who should be prevented from proceeding to the next activity in the journey.
3. (Optional) For **Description**, enter text that describes the purpose of the activity. When you save the activity, this text appears as its label.
4. When you finish, choose **Save**.

### Set up a random split activity

When journey participants arrive on a **Random split** activity, they're randomly sent down one of up to five paths. You can create two to five separate paths for this type of activity. This type of activity is useful when you want to measure the effectiveness of different message variants.

#### Note

Amazon Pinpoint uses a probability-based algorithm to determine which journey participants are sent down each path in a random split activity. The percentages of journey participants who are sent down each path will be very close to the percentages that you specify, but they might not be perfectly equal.

The screenshot shows the 'Random split' configuration window in Amazon Pinpoint. At the top, there's a title bar with a green icon, the text 'Random split', and trash and info icons. Below this, there's a list of four branches: Branch A (orange dot), Branch B (blue dot), Branch C (green dot), and Branch D (yellow dot). Each branch has a text input field set to '25' followed by a '%' symbol and a close icon (X). Below the branches, there's a link '+ Add another branch' and a 'Total: 100%' label. Underneath, there's a section for 'Description - optional' with a text input field containing the text 'Split participants into 4 groups to compare message effectiveness'. At the bottom right, there's a 'Save' button.

### To set up a random split activity

1. Choose the **Random split** activity that you want to configure.
2. Determine how many different paths (branches) you want to create. Choose **Add another branch** to create each additional path.
3. In the field next to each branch, enter the percentage of journey participants who should be sent down that branch. The values that you specify have to be positive numbers, and they can't contain decimals. The sum of the values that you enter across all branches has to equal exactly 100%.
4. (Optional) For **Description**, enter text that describes the purpose of the activity. When you save the activity, this text appears as its label.
5. When you finish, choose **Save**.

**Next:** [Review and test a journey \(p. 166\)](#)

## Review and test a journey

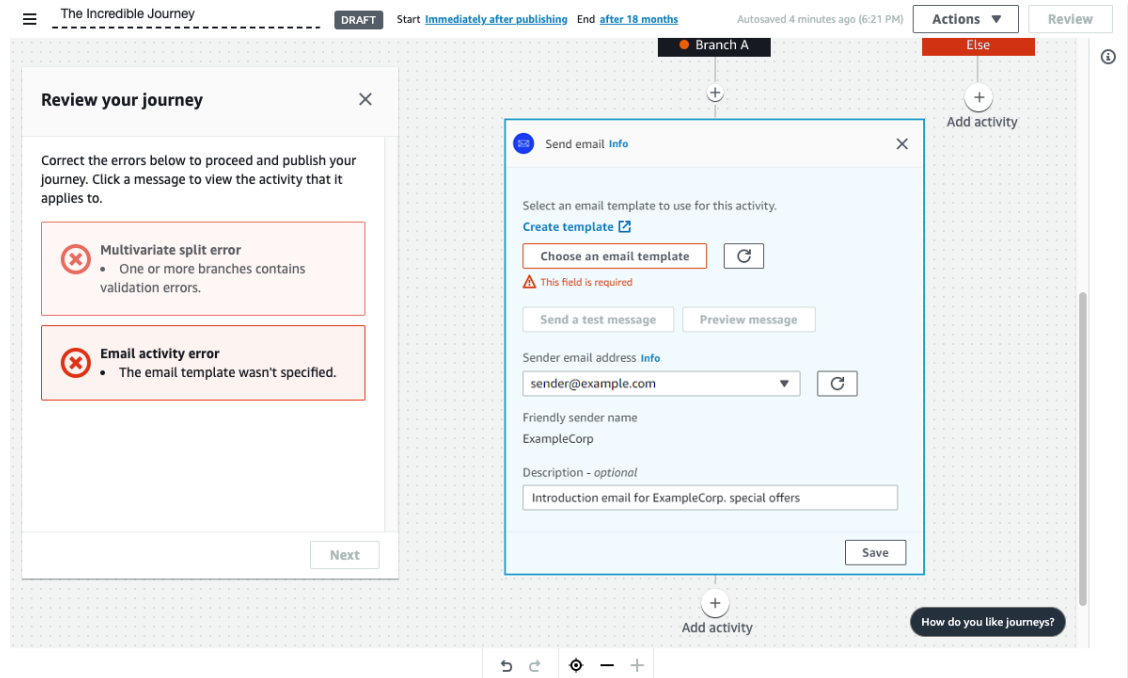
Before you can publish your journey, you have to review it in order to make sure that all of the activities that it contains are configured properly. It's also a good idea to enroll test users in a copy of the journey before you publish it, to confirm that it behaves the way you expect it to behave. This section contains information and procedures related to reviewing and testing your journey.

## Reviewing a journey

The review feature provides information about configuration errors in your journey, and also provides some recommendations.

### To review a journey

1. In the upper-right corner of the journey workspace, choose **Review**. The **Review your journey** pane appears in the journey workspace. The following image shows the journey workspace with the **Review your journey** pane opened.



2. Review the error messages that are shown on the first page of the **Review your journey** pane. You can't publish your journey until you resolve all the issues that are shown on this page. If there aren't any issues with your journey, you see a message stating that your journey doesn't contain any errors. When you're ready to proceed, choose **Next**.

#### Tip

Choose an error to go directly to the activity that it applies to.

3. The second page of the **Review your journey** pane contains recommendations and best practices that are relevant to your journey. You can proceed without resolving the issues that are shown on this page. When you're ready to proceed, choose **Mark as reviewed**.
4. On the third page of the **Review your journey** pane, you can publish your journey. If you're ready for customers to enter the journey, choose **Publish**. However, if you want to test your journey first, close the **Review your journey** pane, and then complete the steps in [Testing a journey](#) (p. 167).

## Testing a journey

One of the most important steps in creating a journey is testing it to make sure that it behaves as intended. Journeys includes a testing feature that makes it easy to send a group of test participants through the journey. It includes features that let you reduce or eliminate the amount of time that participants spend on wait or multivariate split activities, so that you can test each journey thoroughly and quickly.

### To test a journey

1. Create a new segment that contains only the test participants who you want to participate in the test journey. Or, if you already have a segment of test participants, proceed to the next step.

For more information about creating segments, see [Building segments \(p. 110\)](#).

#### Tip

One of the easiest ways to create a test segment is by importing a spreadsheet. For more information, see [Importing segments \(p. 117\)](#).

2. On the **Actions** menu, choose **Test**.
3. For **Test segment**, choose the segment that contains the test participants.
4. Choose how to handle delays in the journey. You can choose one of the following options:
  - **Skip all waits and delays** – Choose this option to have test participants proceed from one activity to another without any intervening delays.
  - **Custom wait time** – Choose this option to have test participants wait for a pre-defined amount of time at each activity that includes a delay. This option is helpful if your journey contains wait activities, or yes/no split or multivariate split activities that are based on customer interactions.
5. Choose **Send test**. Amazon Pinpoint creates a new journey with **Test-** added to the beginning of the journey name. The test participants are added to the journey.
6. When you finish testing, choose **Stop journey** to permanently end the test journey.

#### Tip

During the testing process, if you discover that you need to make changes to the original journey (that is, the journey that the test journey was based on), return to the **Journeys** page. In the list of journeys, choose the original journey, and then make your changes. Changes that you make to the test journey aren't automatically applied to the journey that the test is based on.

## Best practices for testing your journeys

- Include several test participants in the segment that you use to test your journey.
- Include test participants whose email addresses are on domains other than your own.
- Use a variety of email clients and operating systems to test the messages that are sent from your journey.
- If your journey includes yes/no split or multivariate split activities that are based on interactions with your emails, test those interactions. For example, if you have a split activity that checks to see if an email was opened, then some of your test participants should open the email. Then, check the **Journey metrics** pane to make sure that the correct number of users went down each path.
- If your email templates include message variables that refer to endpoint attributes, make sure that your test participants have those same attributes. For example, if your email template refers to a `User.UserAttributes.FirstName` attribute, the endpoints in your test segment should also have that attribute.

**Next:** [Publish a journey \(p. 168\)](#)

## Publish a journey

After you've [tested your journey \(p. 167\)](#) and you're ready for customers to enter it, you can publish the journey. The publishing process requires you to complete the review process one more time.

### To publish a journey

1. In the upper-right corner of the journey workspace, choose **Review**. The **Review your journey** pane appears in the journey workspace.
2. Review the error messages that are shown on the first page of the **Review your journey** pane. You can't publish your journey until you resolve all the issues that are shown on this page. If there aren't any issues with your journey, you see a message stating that your journey doesn't contain any errors. When you're ready to proceed, choose **Next**.
3. The second page of the **Review your journey** pane contains recommendations and best practices that are relevant to your journey. You can proceed without resolving the issues that are shown on this page. When you're ready to proceed, choose **Mark as reviewed**.
4. On the third page of the **Review your journey** pane, choose **Publish**.

#### Note

Even if you configure the journey to begin immediately, there is a five-minute delay before participants actually enter the journey. During this time, Amazon Pinpoint calculates all the segment members, and prepares to start capturing analytics data. This delay also gives you a final opportunity to stop the journey if necessary.

5. Reviewing and publishing a journey adds an exit journey element to the journey flow, indicating that the journey was reviewed and published successfully.

**Next:** [Pause, resume, or stop a journey \(p. 169\)](#)

## Pause, resume, or stop a journey

### Pausing a journey

After publishing a journey you can pause that journey. During a paused journey, messages aren't sent and analytics data isn't generated. You can pause a journey during holidays or if you need to re-evaluate the journey itself for changes. Any endpoints that entered the journey before the pause are completed and then paused. Any endpoints waiting to enter the journey do not enter the journey during the pause. If a journey is in a **Wait** activity, the timer on the **Wait** activity is paused. After the journey is resumed, the **Wait** activity continues from the point at which it was paused. A paused journey cannot be edited.

#### To pause a journey

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. For **All Projects**, choose an existing project.
3. In the navigation pane, choose **Journeys**.
4. Choose a currently published journey.
5. In the upper-right corner of the published journey's workspace, choose **Actions**.
6. Choose **Pause**.
7. When prompted to confirm pausing the journey, choose **Pause**.

A paused journey stays paused indefinitely until you resume it.

### Resuming a journey

A paused journey can only be resumed after five minutes have passed. When you resume a paused journey, participants resume traveling through the journey from the point they were at when the journey

was paused. If any journeys were in a **Wait** activity, the **Wait** activity countdown resumes from the point at which the journey was paused.

### To resume a journey

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. For **All Projects**, choose an existing project.
3. In the navigation pane, choose **Journeys**.
4. Choose a currently paused journey.
5. In the upper-right corner of the paused journey's workspace, choose **Actions**.
6. Choose **Resume**.
7. When prompted to confirm resuming the journey, choose **Resume**.

The journey resumes.

## Stopping a journey

Stopping a journey permanently ends the journey and all activities associated with it. Any activities that are currently in-process are ended. However, you'll still be able to view analytics data.

### Tip

If you are unsure whether to stop a journey, consider pausing instead. Because a stopped journey is stopped permanently, you must recreate the journey if you want to use it again.

### To stop a journey

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. For **All Projects**, choose an existing project.
3. In the navigation pane, choose **Journeys**.
4. Choose a currently published journey.
5. In the upper-right corner of the journey workspace, choose **Actions**.
6. Choose **Stop**.
7. When prompted to confirm stopping the journey, choose **Stop journey**.

The journey permanently stops.

**Next:** [View journey metrics \(p. 170\)](#)

## View journey metrics

After you publish a journey, the **Journey metrics** pane appears in the journey workspace, and Amazon Pinpoint begins to capture metrics related to the journey.

### Topics

- [Journey-Level Execution Metrics \(p. 171\)](#)
- [Activity-Level Execution Metrics \(p. 173\)](#)
- [Journey-Level Engagement Metrics \(p. 175\)](#)
- [Activity-Level Engagement Metrics \(p. 176\)](#)



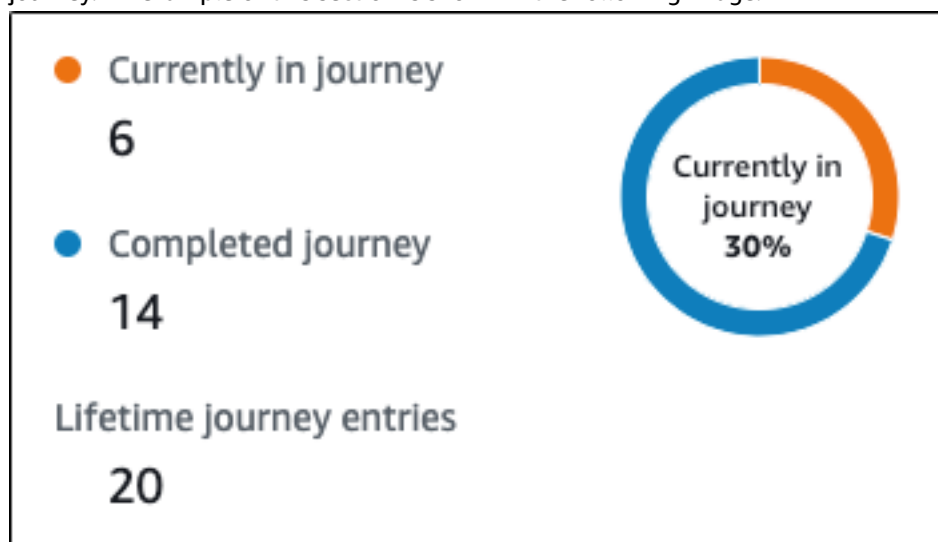
## Journey-Level Execution Metrics

Journey-level execution metrics include information about the endpoints that entered (or were prevented from entering) your journey. To view engagement metrics, choose **Engagement metrics** in the **Journey metrics** pane.

These metrics are divided into several sections, which are discussed in detail in the following sections.

### Entry Metrics

The first section in the list of journey execution metrics shows how many participants entered your journey. An example of this section is shown in the following image.





This section contains the following information:

- **Currently in journey** – The number of participants who are actively proceeding through the activities in the journey.
- **Completed journey** – The number of participants who have reached an end activity in the journey.
- **Lifetime journey entries** – The number of participants who have entered the journey since the start date of the journey. This section also contains a chart that shows the percentage of participants who completed the journey (shown in blue) and the percentage of participants who are still in the journey (shown in orange).

### Journey refresh metrics

This section shows the refresh metrics for the journey. It includes information about the number of segments refreshed, how many times a segment has been refreshed, and whether the segment is set to refresh on update or not. An example of this section is shown in the following image.

Journey metrics <a href="#">Info</a>	
Details for  Viewing details for Entry	
Total journey entries	3
Next entry group - <i>estimate</i>	N/A
 Does not refresh on segment update	
Number of times entry segment will be refreshed	N/A
Number of times entry segment has been refreshed since start	N/A

This section contains the following information:

- **Total journey entries** – The total number of journey entries.
- **Next entry group - *estimate*** – The number of endpoints that will be added on the next update. If a segment refresh interval is not set there will be no endpoints to add. The value displays as **N/A**.
- **Does not refresh on segment update/ Refreshes on update** – Indicates whether **Refresh on segment update** was chosen when adding endpoints for the journey entry activity.
- **Number of times entry segment will be refreshed** – The maximum number of times that the segment will be refreshed during the course of the journey.
- **Number of times entry segment has been refreshed since start** – The current number of times the segment has been refreshed since the journey started.

## Unsent Message Metrics

The next section in the list of journey execution metrics includes information about the reasons why messages weren't sent to journey participants. An example of this section is shown in the following image.

Maximum entries per endpoint	1
Exceeded maximum entries per endpoint	0
Maximum daily messages per endpoint	0
Exceeded max daily messages per endpoint	0
Quiet time	12:00 - 15:00
Not sent during quiet time	0

This section contains the following information:

- **Maximum entries per endpoint/Exceeded maximum entries per endpoint** – Displays the maximum number of entries per endpoint and the number of participants who were prevented from participating in the journey because they would have exceeded the maximum number of times that a single endpoint can participate in the journey.
- **Maximum daily messages per endpoint/Exceeded max daily messages per endpoint** – Displays the maximum number of daily messages per endpoint, and the number of messages that weren't sent because sending them would have exceeded the maximum number of messages that a single participant can receive during a 24-hour period.
- **Quiet time/Not sent during quiet time** – Displays the current quiet time hours set for the journey, and the number of messages that weren't sent because they would have been delivered during quiet time in the recipient's time zone.

## Activity-Level Execution Metrics

Activity-level execution metrics include information about the endpoints that entered (or were prevented from entering) your activity. Select an individual activity to view its execution metrics. To view engagement metrics, choose **Engagement metrics** in the **Journey metrics** pane.

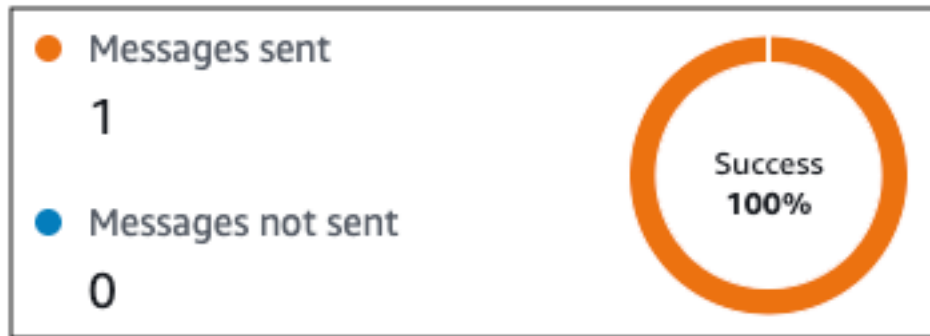
### Important

The number of endpoints that move through each activity in your journey is noted in the top right corner of each activity modal.

These metrics are divided into several sections, which are discussed in detail in the following sections.

## Sent Message Metrics

The first section in the list of activity execution metrics shows how many endpoints entered your activity. An example of this section is shown in the following image.



This section contains the following information:

- **Messages sent** – The number of messages sent.
- **Messages not sent** – The number of messages not sent.

## Unsent Message Metrics

Each activity in your journey includes a list of execution metrics that indicates information about the number of messages that couldn't be delivered because of system issues, Amazon Pinpoint account configuration, or end user preferences such as an opt-out. An example of this section is shown in the following image.

Not sent during quiet time	0
Exceeded endpoint message limit	0
Throttled	0
Temporary failure	0
Service failure	0
Permanent failure	0
Unknown failure	0
Unsupported channel	0
Custom delivery failure	0

This section contains the following information:

- **Not sent during quiet time** – The number of messages that weren't sent because they would have been delivered during quiet time in the recipient's time zone.

- **Exceeded endpoint message limit** – The number of messages that weren't sent because sending them would have exceeded the maximum number of messages that a single participant can receive during a 24-hour period.
- **Throttled** – The number of messages that weren't sent because sending them would exceed the sending quotas for your Amazon Pinpoint account.
- **Temporary failure** – The number of messages that weren't sent because of a temporary failure.
- **Service failure** – The number of messages that weren't sent because of an issue with the Amazon Pinpoint service.
- **Permanent failure** – The number of messages that weren't sent because of a permanent failure.
- **Unsupported channel** – The number of endpoints that weren't sent through the activity because the endpoint did not match the activity type.
- **Unknown failure** – The number of messages that weren't sent because of an unknown reason.
- **(Custom message channel only) Custom delivery failure** – The number of messages that weren't sent because of a Lambda function or webhook failure.

## Journey-Level Engagement Metrics

Journey-level engagement metrics include information about the ways in which the participants in your journey interacted with the messages that were sent from the journey.

These metrics are divided into several sections, which are discussed in detail in the following sections.

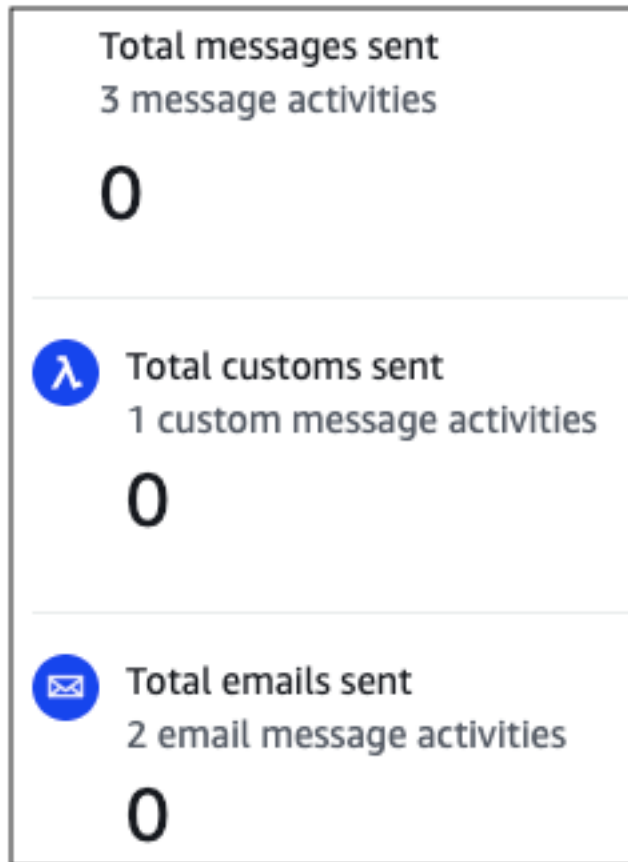
### Important

Several of the engagement metrics are based on information that we receive from recipients' email providers or mobile phone carriers or from push notification services, such as Apple Push Notification service or Firebase Cloud Messaging. After we receive this data from these sources, there is a delay of up to two hours while we process the incoming metrics.

## Number of Message Activities

The engagement metrics for each journey provide the number of message activities in that journey.

If there are multiple activity types in the journey, the engagement metrics are broken down by type, as seen in the image below.



## Activity-Level Engagement Metrics

Activity-level engagement metrics include information about the ways in which the participants in your journey interacted with the messages that were sent from the journey.

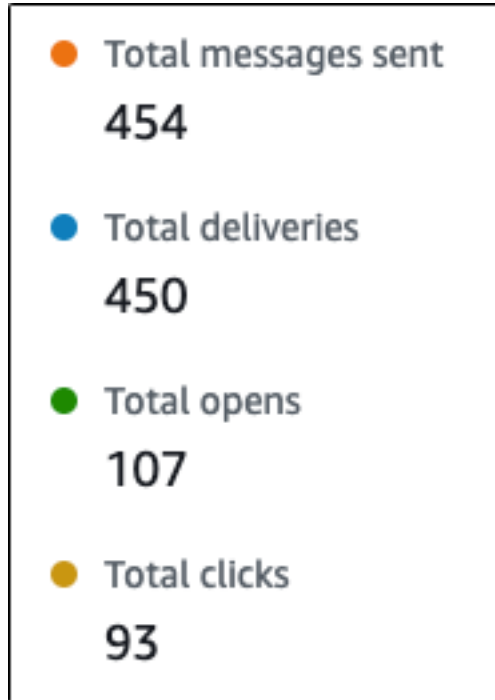
These metrics are divided into several sections, which are discussed in detail in the following sections.

### Email Activity

Email activities provide the following engagement metrics.

### Response Metrics

These metrics provide information about participants' interactions with the messages that were sent from the email message activity.



This section contains the following information:

- **Total messages sent** – The number of emails sent from this activity, whether or not the messages were successfully delivered to the recipients' inboxes.
- **Total deliveries** – The number of messages that were delivered to recipients' email providers.
- **Total opens** – The number of messages that were opened by recipients.

**Note**

In order for Amazon Pinpoint to count an email open event, the recipient has to load the images in your messages. Several email clients, such as some versions of Microsoft Outlook, prevent images from being loaded by default.

Each time the recipient opens the email, it's counted as a distinct event. For example, if a recipient opens the same message five times, Amazon Pinpoint counts five distinct open events. For this reason, it's possible (but unlikely) for the number of opens to exceed the number of sends or deliveries.

- **Total clicks** – The number of times that recipients clicked links in messages.

**Note**

Amazon Pinpoint counts each click as a separate event. For example, if a recipient clicks three links in a message, Amazon Pinpoint counts three distinct click events. For this reason, it's possible for the number of clicks to exceed the number of opens or deliveries.

### Message Engagement Metrics

The final section in the list of engagement metrics provides additional email response metrics. An example of this section is shown in the following image.

Emails soft bounced	6
Emails hard bounced	2
Emails unsubscribed	3
Emails complained	1
Emails rejected	0

This section contains the following information:

- **Emails soft bounced** – The number of messages that resulted in a soft bounce. A soft bounce occurs when a message can't be delivered because of a temporary issue (for example, when the recipient's inbox is full).

**Note**

Amazon Pinpoint attempts to re-deliver messages that result in a soft bounce for a certain period of time. If the message is delivered during one of these redelivery attempts, then the message is counted in the **Total deliveries** metric and removed from the **Emails soft bounced** metric.

- **Emails hard bounced** – The number of messages that resulted in a hard bounce. A hard bounce occurs when a message can't be delivered because of a permanent issue (for example, when the destination email address no longer exists).

**Note**

Soft bounces that can't be delivered after a certain period of time are converted to hard bounces. For this reason, you might see the number of soft bounces decrease and the number of hard bounces increase.

- **Emails unsubscribed** – The number of messages that prompted the recipient to unsubscribe.

**Note**

In order for Amazon Pinpoint to count an unsubscribe event, the unsubscribe link in the email has to contain a special link tag (a tag called `unsubscribeLinkTag`, as in the following example: `<a ses:tags="unsubscribeLinkTag:click;" href="http://www.example.com/unsubscribe">`). Only links that contain this tag are counted as unsubscribes.

- **Emails complained** – The number of messages that were reported by the recipient as unsolicited mail.

**Note**

This metric is based on complaint report data that we receive from recipients' email providers. Some email providers send us complaint data immediately, while others send a weekly or monthly digest.

- **Emails rejected** – The number of messages that weren't sent because they were rejected. A message is rejected if Amazon Pinpoint determines that the message contains malware. Amazon Pinpoint doesn't attempt to send rejected messages.

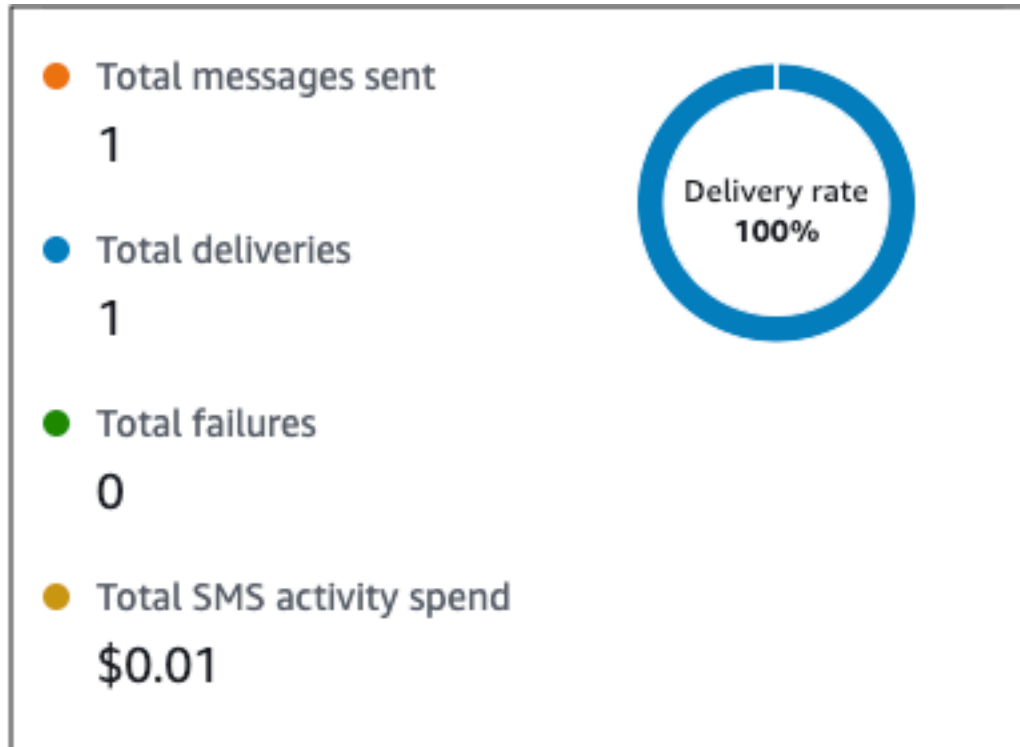


## SMS Message Activity

SMS message activities provide the following engagement metrics.

### Delivery Metrics

These metrics provide information about participants' interactions with the messages that were sent from the SMS message activity.



This section contains the following information:

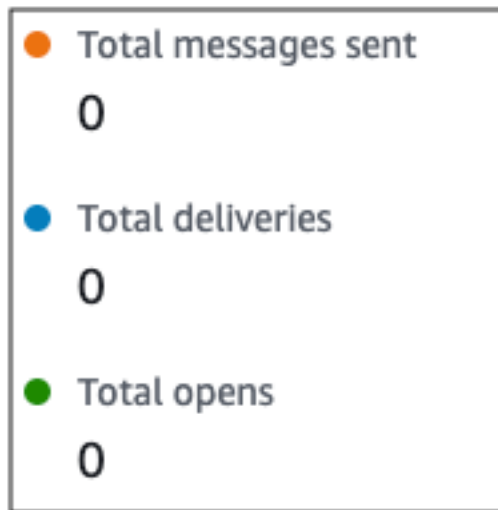
- **Total messages sent** – The number of SMS messages sent from this activity, whether or not the messages were successfully delivered to the recipients' devices.
- **Total deliveries** – The number of SMS messages delivered from the provider to the recipients' devices.
- **Total failures** – The number of SMS messages that failed to be delivered to recipients.
- **Total SMS activity spend** – The estimated amount of money you've spent sending SMS messages through this activity.

## Push Notification Activity

Push notification activities provide the following engagement metrics.

### Response Metrics

These metrics provide information about participants' interactions with the messages that were sent from the push notification activity.



This section contains the following information:

- **Total messages sent** – The number of push notifications sent from this activity, whether or not the messages were successfully delivered to the recipients' devices.
- **Total deliveries** – The number of push notifications delivered from the push notification service to the recipients' devices. This metric only reflects deliveries that are made when an app is running in the foreground or background of a recipient's device. Due to discrepancies in how mobile operating systems prioritize background notifications, delivery of push notifications are not guaranteed.
- **Total opens** – The number of push notifications that were opened by recipients.

#### Time to Live Metrics

The push notification engagement metrics also provide the time to live (TTL) value for the push notification activity. The TTL is the amount of time, in seconds, during which Amazon Pinpoint can deliver the message. After this time elapses, Amazon Pinpoint drops the message and doesn't attempt to re-deliver it.



When the default TTL value is used, the metric displays a "-". For custom TTL values, the metric displays the exact number and unit of time that you chose.

#### Custom Channel Activity

Custom channel activities provide the following engagement metrics.

##### Call Success Metrics

These metrics provide information about participants' interactions with the messages that were sent from the custom channel activity.



This section contains the following information:

- **Call to function or webhook succeeded** – The number of times that a Lambda function or webhook was successfully invoked as a result of this activity.

**Note**

This does not indicate that the message was delivered to the destination, it only indicates that the Lambda function or webhook was called.

- **Call to webhook or function failed** – The number of times that a Lambda function or webhook was not successfully invoked as a result of this activity.

## Activity metrics

In addition to viewing metrics for channel-specific activity types (email, SMS, push, and custom channels), you can also view metrics for other activity types which include the following: **Wait** activities, **Yes/no split** activities, **Multivariate split** activities, and **Random split** activities.

### Wait activity metrics

Journey metrics for wait activities include the following information:

- **Wait completed** – The number of journey participants who completed the activity.
- **Wait date passed** – The number of journey participants who arrived on the activity and immediately moved to the next activity because the wait date occurred in the past.
- **Currently waiting** – The number of participants who are currently waiting (in the activity).

### Yes/No split activity metrics

Journey metrics for yes/no split activities include the following information:

- **Total participants** – The number of journey participants who passed through the activity.
- **Details for path** – The number of journey participants who were sent down each path of the activity.

### Multivariate split activity metrics

Journey metrics for multivariate split activities include the following information:

- **Total participants** – The number of journey participants who passed through activity.

- **Details for *path*** – The number of journey participants who were sent down each path of the activity.

## Holdout activity metrics

Journey metrics for holdout activities include the following information:

- **Total entered** – The number of journey participants who passed through activity.
- **Participants held out** – The number of participants who exited the journey as a result of being held out by the activity.

## Random split activity metrics

Journey metrics for random split activities include the following information:

- **Total participants** – The number of journey participants who passed through the activity.
- **Details for *path*** – The number of journey participants who were sent down each path of the activity.

# Tips and best practices for journeys

Although journeys are designed to be flexible and fully customizable, there are some fundamental strategies and practices that can help you plan, design, and manage any journey. Consider the following tips and best practices for designing and managing a successful journey.

### Topics

- [Scope and settings \(p. 182\)](#)
- [Segments \(p. 184\)](#)
- [Activities \(p. 184\)](#)
- [Email messages \(p. 185\)](#)
- [Reviewing and testing \(p. 186\)](#)
- [Analytics \(p. 186\)](#)
- [Lifecycle management \(p. 187\)](#)

## Scope and settings

Because a journey can perform a variety of different and interrelated tasks, it's a good idea to create a well-defined scenario for a journey. Also, you should choose journey settings that support your scenario and goals. By using journey settings, you can establish constraints that determine the timing, volume, and frequency with which a journey can engage participants.

When you define a scenario, consider limiting its scope to a small aspect of a larger customer experience. Although Amazon Pinpoint supports large-scale journeys that have extensive workflows, you have more opportunities to monitor, refine, and manage a customer's experience if you design a journey to be part of a sequence of related journeys.

For example, you can design a journey that focuses on welcoming new customers and providing them with recommended first steps during their first seven days as a customer. Based on each customer's actions during the first journey, you can then add them to a subsequent journey that's tailored to their initial level of engagement. One subsequent journey might provide next steps for customers who were highly engaged in the first journey. Another subsequent journey might promote different products or services to customers who were less engaged in the first journey. By creating a sequence of

smaller-scope journeys, you can continually refine and manage the customer experience throughout the customer lifecycle.

After you define a scenario, choose journey settings that support your goals for the scenario. These settings define the timing, volume, and frequency with which any part of a journey can engage participants. To choose these settings, create or open the journey. Then choose **Settings** from the **Actions** menu, and expand the **Advanced settings** section.

Some key goals and related settings are:

#### **Store and use participants' local time zones**

To optimize participant engagement in a journey that has a scheduled start and end time, configure the journey to use each participant's local time zone. This helps to ensure that journey activities occur when a participant is most likely to participate in those activities.

Note, however, that the usefulness of this setting depends on whether you store local time zone values in the endpoint definitions for participants. If you use this setting and the endpoint definition for a participant doesn't specify a time zone, Amazon Pinpoint doesn't include the participant in the journey. To avoid this issue, use the `Timezone` attribute to store time zone information for participants. This is a standard attribute that Amazon Pinpoint provides.

#### **Address quiet-time conflicts**

If you configure an activity to send messages at a time that conflicts with the quiet-time settings for the journey, Amazon Pinpoint doesn't send the messages. Once quiet time ends, new messages are sent. If you chose to resume sending messages after quiet time ends, any messages held during quiet time will also be sent. If not, then those messages held messages are dropped.

#### **Limit the number of messages that participants can receive**

To help ensure that participants don't receive too many messages from the journey or project, limit the number of messages that can be sent to a participant during a 24-hour period. This can be especially helpful if a journey uses a segment that's also used by campaigns or other journeys. You might also create and use a segment that's designed explicitly for use by only a specific journey.

#### **Optimize the number of messages that can be sent**

If a journey has a large number of participants and it sends a large number of messages, factor the amount of time that Amazon Pinpoint needs to process and send all of those messages.

For example, consider a situation where you have a journey activity that sends messages to 1,000,000 participants, and the maximum sending rate for your Amazon Pinpoint account is 200 messages per second. Some participants won't receive the message until approximately 80 minutes after the activity starts. This is especially relevant if a journey includes wait activities that follow email activities. If Amazon Pinpoint hasn't finished sending all the messages by the time the wait activity ends, participants might be moved to the activity that follows the wait activity, before they've received the message.

To mitigate this risk, consider increasing the maximum number of messages that a journey can send per second, and possibly increase it to the maximum sending rate for your account. Also consider [increasing the sending quotas for your account \(p. 26\)](#).

#### **Limit the number of times that participants can enter a journey**

Depending on the nature and design of a journey, limit the number of times that a single participant can enter the same journey. If you don't set this limit, a participant could enter a journey, complete several activities in the journey, arrive at an end activity, and then start the journey again. You might prefer to have each participant start and complete a journey only once.

Note that Amazon Pinpoint doesn't allow a participant to enter a journey if they're already an active participant in the journey. For example, Amazon Pinpoint doesn't add a participant as a new participant if the participant starts a journey and you subsequently update the participant's

endpoint definition in a way that affects their inclusion in a segment (based on segment criteria) or the journey (based on activity conditions).

#### **Maximize opportunities for participants to start a journey**

The journey entry activity, which is the first activity in a journey, determines how often new participants are added to the journey. Because new or existing customers could become participants at any time, it's a good idea to configure the entry activity to add new members to the segment frequently. You can also configure the segment to add new participants automatically based on specific user attributes or events. For an example of how to configure a segment in these ways, see the [Building Your First Journey in Amazon Pinpoint](#) blog post.

