Amazon Pinpoint

User Guide

Amazon Pinpoint: User Guide

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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 the features of Amazon Pinpoint into your applications.

Amazon Pinpoint Features

This section describes the major features of Amazon Pinpoint.

Define Audience Segments

Reach the right audience for your messages by defining audience segments (p. 73). A segment designates which users receive the messages that are sent from a campaign. 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. 86). 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.

Send Test Messages

Use the Test messaging (p. 98) page to test your messages before you send campaigns to your customers.

Analyze User Behavior

Gain insights about your audience and the effectiveness of your campaigns by using the analytics that Amazon Pinpoint provides. You can view trends about your users' level of engagement, purchase activity, and demographics. You can monitor your message traffic with metrics for messages sent and opened. Through the Amazon Pinpoint API, your application can report custom data, which Amazon Pinpoint makes available for analysis.

To analyze or store the analytics data outside of Amazon Pinpoint, you can configure Amazon Pinpoint to stream the data (p. 119) to Amazon Kinesis.

Regional Availability

Amazon Pinpoint is available in the US East (N. Virginia) and EU (Ireland) AWS Regions.

Get Started

Get started with Amazon Pinpoint by creating a new project. For more information about creating projects, see Amazon Pinpoint Channels (p. 17).

Getting Started with Amazon Pinpoint

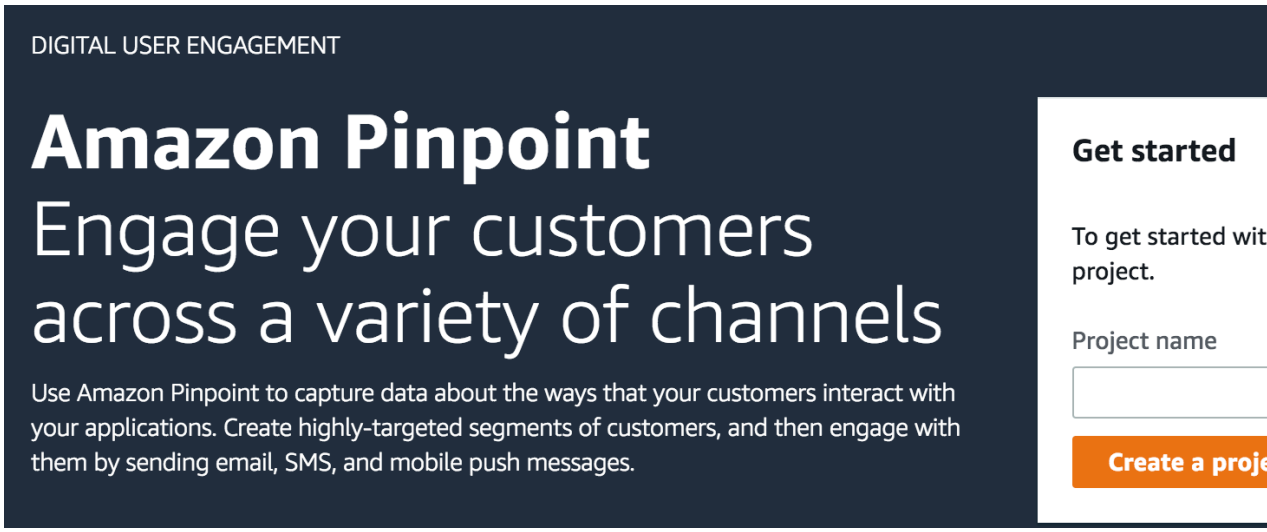
In only a few minutes, you can set up Amazon Pinpoint and start sending messages to your customers. This section shows you how to create a project. It also provides links to documentation that helps you set up your communication channels, create segments, send campaigns, and view response metrics for your campaigns.

Create a Project

In Amazon Pinpoint, projects are collections 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.

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**.



   Note
   The project name can contain up to 64 alphanumeric characters. It can also contain the following characters: comma (,), period (.), at sign (@), underscore (_), equals sign (=), and plus sign (+). It can't contain spaces.
3. On the **Configure features** page, choose a message channel or analytics category to set up. You can choose from the following options:

   - **Email** – Set up a project that can send email from your email address. Later, you can verify a different address, or an entire domain.
   - **SMS** – Set up a project that can send SMS (text) messages.

- **Push notifications** – Set up your project to send notifications directly to users of your mobile apps.
- **Mobile app analytics** – View instructions for integrating your mobile apps with Amazon Pinpoint.
- **Web app analytics** – View instructions for integrating your web apps with Amazon Pinpoint.

Alternatively, you can choose **Skip this step** to set up any of these features later.

For more information about setting up channels, see the following pages:

- Setting up the Amazon Pinpoint Email Channel (p. 21)
- Setting up Amazon Pinpoint Mobile Push Channels (p. 17)
- Setting up the Amazon Pinpoint SMS Channel (p. 36)

Next Steps

Now that you've created a project, you're ready to start engaging with your customers. You can now complete the following steps:

1. (Optional) **Integrate your apps with Amazon Pinpoint** – If you plan to use Amazon Pinpoint to engage with users of your web and mobile apps, you should start by integrating Amazon Pinpoint with your apps. When your customers use your apps, the apps automatically report data to Amazon Pinpoint. You can use this data to create targeted customer groups for your communications.

   To learn more about integrating your apps with Amazon Pinpoint, see Integrating Amazon Pinpoint with Your Application in the *Amazon Pinpoint Developer Guide*.
2. **Create 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 create dynamic segments by using the data that your apps report to Amazon Pinpoint, or you can import segments.

   To learn more about creating segments, see Amazon Pinpoint Segments (p. 73).
3. **Create a campaign and send your first message** – In Amazon Pinpoint, campaigns contain the messages that you send to your segments. You can send a single message at a specified time, or you can create messages that are sent on a recurring basis.

   To learn more about creating and sending campaigns, see Amazon Pinpoint Campaigns (p. 86).
4. (Optional) **Request production access** – When you use Amazon Pinpoint to send email, your account begins in the *sandbox*. While your account is in the sandbox, you can only send email to addresses and domains that you own. When your account is removed from the sandbox, you can send email to any recipient. To learn more about having your account removed from the sandbox, see Opening a Sending Limits Increase Case (p. 27).

   When you use Amazon Pinpoint to send SMS messages, your account begins with a spending limit of $1.00. When you spend more than $1.00 sending messages in a calendar month, Amazon Pinpoint stops sending additional messages until the next month. You can request a higher spending limit by contacting AWS Support. To learn more about increasing the spending limit for your account, see Requesting Increases to Your Monthly SMS Spend Threshold for Amazon Pinpoint (p. 38).
5. **View response metrics for your campaign** – After you send campaigns and your customers interact with them (for example, by opening or clicking messages), you can use the charts in the **Analytics** section to track these responses.

   To learn more about viewing metrics in Amazon Pinpoint, see Amazon Pinpoint Analytics (p. 102).

Amazon Pinpoint Tutorials

The tutorials in this section are intended to show Amazon Pinpoint users how to complete several important tasks. If you're new to Amazon Pinpoint, or if you're just unfamiliar with certain features, these tutorials are a great place to start.

Topics in this section:

- Send an Email Using Amazon Pinpoint (p. 5)
- Create a Segment (p. 10)

Send an Email Using Amazon Pinpoint

This tutorial contains a complete set of procedures for using Amazon Pinpoint to send an email to a predefined segment of customers.

This tutorial is intended to be used by marketers, people who are new to Amazon Pinpoint, or existing Amazon Pinpoint customers who want to send email by using the Amazon Pinpoint console.

Topics in this section:

- Step 1: Create a New Amazon Pinpoint Project (p. 5)
- Step 2: Upload a List of Segment Members to Amazon S3 (p. 6)
- Step 3: Create a Segment (p. 7)
- Step 4: Create a Campaign (p. 7)
- Conclusion and Next Steps (p. 8)

Step 1: Create a New Amazon Pinpoint Project

Before you can send email using Amazon Pinpoint, you first have to create a project. A *project* is a collection of settings, segments, campaigns, and analytics for a specific set of customer engagements.

Part of creating an email campaign involves verifying an identity. 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 it. If your account is still in the Amazon Pinpoint sandbox, you also need to verify the identities that you plan to send emails to.

The procedure in this section shows you how to create a new email project by using the Amazon Pinpoint console.

To create a new Amazon Pinpoint project and verify an email address

1. Open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.
2. On the **Projects** page, choose **Create a project**.
3. For **Project name**, type 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 **Messaging channels**, next to **Email**, choose **Configure**.
5. For **Email address**, type the email address that you want to verify, and then choose **Verify**. Amazon Pinpoint sends an email to the address you specified. Open the email, and then click the link in the message to verify your email address.

Next: Upload a List of Segment Members to Amazon S3 » (p. 6)

Step 2: Upload a List of Segment Members to Amazon S3

To create a segment of customers in Amazon Pinpoint, you first have to upload a spreadsheet that contains those customers' contact details to an Amazon S3 *bucket*.

In Amazon S3, a bucket is a container that you use to store files and folders. Each bucket can have its own permission settings. For example, you can set up a bucket so that its contents are accessible to anyone who has the address of the bucket. Or you could set it up so that its contents are only available to you. To learn more about Amazon S3, see Introduction to Amazon S3 in the *Amazon Simple Storage Service Developer Guide*.

To create a list of contacts and upload it to Amazon S3

1. In a spreadsheet application, create a spreadsheet that contains information about the contacts that you want to send the email to. Use the following template as an example. Change the values in the **Address**, **User.UserAttributes.FirstName**, and **User.UserAttributes.LastName** fields to represent the people who you want to contact. Don't change the column headings or the values in the **ChannelType** column.

ChannelType	Address	User.UserAttributes.Firs	User.UserAttributes.LastName
EMAIL	john.stiles@example.com	John	Stiles
EMAIL	wang.xiulan@example.com	Xiulan	Wang
EMAIL	carlos.salazar@example.com	Carlos	Salazar

Note
You can include additional fields if necessary. For a list of other fields you can specify, see the table in Available Attributes (p. 82).

2. Replace the values in the template with names and email addresses of people you want to contact.

Important
If this is your first time using Amazon Pinpoint, your account is in the sandbox. When your account is in the sandbox, you can only send email to verified identities. If you want to send email to identities you haven't verified, complete the procedure in Requesting Production Access for Email (p. 24).

When you finish, save the file to your computer in comma-separated values (CSV) format.