## Segments

Segments are key. They determine who can participate in an overall journey and specific journey activities. When you create segments for a journey, consider the following best practices:

#### **Create a dedicated test segment**

If you have a regular group of people who test your journeys and messages, create a segment that contains only their endpoints. You can then use that segment as a consistent testing framework, especially if you use the journey testing feature that Amazon Pinpoint provides. For tips about how to build this segment, see [Review and test a journey \(p. 166\)](#).

#### **Use multiple segments**

Although you can choose only one segment for the journey entry activity, that segment can include multiple smaller segments. Later in the journey, you can then use a multivariate split activity to divide participants into separate groups based on their segment membership. This approach can help you provide a more tailored experience for each participant. It can also help reduce processing times for email activities, because those activities will send messages to a smaller, more targeted audience.

It's also a good idea to segment participants based on actions that they explicitly do or don't do. You can do this by using split activities. For example, you can use a yes/no split activity to send participants down a *Yes* path if they click a link in a message, and a *No* path if they don't. The absence of an action can be an opportunity to reengage a participant through a follow-up activity.

#### **Don't delete segments and endpoints**

We encourage you to maintain segments that are part of an active journey. If you delete a segment that's being used by an active journey, the journey could fail and stop running. If the journey does continue to run, any participants who were part of the segment might be removed from the journey prematurely. In addition, those participants will be reported as "dropped" in the analytics data for the last activity that they were part of. This compromises the usefulness of your analytics data—you won't be able to distinguish between participants who left a journey independently and participants whom you removed.

#### **Leverage custom attributes**

To identify and add journey participants to segments more easily, consider adding a custom, journey-specific attribute to endpoints when your application creates or updates endpoints. You can then use this attribute to identify a user or endpoint as someone who should participate in a journey.

## Activities

Activities are the building blocks of any journey. Therefore, when you choose the type and settings for each activity, and the relationships between activities, consider the following guidelines:

### Optimize the entry activity

The entry activity, which is the first activity in a journey, determines how often new participants are added to the journey. You can either add participants based on an activity – for example, adding users who download specific music – or add participants from existing segments. Because new or existing customers could become participants at any time, it's a good idea to configure the entry activity to update (add participants to) the associated segment frequently. By doing this, you maximize opportunities for participants to start a journey.

### Prepare for changes to segment and participant data

An activity's evaluation of segment conditions is based on the latest data for each participant (endpoint) in the segment, and this data might change over time. For example, a participant's favorite food could be pizza when they start an activity. That participant could subsequently change their preference to hot dogs. If this happens, subsequent activities will evaluate the participant based on the participant's preference for hot dogs, not pizza. One way to prepare for these kinds of changes is to use split activities that predict the changes and send participants down an appropriate path.

### Take advantage of the *Else* path

A multivariate split activity can contain as many as four paths (each with its own criteria), in addition to an *Else* path. The *Else* path is for participants who don't meet any of the criteria for the other paths. Therefore, it provides an excellent opportunity to handle unexpected or unusual cases that you might not have considered when you designed the journey.

### Consider delays in receiving event data

Some event data, such as *email opens*, is based on information that we receive from participants' email providers. Some providers send us this information immediately, while others send it less frequently. Those delays can impact participants' experiences. When Amazon Pinpoint evaluates events as a condition of an activity, it moves a participant to a *No* path if it doesn't have any event data for a participant. To mitigate this risk, add buffer time to the evaluation schedule for activities that immediately follow email activities.

### Avoid consecutive email activities

We recommend that you insert a wait or other type of activity between two or more email activities. This can help account for the amount of time that Amazon Pinpoint needs to process and send messages, and any delays in participants receiving messages.

### Use re-entry intervals

Set a re-entry interval for when endpoints re-enter journeys. By setting a re-entry interval you'll space out the time between when users receive your messages, creating a better user engagement and also being less likely that your messages are processed as spam.

## Email messages

In addition to [general tips and best practices for sending email \(p. 52\)](#), consider doing the following before you create a journey:

### Create a dedicated "From" address

Consider using a dedicated email address or domain for all the messages that you send from a journey. This provides a consistent experience across all the messages that participants receive from a journey. It also gives each participant an opportunity to adjust their email application settings to ensure that all of a journey's messages arrive in their inbox. In addition, if you subscribe to the [Deliverability Dashboard \(p. 39\)](#), using a dedicated address or domain can make it easier for you to access advanced analytics data for specific journeys. To learn how to set up a dedicated address or domain for sending messages, see [the section called "Verifying email identities" \(p. 20\)](#).

### Verify that you set up the email channel correctly

Before you publish a journey, make sure that your Amazon Pinpoint account has [production access for email](#) (p. 20). If it doesn't, your account is in the sandbox environment, which means that participants might not receive messages from the journey. (In the sandbox environment, you can send only a limited number of messages and you can send messages to only certain email addresses.) Also, make sure the sending quota and sending rate for your account can support the number of messages that you plan to send from the journey. To check the sending quota and rate for your account, you can use the **Email Settings** page on the Amazon Pinpoint console.

### Design a collection of related message templates

During the early stages of the planning process, it's a good idea to design and create a message template for each email activity that you expect to include in the journey. If you do this, you can ensure that all the messages have a consistent design. This also ensures that each message is specific to and optimized for the corresponding phase of the journey. For example, in a journey that welcomes new customers, you might have three email templates. There is one template with introductory information, another with intermediate information for users who clicked a link in the first message, and another with revised introductory information for users who didn't click a link in the first message.

## Reviewing and testing

Amazon Pinpoint includes a review feature that checks for and warns you about configuration errors in a journey. It also simplifies the process of finding and fixing any errors. To find the activity or setting that has an error, click the error description.

To fix an error, follow the recommendation provided in the **Review your journey** pane. We encourage you to use this feature to review and fix errors before you publish a journey. As a best practice, we also encourage you to complete this review process multiple times before you publish a journey.

Amazon Pinpoint also includes a testing feature that streamlines the testing process. After you complete the review process for a journey, you can use this feature to send a group of test participants through the journey.

To ensure that only test participants can enter the journey, you can create and use a dedicated test segment with this feature. To expedite testing, you can configure this feature to reduce or eliminate wait times for and between activities. We strongly recommend that you use this feature to test all aspects of a journey, including each message that a journey sends, before you publish a journey.

To learn more about reviewing and testing a journey, see [the section called "Review and test a journey"](#) (p. 166).

## Analytics

After you publish a journey, Amazon Pinpoint automatically starts collecting and aggregating analytics data for several types of standard metrics that apply to the overall journey and individual journey activities. We strongly recommend that you review these metrics regularly and frequently.

Among other things, these metrics provide key insight into issues to address, such as failures and errors that might have occurred when Amazon Pinpoint attempted to evaluate or perform an activity. Overall, these metrics can help you determine what is or isn't working well in a journey, which can help you design more effective journeys in the future. For detailed information about the available metrics and how to view them, see [the section called "View journey metrics"](#) (p. 170).

Amazon Pinpoint automatically stores your analytics data for 90 days. Depending on a journey's projected duration or your organization's long-term storage and reporting needs, you might want to



store the underlying event data for more than 90 days. To do this, we recommend that you configure Amazon Pinpoint to export data to Amazon Kinesis Data Streams or Amazon Kinesis Data Firehose. If you export data to Amazon Kinesis, you can also use other services and applications to perform deeper analysis or reporting. For more information, see [the section called “Streaming event data” \(p. 216\)](#).

## Lifecycle management

As you move a journey through various phases of development and execution, keep the following in mind for each phase of the journey's lifecycle. Also note that you can stop (cancel) a journey at any time if any issues arise.

Phase	Description
Draft	<p>The journey is being developed and hasn't been published yet.</p> <p>In this phase, you can change any aspect of the journey, including segments, activities, and settings for the journey. You can also leverage Amazon Pinpoint features for reviewing and testing the journey. You can repeat the review and test processes as many times as you want.</p>
Active	<p>The journey has been developed, reviewed, tested, and published. Depending on the journey's schedule, it might currently be running or scheduled to start running at a later time.</p> <p>In this phase, you can't add, change, or remove activities from the journey.</p>
Closed	<p>The journey has been developed, reviewed, tested, and published. It has started running and is closed to new participants.</p> <p>Depending on the journey's schedule and settings, it might have also passed its scheduled end time. Or the journey might have passed its scheduled start time, and it has an entry activity that's set to never add new segment members.</p> <p>In this phase, you can't add new participants to the journey, and no existing participants can enter the journey for the first time. However, any existing participants who are currently waiting to start an activity can resume the journey.</p>
Stopped	<p>The journey was developed, reviewed, tested, and published, and then subsequently stopped. You can't restart a journey after you stop it. You'll need to recreate the journey again.</p> <p>If you stop a journey, Amazon Pinpoint continues to perform activities that are currently in progress until those activities are complete. Amazon Pinpoint also continues to collect and aggregate analytics data for those activities until the activities are complete. It also does this for any</p>

Phase	Description
	<p>activities that were complete when you stopped the journey.</p> <p>In this phase, you can't add, change, or remove any activities from the journey. In addition, Amazon Pinpoint stops evaluating the journey and doesn't perform any activities that haven't started.</p>

# Send test messages with Amazon Pinpoint

With Amazon Pinpoint, you can send *test messages*, which are one-time messages that you send directly to a specific set of recipients. Sending a test message is useful if you want to test the deliverability of a message, or see how a message appears to recipients. You can send a test message by using any channel that Amazon Pinpoint supports.

We charge you for each test message that you send. However, we don't bill you based on your monthly targeted audience (MTA) when you send test messages. For more information, see [Amazon Pinpoint pricing](#).

When you use the Amazon Pinpoint console to send a test message, you can send the message to as many as 15 recipients, depending on the type of message. You can't send a test message to a segment—you have to send it to individual users. In addition, Amazon Pinpoint delivers a test message immediately. You can't schedule the delivery of a test message. Finally, a test message doesn't generate messaging metrics, such as open, click, or bounce rates. If you want to send a message to a segment, schedule the delivery of a message, or obtain metrics data for a message, you should [create a campaign \(p. 126\)](#) instead of sending a test message.

To send a test message from the Amazon Pinpoint console, use the **Test messaging** page on the console.

## To open the test messaging page

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that you want to send a test message for.
3. In the navigation pane, choose **Test messaging**.

## Sending a test email message

To send a test email message, you have to use a project that has the email channel enabled. To learn how to create a new project and enable the email channel for it, see [Setting up the Amazon Pinpoint email channel \(p. 20\)](#). To learn how to enable the email channel for an existing project, see [Managing the Amazon Pinpoint email channel \(p. 26\)](#).

## To send a test email message

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that you want to send a test message for.
3. In the navigation pane, choose **Test messaging**.
4. On the **Test messaging** page, under **Channel**, choose **Email**.
5. For **Destination type**, choose one of the following destinations for your message:
  - **Email addresses** – Each destination is a recipient's email address.
  - **Endpoint IDs** – Each destination is a unique ID that's assigned to an endpoint for the project.
6. Depending on your selection for **Destination type**, enter one or more **Endpoint IDs** or **Email addresses**. You can enter up to 15 values. Use commas to separate multiple values.

7. For **Message content**, choose whether you want to **Create a new message** or **Use an existing template**.

If you choose to use an existing template, choose the template from the **Template** list. After you choose a template, Amazon Pinpoint displays a preview of the active version of the template. The active version is typically the version of a template that's been reviewed and approved for use, depending on your workflow.

If you choose to create a new message, specify a subject in the **Subject** field, and a message body in the **Message** field.

**Tip**

You can enter the message body by using either HTML or Design view. In the HTML view, you can manually enter HTML content for the message body, including formatting, links, and other features that you want to include in the message. In the Design view, you can use a rich text editor to enter the content of the message body. You can use the formatting toolbar to apply formatting and add links and other features to the message body. To switch views, choose **HTML** or **Design** from the view selector above the message editor.

In the field below the message editor, optionally enter the content that you want to display in the body of messages that are sent to recipients whose email applications don't display HTML content.

8. When you finish, choose **Send message**.

## Sending a test push notification

To send a test push notification, you have to use a project that has one or more push notification channels enabled. To learn how to create a new project and enable a push notification channel for it, see [Setting up Amazon Pinpoint mobile push channels \(p. 15\)](#). To learn how to enable a push notification channel for an existing project, see [Managing mobile push channels with Amazon Pinpoint \(p. 16\)](#).

After you enable one or more push notification channels for a project, you can send a test push notification through any of those channels.

### To send a test push notification

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that you want to send a test message for.
3. In the navigation pane, choose **Test messaging**.
4. On the **Test messaging** page, under **Channel**, choose **Push notifications**.
5. For **Destination type**, choose one of the following destinations for your message:
  - **Endpoint IDs** – Each destination is a unique ID that's assigned to an endpoint for the project.
  - **Device tokens** – Each destination is a token that's assigned to the instance of the app that you're messaging. For example, this value can be a device token that's assigned by the Apple Push Notification service (APNs) or a registration token that's assigned by Firebase Cloud Messaging (FCM).
6. Depending on your selection for **Destination type**, enter one or more **Endpoint IDs** or **Device tokens**. You can enter up to 15 values. Use commas to separate multiple values.

If you use device tokens as the destination type, you should only specify tokens that are associated with a single push notification service. Amazon Pinpoint can send the message through only one push notification service at a time.

If you use endpoint IDs as the destination type, this restriction doesn't apply. You can specify endpoints that use any push notification service.

7. For **Push notification service**, specify the push notification service that you want to send the message through. If you use endpoint IDs as the destination type, Amazon Pinpoint detects the service automatically.
8. For **Notification type**, specify the type of test message that you want to send:
  - **Standard message** – A push notification that has a title, a message body, and other content and settings. Recipients are alerted by their mobile devices when they receive the message.
  - **Raw message** – A push notification that specifies all of a notification's content and settings as a JSON object. This type of notification can be useful for cases such as sending custom data to an app for processing by that app, instead of the push notification service. If you choose this option, the message editor displays an outline of the code to use for the message. In the message editor, enter the settings that you want to use for each push notification service. Include any optional settings (such as images, sounds, and actions) that you want to specify. For more information, see the documentation for the push notification services that you use. When you finish entering all the raw message content, skip to step 12.
9. Under **Message**, for **Message content**, choose whether you want to **Create a new message** or **Use an existing template**.

If you choose to use an existing template, choose the template from the **Template** list. After you choose a template from the list, Amazon Pinpoint displays a preview of the active version of the template. (The active version is typically the version of a template that's been reviewed and approved for use, depending on your workflow.) When you finish choosing a template, skip to step 12.

If you choose to create a new message, specify a **Title** and **Body** for the message.

10. For **Action**, select the action that you want to occur if the recipient taps the notification:
  - **Open app** – Your app launches, or it becomes the foreground app if it was sent to the background.
  - **Go to URL** – The default mobile browser on the recipient's device launches and opens a web page at the URL that you specify. For example, this action is useful for sending users to a blog post.
  - **Open a deep link** – Your app opens and displays a designated user interface in the app. Deep linking is an iOS and Android feature. For example, this action is useful for directing users to special promotions for in-app purchases.
11. (Optional) In the **Media URLs** section, provide URLs that point to media files that you want to display in the message. The URLs must be publicly accessible so that push notification services can retrieve the files.
12. When you finish, choose **Send message**.

## Sending a test SMS message

To send a test SMS message, you have to use a project that has the SMS channel enabled. To learn how to create a new project and enable the SMS channel for it, see [the section called "Setting up" \(p. 58\)](#). To learn how to enable the SMS channel for an existing project, see [Managing the Amazon Pinpoint SMS channel \(p. 81\)](#).

### To send a test SMS message

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that you want to send a test message for.
3. In the navigation pane, choose **Test messaging**.
4. On the **Test messaging** page, under **Channel**, choose **SMS**.
5. For **Destination type**, choose one of the following destinations for your message:

- **Phone numbers** – Each destination is a recipient's phone number.
  - **Endpoint IDs** – Each destination is a unique ID that's assigned to an endpoint for the project.
6. Depending on your selection for **Destination type**, enter one or more **Endpoint IDs** or **Phone numbers**. You can enter up to 15 values. Use commas to separate multiple values.
- If you use phone numbers as the destination type, specify each number in E.164 format. E.164 is a standard for the phone number structure that's used for international telecommunication. Phone numbers that follow this format typically have up to 15 digits, and they are prefixed with the plus character (+) and the country code. For example, a US phone number in E.164 format appears as +12065550100.
7. (Optional) For the **Origination phone number**, choose the number to use as the originator. The originator can be any of your numbers: short code, 10DLC, or long code/toll-free. If you have multiple numbers associated with your account, and you do not choose an originator, Amazon Pinpoint will choose an originator for you based on the following order: short code, 10DLC, long code/toll-free.
8. For **Message type**, choose one of the following:
- **Promotional** – Noncritical messages, such as marketing messages. If you choose this option, Amazon Pinpoint optimizes the message delivery to incur the lowest cost.
  - **Transactional** – Critical messages that support customer transactions, such as one-time passwords for multi-factor authentication. If you choose this option, Amazon Pinpoint optimizes the message delivery to achieve the highest reliability.

**Note**

This message-level setting overrides the default message type that you chose on the **Settings** page for the project.

9. Under **Message**, for **Message content**, choose whether you want to **Create a new message** or **Use an existing template**.

If you choose to use an existing template, choose the template from the **Template** list. After you choose a template from the list, Amazon Pinpoint displays a preview of the active version of the template. (The active version is typically the version of a template that's been reviewed and approved for use, depending on your workflow.) When you finish choosing a template, skip to step 10.

If you choose to create a new message, specify the content of the message in the **Message** field.

10. (Optional) For **Sender ID**, enter a custom ID that contains up to 11 alphanumeric characters, including at least one letter, and no spaces. The sender ID is displayed as the message sender on the recipient's device. For example, you can use your business brand to make the message source easier to recognize.

Support for sender IDs varies by country and/or region. For more information, see [Supported countries and regions \(SMS channel\)](#) (p. 85).

This message-level sender ID overrides your default sender ID, which you chose on the **Settings** page for the project.

11. When you finish, choose **Send message**.

# Amazon Pinpoint analytics

Using the analytics that Amazon Pinpoint provides, you can gain insight into your user base by viewing trends related to user engagement, campaign outreach, revenue, and more.

As users interact with your project, Amazon Pinpoint collects and stores analytics data for these interactions. You can view that data to learn about areas such as your users' [level of engagement \(p. 197\)](#), [purchase activity \(p. 200\)](#), and [demographics \(p. 203\)](#). For example, if you have a mobile app, you can view charts and metrics that show how many users open your app each day, when users open your app, and the revenue that's generated by your app.

By viewing charts about device attributes, you can also learn which platforms and devices your app is installed on. To report these and other metrics for a mobile app, your app must be integrated with Amazon Pinpoint through one of the supported AWS Mobile SDKs. For more information, see [Integrating Amazon Pinpoint with your app](#) in the *Amazon Pinpoint Developer Guide*.

You can also monitor [campaign analytics \(p. 204\)](#) to see how your campaigns are performing in aggregate, as well as individually. For example, you can follow the total number of messages or push notifications that were sent, the percentage of messages or push notifications that users opened, opt-out rates, and other information. If you create a campaign that includes an A/B test, you can also use analytics to compare the effectiveness of the campaign treatments. For example, you can assess whether users are more likely to open your mobile app because they received a certain variation of a campaign message.

To analyze how many users are completing each step in a conversion process, such as purchasing an item or upgrading your app, you can create and monitor [funnels \(p. 215\)](#).

To analyze or store analytics data outside Amazon Pinpoint, you can configure Amazon Pinpoint to [stream the data to Amazon Kinesis \(p. 216\)](#).

## Topics

- [Chart reference for Amazon Pinpoint analytics \(p. 193\)](#)
- [Creating funnel charts with Amazon Pinpoint \(p. 215\)](#)
- [Streaming events with Amazon Pinpoint \(p. 216\)](#)

## Chart reference for Amazon Pinpoint analytics

The **Analytics** pages on the Amazon Pinpoint console provide overviews of key metrics. They also provide dashboards that give details about campaigns, demographics, funnels, usage, revenue, and more. You can filter many of these dashboards by date for further analysis. You can also filter some of these dashboards by other attributes, such as event or channel attributes.

## Topics

- [Endpoints and users in Amazon Pinpoint analytics \(p. 194\)](#)
- [Exporting dashboards \(p. 194\)](#)
- [Overview charts \(p. 194\)](#)
- [Usage charts \(p. 197\)](#)
- [Revenue charts \(p. 200\)](#)
- [Events charts \(p. 202\)](#)
- [Demographics charts \(p. 203\)](#)
- [Campaign charts \(p. 204\)](#)
- [Transactional messaging charts \(p. 210\)](#)

## Endpoints and users in Amazon Pinpoint analytics

Some of the charts and metrics in these dashboards provide data about *endpoints*. Others provide data about *users*.

An *endpoint* is a destination that you can send messages to—such as a user's mobile device, email address, or phone number. Before you can see data about endpoints, your application must register endpoints with Amazon Pinpoint, or you must import your endpoint definitions into Amazon Pinpoint.

A *user* is an individual who has a unique user ID. This ID can be associated with one or more endpoints. For example, if a person uses your app on more than one device, your app could assign that person's user ID to the endpoint for each device. Before you can see data about users, your application must assign user IDs to endpoints, or you must import endpoint definitions that include user IDs.

For information about registering endpoints and assigning user IDs within a mobile app, see [Registering endpoints in your application](#) in the *Amazon Pinpoint Developer Guide*. For information about registering endpoints and assigning user IDs for other types of applications, see [Adding endpoints to Amazon Pinpoint](#) in the *Amazon Pinpoint Developer Guide*. For information about importing endpoint definitions, see [Importing segments](#) (p. 117).

## Exporting dashboards

You can export data from the dashboards that appear on the **Analytics** pages of the Amazon Pinpoint console. When you export data from a dashboard, Amazon Pinpoint creates a .zip file that contains a comma-separated values (.csv) file with the data for each section of the dashboard. You can open these .csv files by using any modern spreadsheet or data analysis application.

To export data from a dashboard, choose a date range for the data (and other attributes, if applicable), and then choose **Download CSV**.

## Overview charts

The **Analytics overview** page contains several charts and metrics that provide an overview of endpoint, usage, and campaign responses for your project. If you've sent transactional email messages for your project, this page also provides information about responses to those messages.

## Viewing the analytics overview charts

Complete the following steps to view the charts and metrics on the **Analytics overview** page of the Amazon Pinpoint console. You can filter the data by date.

### To view and filter the analytics overview charts and metrics

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that you want to view analytics data for.
3. In the navigation pane, choose **Analytics**.
4. (Optional) To apply a filter that displays the data for a specific date or range of dates, use the date selector at the top of the page to choose the dates for the time period that you want. After you choose new dates, the page updates to show the data for the selected time period.

## Chart descriptions

The **Analytics overview** page contains three sections: [App analytics](#) (p. 195), [Campaign analytics](#) (p. 195), and [Transactional email](#) (p. 196).



## App analytics

The **App analytics** section contains some of the most commonly used metrics that are related to your app or project.

### Daily active endpoints

Shows the number of endpoints that opened your app at least once in a 24-hour period for each day in the selected time period. This chart also provides the average number of daily active endpoints for the entire time period, and the percentage change in the number of daily active endpoints from the beginning to the end of the time period. If your app or project contains a high number of endpoints, there might be a delay of up to six hours for Amazon Pinpoint to display this data.

### Monthly active endpoints

Shows the number of endpoints that opened your app at least once in the previous 30 days for each day in the selected time period. This chart also provides the average number of monthly active endpoints for the entire time period, and the percentage change in the number of monthly active endpoints from the beginning to the end of the time period. If your app or project contains a high number of endpoints, there might be a delay of up to six hours for Amazon Pinpoint to display this data.

### New endpoints

Shows the number of endpoints that were registered with Amazon Pinpoint for the first time, for each day in the selected time period. This chart also provides the average number of new endpoints for the entire time period, and the percentage change in the number of new endpoints from the beginning to the end of the time period.

### 7-day retention rate

Shows the percentage of users who opened your app less than 8 days ago, and then opened it again at some point during the following 7 days. This chart also provides the average 7-day retention rate for the entire time period, the average daily retention rate for the time period, and the percentage change in the rate from the beginning to the end of the time period.

### Sessions

Shows the total number of times that your app was opened each day in the selected time period. This chart also provides the average number of daily sessions for the entire time period, and the percentage change in the number of sessions from the beginning to the end of the time period.

### Revenue

Shows the revenue, in USD, that was reported by your app for each day in the selected time period. This chart also provides the total revenue for the entire time period, and the percentage change in the amount of revenue from the beginning to the end of the time period.

## Campaign analytics

The **Campaign analytics** section contains several important metrics that can help you understand the success of your campaigns. The metrics in this section provide aggregated metrics for all the campaigns in the current project.

### Active targetable endpoints

Shows the number of endpoints that currently have a status of *active* for the project and are opted in to receive messages from you through at least one channel, and the number of active targetable endpoints for each channel—for example, push notifications, email, and SMS.

### Campaigns

Shows information about the campaigns that were active during the selected time period. This section includes the following information:

### Active campaigns

The number of campaigns that are currently active.

### Messages delivered

The number of messages that were delivered to their intended recipients. Amazon Pinpoint calculates this number by subtracting the number of messages that bounced from the number of messages that you sent.

### Delivery rate

The percentage of targeted endpoints that received messages from you. Amazon Pinpoint calculates this rate by dividing the number of messages that were delivered to their intended recipients by the total number of messages that you sent.

### Opt-out rate

The percentage of users who opted out after receiving messages from you. Amazon Pinpoint calculates this rate by determining the number of recipients who received your messages and opted out, and dividing that number by the number of recipients who were active during the selected time period. (The recipient might have opted out by clicking an unsubscribe link in an email, or by replying to an SMS message with the keyword `STOP`). If a single recipient opted out multiple times, the recipient is counted only once.

### Email open rate

The percentage of recipients who opened messages from you. Amazon Pinpoint calculates this rate by dividing the number of email messages that were sent and opened by their recipients by the number of messages that were received by their recipients.

### Push open rate

The percentage of push notifications that were opened by recipients. Amazon Pinpoint calculates this rate by dividing the number of recipients who opened push notifications from you by the number of push notifications that were received by their recipients.

### Endpoint deliveries

The average number of unique endpoints that received messages from you on each day of the selected time period. The chart shows the number of unique endpoints that received messages from you, for each day in the selected time period.

## Transactional email

The **Transactional email** section contains a chart and metrics that provide information about responses to all the transactional email messages that you sent during the selected time period. Note that this section doesn't include information about messages that you sent from campaigns or transactional messages that you sent through other types of channels. In addition, it can take up to two hours for new data to appear in this section.

### Sent

The number of transactional messages that were sent:

- Average – The average number of messages that were sent each day of the selected time period.
- Total – The total number of messages that were sent during the selected time period.
- Change over period – The percentage of change between the number of messages that were sent on the first and last days of the selected time period. If this value is an em dash (—), no transactional email messages were sent on the first day of the time period. Amazon Pinpoint can't calculate the percentage of change if the value is zero (0) for the first day of the time period.

### Delivered

The number of transactional messages that were delivered to their intended recipients:

- **Average** – The average number of messages that were delivered each day of the selected time period.
- **Total** – The total number of messages that were delivered during the selected time period.
- **Change over period** – The percentage of change between the number of messages that were delivered on the first and last days of the selected time period. If this value is an em dash (—), no transactional email messages were delivered on the first day of the time period. Amazon Pinpoint can't calculate the percentage of change if the value is zero (0) for the first day of the time period.

#### Opened

The number of transactional messages that were opened by recipients:

- **Average** – The average number of messages that were opened each day of the selected time period.
- **Total** – The total number of messages that were opened during the selected time period.
- **Change over period** – The percentage of change between the number of messages that were opened on the first and last days of the selected time period. If this value is an em dash (—), no transactional email messages were opened on the first day of the time period. Amazon Pinpoint can't calculate the percentage of change if the value is zero (0) for the first day of the time period.

#### Clicked

The number of times that recipients clicked links in transactional messages:

- **Average** – The average number of clicks that occurred each day of the selected time period.
- **Total** – The total number of clicks that occurred during the selected time period.
- **Change over period** – The percentage of change between the number of clicks that occurred on the first and last days of the selected time period. If this value is an em dash (—), no clicks occurred on the first day of the time period. Amazon Pinpoint can't calculate the percentage of change if the value is zero (0) for the first day of the time period.

If a single recipient clicks multiple links in a message, or clicks the same link more than once, each click is counted as a separate click event.

## Usage charts

The **Usage** page includes charts and metrics that show how often your app is being used and how successfully it retains user interest over time.

#### Note

Some of the charts and metrics on the **Usage** page refer to *endpoints*, while others refer to *users*. For information about the difference between users and endpoints, see [Endpoints and users in Amazon Pinpoint analytics](#) (p. 194).

## Viewing the usage charts

Complete the following steps to view the **Usage** charts and metrics on the Amazon Pinpoint console. You can filter the data by date and by endpoint attributes.

#### To view and filter the usage charts and metrics

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that you want to view usage data for.
3. In the navigation pane, under **Analytics**, choose **Usage**.
4. (Optional) To apply a filter that displays the data for a specific date or range of dates, use the date selector at the top of the page to choose the dates for the time period that you want. After you choose new dates, the page updates to show the data for the selected time period.

5. (Optional) To apply a filter that displays data for only those users or endpoints that have specific attributes, expand the **Filters** section. Choose an attribute from the **Endpoint Attributes** list. After you choose an attribute, choose an attribute value from the **Endpoint Attribute Values** list. Then choose **View charts** to see the updated metrics.

**Note**

To provide you with the best possible experience, we hide this filter if you haven't used it in the past 90 days.

If the **Filters** section shows a message stating that the filter is unavailable, choose **More information**, and then choose **Enable filters**. When you do, we restore the filter for your account in the current AWS Region. Depending on the amount of data that's associated with your account, this process can take up to 72 hours to complete.

To further filter the data, repeat this step for each additional attribute and attribute value that you want to filter the data by.

## Chart descriptions

The **Usage** page contains three sections: [User metrics \(p. 198\)](#), [Session metrics \(p. 199\)](#), and [Authentication metrics \(p. 200\)](#).

### User metrics

The **User metrics** section provides information about how users and endpoints interacted with your application. These charts and metrics help you better understand user retention—that is, the likelihood that a customer who used your application in the past will use it again at a later time.

**Note**

The following metrics can be affected by API operations that impact endpoints: **Daily active endpoints**, **Monthly active endpoints**, **Daily active users**, **Monthly active users**. For example, if you use the `UpdateEndpoint` or `PutEvents` API operations to modify endpoints, metrics such as **Daily active users** could indicate higher counts than **Daily sessions**.

For information about the difference between users and endpoints, see [Endpoints and users in Amazon Pinpoint analytics \(p. 194\)](#).

#### Daily active endpoints

Shows the number of endpoints that opened your application for each day in the selected time period. This chart also provides the average number of daily active endpoints for the entire time period, and the percentage change in the number of daily active endpoints from the beginning to the end of the time period. If your app or project contains a high number of endpoints, there might be a delay of up to six hours for Amazon Pinpoint to display this data.

#### Monthly active endpoints

Shows the number of endpoints that opened your application at some point in the preceding 30 days for each day in the selected time period. This chart also provides the average number of monthly active endpoints for the entire time period, and the percentage change in the number of monthly active endpoints from the beginning to the end of the time period. If your app or project contains a high number of endpoints, there might be a delay of up to six hours for Amazon Pinpoint to display this data.

#### New endpoints

Shows the number of endpoints that were registered with Amazon Pinpoint for the first time for each day in the selected time period. This chart also provides the average number of new endpoints for the entire time period, and the percentage change in the number of new endpoints from the beginning to the end of the time period.

### Daily active users

Shows the number of users that opened your application for each day in the selected time period. This chart also provides the average number of daily active users for the entire time period, and the percentage change in the number of daily active users from the beginning to the end of the time period.

### Monthly active users

Shows the number of users that opened your application at some point in the preceding 30 days for each day in the selected time period. This chart also provides the average number of monthly active users for the entire time period, and the percentage change in the number of monthly active users from the beginning to the end of the time period.

### New users

Shows the number of new user IDs that were created in Amazon Pinpoint for each day in the selected time period. This chart also provides the average number of new users for the entire time period, and the percentage change in the number of new users from the beginning to the end of the time period.

### 7-day retention rate

Shows the percentage of users who opened your app less than 8 days ago, and then opened it again at some point during the following 7 days. This chart also provides the average daily retention rate for the entire time period, the average daily retention rate for the time period, and the percentage change in the rate from the beginning to the end of the time period.

### Sticky factor

Shows the portion of monthly active endpoints that were active on each day of the selected time period. For example, a sticky factor of 0.25 indicates that 25% of active endpoints from the previous 30 days were active on the chosen day. This chart also shows the average sticky factor for the entire time period, and the percentage change in the sticky factor rate from the beginning to the end of the time period. If your app or project contains a high number of endpoints, there might be a delay of up to six hours for Amazon Pinpoint to display this data.

## Session metrics

The **Session metrics** section provides information about how often your app was opened. These metrics can help you better understand how often individual customers use your app, as well as the days and times that they're most likely to use your app.

### Sessions

Shows the number of times your app was opened for each day in the selected time period. This chart also provides the average number of sessions for the entire time period, and the percentage change in the number of sessions from the beginning to the end of the time period.

### Sessions per endpoint

Shows the number of sessions for each endpoint. Amazon Pinpoint calculates this number by dividing the number of sessions in the time period by the number of unique endpoints that opened your app in the time period. This chart also provides the average number of sessions per endpoint for the entire time period, and the percentage change in the number of sessions per endpoint from the beginning to the end of the time period.

### Sessions per user

Shows the number of sessions for each user. Amazon Pinpoint calculates this number by dividing the number of sessions in the time period by the number of unique users who opened your app in the time period. This chart also provides the average number of sessions per user for the entire time

period, and the percentage change in the number of sessions per user from the beginning to the end of the time period.

#### Session heat map

Shows the days and times when endpoints opened your app. The times in this chart reflect each endpoint's local time. Darker rectangles in this chart indicate larger numbers of endpoints opening your app.

## Authentication metrics

The **Authentication metrics** section provides information about how often existing users sign in to your app, and how often new users sign up for your app. These charts are useful for tracking the success of user acquisition programs, or the success of campaigns that attempt to draw disengaged users back to your app, for example.

#### Sign-ins

Shows the number of times that users signed in to your app for each day in the selected time period. This chart also provides the average number of sign-ins for the entire time period, and the percentage change in the number of sign-ins from the beginning to the end of the time period.

#### Sign-ups

Shows the number of times that users created new accounts for your app for each day in the selected time period. This chart also provides the average number of sign-ups for the entire time period, and the percentage change in the number of sign-ups from the beginning to the end of the time period.

#### Authentication failures

Shows the number of times that users attempted to sign in but were unable to do so for each day in the selected time period. This chart also provides the average number of authentication failures for the entire time period, and the percentage change in the number of authentication failures from the beginning to the end of the time period.

## Revenue charts

The charts and metrics on the **Revenue** page provide details about user purchase activity and the revenue that's generated by your app.

#### Note

Some of the charts and metrics on the **Revenue** page refer to *endpoints*, while others refer to *users*. For information about the difference between users and endpoints, see [Endpoints and users in Amazon Pinpoint analytics](#) (p. 194).

## Viewing the revenue charts

Complete the following steps to view the **Revenue** charts and metrics on the Amazon Pinpoint console. You can filter the data by date and by endpoint attributes.

#### To view and filter the revenue charts and metrics

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that you want to view revenue data for.
3. In the navigation pane, under **Analytics**, choose **Revenue**.
4. (Optional) To apply a filter that displays the data for a specific date or range of dates, use the date selector at the top of the page to choose the dates for the time period that you want. After you choose new dates, the page updates to show the data for the selected time period.

5. (Optional) To apply a filter that displays data for only those endpoints that have specific attributes, expand the **Filters** section. Choose an attribute from the **Endpoint Attributes** list. After you choose an attribute, choose an attribute value from the **Endpoint Attribute Values** list. Then choose **View charts** to see the updated metrics.

**Note**

To provide you with the best possible experience, we hide this filter if you haven't used it in the past 90 days.

If the **Filters** section shows a message stating that the filter is unavailable, choose **More information**, and then choose **Enable filters**. When you do, we restore the filter for your account in the current AWS Region. Depending on the amount of data that's associated with your account, this process can take up to 72 hours to complete.

To further filter the data, repeat this step for each additional attribute and attribute value that you want to filter the data by.

## Chart descriptions

The **Revenue** page contains the following sections:

### Revenue

Shows the amount of money, in USD, spent within your app by all users for each day in the selected time period. This chart also provides the average amount of revenue that was generated by the app for the entire time period, and the percentage change in the amount of revenue from the beginning to the end of the time period.

### Revenue per endpoint

Shows the average amount of money that was spent within your app by each endpoint for each day in the selected time period. Amazon Pinpoint calculates this number by dividing the amount of revenue generated during the selected time period by the number of users who opened the app in that time period. This chart also provides the average amount of revenue per endpoint for the entire time period, and the percentage change in the amount of revenue per endpoint from the beginning to the end of the time period.

### Paying users

Shows the number of unique users who made at least one purchase for each day in the selected time period. This chart also provides the total number of paying users, the average number of paying users, and the percentage change in the number of paying users from the beginning to the end of the time period.

### Revenue per paying user

Shows the amount of money that was spent by each paying user. Amazon Pinpoint calculates this number by dividing the amount of revenue generated each day in the selected time period by the number of unique users who made at least one purchase during that day. This chart also provides the average amount of revenue per paying user for the entire time period, and the percentage change in the amount of revenue per paying user from the beginning to the end of the time period.