3. Open the Amazon S3 console at https://console.aws.amazon.com/s3/.
4. Choose **Create bucket**.

5. On the **Create bucket** dialog box, for **Bucket name**, type a name for the bucket, and then choose **Create**.
6. In the list of buckets, choose the bucket that you created in the previous step.
7. Choose **Create folder**. Type a name for the folder, and then choose **Save**.

   Make a note of both the name of the bucket and the name of the folder (you need to provide both of these values in a later step).
8. In the folder you just created, choose **Upload**, and then choose **Add files**. Upload the spreadsheet that you created earlier in this section.

Next: Create a Segment » (p. 7)

Step 3: Create a Segment

Now that you've uploaded a spreadsheet that contains the contact information for your customers, you can use that spreadsheet to create a new *segment* in Amazon Pinpoint.

A segment is a group of customers that you want to target for a campaign. Usually, members of a segment have certain characteristics in common with each other. For example, segment members might all live in the same city, or they might have purchased the same item from you in the past.

When you create a segment in Amazon Pinpoint, you can reuse it later in a different campaign.

To create a segment based on a spreadsheet that's stored in Amazon S3

1. Open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.
2. Choose the project that you created in the first section of this topic.
3. In the navigation pane, choose **Segments**, and then choose **Create a segment**.
4. On the **Create a segment** page, do the following:

   a. Choose **Import a segment**.
   b. For **Segment name**, type a name for the segment.
   c. For **Amazon S3 URL**, type the following:

   ```
   s3://bucketName/folderName
   ```

   Replace *bucketName* with the name of the Amazon S3 bucket that you created in the previous section. Replace *folderName* with the name of the folder that you created in the previous section.
   d. Under **IAM role**, choose **Automatically create a role**, and then type a name for the role.
   e. Under **What type of file are you importing?**, choose **Comma-Separated Values (CSV)**.
   f. Choose **Create segment**. The **Scheduled imports** page appears.
5. Wait for a few minutes, and then refresh the page. If the value in the **Import status** column is **Completed**, proceed to the next section. Otherwise, repeat this step until the segment import process is complete.

Next: Create a Campaign » (p. 7)

Step 4: Create a Campaign

After you create a segment, you can create a *campaign* and schedule Amazon Pinpoint to send it to your segment.

In Amazon Pinpoint, a campaign refers to a single message that you send to a segment. If you've used other digital user engagement tools in the past, you might have used phrases like "tactics" or "campaign elements" to refer to the same concept.

To create a new campaign

1. In the navigation pane, choose **Campaigns**, and then choose **Create a campaign**.
2. For **Campaign name**, type a name for the campaign.
3. Under **Campaign type**, choose **Standard campaign**, and then choose **Next**.
4. On the **Choose a segment** page, choose **Use an existing segment**. Then, for **Segment**, choose the segment that you created in the previous section. Choose **Next step**.
5. On the **Create your message** page, do the following:
   a. Under **Choose a channel for this campaign**, choose **Email**.
   b. For **Message content**, choose **Create a new message**.
   c. For **Subject**, type the subject line of the email.
   d. For **Message**, type the body of the email.

      Tip
      You can modify the HTML body of your message directly by choosing the **edit HTML** (</>) button in the message editor.
      You can also include personalized content in your message. You do this by adding the name of an attribute from the spreadsheet that you imported into Amazon Pinpoint. When you specify an attribute in this way, surround the attribute name with two sets of curly braces. For example, you could include the recipient's first name in the body of the message by typing `{{User.UserAttributes.FirstName}}` in the body of the message.
   e. When you finish, choose **Next**.
6. On the **Schedule your campaign** page, for **How often should this campaign be sent?**, choose **Immediately**, and then choose **Next**.

   Note
   You can also choose to schedule the delivery of your message for a specific date and time. To schedule the delivery of your message, choose **Once**, and then specify the date and time when you want Amazon Pinpoint to send the email.
   If you want to send the message on a recurring basis, choose one of the other schedule options (**Hourly**, **Daily**, **Weekly**, or **Monthly**), and then specify the start and end times.
7. On the **Review and launch** page, confirm that the campaign is set up correctly, and then choose **Launch campaign**.

Next: Next Steps » (p. 8)

Conclusion and Next Steps

By completing this tutorial, you've accomplished the following:

- Created a new Amazon Pinpoint project.
- Verified an email address or domain that you can use to send email from Amazon Pinpoint.
- Created a spreadsheet that contains contact information for a list of contacts, and then uploaded that spreadsheet to Amazon S3.
- Created a new segment that uses the contact information in the spreadsheet that you uploaded to Amazon S3.
- Created a new email campaign and sent it to your segment.
- Reviewed the delivery and response metrics for your campaign.

What's Next?

Now that you know how to send an email in Amazon Pinpoint, you're ready for some more advanced steps. The following sections provide information about other Amazon Pinpoint features that you can explore.

Get Out of the Sandbox

New Amazon Pinpoint customers are placed in a "sandbox" environment. When your account is in the sandbox, you can only send email to verified email addresses. Additionally, you can send a maximum of 200 messages in a 24-hour period, and a maximum of 1 message per second.

We put new accounts in the sandbox in order to prevent unscrupulous users from creating multiple accounts and using them to send unsolicited or malicious email. In order to have your account removed from the sandbox, you have to demonstrate that you follow industry best practices, and that your email sending practices abide by the policies in the AWS Service Terms and AWS Acceptable Use Policy documents.

For information about having your account removed from the sandbox, see Opening a Sending Limits Increase Case (p. 27).

View Your Response Metrics

After you send a message, Amazon Pinpoint automatically monitors how your customers interact with that message. For example, when you send email to a segment of customers, Amazon Pinpoint keeps track of how many emails were delivered. It also tracks the number of customers that opened the email, and the number who unsubscribed after receiving the email. You can view these metrics directly in the Amazon Pinpoint console.

To view the response metrics for your campaign

1. Open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.
2. Choose the project that you want to view response metrics for.
3. In the navigation pane, under **Analytics**, choose **Campaigns**.
4. In the list of campaigns at the bottom of the page, choose a campaign. The campaign details page appears. This page tells you how many messages were sent, how many were delivered, how many bounced, and how many were opened. It also tells you the date and time when each campaign run occurred. If you sent the message once, you only see information for one campaign run. If you sent a message on a recurring basis, you see information for each time Amazon Pinpoint sent the message.

Send Messages in Other Channels

If your customers consent to being contacted by other channels, such as SMS or push notifications, you can use Amazon Pinpoint to send messages through those channels as well. The process for sending through other channels is similar to the process that you used to send email in this tutorial.

When you send messages by using other channels, you need to modify a few of the procedures in this tutorial:

- When you create a new project, specify a different channel type.
- When you upload a list of segment members, include their mobile numbers (for SMS messages) or their app tokens (for push notifications).

For more information about other messaging channels in Amazon Pinpoint, see Amazon Pinpoint Channels (p. 17).

Create a Segment

This tutorial contains a complete set of procedures for using Amazon Pinpoint to create a segment. The segment you create in this tutorial includes several attributes. It also excludes customers who are members of a separate "blacklist" segment.

It can be helpful to create blacklist segments when you have groups of users that you consistently need to exclude from your communications. For example, you might want to send a message to all users of your app, except for those who use version 4.2.

Topics in this section:

- Prerequisites (p. 10)
- Create the Segment (p. 11)

Prerequisites

You can use Amazon Pinpoint to create segments based on certain criteria that you define. These criteria can be things such as the date an endpoint was last active, the device type and operating system, and even custom attributes that are specific to your project.

Before you create your segment, you should understand some of the terms and concepts involved in creating segments. You also have to create the base segments that serve as the foundation for the segment you're building.

Segmentation Terms

You should familiarize yourself with several terms and concepts before you start creating segments in Amazon Pinpoint.

Segment Group

A segment group consists of two parts: base segments and filters. Base segments are the segments that define the potential population of the segment. Filters are criteria that you apply on top of the base segments to further refine the segment. In the Amazon Pinpoint console, you can create up to two segment groups. Segment groups can be joined together using AND or OR logic. You can add several different filters within each segment group.

Filters

Each segment group contains one or more filters. These filters can be based on channel, endpoint or user attributes. For instance, if you wanted to send an email campaign, you can create a filter that makes it so that the segment only includes endpoints in the Email channel. The other filters types (endpoints and users) help you futher refine the segment based on the attributes of the user and the user's device.

Filter logic

When you add more than one filter to a segment group, you can choose how the filters are related to each other. Filters can be connected by using the following operators:

- **All** – When you choose this option, the segment contains only the members of the base segments that meet all of the filter criteria. For example, if you filter users whose favorite coffee drink is a latte AND whose favorite kind of donut is chocolate, your segment only contains users who meet both criteria.
- **Any** – When you choose this option, the segment contains members of the base segments that meet any one of the filter criteria. For example, if you filter users whose favorite coffee drink is a

latte OR whose favorite kind of donut is chocolate, your segment contains users who meet one or both of the criteria.

- **None** – When you choose this option, the segment contains only the members of the base segments that don't meet any of the filter criteria. For example, if you filter users whose favorite coffee drink is NOT a latte, your segment contains users whose favorite coffee drink is every other type of drink except for a latte.

Segment group logic

If your segment contains two segment groups, you can choose how the two groups are connected. You can connect segment groups using the following operators:

- **AND** – When you choose this option, the segment contains only the members that meet the criteria of both segment groups.
- **OR** – When you choose this option, the segment contains the members who meet the criteria in either of the segment groups.

Create Your Base Segment

To complete this tutorial, you need to create at least two base segments. The first base segment includes the entire universe of customers that you might want to contact. The second segment contains the list of customers that you explicitly don't want to contact (your blacklist segment).

There are two ways to create segments in Amazon Pinpoint. The fastest method is to create a spreadsheet that contains the endpoint information for the segment. For more information about importing segments, see Importing Segments (p. 77).

The other method of creating a segment is to integrate Amazon Pinpoint with your apps, and then create dynamic segments based on the usage data that your apps report to Amazon Pinpoint. For more information about creating dynamic segments, see Building Segments (p. 73). For more information about integrating your apps with Amazon Pinpoint, see Integrating Amazon Pinpoint with Your Application in the *Amazon Pinpoint Developer Guide*.

Create the Segment

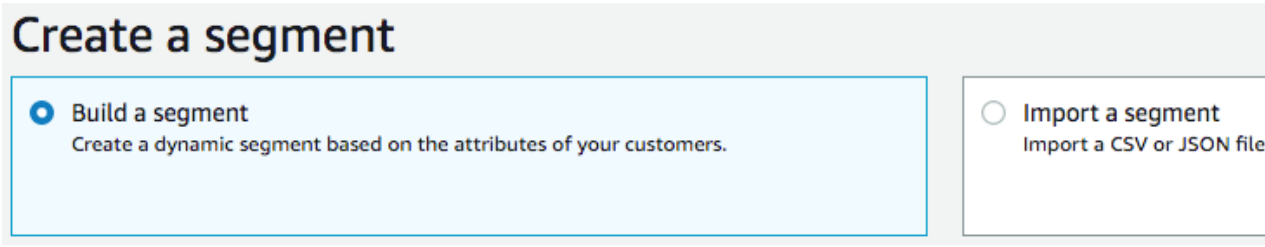
There are two steps involved in creating a dynamic segment. First, you set up the segment. Next, you set up the segment groups for the segment.

Step 1: Set Up the Segment

To start building your segment, you first create a new segment and give it a name. You also have to choose whether you're creating a dynamic segment or importing one. In this tutorial, you create a new dynamic segment.

To create 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 **Projects** page, choose the project that you want to create the segment in.
3. In the navigation pane, choose **Segments**.
4. Choose **Create a segment**.
5. Under **Create a segment**, choose **Build a segment**.



6. For **Name**, type a name for the segment to make it easy to recognize later.

Step 2: Add the First Segment Group

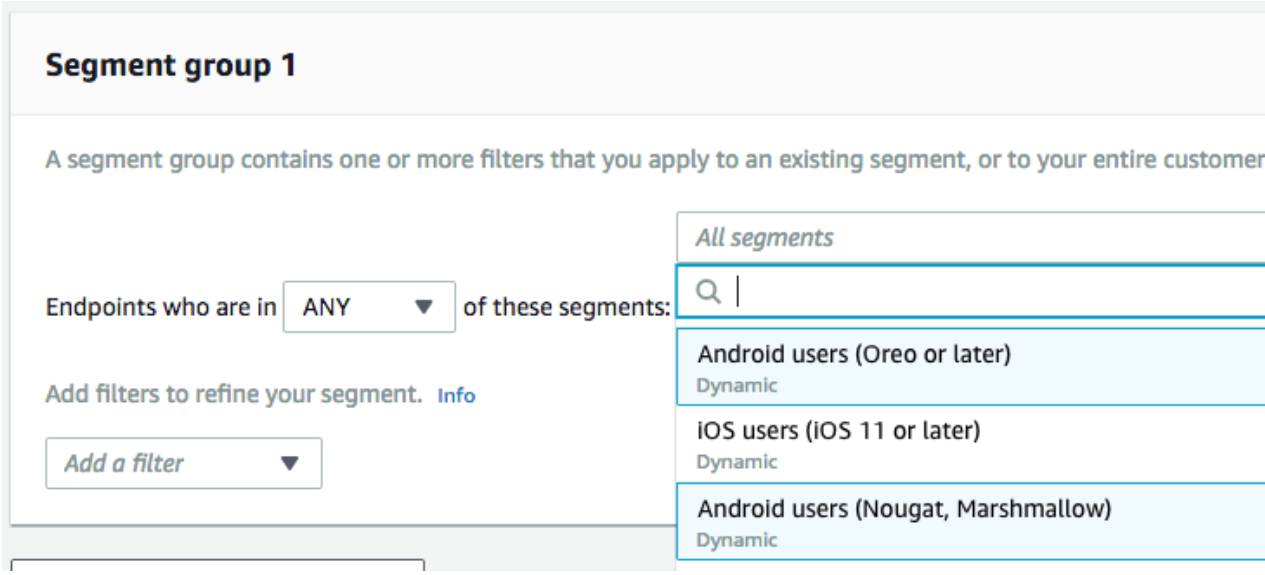
Now that you've created your segment, you can add the first segment group to it. The first segment group should contain all of the customers who should be eligible for the segment. In the section after this, you'll specify your blacklist segment in order to exclude certain recipients.

1. Under **Segment Group 1**, next to **Include endpoints that are in**, choose one of the following options:

   - **any** – 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 select.
   - **all** – If you use more than one segment as a base segment, your new segment only contains endpoints that are in all of the selected segments.

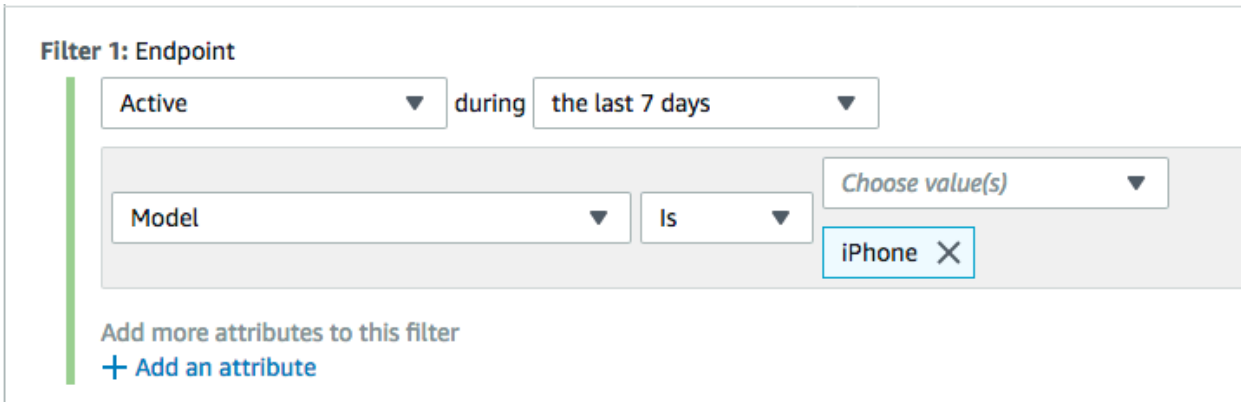
2. Next to **of the following segments**, choose the segment or segments that you want to use as base segments, as shown in the following image.

   Tip
   The menu doesn't close when you select the first base segment. If you want to use several base segments, you can continue to select segments as necessary. When you're done choosing segments, choose an area outside the menu to close it.

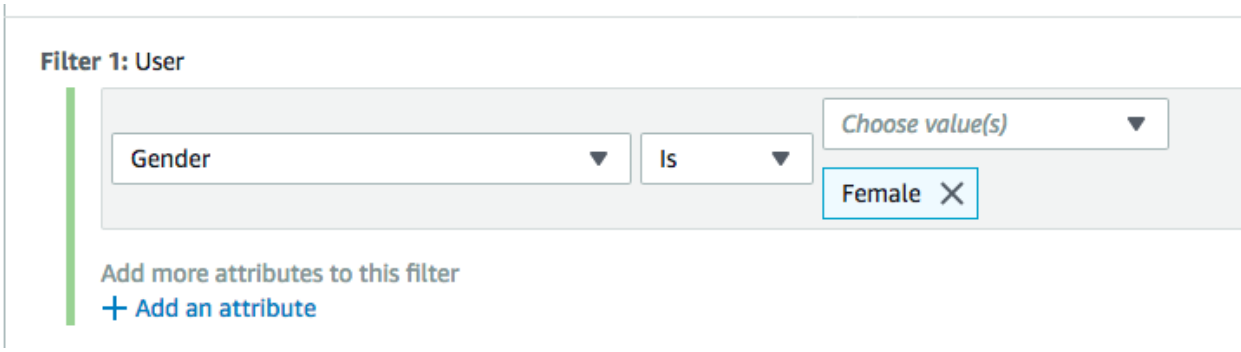


3. For **Add a filter**, choose the type of filter you want to add to the segment. You can choose from the following options:

- **Filter by channel** – Use this option to filter the segment based on the channel of the recipient's endpoint. For example, when you choose **EMAIL**, your segm ent only contains endpoints that can receive email.
- **Filter by endpoint** – 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. For example, this filter could include all customers who were active within the past 7 days who used an iPhone to access your app, as shown in the following image.



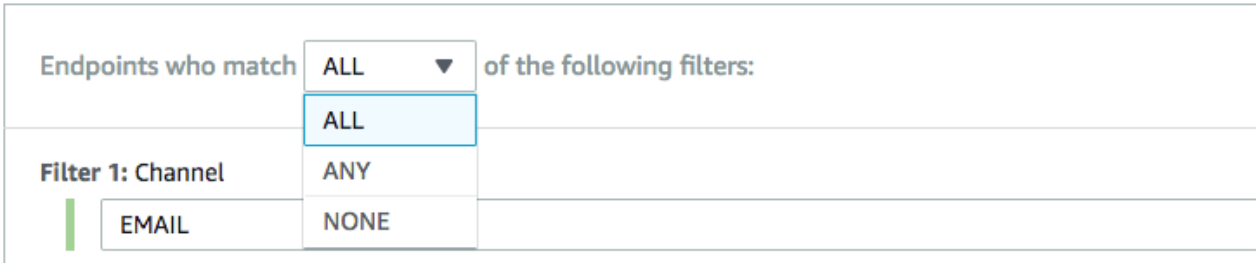
  You can add several attributes to this filter. To add another attribute, choose **Add an attribute**.
- **Filter by user** – Use this option to filter the segment based on user attributes. User attributes are those attributes that are specific to the actual customers, as opposed endpoint attributes, which focus more on the specific endpoints that customers use to interact with your app. For example, you could set up this filter to include all users who are female, as shown in the following image.



  You can add several attributes to this filter. To add another attribute, choose **Add an attribute**.

You can add several filters to a single segment group, and each filter can include several attributes.

If the segment group includes more than one filter, you can specify how the filters are related to each other. For example, you can set up the filter section to include customers who meet any of the filter criteria you specified, or to only include those customers who meet *all* of the specified criteria, or even to include only those customers who meet *none* of the specified criteria. To change this setting, change the value next to **Endpoints that match**, as shown in the following image.