### Units sold

Shows the total number of items that were purchased in your app for each day in the selected time period. This chart also provides the total number of units sold, the average number of units sold per day, and the percentage change in the number of units sold from the beginning to the end of the analysis period.

### Units sold per endpoint

Shows the daily average number of items that were purchased by each endpoint. Amazon Pinpoint calculates this number by dividing the number of units sold each day by the number of endpoints

that were active during the selected time period. This chart also provides the average number of units that were sold per endpoint for the entire time period, and the percentage change in the number of units sold per endpoint from the beginning to the end of the analysis period.

### Purchases

Shows the number of purchases that were made in your app for each day in the selected time period. This chart also provides the total number of purchases made in the time period, and the percentage change in the number of purchases from the beginning to the end of the analysis period.

### Purchases per endpoint

Shows the daily average number of purchases per endpoint for each day in the selected time period. Amazon Pinpoint calculates this number by dividing **Purchases** by the number of endpoints that made a purchase for each day in the analysis period. This chart also provides the average number of purchases per endpoint for the entire time period, and the percentage change in the number of units sold per endpoint from the beginning to the end of the analysis period.

## Events charts

The charts and metrics on the **Events** page help you see trends by displaying data for one or more types of events and event attributes. You can filter the data on the page to show any event that your application reports to Amazon Pinpoint.

## Viewing the events charts

Complete the following steps to view the **Events** charts and metrics on the Amazon Pinpoint console. You can filter the data by date, event, and endpoint attributes.

### To view and filter the events charts and metrics

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that you want to view event data for.
3. In the navigation pane, under **Analytics**, choose **Events**.
4. (Optional) To apply a filter that displays the data for a specific date or range of dates, use the date selector at the top of the page to choose the dates for the time period that you want. After you choose new dates, the page updates to show the data for the selected time period.
5. (Optional) To apply additional filters, expand the **Filters** section.

#### Note

To provide you with the best possible experience, we hide these filters if you haven't used them in the past 90 days.

If the **Filters** section shows a message stating that the filters are unavailable, choose **More information**, and then choose **Enable filters**. When you do, we restore the filters for your account in the current AWS Region. Depending on the amount of data that's associated with your account, this process can take up to 72 hours to complete.

If the additional filters are available, do any of the following:

- To apply a filter that displays the data for only a specific type of event, choose the event type from the **Event** list. After you choose an event type, choose event attributes or metrics and a value from the **Event Attributes and Metrics** and **Event Attribute Values** lists.

The **Event** list displays the types of events that your app reported during the past 14 days. If your app didn't report any events during that time period, only the **All event types** option is available and you can't filter the data by a specific type of event.

- To apply a filter that displays data for only those endpoints that have a specific attribute, choose the attribute from the **Endpoint Attributes** list. After you choose an attribute, choose an attribute



value from the **Endpoint Attribute Values** list. Then choose **View charts** to see the updated metrics.

To further filter the data, repeat this step for each additional event or attribute that you want to filter the data by.

If your app or project contains a high number of endpoints, there might be a delay of up to six hours for Amazon Pinpoint to display this data.

## Chart descriptions

The **Events** page includes the following sections:

### Event count

This chart displays the number of events that were reported by your app for each day in the selected time period. This chart also provides the average number of events per day, the total number of events in the time period, and the percentage change in the number of events from the beginning to the end of the time period.

### Endpoint count

This chart displays the number of endpoints that reported the selected event for each day in the selected time period. This chart also provides the average number of endpoints that reported the event each day, the total number of endpoints that reported the event each day, and the percentage change in the number of endpoints that reported the event from the beginning to the end of the time period.

### Events per session

This chart displays the average number of events that occurred in each app session for each day in the selected time period. Amazon Pinpoint calculates this metric by dividing the number of times the selected event occurred each day by the number of sessions that occurred that day.

This chart also provides the average number of events per session for the entire time period, and the percentage change in the number of events per session from the beginning to the end of the time period.

## Demographics charts

The charts on the **Demographics** page help you understand characteristics of your customers and the devices that they use to access your app. If you've configured your app to report custom metrics to Amazon Pinpoint, this page shows the data for those metrics.

## Viewing the demographics charts

Complete the following steps to view the **Demographics** charts on the Amazon Pinpoint console. You can filter the data by channel.

### To view and filter the demographics charts

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that you want to view demographic data for.
3. In the navigation pane, under **Analytics**, choose **Demographics**.
4. (Optional) To apply a filter that displays the data for only a specific channel, choose **All channels**, and then choose a channel.

## Chart descriptions

The **Demographics** page includes the following sections:

### Platform

Shows the proportion of users who use your app on various platforms.

### App version

Shows the proportion of users who use various versions of your app.

### Device model

Shows the proportion of users who use your app on various device models, such as iPhone or Galaxy S9.

### Device make

Shows the proportion of users who use your app on various makes of devices, such as Apple or Samsung.

### User location

Shows the countries and regions where users of your app are located.

### Custom attributes

Shows the values for each custom attribute that's reported by your app.

## Campaign charts

The charts and metrics on the **Campaigns** page provide information about all the campaigns for a project. You can also choose a specific campaign to view additional delivery and engagement metrics for that campaign.

## Viewing the campaign charts

Complete the following steps to view the **Campaigns** charts and metrics on the Amazon Pinpoint console. You can filter the data by date.

### To view and filter the campaigns charts and metrics

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that you want to view campaign data for.
3. In the navigation pane, under **Analytics**, choose **Campaigns**.
4. (Optional) To apply a filter that displays the data for a specific date or range of dates, use the date selector at the top of the page to choose the dates for the time period that you want. After you choose new dates, the page updates to show the data for the selected time period.

## Chart descriptions

The **Campaigns** page includes sections that provide aggregated charts and metrics for all the campaigns that were active during the selected time period. It also includes a table that lists all of those campaigns. When you choose a specific campaign from the table, you see a new set of charts and metrics with data that's specific to that campaign.

## Aggregated campaign metrics

The **Campaigns** page includes the following charts and metrics, which are aggregated across all the campaigns that were active during the selected time period.

### Active targetable endpoints

Shows the total number of *targetable endpoints*. A targetable endpoint is an endpoint that currently has a status of *active* for the project and is opted in to receiving messages from you through at least one channel. This section displays the total number of active targetable endpoints across all channels, and the number of active targetable endpoints for each channel—for example, push notifications, email, and SMS.

### Campaigns

Shows the total number of campaigns that are currently active. For the selected time period, this section also shows the number of endpoints that received messages from you, and the delivery, open, and opt-out rates for those messages. The **Endpoint deliveries** area shows the number of unique endpoints that received messages from the campaigns.

## Metrics for individual campaigns

When you select a campaign from the table of campaigns, you see charts and metrics that are specific to that campaign. The charts and metrics that you see depend on the type of channel that the campaign used.

### Note

If you select an A/B test campaign, you see the charts and metrics listed in the following sections for each treatment. This report makes it easy to compare the effectiveness of various treatments for a campaign.

### Email campaigns

When you select a standard campaign that uses the email channel, you see the following charts and metrics.

#### Delivery count metrics

This section provides the following charts and metrics that relate to the number of messages that were sent and delivered for this campaign:

##### Messages sent

The number of messages that were sent.

##### Messages delivered

The number of messages that were delivered to their intended recipients. Amazon Pinpoint calculates this number by subtracting the number of messages that hard bounced from the number of messages that were sent.

##### Links clicked

The number of times that recipients clicked links in the message. If a single recipient clicks multiple links in a message, or clicks the same link more than once, each click is counted as a separate event.

##### Endpoint deliveries

The average number of unique email endpoints that the message was delivered to on each day. The chart shows the number of unique email endpoints that the message was delivered to, for each day in the selected time period.

## Delivery rate metrics

This section provides the following metrics that relate to the delivery of messages from this campaign:

### Delivery rate

The percentage of messages that were delivered to their intended recipients. Amazon Pinpoint calculates this rate by dividing the number of messages that were delivered by the number of messages that were sent.

### Email open rate

The percentage of messages that were opened by their intended recipients. Amazon Pinpoint calculates this rate by dividing the number of messages that were opened by the number of messages that were delivered.

### Bounce rate

The percentage of messages that couldn't be delivered to their intended recipients. This metric only measures *hard bounces*—that is, messages in which the recipient's email address had a permanent issue that prevented the message from being delivered. Amazon Pinpoint calculates this rate by dividing the number of bounced messages by the number of messages sent.

## Campaign runs

This section provides the following metrics that relate to the timing and delivery of your messages each time this campaign ran:

### Run date

The date and time when the campaign run was sent.

### Endpoints targeted

The number of unique endpoints that you attempted to send the message to as part of the campaign run.

### Messages sent

The number of messages that were sent during the campaign run. This number might differ from the number of endpoints targeted if the targeted segment included email addresses that were formatted incorrectly or were known to produce hard bounces. This number also omits endpoints that opted out.

### Messages delivered

The number of messages that were sent from the campaign run and delivered to their intended recipients.

### Delivery rate

The percentage of messages that were sent from the campaign run and delivered to their intended recipients. Amazon Pinpoint calculates this rate by dividing **Messages delivered** by **Messages sent**.

### Total email opened

The number of messages that were sent from the campaign run and opened by their intended recipients. Due to technical limitations, this value only includes recipients who opened the message by using an email client that supports images.

### Email open rate

The percentage of messages that were sent from the campaign run and opened by their intended recipients. Amazon Pinpoint calculates this rate by dividing **Total email opened** by **Messages delivered**.

### **Bounce rate**

The percentage of messages that were sent from the campaign run and couldn't be delivered to their intended recipients. This metric measures only hard bounces. Amazon Pinpoint calculates this rate by dividing the number of messages that bounced during the campaign run by **Messages delivered**.

## **Push notification campaigns**

When you select a standard campaign that sends push notifications, you see the following charts and metrics.

### **Campaign delivery counts**

This section provides the following charts and metrics that relate to the number of push notifications that were sent and delivered for this campaign:

#### **Messages sent**

The number of push notifications that were sent.

#### **Messages delivered**

The number of push notifications that were delivered to their intended recipients. Amazon Pinpoint calculates this number by subtracting the number of notifications that couldn't be delivered from the total number of notifications that you sent.

#### **Endpoint deliveries**

The average number of unique push-notification endpoints that the message was delivered to on each day. The chart shows the number of unique push-notification endpoints that the message was delivered to, for each day in the selected time period.

### **Campaign engagement rates**

This section provides the following charts and metrics that relate to delivery and engagement rates for the push notifications that were sent by this campaign:

#### **Delivery rate**

The percentage of push notifications that were delivered to their intended recipients. Amazon Pinpoint calculates this rate by dividing the number of push notifications that were delivered by the number of push notifications that were sent.

#### **Push open rate**

The percentage of push notifications that were opened by their intended recipients. Amazon Pinpoint calculates this rate by dividing the number of recipients who opened push notifications from you by the number of push notifications that were delivered to their intended recipients.

### **Campaign sessions**

This section provides the following charts and metrics that relate to the number of times that your app was opened by unique endpoints within 24 hours of receiving a push notification from this campaign:

#### **Total sessions**

The number of times that your app was opened by endpoints during the selected time period.

#### **Sessions per endpoint**

Shows the number of times that your app was opened by unique endpoints within 24 hours of receiving the push notification from the campaign, for each day in the selected time period.

### Campaign session heat map

Shows the days and times when users opened your app after receiving the push notification from the campaign. Darker rectangles represent greater numbers of users. Times are based on each user's local time zone.

### Campaign units sold

This section provides the following charts and metrics that relate to the number of units that were purchased by unique endpoints within 24 hours of receiving a push notification from this campaign:

#### Total units sold

The number of units that were purchased by endpoints during the selected time period.

#### Units sold per endpoint

Shows the number of purchases that were made by unique endpoints within 24 hours of receiving the push notification from the campaign, for each day in the analysis period.

### Campaign runs

This section provides the following metrics that relate to the timing and delivery of your push notifications each time this campaign ran:

#### Run date

The date and time when the campaign run was sent.

#### Endpoints targeted

The number of unique endpoints that you attempted to send the push notification to as part of the campaign run.

#### Messages sent

The number of push notifications that were sent during the campaign run. This number might differ from the number of endpoints targeted, if the targeted segment included invalid tokens or endpoints that opted out.

#### Messages delivered

The number of push notifications that were sent from the campaign run and were delivered to their intended recipients.

#### Delivery rate

The percentage of push notifications that were sent from the campaign run and delivered to their intended recipients. Amazon Pinpoint calculates this rate by dividing **Messages delivered** by **Messages sent**.

#### Total push opened

The number of push notifications that were sent from the campaign run and opened by their intended recipients.

#### Push open rate

The percentage of push notifications that were sent from the campaign run and opened by their intended recipients. Amazon Pinpoint calculates this rate by dividing **Total push opened** by **Messages delivered**.

### SMS campaigns

When you select a standard campaign that uses the SMS channel, you see the following charts and metrics.

## Delivery metrics

This section provides the following metrics that relate to the delivery of messages from this campaign:

### Messages sent

The number of messages that were sent.

### Messages delivered

The number of messages that were delivered to their intended recipients. Amazon Pinpoint calculates this number by subtracting the number of messages that couldn't be delivered from the number of messages that were sent.

### Delivery rate

The percentage of messages that were delivered to their intended recipients. Amazon Pinpoint calculates this rate by dividing the number of messages that were delivered by the number of messages that were sent.

### Endpoint deliveries

The average number of unique SMS endpoints that the message was delivered to on each day. The chart shows the number of unique SMS endpoints that the message was delivered to, for each day in the selected time period.

## SMS spend

This section shows the total number of SMS message parts that you sent for the campaign during the selected time period. It also shows the total and average amount of money, in USD, that you spent sending those message parts.

A *message part* is a portion of an SMS message. If an SMS message contains more than the maximum number of characters that are allowed by mobile phone carriers, Amazon Pinpoint automatically splits the message into multiple message parts, and sends each message part to the recipient.

## Campaign runs

This section provides the following metrics that relate to the timing and delivery of your messages each time this campaign ran:

### Run date

The date and time when the campaign run was sent.

### Endpoints targeted

The number of unique endpoints that you attempted to send the message to as part of the campaign run.

### Messages sent

The number of messages that were sent during the campaign run. This number might differ from the number of endpoints targeted if the targeted segment included invalid phone numbers or endpoints that opted out.

### Message parts sent

The number of message parts that were sent during the campaign run. This number might differ from the number of messages sent. This is the case if the campaign message contained more than the maximum number of characters that are allowed by mobile phone carriers.

### Messages delivered

The number of messages that were sent from the campaign run and were delivered to their intended recipients.

### Delivery rate

The percentage of messages that were sent from the campaign run and were delivered to their intended recipients. Amazon Pinpoint calculates this rate by dividing **Messages delivered** by **Messages sent**.

## Transactional messaging charts

The **Transactional messaging** page provides charts and metrics that show how many transactional messages you've sent, and helps you measure recipients' responses to those messages. For example, this page shows the number of transactional email messages that were delivered, opened, clicked, bounced, or reported as spam.

### Note

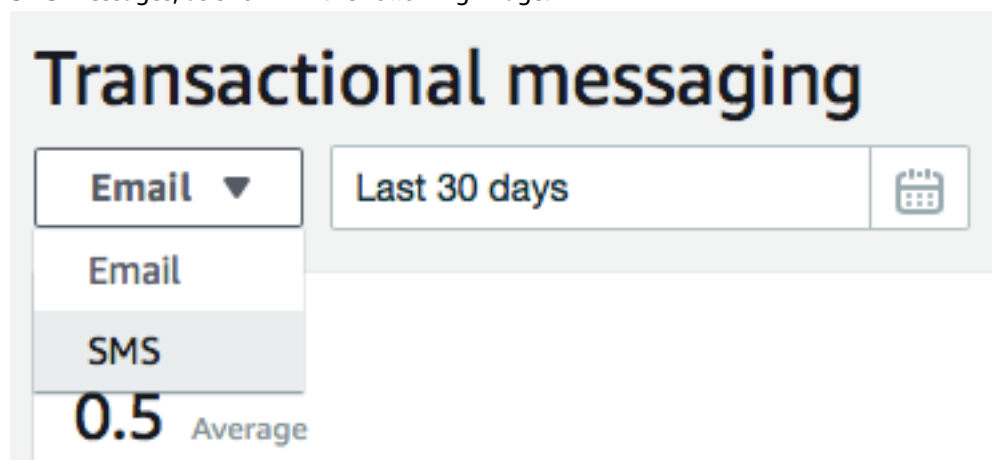
The data on this page only includes information about transactional messages. It doesn't include information about messages that you sent by using campaigns. To see the data for messages that were sent by campaigns, use the [Campaigns charts](#) (p. 204). In addition, it can take up to two hours for new data to appear on this page.

## Viewing the transactional messaging charts

Complete the following steps to view the **Transactional messaging** charts and metrics on the Amazon Pinpoint console. You can filter the data by channel and by date.

### To view and filter the transactional messaging charts and metrics

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that you want to view transactional messaging data for.
3. In the navigation pane, under **Analytics**, choose **Transactional messaging**.
4. Use the menu at the top of the page to choose whether to display data for transactional **Email** or **SMS** messages, as shown in the following image:



5. (Optional) To apply a filter that displays the data for a specific date or range of dates, use the date selector at the top of the page to choose the dates for the time period that you want. After you choose new dates, the page updates to show the data for the selected time period.



## Chart descriptions

The **Transactional messaging** page contains several charts and metrics that provide information about how recipients have responded to the transactional email and SMS messages that you sent during the selected time period.

For SMS messages, this page also provides information about the number and price of the message parts that you sent. A *message part* is a portion of an SMS message. If an SMS message contains more than the maximum number of characters that are allowed by mobile phone carriers, Amazon Pinpoint automatically splits the message into multiple message parts. Each message part contains some additional information about the part of the message that came before it. When a recipient's device receives messages that are separated in this way, it uses this additional information to join the incoming message parts into one message.

### Transactional SMS charts

When you use the channel selector to display the data for transactional SMS messages, you see the following charts and metrics:

#### Messages sent

Shows the number of messages that you sent:

- Average – The average number of messages that were sent each day of the selected time period.
- Total – The total number of messages that were sent during the selected time period.
- Change over period – The percentage of change between the number of messages that were sent on the first and last days of the selected time period. If this value is an em dash (—), no messages were sent on the first day of the time period. Amazon Pinpoint can't calculate the percentage of change if the value is zero (0) for the first day of the time period.

The chart shows the total number of messages that were sent on each day of the selected time period.

#### Message parts sent

Shows the number of message parts that you sent:

- Average – The average number of message parts that were sent each day of the selected time period.
- Total – The total number of message parts that were sent during the selected time period.
- Change over period – The percentage of change between the number of message parts that were sent on the first and last days of the selected time period. If this value is an em dash (—), no message parts were sent on the first day of the time period. Amazon Pinpoint can't calculate the percentage of change if the value is zero (0) for the first day of the time period.

The chart shows the total number of message parts that were sent on each day of the selected time period.

#### Deliveries

Shows the number of messages that were delivered to recipients:

- Average – The average number of messages that were delivered each day of the selected time period.
- Total – The total number of messages that were delivered during the selected time period.
- Change over period – The percentage of change between the number of messages that were delivered on the first and last days of the selected time period. If this value is an em dash (—), no messages were delivered on the first day of the time period. Amazon Pinpoint can't calculate the percentage of change if the value is zero (0) for the first day of the time period.

The chart shows the total number of messages that were delivered on each day of the selected time period.

There are several factors that could cause these values to differ from the average and total number of messages that were sent. For example, if you send an SMS message to a phone number that doesn't exist, it is counted as sent, but not delivered.

#### Delivery rate

Shows the average percentage of messages that were sent and delivered to recipients during the selected time period. Amazon Pinpoint calculates the average delivery rate by first calculating the daily delivery rate for each day of the time period. (The daily delivery rate is the number of messages that were delivered on a certain day divided by the number of messages that were sent on that day.) Amazon Pinpoint then calculates the sum of the daily delivery rates, and divides the sum by the number of days in the time period.

This section also shows the percentage of change between the daily delivery rates for the first and last days of the selected time period. If this value is an em dash (—), no messages were delivered on the first day of the time period. Amazon Pinpoint can't calculate the percentage of change if the value is zero percent (0%) for the first day of the time period.

The chart shows the delivery rate for each day of the selected time period.

#### Messages by country or region

Lists all the countries that you sent messages to during the selected time period. For each country, this table shows the number of messages that you sent to recipients in that country (**Messages sent**), the number of message parts that you sent to recipients in that country (**Message parts sent**), the number of messages that were delivered to recipients in that country (**Messages delivered**), and the average price that you paid for each message part that you sent to a recipient in that country (**Average price per part**).

#### Message delivery errors

Shows the number of errors that occurred as a result of the messages that you sent during the selected time period. To view a list of all the types of errors that occurred, expand the **Show all SMS errors** section. For each error, this section shows the number of times that the error occurred during the selected time period (**Total over period**), the average number of times that the error occurred for each day (**Average over period**), and the percentage of change between the number of errors that occurred on the first and last days of the time period (**Change over period**).

## Transactional email charts

When you use the channel selector to view the data for transactional email messages, you see the following charts and metrics:

#### Sends

Shows the number of messages that were sent:

- Average – The average number of messages that were sent each day of the selected time period.
- Total – The total number of messages that were sent during the selected time period.
- Change over period – The percentage of change between the number of messages that were sent on the first and last days of the selected time period. If this value is an em dash (—), no messages were sent on the first day of the time period. Amazon Pinpoint can't calculate the percentage of change if the value is zero (0) for the first day of the time period.

The chart shows the total number of messages that were sent on each day of the selected time period.

## Deliveries

Shows the number of messages that were delivered to recipients:

- Average – The average number of messages that were delivered each day of the selected time period.
- Total – The total number of messages that were delivered during the selected time period.
- Change over period – The percentage of change between the number of messages that were delivered on the first and last days of the selected time period. If this value is an em dash (—), no messages were delivered on the first day of the time period. Amazon Pinpoint can't calculate the percentage of change if the value is zero (0) for the first day of the time period.

The chart shows the total number of messages that were delivered on each day of the selected time period.

There are several factors that could cause these values to differ from the average and total number of messages that were sent. For example, if a message bounces, it is counted as sent, but not delivered.

## Opens

Shows the number of messages that were opened by recipients:

- Average – The average number of messages that were opened each day of the selected time period.
- Total – The total number of messages that were opened during the selected time period.
- Change over period – The percentage of change between the number of messages that were opened on the first and last days of the selected time period. If this value is an em dash (—), no messages were opened on the first day of the time period. Amazon Pinpoint can't calculate the percentage of change if the value is zero (0) for the first day of the time period.

The chart shows the total number of messages that were opened on each day of the selected time period.

Amazon Pinpoint adds a very small, transparent image to the end of each transactional message that you send. When a recipient opens a message that contains one of these images, their email client downloads the image from our servers. We count the message as opened. If a recipient opens the same message more than once, we count each of those opens separately.

## Clicks

Shows the number of times that recipients clicked links in the messages:

- Average – The average number of clicks that occurred each day of the selected time period.
- Total – The total number of clicks that occurred during the selected time period.
- Change over period – The percentage of change between the number of clicks that occurred on the first and last days of the selected time period. If this value is an em dash (—), no clicks occurred on the first day of the time period. Amazon Pinpoint can't calculate the percentage of change if the value is zero (0) for the first day of the time period.

The chart shows the total number of clicks that occurred on each day of the selected time period.

When you send a message that contains links, Amazon Pinpoint replaces those links with links that refer to our servers. When a recipient clicks one of these links, we redirect the recipient to the intended location, and count the click. If a single recipient clicks multiple links in a message, or clicks the same link more than once, each click is counted as a separate event.

## Complaints

Shows the number of messages that were reported as spam by recipients:

- Average – The average number of messages that were reported as spam on each day of the selected time period.

- **Total** – The total number of messages that were reported as spam during the selected time period.
- **Change over period** – The percentage of change between the number of messages that were reported as spam on the first and last days of the selected time period. If this value is an em dash (—), no messages were reported as spam on the first day of the time period. Amazon Pinpoint can't calculate the percentage of change if the value is zero (0) for the first day of the time period.

The chart shows the total number of messages that were reported as spam on each day of the selected time period.

When a recipient applies **Mark as Spam** or a similar function to a message by using their email client, the recipient's email provider notifies us that the message was reported as spam.

### **Delivery rate**

Shows the average percentage of messages that were sent and delivered to recipients during the selected time period. Amazon Pinpoint calculates the average delivery rate by first calculating the daily delivery rate for each day of the time period. (The daily delivery rate is the number of messages that were delivered on a certain day divided by the number of messages that were sent on that day.) Amazon Pinpoint then calculates the sum of the daily delivery rates and divides the sum by the number of days in the time period.

This section also shows the percentage of change between the daily delivery rates for the first and last days of the selected time period. If this value is an em dash (—), no messages were delivered on the first day of the time period. Amazon Pinpoint can't calculate the percentage of change if the value is zero percent (0%) for the first day of the time period.

### **Bounce rate**

Shows the average percentage of messages that bounced during the selected time period. Amazon Pinpoint calculates the average bounce rate by first calculating the daily bounce rate for each day in the time period that you selected. (The daily bounce rate is the number of messages that bounced on a certain day divided by the number of messages that were sent on that day.) Amazon Pinpoint then calculates the sum of the daily bounce rates and divides the sum by the number of days in the time period.

This section also shows the percentage of change between the daily bounce rates for the first and last days of the selected time period. If this value is an em dash (—), no messages bounced on the first day of the time period. Amazon Pinpoint can't calculate the percentage of change if the value is zero percent (0%) for the first day of the time period.

### **Complaint rate**

Shows the average percentage of messages that were reported as spam by recipients during the selected time period. Amazon Pinpoint calculates the average complaint rate by first calculating the daily complaint rate for each day in the time period that you selected. (The daily complaint rate is the number of messages that were reported as spam on a certain day divided by the number of messages that were sent on that day.) Amazon Pinpoint then calculates the sum of the daily complaint rates and divides the sum by the number of days in the time period.

This section also shows the percentage of change between the daily complaint rates for the first and last days of the selected time period. If this value is an em dash (—), no messages were reported as spam on the first day of the time period. Amazon Pinpoint can't calculate the percentage of change if the value is zero percent (0%) for the first day of the time period.

### **Unique user events**

Shows the number of unique recipients who opened messages (**Unique message opens**) and clicked links in messages (**Unique message clicks**):

- **Average** – The average number of open or click events that occurred on each day of the selected time period.
- **Total** – The total number of open or click events that occurred during the selected time period.

- **Change over period** – The percentage of change between the number of open or click events that occurred on the first and last days of the selected time period. If this value is an em dash (—), no open or click events occurred on the first day of the time period. Amazon Pinpoint can't calculate the percentage of change if the value is zero (0) for the first day of the time period.

The chart shows the total number of unique recipients that opened messages and clicked links in messages on each day of the selected time period.

Unlike the **Opens** and **Clicks** metrics, these metrics show the number of unique recipients who opened messages or clicked links in messages, as opposed to the total number of messages that were opened and click events that occurred. In other words, if a single user opens a message five times, the **Opens** chart would show five open events, but this chart would show only one open event.

#### Bounce and complaint events

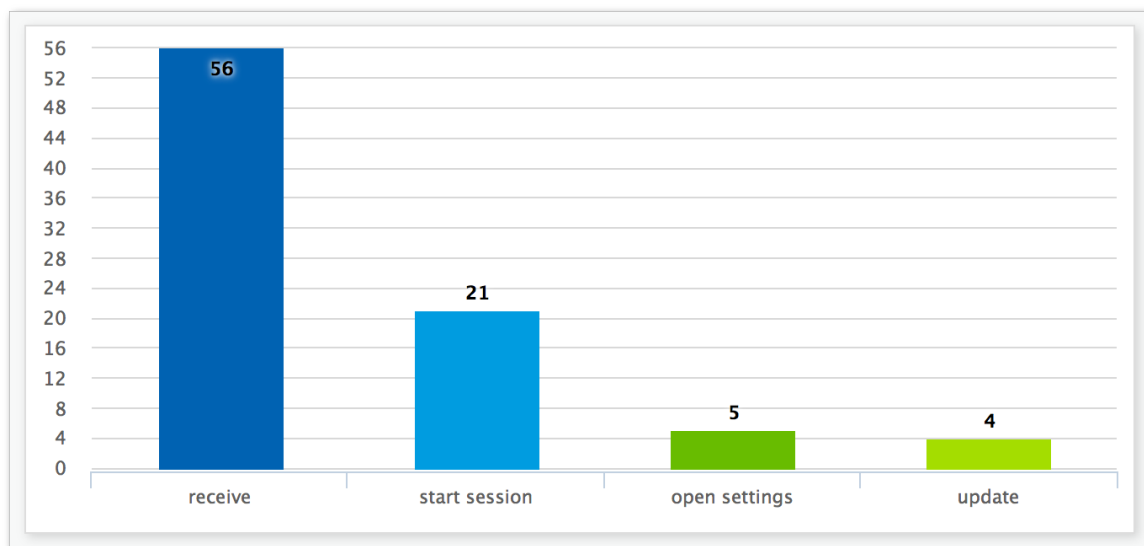
Shows the number of soft bounces, hard bounces, and complaints that occurred on each day of the selected time period. Soft bounces are usually temporary in nature. For example, if the recipient's inbox is full or their mail server is temporarily offline when we attempt to deliver a message, we count it as a soft bounce. Hard bounces are permanent. For example, if a recipient's email address doesn't exist or their mail server doesn't accept messages from your domain, we count it as a hard bounce.

## Creating funnel charts with Amazon Pinpoint

You can use Amazon Pinpoint to analyze *funnels*, which are charts that show how many users complete each of a series of steps. For example, the series of steps in a funnel can be a conversion process that results in a purchase (as in a shopping cart), or some other intended user behavior.

By monitoring funnels, you can assess whether conversion rates have improved because of changes to your app or because of an Amazon Pinpoint campaign.

After you specify which steps belong in your funnel, the **Create a funnel** page displays a chart like the following example:



This example chart shows the percentage of users who completed each step in the process of updating an app. By comparing the values between columns, you can determine the drop-off rates between steps.

In this example, there is a 35 percent drop-off between users who receive a notification and those who start an app session. Then there is a 19 percent drop-off between users who start a session and those who open the app settings page.

To create a funnel, you specify each event that's part of the conversion process that you want to analyze. When you add events to your funnel, you can choose any event that's reported by your app. Your app can report the following types of events:

- **Standard events** – These include events that automatically report when an app session starts or stops. The names of event types for standard events are denoted with an underscore prefix, as in `_session.start`. Standard events also include monetization events that report in-app purchases.
- **Custom events** – These are defined by you to monitor activities that are specific to your app. Some examples are completing a level in a game, posting to social media, or setting particular app preferences.

For information about configuring your app to report events, see [the section called “Streaming event data” \(p. 216\)](#).

## Enabling funnels

To provide you with the best possible experience, we hide the funnels reports if you haven't used them in the past 90 days.

If the funnels page shows a message stating that the funnels reports are hidden, choose **Enable funnels**. When you do, we begin restoring the funnels for your account in the current AWS Region. Depending on the amount of data that's associated with your account, this process can take up to 72 hours to complete.

## Creating funnels

If the funnels data for your Amazon Pinpoint account has already been loaded, you can start creating new funnels.

### To create a funnel

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that you want to create a funnel for.
3. In the navigation pane, under **Analytics**, choose **Funnels**.
4. Choose **Create a funnel**.
5. For **Funnel name**, enter a name for the funnel.
6. Choose the events that you want to add to the funnel chart. For each event, specify the following:
  - **Series name** – A name for the event chart.
  - **Event** – The type of event that's reported to Amazon Pinpoint.
  - **Attributes** – The attribute-value pairs that are assigned to the events that you want to add to the chart.
7. To add more events, choose **Create another series**. You can also copy an event by choosing **Duplicate this series**.

## Streaming events with Amazon Pinpoint

Amazon Pinpoint can stream engagement and application usage data, known as *event data*, to supported AWS services that provide more options for analysis and storage.

After you integrate your application with Amazon Pinpoint, it reports events, such as the number of sessions started by users. Amazon Pinpoint provides this data in the analytics charts and metrics for that application in the console. The analytics data also shows campaign events generated by Amazon Pinpoint, such as the number of devices that a campaign sent messages to.

Amazon Pinpoint retains this data for 90 days. To keep this data for an indefinite period of time or to analyze it with custom queries and tools, you can configure Amazon Pinpoint to send event data to Amazon Kinesis.

**Topics in this section:**

- [About Amazon Kinesis \(p. 217\)](#)
- [Streaming Amazon Pinpoint events to Kinesis \(p. 217\)](#)

## About Amazon Kinesis

The Kinesis platform offers services that you can use to load and analyze streaming data on AWS. You can configure Amazon Pinpoint to send application, campaign, and journey events to Amazon Kinesis Data Streams or Amazon Kinesis Data Firehose. By streaming your events, you enable more flexible options for data analysis, such as:

- Converging the events from multiple applications into one stream so that you can analyze this data as a collection.
- Analyzing events with AWS query services. For example, you can use Amazon Kinesis Data Analytics to run SQL queries against streaming data.

## About Amazon Kinesis Data Streams

Amazon Kinesis Data Streams is a service that you can use to build custom applications that process or analyze your streaming data. For example, streaming your events to Kinesis Data Streams is useful if you want to use event data in custom dashboards, generate alerts based on events, or dynamically respond to events.

For more information, see the [Amazon Kinesis Data Streams Developer Guide](#).

## About Amazon Kinesis Data Firehose

Amazon Kinesis Data Firehose is a service that you can use to deliver your streaming data to AWS data stores, including Amazon Simple Storage Service (Amazon S3), Amazon Redshift, or Amazon Elasticsearch Service (Amazon ES). For example, streaming your events to Kinesis Data Firehose is useful if you want to:

- Use your own analytics applications and tools to analyze events in Amazon S3, Amazon Redshift, or Amazon ES.
- Send your events to Amazon S3 so that you can write SQL queries on this data with Amazon Athena.
- Back up your event data for long-term storage in Amazon S3.

For more information, see the [Amazon Kinesis Data Firehose Developer Guide](#).

## Streaming Amazon Pinpoint events to Kinesis

The Kinesis platform offers services that you can use to load and analyze streaming data on AWS. You can configure Amazon Pinpoint to send application, campaign, and journey events to Amazon Kinesis Data Streams for processing by external applications or third-party analytics tools. You can also

configure Amazon Pinpoint to stream this event data to AWS data stores (such as Amazon Redshift) using Amazon Kinesis Data Firehose.

## Prerequisites

Before you complete the procedure in this section, create an Amazon Kinesis stream or a Kinesis Data Firehose delivery stream in the same account in which you use Amazon Pinpoint. To learn more about creating Kinesis streams, see [Creating and updating data streams](#) in the *Amazon Kinesis Data Streams Developer Guide*. To learn more about creating Kinesis Data Firehose delivery streams, see [Creating an Amazon Kinesis Data Firehose delivery stream](#) in the *Amazon Kinesis Data Firehose Developer Guide*.

You can optionally create an IAM role that grants permission to send data to your stream. If you don't create this role, Amazon Pinpoint can create one for you. For more information about creating this policy manually, see [IAM role for streaming events to Kinesis](#) in the *Amazon Pinpoint Developer Guide*.

## Setting up event streaming

Complete the following steps in Amazon Pinpoint to set up event streaming.

### To set up event streaming

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that you want to set up data streaming for.
3. In the navigation pane, under **Settings**, choose **Event stream**.
4. In the **Services** section, choose **Edit**.
5. Choose **Stream to Amazon Kinesis**.
6. Under **Choose a stream type**, choose one of the following options:
  - **Send events to an Amazon Kinesis Data Stream** – Choose this option if you want to send Amazon Pinpoint event data to an external application for analysis.
  - **Send events to an Amazon Kinesis Data Firehose stream** – Choose this option if you want to send event data to an AWS data store, such as Amazon Redshift.
7. For **Amazon Kinesis stream**, choose the Amazon Kinesis stream that you want to use to export the data.

#### Note

If you haven't already created an Amazon Kinesis stream, go to the Amazon Kinesis console at <https://console.aws.amazon.com/kinesis>. For more information about creating streams, see the [Amazon Kinesis Data Streams Developer Guide](#) or the [Amazon Kinesis Data Firehose Developer Guide](#).

8. Under **IAM role**, choose one of the following options:
  - **Use an existing role** – Choose this option to have Amazon Pinpoint assume an IAM role that already exists in your account. The role that you select must allow the `firehose:PutRecordBatch` action. For an example of a policy that allows this action, see [Permissions Policies](#) in the *Amazon Pinpoint Developer Guide*.
  - **Automatically create a role** – Choose this option to automatically create an IAM role with the required permissions. This role authorizes Amazon Pinpoint to send data to the stream that you chose in step 7.
9. Choose **Save**.

As Amazon Pinpoint receives events for your project, it sends this data to your Kinesis stream. For information about the data that Amazon Pinpoint sends for an event, see [Streaming Amazon Pinpoint Events to Kinesis](#) in the *Amazon Pinpoint Developer Guide*.



# Amazon Pinpoint message templates

If you frequently design and send a certain type of message, such as a weekly newsletter or an appointment reminder, you can create and save it as a message template. You can then use the template as a starting point each time you need to send that type of message, instead of designing and writing the message again.

A *message template* is a set of content and settings that you can create, save, and then reuse in messages that you send for any of your Amazon Pinpoint projects. When you create a template, you specify the content that you want to reuse in various components of messages that are based on the template.