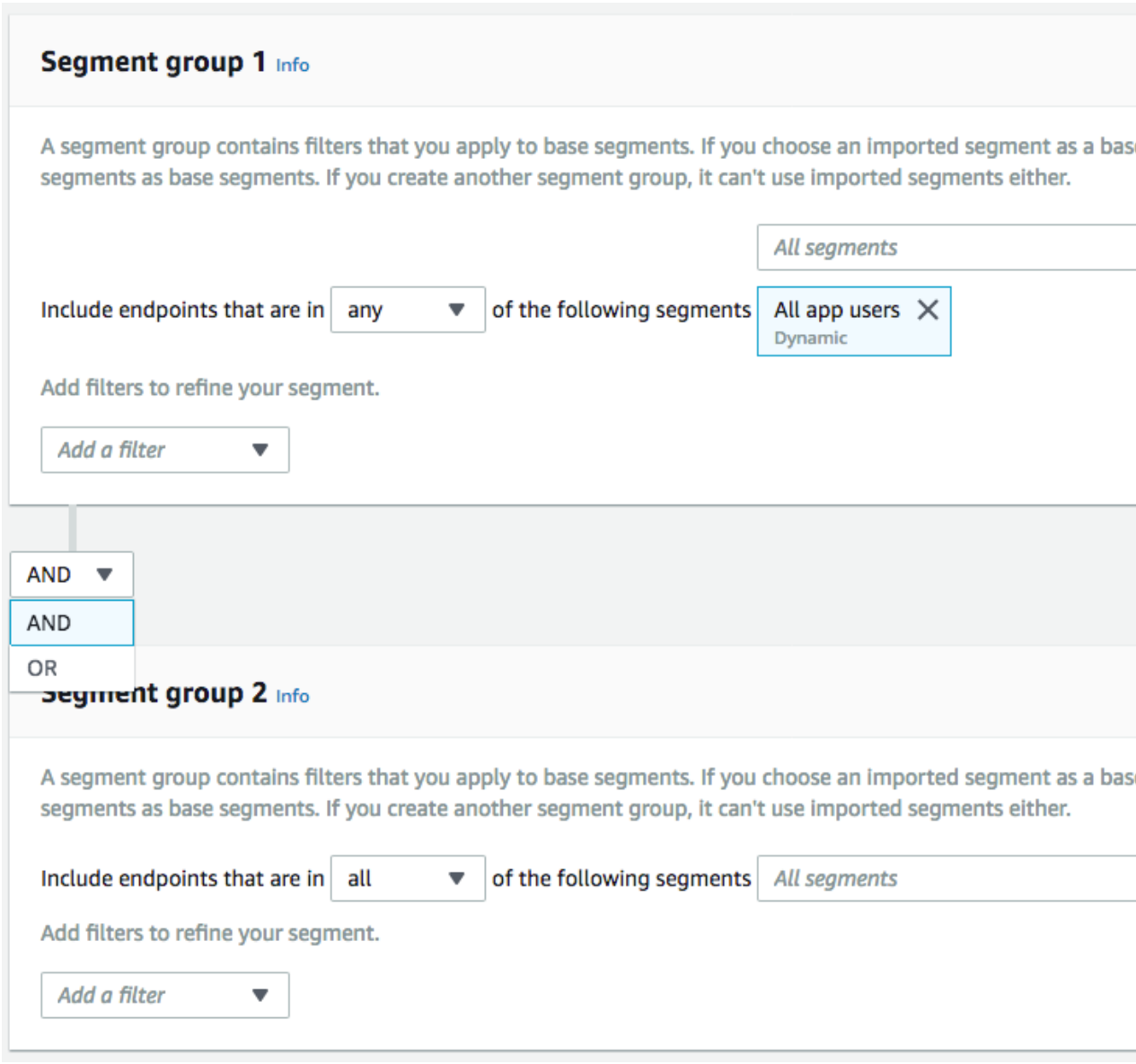


Step 3: Add the Blacklist Segment Group

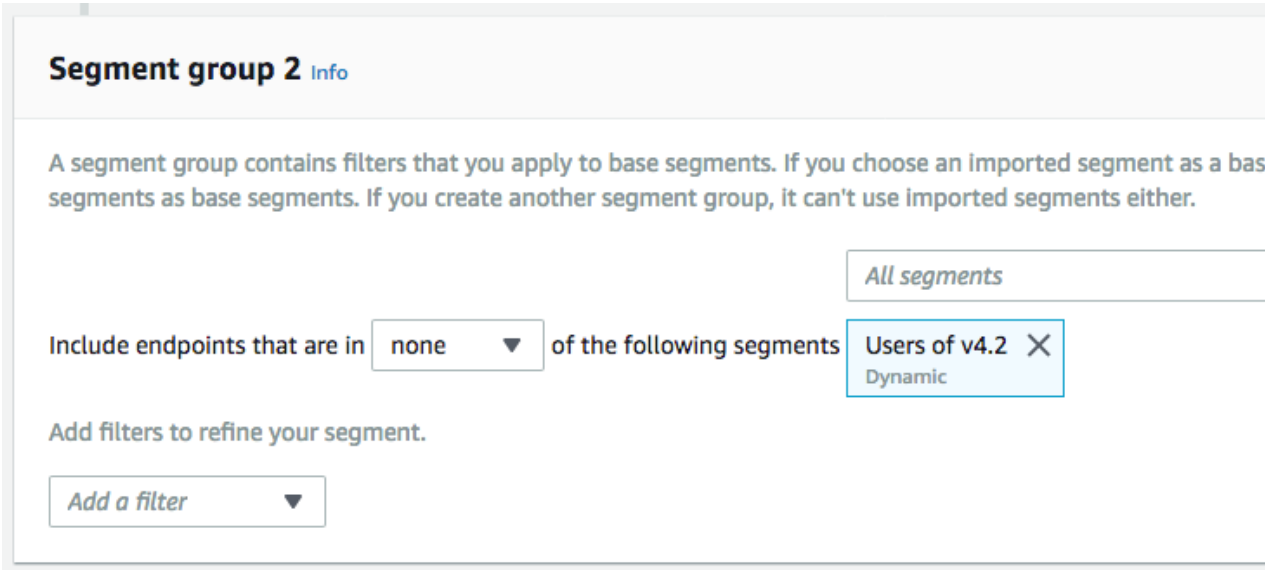
Now that you've specified which customers should be added to the segment, you can create another segment that excludes your blacklist.

Note
If you use an imported segment as the base segment for your first segment group, you can't create a second segment group.

1. When you finish setting up the first segment group, choose **Add another segment group**. When you add another segment group, you have to specify how it relates to the first segment group, as shown in the following image. For this example, choose **AND**, as shown in the following image.



2. Next to **Include endpoints that are in**, choose **none**. Then, next to of the following segments, choose the segment that you want to exclude. These steps are shown in the following image.



3. Choose **Create segment**.

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 channel types:

- Push notifications (p. 17)
- Email (p. 20)
- SMS (p. 33)
- Voice (p. 67)

Before you can use Amazon Pinpoint to engage your audience, you have to create an Amazon Pinpoint project, and that project has to support one or more channels.

After you create a project and enable a channel, you can use your project to send messages. You can define the audience segment (p. 73) that you want to engage and then define a campaign (p. 86) that sends messages to that segment. Or, to send a message to a limited audience, you can send a test message (p. 98) without creating a campaign.

Topics

- Amazon Pinpoint Push Notification Channels (p. 17)
- Amazon Pinpoint Email Channel (p. 20)
- Amazon Pinpoint SMS Channel (p. 33)
- Amazon Pinpoint Voice Channel (p. 67)

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. 17)
- Monitoring Push Notification Activity with Amazon Pinpoint (p. 18)
- Managing Mobile Push Channels with Amazon Pinpoint (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 notification** settings page. For more information, see Push Notification Settings (p. 129).

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 **Projects** page, choose **Create a project**.
3. For **Project name**, type 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 **Messaging channels**, next to **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.

   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 cannot monitor push notification activity outside of a campaign.

Amazon Pinpoint Analytics

The Analytics section of the Amazon Pinpoint console shows trends related to user engagement, campaign outreach, revenue, and more. For example, you can view the number of push notification endpoints that you can target, the number of endpoints you've already sent messages to, and the open rates for campaigns you've already sent. You can view these 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 **Projects** page, choose the project that you want to view metrics for.
3. In the navigation pane, under **Analytics**, choose **Campaigns**.
4. (Optional) Choose a campaign from the **Campaigns** table to view metrics specific to that campaign.

For more information, see Amazon Pinpoint Analytics (p. 102).

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:

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

To update push notification settings

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

Managing APNs Settings

On the **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 does not 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 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, 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 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.
4. When you finish, choose **Save**.

Amazon Pinpoint Email Channel

To engage your user segment with an email campaign, enable the email channel in Amazon Pinpoint.

When you first enable the email channel, your AWS account has access only to the email sandbox. With sandbox access, you can send 200 emails per 24-hour period at a maximum rate of one email per second. You can only send emails to addresses you verify. To increase your sending limits and to send email to unverified email addresses, see Requesting Production Access for Email (p. 24).

You can monitor your email activity (p. 24) by viewing analytics in the Amazon Pinpoint console or by streaming email events to Kinesis.

As your email needs change, you can manage your email channel by updating your email address or domain (p. 25), or requesting a sending limits increase (p. 26).

Topics

- Setting up the Amazon Pinpoint Email Channel (p. 21)
- Monitoring Email Activity with Amazon Pinpoint (p. 24)

- Managing the Amazon Pinpoint Email Channel (p. 25)
- Sending Email in Amazon Pinpoint (p. 28)
- Tips and Best Practices (p. 30)

Setting up the Amazon Pinpoint Email Channel

To set up the Amazon Pinpoint email channel, you create a new project (p. 21), and then verify an email address to use when sending email from that project.

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 sending limit increase request (p. 24) through AWS Support.

Topics

- Creating an Amazon Pinpoint Project with Email Support (p. 21)
- Verifying Email Identities (p. 22)
- Requesting Production Access for Email (p. 24)
- Tracking Open and Click Events in Email (p. 24)

Creating an Amazon Pinpoint Project with Email Support

To send email messages with Amazon Pinpoint, you must create an Amazon Pinpoint project, and then enable the email channel in that project. There are two ways to create an Amazon Pinpoint project: by using the Amazon Pinpoint console, or by using the Amazon Pinpoint API. This section shows you how to create a project by using the console.

Topics in this section

- Create a New Project by Using the Console (p. 21)

Create a New Project by Using the Console

The first step in setting up email in Amazon Pinpoint is to create a new project. Next, you verify an email address identity.

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 it. If your account is still in the Amazon Pinpoint sandbox, you also need to verify the identities that you plan to send emails to.

To create a new Amazon Pinpoint project and verify an email address

1. Open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.
2. On the **Projects** page, choose **Create a project**.
3. For **Project name**, type 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 **Messaging channels**, next to **Email**, choose **Configure**.

5. For **Email address**, type the email address that you want to verify, and then choose **Verify**. Amazon Pinpoint sends an email to the address you specified. Open the email, and then click the link in the message to verify your email address.

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 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 emails to.

Before you verify an identity, you first have to create a project. For information about creating projects, see Creating an Amazon Pinpoint Project with Email Support (p. 21).

Topics in this section

- Verifying an Email Address (p. 22)
- Verifying a Domain (p. 23)

Verifying an Email Address

If you've already created a project for sending email, you may have 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. On the **Projects** page, choose the project that you want to verify the identity in.
3. In the navigation pane, under **Settings**, choose **Email**.
4. Next to **Channel settings**, choose **Edit**.
5. Under **Identity Type**, choose **Email address**, and then choose **New email address verification**.
6. For **Email address**, type the email address that you want to verify, and then choose **Verify Email**.

   Note
   The email address you specify must be one that you have access to, and that is able to receive email.
7. Check the inbox of the address that you specified for a message from *no-reply-aws@amazon.com*. Open the message, and then click the link to verify your email address.

When you verify email addresses, consider the following:

- Amazon Pinpoint has endpoints in multiple AWS Regions, and the verification status of the 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.
- The *local part* of the email address (the part that comes before the @ sign) is case sensitive. If you verify *user@example.com*, you can't send from *USER@example.com* unless you verify that address as well.
- Domain names are case insensitive. If you verify *user@example.com*, you can also send from *user@EXAMPLE.com*.
- You can verify up to 10,000 identities (domains and email addresses, in any combination) in each AWS Region.
- You can apply labels to verified email addresses by adding a plus sign (+) and a string of text after the local part of the address, and before the @ sign. For example, to add *label1* to the address *user@example.com*, use the modified address *user+label1@example.com*.

You can use as many labels as you want to on each verified address. You can 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 of the email addresses that are associated with that domain. Therefore, you don't need to verify email addresses from that domain individually. For example, if you verify the domain *example.com*, you can send email from *carlos@example.com*, *john@example.com*, and any other address in the *example.com* domain.

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

> **Note**
> In order to complete the verification process, you have to modify the DNS settings for the domain. For more information about changing the DNS settings for your domain, see the documentation for your DNS or web hosting provider.

To verify a domain

1. Open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.
2. On the **Projects** page, choose the project that you want to verify the identity in.
3. In the navigation pane, under **Settings**, choose **Email**.
4. Next to **Channel settings**, choose **Edit**.
5. Under **Identity Type**, choose **Domain**, and then choose **New domain verification**.
6. For **Domain**, enter the domain that you want to verify.
7. For **Default FROM address**, enter the email address that should be used to send email on this domain.
8. Choose **Verify domain**.
9. Make a note of the record values under **TXT record for domain's DNS settings**.
10. Open the DNS configuration page for your email domain, and then add a new TXT record. In the new TXT record, paste the **Name** and **Value** that you received in the previous step.

    > **Note**
    > If your DNS provider doesn't allow DNS record names to contain underscores, you can omit *_amazonses* from the **Name**.
    > Some DNS providers automatically add the domain name to the end of each DNS record name. To avoid duplication of the domain name, add a period to the end of the domain name in the DNS record. This step indicates to the provider that the domain name is fully qualified.

    Amazon Pinpoint automatically detects the TXT record within 72 hours.

When verifying your domain, consider the following:

- You can send from any subdomain of the verified domain without specifically verifying the subdomain. 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, and the whole domain name must not exceed a total length of 255 characters.

- You can verify up to 10,000 identities (domains and email addresses, in any combination) in each AWS Region.

Requesting Production Access for Email

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

To remove these restrictions, see Opening a Sending Limits Increase Case (p. 27).

Tracking Open and Click Events in Email

Amazon Pinpoint automatically tracks the how many of your emails were opened or clicked by their recipients. In order to track the numbers 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 very end of each email that you send. This image is hosted on an AWS server. The filename 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. 131).

Monitoring Email Activity with Amazon Pinpoint

For emails that you send as part of a campaign, Amazon Pinpoint provides options for monitoring your email activity.

> **Note**
> To monitor email activity, you must use a campaign. You can't monitor email activity outside of a campaign.

Amazon Pinpoint Analytics

The console provides several campaign-related metrics. For example, you can view the number of email endpoints that you can target, the number of endpoints you've already sent messages to, and the open,

click, and opt-out rates for campaigns you've already sent. You can view these 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 **Projects** page, choose the project that you want to view metrics for.
3. In the navigation pane, under **Analytics**, choose **Campaigns**.
4. (Optional) Choose a campaign from the **Campaigns** table to view metrics specific to that campaign.

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. 120).

For examples of the event data that Amazon Pinpoint streams to Kinesis, see Event Data 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 limits, you can open a Sending Limits Increase case with AWS Support.

Topics

- Updating Email Settings (p. 25)
- Managing Email Sending Limits (p. 26)

Updating Email Settings

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

To update your email settings

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.
2. On the **Projects** page, choose the project for which you want to update email settings.
3. In the navigation pane, under **Settings**, choose **Email**.
4. Next to **Channel settings**, choose **Edit**.
5. Choose the email identity that you want to add or update: **Email address** or **Domain**.
6. Choose whether you want to use an existing identity, or verify a new identity.
7. Provide your email address or domain, and choose **Verify**. Then, follow the instructions shown on the console.

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

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

For more information about verifying an email address or domain, see Verifying Email Identities (p. 22).

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

Managing Email Sending Limits

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 limits. Sending limits benefit all Amazon Pinpoint users because they help to maintain the trusted relationship between Amazon Pinpoint and Internet service providers (ISPs). Sending limits 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.

The following are Amazon Pinpoint sending limits:

Sending Quota

The maximum number of emails that you can send in a 24-hour period. The sending quota reflects a rolling time period. Every time you try to send an email, Amazon Pinpoint checks how many emails you sent in 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 sending quota is 50,000, and you sent 15,000 emails in the previous 24 hours, then you can send another 35,000 emails right away. If you have already sent 50,000 emails in the previous 24 hours, you cannot send more emails until some of the previous sending rolls out of its 24-hour window.

Maximum Send Rate

The maximum number of emails that Amazon Pinpoint can accept from your account per second. You can exceed this limit 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 send 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 your sending limits, submit an Amazon Pinpoint Sending Limits Increase case. For more information, see Requesting Production Access for Email (p. 24). After your account moves out of the sandbox and you start sending emails, you can increase your sending limits further by submitting another Amazon Pinpoint Sending Limits Increase case.

Increasing Your Sending Limits

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

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

> **Important**

- Plan ahead. Be aware of your sending limits and try to stay within them. If you anticipate needing a higher quota than the system allocated, open an Amazon Pinpoint Sending Limits Increase case well before the date that you need the higher quota.

- If you anticipate needing to send more than one million emails per day, you must open an Amazon Pinpoint Sending Limits Increase case.

For Amazon Pinpoint to increase your quota, 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 quota** – If your volume stays close to your 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 limits.

  Important
  Test emails that you send to your own email addresses 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 Amazon SES Email Sending.

Opening a Sending Limits Increase Case

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

To request a sending limit increase

1. In your web browser, go to AWS Support Center. If you are not already signed in to the AWS Management Console, type your user name and password when prompted.
2. Choose **Create Case**.
3. Complete the sending limit increase request by providing the following information:
   - **Regarding** – Choose **Service Limit Increase**.
   - For **Limit Type** – Choose **Pinpoint Email**.
   - **Region** – Select the AWS Region for which you are requesting a sending limit increase. Your sending limits are separate for each AWS Region. For supported regions, see AWS Regions and Endpoints in the *AWS General Reference*.
   - **Limit** – Choose one of the following options:
     - Choose **Desired Daily Sending Quota** if you want to increase the number of messages you can send per day.
     - Choose **Desired Maximum Send Rate** if you want to increase the number of messages you can send per second.
   - **New limit value** – Enter the amount you are requesting.

     Note
     Only request the amount you think you'll need. We cannot guarantee that you will receive the amount you request. The larger your request, the more justification you need to provide to have your request granted.
   - **Mail type** – Choose the option that best represents your use case.
   - **Website URL** – Type the URL of your website.

     Note
     You are not required to provide a website URL. However, providing a website URL helps us evaluate your request.

- **My email-sending complies with the AWS Service Terms and AWS Acceptable Use Policy (AUP)** – Select **Yes** or **No**.
- **I only send to recipients who have specifically requested my mail** – Select **Yes** or **No**.
- **I have a process to handle bounces and complaints** – Select **Yes** or **No**.
- **Use Case Description** – Describe how you plan to send email using Amazon Pinpoint in as much detail as possible. For example, describe the type of emails you are sending and how email sending fits into your business. The more information you provide that indicates that you send high-quality messages to recipients who want and expect them, the more likely we are to approve your request.
- For **Support Language**, choose the language in which you want to communicate with the AWS Support team.
- For **Contact method**, choose **Web**.

4. When you finish, choose **Submit**.

Checking the Status of Your Request

After you submit your request, we review your case. Allow one full business day for processing.

To check the status of your sending limit increase request

1. In your web browser, go to AWS Support Center. If you are not already signed in to the AWS Management Console, type your user name and password when prompted.
2. In the navigation panel on the left side of the screen, choose **Dashboard**.
3. Under **Recent Cases**, choose your sending limit increase request case.
4. 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 limits.

If your account is currently in the email sandbox, and if you are granted a sending limit 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 limits. If your needs exceed the gradual increase, you can open another Amazon Pinpoint Sending Limits Increase request.

Sending Email in Amazon Pinpoint

There are two types of email that you can send using Amazon Pinpoint: campaign-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. *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, whereas transactional emails are usually sent from applications that use an AWS SDK, or that call the Amazon Pinpoint API directly.

When you send a campaign-based email, you first create a segment (p. 73). 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 more about creating campaigns, see *Campaigns* (p. 86).

To send a transactional email, you can use the `SendMessage` operation 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. 29).

Sending Email by Using the Amazon Pinpoint SMTP Interface

The Amazon Pinpoint SMTP interface allows you to send email 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 `smtplib` 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 limited 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).