These components are referred to as *template parts*. They can contain static text, personalized content, images, and other design elements, depending on the type of template. A template part can also contain channel-specific settings. For example, a template part in a push notification template can specify a custom sound to play or an image to display when a recipient receives a push notification that's based on the template.

When you create a message, you can choose a template to use for the message. If you choose a template, Amazon Pinpoint populates the message with the content and settings in the template.

You can design the following types of message templates in Amazon Pinpoint:

- *Email templates* for email messages that you send from campaigns or journeys, or to a limited audience as direct or test messages.
- *Push notification templates* for push notifications that you send from campaigns, or to a limited audience as direct or test messages.
- *SMS templates* for SMS text messages that you send from campaigns, or to a limited audience as direct or test messages.
- *Voice templates* for voice messages that you send as direct or test messages.

In addition to supporting multiple types of message templates, Amazon Pinpoint supports versioning for message templates. Versioning provides a way for you to design and change a template over time, while also creating and maintaining a history of the template. Versioning also provides a way for you to specify which version of a template can be used in messages. To learn more about template versions, see [Managing versions of message templates \(p. 254\)](#).

The topics in this chapter explain how to create and manage message templates for your Amazon Pinpoint account.

## Topics

- [Creating email templates \(p. 220\)](#)
- [Creating push notification templates \(p. 221\)](#)
- [Creating SMS templates \(p. 224\)](#)
- [Creating voice templates \(p. 225\)](#)
- [Adding personalized content to message templates \(p. 226\)](#)
- [Using message template helpers \(p. 232\)](#)
- [Managing message templates \(p. 251\)](#)
- [Managing versions of message templates \(p. 254\)](#)

## Creating email templates

An *email template* is a type of message template that contains content and settings that you want to create, save, and reuse in email messages that you send for any of your Amazon Pinpoint projects. You can use an email template in any type of email message that you create and send by using Amazon Pinpoint.

When you create an email template, you specify the content and settings that you want to reuse in various components of email messages that are based on the template. These components, referred to as *template parts*, can be the message subject, the message body, or both. The content can be static text, personalized content, images, or other design elements. A template part can also be a setting, such as the message body to use if a recipient's email application doesn't display HTML content.

When you create an email message that's based on a template, Amazon Pinpoint populates the message with the content and settings that you defined in the template.

### To create an email template

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, choose **Message templates**.
3. Choose **Create template**.
4. Under **Channel**, choose **Email**.
5. Under **Template details**, for **Template name**, enter a name for the template. The name has to begin with a letter or number. It can contain up to 128 characters. The characters can be letters, numbers, underscores (\_), or hyphens (-).
6. (Optional) For **Version description**, enter a brief description of the template. The description can contain up to 500 characters.
7. Under **Email details**, use the following options to specify the content for messages that use the template:
  - For **Subject**, enter the text that you want to display in the subject line of the message.
  - For **Message**, enter the content that you want to display in the body of the message.

#### Tip

For the message body, you can enter the content by using either the HTML or Design view. In the HTML view, you can manually enter HTML content, including formatting, links, and other features that you want to include in the message. In the Design view, you can use a rich text editor to enter the content. Use the formatting toolbar to apply formatting and add links and other features to the content. To switch views, choose **HTML** or **Design** from the view selector above the message editor.

You can also include personalized content in the subject and body of the template. To do this, add message variables that refer to specific attributes that you or Amazon Pinpoint created, such as an attribute that stores a user's first name. By using message variables, you can display different content for each recipient of a message that uses the template. To use a message variable, choose the name of an existing attribute from the **Attribute finder**. Amazon Pinpoint creates a message variable for the attribute and copies it to your clipboard. Paste the variable in the location that you want. For more information, see [Adding personalized content to message templates \(p. 226\)](#).

8. (Optional) Under **Plain text version**, enter the content that you want to display in the body of messages that use the template and are sent to recipients whose email applications don't display HTML content.
9. If you added personalized content to the template by using message variables, specify a default value for each variable. If you do this, Amazon Pinpoint replaces the variable with the value that you specify, if a corresponding value doesn't exist for a recipient. We recommend that you do this for each variable in the template.

To specify default values for variables, expand the **Default attribute values** section. Then enter the default value that you want to use for each variable. If you don't specify a default value and a value doesn't exist for a recipient, Amazon Pinpoint does not send the message.

10. When you finish entering content and settings for the template, choose **Create**.

If you want to test the template before you use it in an email message that you send to users, you can [send a test message \(p. 189\)](#) that uses the template. If you do this, ensure that you first complete step 9 to specify default values for all the variables in the template. Otherwise, the message might not be sent or it might not render correctly.

## Creating push notification templates

A *push notification template* is a type of message template that contains content and settings that you want to create, save, and reuse in push notifications that you send for any of your Amazon Pinpoint projects. When you create a push notification that's based on a template, Amazon Pinpoint populates the notification with the content and settings that you defined in the template. You can use a push notification template in push notifications that you send from campaigns, or to a limited audience as direct or test messages.

When you create a push notification template, you specify the content and settings that you want to reuse in various components of push notifications that are based on the template. These components, referred to as *template parts*, can contain text (such as the title or body of a notification) or settings (such as a custom sound to play when a recipient receives a notification).

To customize a template for specific push notification channels, you can create multiple sets of template parts in each template—a default set and one or more channel-specific sets. The default set contains the content and settings that you want to use by default for any push notification channel. For example, this can include the text to display in the title or body of a notification. A channel-specific set contains any content and settings that you want to use for a specific channel. This can include a custom image to display or an action to occur if a recipient taps a notification. For example, you can create a template that uses the same default text for the title and body of a notification that's sent through any channel, but displays a different image for each channel. By adding channel-specific settings to a template, you can tailor notifications to use features that are unique to a recipient's device.

### To create a push notification template

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, choose **Message templates**.
3. Choose **Create template**.
4. Under **Channel**, choose **Push notifications**.
5. Under **Template details**, for **Template name**, enter a name for the template. The name has to begin with a letter or number. It can contain up to 128 characters. The characters can be letters, numbers, underscores (`_`), or hyphens (`-`).
6. (Optional) For **Version description**, enter a brief description of the template. The description can contain up to 500 characters.
7. Under **Push notification details**, choose **Standard message**.

An additional option is to create a template that's formatted as a *raw message*. A *raw message* is a type of push notification that specifies all of a notification's content and settings as a JSON object. This type of notification can be useful for cases such as sending custom data to a mobile app for processing by that app, instead of the push notification service.

If you choose the **Raw message** option, the message editor displays an outline of the code to use for the template. In the message editor, enter the settings that you want to use for each push notification service, including any optional settings—such as images, sounds, and actions—that you want to specify for the template. For more information, see the documentation for the push notification services that you use. When you finish entering all the raw message content, skip to [step 10](#).

8. Choose any of the following options to specify the default content and settings for standard push notifications that use the template:

- For **Title**, enter the title that you want to display above the notification message on a recipient's device.
- For **Body**, enter the text that you want to display in the body of the notification message.

**Tip**

You can include personalized content in the title and body of the template. To do this, add message variables that refer to specific attributes that you or Amazon Pinpoint created, such as an attribute that stores a user's first name. By using message variables, you can display different content for each recipient of a push notification that uses the template.

To use a message variable, choose the name of an existing attribute from the **Attribute finder**. Amazon Pinpoint creates a message variable for the attribute and copies it to your clipboard. Paste the variable in the location that you want. For more information, see [Adding personalized content to message templates \(p. 226\)](#).

- For **Custom alert sound**, enter the name of the audio file that contains the custom sound that you want to play when a recipient receives the push notification. This name has to match the name of an audio file on a recipient's device.
  - For **Action**, choose what you want a recipient's device to do if the recipient taps the push notification:
    - **Open your app** – Open your app or bring it to the foreground if it was sent to the background.
    - **Go to a URL** – Open the default browser on the recipient's device and load a specific webpage. If you choose this option, enter the URL of the webpage in the **Destination URL** box.
    - **Open a deep link** – Open your app and display a specific user interface in the app. If you choose this option, enter the URL of the interface in the **Destination URL** box.
9. (Optional) To customize the template for specific push notification channels, choose the appropriate channel tab under **Customize content for individual push services**. Then choose the options that you want for the channel.

If you select the **Override default push content** check box on a channel tab, Amazon Pinpoint automatically replaces the default content and settings that you chose in step 8 with the options that you choose on the tab. If you want to keep the default content and settings and just customize the template to use additional channel-specific settings, don't select this check box.

## Apple

Use these options to specify custom content and settings for push notifications that you send through the Apple Push Notification service (APNs) channel to apps that are running on iOS devices.

In addition to the standard content and settings, you can include a custom image or video in push notifications that use the template. To do this, enter the URL for the image or video file in the **iOS media** box. The URL must be publicly accessible. Otherwise, the recipient's device won't be able to display the image or video.

## Google

Use these options to specify custom content and settings for push notifications that you send through the Google Firebase Cloud Messaging (FCM) channel to apps that are running on Android devices.

In addition to the standard content and settings, you can choose the following options to display custom images in push notifications that use the template:

- **Android image** – Enter the URL of the image to display in the body of the push notification.
- **Android icon** – Enter the URL of the large icon image to display in the content view of the push notification.
- **Android small icon** – Enter the URL of the small icon image to display in the status bar and in the content view of the push notification.

## Amazon

Use these options to specify custom content and settings for push notifications that you send through the Amazon Device Messaging (ADM) channel to apps that are running on Amazon devices, such as Kindle Fire tablets.

In addition to the standard content and settings, you can choose the following options to display custom images in push notifications that use the template:

- **Android image** – Enter the URL of the image to display in the body of the push notification.
- **Android icon** – Enter the URL of the large icon image to display in the content view of the push notification.
- **Android small icon** – Enter the URL of the small icon image to display in the status bar and in the content view of the push notification.

## Baidu

Use these options to specify custom content and settings for push notifications that you send through the Baidu channel to apps that use the Baidu Cloud Push platform.

In addition to the standard content and settings, you can choose the following options to display custom images in push notifications that use the template:

- **Android image** – Enter the URL of the image to display in the body of the push notification.
- **Android icon** – Enter the URL of the large icon image to display in the content view of the push notification.
- **Android small icon** – Enter the URL of the small icon image to display in the status bar and in the content view of the push notification.

10.

If you added personalized content to the template by using message variables, specify a default value for each variable. If you do this, Amazon Pinpoint replaces the variable with the value that you specify, if a corresponding value doesn't exist for a recipient. We recommend that you do this for each variable in the template.

To specify default values for variables, expand the **Default attribute values** section. Then enter the default value that you want to use for each variable. If you don't specify a default value and a value doesn't exist for a recipient, Amazon Pinpoint does not send the message.

11. When you finish entering content and settings for the template, choose **Create**.

If you want to test the template before you use it in a push notification that you send to users, you can [send a test notification \(p. 190\)](#) that uses the template. If you do this, ensure that you first complete step 10 to specify default values for all the variables in the template. Otherwise, the push notification might not be sent or it might not render correctly.

## Creating SMS templates

An *SMS template* is a type of message template that contains content and settings that you want to create, save, and reuse in SMS text messages that you send for any of your Amazon Pinpoint projects. You can use an SMS template in text messages that you send from campaigns, or to a limited audience as direct or test messages.

When you create an SMS template, you specify the settings and content that you want to reuse in the body of text messages that are based on the template. When you create a message that's based on the template, Amazon Pinpoint populates the message with the settings and content that you defined in the template.

### To create an SMS template

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, choose **Message templates**.
3. Choose **Create template**.
4. Under **Channel**, choose **SMS**.
5. Under **Template details**, for **Template name**, enter a name for the template. The name has to begin with a letter or number. It can contain up to 128 characters. The characters can be letters, numbers, underscores (`_`), or hyphens (`-`).
6. (Optional) For **Version description**, enter a brief description of the template. The description can contain up to 500 characters.
7. Under **SMS details**, for **Message**, enter the content that you want to display in the body of messages that use the template. The message body can contain up to 1,600 characters.

#### Tip

You can include personalized content in the body of the template. To do this, add message variables that refer to specific attributes that you or Amazon Pinpoint created, such as an attribute that stores a user's first name. By using message variables, you can display different content for each recipient of a message that uses the template.

To use a message variable, choose the name of an existing attribute from the **Attribute finder**. Amazon Pinpoint creates a message variable for the attribute and copies it to your clipboard. Paste the variable in the location that you want. For more information, see [Adding personalized content to message templates \(p. 226\)](#).

8. If you added personalized content to the template by using message variables, specify a default value for each variable. If you do this, Amazon Pinpoint replaces the variable with the value that you specify, if a corresponding value doesn't exist for a recipient. We recommend that you do this for each variable in the template.

To specify default values for variables, expand the **Default attribute values** section. Then enter the default value that you want to use for each variable. If you don't specify a default value and a value doesn't exist for a recipient, Amazon Pinpoint does not send the message.

9. When you finish entering content and settings for the template, choose **Create**.

If you want to test the template before you use it in a message that you send to users, you can [send a test message \(p. 191\)](#) that uses the template. If you do this, ensure that you first complete step 8 to specify default values for all the variables in the template. Otherwise, the message might not be sent or it might not render correctly.

## Creating voice templates

A *voice template* is a type of message template that contains content and settings that you want to create, save, and reuse in voice messages that you send for any of your Amazon Pinpoint projects. You can use a voice template in voice messages that you send as direct or test messages.

When you create a voice template, you specify the content and settings that you want to reuse in various components of voice messages that are based on the template. These components are referred to as *template parts*. They can contain the text of the message script or settings, such as the voice to use when delivering the message. The message script can include static text and, optionally, personalized content that you define.

When you create a voice message that's based on a template, Amazon Pinpoint populates the message with the content and settings that you defined in the template.

### To create a voice template

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, choose **Message templates**.
3. Choose **Create template**.
4. Under **Channel**, choose **Voice**.
5. Under **Template details**, for **Template name**, enter a name for the template. The name has to begin with a letter or number. It can contain up to 128 characters. The characters can be letters, numbers, underscores (`_`), or hyphens (`-`).
6. (Optional) For **Version description**, enter a brief description of the template. The description can contain up to 500 characters.
7. Under **Voice message details**, for **Message**, enter the text that you want to use as the message script for messages that use the template. The script can contain up to 10,000 characters and has to be in plaintext format.

#### Tip

You can include personalized content in the message script. To do this, add message variables that refer to specific attributes that you or Amazon Pinpoint created, such as an attribute that stores a user's first name. By using message variables, you can play different content for each recipient of a message that uses the template.

To use a message variable, choose the name of an existing attribute from the **Attribute finder**. Amazon Pinpoint creates a message variable for the attribute and copies it to your clipboard. Paste the variable in the location that you want. For more information, see [Adding personalized content to message templates \(p. 226\)](#).

8. For **Language and region**, choose the language that the text of the message script is written in. Amazon Pinpoint uses this setting to determine which phonemes and other language-specific settings to use when it converts the text of the script to speech.
9. For **Voice**, choose the voice that you want to speak the message to recipients. Each voice is created using native language speakers, so there are variations from voice to voice, even within the same language. Therefore, it's a good idea to test each voice with your script.

The list of voices changes based on the language that you choose in step 8. In most cases, the list includes at least one male and one female voice. In some cases, only one voice is available. We continually add support for additional languages and create voices for supported languages.

10. Choose **Play message** to test how the message will sound when it's delivered to recipients. Adjust the content and settings until the template has the design that you want.
11. If you added personalized content to the template by using message variables, specify a default value for each variable. If you do this, Amazon Pinpoint replaces the variable with the value that you specify, if a corresponding value doesn't exist for a recipient. We recommend that you do this for each variable in the template.



To specify default values for variables, expand the **Default attribute values** section. Then enter the default value that you want to use for each variable. If you don't specify a default value and a value doesn't exist for a recipient, Amazon Pinpoint does not send the message.

12. When you finish entering content and settings for the template, choose **Create**.

## Adding personalized content to message templates

To deliver dynamic, personalized content in messages that use a template, add *message variables* to the message template. A *message variable* is a placeholder that refers to a specific attribute that you or Amazon Pinpoint created to store information about your users. Each attribute typically corresponds to a characteristic of a user, such as a user's first name or the city where they live. By adding message variables to templates, you can use these attributes to deliver custom content to each recipient of a message that uses a template.

If a template contains message variables, Amazon Pinpoint replaces each variable with the current, corresponding value of the attribute for each recipient. It does this each time it sends a message that uses the template. This means that you can send personalized content to each recipient without creating multiple, customized versions of a message or message template. You can also feel confident that the message contains the latest information that you have for a recipient.

For example, if your project is a fitness application for runners and it includes attributes for each user's first name, preferred activity, and personal record, you could use the following text and message variables in a template:

```
Hi {{User.UserAttributes.FirstName}}, congratulations  
on your new {{User.UserAttributes.Activity}} record of  
{{User.UserAttributes.PersonalRecord}}!
```

When you send a message that uses the template, Amazon Pinpoint replaces the variables with the current value of each attribute for each recipient. The following examples show this.

### Example 1

```
Hi Sofia, congratulations on your new half marathon record of 1:42:17!
```

### Example 2

```
Hi Alejandro, congratulations on your new 5K record of 20:52!
```

If an attribute value doesn't exist for a recipient, Amazon Pinpoint can replace a variable with a default value that you specify for the variable. For example, if a user of your fitness application hasn't chosen their preferred activity, you could use `running` as a default value for the `{{User.UserAttributes.Activity}}` variable. In this case, Amazon Pinpoint replaces the variable as shown in the following examples:

### Example 1

```
Hi Jane, congratulations on your new running record of 1:42:17!
```

### Example 2

```
Hi John, congratulations on your new running record of 20:52!
```

If you don't specify a default value and a value doesn't exist for a recipient, Amazon Pinpoint omits all text for the variable when it sends a message to that recipient. For example:



Hi Mary, congratulations on your new record of 20:52!

As a best practice, we recommend that you specify a default value for each variable that you include in a template.

## Adding message variables

You can add message attributes to a new template you create or to an existing template. If you add variables to an existing template, Amazon Pinpoint doesn't necessarily apply the changes to messages that use the template and haven't been sent yet, such as campaign messages that are scheduled to be sent at a later time. This depends on the version of the template that you add variables to and how you configured the messages that use the template. For more information, see [Managing versions of message templates \(p. 254\)](#).

### To add a message variable to a message template

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, choose **Message templates**.
3. On the **Message templates** page, do one of the following:
  - To create a new template and add a message variable to it, choose **Create template**. Then, on the template page, enter a name for the template and, optionally, a description of the template.
  - To add a message variable to an existing template, choose the template that you want to add a variable to. Then, on the template page, choose **Edit**. Under **Template details**, use the version selector to choose the version of the template that you want to use as a starting point. If you choose the most recent version, you can save your changes directly to that version of the template. Otherwise, you can save your changes as a new version of the template.
4. In the message details section, determine where you want to add a message variable. You can add a variable to the body of any type of template. For email and push notification templates, you can also add a variable to the message subject or title.
5. In the **Attribute finder**, expand the section for the type of attribute that you want to add a message variable for. You can choose from the following types of attributes:

#### Standard attributes

These are attributes that Amazon Pinpoint creates automatically for any project. This means that you can use them in messages that you send for any project. For detailed information about each of these attributes, see [Supported attributes \(p. 229\)](#).

To add a variable for a standard attribute, choose the attribute from the list.

#### Custom attributes

These are attributes that you optionally create for individual projects. Because these attributes might not be available for some of your projects, Amazon Pinpoint might not be able to replace the variable with a value for each and every recipient of a message that uses the template. To help you avoid this issue, Amazon Pinpoint provides options to help you choose an attribute that exists for specific projects or all of your projects.

To add a custom attribute:

1. Choose **Custom attributes**, and then choose **Load custom attributes**. In the window that appears, Amazon Pinpoint lists all the projects you created. As you choose each project, the attributes common to the selected projects display in the right-hand navigation pane. If no attributes display, then there are no common attributes between those projects.
2. Do one of the following:
  - To use all attributes common to the selected projects, choose **Load custom attributes**.

- If you want to use a specific attribute from the list, enter any portion of the attribute name in the search field. Attributes matching the entered text display. Choose **Load custom attributes** when the attribute you want to use displays. **Attribute finder** displays the newly added custom attributes.

**Note**

You can neither add common attributes from different sets of projects, nor can you modify the **Custom attributes** section of the **Attribute finder**. If you need to make changes to custom attributes, choose **X** to clear the **Attribute finder**, and then start again.

3. In the **Attribute finder**, choose the attribute that you want to add a variable for.

**Recommended attributes**

These are attributes that you optionally create for your account when you configure Amazon Pinpoint to retrieve personalized recommendations from a recommender model. For information about using recommender models, see [Machine learning models \(p. 260\)](#). You can add variables for this type of attribute to email templates, push notification templates, and SMS templates. You can't add them to voice templates.

To add a variable for a recommended attribute, choose the attribute from the list. If the **Attribute finder** doesn't list any recommended attributes, you have to first connect the template to a recommender model.

To add a recommended attribute:

1. Choose **Connect model**.
  2. Select the model that you want to retrieve recommendations from when you send messages that use the template.
  3. Choose **Connect model**.
6. When you choose an attribute from the **Attribute finder**, Amazon Pinpoint creates a message variable for the attribute and copies it to your clipboard. Paste the variable in the location that you want. If you have a long list of attributes, enter search text to narrow down the list. Choose **X** to clear the search field.

After you paste the variable, Amazon Pinpoint displays it as the name of the associated attribute, enclosed in two sets of curly braces—for example, `{User.UserAttributes.FirstName}`.

7. Repeat steps 4 through 6 for each message variable that you want to add.
8. To specify a default value for a message variable, expand the **Default attribute values** section. Then, in the list of variables, enter the default value that you want to use for the variable.

**Note**

We recommend that you do this for each variable in the template. Otherwise, Amazon Pinpoint might not be able to send a message that uses the template or the message might display in unexpected or unwanted ways.

9. When you finish, do one of the following:
  - If you added message variables to a new template, choose **Create**.
  - If you added message variables to an existing template and you want to save your changes as a new version of the template, choose **Save as new version**.
  - If you added message variables to an existing template and you want to save your changes as an update to the most recent version of the template, choose **Update version**. This option is available only if you opened the most recent version of the template in step 3.

## Supported attributes

Each project can have standard attributes and custom attributes. Standard attributes are attributes that Amazon Pinpoint creates automatically for any project. Custom attributes are attributes that you optionally create for a project. There are three types of custom attributes:

- **User attributes** – These attributes describe a user—for example, a user's first name, last name, and birth date. A *user* is an individual who has a unique user ID for a project.
- **Endpoint attributes** – These attributes describe a specific endpoint for a user. An *endpoint* is a destination that you can send messages to—such as an email address, phone number, or mobile device. Each user can be associated with one or more endpoints. For example, if you communicate with a user by email, SMS, and phone, the user could be associated with three endpoints—one for the user's email address, another for the user's mobile phone number, and another for the user's home (landline) phone number.
- **Metric attributes** – These attributes are numeric metrics that your application reports to Amazon Pinpoint for individual endpoints, such as the number of sessions for a mobile app or the number of items left in a cart.

In addition to custom and standard attributes that you or Amazon Pinpoint creates for your projects, Amazon Pinpoint supports *recommended attributes*. A *recommended attribute* is an attribute that temporarily stores personalized recommendations for users or endpoints. Amazon Pinpoint retrieves these recommendations from recommender models that you configure it to use. Recommended attributes aren't associated with specific projects. Instead, they're associated with your Amazon Pinpoint account. For information about using recommender models, see [Machine learning models \(p. 260\)](#).

You can use any standard, custom, or recommended attribute in a message variable. The following table indicates the text that appears in the message variable for each supported attribute, and it describes each attribute. In the table, *custom\_attribute* indicates text that appears in a variable for a custom attribute. In those cases, replace *custom\_attribute* with the name of the custom attribute. For example, if your project stores users' first names in a custom user attribute named `FirstName` and you add a variable for that attribute, the text for the variable is `{{User.UserAttributes.FirstName}}`.

Attribute	Description
Address	The destination address for messages or push notifications that you send to the endpoint—for example, an email address, phone number, or device token.
Attributes. <i>custom_attribute</i>	A custom endpoint attribute that describes the endpoint.
ChannelType	<p>The channel to use when sending messages or push notifications to the endpoint. For example:</p> <ul style="list-style-type: none"> <li>• <b>APNS</b> – For an endpoint that can receive push notifications that you send through the Apple Push Notification service (APNs) channel to apps that are running on iOS devices.</li> <li>• <b>EMAIL</b> – For an endpoint that can receive email messages.</li> <li>• <b>GCM</b> – For an endpoint that can receive push notifications that you send through the Firebase Cloud Messaging (FCM) channel to apps that are running on Android devices.</li> </ul>

Attribute	Description
	<ul style="list-style-type: none"> <li><b>SMS</b> – For an endpoint that can receive SMS text messages.</li> <li><b>VOICE</b> – For an endpoint that can receive voice messages.</li> </ul>
<code>CreationDate</code>	The date and time when the endpoint was added to the project, in <a href="#">ISO 8601 format</a> . For example, <code>2019-06-30T11:45:25.220Z</code> for 11:45 AM UTC June 30, 2019.
<code>Demographic.AppVersion</code>	The version number of the application that's associated with the endpoint.
<code>Demographic.Locale</code>	The locale of the endpoint, in the following format: the <a href="#">ISO 639-1 alpha-2</a> code, followed by an underscore ( <code>_</code> ), followed by an <a href="#">ISO 3166-1 alpha-2</a> value. For example, <code>en_US</code> is the English language locale for the United States.
<code>Demographic.Make</code>	The manufacturer of the endpoint device, such as <code>apple</code> or <code>samsung</code> .
<code>Demographic.Model</code>	The model name or number of the endpoint device, such as <code>iPhone</code> or <code>SM-G900F</code> .
<code>Demographic.ModelVersion</code>	The model version of the endpoint device.
<code>Demographic.Platform</code>	The operating system on the endpoint device, such as <code>ios</code> or <code>android</code> .
<code>Demographic.PlatformVersion</code>	The version of the operating system on the endpoint device.
<code>Demographic.Timezone</code>	The endpoint's time zone, as a <a href="#">tz database</a> value. For example, <code>America/Los_Angeles</code> for Pacific Time (North America).
<code>EffectiveDate</code>	The date and time when the endpoint was last updated, in <a href="#">ISO 8601 format</a> . For example, <code>2019-08-23T10:54:35.220Z</code> for 10:54 AM UTC August 23, 2019.
<code>EndpointStatus</code>	Whether to send messages or push notifications to the endpoint: <b>ACTIVE</b> , send messages to the endpoint; or, <b>INACTIVE</b> , don't send messages to the endpoint.
<code>Id</code>	The unique identifier for the endpoint.
<code>Location.City</code>	The city where the endpoint is located.
<code>Location.Country</code>	The two-character code, in <a href="#">ISO 3166-1 alpha-2 format</a> , for the country or region where the endpoint is located. For example, <code>US</code> for the United States.
<code>Location.Latitude</code>	The latitude coordinate of the endpoint's location, rounded to one decimal place.

Attribute	Description
<code>Location.Longitude</code>	The longitude coordinate of the endpoint's location, rounded to one decimal place.
<code>Location.PostalCode</code>	The postal or ZIP code for the area where the endpoint is located.
<code>Location.Region</code>	The name of the region, such as a state or province, where the endpoint is located.
<code>Metrics.custom_attribute</code>	A custom, numeric metric that your application reports to Amazon Pinpoint for the endpoint.
<code>OptOut</code>	Whether the user opted out of receiving messages and push notifications from you: <code>ALL</code> , the user opted out and doesn't want to receive any messages or push notifications; or, <code>NONE</code> , the user hasn't opted out and wants to receive all messages and push notifications.
<code>RecommendationItems</code>	A standard recommended attribute that stores one recommendation for the endpoint or user. This attribute contains text that's provided directly by a recommender model.
<code>RecommendationItems.[#]</code>	<p>A standard recommended attribute that stores an ordered list of 2–5 recommendations for the endpoint or user. This attribute contains text that's provided directly by a recommender model.</p> <p>The numeric placeholder (<code>[#]</code>) indicates that the attribute contains multiple values. A message variable for this attribute can refer to a specific value in the list.</p>
<code>Recommendations.custom_attribute</code>	A custom recommended attribute that stores one recommendation for the endpoint or user. This attribute contains content that's provided by a recommender model and enhanced by an AWS Lambda function.
<code>Recommendations.custom_attribute.[#]</code>	<p>A custom recommended attribute that stores multiple recommendations for the endpoint or user. This attribute contains content that's provided by a recommender model and enhanced by an AWS Lambda function.</p> <p>The numeric placeholder (<code>[#]</code>) indicates that the attribute contains multiple values. A message variable for this attribute can refer to one of those values specifically.</p>
<code>RequestId</code>	The unique identifier for the most recent request to update the endpoint.
<code>User.UserAttributes.custom_attribute</code>	A custom user attribute that describes the user.
<code>User.UserId</code>	A unique identifier for the user.

# Using message template helpers

With Pinpoint templates, customers can create reusable message templates based on the Handlebars.js language. Helpers provide a variety of features like formatting a price to a specific Region's currency or adding a time zone-based location. A helper can use a specific string or integer for the value or a specific Amazon Pinpoint message variable.

These are the categories of helpers, described in the following sections:

## Default helpers

This section describes the **built-in** helpers provided by Handlebars. For the full list see [Built-in Helpers](https://handlebarsjs.com) at [handlebarsjs.com](https://handlebarsjs.com). These are the built-in helpers:

- `each` – Iterates a list.
- `if` – Evaluates a statement.

### *each*

Iterates a list. This helper uses only a block statement. You can optionally

- Pass `@index` in the request to reference the current loop index.
- Use the `this` helper to reference the current element being iterated.
- Return the helper response in a list, using the `<li>` tag.

#### Usage

```
{{#each value}}
```

Value at position `{{@index}}` is `{{this}}`.

```
{{else}}
```

Condition is false.

```
{{/each}}
```

`each` must be prefaced with a pound sign (`#`) and conclude with a closing `{{/each}}` in the block statement.

#### Example

In this example, `each` is used to return a list of a user's favorite colors. For a `false`, an `else` statement is returned. If the request is this

```
{{#each User.UserAttributes.FavoriteColors}}
```

```
<li>{{this}}</li>
```

```
{{else}}
```

*You have no favorite colors.*

```
{{/each}}
```

 returns

- *red*
- *blue*

- *yellow*

for a true statement.

### *if*

Evaluates whether something is true and returns a response based on the evaluation.

#### Usage

```
{{#if value}}
```

Value is not undefined

```
{{else}}
```

Value is undefined

```
{{/if}}
```

*if* must be prefaced with a pound sign (#) and conclude with a closing `{{/if}}` in the block statement.

#### Example

In this example, the *if* helper is used to evaluate whether a user's first name. If the name is found, a greeting is returned that passes the user's first name in the response. Otherwise, the *else* statement returns an alternative greeting.

```
{{#if User.UserAttributes.FirstName.[0]}}
```

```
Hello {{User.UserAttributes.FirstName.[0]}},
```

```
{{else}}
```

```
Hello,
```

```
{{/if}}
```

returns *Hello, Jane* if the *if* helper is true.

## Conditional helpers

This section describes the **conditional** helpers.

Conditional helpers can be used on either a single line or in a block statement. You can customize the response regardless of which helper method you use. You can pass additional conditional helpers within both single line and block statements. The following conditional helpers show usage first for a single line and then a block statement using an optional *else* clause. These are the conditional helpers:

- *and* – Compares whether or not all passed elements are equal.
- *eq* – Tests whether two elements are equal.
- *gt* – Tests whether one element is greater than another.
- *gte* – Tests whether one element is greater than or equal to another.
- *if* – Evaluates whether something is true.
- *lt* – Tests whether one element is less than another.
- *lte* – Tests whether one element is less than or equal to another.

- **neg** – Evaluates whether two elements are not equal.
- **not** – Inverts the response of a boolean operation.
- **or** – Compares whether any of the elements in the argument are equal.

#### *and*

Compares whether *all* elements passed in an argument are equal, and then returns the response based on the result. This helper can be used for non-Boolean values. You must pass at least two elements for the condition.

##### Usage

- `{{and valuea valueb valuec valued yes='y' no='n'}}`

You can replace *y* and *n* with other values, such as *yes* and *no*, or any other string you want returned, depending on the condition.

- `{{#and valuea valueb}}`

Condition is true.

`{{else}}`

Condition is false.

`{{/and}}`

`and` must be prefaced with a pound sign (#) and conclude with a closing `{{/and}}` in the block statement.

##### Example

In this example, `eq` is used within the `and` block statement to determine whether both strings passed for the `Location.City` and `Location.Country` attributes are true. If both conditions are equal, then a true statement is returned. If either of those attributes are false, then an `else` statement is returned.

```
{{#and (eq Location.City "Los Angeles") (eq Location.Country "US")}}
```

*You live in Los Angeles and the US.*

```
{{else}}
```

*You don't live in Los Angeles and the US.*

```
{{/and}}
```

#### *eq*

Tests whether two elements are equal or if the value of one element is equal to a passed string.

##### Usage

- `{{eq valuea valueb yes='y' no='n'}}`

You can replace *y* and *n* with other values, such as *yes* and *no*, or any other string you want returned, depending on the condition.

- `{{#eq valuea valueb}}`

Condition is true.

`{{else}}`



Condition is false.

```
{{/eq}}
```

eq must be prefaced with a pound sign (#) and conclude with a closing {{/eq}} in the block statement.

### Example

In this example, eq is used to evaluate whether the value of `User.UserAttributes.FavoriteColors.[0]` is *Red*. If the response is true, a true statement is returned. If the response is false, then an else statement is returned.

```
{{#eq User.UserAttributes.FavoriteColors.[0] "red"}}
```

*Your favorite color is red.*

```
{{else}}
```

*You don't like red.*

```
{{/eq}}
```

*gt*

Tests whether the value of one element is greater than another.

### Usage

- ```
{{gt valuea valueb yes='y' no='n'}}
```

You can replace *y* and *n* with other values, such as *yes* and *no*, or any other string you want returned, depending on the condition.

- ```
{{#gt valuea valueb}}
```

Condition is true.

```
{{else}}
```

Condition is false.

```
{{/gt}}
```

gt must be prefaced with a pound sign (#) and conclude with a closing {{/gt}} in the block statement.

### Example

In this example, the helper compares the value of `User.UserAttributes.UserAge.[0]` attribute against a string, *17*, to verify whether the user's age is greater than 17. If the response is true, a true statement is returned. If the response is false, then an else statement is returned.

```
{{#gt User.UserAttributes.UserAge[0] "17"}}
```

*You are old enough to rent a car.*

```
{{else}}
```

*You are not old enough to rent a car.*

```
{{/gt}}
```

### *gte*

Tests whether the value of one element is greater than or equal to another.

#### Usage

- `{{gte valuea valueb yes='y' no='n'}}`

You can replace *y* and *n* with other values, such as *yes* and *no*, or any other string you want returned, depending on the condition.

- `{{#gte valuea valueb}}`

Condition is true.

`{{else}}`

Condition is false.

`{{/gte}}`

`get` must be prefaced with a pound sign (#) and conclude with a closing `{{/gte}}` in the block statement.

#### Example

In this example, the helper compares the `User.UserAttributes.UserAge.[0]` attribute against a string, *18*, to verify whether the user's age is greater than or equal to 18. If the response is true, a true statement is returned. If the response is false, then an else statement is returned.

```
{{#gte User.UserAttributes.UserAge.[0] "18"}}
```

*You are old enough to rent a car.*

`{{else}}`

*You are not old enough to rent a car.*

`{{/gte}}`

### *if*

Evaluates whether something is true and returns a response based on the evaluation.

#### Usage

- `{{#if value}}`

You can replace *y* and *n* with other values, such as *yes* and *no*, or any other string you want returned, depending on the condition.

- `{{#if value}}`

Condition is true.

`{{else}}`

Condition is false.

`{{/if}}`

`if` must be prefaced with a pound sign (#) and conclude with a closing `{{/if}}` in the block statement.

#### Example

In this example, the if helper is used to evaluate whether a user's first name. If the name is found, a greeting is returned that passes the user's first name in the response. Otherwise, the else statement returns an alternative greeting.

```
{{#if User.UserAttributes.FirstName.[0]}}  
Hello {{User.UserAttributes.FirstName.[0]}},  
  
{{else}}  
Hello,  
  
{{/if}}
```

returns *Hello Jane*, if the if helper is true.

*lt*

Tests whether the value of one element is less than the value of another.

#### Usage

- `{{lt valuea valueb yes='y' no='n'}}`

You can replace *y* and *n* with other values, such as *yes* and *no*, or any other string you want returned, depending on the condition.

- `{{#lt valuea valueb}}`

Condition is true.

```
{{else}}
```

Condition is false.

```
{{/gt}}
```

*lt* must be prefaced with a pound sign (#) and conclude with a closing `{{/lt}}` in the block statement.

#### Example

In this example, the helper compares the `User.UserAttributes.UserAge.[0]` attribute against a string, *18*, to verify whether the user's age is less than 18. If the response is `true`, a true statement is returned. If the response is `false`, then an else statement is returned.

```
{{#lt User.UserAttributes.UserAge.[0] "18"}}  
You are not old enough to rent a car.  
  
{{else}}  
You are old enough to rent a car.  
  
{{/lt}}
```

*lte*

Tests whether the value of an element is less than or equal to another.

#### Usage

- `{{lte valuea valueb yes='y' no='n'}}`

You can replace *y* and *n* with other values, such as *yes* and *no*, or any other string you want returned, depending on the condition.