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**, type 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. Alternatively, choose Download Credentials to download the username and password to your computer.

   Note
   This is the only opportunity 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.

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
EU (Ireland)	email-smtp.eu-west-1.amazonaws.com

The Amazon Pinpoint SMTP endpoint requires that all connections 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 ports 25, 587, or 2587. If you use TLS Wrapper authentication, you can connect to the Amazon Pinpoint SMTP interface on ports 465 or 2465.

When you connect your application or library to the SMTP interface, use the SMTP username and password that you created in ??? (p. 29) as your SMTP username and password, respectively.

Tips and 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.

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.

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 attributes in your messages to identify whether your message is legitimate. These content filters automatically review the content of your 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 contains the 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 blacklists, 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 blacklist those services altogether. If your email contains a link to a blacklisted 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. 53). In some countries and regions, you can also receive messages from your customers by using the two-way SMS feature.

To send text messages using Amazon Pinpoint, you have to enable the SMS channel in your project (p. 36). Depending on how you use Amazon Pinpoint to send SMS messages, you might also need to initiate a request with AWS Support (p. 37) to request that certain SMS options are enabled or modified for your account. For example, you can request an increase to your SMS spending limit, or 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. 40) or long code (p. 43). When you have a dedicated number, you can enable two-way SMS for it (p. 52). Finally, you can specify the messages that Amazon Pinpoint sends to customers when it receives incoming messages (p. 126).

In the SMS settings section of the Amazon Pinpoint console (p. 126), you can manage SMS channel settings for your use case and budget. For example, you can set your monthly SMS spending limit, 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

- SMS Limits and Restrictions in Amazon Pinpoint (p. 34)
- Setting up the Amazon Pinpoint SMS Channel (p. 36)
- Requesting Support for SMS Messaging with Amazon Pinpoint (p. 37)
- Monitoring SMS Activity with Amazon Pinpoint (p. 47)
- Managing the Amazon Pinpoint SMS Channel (p. 49)
- Originating Identities for SMS Messages (p. 50)
- Using Two-Way SMS Messaging in Amazon Pinpoint (p. 52)
- Supported Countries and Regions (p. 53)
- SMS Best Practices (p. 61)
- Validating Phone Numbers with Amazon Pinpoint (p. 64)

SMS Limits and Restrictions in Amazon Pinpoint

The SMS protocol is subject to several restrictions and limitations. 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.

When you send SMS messages using Amazon Pinpoint, you should consider these limits and restrictions. For best results, you should also implement the techniques discussed in SMS Best Practices (p. 61).

Character Limits

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. 34), also known as the GSM 7-bit alphabet, it can contain up to 160 characters. If your message contains characters 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, Amazon Pinpoint automatically splits the message. When Amazon Pinpoint splits a message into multiple messages, each message contains some additional information about the part of the message that came before it. When the recipient's device receives messages separated in this way, it uses this additional information to join the incoming messages into one message. As a result of adding this data, when a long message is split into several messages, the maximum number of characters in each message is reduced to 153 (for messages that only contain GSM 03.38 characters) or 67 (for messages that contain other characters).

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	&	*	@	:	,	¤
$	=	!	>	#	-	¡	¿	(	<	%	.	+
£	?	"	)	§	;	'	/	_	¥	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.

Restrictions for Specific Countries or Regions

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 (p. 53).

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.

Originating Numbers

In Amazon Pinpoint, an *originating number* or *originating ID* is the phone number or sender ID that appears on customers' devices when they receive messages from you. You can use Amazon Pinpoint to send SMS messages from the following types of originating IDs: short codes, long codes, and sender IDs. The appropriate type of originating ID to use depends on the rules related to sending commercial SMS messages in the countries and regions where your customers are located. For more information about originating IDs, see Originating Identities for SMS Messages (p. 50).

Each country or region has different rules related to the originating number or ID that commercial senders use when sending SMS messages. For example, in the United States and Canada, application-to-person (A2P) messages must be sent using a short code. In India, A2P messages must be sent using a six-digit sender ID that's preregistered with mobile carriers.

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 **Settings** page in the Amazon Pinpoint console. For more information, see Managing the Amazon Pinpoint SMS Channel (p. 49).

Creating a New Project by Using the Amazon Pinpoint Console

The first step in setting up email in Amazon Pinpoint is to create a new project. Next, you verify an email address identity.

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 it. If your account is still in the Amazon Pinpoint sandbox, you also need to verify the identities that you plan to send emails to.

To create a new Amazon Pinpoint project and verify an email address

1. Open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.
2. On the **Projects** page, choose **Create a project**.
3. For **Project name**, type 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 **Messaging channels**, next to **SMS**, 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 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 spend limit** – The maximum amount of money, in US Dollars, that you want to spend sending SMS messages per calendar month. If your monthly sending exceeds this limit, Amazon Pinpoint and other AWS services stop sending SMS messages from your account.
   - **Default sender ID** – The identity that appears on recipients' devices when they receive this message. 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 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. 37).

To engage an audience segment with an SMS campaign, see Amazon Pinpoint Campaigns (p. 86).

To send an SMS message directly to a limited audience without creating a campaign, see Send Test Messages with Amazon Pinpoint (p. 98).

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 spend threshold**

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

- **A dedicated number (short code or long 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 or long 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 long code or short code is required if you want to enable two-way SMS with Amazon Pinpoint. Long codes are supported only for two-way SMS.

- **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 (p. 53).

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.

Topics

- Requesting Increases to Your Monthly SMS Spend Threshold for Amazon Pinpoint (p. 38)
- Requesting Dedicated Short Codes for SMS Messaging with Amazon Pinpoint (p. 40)
- Requesting Dedicated Long Codes for SMS Messaging with Amazon Pinpoint (p. 43)
- Requesting Sender IDs for SMS Messaging with Amazon Pinpoint (p. 45)

Requesting Increases to Your Monthly SMS Spend Threshold for Amazon Pinpoint

Your monthly spend threshold sets how much you can spend each calendar month on SMS messaging when you use Amazon Pinpoint. When Amazon Pinpoint determines that sending an SMS message would incur a cost that exceeds your spend threshold for that month, it stops publishing SMS messages within minutes.

Important
Because Amazon Pinpoint is a distributed system, it stops sending SMS messages within a time interval of minutes of the spend limit being exceeded. During that interval, if you continue to send SMS messages, you might incur costs that exceed your limit.

By default, the spend threshold is $1.00 (USD). For information about SMS pricing, see Amazon Pinpoint Pricing.

Typically, AWS Support processes your case within 2 business days. Depending on the spend limit you request and the complexity of your case, AWS Support might require an additional 3–5 days to ensure that your request can be processed.

To request a spend threshold increase, complete the following steps.

Step 1: Open an Amazon Pinpoint SMS Case

Open a case with AWS Support by completing the following steps.

1. Sign in to the AWS Management Console, and go to the AWS Support Center.
2. Choose **Create case**.
3. For **Regarding**, choose **Service Limit Increase**.
4. For **Limit Type**, choose **Pinpoint SMS**.

Step 2: Specify Your Request

Tell AWS Support that you're requesting a spend threshold increase by completing the following steps.

1. For **Resource Type**, choose **General Limits**.
2. For **Limit**, choose **Account Spend Threshold Increase**.

3. For **New limit value**, type the maximum amount in USD that you'll spend on SMS messages each calendar month.
4. (Optional) If you want to include multiple requests in this support case, choose **Add another request**. Then, specify the type of 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. 37).

Step 3: Describe Your SMS Use Case

Describe how you use SMS messaging by completing the following steps.

1. For **Link to site or app which will be sending SMS**, identify the website or application where your audience members will opt in to receive your SMS messages.
2. For **Type of messages**, choose the type of SMS message that you send:

   - **Transactional** – Important informational messages that support customer transactions, such as order confirmations or transaction alerts. Transactional messages must not contain promotional content.
   - **Promotional** – Noncritical messages that promote your business or service, such as special offers or announcements.
   - **One Time Passwords** – Messages that provide passwords to authenticate with your website or application.
3. For **Targeted Countries**, specify the countries that you send SMS messages to. For more information, see Supported Countries and Regions (p. 53).

   If your list of countries exceeds the character limit for this text box, you can instead specify your countries in the **Use Case Description** box.
4. 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 spend threshold (the value you specified for **New limit 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.
5. When you finish, choose **Submit**.

Step 4: Update Your SMS Settings in the Amazon Pinpoint Console

After AWS notifies you that your monthly spend threshold is increased, complete the following steps.

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.
2. On the **Projects** page, choose a project that uses the SMS channel.
3. In the navigation pane, under **Settings**, choose **SMS**.
4. Next to **General**, choose **Edit**.
5. Under **Account-level settings**, for **Account spend limit**, type 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 limit provided by AWS Support. By setting a lower value, you can control spending while retaining the capacity to scale up as needed.
6. Choose **Save changes**.

Requesting Dedicated Short Codes for SMS Messaging with Amazon Pinpoint

A short code is a five-digit or six-digit number that's meant for high-volume SMS messaging. Short codes are often used for application-to-person (A2P) messaging, two-factor authentication (2FA), and marketing.

To use short codes in multiple countries, request a separate short code for each country. You can use a short code only to message the same country in which it was approved by wireless carriers.

For information about short code pricing, see Amazon Pinpoint Pricing.

> **Important**
> If you're new to SMS messaging with Amazon Pinpoint, request a monthly SMS spend threshold that meets the expected demands of your SMS use case. By default, your monthly spend threshold is $1.00 USD. You can request to increase your spend threshold in the same support case that includes your request for a short code. Or, you can use a separate case. For more information, see Requesting Increases to Your Monthly SMS Spend Threshold for Amazon Pinpoint (p. 38).

After receiving your request, AWS works with the wireless carriers to provision your short code on your behalf. This provisioning process typically takes 8–12 weeks to complete, but some carriers may require additional time to complete the process.

> **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.

To request a dedicated short code, complete the following steps.

Step 1: Open an Amazon Pinpoint SMS Case

Open a case with AWS Support by completing the following steps.

1. Sign in to the AWS Management Console, and go to the AWS Support Center.
2. Choose **Create case**.
3. For **Regarding**, choose **Service Limit Increase**.
4. For **Limit Type**, choose **Pinpoint SMS**.

Step 2: Specify Your Request

Tell AWS Support that you're requesting a dedicated short code by completing the following steps.

1. For **Resource Type**, choose **Dedicated SMS Short Codes**.

2. For **Limit**, choose the type of message that you'll send with your short code:

   - **One-time Passwords/Two-Factor Authentication** – Messages that provide passwords to authenticate with your website or application.
   - **Promotional/Marketing** – 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 transaction alerts. Transactional messages must not contain promotional content.

3. For **New limit value**, specify the number of short codes that you're requesting. Typically, this value is `1`.
4. (Optional) If you want to include multiple requests in this support case, choose **Add another request**. Then, specify the type of 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. 37).

Step 3: Describe Your SMS Use Case

Describe how you'll use your dedicated short code by completing the following steps.

1. For **Link to site or app which will be sending SMS**, identify the website or application where your audience members will opt in to receive your SMS messages.
2. For **Type of messages**, choose the type of message that you'll send using your short code: **Transactional**, **Promotional**, or **One Time Passwords**.
3. For **Targeted Countries**, specify the country that you'll send SMS messages to with your short code.
4. For **Use Case Description**, provide the following details, which AWS requires to register your short code with wireless carriers:

   Company information:

   - Company name.
   - Company mailing address.
   - Name and phone number for the primary contact for your request.
   - Email address and toll-free number for support at your company.
   - Company tax ID.
   - Name of your product or service.

   User sign-up process:

   - Company website, or the website that your customers will sign up on to receive messages from your short code.
   - How users will sign up to receive messages from your short code. Specify one or more of the following options:
     - `Text messages`.
     - `Website`.
     - `Mobile app`.
     - `Other`. If other, explain.
   - The text for the option to sign up for messages on your website, app, or elsewhere.
   - The sequence of messages that you'll use for double opt-in. Provide:

1. The SMS message that you'll send when a user signs up. This message asks for the user's consent for recurring messages. For example:

   ExampleCorp: Reply YES to receive account transaction alerts. Msg&data rates may apply.
2. The opt-in response that you expect from the user. This is typically a keyword, such as *YES*.
3. The confirmation message that you'll send in response. For example:

   You are now registered for account alerts from ExampleCorp. Msg&data rates may apply. Txt STOP to cancel or HELP for info.

The purpose of your messages:

- The purpose of the messages that you'll send with your short code. Specify one of the following options:
  - **`Promotions and marketing`**.
  - **`Location-based services`**.
  - **`Notifications`**.
  - **`Information on demand`**.
  - **`Group chat`**.
  - **`Two-factor authentication (2FA)`**.
  - **`Polling and surveys`**.
  - **`Sweepstakes or contests`**.
  - **`Other`**. If other, explain.
- Whether you'll use your short code for promotional or marketing messages for a business other than your own.

Message content:

- The message that you'll send when customers opt in to your messages by sending you a specific keyword. Be careful when you specify this keyword and message—it may take several weeks to change this message. When we create your short code, we register the keyword and message with the mobile phone carriers in the country where you use the short code. Your message may resemble the following example:

  Welcome to `ProductName` alerts! Msg&data rates apply. `2` msgs per month. Reply HELP for help, STOP to cancel.
- The message that you'll send in response to the *HELP* keyword. This message must include customer support contact information. For example:

  `ProductName` Alerts: Help at `example.com/help` or `(800) 555-0199`. Msg&data rates apply. `2` msgs per month. Reply STOP to cancel.
- The message that you'll send in response to the *STOP* keyword. This message must confirm that messages are no longer sent to the user. For example:

  You are unsubscribed from `ProductName` Alerts. No more messages will be sent. Reply HELP for help or `(800) 555-0199`.
- The text you'll use for a periodic reminder that the user is subscribed to your messages. For example:

  Reminder: You are subscribed to account alerts from ExampleCorp. Msg&data rates may apply. Txt STOP to cancel or HELP for info.

- An example of each type of message that you'll send with your short code. Provide at least 3 examples, but if you are sending more than 3 types of messages, provide examples for all of them.

5. When you finish, choose **Submit**.

Step 4: Update Your SMS Settings in the Amazon Pinpoint Console

After AWS notifies you that your short code is registered with the wireless carriers, complete the following steps.

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.
2. On the **Projects** page, choose the a project that uses the SMS channel.
3. In the navigation pane, under **Settings**, choose **SMS**.
4. Under **Short and Long Codes**, choose the short code that AWS assigned to your account.
5. Under **Default keywords**, verify that the messages for the *HELP* and *STOP* keywords match the values you provided to AWS Support.
6. Under **Registered keyword**, verify that the opt-in keyword and message match the values you provided to AWS Support.
7. (Optional) If you want to specify additional keyword responses, or if you want to process inbound messages outside of Amazon Pinpoint, configure two-way SMS settings. For more information, see Two-Way SMS Settings (p. 128).
8. When you finish making changes, 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. 86).

To send an SMS message directly to a limited audience without creating a campaign, see Send Test Messages with Amazon Pinpoint (p. 98).

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 10-digit phone number. Long codes are meant for low-volume, person-to-person communication. For example, in the United States and Canada, sending rates for long codes are restricted to 1 TPS. Sending high-volume traffic to a long code might prompt wireless carriers to block the messages by blacklisting the long code. Long codes are useful for testing your SMS program before you invest in a short code. With Amazon Pinpoint, long codes are supported only for two-way SMS.

You can request up to 5 long codes for each country that you'll send SMS messages to.

> **Important**
> If you're new to SMS messaging with Amazon Pinpoint, request a monthly SMS spend threshold that meets the expected demands of your SMS use case. By default, your monthly spend threshold is 1.00 USD. You can request to increase your spend threshold in the same support case that includes your request for a long code. Or, you can submit a separate case. For more information, see Requesting Increases to Your Monthly SMS Spend Threshold for Amazon Pinpoint (p. 38).

After receiving your request, AWS registers your long code in the targeted countries on your behalf. Typically, AWS Support processes your case within 2 business days. Depending on the complexity of your case, AWS Support might require an additional 3–5 days to ensure that your request can be processed.

To request a dedicated long code, complete the following steps.

Step 1: Open an Amazon Pinpoint SMS Case

Open a case with AWS Support by completing the following steps.

1. Sign in to the AWS Management Console, and go to the AWS Support Center.
2. Choose **Create case**.
3. For **Regarding**, choose **Service Limit Increase**.
4. For **Limit Type**, choose **Pinpoint SMS**.

Step 2: Specify Your Request

Tell AWS Support that you're requesting a dedicated long code by completing the following steps.

1. For **Resource Type**, choose **Dedicated SMS Long Codes**.
2. For **Limit**, choose the type of message that you'll send with your long code:

   - **One-time Passwords/Two-Factor Authentication** – Messages that provide passwords to authenticate with your website or application.
   - **Promotional/Marketing** – 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 transaction alerts. Transactional messages must not contain promotional content.
3. For **New limit value**, specify the number of long codes that you're requesting. Typically, this value is `1`. You can request up to 5 long codes for each country in your request.
4. (Optional) If you want to include multiple requests in this support case, choose **Add another request**. Then, specify the type of request.

   If you include multiple requests, provide the required information for each. For the required information, see the other sections in Requesting Support for SMS Messaging with Amazon Pinpoint (p. 37).

Step 3: Describe Your SMS Use Case

Describe how you'll use your dedicated long code by completing the following steps.

1. For **Link to site or app which will be sending SMS**, identify the website or application where your audience members will opt in to receive your SMS messages.
2. For **Type of messages**, choose the type of message that you'll send using your long code: **Transactional**, **Promotional**, or **One Time Passwords**.
3. For **Targeted Countries**, specify the countries that you're requesting a long code for. For more information, see Supported Countries and Regions (p. 53).

   If your list of countries exceeds the character limit for this text box, you can instead specify your countries in the **Use Case Description** box.
4. For **Use Case Description**, provide the following details:

   - The AWS Region where you'll use Amazon Pinpoint to send SMS messages with your long code.

- Because long codes are supported only for two-way SMS, confirm that you require your long code for two-way SMS purposes.

5. When you finish, choose **Submit**.

Step 4: Update Your SMS Settings in the Amazon Pinpoint Console

After AWS notifies you that your long code is registered in the targeted countries, complete the following steps.

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.
2. On the **Projects** page, choose the a project that uses the SMS channel.
3. In the navigation pane, under **Settings**, choose **SMS**.
4. Under **Short and Long Codes**, choose the long code that AWS assigned to your account.
5. Under **Default keywords**, verify that the messages for the *HELP* and *STOP* keywords match the values you provided to AWS Support.
6. Under **Registered keyword**, verify that the opt-in keyword and message match the values you provided to AWS Support.
7. (Optional) If you want to specify additional keyword responses, or if you want to process inbound messages outside of Amazon Pinpoint, configure two-way SMS settings. For more information, see Two-Way SMS Settings (p. 128).
8. When you finish making changes, choose **Save**.

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. 86).

To send an SMS message directly to a limited audience without creating a campaign, see Send Test Messages with Amazon Pinpoint (p. 98).

Requesting Sender IDs for SMS Messaging with Amazon Pinpoint

A sender ID is a custom name that's displayed as the message sender on the receiving 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 example, messages delivered to U.S. phone numbers don't display the sender ID. For the countries and regions that support sender IDs, see Supported Regions and Countries.

> **Important**
> If you're new to SMS messaging with Amazon Pinpoint, request a monthly SMS spend threshold that meets the expected demands of your SMS use case. By default, your monthly spend threshold is 1.00 USD. You can request to increase your spend threshold in the same support case that includes your request for a sender ID. Or, you can use a separate case. For more information, see Requesting Increases to Your Monthly SMS Spend Threshold for Amazon Pinpoint (p. 38).

To request a sender ID, complete the following steps.

Step 1: Open an Amazon Pinpoint SMS Case

Open a case with AWS Support by completing the following steps.

1. Sign in to the AWS Management Console, and go to the AWS Support Center.
2. Choose **Create case**.
3. For **Regarding**, choose **Service Limit Increase**.
4. For **Limit Type**, choose **Pinpoint SMS**.

Step 2: Specify Your Request

Tell AWS Support that you're requesting a sender ID by completing the following steps.

1. For **Resource Type**, choose **General Limits**.
2. For **Limit**, choose **SenderID Registration**.
3. For **New limit value**, type the number of sender IDs that you're requesting. Typically, this value is `1`.
4. (Optional) If you want to include multiple requests in this support case, choose **Add another request**. Then, specify the type of request.