- `{{#lte valuea valueb}}`

Condition is true.

`{{else}}`

Condition is false.

`{{/lte}}`

`lte` must be prefaced with a pound sign (#) and conclude with a closing `{{/lte}}` in the block statement.

### Example

In this block statement, the helper compares the `User.UserAttributes.UserAge.[0]` attribute against a string, `17`, to verify whether the user's age is equal to 17 or younger. If the response is true, a true statement is returned. If the response is false, then an else statement is returned.

```
{{#lte User.UserAttributes.Age[0] "17"}}
```

*You are not old enough to rent a car.*

```
{{else}}
```

*You are old enough to rent a car.*

```
{{/lte}}
```

### *neq*

Test whether two elements are *not* equal.

### Usage

- `{{neq valuea valueb yes='y' no='n'}}`

You can replace *y* and *n* with other values, such as *yes* and *no*, or any other string you want returned, depending on the condition.

- `{{#neg valuea valueb}}`

Condition is true.

`{{else}}`

Condition is false.

`{{/neg}}`

`neg` must be prefaced with a pound sign (#) and conclude with a closing `{{/neg}}` in the block statement.

### Example

In this block statement, the `User.UserAttributes.FavoriteColors.[0]` attribute is checked against a string, *Red*. If the response is true, a true statement is returned. If the response is false, then an else statement is returned.

```
{{#neg User.UserAttributes.Favorite.Colors[0] "red"}}
```

*You do not like red.*

```
{{else}}
```

```
You like red.
```

```
{{/neg}}
```

*not*

Inverts the response of a Boolean operation, so that if `not` is a positive comparison, then a `true` statement is returned. If the response is false, then an `else` statement is returned.

#### Usage

- `{{not value yes='y' no='n'}}`

You can replace `y` and `n` with other values, such as `yes` and `no`, or any other string you want returned, depending on the condition.

- `{{#not value}}`

Condition is true.

```
{{else}}
```

Condition is false.

```
{{/not}}
```

`not` must be prefaced with a pound sign (`#`) and conclude with a closing `{{/not}}` in the block statement.

#### Example

In this block statement, the `User.UserAttributes.FavoriteColors.[0]` attribute is checked against a string, `red`, using the `eq` helper. The `not` helper then returns the opposite of the `eq` helper. If the response returns any color other than `red`, a `true` statement is returned. If the response returns `red`, then an `else` statement is returned indicating a false statement.

```
{{#not (eq User.UserAttributes.FavoriteColors[0] "red")}}
```

```
You do not like red.
```

```
{{else}}
```

```
You like red.
```

```
{{/not}}
```

#### Example

In this example,

```
{{not (eq User.UserAttributes.FavoriteColors.[0] "red")}}
```

returns false if `User.UserAttributes.FavoriteColors.[0]` is `red`.

*or*

Compares whether *any* of the elements in the argument are equal, and then returns a response based on the result. This helper can be used for non-Boolean values.

#### Usage

- `{{or valuea valueb valuec valued yes='y' no='n'}}`

You can replace *y* and *n* with other values, such as *yes* and *no*, or any other string you want returned, depending on the condition. You must pass at least two elements for the condition.

- `{{#or valuea valueb}}`

Condition is true.

`{{else}}`

Condition is false.

`{{/or}}`

`or` must be prefaced with a pound sign (#) and conclude with a closing `{{/or}}` in the block statement.

### Example

In this `or` block statement, two strings for the `Location.City` attribute are compared additionally using the `eq` helper. If either of the attributes are `true`, then a true statement is returned. If one or more of the responses are `false`, then an `else` statement is returned.

```
{{#or (eq Location.City "Los Angeles") (eq Location.City "Seattle")}}
```

*You live on the West Coast of the United States.*

```
{{else}}
```

*You do not live on the West Coast of the United States.*

```
{{/or}}
```

## String helpers

This section describes the following **string** helpers:

- `abbreviate` – Truncates a value.
- `capitalize` – Capitalizes each word between white spaces.
- `capitalizeFirst` – Capitalizes the first character of a value.
- `center` – Centers a value.
- `cut` – Cuts a value.
- `dateFormat` – Sets the date style.
- `inflect` – Returns a singular or plural string based on the count.
- `join` – Joins an array, iterator, or an iterable object.
- `ljust` – Justifies a value to the left margin.
- `lower` – Converts a value to lower case.
- `now` – Prints the current date.
- `ordinalize` – Ordinalizes a numeric value.
- `replace` – Replaces one string with another.
- `rjust` – Justifies a value to the right margin.
- `slugify` – Converts a value to lower case and removes non-word characters, converts spaces to hyphens, and removes trailing white space.
- `stripTags` – Strips [X]HTML tags from a value.
- `substring` – Returns a new string as a substring of a passed value.

- `upper` – Converts the passed value to upper case.
- `yesno` – Replaces true, false, and no with Yes, No, and Maybe.

#### *abbreviate*

Truncates a value if the value exceeds the number specified. White spaces are included in the length count. An ellipsis displays in the response to indicate a truncated value. The ellipsis counts towards the truncated value in the response. This type of helper is useful if you have a large table and minimal space. Truncating values in a cell allows you to have a more uniform look to the table.

#### **Usage**

`{{abbreviate value X}}`, replacing `X` with a numeric value indicating the number of characters to keep. Negative numbers are not supported.

#### **Example**

In this example, `abbreviate` is used to truncate `User.UserAttributes.LastName.[0]` to six (6) characters. The response includes an ellipsis, the dots of which count towards the six-character total.

`{{abbreviate User.UserAttributes.LastName.[0] 6}}` returns

*Ale...* if *Alejandro* is the value of `[0]`.

#### *capitalize*

Capitalizes each word between white spaces.

#### **Usage**

`{{capitalize value}}`

#### **Example**

In this example, initial capitalization is applied to each word for the `Attributes.description.[0]` entry.

`{{capitalize Attributes.description.[0]}}`

If `Attributes.description.[0]` returns

*My First Post*, if the value of `Attributes.description.[0]` is *my first post*.

#### *capitalizeFirst*

Capitalizes the first character in a value.

#### **Usage**

`{{capitalizeFirst value}}`

#### **Example**

In this example, capitalization is applied to the first character of the first word of the `Attributes.description.[0]` entry.

`{{capitalizeFirst Attributes.description.[0]}}` returns

*My first post*, if the value of `Attributes.description.[0]` is *my first post*.

### Example

#### *center*

Centers the value in a field of a given width by the number specified. You can optionally pass a character to display for the padding or leave the field blank. If no character is passed a white space is used.

### Usage

```
{{center value size=X [pad=" "]}}
```

, replacing *X* with a numeric value.

If pad is kept blank, white space is used as the padding in the response. If you pass a character, that character displays in each space of the padding. Negative numbers are not supported.

### Example

In this example, the value of `Location.City` is centered with a size of *19*.

```
{{center Location.City size=19}}
```

 returns

*" Los Angeles "* If `Location.City` is *Los Angeles*. Note that the quotes displayed in the example output are provided for emphasis only.

#### *cut*

Removes the specified value from a string.

### Usage

```
{{cut value [ " " ]}}
```

, replacing the space within the quotes parameter with the value to cut. If no parameter value is passed, a white space is used.

### Example

This example removes the letter *e* from the `Location.City` attribute.

```
{{cut Location.City "e"}}
```

 returns

*Los Angls* if `Location.City` is *Los Angeles*.

#### *dateFormat*

Sets the default date style for the date in any response. For a list of the time zone IDs, see [https://en.wikipedia.org/wiki/List\\_of\\_tz\\_database\\_time\\_zones](https://en.wikipedia.org/wiki/List_of_tz_database_time_zones).

### Usage

```
{{dateFormat date [inputFormat="format1"] [outputFormat="format2"]  
[tz=timeZoneId]}}
```

The format parameter must be one of:

- "full": full date format. For example: *Tuesday, September 19, 2020*
- "long": long date format. For example: *September 19, 2020*
- "medium": medium date format. For example: *Sept 19, 2020*
- "short": short date format. For example: *9/19/20*
- "pattern": uses a custom date pattern format. For more information about date patterns, see <https://docs.oracle.com/javase/8/docs/api/java/text/SimpleDateFormat.html>.

If a format is passed, then medium is used by default.



### Example

In this example, a message is sent to a user using the full date format based on the *America/Los\_Angeles* time zone and a date of *09/19/2020*.

We can meet with you any time on `{{dateFormat date inputFormat="19/09/2020" outputFormat="full" tz=America/Los_Angeles}}`. returns

*We can meet with you any time on Tuesday, September 19, 2020.*

### *inflect*

Returns a singular or plural string based on the count value.

### Usage

`{{inflect count singular plural [includeCount=false]}}`

- Enter the singular and plural forms of the string you want to pass in the argument.
- If `includeCount` is set to `false`, no count is returned in the response. If set to `true`, the count is included in the response.

### Example

The following examples show the inflection for a purchase of apples, with and without `includeCount`.

Thank you for your purchase of `{{inflect 3 apple apples includeCount=false}}`. returns:

*Thank you for your purchase of apples.*

If `includeCount` is set to `true`, then the response is

*Thank you for your purchase of 3 apples.*

### *join*

Joins an array, iterator, or an iterable object. The response returns a list, with each value in the list concatenated by the character you pass in the `join`. For example, you might separate values using a comma (,). The value in this helper must be a list without an attribute position index. For example, this might be `Attributes.custom_attribute`.

### Usage

`{{join value " // " [prefix=""] [suffix=""]}}`

### Example

In this example, a list of colors is returned, with the list separated by a comma and a space (, " "):

`{{join Attributes.favorite_colors ", "}}` returns

*blue, red, green* if `Attributes.favorite_colors` is the list *blue, red, green*.

### *ljust*

Justifies the value to the left margin and adds space to the right so that the length of the value matches the number. Negative numbers are not supported.

You can optionally pass a character to display for the pad or leave the field blank. If you leave the pad value blank, the default value is a white space.

### Usage

{{ljust *value* *X* [pad=" " ]}}, where *X* is the total length of the value, including white space.

### Example

In this example, a left justification value of *15* is applied to the Location.City.

{{ljust *Location.City* *15*}} returns

*"Los Angeles "* if the value of Location.City is *Los Angeles*. Note that the quotes displayed in the example output are provided for emphasis only.

### lower

Converts a value to all lower case.

### Usage

{{lower *value*}}

### Example

In this example, the [0] entry for User.UserAttributes.LastName.[0] is changed to lower case.

{{lower *User.UserAttributes.LastName.[0]*}} returns

*santos* if *Santos* is the value of [0].

### now

Prints out the current date based on the passed time zone ID. For a list of the time zone IDs, see [https://en.wikipedia.org/wiki/List\\_of\\_tz\\_database\\_time\\_zones](https://en.wikipedia.org/wiki/List_of_tz_database_time_zones).

### Usage

{{now ["format"] [tz=timeZoneId]}}

The format parameter must be one of:

- "full": full date format. For example: *Tuesday, September 19, 2020*
- "long": long date format. For example: *September 19, 2020*
- "medium": medium date format. For example: *Sept 19, 2020*
- "short": short date format. For example: *9/19/20*
- "pattern": a date pattern. For more information about date patterns, see <https://docs.oracle.com/javase/8/docs/api/java/text/SimpleDateFormat.html>.

If a format is not passed, then medium is used by default.

### Example

In this example, the current date in Los Angeles is returned with a medium format.

{{now "medium" tz=*America/Los\_Angeles*}} returns

*Sept 19, 2020*.

### ordinalize

Ordinalizes the numeric value passed in the argument. For example, *1* is ordinalized as *1st*, *2* as *2nd*, etc. Only numeric values are supported.

### Usage

```
{{ordinalize [number]}}
```

### Example

In this example, the [0] entry of `User.UserAttributes.UserAge` is ordinalized and returned, along with a message.

Congratulations on your `{{ordinalize User.UserAttributes.UserAge[0]}}` birthday! returns *22* ordinalized as *22nd*.

*Congratulations on your 22nd birthday!*

### replace

Replaces one string with another string. A string or numeric value must be literal. Wildcard characters are not supported.

### Usage

```
{{replace stringToReplace replacementValue}}
```

### Example

In this example, an underscore ( `_` ) replaces a white space.

`{{replace Location.City " " "_"}}` returns

*Los\_Angeles* if the `Location.City` is *Los Angeles*.

### rjust

Justifies the value to the right margin and adds space to the left so that the length of the value matches the number. Negative numbers are not supported.

You can optionally pass a character to display for the pad or keep the field blank. If you keep the pad value blank, the default value is a white space.

### Usage

```
{{rjust value X [pad=" "]}}, where X is the total length of the value, including white space.
```

### Example

In this example, a right justification value of *15* is applied to the `Location.City` attribute.

`{{rjust Location.City 15}}` returns

*" Los Angeles" .* if the `Location.City` is *Los Angeles*. Note that the quotes displayed in the output are provided for emphasis only.

### slugify

Converts the passed value to lowercase, removes non-word characters (alphanumeric and underscore), converts spaces to hyphens, and removes any leading or trailing white space.

### Usage

```
{{slugify value}}
```

### Example

In this example, slugify is performed for the `Location.City` attribute.

{{slugify *Location.City*}} returns

*los-angeles* if `Location.City` is *Los Angeles*.

#### *stripTags*

Strips [X]HTML tags from a value.

#### **Usage**

{{stripTags *value*}}

#### **Example**

In this example, the HTML tags for the `User.UserAttributes.interest.[0]` are removed.

{{stripTags *User.UserAttributes.interests.[0]*}} returns

*Art*, if `User.UserAttributes.interests.[0]` is `<h1>Art</h1>`.

#### *substring*

Returns a new string as a substring of the passed value. The length and position are determined by the `startOffset` and `endOffset` parameters, which must be integers. Negative numbers are not supported. If an `endOffset` is not passed, the substring uses the original ending value of the string.

#### **Usage**

{{substring *value startOffset [endOffset]*}}

#### **Example**

In this example, an offset of 4 and `endOffset` of 9 are applied to the `Location.City` attribute.

{{substring *Location.City 4 9*}} returns

*Angel* if Los Angeles is the value of `Location.City` is *Los Angeles*.

#### *upper*

Converts the passed value to upper case.

#### **Usage**

{{upper *value*}}

#### **Example**

In this example, the `[0]` entry for the `User.UserAttributes.LastName` attribute is converted to all upper case.

{{upper `User.UserAttributes.LastName.[0]`}} returns

*ROE* if the `User.UserAttributes.LastName.[0]` value is *Roe*.

#### *yesno*

Replaces true, false, and NULL with Yes, No, and Maybe.

#### **Usage**

```
{{yesno value [yes="yes"] [no="no"] maybe=["maybe"]}}
```

### Example

In this example, the `IsUserSubscribed` attribute returns whether a user is subscribed to a particular list.

```
{{yesno Attributes.IsUserSubscribed}} returns
```

**yes** if `Attributes.IsUserSubscribed` is **true**.

## Math and encoding helpers

This section describes the **math and encoding** helpers.

- `add` – Returns the sum of two numbers.
- `ceiling` – Capitalizes each word between white spaces.
- `decode64` – Decodes a Base64encoded value to a string.
- `divide` – Returns the quotient of two numbers.
- `encode64` – Encodes a string using Base64.
- `floor` – Rounds an integer to its mathematical floor.
- `md5` – Hashes a passed string using the MD5 algorithm.
- `modulo` – Returns the remainder of two numbers using floating points.
- `multiply` – Returns the product of two numbers.
- `round` – Rounds a decimal to the nearest whole number.
- `sha256` – Hashes a passed string using SHA-256.
- `sha512` – Hashes a passed string using SHA-512.
- `subtract` – Returns the difference of two numbers.
- `uuid` – Randomly generates a UUID in a 128-bit format.

### *add*

Returns the sum of two numbers along with floating points.

### Usage

```
{{add arg1 arg2}}
```

### Example

```
{{add 5 2.3}} returns
```

**7.3**

### *ceiling*

Rounds an integer to its mathematical ceiling, which is the highest whole number closest to the passed value.

### Usage

```
{{ceiling value}}
```

### Example

{{ceiling 5.23}} returns

6

#### *decode64*

Decodes a Base64 encoded value to a string.

##### **Usage**

{{decode64 "string"}}

##### **Example**

{{encode64 "SGVsbG8gd29ybGQ="}} returns

Hello World

#### *divide*

Returns the quotient of two numbers, including floating points.

##### **Usage**

{{divide arg1 arg2}}

##### **Example**

{{divide 5 2.3}} returns

2.17391304

#### *encode64*

Encodes the string passed in the argument using Base64.

##### **Usage**

{{encode64 "string"}}

##### **Example**

{{encode64 "Hello World"}}

SGVsbG8gd29ybGQ=

#### *floor*

Rounds an integer to its mathematical floor, which is the lowest whole number closes to the passed value.

##### **Usage**

{{floor value}}

##### **Example**

{{floor 5.23}} returns

5

#### *md5*

Hashes a passed string using the MD5 algorithm.

### Usage

```
{{md5 "string"}}
```

### Example

```
{{md5 "Hello World"}}
```

*3e25960a79dbc69b674cd4ec67a72c62*

### *modulo*

Returns the remainder of two numbers using floating points.

### Usage

```
{{modulo arg1 arg2}}
```

### Example

```
{{modulo 7 2}} returns
```

*1*

### *multiply*

Returns the product of two numbers, with any floating points.

### Usage

```
{{multiply arg1 arg2}}
```

### Example

```
{{multiply 5 2.3}} returns
```

*11.5*

### *round*

Rounds a decimal place up or down to the nearest whole number.

### Usage

```
{{round value}}
```

### Example

You spent an average of {{round 19.21}} minutes on our website each day.  
returns:

*You spent an average of 19 minutes on our website each day.*

### *sha256*

Hashes a passed string using SHA-256 cryptographic security.

### Usage

```
{{sha256 "string"}}
```

### Example

{{sha256 "Hello World"}} returns

a591a6d40bf420404a011733cfb7b190d62c65bf0bcda32b57b277d9ad9f146e  
sha512

Hashes a passed string using SHA-512 cryptographic security.

#### Usage

{{sha512 "string"}}

#### Example

{{sha512 "Hello World"}} returns

2c74fd17edafd80e8447b0d46741ee243b7eb74dd2149a0ab1b9246fb30382f27e853d8585719e0e67cbda  
subtract

Returns the difference of two numbers, with any floating points.

#### Usage

{{subtract arg1 arg2}}

#### Example

{{subtract 5 2.3}} returns

2.7

uuid

Randomly generates a UUID in a standard 128-bit format. No value needs to be passed in the argument.

#### Usage

{{uuid}}

#### Example

{{uuid}} returns

95f36680-152c-4052-99ec-cc3cdf7ca594

## Inline partials

While technically not a helper, inline partials are Handlebars way to simplify templates that include repeated strings, allowing for easier reuse. For more information see [inline partials](https://handlebarsjs.com/guide/inline-partials.html) at [handlebarsjs.com](https://handlebarsjs.com).

#### Usage

{{#\* inline "inlineName"}}Content to reuse{{/inline}}

To reference the content of the inline partial elsewhere, use:

{{> inlineName}}

#### Example



The following example creates an inline partial that includes the recipient's first name, and, if it is available, last name, by adding the following code to the beginning of the template:

```
{{#* inline "fullName"}}  
  
{{User.UserAttributes.FirstName.[0]}} {{#if User.UserAttributes.LastName.  
[0]}} {{User.UserAttributes.LastName.[0]}} {{/if}}  
  
{{/inline}}
```

After creating the `fullName` partial, you can include it anywhere in your template by preceding the name of the partial with a `>` (greater than) symbol, followed by a space, as in the following example: `{{>fullName}}`.

```
Hello {{>fullName}}
```

returns the user's first and last name if true – for example, `Hello Jane Doe`. Otherwise, if no last name is found, `Hello Jane` is returned.

Handlebars includes additional features beyond those documented here. For more information, see [handlebarsjs.com](http://handlebarsjs.com).

## Using variables with message template helpers

Pinpoint custom attributes, such as `User.UserAttributes.LastName`, are stored as a list, regardless of whether there's a single item or multiple items. When passing a list in a helper that expects a string, you must specify the attribute index value along with the attribute name. This attribute index value indicates the position of a value from the attribute list: `. [ 0 ]` for the first entry in the list, `. [ 1 ]` for the second, `. [ 2 ]` for the third, and so on. For example, let's say you're using the `upper` helper to convert the first (`[ 0 ]`) entry of `User.UserAttributes.LastName` to all upper case. The helper usage is `{{upper value}}`, and the attribute formatted as `User.UserAttributes.LastName`. Replace `value` with the attribute name and attribute index value `. [ 0 ]` as follows: `{{upper User.UserAttributes.LastName.[0]}}`. The response then returns the `[ 0 ]` entry from the list, formatted in all upper case. For example, if the value of `[ 0 ]` is `Santos`, the response returns `SANTOS`.

## Using nested helpers

You can nest multiple message template helpers within each other. The following example shows how to format two helpers: `{{ first helper (second helper) }}`. The second helper is processed first, followed by the first helper. Remember that the first helper always determines the output. Subsequent helpers must be nested within the previous helper as follows: `{{ first helper (second helper (third helper) ) }}`.

The following example shows how to nest two helpers to change **JANE** to **Jane**: `{{capitalizeFirst (lower "JANE") }}`. `lower` first converts **JANE** to **jane**. Then `capitalizeFirst` converts **jane** to **Jane**.

## Managing message templates

The **Message templates** page on the Amazon Pinpoint console provides a single location for you to create, view, and manage all the message templates for your Amazon Pinpoint account in the current AWS Region. By using this page, you can manage your message templates as a single collection. This can help you design consistent messages and reuse content more easily and effectively. You can use this page to perform management tasks such as viewing and editing templates, and copying, deleting, and creating templates.

### Topics

- [Viewing your collection of message templates \(p. 252\)](#)
- [Opening a message template \(p. 252\)](#)
- [Editing a message template \(p. 253\)](#)
- [Copying a message template \(p. 253\)](#)
- [Deleting a message template \(p. 254\)](#)

For information about creating a message template, see [Creating email templates \(p. 220\)](#), [Creating push notification templates \(p. 221\)](#), [Creating SMS templates \(p. 224\)](#), or [Creating voice templates \(p. 225\)](#), depending on the type of template that you want to create.

For information about viewing and managing versions of templates, see [Managing versions of message templates \(p. 254\)](#).

## Viewing your collection of message templates

The **Message templates** page displays a list of all the message templates for your Amazon Pinpoint account in the current AWS Region. To browse the list more easily or find specific templates quickly, you can sort and filter the list, choose which columns to display, and change other display settings for the list.

### To view your collection of message templates

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, choose **Message templates**. The **Message templates** page opens and displays the number of templates in your collection and a list of those templates.
3. To customize the list or find a specific template quickly, choose any of the following options:
  - To sort the list by a specific type of value, click the column heading for that value. To change the sort order from ascending to descending or vice versa, click the column heading again.
  - To apply a filter that displays only a specific type of template, use the channel selector at the top of the page to choose the channel. To remove the filter, choose **All message channels** from the channel selector.
  - To apply a filter that displays only those templates whose names contain specific text, enter the text in the **Search** box above the list. To remove the filter, choose **X** in the **Search** box.
  - To change the number of templates that are displayed in the list, choose the settings icon at the top of the page. Then, for **Page size**, choose the number of templates that you want to display, and choose **Save changes**.
  - To add or remove columns from the list, choose the settings icon at the top of the page. Then, for **Choose visible columns**, turn each column on or off, and choose **Save changes**.

## Opening a message template

By using the **Message templates** page, you can quickly find and open a specific message template to view the contents of the template and information about the template. For example, you can view current and previous versions of the template, and determine when the template was last updated. After you open a template, you can also [edit the template \(p. 253\)](#).

### To open a message template

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, choose **Message templates**.

3. On the **Message templates** page, choose the template that you want to open. The template page opens and displays information about the template. It also displays the contents of the active version of the template.
4. To view a different version of the template, use the version selector under **Template details** to choose the version that you want to view.

## Editing a message template

You can open a message template for editing in two ways: while you're authoring a message that uses the template, and by using the **Message templates** page. This topic explains how to open and edit a template by using the **Message templates** page.

If you edit a template, Amazon Pinpoint might apply your changes to existing messages that use the template and haven't been sent yet, such as campaign messages that are scheduled to be sent at a later time. This depends on whether you edit the active version of the template and how you configured the messages that use the template. For more information, see [Managing versions of message templates](#) (p. 254).

### To edit a message template

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, choose **Message templates**.
3. On the **Message templates** page, choose the template that you want to edit. The template page opens and displays information about the template. It also displays the contents and settings for the active version of the template.
4. Choose **Edit**.
5. Under **Template details**, use the version selector to choose the version of the template that you want to use as a starting point for your changes. If you choose the most recent version of the template, you can save your changes directly to that version of the template. Otherwise, you can save your changes as a new version of the template.
6. Make the changes that you want. You can change any of the template's content or settings, except the name of the template. To change the name of the template, you can [create a copy of the template](#) (p. 253), save the copy with the name that you want, and then optionally delete the original template.
7. When you finish making changes, do one of the following:
  - To save your changes as a new version of the template, choose **Save as new version**. To help ensure that your changes don't affect any existing messages, we recommend that you choose this option.
  - To save your changes as an update to the most recent version of the template, choose **Update version**. This option is available only if you chose the most recent version of the template in step 5. If you choose this option, your changes might affect existing messages that use the template.

## Copying a message template

To quickly create a new message template that's similar to an existing template, you can create a copy of the template. You can then edit the template copy without changing the original template.

### To copy a message template

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, choose **Message templates**.

3. On the **Message templates** page, select the check box next to the template that you want to copy.
4. On the **Actions** menu, choose **Duplicate**.
5. For **Template name**, enter a name for the template copy. The name has to begin with a letter or number. It can contain up to 128 characters. The characters can be letters, numbers, underscores (\_), or hyphens (-).
6. When you finish entering the name, choose **Duplicate template**. The template page opens and displays all the content and settings for the active version of the template that you copied.
7. (Optional) To change the template copy, choose **Edit**, make the changes that you want, and then choose **Save as new version**.

## Deleting a message template

If you want to remove a message template from Amazon Pinpoint completely, you can delete the template. If you delete a template, it doesn't affect any existing messages that use the template, such as campaign messages that are scheduled to be sent at a later time.

### Warning

If you delete a template, Amazon Pinpoint deletes all versions, content, and settings for the template. In addition, the template becomes unavailable for all future messages. You can't recover a template after you delete it.

### To delete a message template

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, choose **Message templates**.
3. On the **Message templates** page, select the check box next to each template that you want to delete.
4. On the **Actions** menu, choose **Delete**.

## Managing versions of message templates

To help you manage the development and use of individual message templates, Amazon Pinpoint supports versioning for all types of message templates. Versioning provides a way for you to create a history of changes to a template—each version is a snapshot of a template at a certain point in time. Versioning also provides a way for you to control the contents and settings of messages that use a template.

Each time you change a template, you can specify whether you want to save your changes as a new version of the template or as an update to the most recent, existing version of the template. As you design, develop, and refine a template, each of these versions serves as a snapshot that can help you track the progress and status of the template. That is to say, you can use versioning to store, track, and manage a template as it changes over time. You can:

- **Track the history of a template** – For each template, Amazon Pinpoint provides a list of versions of the template. This list displays the name of each version, and it indicates when each version was last changed. The list is sorted in descending chronological order with the most recent version listed first.
- **View and compare versions of a template** – By using the version list, you can browse previous versions of a template. If you choose a version from the list, Amazon Pinpoint displays the contents and settings that are stored in that version.
- **Restore a previous version of a template** – If you find issues in the most recent version of a template, you can open and edit a previous version that doesn't contain the issues. You can then save that previous version as a new version of the template. The new version then becomes the most recent version of the template.

You can also use versioning to control which version of a template can be used in messages. You do this by designating a specific version as the *active version* of a template. The *active version* is typically the version that's been most recently reviewed and approved for use in messages, depending on your organization's workflow for developing and managing templates.

When you designate a version as the active version, you enable that version for use in messages. As a template changes over time, you can designate a different version as the active version, and you can change that designation multiple times.

#### Topics

- [How versioning works \(p. 255\)](#)
- [Viewing versions of a message template \(p. 256\)](#)
- [Viewing the active version of a message template \(p. 257\)](#)
- [Designating the active version of a message template \(p. 257\)](#)
- [Editing the active version of a message template \(p. 258\)](#)

## How versioning works

In a typical development workflow, a message template has many versions. These versions extend from the start of design and development through testing, review, and, ultimately, approval for use in messages. In some cases, you might create and approve additional versions after the initial approval, as you refine and update a template. For example, you might add links or change the layout of a template in response to analytics data for a campaign that uses the template.

### Version numbering

When you create a template, there is only one version of the template—*Version 1*. Each time you subsequently change a template, you specify whether you want to save your changes as a new version of the template, or as an update to the most recent version of the template.

If you save your changes as a new version, Amazon Pinpoint automatically increments the version number by 1 and assigns that version number to the version—*Version 1* for the first version, *Version 2* for the second version, *Version 3* for the third version, and so on. Version numbers are never reused. You can save as many as 5,000 versions of a template.

If you save your changes as an update to the most recent version, Amazon Pinpoint overwrites the most recent version to include your changes. To ensure that you have an accurate view of a template's history, you can overwrite only the most recent version of a template by using the Amazon Pinpoint console. You can't overwrite any earlier versions of a template by using the console.

### Current and active versions

To support long-term, continuous development of templates, two versions of a template can be current at the same time. They are: the *latest* version, which is the version that was most recently changed; and, the *active* version, which is the version that can be used in messages.

Depending on your organization's workflow, the active version is typically the version that's been most recently reviewed and approved for use in messages. It isn't necessarily the latest version of a template. In addition, any version other than the active version is considered a draft or archival version of a template. This means that you can use only the active version of a template in messages that you create by using the Amazon Pinpoint console.

For example, you might create several versions of a template as you design and develop the template. When the latest version of the template is complete and approved for use in messages, you can designate that version as the active version of the template. You can then use that active version of the

template in messages. If you later decide to change the template, you can create additional versions for those changes, without affecting the active version of the template or any existing messages that use the template.

Of all the versions of a template, one version has to be designated as the active version of the template. As a template changes over time, you can designate a different version as the active version, and you can change that designation multiple times.

## Version settings for messages

To use a specific version of a template in a message, the version must be the active version of the template when you create the message or when Amazon Pinpoint sends the message. This depends on how you configure a message to use a template. When you create a message and choose a template for it, you have two options:

- **Use the version that's currently active** – If you choose this option, Amazon Pinpoint always sends the same message content and settings, as specified in the version of the template that's active when you create the message. This means that the message remains the same, regardless of any changes that you make to the template later.
- **Use the version that's active when the message is sent** – If you choose this option, Amazon Pinpoint automatically updates the message content and settings to match whichever version of the template is active when it sends the message. This means that the message changes if you designate a different version as the active version after you create the message.

For example, if you do the following:

1. Create *Version 1* of a template.
2. Designate *Version 1* as the active version of the template.
3. Create a message that uses the template and schedule that message to be sent at a later time.
4. Change the template several times.
5. Designate a new version (*Version 5*) as the active version of the template.

Amazon Pinpoint does the following for each option when it sends the message:

- **Use the version that's currently active** – If you chose this option for the message, Amazon Pinpoint uses the content and settings specified by *Version 1* of the template. It does this because *Version 1* was the active version of the template when the message was created.
- **Use the version that's active when the message is sent** – If you chose this option for the message, Amazon Pinpoint automatically updates the message to use the content and settings specified by *Version 5* of the template. It does this because *Version 5* is the active version of the template when the message is sent.

If you want to ensure that changes to a template don't affect any existing messages that you haven't sent yet, we recommend that you configure your messages to use the version of the template that's active when messages are created, not sent. Alternatively, if you want to continue to develop a template after you start using it in messages, you can [create a copy of the template \(p. 253\)](#), and then edit and use the template copy in new messages.

## Viewing versions of a message template

By using the **Message templates** page, you can quickly find and open a specific message template. You can then view a list of the versions that exist for the template. From that list, you can choose a specific version to view the contents and settings for that version of the template.

### To view versions of a message template

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, choose **Message templates**.
3. On the **Message templates** page, choose the template whose versions you want to view. The template page opens and displays information about the template. It also displays the contents and settings for the active version of the template.
4. Under **Template details**, open the version selector to display a list of versions for the template.
5. To view the contents and settings for a specific version, use the version selector to choose the version. After you choose a version, Amazon Pinpoint displays the contents and settings for that version of the template.

## Viewing the active version of a message template

You can view the active version of a message template in two ways: while you're creating a message that uses the template, and by using the **Message templates** page. To view the active version of a template while you're creating a message, choose the template for the message. Amazon Pinpoint automatically displays a preview of the active version of the template.

To view the active version of a template by using the **Message templates** page, follow the steps in this topic.

### To view the active version of a message template

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, choose **Message templates**.
3. On the **Message templates** page, choose the template whose active version you want to view. The template page opens and displays information about the template. It also displays the contents and settings for the active version of the template. Under **Template details**, note that **ACTIVE VERSION** appears (in green) next to the version name in the version selector.
4. To view a different version of the template, use the version selector under **Template details** to choose the version that you want. To view the active version again, use the version selector to choose the version that displays **ACTIVE VERSION** (in green) next to the version name.

## Designating the active version of a message template

When you create a message template, Amazon Pinpoint automatically designates the first version of the template as the active version of the template. As you create and develop subsequent versions of a template, you can designate a different version as the active version of the template, and you can change that designation multiple times.

Before you designate a version as the active version of a template, it's a good idea to ensure that all the content and settings in the proposed active version are complete and ready for use.

It's also a good idea to verify that the differences between the current and proposed active versions won't affect existing messages in unexpected or unwanted ways. If you designate a different version as the active version, Amazon Pinpoint might apply your change to existing messages that use the template and haven't been sent yet. This depends on how you configured the messages that use the template. For more information, see [the section called "Version settings for messages" \(p. 256\)](#).

If the template is being used in messages that haven't been sent yet, compare the version that's currently active to the version that you want to make active. Also, review any journey activities and campaigns that use the template. Then, edit the template as necessary to address any issues that you find before you designate a different version as the active version.



If you're concerned about the effects of designating a different version as the active version, you can [create a copy of the template \(p. 253\)](#) instead. You can then edit and use the template copy in new messages.

### To designate the active version of a message template

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, choose **Message templates**.
3. On the **Message templates** page, choose the template that you want to designate the active version for. The template page opens and displays information about the template. It also displays the contents and settings for the version that's currently the active version of the template.
4. Under **Template details**, use the version selector to choose the version that you want to designate as the active version. After you choose a version, Amazon Pinpoint displays the contents and settings for that version of the template.
5. Choose **Make active version**.

The new active version of the template is now available for use in new messages. In addition, it's used in any existing messages that haven't been sent yet and are configured to use the version of the template that's active when the message is sent.

## Editing the active version of a message template

Before you edit the active version of a template, it's important to remember that only the active version of a template can be used in messages that you create by using the Amazon Pinpoint console. For this reason, it's a good idea to first verify that your changes are complete and ready for use.

It's also a good idea to verify that your changes won't affect existing messages in unexpected or unwanted ways. Amazon Pinpoint might apply your changes to existing messages that use the template and haven't been sent yet. This depends on how you configured the messages that use the template. For more information, see [the section called "Version settings for messages" \(p. 256\)](#).

To determine how your changes might affect existing messages, review the contents and settings for the version of the template that's currently active. Also, review any journey activities and campaigns that use the template. Then, consider the changes that you plan to make and ensure that your changes align with your goals for existing messages that use the template.

Finally, if you're concerned about the effects of editing the active version of the template, you can [create a copy of the template \(p. 253\)](#) instead. You can then edit and use the template copy in messages that you create later.

### To edit the active version of a message template

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, choose **Message templates**.
3. On the **Message templates** page, choose the template whose active version you want to edit. The template page opens and displays information about the template. It also displays the contents and settings for the version that's currently designated as the active version of the template.
4. Choose **Edit**.
5. Under **Template details**, use the version selector to ensure that you're editing the active version of the template. **ACTIVE VERSION** appears (in green) next to the name of the active version.
6. Make the changes that you want, and then choose **Save as new version**.
7. Under **Template details**, use the version selector to choose the version of the template that you created in the preceding step.
8. Choose **Make active version**.



The new active version of the template is now available for use in new messages. In addition, it's used in any existing messages that haven't been sent yet and are configured to use the version of the template that's active when the message is sent.

# Machine learning models in Amazon Pinpoint

A *machine learning (ML) model* is a mathematical representation of a real-world problem. An ML model finds patterns in data and generates predictions based on the patterns that it finds. These predictions typically improve over time, as an ML model receives more data and people retrain or tune the model to refine and optimize the model's analysis of data.

In Amazon Pinpoint, you can connect to a certain type of ML model, referred to as a *recommender model*, to predict which items a user will interact with and to send those items to message recipients as personalized recommendations. A *recommender model* is an ML model that's designed to answer the question, "What will a user like or be interested in?" It predicts what a particular user will prefer from a given set of products or items, and it provides that information as a set of recommendations for the user. By using recommender models with Amazon Pinpoint, you can send personalized recommendations to message recipients based on each recipient's attributes and behavior.

To use a recommender model with Amazon Pinpoint, start by working with your data science team to create and deploy the model as an Amazon Personalize campaign. Next, configure Amazon Pinpoint to use recommendation data from the Amazon Personalize campaign. You do this by setting up a connection between Amazon Pinpoint and the Amazon Personalize campaign. When you set up the connection, you specify how you want to retrieve and use data from the Amazon Personalize campaign.

After you set up the connection to the Amazon Personalize campaign, you can start adding recommendations to messages. To do this, create a message template. In the template, add message variables for the recommendations that you want to use. You can add these variables to the following types of templates:

- Email templates, for email messages that you send from campaigns or journeys.
- Push notification templates, for push notifications that you send from campaigns.
- SMS templates, for SMS text messages that you send from campaigns.

Then, create a campaign or journey to send messages that use the template. When you send the messages, Amazon Pinpoint retrieves the latest data from the Amazon Personalize campaign, and replaces each variable with values that your model recommends for each message recipient.

This feature is available in the following AWS Regions:

- US East (N. Virginia)
- US West (Oregon)
- Asia Pacific (Mumbai)
- Asia Pacific (Sydney)
- Asia Pacific (Seoul)
- Asia Pacific (Singapore)
- Asia Pacific (Tokyo)
- Europe (Ireland)

- Canada (Central)

The topics in this chapter explain how to configure Amazon Pinpoint to use recommendation data from an Amazon Personalize campaign. They also explain how to include that data in messages.

#### Topics

- [How recommendations work in Amazon Pinpoint \(p. 261\)](#)
- [Preparing to use a recommender model with Amazon Pinpoint \(p. 262\)](#)
- [Setting up a recommender model in Amazon Pinpoint \(p. 265\)](#)
- [Using recommendations in messages \(p. 267\)](#)
- [Managing machine learning models in Amazon Pinpoint \(p. 270\)](#)

## How recommendations work in Amazon Pinpoint

In a typical workflow, your team performs a series of activities to create and use a recommender model with Amazon Pinpoint. In general, those activities are:

1. In Amazon Personalize, create a solution for the model and deploy it as an Amazon Personalize campaign. Then train, evaluate, and update the model in a continuous cycle to refine the predictions and recommendations that it makes.
2. Configure Amazon Pinpoint to connect to the Amazon Personalize campaign. Use the configuration settings for the connection to specify how you want to retrieve and process data from the Amazon Personalize campaign.
3. Create one or more email, push notification, or SMS message templates. Design those templates to include message variables that refer to recommended attributes. A *message variable* is a placeholder that refers to a specific attribute. A *recommended attribute* is an attribute that temporarily stores data that Amazon Pinpoint retrieves from an Amazon Personalize campaign.
4. Create one or more Amazon Pinpoint campaigns that use the message templates. Or, if you created email templates in the preceding activity, create one or more journey activities that use those templates.

After your team performs these activities, Amazon Pinpoint does the following each time it sends a message that includes recommendations from the model:

1. Evaluates the settings and contents of the message and message template.
2. Determines that you connected the message template to a recommender model.
3. Checks the configuration settings that you entered for using the recommender model.
4. Finds one or more message variables for recommended attributes that you created for the recommender model.
5. Connects to the Amazon Personalize campaign that you specified in the configuration settings for the recommender model.
6. For each message recipient:
  - a. Retrieves recommendations from the Amazon Personalize campaign.
  - b. Adds the recommendations to the recommended attributes that you created for the recommender model.
  - c. Replaces each message variable with the corresponding value of the recommended attribute. If you configured the model to enhance recommendations by using an AWS Lambda function, Amazon Pinpoint uses that function as part of this step.
7. Sends a version of the message that contains the personalized recommendations for each message recipient.

# Preparing to use a recommender model with Amazon Pinpoint

To work with Amazon Pinpoint, a recommender model has to be deployed as an Amazon Personalize campaign. In addition, certain AWS Identity and Access Management (IAM) roles and policies need to be in place. If you want to enhance recommendations that Amazon Pinpoint receives from the model, an AWS Lambda function also needs to be in place to process the recommendations.

Before you set up a recommender model in Amazon Pinpoint, work with your data science and development teams to design and create these resources. Also, work with those teams to ensure that the model meets certain technical requirements to work with Amazon Pinpoint. After you create these resources, work with your administrator to ensure that you and Amazon Pinpoint can access them. As you take these steps, gather the information that you'll need to set up the model in Amazon Pinpoint.

## Topics

- [Amazon Personalize campaigns \(p. 262\)](#)
- [AWS Identity and Access Management roles and policies \(p. 264\)](#)
- [AWS Lambda functions \(p. 264\)](#)

## Amazon Personalize campaigns

Amazon Personalize is an AWS service that's designed to help you create machine learning models that provide real-time, personalized recommendations for customers who use your applications. Amazon Personalize guides you through the process of creating and training a machine learning model, primarily by using a combination of data and a recipe. A *recipe* is an algorithm that's configured to support a specific use case, such as predicting items that a person will like and interact with.

This combination of data and a recipe is referred to as a *solution*. After a solution is trained, it becomes a *solution version*. The solution version is then tested, refined, and prepared for use. When a solution version is ready for use, it's deployed as an Amazon Personalize campaign. The campaign is then used to provide real-time, personalized recommendations. To learn more about Amazon Personalize, see the [Amazon Personalize Developer Guide](#).

For Amazon Pinpoint to retrieve recommendations from an Amazon Personalize campaign, the campaign and its components have to meet the following requirements:

- The recipe has to be a *USER\_PERSONALIZATION* recipe. It can use any supported algorithm settings (hyperparameters) for this type of recipe. For information about this type of recipe, see [Using predefined recipes](#) in the *Amazon Personalize Developer Guide*.
- The solution has to be trained using user IDs that can be correlated with endpoint IDs or user IDs in Amazon Pinpoint projects. Amazon Pinpoint uses the `userId` field in Amazon Personalize to correlate data between users in Amazon Personalize and endpoints or users in Amazon Pinpoint projects.
- The solution has to support use of the [GetRecommendations](#) operation of the Amazon Personalize Runtime API.
- The campaign has to use the solution version that you want to retrieve recommendations from.
- The campaign has to be deployed and have a status of *active*.
- The campaign has to be running in the same AWS Region as the Amazon Pinpoint projects that will use recommendations from it. Otherwise, Amazon Pinpoint won't be able to retrieve recommendations from the campaign, which could cause an Amazon Pinpoint campaign or journey activity to fail.

In addition to these requirements, we recommend configuring the campaign to support at least 20 provisioned transactions per second.

As you work with your team to implement an Amazon Personalize campaign that meets the preceding requirements, also be sure to answer the following questions:

### **Which campaign?**

To set up the model in Amazon Pinpoint, you'll need to know the name of the Amazon Personalize campaign to retrieve recommendations from. Later, if you work with your administrator to manually configure access to the campaign, you'll also need to know the Amazon Resource Name (ARN) of the campaign.

### **Which type of ID?**

When you set up the model in Amazon Pinpoint, you choose whether to associate users in the Amazon Personalize campaign with endpoints or users in your Amazon Pinpoint projects. This enables the model to provide recommendations that are truly specific to a particular message recipient.

In an Amazon Personalize campaign, each user has a user ID (`userId` or `USER_ID`, depending on the context). This is a sequence of characters that uniquely identifies a particular user in the campaign. In an Amazon Pinpoint project, a message recipient can have two types of IDs:

- **Endpoint ID** – This is a sequence of characters that uniquely identifies a destination that you can send messages to—such as an email address, mobile phone number, or mobile device.
- **User ID** – This is a sequence of characters that uniquely identifies a particular user. Each user can be associated with one or more endpoints. For example, if you communicate with a user by email, SMS, and a mobile app, the user could be associated with three endpoints—one for the user's email address, another for the user's mobile phone number, and another for the user's mobile device.

When you choose the type of Amazon Pinpoint ID to associate with Amazon Personalize user IDs, choose the type that you use most consistently in your Amazon Pinpoint projects. If you or your application hasn't assigned an ID to an endpoint or user, Amazon Pinpoint can't retrieve recommendations for the endpoint or user. This might prevent Amazon Pinpoint from sending messages to the endpoint or user. Or, it might cause Amazon Pinpoint to send messages that display in unexpected or unwanted ways.

### **How many recommendations?**

Each time Amazon Pinpoint retrieves recommendations, Amazon Personalize returns an ordered list of recommendations for each recipient of a message. You can configure Amazon Pinpoint to retrieve between 1 and 5 of these recommendations for each recipient. If you choose one recommendation, Amazon Pinpoint retrieves only the first item from the list for each recipient—for example, the most highly recommended movie for a recipient. If you choose two recommendations, it retrieves the first and second items from the list for each recipient—for example, the top two recommended movies for a recipient. And so on.

Your choice for this setting depends primarily on your goals for messages that include recommendations from the model. However, it might also depend on how your team designed the solution and your team's evaluation of the solution's performance. For this reason, work with your team to ensure that you choose an appropriate number for this setting.

### **What does a recommendation contain?**

When Amazon Pinpoint retrieves recommendations, Amazon Personalize returns an ordered list of 1-5 recommended items, depending on how many recommendations you choose to retrieve for each message recipient. Each item consists only of text, such as a product ID or a movie title. However, the nature and contents of these items can vary from one Amazon Personalize campaign to another, based on the design of the underlying solution and the campaign.

Therefore, it's a good idea to ask your team exactly what content the campaign provides for recommended items. Their answer will probably affect how you design messages that use

recommendations from the campaign. If you want to enhance the content that the campaign provides, you might also choose to implement an AWS Lambda function that can perform this task.

## AWS Identity and Access Management roles and policies

AWS Identity and Access Management (IAM) is an AWS service that helps administrators control access to AWS resources. To learn more about IAM and how it works with Amazon Pinpoint, see [Identity and access management for Amazon Pinpoint](#) in the *Amazon Pinpoint Developer Guide*.

When you set up a recommender model in Amazon Pinpoint, you specify which Amazon Personalize campaign you want to retrieve recommendations from. To choose the campaign, your administrator needs to first allow you to view the campaigns for your organization's AWS account. Otherwise, the campaign won't appear in the list of campaigns that you can choose from. If you don't see the campaign in the list, ask your administrator to provide you with this access.

In addition, you or your administrator needs to create an IAM role and policy that allows Amazon Pinpoint to retrieve recommendations from Amazon Personalize campaigns. When you set up a recommender model, you can choose to have Amazon Pinpoint create this role and policy for you automatically. Another option is for you or your administrator to create this role and policy manually, before you set up the recommender model in Amazon Pinpoint. To learn how to do this, see [IAM role for retrieving recommendations](#) in the *Amazon Pinpoint Developer Guide*.

## AWS Lambda functions

For some models, you might want to enhance the recommendations that Amazon Pinpoint receives from Amazon Personalize. For example, instead of including only a single recommended value (such as a product name) in messages, you might want to include additional content (such as a product's name, description, and image) in messages. You can do this by working with your team to design and create an AWS Lambda function that transforms recommendation data into the content that you want.

AWS Lambda is an AWS service that's designed to help people run code without provisioning or managing servers. You or your team develops and packages code, and uploads it to AWS Lambda as a Lambda function. AWS Lambda then runs the function each time the function is invoked by an application or service, such as Amazon Pinpoint. To learn more about AWS Lambda, see the [AWS Lambda Developer Guide](#).

When you set up a recommender model in Amazon Pinpoint, you specify how you want Amazon Pinpoint to process the recommendations that it receives. One option is to use a Lambda function. If you want to use a Lambda function, work with your team to:

- Define what the function does.
- Define the custom recommended attributes that you want the function to use when it processes recommendations. This includes the number of attributes, and the name and purpose of each one. A Lambda function can use as many as 10 custom attributes for each message recipient. You'll need to enter information about these attributes when you set up the recommender model in Amazon Pinpoint.
- Ensure that the function is hosted in the same AWS Region as the Amazon Pinpoint projects that will use it. Otherwise, Amazon Pinpoint won't be able to send recommendation data to the function, which could cause an Amazon Pinpoint campaign or journey activity to fail.

Finally, work with your administrator to create a policy that allows Amazon Pinpoint to invoke the Lambda function each time it sends messages that include recommendations from the model.

For detailed information about using a Lambda function to process recommendations, see [Customizing recommendations with AWS Lambda](#) in the *Amazon Pinpoint Developer Guide*.

## Setting up a recommender model in Amazon Pinpoint

A *recommender model* is a type of machine learning (ML) model that's designed to predict what a particular user will prefer from a given set of products or items. It provides that information as a set of recommendations for the user. In Amazon Pinpoint, you can use these models to send personalized recommendations to message recipients based on each recipient's attributes and behavior.

Before you can use a recommender model in this way, you have to set up a connection between Amazon Pinpoint and the Amazon Personalize campaign that has the model to use. When you set up the connection, you specify how you want to retrieve and use recommendations from the Amazon Personalize campaign. You also add settings for attributes that temporarily store recommendations from the campaign.

### Before you begin

Before you set up a recommender model in Amazon Pinpoint, review the information in [Preparing to use a recommender model with Amazon Pinpoint \(p. 262\)](#). This will help you gather the resources and information that you need to set up the model in Amazon Pinpoint.

### Step 1: Set up the model

For this step, you specify which Amazon Personalize campaign you want to retrieve recommendations from. You also choose settings that specify how you want to retrieve and use those recommendations.

#### To set up a recommender model

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, choose **Machine learning models**.
3. On the **Machine learning models** page, choose **Add recommender model**.
4. Under **Model details**, for **Recommender model name**, enter a name for the model in Amazon Pinpoint. The name has to begin with a letter or number. It can contain up to 128 characters. The characters can be letters, numbers, underscores (`_`), or hyphens (`-`).
5. (Optional) For **Recommender model description**, enter a brief description of the model. The description can contain up to 128 characters. The characters can be letters, numbers, spaces, or the following symbols: `_` ; `()` , `-`.
6. Under **Model configuration**, for **IAM role**, choose the AWS Identity and Access Management (IAM) role that authorizes Amazon Pinpoint to connect to and retrieve recommendations from the Amazon Personalize campaign that uses the model. You have the following options:
  - **Use an existing role** – Choose this option to use an IAM role that already exists for your AWS account. Then, from the list of roles, choose the role that you want.
  - **Automatically create a role** – Choose this option to automatically create an IAM role that has the required permissions. Then, enter a name for the role.

Another option is to work with your administrator to create the role manually. For information about creating the role manually, see [IAM role for retrieving recommendations](#) in the *Amazon Pinpoint Developer Guide*.

7. For **Recommender model**, choose the Amazon Personalize campaign that you want to retrieve recommendations from.

This list displays all the Amazon Personalize campaigns that you're allowed to access with your AWS account in the current AWS Region. If the list doesn't include the campaign that you want, ask your administrator to give you access to the campaign and verify that you chose the correct IAM role in the preceding step. Also, verify that the campaign exists in the current AWS Region.

8. Under **Settings**, for **Identifier to use for recommendations**, specify whether you want to associate unique users in the Amazon Personalize campaign with endpoints (**Endpoint ID**) or users (**User ID**) in your Amazon Pinpoint projects.
9. For **Number of recommendations per message**, choose the number of recommended items that you want to retrieve for each endpoint or user in your Amazon Pinpoint projects, depending on your choice in the preceding step.

This setting determines how many recommendations Amazon Pinpoint retrieves and you can add to individual messages. You can retrieve as many as five recommended items. If you choose **1**, Amazon Pinpoint retrieves only the first item from the list of recommendations for each message recipient—for example, the most highly recommended movie for a recipient. If you choose **2**, it retrieves the first and second items from the list for each recipient—for example, the top two recommended movies for a recipient. And so on, for as many as five recommendations.

10. For **Processing method**, choose one of the following options to specify how you want Amazon Pinpoint to process the recommendations that it retrieves:
  - **Use the value returned by the model** – With this option, messages display the exact text of the recommendations that are provided by the Amazon Personalize campaign. In addition, all the recommendations for each endpoint or user are temporarily stored in one standard recommended attribute for each endpoint or user.
  - **Use a Lambda function** – With this option, messages can display enhanced recommendations instead of or in addition to the text of the recommendations that are provided by the Amazon Personalize campaign. If you choose this option, Amazon Pinpoint sends recommendations to an AWS Lambda function for additional processing, before it sends a message that includes the recommendations. In addition, you can temporarily store recommendations in as many as 10 custom recommended attributes for each endpoint or user.

If you choose this option, also use the **Lambda function** list to choose the function that you want to use. This list displays all the Lambda functions that you're allowed to access with your AWS account in the current AWS Region. If the list doesn't include the function that you want, ask your administrator to give you access to the function. If the function doesn't exist yet, choose **Create new Lambda function**, and work with your development team to create the function. For more information, see [Customizing recommendations with AWS Lambda](#) in the *Amazon Pinpoint Developer Guide*.

11. When you finish entering these settings, choose **Next** to proceed to the next step—adding attribute settings for the recommender model.

## Step 2: Add attributes to the model

After you choose settings for connecting to and retrieving recommendations from the Amazon Personalize campaign, you're ready to enter settings for the attributes that will store the recommendation data. These options vary depending on the processing method that you chose in the preceding step:

### Use the value returned by the model

If you chose this option, recommendations are temporarily stored in one attribute. This is a standard recommended attribute for each endpoint or user, depending on the option that you chose for the



**Identifier to use for recommendations** setting in the preceding step. The underlying name of this attribute is `RecommendationItems`.

For **Display name**, enter a descriptive name for the attribute. This name will appear in the **Attribute finder** in the template editor when you add a variable for the attribute to a message template. The name can contain up to 25 characters. The characters can be letters, numbers, spaces, underscores (`_`), or hyphens (`-`).

#### Use a Lambda function

If you chose this option, you can use as many as 10 attributes to store data for each recommendation. These are custom recommended attributes for each endpoint or user, depending on the option that you chose for the **Identifier to use for recommendations** setting in the preceding step. For example, if you retrieve one product recommendation for each endpoint or user, the Lambda function can process the recommendation and add the results to three custom attributes for the recommendation—product name, price, and image.

For each custom attribute that you want to add, choose **Add attribute**, and then do the following:

- For **Attribute name**, enter a name for the attribute. This name, preceded by the `Recommendations` prefix, will appear in the template editor after you add a variable for the attribute to a message template. The name has to match the name of an attribute that the Lambda function uses to store recommendation data.

An attribute name has to start with a letter or number and it can contain up to 50 characters. The characters can be letters, numbers, underscores (`_`), or hyphens (`-`). Attribute names are case sensitive and must be unique.

- For **Display name**, enter a descriptive name for the attribute. This name will appear in the **Attribute finder** in the template editor when you add a variable for the attribute to a message template. The name has to start with a letter or number and it can contain up to 25 characters. The characters can be letters, numbers, spaces, underscores (`_`), or hyphens (`-`).

When you finish entering attribute settings, choose **Next** to proceed to the next step—reviewing and publishing the configuration settings for the recommender model.

## Step 3: Review and publish the model

After you finish entering all the settings for connecting to and using the recommender model, you're ready to review the settings.

When you finish reviewing the settings, choose **Publish** to save them. Amazon Pinpoint then checks the settings to verify that they're correct. If any settings are missing or incorrect, it displays a message for each error to help you determine which setting to fix. If you need to fix a setting, use the navigation pane to go directly to the page that contains the setting.

After you publish the settings, you can start using recommendations in messages.

## Using recommendations in messages

To add dynamic, personalized recommendations to messages, create and use message templates that include message variables for recommended attributes. A *message variable* is a placeholder that refers to a specific attribute that you or Amazon Pinpoint created to store information about your users. A *recommended attribute* is an attribute that temporarily stores recommendations for your users. Amazon Pinpoint retrieves these recommendations from a recommender model that you deployed as an Amazon Personalize campaign and configured Amazon Pinpoint to use.

If a template contains message variables, Amazon Pinpoint replaces each variable with the current, corresponding value of the attribute for each recipient. For recommendations, this process includes retrieving the latest recommendations for each recipient from an Amazon Personalize campaign. Amazon Pinpoint does this each time it sends a message that uses the template. This means that you can feel confident that the message contains the latest recommendations for a recipient.

For example, if your project is an application that recommends movies and TV shows to users, you might have the following attributes for each user:

- The user's first name.
- The rating that the user most recently submitted.
- The title of the movie or show that the user most recently rated.
- The titles of the top three movies and shows that the model recommends for the user.

For this project, you could use the following text and message variables in a template:

```
Hi {{User.UserAttributes.FirstName}}, based on your recent
{{User.UserAttributes.LatestRating}}-star rating for
{{User.UserAttributes.LatestRatedTitle}}, we think you might also
enjoy: {{RecommendationItems.[0]}}, {{RecommendationItems.[1]}}, and
{{RecommendationItems.[2]}}.
```

When you send a message that uses the template, Amazon Pinpoint replaces the variables with the current value of each attribute for each recipient. The following examples show this.

#### Example 1

```
Hi Sofia, based on your recent 5-star rating for The Marvelous Mrs.
Maisel - Season 3, we think you might also enjoy: Fleabag, Late Night, and
Catastrophe.
```

#### Example 2

```
Hi Alejandro, based on your recent 4-star rating for Tom Clancy's Jack
Ryan - Season 2, we think you might also enjoy: Hanna, Hunters, and Agatha
Christie's The ABC Murders.
```

If you configured a recommender model to enhance recommendations by using an AWS Lambda function, a template and the resulting message might use additional variables and recommended attributes. For example, they might also use variables for attributes that provide an image and a URL for each recommended movie or show.

For more information about using message variables in templates, see [Adding personalized content to message templates \(p. 226\)](#).

## Adding recommendations to messages

To add personalized recommendations to messages, create and use message templates that include message variables for the recommendations that you want to use. You can add these variables to the following types of message templates:

- Email templates, for email messages that you send from campaigns or journeys.
- Push notification templates, for push notifications that you send from campaigns.
- SMS templates, for SMS text messages that you send from campaigns.

Each template can use variables and recommended attributes from one recommender model at a time.

You can add the variables to a new template when you create the template, or to an existing template. If you add variables to an existing template, Amazon Pinpoint doesn't necessarily apply the changes to messages that use the template and haven't been sent yet, such as campaign messages that are scheduled to be sent at a later time. This depends on the version of the template that you add variables to and how you configured the messages that use the template. For more information, see [Managing versions of message templates \(p. 254\)](#).

### To add recommendations to a message template

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, choose **Message templates**.
3. On the **Message templates** page, do one of the following:
  - To create a new template and add recommendations to it, choose **Create template**. Then, on the template page, enter a name for the template and, optionally, a description of the template.
  - To add recommendations to an existing template, choose the template that you want. Then, on the template page, choose **Edit**. Under **Template details**, use the version selector to choose the version of the template that you want to use as a starting point. If you choose the most recent version, you can save your changes directly to that version of the template. Otherwise, you can save your changes as a new version of the template.
4. In the **Attribute finder**, expand the **Recommended attributes** section.

If you haven't selected a recommender model for the template yet, choose **Connect model**. Next, select the model that you want to retrieve recommendations from when you send messages that use the template. Then choose **Connect model**.
5. Under **Recommended attributes**, choose the attribute that you want to add a message variable for. Amazon Pinpoint creates a variable for the attribute and copies it to your clipboard. Then, in the message editor, paste the variable where you want the recommendation to appear in messages.

After you paste the variable, Amazon Pinpoint displays it as the name of the associated attribute, enclosed in two sets of curly braces—for example, `{{RecommendationItems}}`.
6. If the recommender model provides more than one recommended attribute, repeat the preceding step for each additional attribute that you want to add a variable for.

You can also add variables for other types of attributes. To do this, expand other sections in the **Attribute finder**, choose each additional attribute that you want, and then paste the variable in the location that you want. To learn about using variables for other types of attributes, see [Adding personalized content to message templates \(p. 226\)](#).
7. To specify a default value for a message variable, expand the **Default attribute values** section. Then, in the list of variables, enter the default value that you want to use for the variable. We recommend that you do this for each variable in the template.
8. When you finish, do one of the following:
  - If you added message variables to a new template, choose **Create**.
  - If you added message variables to an existing template and you want to save your changes as a new version of the template, choose **Save as new version**.
  - If you added message variables to an existing template and you want to save your changes as an update to the most recent version of the template, choose **Update version**. This option is available only if you opened the most recent version of the template in step 3.

You can now use the template to include personalized recommendations in messages that you send from campaigns and journeys.

Note that you can't include recommendations in messages that you send to a limited audience as direct or test messages. Although you can use templates in these messages more generally, Amazon Pinpoint

can't correlate recommendations from a model with recipients of a direct or test message. To test the appearance and formatting of a template that uses recommendations, specify a default value for each message variable that refers to a recommended attribute, and then send a test message that uses the template.

## Removing recommendations from messages

To remove personalized recommendations from messages, update the message template that the messages use. When you update the template, remove all or only some message variables for recommendations.

If you remove recommendations from a template, Amazon Pinpoint doesn't necessarily apply the changes to messages that use the template and haven't been sent yet, such as campaign messages that are scheduled to be sent at a later time. This depends on the version of the template that you remove recommendations from and how you configured the messages that use the template. For more information, see [Managing versions of message templates](#) (p. 254).

### To remove recommendations from a message template

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, choose **Message templates**.
3. On the **Message templates** page, choose the template that you want to remove recommendations from. Then, on the template page, choose **Edit**.
4. Under **Template details**, use the version selector to choose the version of the template that you want to use as a starting point. If you choose the most recent version, you can save your changes directly to that version of the template. Otherwise, you can save your changes as a new version of the template.
5. In the message editor, delete all the text of the message variable for each recommended attribute that you want to remove. Each message variable consists of two sets of curly braces and the name of the associated attribute—for example, `{{RecommendationItems}}`.

To remove the recommender model from the template completely, delete all the variables for recommended attributes that the model provides. Then, in the **Attribute finder**, expand the **Recommended attributes** section and choose **X** next to the name of the model.

6. When you finish, do one of the following:
  - To save your changes as a new version of the template, choose **Save as new version**.
  - To save your changes as an update to the most recent version of the template, choose **Update version**. This option is available only if you chose the most recent version of the template in step 4.

## Managing machine learning models in Amazon Pinpoint

The **Machine learning models** page on the Amazon Pinpoint console provides a single location for you to view, change, and manage Amazon Pinpoint configuration settings for all the machine learning (ML) models that you've connected to your Amazon Pinpoint account in the current AWS Region. By using this page, you can perform management tasks such as viewing, changing, and deleting configuration settings for connections to ML models. You can also configure Amazon Pinpoint to connect to and use data from additional ML models.

### Topics

- [Viewing your collection of models](#) (p. 271)

- [Viewing the settings for a model \(p. 271\)](#)
- [Changing the settings for a model \(p. 271\)](#)
- [Copying a model \(p. 272\)](#)
- [Deleting a model \(p. 273\)](#)

To learn how to add and configure a connection to a model, see [Setting up a recommender model in Amazon Pinpoint \(p. 265\)](#).

## Viewing your collection of models

The **Machine learning models** page displays a list of all the configurations that you created to enable Amazon Pinpoint to connect to and use data from specific ML models for your account. To browse the list more easily or find specific configurations quickly, you can sort and filter the list, choose which columns to display, and change other display settings for the list.

### To view your collection of ML models

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, choose **Machine learning models**. The **Machine learning models** page opens and displays the number of configurations in your collection and a list of those configurations.
3. To customize the list or find a specific configuration quickly, choose any of the following options:
  - To sort the list by a specific type of value, click the column heading for that value. To change the sort order from ascending to descending or vice versa, click the column heading again.
  - To apply a filter that displays only those configurations whose names contain specific text, enter the text in the **Search** box above the list. To remove the filter, choose **X** in the **Search** box.
  - To change the number of configurations that are displayed in the list, choose the settings icon at the top of the page. Then, for **Page size**, choose the number of configurations that you want to display, and choose **Save changes**.
  - To add or remove columns from the list, choose the settings icon at the top of the page. Then, for **Choose visible columns**, turn each column on or off, and choose **Save changes**.

## Viewing the settings for a model

By using the **Machine learning models** page, you can quickly find and open a specific configuration to view its settings and other information. For example, you can view a list of the attributes that the model provides for use in messages. After you open a configuration to view its settings, you can also [change the settings for the configuration \(p. 271\)](#).

### To view the settings for an ML model

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, choose **Machine learning models**.
3. On the **Machine learning models** page, choose the configuration whose settings you want to view.

The configuration page opens and displays the current settings for the configuration.

## Changing the settings for a model

Before you change the configuration settings for an ML model, it's important to note that Amazon Pinpoint automatically applies your changes to message templates that use the model. (It applies the

changes to both the active and latest versions of the template.) This means that your changes also affect any messages that use those templates and haven't been sent yet, such as campaign messages that are scheduled to be sent at a later time.

For this reason, your changes might prevent Amazon Pinpoint from sending messages that use the configuration and haven't been sent yet. Or, your changes could cause those messages to display in unexpected or unwanted ways. This depends on the configuration settings that you change. It also depends on how you designed the templates that use the model.

If you change the configuration settings for an ML model, be sure to also review and make the appropriate changes to any templates that use the current configuration for the model. For example, if you delete an attribute, be sure to also remove or replace that attribute in every template that uses the attribute. Also, be sure to make those changes to the appropriate versions of each message template. For more information, see [Editing a message template \(p. 253\)](#).

If you don't want to apply your changes to existing templates and messages, you can [create a copy of the configuration \(p. 272\)](#), and save the copy with the changes that you want. You can then use the configuration copy in new templates, or update existing templates to use the configuration copy.

### To change the settings for an ML model

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, choose **Machine learning models**.
3. On the **Machine learning models** page, choose the configuration that you want to change. The configuration page opens and displays the current settings for the configuration.
4. Choose **Edit model**.
5. On the **Set up model** page, make any changes that you want. You can change any of the settings, except the name of the configuration. To change the name of the configuration, you can [create a copy of the configuration \(p. 272\)](#), save the copy with the name that you want, and then optionally [delete the original configuration \(p. 273\)](#).
6. When you finish making any changes to these settings, choose **Next**.
7. On the **Add attributes** page, make any changes that you want, and then choose **Next**.
8. On the **Review and publish** page, review the new settings and make sure that they're what you want. If they are, choose **Publish** to save your changes.

## Copying a model

To quickly create a new configuration that's similar to an existing configuration for an ML model, you can create a copy of the configuration. You can then change settings for the configuration copy, without changing the original configuration.

### To copy an ML model

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, choose **Machine learning models**.
3. On the **Machine learning models** page, select the check box next to the configuration that you want to copy.
4. On the **Actions** menu, choose **Duplicate**.
5. For **Recommender model name**, enter a name for the configuration copy. The name has to begin with a letter or number. It can contain up to 128 characters. The characters can be letters, numbers, underscores (`_`), or hyphens (`-`).
6. When you finish entering the name, choose **Duplicate model**. The configuration page opens and displays the current settings for the configuration that you copied.

7. (Optional) To change the configuration copy, choose **Edit model**, and then make the changes that you want. When you finish, choose **Publish**.

## Deleting a model

If you want to remove the configuration for an ML model from Amazon Pinpoint completely, you can delete the configuration. When you delete a configuration, Amazon Pinpoint deletes all settings for the configuration and the configuration becomes unavailable for use in both new and existing message templates. You can't recover a configuration after you delete it.

### Warning

If you delete a configuration, Amazon Pinpoint won't be able to send messages that use the configuration and haven't been sent yet, such as campaign messages that are scheduled to be sent at a later time. Before you delete a configuration, review and update the contents and settings for message templates that use the configuration. Also, review any campaigns and journey activities that use those templates, and update them as necessary.

If you delete a configuration, Amazon Pinpoint doesn't delete any resources or data that's used by the configuration and stored in other AWS services. This includes Amazon Personalize solutions and campaigns, and any AWS Lambda functions.

### To delete an ML model

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, choose **Machine learning models**.
3. On the **Machine learning models** page, select the check box next to each configuration that you want to delete.
4. On the **Actions** menu, choose **Delete**.
5. In the window that appears, enter **delete** to confirm that you want to delete the selected configurations, and then choose **Delete models**.

# Amazon Pinpoint settings

Generally, you configure settings for each project, and these settings apply by default to all the campaigns and journeys in the project. If you want to tailor an individual campaign or journey to meet specific needs, you can change certain settings for the campaign or journey. Your changes then override the default settings for the project, and the campaign or journey uses the custom settings that you chose.

In addition to the settings that are specific to an individual project, campaign, or journey, there are also some account-level settings. These account-level settings apply to all the projects for your Amazon Pinpoint account and, in some cases, other AWS services. These settings include:

- Production access and sending quotas for channels.
- SMTP credentials and other settings for sending email by using the Amazon Pinpoint SMTP interface.
- Dedicated phone numbers for sending SMS and voice messages, and for receiving SMS messages.
- Verified identities for sending email and SMS messages.
- SMS information such as short codes, long codes, 10DLC, keywords, and registered sender IDs for sending SMS messages.

To view all the settings for your Amazon Pinpoint account, open an Amazon Pinpoint project, choose **Settings** in the navigation pane, and then choose the type of setting that you want to view.

## Topics

- [General settings \(p. 274\)](#)
- [Email settings \(p. 277\)](#)
- [SMS and voice settings \(p. 281\)](#)
- [Push notification settings \(p. 298\)](#)
- [Mobile and web app analytics settings \(p. 300\)](#)
- [Event stream settings \(p. 300\)](#)

## General settings

Use the **General settings** page to specify when Amazon Pinpoint can send messages for campaigns and journeys in the current project and how many messages Amazon Pinpoint can send for those campaigns and journeys. This includes settings such as the time frame for sending messages and the maximum number of messages to send to each endpoint. You can also use the **General settings** page to delete a project.

## Topics

- [Configuring default settings for a project \(p. 274\)](#)
- [Deleting a project \(p. 276\)](#)

## Configuring default settings for a project

On the **General settings** page, you can configure default settings and quotas that you want to apply to campaigns and journeys in a project. When you change these settings, Amazon Pinpoint automatically



applies them to all new campaigns and journeys that you create for the project. The settings aren't applied to any campaigns or journeys that you previously created. You can also configure these same settings for individual campaigns and journeys. If you configure settings for an individual campaign or journey, those settings override the settings that you choose on the **General settings** page.

### To configure default settings for a project

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that you want to change the default settings for.
3. In the navigation pane, under **Settings**, choose **General settings**.
4. Choose **Edit**.
5. On the **Edit general settings** page, change any of the following settings:

#### Quiet time hours

Use these settings to prevent Amazon Pinpoint from sending messages during specific hours. When you configure these settings, you provide a **Start time** and an **End time**. If a message would be sent between the start and end times in an endpoint's local time zone, Amazon Pinpoint doesn't attempt to send the message to that endpoint.

##### Note

In order for this setting to observe local time zones, the endpoint definition for a recipient has to include a properly-formatted `Demographic.Timezone` attribute.

The times that you specify have to use 24-hour notation and be in *HH:MM* format. For example, for 9:30 PM, enter **21:30**.

#### Maximum number of daily messages per endpoint

Use this setting to specify the maximum number of messages that can be sent to a single endpoint during a 24-hour period by all the campaigns and journeys in the project. The value that you specify can't be larger than 100.

#### Maximum number of messages per endpoint

Use this setting to specify the maximum number of messages that can be sent to a single endpoint by each campaign or journey. If a campaign recurs, this setting applies to all runs of the campaign. The value that you specify can't be larger than 100.

##### Note

This setting considers the number of messages that *target* an endpoint, as opposed to the number of messages that are actually *delivered* to an endpoint. For example, if a campaign is configured to automatically send a message when a customer creates a new account, but the endpoint isn't able to receive the message (for example, if the quiet time setting applies to the endpoint), then the endpoint is still counted as having been targeted. In this situation, the endpoint would be removed from subsequent runs of the campaign.

#### Maximum number of messages per second

Use this setting to specify the maximum number of messages that can be sent each second by a campaign or journey. The value that you specify has to be a number between 50 and 20,000. If you define a messages per second parameter, we try to match it. Otherwise, if this is not defined, we attempt to deliver the message as fast as possible. Note that delivery speed, however, is dependent on channel latency at any given time.

#### Maximum amount of time for a campaign run

Use this setting to specify the maximum amount of time, in seconds, that a campaign can attempt to deliver a message after the scheduled start time. The minimum value for this setting is 60 seconds.

6. When you finish, choose **Save**.

## Deleting a project

If you want to remove a project from Amazon Pinpoint completely, you can delete the project by using the Amazon Pinpoint console.

### Warning

If you delete a project, Amazon Pinpoint deletes all project-specific settings, campaigns, journeys, and other information for the project. The information can't be recovered.

When you delete a project, Amazon Pinpoint deletes all project-specific settings for the push notification and two-way SMS messaging channels, and all segments, campaigns, journeys, and project-specific analytics data that's stored in Amazon Pinpoint, such as the following:

- **Segments** – All segment settings and data. For dynamic segments, this includes segment groups and filters that you defined. For imported segments, this includes endpoints, user IDs, and other data that you imported, and any filters that you applied.
- **Campaigns** – All messages, message treatments and variables, analytics data, schedules, and other settings.
- **Journeys** – All activities, analytics data, schedules, and other settings.
- **Analytics** – Data for all engagement metrics, such as the number of messages sent and delivered for campaigns and journeys, and all journey execution metrics. For mobile and web apps, all event data that wasn't streamed to another AWS service such as Amazon Kinesis, all funnels, and data for application usage, revenue, and demographic metrics. Before you delete a project, we recommend that you export this data to another location. For more information, see [the section called “Exporting dashboards” \(p. 194\)](#).

Note that account-level settings and data for your Amazon Pinpoint account and your AWS account aren't deleted. This includes:

- Message templates.
- Production access and sending quotas for channels.
- Dedicated phone numbers for sending SMS and voice messages, and for receiving SMS messages.
- Verified identities for sending email and SMS messages.
- SMS information such as short codes, long codes, keywords, and registered sender IDs for sending SMS messages.
- SMTP credentials and other settings for sending email by using the Amazon Pinpoint SMTP interface.
- Configuration settings for connecting to and using machine learning models.

In addition, data that's stored in other AWS services isn't deleted. This includes event data that you streamed to other AWS services such as Amazon Kinesis, files that you imported from an Amazon Simple Storage Service (Amazon S3) bucket to define a segment, and any Amazon Pinpoint metrics and spending alarms that you configured in Amazon CloudWatch.

### To delete a project

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that you want to delete.
3. In the navigation pane, under **Settings**, choose **General settings**.
4. Choose **Delete project**.

5. Enter the name of the project that you want to delete, and then choose **Ok**.

## Email settings

Use the **Email** settings page to view information about email usage for your Amazon Pinpoint account, such as the number of emails that you've sent during the past 24 hours and whether there are sending restrictions on your account.

You can also use the **Email** settings page to enable or disable the email channel for the current project. If you disable the email channel for the project, you can't send email from campaigns or journeys in the project. However, you can send transactional email from your Amazon Pinpoint account.

In addition, you can use the **Email** settings page to verify email identities for the current project. In Amazon Pinpoint, an *identity* is an email address or domain that you use to send email. Every email address that you want to use as a "From," "Source," "Sender," or "Return-Path" address in email has to be verified before you can send email with it by using Amazon Pinpoint.

### Topics

- [Viewing details about email usage \(p. 277\)](#)
- [Enabling and disabling the email channel \(p. 277\)](#)
- [Verifying identities \(p. 278\)](#)

## Viewing details about email usage

The **Email usage and restrictions** section of the **Email** settings page provides information about email usage for your Amazon Pinpoint account. You can see how many emails have been sent from your account during the past 24 hours. You can compare that number to the maximum number of emails that your account is allowed to send during a 24-hour period, referred to as your *sending quota*. You can also see the maximum number of emails that you can send per second, referred to as your *sending rate*. For additional detailed reports, see the analytics pages for [Campaigns \(p. 204\)](#) and [Transactional messaging \(p. 210\)](#).

### Note

The email sending quota, rate, and usage values that are shown in this section apply to your entire AWS account in the current AWS Region. If you've used Amazon SES to send email in the same Region, then this section shows how many email messages you've sent from both Amazon SES and Amazon Pinpoint.

The **Email usage and restrictions** section also indicates whether your account is in the sandbox. If your account is in the sandbox, your sending quota and sending rate are set to relatively low values, and you can send email only to verified email addresses or domains. For information about requesting an increase to your sending quota or sending rate, see [Managing email sending quotas \(p. 26\)](#). For information about removing your account from the sandbox, see [the section called "Email sandbox" \(p. 20\)](#).

## Enabling and disabling the email channel

To send email for campaigns and journeys in the current project, you first have to enable the email channel for the project. If you don't plan to send email for any campaigns or journeys in a project, you can disable the email channel for the project.

Note that you don't need to enable the email channel to send transactional email, which is email that is typically sent only once in response to a specific action. For information about sending transactional email, see [the section called "Sending email" \(p. 31\)](#).

### To enable the email channel for a project

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that you want to enable the email channel for.
3. In the navigation pane, under **Settings**, choose **Email**.
4. On the **Identities** tab, choose **Edit**.
5. Select **Enable the email channel for this project**.
6. If you haven't verified an email identity yet, complete the appropriate procedure in the [the section called "Verifying identities" \(p. 278\)](#) section. Otherwise, choose the identity that you want to use.
7. Choose **Save**.

The process for disabling the email channel is similar. If you disable the email channel, you can't send email for any campaigns or journeys in the project. However, you can send transactional email from your Amazon Pinpoint account.

### To disable the email channel

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that you want to disable the email channel for.
3. In the navigation pane, under **Settings**, choose **Email**.
4. On the **Identities** tab, choose **Edit**.
5. Clear **Enable the email channel for this project**, and then choose **Save**.

## Verifying identities

An *identity* is an email address or domain that you use to send email. Every identity that you use as a "From," "Source," "Sender," or "Return-Path" address in email has to be verified before you can send email with it by using Amazon Pinpoint. You can verify as many as 10,000 email addresses or domains, in any combination, in each AWS Region. If your account is still in the Amazon Pinpoint sandbox, you also need to verify the identities that you plan to send email to.

## Verifying an email address

If you aren't able to change DNS settings for your domain or you want to send email from an address on a commercial domain, such as *gmail.com* or *hotmail.com*, you can verify individual email addresses that you want to use when you send email from a project.

### To verify an email address

1. Complete the procedure in the [previous section \(p. 277\)](#) to enable the email channel.
2. Under **Identity type**, choose **Email address**, and then choose **Verify a new email address**.
3. Do one of the following:
  - Choose **Use an existing email address**, and then choose **Default sender address**. You can optionally enter a **Friendly sender name** identifying this address.
  - Choose **Verify a new email address**, enter a new **Default sender address** that you want to verify. The email address must be an address that you can access and is able to receive mail.
4. Choose **Verify email address**.
5. Choose **Save**.
6. Check the inbox of the address that you entered and look for an email from *no-reply-aws@amazon.com*. Open the email and click the link in the email to complete the verification process for the email address.

### Note

You should receive the verification email within five minutes. If you don't receive the email, do the following:

- Make sure you typed the address correctly.
- Make sure the email address that you're attempting to verify can receive email. You can test this by using another email address to send a test email to the address that you want to verify.
- Check your junk mail folder.

The link in the verification email expires after 24 hours. To resend the verification email, choose **Send verification email again** on the **Identities** tab of the **Email** settings page.

When you verify an email address, consider the following:

- Amazon Pinpoint has endpoints in multiple AWS Regions and the verification status of an email address is separate for each Region. If you want to send email from the same identity in more than one Region, you must verify that identity in each Region. You can verify as many as 10,000 identities (email addresses and domains, in any combination) in each AWS Region.
- The *local part* of the email address, which is the part that precedes the at sign (@), is case sensitive. For example, if you verify *user@example.com*, you can't send email from *USER@example.com* unless you verify that address too.
- Domain names are case insensitive. For example, if you verify *user@example.com*, you can also send email from *user@EXAMPLE.com*.
- You can apply labels to verified email addresses by adding a plus sign (+) followed by a string of text after the local part of the address and before the at sign (@). For example, to apply *label1* to the address *user@example.com*, use *user+label1@example.com*. You can use as many labels as you want for each verified address. You can also use labels in the "From" and "Return-Path" fields to implement Variable Envelope Return Path (VERP).

### Note

When you verify an unlabeled address, you are verifying all addresses that could be formed by adding a label to the address. However, if you verify a labeled address, you can't use other labels with that address.

## Verifying a domain

If you plan to send email from a domain that you own, you should verify that domain, rather than individual email addresses from that domain. After you verify a domain, you can send email from any address in that domain. For example, if you verify the *example.com* domain, you can send email from *carlos@example.com*, *jane@example.com*, and any other address in the *example.com* domain. You can also send email from any address on any subdomain of the domain. For example, if you verify the domain *example.com*, you can send email from *jane@example.com* and *john@subdomain.example.com*.

### Important

To verify a domain, you have to be able to modify the DNS settings for the domain. The procedures for modifying the DNS settings for a domain vary depending on the DNS or web hosting provider. For information about changing the DNS settings for your domain, see the documentation for your provider.

### To verify a domain

1. Complete the procedure in the [previous section \(p. 277\)](#) to enable the email channel.
2. Under **Identity type**, choose **Domain**, and then choose **Verify a new domain**.

3. For **Domain**, enter the name of the domain that you want to verify.
4. For **Default sender address**, enter the email address that you want to use by default when you send email from this domain. When you send email, you can specify a different address. However, if you don't specify a different address for specific email, Amazon Pinpoint sends the email from this default address.
5. Choose **Verify domain**.
6. Under **DNS records for domain verification**, copy the three CNAME records and save them to a location on your computer. Or, to download and save the records in a .csv file, choose **Download record set**.
7. Log in to the management console for your DNS provider, and then create three new CNAME records that contain the values that you saved in the previous step. See the next section for links to the documentation for several major providers.

It usually takes 24–48 hours for changes to DNS settings to propagate. As soon as Amazon Pinpoint detects all three of these CNAME records in the DNS configuration of your domain, the verification process is complete. You can't send email from a domain until the verification process is complete.

When you verify a domain, consider the following:

- You can send email from any subdomain of the verified domain without verifying the subdomain specifically. For example, if you verify *example.com*, you don't need to verify *a.example.com* or *a.b.example.com*.
- As specified in [RFC 1034](#), each DNS label can have up to 63 characters. In addition, the whole domain name must not exceed a total length of 255 characters.
- Amazon Pinpoint has endpoints in multiple AWS Regions and the verification status of a domain is separate for each Region. If you want to send email from the same identity in more than one Region, you must verify that identity in each Region. You can verify as many as 10,000 identities (domains and email addresses, in any combination) in each AWS Region.

## Instructions for configuring DNS records for various providers

The procedures for updating the DNS records for a domain vary depending on which DNS or web hosting provider you use. The following table lists links to the documentation for several common providers. This list isn't exhaustive and inclusion in this list isn't an endorsement or recommendation of any company's products or services. If your provider isn't listed in the table, you can probably use the domain with Amazon Pinpoint.

DNS/Hosting provider	Documentation link
Amazon Route 53	<a href="#">Creating Records by Using the Amazon Route 53 Console</a>
GoDaddy	<a href="#">Add a CNAME record</a>
Dreamhost	<a href="#">How do I add custom DNS records?</a>
Cloudflare	<a href="#">Managing DNS records in Cloudflare</a>
HostGator	<a href="#">Manage DNS Records with HostGator/eNom</a>
Namecheap	<a href="#">How do I add TXT/SPF/DKIM/DMARC records for my domain?</a>
Names.co.uk	<a href="#">Changing your domains DNS Settings</a>

DNS/Hosting provider	Documentation link
Wix	<a href="#">Adding or Updating CNAME Records in Your Wix Account</a>

## Domain verification tips and troubleshooting

If you completed the preceding steps but your domain still isn't verified after 72 hours, check the following:

- Make sure that you entered the values for the DNS records in the correct fields. Some providers refer to the **Name/host** field as *Host* or *Hostname*. In addition, some providers refer to the **Record value** field as *Points to* or *Result*.
- Make sure that your provider didn't automatically append your domain name to the **Name/host** value that you entered in the DNS record. Some providers append the domain name without indicating that they've done so. If your provider appended your domain name to the **Name/host** value, remove the domain name from the end of the value. You can also try adding a period to the end of the value in the DNS record. This period indicates to the provider that the domain name is fully qualified.
- The underscore character (\_) is required in the **Name/host** value of each DNS record. If your provider doesn't allow underscores in DNS record names, contact the provider's customer support department for additional assistance.
- The validation records that you have to add to the DNS configuration for your domain are different for each AWS Region. If you want to use a domain to send email from multiple AWS Regions, you have to verify the domain in each of those Regions.

## SMS and voice settings

Use the **SMS and voice** settings page to enable or disable the SMS channel for the current project. You can also use this page to do the following:

- Manage the default settings that apply to all SMS messages that you send from your AWS account. These settings also apply to messages that you send using other AWS services such as Amazon SNS.
- View a list of the phone numbers that you can use to send SMS and voice messages.
- Request a long code, toll-free number, or 10DLC phone number.

## Number purchase types

On the **SMS and voice** settings page, you can request the following types of numbers:

- **10DLC** (US only) – A type of long code that's registered with mobile carriers specifically to support high-volume Application-to-Person (A2P) SMS messaging using 10-digit phone numbers. To use 10DLC, you must first register your company and use case. After you complete these registrations, you can associate phone numbers with your 10DLC campaign. For more information about setting up 10DLC, see [10DLC](#) (p. 282).
- **Toll-free** (US only) – A 10-digit number that begins with one of the following prefixes: 800, 888, 877, 866, 855, 844, or 833. Toll-free numbers should only be used to send transactional messages, such as registration confirmation or one-time passwords. They can support up to three message parts per second. Opt-in and opt-out messages are managed downstream from AWS. For this reason, you can't change the messages that are shown when your recipients opt in to or out of receiving your messages.
- **Long code** – Phone numbers that use the number format of the country or region where your recipients are located. For example, in the US and Canada, long codes contain 11 digits: the number

1 (the country code), a three-digit area code, and a seven-digit phone number. You can purchase long codes for use with the voice channel on the **SMS and voice** settings page.

- **Short code** – A short phone number (typically 5–6 digits) for sending SMS messages. Short codes typically support very high throughput rates. For example, in the US and Canada, short codes support 100 message parts per second by default, and can support much higher rates for an additional charge. These capabilities vary by country or region. It typically takes several weeks to obtain a short code. To obtain a short code, you must create an AWS Support case. For more information about requesting a short code, see [the section called “Requesting short codes” \(p. 71\)](#).

## US phone number capabilities

Amazon Pinpoint supports more types of phone numbers in the United States than in other countries. The following table compares the capabilities of the types of phone numbers that you can use to send messages to recipients in the United States.

### Note

Short codes and long codes are available in countries and regions other than the United States. The capabilities of these number types vary by country. For more information about requesting short codes, see [Requesting short codes for SMS messaging with Amazon Pinpoint \(p. 71\)](#); for more information about requesting long codes, see [Requesting dedicated long codes for SMS messaging with Amazon Pinpoint \(p. 74\)](#). Toll-free and 10DLC phone numbers are only available in the United States.

Number type	Number format	Channel support	Requires registration	Provisioning time	SMS throughput
Short code	5–6 digits	SMS only	Yes	At least 10 weeks	100 message parts per second by default
Toll-free	10 digits	SMS, voice	No	Available immediately	3 message parts per second
10DLC	10 digits	SMS, voice	Yes	About 1 week	Varies based on registration
Unregistered long code	10 digits	Voice only	No	Available immediately	<i>Not applicable</i>

## SMS and voice sandboxes

New accounts that use the Amazon Pinpoint SMS and voice messaging channels are placed in sandbox environments for testing purposes. In the sandboxes, you can access all of Amazon Pinpoint's features, but with restrictions. When you're satisfied with your testing, you can request production access. For more information, see [Amazon Pinpoint SMS sandbox \(p. 57\)](#) and [Amazon Pinpoint voice sandbox \(p. 101\)](#).

## 10DLC

In the United States, unregistered long codes are designated only for Person-to-Person (P2P) messaging with low throughput. The mobile carriers in the US don't support Application-to-Person (A2P) SMS messaging over unregistered long codes.



If you use Amazon Pinpoint to send messages to recipients in the United States, you can use 10DLC phone numbers to deliver those messages, rather than using unregistered long codes. The abbreviation 10DLC stands for "10-digit long code." A 10DLC phone number is registered for use by a single sender and for a single use case. This registration process gives the mobile carriers insight into the approved use cases for each phone number that is used to send A2P messages. As a result, 10DLC phone numbers can offer high throughput and deliverability rates.

A message that you send from a 10DLC phone number appears on your recipients' devices as a 10-digit phone number. You can use 10DLC to send both transactional and promotional messages. If you already use short codes or toll-free numbers to send your messages, you don't need to set up 10DLC.

To set up 10DLC, you first register your company or brand. Next, you create a *10DLC campaign*, which is a description of your use case. This information is then shared with The Campaign Registry, which is a third party that evaluates your registration information and returns a trust score. After your company and 10DLC campaign are approved, you can purchase a phone number and associate it with your campaign. Associating a phone number with a 10DLC campaign can take 7–10 days. Although you can associate multiple phone numbers with a single campaign, you can't use the same phone number across multiple campaigns. For each campaign you create, you need to have at least one unique phone number.

**Note**

For more information about how The Campaign Registry uses your information, see their [FAQ](https://www.thecampaignregistry.com/faq) at [campaignregistry.com](https://www.thecampaignregistry.com).

Amazon Pinpoint customers who have existing unregistered long codes can request that those long codes be enabled for 10DLC. To do this, complete the registration process, and then create a case in the AWS Support Center. In some situations, it may not be possible to enable a long code for 10DLC. In this case, you need to request a new number through the Amazon Pinpoint console and associate it with your 10DLC campaign. For more information about using 10DLC with existing long codes, see [Associating a long code with a 10DLC campaign \(p. 289\)](#).

## 10DLC capabilities

The capabilities of 10DLC phone numbers depend on the mobile carriers of your recipients. AT&T provides a throughput limit based on the number of message parts that can be sent each minute. T-Mobile and Sprint provide a daily limit, with no limitation on the number of message parts that can be sent per minute. As of April 1, 2021, Verizon hasn't announced its 10DLC throughput policy.

When you set up 10DLC, you have to register your company. The Campaign Registry uses this information to calculate a trust score. Your trust score determines the capabilities of your 10DLC campaigns. The following table shows the 10DLC trust score tiers and the capabilities of 10DLC numbers that fall into those tiers.

Tier	10DLC campaign message parts per minute (AT&T)	Maximum daily 10DLC messages per company (T-Mobile)
High	3,600	200,000
Medium-high	600	40,000
Medium-low	60	10,000
Basic	12	2,000

For a comparison of the different phone number types see [US phone number capabilities \(p. 282\)](#).

## Setting up 10DLC

You can set up 10DLC directly in the Amazon Pinpoint console. To set up 10DLC, you must complete all of the following steps.

### 1. Register your company

The first step in setting up 10DLC is to register your company or brand. For information, see [Registering a company \(p. 284\)](#). Registration is typically instantaneous, but in some cases The Campaign Registry requires more information. There is a one-time registration fee to register your company. This fee is shown on the registration page.

### 2. Register your campaign

After you register your company, you create a 10DLC campaign. A 10DLC campaign contains information about your use case. Each 10DLC campaign can be associated with one company. Amazon Pinpoint sends this campaign information to The Campaign Registry for approval. In most cases, 10DLC campaign approval is instantaneous. In some cases, The Campaign Registry may require additional information. For more information, see [Registering a 10DLC campaign \(p. 286\)](#). There is a recurring monthly fee for each 10DLC campaign that you register. The monthly fee varies depending on your use case. The recurring fee for your campaign is shown on the registration page.

### 3. Request your 10DLC number

After your 10DLC campaign is approved, you can request a phone number and associate that number with the approved 10DLC campaign. Each phone number can only be associated with a single 10DLC campaign. For more information, see [Requesting a number \(p. 291\)](#). There is a monthly recurring fee for leasing the phone number. This fee is shown on the purchase page.

## 10DLC registration and monthly fees

There are registration and monthly fees associated with using 10DLC, such as registering your company and 10DLC campaign. These are separate from any other monthly or AWS fees. For more information about 10DLC fees, see the [Amazon Pinpoint Pricing](#) page.

## Registering a company

Before you can request a 10DLC, you must register your company with The Campaign Registry.

You only need to register your company once. After it's registered, you can edit most of your company and contact information. To delete a registered company, create a case with AWS Support. For more information about editing or deleting company details, see [Editing or deleting a registered company \(p. 285\)](#).

### To register a company

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, under **SMS and voice**, choose **Phone numbers**.
3. On the **10DLC campaigns** tab, choose **Register company**.
4. On the **Register your company** page, view the **Registration fee**. This is a one-time fee associated with registering your company. This cost is separate from any other monthly costs or fees. It is charged to you only when your company has been registered.
5. In the **Company info** section, provide the following information:
  - **Legal company name** – This is the name under which the company is registered. You must use the company's legal name.

### Important

Make sure to use your company's exact legal name. Once submitted you can't change this information. Incorrect or incomplete information might result in your registration being delayed or denied.

- **What type of legal form is this organization** – Choose one of the following from the dropdown list: **Private profit**, **Public for profit**, or **Not for profit**.
  - If you choose **Public for profit**, you're prompted to supply the company's stock symbol and the stock exchange on which it's listed.
  - Choose the country where the company is registered from the **Country of registration** list.
  - If the company is known by any name other than its registered name, enter that name in the **Doing Business As (DBA) or brand name** field.
  - Enter the business's **Tax ID**. In the United States, this is a 9-digit number. A tax ID is required, so you must provide an actual tax ID. Do not leave this blank or complete with false information. Once submitted you can't change this information.
  - For **Vertical**, choose the vertical market that most closely resembles the company you're registering.
6. In the **Contact info** section, provide contact information for contacting the company.
    - **Address/Street** – The physical street address.
    - **City** – The city in which the physical address is located.
    - **State or region** – The state or region where the address is located.
    - **Zip Code /Postal Code** – The associated ZIP or postal code for the address.
    - **Company website** – Provide the full URL, including HTTP or HTTPS.
    - **Support email** – The full email address where your company support can be contacted.
    - **Support phone number** – The phone number, using an E.164 format, where your company support can be contacted. For example, **12065550101**. You don't need to include the initial plus sign (+).
  7. When you're finished, choose **Create**. This submits your company registration to The Campaign Registry. Typically, approval is instantaneous.
  8. After your company is registered, you can create a 10DLC campaign. For information about creating a 10DLC campaign, see [Registering a 10DLC campaign \(p. 286\)](#).

## Editing or deleting a registered company

You can edit a company's registered information. However, if you want to delete a registered company you'll need to file a support request.

### Editing a company

After a company is registered, you can edit any company information except the **Legal company name** or **Tax ID**. If the **Legal company name** or **Tax ID** are wrong you'll need to delete the company and start the company registration process over.

#### To edit a company

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. Under **Account Settings**, and then under **SMS and voice**, choose **10DLC campaigns**.
3. On the 10DLC campaign tab, choose the **Company** link you want to edit.

**Note**

On the **Company info** page you can also register a new 10DLC campaign if you have no campaigns yet associated with the company. See [Registering a 10DLC campaign \(p. 286\)](#) for more information.

4. Choose **Edit**.
5. Update any **Company info** or **Contact info** fields as required.
6. Choose **Update**.

## Deleting a company

You'll need to file a support request if you want to delete a registered company. You can't delete a company through the Amazon Pinpoint console.

### To delete a company

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. Under **Account Settings**, and then under **SMS and voice**, choose **10DLC campaigns**.
3. On the **10DLC campaigns** tab, choose the **Request to delete company**.
4. Confirm that you want to continue by choosing **Request to delete company** again to open the AWS Support Dashboard.
5. For the case type, choose **Service limit increase**.
6. For the **Limit type**, choose **Pinpoint**.
7. In the **Requests** section, choose the **Region**, and then for the **Limit**, choose **10DLC - request to update/delete 10DLC company or campaign**.
8. Leave the **New limit value** field empty.
9. For **Use case description**, enter the company name you want to delete, and then provide details for what you want to be done.
10. Under **Contact options**, for **Preferred contact language**, choose the language that you prefer to use when communicating with the AWS Support team.
11. For **Contact method**, choose your preferred method of communicating with the AWS Support team.
12. Choose **Submit**.

## Registering a 10DLC campaign

A 10DLC campaign indicates how you'll be using the 10DLC number you're requesting. Before you can create and register a 10DLC campaign, your company must first be registered. For information on registering a company, see [Registering a company \(p. 284\)](#).

On this page, you first provide the details about the company you're creating the 10DLC campaign for and then provide the use case details of the campaign itself. The information on this page is then provided to The Campaign Registry for approval.

### Step 1: Choose the company associated with the 10DLC campaign

In this section, you'll choose the company you're creating the 10DLC campaign for and provide additional details.

**Important**

Carefully verify that all of the information that you enter is correct. Errors in the registration process could result in reduced throughput for your 10DLC phone numbers.

## To create a 10DLC campaign

### Note

For each campaign you're registering, there is a carrier registration fee that won't be charged until your campaign is approved.

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. Under **Account Settings**, and then under **SMS and voice**, choose **10DLC campaigns**.
3. On the **Create a 10DLC campaign** page, the **Fees** section displays the one-time carrier 10DLC campaign registration fee, separate from any monthly or AWS fees, in addition to the monthly 10DLC campaign fee. This fee charged is per campaign.
4. For **Company name**, choose the company that you're creating this campaign for. If you haven't already registered the company, you must do that first.
5. Enter a **10DLC campaign name**.
6. For **Vertical**, choose the vertical market that most closely resembles your market.
7. In **Help message**, enter the message that your customers receive if they respond with a HELP keyword.
8. In **Stop message**, enter the message a customer receives from you if they respond with the STOP keyword.

## Step 2: Add the use case details

After you've provided the company information, you'll next supply the 10DLC campaign details.

### To provide use case details

1. For **Use case**, choose a use case that most closely resembles your campaign from the preset list of use cases. The monthly fee for each use case appears next to the use case name.
2. Enter at least one **Sample SMS message**. This is the sample message you plan to send to your customers. This message must be the exact message you'll be sending.
3. If your use case supports multiple scenarios, enter up to four additional sample messages.
4. The **Campaign and content attributes** section defines the characteristics of your 10DLC campaign. These are a series of **Yes** or **No** options indicating particular features of the campaign. Some attributes are mandatory, so you can't change the default value. These values appear grayed out.

### Important

Make sure that the attributes you choose are applicable to your campaign. In some cases, choosing an attribute that is not applicable to your campaign can negatively affect your throughput per second (TPS).

- **Subscriber opt-in** – Subscribers can opt in to receive messages about this campaign.
- **Subscriber opt-out** – Subscribers can opt out of receiving messages about this campaign.
- **Subscriber help** – Subscribers can contact the message sender after sending the HELP keyword.
- **Number pooling** – This 10DLC campaign uses more than 50 phone numbers.
- **Direct lending or loan arrangement** – The campaign includes information about direct lending or other loan arrangements.
- **Embedded link** – The 10DLC campaign includes an embedded link. URL shorteners, such as Tinyurl or Bitly, are not allowed.
- **Embedded phone number** – The campaign includes an embedded phone number that is not a customer support number.
- **Affiliate marketing** – The 10DLC campaign includes information from affiliate marketing.

- **Age-gated content** – The 10DLC campaign includes age-gated content as defined by carrier and Cellular Telecommunications and Internet Association (CTIA) guidelines.
5. Choose **Create**. The SMS and voice page opens. A message appears indicating that your campaign was submitted and is under review. You can see the status of your request on the **10DLC campaigns** tab. You can check the status of your registration on the **10DLC** tab, which will be one of the following:
    - **Active** – Your 10DLC campaign was approved. You can request a 10DLC and assign that number to your campaign. See [Requesting a number \(p. 291\)](#).
    - **Pending** – Approval for your 10DLC campaign has not yet been received by one or more carriers. In some cases, approval might take one week or more. If the status changes to any other status, the Amazon Pinpoint console reflects that change. We don't notify you of status changes.
    - **Rejected** – Your 10DLC campaign was rejected by one or more carriers. To get more information, submit a support request that includes the campaign ID of the rejected campaign. Amazon Pinpoint doesn't include rejection reasons on the console, and we don't notify you if your campaign is rejected.
    - **Suspended** – One or more carriers suspended your 10DLC campaign. To get more information, submit a support request that includes the campaign ID of the suspended campaign. Amazon Pinpoint doesn't include suspension reasons on the console, and we don't notify you if your campaign is suspended.
  6. If your 10DLC is approved, you can request a 10DLC number to associate with that campaign. For information about requesting a 10DLC number, see [Requesting a number \(p. 291\)](#).

**Note**

In some cases, for instance if you've been previously registered with the Campaign Registry, you might be automatically approved.

## Editing or deleting a 10DLC campaign

You can edit Help, Stop, and Sample message for your 10DLC campaign using the Amazon Pinpoint console. In addition, you can also delete your 10DLC campaign using the console.

### Editing a 10DLC campaign

Once your campaign is approved you can modify the Help, Stop, and any sample SMS messages. You can also add additional sample messages up to the limit of five. However, you can't reduce the number of sample messages that you originally registered. For example, if you registered your campaign with three sample SMS messages, you can't reduce the number of sample SMS messages to less than three.

No other fields can be modified once the 10DLC campaign is approved. Changes to these fields do not require re-approval from The Campaign Registry or from carriers.

**Note**

If you want to modify any fields other than sample messages, you should first delete the 10DLC campaign and then recreate the campaign to include the updated information.

### To edit a 10DLC campaign

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. Under **Account Settings**, and then under **SMS and voice**, choose **10DLC campaigns**.
3. Choose the 10DLC campaign that you want to modify sample messages for.
4. In the **Campaign messages** section of the campaign details page, choose **Edit**.
5. Update any of the following fields:

- **Help message**
- **Stop message**
- **Sample SMS message**

You can't delete a previously added sample message, or delete the contents of a sample message so that the field is empty. If you delete the contents of a message without replacing that content, the original message will be used on updating.

6. Choose **Update**.
7. A confirmation banner appears letting you know the campaign messages were updated.

## Deleting a 10DLC campaign

You can delete a 10DLC campaign using the Amazon Pinpoint console. Before deleting a 10DLC campaign you must first remove any numbers associated with that campaign. You cannot recover a deleted 10DLC campaign.

### Important

If you have any 10DLC numbers associated with a campaign you want to delete, first remove those numbers from the campaign. Once you remove a 10DLC number from a campaign you no longer have access to that number.

### To delete a 10DLC campaign

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. Under **Account Settings**, and then under **SMS and voice**, choose **10DLC campaigns**.
3. Choose the 10DLC campaign that you want to delete.
4. In the **Phone numbers** section, note the phone numbers associated with the campaign.

### Note

This step is only required if you have multiple 10DLC phone numbers associated with the campaign. If you have only a single phone number associated with the 10DLC campaign that number will appear on the **10DLC campaigns** tab. Note the number displayed on the tab.

5. On the **Phone numbers** tab, choose the 10DLC number you want to remove, and then choose **Remove phone number**.
6. Enter **delete** into the confirmation box, and then choose **Confirm**. A success message appears at the top of the SMS and voice page.
7. Repeat the previous two steps for each 10DLC number associated with the campaign.
8. After removing any numbers associated with the 10DLC campaign, choose the **10DLC campaigns** tab.
9. Choose the 10DLC campaign you want to delete.
10. In the upper right-hand corner of the **10DLC campaign details** page, choose **Delete**.
11. Enter **delete** into the confirmation box, and then choose **Confirm**. A success message appears at the top of the SMS and voice page.

## Associating a long code with a 10DLC campaign

If you have an existing long code, you can associate that long code with one of your current 10DLC campaigns by filing a support request. The long code you associate with the 10DLC campaign can only be used with that campaign and can't be used for any other 10DLC campaign. While your long code is

being migrated to 10DLC you'll still be able to use it. Until it's approved, however, you won't be able to use it for any 10DLC campaign.

When filing the request, you'll need:

- the long codes to associate with a 10DLC campaign
- the 10DLC campaign ID you want to associate the long code with

**Note**

Before you can associate any long codes with a campaign, you need to have that 10DLC campaign registered. If you have not yet created and registered a 10DLC campaign, see [Registering a 10DLC campaign \(p. 286\)](#).

**To assign a long code to 10DLC**

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. Under **Settings**, and then under **SMS and voice**, choose the **Phone numbers** tab.
3. Choose the long code that you want to convert to a 10DLC.
4. To open Support Center, choose **Assign to 10DLC campaign**.
5. For the case type, choose **Service limit increase**.
6. For **Limit type**, choose **Pinpoint**.
7. In the **Requests** section, choose the **Region**, and then for the **Limit**, choose **10DLC**.
8. Under **Case description**, for **Use case description**, be sure to include the 10DLC campaign ID and the long code numbers you want to associate that campaign. You can include multiple long codes in the request, but you should include only one campaign ID.
9. Under **Contact options**, for **Preferred contact language**, choose the language that you prefer to use when communicating with the AWS Support team.
10. For **Contact method**, choose your preferred method of communicating with the AWS Support team.
11. Choose **Submit**.

## 10DLC cross-account access

There are two ways you can enable cross-account access for 10DLC.

1. You can register the same tax ID and brand across multiple AWS accounts. These will be treated as separate registrations and charged separately. In addition, trust score and throughput allocation are evaluated separately by carrier and might differ across accounts.
2. Alternatively, you can register a single AWS account, and use AWS Identity and Access Management (IAM) roles to associate other accounts with your main account. Then, delegate access permissions from the main account to the other accounts by granting them access to the 10DLC numbers in the main account. These steps are described below.

**To grant access to the 10DLC numbers in your main account**

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. Under **Account Settings**, **SMS and voice**, choose the **10DLC** tab.
3. Register your company and campaign on the main account that will use the 10DLC phone number. For example, your main account might be a **Production** account, but you want your **Development** account to use a 10DLC number.



4. Create the IAM role in your main account. This allows another account to call the `SendMessage` API operation. For this operation, you must specify the 10DLC number to use for the originating identity. For more information on creating roles, see [Creating IAM roles](#) in the *IAM User Guide*.
5. Delegate and test access permission from your main account using IAM roles with any of your other accounts that need to use your 10DLC numbers. For example, you might delegate access permission from your `Production` account to your `Development` account. See [Delegate access across AWS account using IAM roles](#) in the *IAM User Guide* for more information about delegating and testing.
6. Using the new role, send a message using a 10DLC number from the main account. See [Using IAM roles](#) in the *IAM User Guide* for more information on using a role.

**Important**

A sent message from the secondary account is treated as if it were sent from your main account. Quotas and billing are counted against this account and not any secondary accounts.

## Rejected 10DLC companies and campaigns

If your company or 10DLC campaign are rejected, you'll need to submit a support request to get more information. Amazon Pinpoint does not display rejection reasons on the console.

### To submit a support request for a rejected company or 10DLC campaign

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. Choose **Support**, and then **Support Center**.
3. On the Support page, choose **Create case**.
4. For the case type, choose **Service limit increase**.
5. For the **Limit type**, choose **Pinpoint**.
6. In the **Requests** section,
  - Choose the **Region**.
  - For the **Resource Type**, choose **10DLC Registration**.
  - For the **Limit**, choose **Company or 10DLC Campaign Registration Rejection**.
7. For **Use case description**, enter the rejected 10DLC company name or 10DLC campaign ID for which you want to know the rejection reason.
8. Under **Contact options**, for **Preferred contact language**, choose the language that you prefer to use when communicating with the AWS Support team.
9. For **Contact method**, choose your preferred method of communicating with the AWS Support team.
10. Choose **Submit**.

## Requesting a number

You can request a long code, toll-free number, or 10DLC phone number on the **SMS and voice** settings page. Long codes and toll-free numbers are ready to be used immediately after you purchase them. To request a 10DLC phone number, you must first register your company and campaign. After you complete these registrations, you can request a phone number and associate it with a 10DLC campaign. For more information about 10DLC, see [10DLC \(p. 282\)](#).

**Note**

On this page, you can purchase long codes that you can use to send voice messages. If you want to purchase long codes for sending SMS messages, or if you want to purchase a long code for

a country that isn't listed on this page, you must open a ticket with AWS Support. For more information about opening a Support ticket to request long codes, see [Requesting dedicated long codes for SMS messaging with Amazon Pinpoint \(p. 74\)](#).

## Step 1: Request a number

On the **SMS and voice** settings page in the Amazon Pinpoint console you can request a long code, toll-free number, or 10DLC phone number.

### To request a number

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. In the navigation pane, under **Settings**, choose **SMS and voice**.
3. On the **Phone numbers** tab, choose **Request phone number**.
4. On the **Define your phone numbers** page, for **Country**, choose the country where your recipients are located. You can choose only one country at a time, but you can add more countries later if necessary. For all countries except the United States, the only type of phone numbers that you can purchase on this page are long codes.

#### Note

You can't request a specific number or area code. Phone numbers are assigned based on availability.

If you're requesting a number for use in the United States, choose the phone number type. Depending on the type, you might need to provide additional documentation to support the request.

- **Long code** – This is a standard 10-digit number dedicated only for use with Amazon Pinpoint. No special documentation is required.

#### Note

Unregistered long codes only support voice messages. SMS is not supported due to U.S. telecom carrier requirements. Choose **10DLC** to request a number using an SMS-enabled 10-digit phone number format.

- **Toll-free** – Request a toll-free number. Your throughput is limited to 3 messages per second. Toll-free number support both SMS and voice messages. A toll-free number cannot be used to send messages outside of the U.S.

#### Note

For toll-free numbers, the default SMS opt-out and opt-in keywords are STOP and UNSTOP. These keywords are carrier-managed, so no other keywords are supported. When a user responds with STOP or UNSTOP, the response message is also carrier-managed and can't be changed. On the **SMS settings** page of the Amazon Pinpoint console, the opt-out **Keyword** and **Response message** fields are grayed-out and can't be edited.

- **10DLC** – Only available for sending messages within the United States. Can support both SMS and voice. Company and campaign registration approval is required before a number can be purchased. Requesting a 10DLC number might take up to a week for approval.

If you choose **10DLC**, you're prompted to assign the number to an existing 10DLC campaign. This number can only be used for the associated campaign. A single 10DLC phone number can't be used for multiple campaigns. If you request a 10DLC number before you have an active 10DLC campaign, Amazon Pinpoint returns an error message. If you don't see a campaign listed, verify the campaign status on the **10DLC** tab on **SMS and voice** settings page. This tab shows a list of current 10DLC campaigns and their statuses. For information about creating new 10DLC campaigns, see [Registering a 10DLC campaign \(p. 286\)](#).

For US-based phone numbers, you also need to choose the channels the number supports. You can choose to enable the **SMS** channel, the **Voice** channel, or both.

5. Specify the use case for the phone number. You can choose one of the following options:
  - **Promotional** – Choose this option for sending marketing messages or messages promoting your business or service.
  - **Transactional** – Choose this option for sending time-sensitive messages, such as password resets or transaction alerts.

In some countries and regions, the value that you choose may determine the price that you pay for each message that you send. Transactional messages are optimized for high deliverability, resulting in a higher cost in many countries. Promotional messages are optimized for cost-effectiveness. For more information about SMS pricing, see [Amazon Pinpoint Pricing](#).

6. The **Summary** section displays information about the number. The **Price per month** shows the cost for a single number.
7. For **Quantity**, choose the quantity of numbers you want to purchase. You can purchase up to 10 numbers in a single request. You can purchase additional numbers later. The **Subtotal** updates to display the total monthly cost for the quantity of phone numbers that you're purchasing.
8. (Optional) If you want to purchase additional phone numbers, choose **Add a country or region**.
9. When you're done purchasing phone numbers, choose **Next**.

## Step 2: Review and submit your number request

Before you request a number, use this page to verify whether the information is correct. Once you submit the request you have to submit a support request to make any changes.

### To review and submit your number request

1. The **Review and request** page displays the number request details for each destination country.
2. The **Total cost** displays the total cost for all numbers for all countries you've chosen.
3. Choose **Request** if you're ready; otherwise, choose **Previous** to go to back and make any changes. Once you choose **Request** you can no longer make changes.
4. Typically, a request for a long code or toll-free number is approved instantaneously, and a confirmation appears at the top of the page noting that the phone number type was added successfully. You can now access those numbers on the Phone numbers tab of the **SMS and voice** page.

A 10DLC phone number request takes an average of 7-10 days to process. During this time the status of the phone number on the Phone numbers tab is **Pending**. Once your request for the 10DLC number is approved the status changes to **Active**. You can then associate that number with your 10DLC campaign.

If the request encounters any errors, an error message displays at the top of the page. Common errors might be that there were no long codes available for one of your selected countries or an error occurred while trying to provision a long code. In some cases, your account might require additional review prior to approving your request. Should this message appear, you'll need to create a support ticket providing further information about your request.

5. If your number is enabled for SMS you can further customize it by adding HELP and STOP keywords, or enabling two-way SMS. See [Managing SMS and voice settings \(p. 294\)](#).
6. If you've enabled SMS on the number, test it. See [Sending a test SMS message \(p. 191\)](#).

## Managing SMS and voice settings

### Topics

- [Changing SMS settings \(p. 294\)](#)
- [Managing number settings \(p. 294\)](#)
- [Removing a number \(p. 297\)](#)

## Changing SMS settings

The Amazon Pinpoint console provides several options to help you update and manage SMS channel settings to match your use case and budget. For example, you can enable or disable the SMS channel for a specific project, set a monthly SMS spending quota for your AWS account, or change the default message type for your AWS account.

### To change SMS settings

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, do one of the following:
  - To change SMS settings for a specific project, choose the project.
  - To change SMS settings for your AWS account, choose any project.
3. In the navigation pane, under **Settings**, choose **SMS and voice**.
4. On the **SMS and voice** settings page, next to **General**, choose **Edit**.
5. On the **Edit SMS** page, change any of the following settings:
  - **Enable the SMS channel for this project** – Select this option to enable the SMS channel for the current project. To disable the SMS channel for the project, clear this option.
  - **Account-level settings** – Change these settings to modify the SMS settings for your AWS account. These settings apply to your entire Amazon Pinpoint account and to all AWS services that you can use to send SMS messages, such as Amazon Simple Notification Service. You can change the following settings:
    - **Default message type** – Choose the type of SMS messages that you plan to send. If you plan to send time-sensitive content, such as alerts and one-time passwords, choose **Transactional**. If you plan to send marketing-related content, choose **Promotional**.
    - **Account spending limit** – Specify the maximum amount of money, in US Dollars, that you want to spend sending SMS messages during each calendar month.
    - **Default sender ID** – Optionally, specify the sender ID that you plan to use to send SMS messages. A sender ID is an alphanumeric identifier that appears on recipients' devices when they receive messages from you. Support for sender IDs varies by country or region. For more information, see [Supported countries and regions \(SMS channel\) \(p. 85\)](#).
6. When you finish making changes, choose **Save changes**.

## Managing number settings

You can use the options in the **Number settings** section of the **SMS and voice** settings page to manage settings for the dedicated *short codes* and *long codes* that you requested from AWS Support and assigned to your account. A short code is a five-digit or six-digit number that's meant for high-volume SMS messaging. To learn how to request a dedicated short code, see [the section called "Requesting short codes" \(p. 71\)](#). A long code is a standard 10-digit phone number that's meant for low-volume, person-to-person communication. To learn how to request a dedicated long code, see [the section called "Requesting long codes" \(p. 74\)](#).

After you receive one or more dedicated short codes or long codes from AWS Support, those numbers appear in the **Number settings** section, where you can manage SMS keyword settings and two-way SMS messaging settings for the numbers.

## Keyword settings

A *keyword* is a specific word or phrase that a customer can send to your number to elicit a response, such as an informational message or a special offer. When your number receives a message that begins with a keyword, Amazon Pinpoint responds with a customizable message.

For short codes, the console shows the keywords and responses that you initially define when you request a short code from AWS Support. AWS Support registers your keywords and responses with wireless carriers when it provisions your short code.

For long codes, the console shows the default keywords and responses.

### Important

Your keywords and response messages must comply with the guidelines that are set by wireless carriers and wireless industry groups. Otherwise, following an audit, such groups might take action against your short code or long code. This action can include deny listing your number and blocking your messages.

## Default keywords

Wireless carriers in the US require short codes to support the following keywords. In addition, AWS expects all long codes and short codes to support these keywords:

### HELP

Used to obtain customer support. The response message must include customer-support contact information, as in the following example:

*"For assistance with your account, call 1 (NNN) 555-0199."*

### STOP

Used to opt out of receiving messages from your number. In addition to *STOP*, your audience can use any supported opt-out keyword, such as *CANCEL* or *OPTOUT*. For a list of supported opt-out keywords, see [SMS opt out \(p. 82\)](#). After your number receives an SMS message that contains an opt-out keyword, Amazon Pinpoint stops sending SMS messages from your account to the individual who opted out.

The response message must confirm that messages will stop being sent to the individual who opted out, as in the following example:

*"You are now opted out and will no longer receive messages."*

## Registered keyword

A *registered keyword* is a keyword that's specific to your SMS use case. When you use short codes, you're required to register this keyword with wireless carriers. Customers can send this keyword to your short code to get more information about the products and services that you offer.

## Changing keyword settings

Use the Amazon Pinpoint console to customize the keyword responses for your number.

### Important

Required opt-out and opt-in keyword responses for toll-free numbers are *STOP* and *UNSTOP*, which are carrier-managed. Because these keywords are carrier-managed, they can't be

changed. On the Amazon Pinpoint console these fields will be grayed-out. When a user sends STOP or UNSTOP, the carrier also sends the response message. Therefore, you won't be able to customize your opt-out or opt-in response message.

1. On the **SMS and voice** settings page, under **Number settings**, choose the short code or long code that you want to manage keyword responses for.

Under **Keywords**, the console provides options for:

- The default *HELP* and *STOP* keywords. You can edit the response messages, but you can't edit the keywords.
  - Your registered keyword. If you want to change your registered keyword, you need to first open a case with AWS Support and request to update the keyword with wireless carriers. Then, you need to edit the keyword in the Amazon Pinpoint console to match. You can also edit the response message, but the intent of the message must remain consistent with the message that you provide to AWS Support.
2. In the table that contains the keyword that you want to edit, choose **Edit**, and then edit the keyword and response message.
  3. When you finish making changes, choose **Save**.

## Two-way SMS settings

You can define keywords for SMS messages that you want to receive and process by using a service other than Amazon Pinpoint. When your number receives an SMS message that begins with one of these keywords, Amazon Pinpoint sends the message and related data to an Amazon Simple Notification Service (Amazon SNS) topic in your account. You can then use Amazon SNS to publish the message to topic subscribers or to AWS services for further processing.

### To set up two-way SMS

1. On the **All projects** page, choose the project that you want to manage two-way SMS settings for.
2. In the navigation pane, under **Settings**, choose **SMS and voice**.
3. Under **Number settings**, choose the phone number that you want to configure two-way SMS for.

#### Note

You can enable two-way SMS for a phone number only if the value in the **SMS** column is *Enabled*.

4. Under **Two-way SMS**, choose **Enable 2-way SMS**.
5. Under **Incoming messages destination**, specify the Amazon SNS topic that receives your SMS messages by choosing one of the following options:

- **Create a new Amazon SNS topic** – Amazon Pinpoint creates a topic in your account.
- **Choose an existing Amazon SNS topic** – Specify the ARN of a topic in your account.

#### Note

Amazon Pinpoint currently doesn't support the use of encrypted Amazon SNS topics for two-way SMS messaging. You have to choose a topic that isn't encrypted.

6. Under **Two-way SMS keywords**, you can add or edit keywords and response messages. When your number receives an SMS message that contains one of these keywords, Amazon Pinpoint does the following:
  - Sends the message to your Amazon SNS topic.
  - Responds with the keyword response message, if you specified one.

To add a keyword, choose **Add another keyword**.

7. When you finish making changes, choose **Save**.

## Self-managed opt-outs

By default, when a customer sends a message that begins with *HELP* or *STOP* to one of your dedicated numbers, Amazon Pinpoint automatically replies with a customizable message. In the case of incoming *STOP* messages, Amazon Pinpoint also opts the customer out of receiving future SMS messages. If you prefer to manage *HELP* and *STOP* responses by using a service other than Amazon Pinpoint, you can enable self-managed opt-outs.

### Note

To enable self-managed opt-outs for a number, you must first enable two-way SMS messaging for that number.

When you enable this feature, there are three changes to the way that Amazon Pinpoint handles incoming messages that your customers send to the specified long or short code. First, it stops sending automatic responses to incoming *HELP* and *STOP* messages. (However, you can use [keyword settings \(p. 295\)](#) to manually configure responses to these messages.) Second, Amazon Pinpoint stops automatically opting your customers out of receiving future SMS messages when they send a *STOP* message. And finally, it routes incoming *HELP* and *STOP* messages to the Amazon SNS topic that you use to receive two-way SMS messages, rather than responding to the sender automatically.

If you enable this feature, you're responsible for responding to *HELP* and *STOP* requests. You're also responsible for tracking and honoring opt-out requests.

### Important

Many countries, regions, and jurisdictions impose severe penalties for sending unwanted SMS messages. If you enable this feature, make sure you have systems and processes in place for capturing and managing opt-out requests.

### To enable self-managed opt-outs

1. Under **Number settings**, choose the short code or long code that you want to enable self-managed opt-outs for.
2. On the **Number settings** page, choose **Two-way SMS**.
3. Enable and set up two-way SMS messaging, if you haven't already done so. For information about setting up two-way SMS messaging, see [the section called "Two-way SMS messaging" \(p. 83\)](#).
4. Under **Opt-outs**, choose **Enable self-managed opt-outs**.

## Removing a number

If you don't need a dedicated phone number for your account anymore, you can relinquish and end your lease for it. When you relinquish a number, we stop charging you for it in your bill for the next calendar month. You can remove a long code or toll-free number yourself through the Amazon Pinpoint console. For removing a 10DLC you'll need to file a support ticket, which you can submit following the steps below.

### Important

If you relinquish a number you might not be able to get that same number back in the future. Once you remove a 10DLC number you no longer have access to that number for other campaigns.

### To remove a number from your account

1. Under **Phone number**, choose the long code, toll-free number, or 10DLC. You can only remove one number at a time.
2. Choose **Remove phone number**.



3. Enter **delete** into the confirmation box, and then choose **Confirm**. A success message appears at the top of the SMS and voice page.

## Push notification settings

Use the **Push notifications** settings page to specify the credentials that Amazon Pinpoint should use to send push notifications for the current project to iOS, Android, or Amazon devices. You can provide credentials for the following push notification services, each of which is supported by an Amazon Pinpoint channel:

- Amazon Device Messaging (ADM)
- Apple Push Notification service (APNs)
- Baidu Cloud Push
- Firebase Cloud Messaging (FCM)

### Topics

- [Updating push notification settings \(p. 298\)](#)
- [Managing APNs settings \(p. 298\)](#)

## Updating push notification settings

By using the console, you can update the credentials that Amazon Pinpoint uses to send push notifications for the current project to iOS, Android, and Amazon devices.

### To update push notification settings

1. Open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that you want to update push notification settings for.
3. In the navigation pane, under **Settings**, choose **Push notifications**.
4. Next to **Push notifications**, choose **Edit**.
5. To update settings for the Baidu Cloud Push or ADM service, choose **Show more push notification services**.
6. Enter the correct credentials for the push notification services that you want to use:
  - **APNs** – Requires an authentication token signing key or a TLS certificate, which you get from your Apple developer account. For more information, see the next section, *Managing APNs Settings*.
  - **FCM** – Requires a Web API Key, also referred to as an *API\_KEY* or *server key*, which you get from the Firebase console. For information about obtaining FCM credentials, see [Credentials](#) in the Firebase documentation.
  - **Baidu** – Requires an API key and a secret key, which you get from your Baidu Cloud Push project.
  - **ADM** – Requires the OAuth credentials (client identifier and client secret) from your Amazon Developer account. For more information, see [Obtaining amazon device messaging credentials](#) in the Amazon Developer documentation.
7. When you finish, choose **Save**.

## Managing APNs settings

For the Apple Push Notification service (APNs), you can authorize Amazon Pinpoint to send push notifications to your iOS app by providing information about your APNs *key* or *certificate*:



### Key

A private signing key that Amazon Pinpoint uses to cryptographically sign APNs authentication tokens. You obtain the signing key from your Apple developer account.

If you provide a signing key, Amazon Pinpoint uses a token to authenticate with APNs for every push notification that you send. With your signing key, you can send push notifications to APNs production and sandbox environments.

Unlike certificates, your signing key doesn't expire. You provide your key only once, and you don't need to renew it later. In addition, you can use the same signing key for multiple apps. For more information, see [Communicate with APNs using authentication tokens](#) in *Apple Developer Account Help*.

### Certificate

A TLS certificate that Amazon Pinpoint uses to authenticate with APNs when you send push notifications. An APNs certificate can support both the production and sandbox environments, or it can support only the sandbox environment. You obtain the certificate from your Apple developer account.

A certificate expires after one year. When this happens, you must create a new certificate, which you then provide to Amazon Pinpoint to renew push notification deliveries. For more information, see [Communicate with APNs using a TLS certificate](#) in *Apple Developer Account Help*.

### To manage APNs settings

1. On the **Edit push notifications** page, select **Apple Push Notification service (APNs)**.
2. Under **Authentication type**, choose **Key credentials** or **Certificate credentials**, depending on the type of authentication that you want to use.
  - If you choose **Key credentials**, provide the following information from your Apple developer account at <https://developer.apple.com/account/>. Amazon Pinpoint requires this information to construct authentication tokens.
    - **Key ID** – The ID assigned to your signing key. To find this value, choose **Certificates, IDs & Profiles**, and choose your key in the **Keys** section.
    - **Bundle identifier** – The ID assigned to your iOS app. To find this value, choose **Certificates, IDs & Profiles**, choose **App IDs** in the **Identifiers** section, and choose your app.
    - **Team identifier** – The ID assigned to your Apple developer account team. This value is provided on the **Membership** page.
    - **Authentication key** – The .p8 file that you download from your Apple developer account when you create an authentication key. Apple allows you to download your authentication key only once.
  - If you choose **Certificate credentials**, provide the following information:
    - **SSL certificate** – The .p12 file for your TLS certificate. You can export this file from Keychain Access after you download and install your certificate from your Apple developer account.
    - **Certificate password** – If you assigned a password to your certificate, enter it here.
3. For **Production support**, choose **Enabled** if your certificate supports sending push notifications to the APNs production environment. If your certificate supports the sandbox environment only, choose **Disabled**.
4. For **Default authentication type**, choose how you want Amazon Pinpoint to authenticate with APNs by default: **Key**, to use your signing key, or **Certificate**, to use your TLS certificate. Amazon Pinpoint uses this default setting for every APNs push notification that you send by using the console. You can override the default setting when you send a message programmatically by using the Amazon Pinpoint API, the AWS CLI, or an AWS SDK. If your default authentication type fails, Amazon Pinpoint doesn't attempt to use the other authentication type.

5. When you finish, choose **Save**.

## Mobile and web app analytics settings

Use the **Mobile app analytics** and **Web app analytics** pages as guides to help you integrate and configure your mobile and web apps to send usage data to Amazon Pinpoint. This data includes metrics that can help you determine how your customers use your apps. For example, you can determine how many customers logged in to your app during the past 30 days, how many customers used a specific feature of your app, and the percentage of customers who accessed your app by using a specific type of device. You can use this data to improve the usability of your apps and to increase customer engagement, satisfaction, and retention.

## Event stream settings

Use the **Event stream** settings page to enable or disable streaming of usage and engagement data, known as *event* data, for the current project to supported AWS services. If you enable streaming, you can also choose the type of stream and the AWS Identity and Access Management role that you want to use.

### To set up event streaming

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at <https://console.aws.amazon.com/pinpoint/>.
2. On the **All projects** page, choose the project that you want to set up data streaming for.
3. In the navigation pane, under **Settings**, choose **Event stream**.
4. In the **Services** section, choose **Edit**.
5. Choose **Stream to Amazon Kinesis**.
6. Under **Choose a stream type**, choose one of the following options:
  - **Send events to an Amazon Kinesis Data Stream** – Choose this option if you want to send Amazon Pinpoint event data to an external application for analysis.
  - **Send events to an Amazon Kinesis Data Firehose stream** – Choose this option if you want to send event data to an AWS data store, such as Amazon Redshift.
7. For **Amazon Kinesis stream**, choose the Amazon Kinesis stream that you want to use to export the data.

#### Note

If you haven't already created an Amazon Kinesis stream, go to the Amazon Kinesis console at <https://console.aws.amazon.com/kinesis>. For more information about creating streams, see the [Amazon Kinesis Data Streams Developer Guide](#) or the [Amazon Kinesis Data Firehose Developer Guide](#).

8. Under **IAM role**, choose one of the following options:
  - **Use an existing role** – Choose this option to have Amazon Pinpoint assume an IAM role that already exists in your account. The role that you select must allow the `firehose:PutRecordBatch` action. For an example of a policy that allows this action, see [Permissions Policies](#) in the *Amazon Pinpoint Developer Guide*.
  - **Automatically create a role** – Choose this option to automatically create an IAM role with the required permissions. This role authorizes Amazon Pinpoint to send data to the stream that you chose in step 7.
9. Choose **Save**.

As Amazon Pinpoint receives events for your project, it sends this data to your Kinesis stream. For information about the data that Amazon Pinpoint sends for an event, see [Streaming Amazon Pinpoint Events to Kinesis](#) in the *Amazon Pinpoint Developer Guide*.

# Monitoring Amazon Pinpoint with Amazon CloudWatch

You can use Amazon CloudWatch to collect, view, and analyze several important metrics related to your Amazon Pinpoint account and projects. When you configure CloudWatch for Amazon Pinpoint, you gain insight into the delivery of your Amazon Pinpoint campaigns, as well as the status of your endpoint registrations and import jobs. You can also use CloudWatch to create alarms that notify you when certain metrics exceed values that you define. For example, you can create an alarm that automatically sends you an email if a certain number of campaign messages fail within a specific time period.

## Topics in this chapter:

- [Amazon Pinpoint metrics that are exported to CloudWatch \(p. 302\)](#)
- [View Amazon Pinpoint metrics in CloudWatch \(p. 305\)](#)
- [Create CloudWatch alarms for Amazon Pinpoint metrics \(p. 305\)](#)

## Amazon Pinpoint metrics that are exported to CloudWatch

The following topics describe the metrics that Amazon Pinpoint exports to CloudWatch.

## Topics in this section:

- [Metrics related to message delivery \(p. 302\)](#)
- [Metrics related to endpoints \(p. 304\)](#)
- [Metrics related to import jobs \(p. 304\)](#)
- [Metrics related to events \(p. 304\)](#)

## Metrics related to message delivery

Metric	Description
<code>DirectSendMessagePermanentFailure</code>	<p>The number of direct messages that weren't sent because of a permanent issue.</p> <p>This type of issue usually occurs when an endpoint token is expired or invalid.</p> <p>Units: <i>Count</i></p> <p>Dimensions: <i>ApplicationId</i>, <i>ChannelType</i></p>
<code>DirectSendMessageTemporaryFailure</code>	<p>The number of direct messages that failed to send because of a temporary issue.</p> <p>This type of issue usually indicates that an internal issue with the Amazon Pinpoint service prevented the message from being sent. When this type of</p>

Metric	Description
	<p>issue occurs, Amazon Pinpoint doesn't attempt to redeliver the message.</p> <p>Units: <i>Count</i></p> <p>Dimensions: ApplicationId, ChannelType</p>
CampaignSendMessagePermanentFailure	<p>The number of campaign messages that weren't sent because of a permanent issue.</p> <p>This type of issue usually occurs when an endpoint token is expired or invalid.</p> <p>Units: <i>Count</i></p> <p>Dimensions: ApplicationId, ChannelType</p>
CampaignSendMessageTemporaryFailure	<p>The number of campaign messages that weren't sent because of a temporary issue.</p> <p>This type of issue usually indicates that an internal issue with the Amazon Pinpoint service prevented the message from being sent. When this type of issue occurs, Amazon Pinpoint doesn't attempt to redeliver the message.</p> <p>Units: <i>Count</i></p> <p>Dimensions: ApplicationId, ChannelType</p>
DirectSendMessageThrottled	<p>The number of direct messages that weren't sent because your account's ability to send messages was throttled.</p> <p>Units: <i>Count</i></p> <p>Dimensions: ApplicationId, ChannelType</p>
CampaignSendMessageThrottled	<p>The number of campaign messages that weren't sent because your account's ability to send messages was throttled.</p> <p>Units: <i>Count</i></p> <p>Dimensions: ApplicationId, ChannelType</p>
CampaignSendMessageLatency	<p>The amount of time, in seconds, that passed between the time when the campaign started running and the time when it finished running.</p> <p>Units: <i>Count</i></p> <p>Dimensions: ApplicationId, ChannelType</p>

## Metrics related to endpoints

Metric	Description
EndpointRegistrationFailure	<p>The number of endpoint registrations submitted through an AWS SDK or the Amazon Pinpoint API that couldn't be imported.</p> <p>This type of issue usually occurs when an incoming endpoint record is invalid.</p> <p>Units: <i>Count</i></p> <p>Dimensions: ApplicationId</p>

## Metrics related to import jobs

Metric	Description
ImportedEndpointFailure	<p>The number of endpoints in an import job that couldn't be imported because they were invalid.</p> <p>Units: <i>Count</i></p> <p>Dimensions: ApplicationId</p>
ImportJobFailure	<p>The number of import jobs that couldn't be completed for any reason.</p> <p>Units: <i>Count</i></p> <p>Dimensions: ApplicationId</p>
ImportJobDuration	<p>The amount of time, in seconds, that elapsed between the beginning and the end of each import job.</p> <p>Units: <i>Count</i></p> <p>Dimensions: ApplicationId</p>

## Metrics related to events

Metric	Description
TotalEvents	<p>The total number of events that Amazon Pinpoint recorded. This metric includes events that were recorded by AWS SDKs or by the Amazon Pinpoint API.</p> <p>Units: <i>Count</i></p> <p>Dimensions: ApplicationId</p>

Metric	Description
ExportedEvents	<p>The total number of events that were successfully written to the event stream for exporting.</p> <p>Units: <i>Count</i></p> <p>Dimensions: ApplicationId</p>
ExportEventErrors	<p>The total number of errors that occurred after writing to the event stream. These errors can include issues that aren't related to Amazon Pinpoint.</p> <p>For example, this error could occur when the volume of events that you stream to Kinesis Data Firehose exceeds your provisioned throughput.</p> <p>Units: <i>Count</i></p> <p>Dimensions: ApplicationId, ErrorCode</p>

## View Amazon Pinpoint metrics in CloudWatch

You can monitor metrics for Amazon Pinpoint by using the Amazon CloudWatch console or the Amazon CloudWatch API. The following procedure explains how to view the metrics by using the CloudWatch console.

### To view metrics by using the CloudWatch console

1. Open the CloudWatch console at <https://console.aws.amazon.com/cloudwatch/>.
2. In the navigation pane, choose **Metrics**.
3. On the **All metrics** tab, choose **Pinpoint**.
4. Select the type of metric that you want to view.
5. Select a metric to add it to the chart.

You can also use CloudWatch to create alarms that send you notifications about changes in these metrics. For more information, see [Create CloudWatch alarms for Amazon Pinpoint metrics \(p. 305\)](#).

## Create CloudWatch alarms for Amazon Pinpoint metrics

In Amazon CloudWatch, you can create an alarm that sends a notification when the value of a certain metric is within or outside a threshold that you define. For example, you can create an alarm that notifies you if more than a certain number of campaign messages weren't sent due to a temporary issue. In this example, the alarm sends a notification if the value of the **CampaignSendMessageTemporaryFailure** metric is greater than the value that you specify.

This topic explains how to create an alarm for an Amazon Pinpoint metric by using the CloudWatch console. For more information about creating alarms, including detailed information about alarm configuration settings, see [Using Amazon CloudWatch alarms](#) in the *Amazon CloudWatch User Guide*.

### To create an alarm for an Amazon Pinpoint metric

1. Open the CloudWatch console at <https://console.aws.amazon.com/cloudwatch/>.
2. In the navigation pane, choose **Alarms**.
3. Choose **Create alarm**.
4. Choose **Select metric**.
5. On the **All metrics** tab, choose **Pinpoint**, and then choose the type of metric that you want to create an alarm for. The types of available metrics depends on the Amazon Pinpoint features that you use.
6. Select the metric that you want to create an alarm for, and then choose **Select metric**. The **Specify metric and conditions** page appears, showing a graph and other information about the metric.
7. Under **Conditions**, complete the following steps:
  - For **Threshold type**, choose **Static**.
  - For **Whenever metric is**, specify whether you want the value of the metric to be greater than, greater than or equal to, less than, or less than or equal to the threshold to trigger the alarm. Then, under **than**, enter the threshold value that you want to trigger the alarm.
8. Under **Additional configuration**, complete the following steps:
  - For **Datapoints to alarm**, enter the number of evaluation periods (datapoints) during which the metric value must meet the threshold conditions to trigger the alarm.
  - For **Missing data treatment**, choose what you want the alarm to do if some data is missing.
9. Choose **Next**.
10. Under **Notification**, complete the following steps:
  - For **Whenever this alarm state is**, choose **in Alarm**.
  - For **Select an SNS topic**, choose or create an Amazon Simple Notification Service (Amazon SNS) topic that you want the alarm notification to be sent to.
11. Choose **Next**.
12. Enter a name and, optionally, a description for the alarm, and then choose **Next**.
13. Under **Preview and create**, review and confirm that the alarm settings are what you want, and then choose **Create alarm**.



# Document history for Amazon Pinpoint

The following table describes important changes in each release of the *Amazon Pinpoint User Guide* after December 2018. For notification about updates to this documentation, you can subscribe to an RSS feed.

- **Latest documentation update:** January 14, 2021

update-history-change	update-history-description	update-history-date
<a href="#">Segmentation (p. 307)</a>	You can use advanced segmentation features to further refine a target audience in Amazon Pinpoint. See <a href="#">Building segments</a> .	January 14, 2021
<a href="#">Message templates (p. 307)</a>	You can use template helpers to customize message templates in Amazon Pinpoint. See <a href="#">Using template helpers to personalize messages</a> .	November 16, 2020
<a href="#">Journeys (p. 307)</a>	You can now create an event-triggered journey in Amazon Pinpoint. See <a href="#">Create a journey</a> .	September 30, 2020
<a href="#">Custom attributes (p. 307)</a>	Amazon Pinpoint now supports up to 250 custom attributes for <a href="#">email messaging templates</a> .	September 18, 2020
<a href="#">Special requirements for sending messages to recipients in India (p. 307)</a>	Steps to register with the TRAI have changed. See <a href="#">Special requirements for sending SMS messages to recipients in India</a> .	September 15, 2020
<a href="#">Regional availability (p. 307)</a>	Amazon Pinpoint is now available in these Regions: Asia Pacific (Tokyo) Region, Europe (London) Region, and Canada (Central) Region. Note that the Amazon Pinpoint SMS and Voice API is not available in these Regions.	September 10, 2020
<a href="#">Regional availability (p. 307)</a>	Amazon Pinpoint is now available in the Asia Pacific (Tokyo) Region. Note that the Amazon Pinpoint SMS and Voice API does not support Voice in this Region.	September 2, 2020
<a href="#">Shared short codes (p. 307)</a>	U.S. carriers no longer support shared short codes. You can	August 20, 2020

	no longer request shared short codes in Amazon Pinpoint.	
<a href="#">Regional availability (p. 307)</a>	Amazon Pinpoint is now available in the Asia Pacific (Seoul) Region. You can't use the Amazon Pinpoint API to send SMS messages in this Region.	July 31, 2020
<a href="#">Channels (p. 307)</a>	You can now <a href="#">purchase US and Canada SMS long codes using the Amazon Pinpoint console</a> without needing to file a Support request.	June 19, 2020
<a href="#">Regional availability (p. 307)</a>	Amazon Pinpoint is now available in the AWS GovCloud (US) Region.	April 30, 2020
<a href="#">Custom channels (p. 307)</a>	Your campaigns can now <a href="#">send messages using custom channels</a> .	April 23, 2020
<a href="#">Machine learning (p. 307)</a>	You can now use <a href="#">machine learning models</a> with message templates to add dynamic, personalized recommendations to messages that you send from campaigns and journeys.	March 4, 2020
<a href="#">Templates (p. 307)</a>	You can now create, view, and manage versions of <a href="#">message templates</a> .	December 20, 2019
<a href="#">Templates (p. 307)</a>	You can now create, view, and manage <a href="#">message templates</a> for voice messages. You can also specify default values for message variables that you use in any type of message template.	November 18, 2019
<a href="#">Journeys (p. 307)</a>	Your Amazon Pinpoint projects can now include <a href="#">journeys</a> —multi-step campaign messaging workflows.	October 31, 2019
<a href="#">Templates (p. 307)</a>	You can now create, view, and manage all the <a href="#">message templates</a> for your Amazon Pinpoint account from a single location. You can use these templates in messages that you send for any of your Amazon Pinpoint projects.	October 7, 2019

<a href="#">Analytics (p. 307)</a>	For campaigns that send email, push notifications, or SMS messages, we replaced the endpoints messaged metric with metrics and charts that show the number of unique endpoints that a campaign was sent to in a 24-hour period. For campaigns that send push notifications, we replaced the event count metrics for sessions per unique endpoint and purchases per unique endpoint with metrics and charts that show the number of times an app was opened and the number of units that were purchased in a 24-hour period after a campaign was sent. All the new metrics and charts are available for both standard and A/B test campaigns.	July 25, 2019
<a href="#">Deliverability dashboard (p. 307)</a>	The Deliverability dashboard now includes deliverability for individual campaigns. It also lets you easily create alarms that notify you when your bounce, complaint, inbox placement, or IP deny list rates reach specific values.	June 13, 2019
<a href="#">Regional availability (p. 307)</a>	Amazon Pinpoint is now available in the AWS Asia Pacific (Mumbai) and Asia Pacific (Sydney) Regions.	April 25, 2019
<a href="#">General settings (p. 307)</a>	Added information about using the Amazon Pinpoint console to <a href="#">delete a project</a> .	January 10, 2019

## Earlier updates

The following table describes important changes in each release of the *Amazon Pinpoint User Guide* through December 2018.

Change	Description	Date
Regional availability	Amazon Pinpoint is now available in the AWS US West (Oregon) and Europe (Frankfurt) Regions.	December 21, 2018
Deliverability dashboard	Amazon Pinpoint now includes a <a href="#">deliverability dashboard (p. 39)</a> , which you can use to identify	December 3, 2018

Change	Description	Date
	issues that could impact the delivery of emails that you send by using Amazon Pinpoint.	
Event triggers	You can now configure campaigns to be sent when specific events occur. For example, if a customer adds an item to their cart but doesn't purchase it, you can send them an email. To learn more about configuring campaigns to be sent when specific events occur, see <a href="#">Step 4: Choose when to send the campaign (p. 135)</a> .	November 19, 2018
Voice channel	You can use the new Amazon Pinpoint voice channel to create voice messages and deliver them to your customers over the phone. Currently, you can only send voice messages by using the Amazon Pinpoint SMS and Voice API. For more information, see <a href="#">Amazon Pinpoint voice channel (p. 101)</a> .	November 15, 2018
Transactional email	You can now use Amazon Pinpoint to send email directly to individual recipients, without having to create segments or campaigns first. For more information about sending transactional email, see <a href="#">Sending email in Amazon Pinpoint (p. 31)</a> . For more information about setting up the email channel, see <a href="#">Email settings (p. 277)</a> .	November 5, 2018
Europe (Ireland) availability	Amazon Pinpoint is now available in the AWS Europe (Ireland) Region.	October 25, 2018
New console design	The Amazon Pinpoint console has been completely redesigned to make it easier to use. We've also streamlined the project creation process so that you can create projects directly on the Amazon Pinpoint console, rather than having to create them in AWS Mobile Hub.	October 4, 2018

Change	Description	Date
Advanced segmentation	Added the ability to <a href="#">create dynamic segments (p. 110)</a> that include advanced logic and comparisons.	October 4, 2018
Monitoring with CloudWatch	You can now use Amazon CloudWatch to monitor and analyze metrics related to your Amazon Pinpoint account.	October 4, 2018
Analytics chart references	The <b>Analytics</b> section now includes several new and updated reports. We've added <a href="#">documentation (p. 193)</a> that gives you additional information about each metric.	June 12, 2018
Testing campaigns	You can now <a href="#">test your messages (p. 133)</a> by sending them to a segment or to a list of individual recipients.	May 7, 2018
Define segments by importing user IDs	Define a segment by <a href="#">importing a file that contains a list of user IDs (p. 117)</a> . When you send a message to the segment, the potential destinations include each endpoint that's associated with each user ID in the file.	May 7, 2018
Self-managed opt-outs and dashboard exports	You can configure your SMS account settings so that you can <a href="#">manage SMS opt-outs outside of Amazon Pinpoint (p. 297)</a> . You can also <a href="#">export Amazon Pinpoint dashboards (p. 194)</a> for further analysis.	March 28, 2018
Email project creation and identity verification	Added information about <a href="#">creating email projects (p. 23)</a> and <a href="#">verifying identities used to send email (p. 20)</a> .	March 21, 2018
SMS best practices	Added <a href="#">a best practices guide (p. 98)</a> that contains tips and information related to SMS campaigns.	February 23, 2018
Requesting support for SMS use cases	Contact AWS Support to <a href="#">request support for your SMS use case (p. 68)</a> if you want to increase your spending quota, reserve an origination number, or reserve a sender ID.	February 21, 2018

Change	Description	Date
Segment import documentation	Amazon Pinpoint can now create an IAM role for you automatically.	February 6, 2018
Two-way SMS support by country	Updated the <a href="#">table of Supported Countries and Regions for the SMS channel (p. 85)</a> to list the countries and regions that support 2-way SMS.	February 5, 2018
Time to Live value for mobile push	On the Amazon Pinpoint console, you can specify a Time to Live (TTL) value when you <a href="#">write a mobile push message (p. 130)</a> for a campaign.	December 22, 2017
Removal of Amazon S3 export documentation	The ability to export Amazon Pinpoint event data directly to Amazon S3 has been deprecated. Instead, you can use Amazon Kinesis Data Firehose to send event data to Amazon S3, Amazon Redshift, and other AWS services. For more information, see <a href="#">the section called "Streaming event data" (p. 216)</a> .	December 18, 2017
Segment import documentation	<a href="#">Importing segments (p. 117)</a> includes updated information about how to create endpoint files, the attributes you can use within these files, and how to create an IAM role for importing.	October 26, 2017
APNs token authentication and APNs sandbox support	The <a href="#">APNs channel settings (p. 17)</a> accept a .p8 signing key so that Amazon Pinpoint can construct authentication tokens for your push notifications.  Use the APNs channel to send notifications to production and sandbox environments.	September 27, 2017
ADM and Baidu mobile push	<a href="#">Enable mobile push channels (p. 16)</a> for Amazon Device Message and Baidu Cloud Push in your projects.	September 27, 2017
User analytics with Amazon Cognito user pools	To enable <a href="#">analytics about users and authentication (p. 197)</a> , use Amazon Cognito user pools to manage user sign-in.	September 26, 2017

Change	Description	Date
Account settings	Use the <a href="#">SMS settings (p. 281)</a> page on the console to manage account-level SMS settings that take effect for all of your projects.	September 11, 2017
Users analytics	<a href="#">Users charts (p. 197)</a> on the Amazon Pinpoint console provide metrics about app usage and user authentication.	August 31, 2017
Direct email messages	You can <a href="#">send email messages directly (p. 189)</a> , to a limited audience, without creating a campaign or engaging a segment.	July 05, 2017
New channels: email and SMS	In addition to the <a href="#">mobile push (p. 15)</a> channel, you can enable <a href="#">email (p. 19)</a> and <a href="#">SMS (p. 56)</a> channels as part of your Amazon Pinpoint projects. With these channels enabled, you can send emails or text messages with your campaigns.	June 08, 2017
Direct messaging	You can <a href="#">send push notifications and text messages directly (p. 189)</a> , to a limited audience, without creating a campaign or engaging a segment.	June 08, 2017
Revenue charts	You can view <a href="#">revenue charts (p. 200)</a> on the Amazon Pinpoint console to see the revenue that's generated by your app and the number of items purchased by users.	March 31, 2017
Event streams	You can configure Amazon Pinpoint to <a href="#">send your app and campaign events to a Kinesis stream (p. 216)</a> .	March 24, 2017
Amazon Pinpoint general availability	This release introduces Amazon Pinpoint.	December 1, 2016