   If you include multiple requests, provide the required information for each. For the required information, see the other sections in Requesting Support for SMS Messaging with Amazon Pinpoint (p. 37).

Step 3: Describe Your SMS Use Case

Describe how you'll use your sender ID by completing the following steps.

1. For **Link to site or app which will be sending SMS**, identify the website or application where your audience members will opt in to receive your SMS messages.
2. For **Type of messages**, choose the type of message that you'll send using your sender ID:

   - **Transactional** – Important informational messages that support customer transactions, such as order confirmations or transaction alerts. Transactional messages must not contain promotional content.
   - **Promotional** – Noncritical messages that promote your business or service, such as special offers or announcements.
   - **One Time Passwords** – Messages that provide passwords to authenticate with your website or application.
3. For **Targeted Countries**, specify the countries where you want to register a sender ID. Support for sender IDs and sender ID registration requirements vary by country. For more information, see Supported Countries and Regions (p. 53).

   If your list of countries exceeds the character limit for this text box, you can instead specify the countries in the **Use Case Description** box.
4. For **Use Case Description**, provide the following details:

   - The name of your organization (or the organization associated with the sender ID).
   - The sender ID to register. Typically, the sender ID can contain up to 11 alphanumeric characters, including at least one letter and no spaces. These requirements can vary depending on the country you're messaging.
   - How your sender ID relates to the name of your organization, if that relationship isn't clear. For example, if your sender ID is an acronym that includes your organization name when expanded, provide the expanded form.

- The template for the messages that you'll send with the sender ID.

5. When you finish, choose **Submit**.

Step 4: Update Your SMS Settings in the Amazon Pinpoint Console

After AWS notifies you that your sender ID is registered in the targeted countries, complete the following steps.

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

Next Steps

You've registered a sender ID and updated your settings in the Amazon Pinpoint console. Now you can use Amazon Pinpoint to send SMS messages with your sender ID. SMS recipients in supported countries will see your sender ID as the message sender on their devices.

To engage an audience segment with an SMS campaign, see Amazon Pinpoint Campaigns (p. 86).

To send an SMS message directly to a limited audience without creating a campaign, see Send Test Messages with Amazon Pinpoint (p. 98).

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 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. 120).

For examples of the event data that Amazon Pinpoint streams to Kinesis, see Event Data in the *Amazon Pinpoint Developer Guide*.

Amazon Pinpoint Analytics

On the **Analytics** page in the Amazon Pinpoint console, you can view metrics for the number of active targetable users that you can engage with the SMS channel.

Monitoring SMS Spending Activity with Amazon Pinpoint

This topic contains information about viewing SMS spending metrics in CloudWatch. It also contains procedures for using CloudWatch to set up an alarm that sends you a notification when your monthly SMS spending goes over a certain amount.

View Your Monthly SMS Spending by Using CloudWatch

You can quickly determine how much money you've spent sending SMS messages in the current month by using the Metrics section of the CloudWatch console. CloudWatch retains metrics 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 **SMSMonthToDateSpendUSD**. The chart updates to display the amount of money that you've spent sending SMS messages in the current month using both Amazon Pinpoint and Amazon SNS.

   Note
   The **SMSMonthToDateSpendUSD** metric doesn't appear until you send at least one SMS message through Amazon Pinpoint or Amazon SNS.

Create an SMS Spending Alarm

In addition to viewing your monthly SMS spending metrics, you can also create alarms in CloudWatch that send you notifications 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 Creating 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 more information about creating and subscribing to topics, see Getting Started with Amazon Simple Notification Service 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. Choose **Create Alarm**.
5. Under **SNS Metrics**, choose **Metrics with no dimensions**, and then select **SMSMonthToDateSpendUSD**. Choose **Next**.

   Note
   The **SMSMonthToDateSpendUSD** metric doesn't appear until you send at least one SMS message through Amazon Pinpoint or Amazon SNS.
6. Under **Alarm Threshold**, complete the following steps:

   - For **Name**, type a name for the alarm.
   - For **Description**, type a description of the alarm.

- For **Whenever**, specify the dollar amount (in US Dollars) that should trigger the alarm. Also, specify the number of periods that the spending amount must exceed the threshold in order to trigger the alarm.

7. Under **Additional settings**, for **Treat missing data as**, choose **ignore**.
8. Under **Actions**, make the following selections:
   - For **Whenever this alarm**, choose **State is ALARM**.
   - For **Send notification to**, choose the Amazon SNS topic that the notification should be sent to.
9. Choose **Create Alarm**.

Managing the Amazon Pinpoint SMS Channel

Use the Amazon Pinpoint console to enable the SMS channel and manage SMS settings, such as your default message type (transactional or promotional) and your monthly spending limit.

To update your SMS settings, use the **SMS settings** page. For more information, see SMS and Voice Settings (p. 126).

Before you can use Amazon Pinpoint to send SMS messages, you must enable the SMS channel for one or more projects. To create a new project with SMS support, see Setting up the Amazon Pinpoint SMS Channel (p. 36). To enable the SMS channel in an existing project, complete the following steps:

To enable the SMS channel 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 **Projects** page, choose the project for which you want to enable the SMS channel.
3. In the navigation pane, under **Settings**, choose **SMS**.
4. Next to **General**, choose **Edit**.
5. Choose **Enable the SMS channel for this project**.
6. 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.

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.

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 (p. 53).

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. 43).

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.

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), or use a sender ID (if your recipients are in a country or region where sender IDs are supported).

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. There are two types of short codes you can use with Amazon Pinpoint: shared short codes and dedicated short codes.

Shared Short Codes

By default, the SMS messages that you send from Amazon Pinpoint are sent from a group of phone numbers (originating numbers) that are shared with other Amazon Pinpoint users. This group of shared originating numbers is called the shared pool.

When you send a message using the shared pool, and your recipients are in the United States or Canada, they see a short code.

Advantages

You don't have to complete any extra steps to use the identities in the shared pool. Additionally, you only pay for the messages you send—there are no extra costs associated with sending messages using the shared pool.

Disadvantages

The identities in the shared pool are shared with other Amazon Pinpoint users. You can't specify which phone number to use when you send messages using the shared pool. If you send several messages to the same recipient, each message might appear to be sent from a different phone number. For this reason, it can be harder to establish your brand and identity when you use the shared pool.

Dedicated Short Codes

If you send a large volume of SMS messages to recipients in the United States or Canada, you can purchase a dedicated short code. Unlike the short codes in the shared pool, dedicated short codes are reserved for your exclusive use.

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 dedicated 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.

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 (p. 53).

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. 37).

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 **Projects** page, choose the project that you want to manage two-way SMS settings for.

2. In the navigation pane, under **Settings**, choose **SMS**.
3. Under **Short Codes and Long Codes**, choose the phone number that you want to configure two-way SMS for.
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 with one of the following options:

   - **Create a new topic** – Amazon Pinpoint creates a topic in your account.
   - **Choose an existing Amazon SNS topic** – Specify the ARN of a topic in your account.
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.
7. When you finish, 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": "+1XXX5550100",
  "messageBody": "offers",
  "inboundMessageId": "cae173d2-66b9-564c-8309-21f858e9fb84",
  "messageKeyword": "offers",
  "destinationNumber": "+1XXX5550199"
}
```

The value for `originationNumber` is the number that the message was sent from (that is, your customer's number). The value for `destinationNumber` is the number that the message was sent to (your short code or long code).

Supported Countries and Regions

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.

Country or region	ISO code	Supports sender IDs	Supports two-way SMS
Afghanistan	AF		
Albania	AL	Yes	
Algeria	DZ		
Andorra	AD	Yes	
Angola	AO	Yes	
Anguilla	AI	Yes	
Antigua and Barbuda	AG	Yes	

Country or region	ISO code	Supports sender IDs	Supports two-way SMS
Argentina	AR		Yes
Armenia	AM	Yes	
Aruba	AW	Yes	
Australia	AU	Yes	Yes
Austria	AT	Yes	Yes
Azerbaijan	AZ		
Bahamas	BS	Yes	
Bahrain	BH	Yes	
Bangladesh	BD		
Barbados	BB	Yes	
Belarus	BY	Yes[1 (p. 60)]	
Belgium	BE		Yes
Belize	BZ	Yes	
Benin	BJ	Yes	
Bermuda	BM	Yes	
Bhutan	BT	Yes	
Bolivia	BO	Yes	
Bosnia and Herzegovina	BA	Yes	
Botswana	BW	Yes	
Brazil	BR		Yes
Brunei	BN	Yes	
Bulgaria	BG	Yes	
Burkina Faso	BF	Yes	
Burundi	BI	Yes	
Cambodia	KH	Yes	
Cameroon	CM	Yes	
Canada	CA		Yes
Cape Verde	CV	Yes	
Cayman Islands	KY	No	
Central African Republic	CF	Yes	
Chad	TD	Yes	

Country or region	ISO code	Supports sender IDs	Supports two-way SMS
Chile	CL		Yes
China	CN		Yes
Colombia	CO		
Comoros	KM	Yes	
Cook Islands	CK	Yes	
Costa Rica	CR		
Croatia	HR		Yes
Cyprus	CY	Yes	
Czech Republic	CZ	Yes[1 (p. 60)]	Yes
Democratic Republic of the Congo	CD		
Denmark	DK	Yes	Yes
Djibouti	DJ	Yes	
Dominica	DM	Yes	
Dominican Republic	DO		
East Timor	TL		
Ecuador	EC		
Egypt	EG	Yes	
El Salvador	SV		
Equatorial Guinea	GQ	Yes	
Estonia	EE	Yes	Yes
Ethiopia	ET		
Faroe Islands	FO	Yes	
Fiji	FJ	Yes	
Finland	FI	Yes	Yes
France	FR	Yes	Yes
French Guiana	GF		
Gabon	GA	Yes	
Gambia	GM	Yes	
Georgia	GE	Yes	
Germany	DE	Yes	Yes

Country or region	ISO code	Supports sender IDs	Supports two-way SMS
Ghana	GH		
Gibraltar	GI	Yes	
Greece	GR	Yes	
Greenland	GL	Yes	
Grenada	GD	Yes	
Guadeloupe	GP	Yes	
Guam	GU		
Guatemala	GT		Yes
Guinea	GN	Yes	
Guinea-Bissau	GW	Yes	
Guyana	GY	Yes	
Haiti	HT	Yes	
Honduras	HN		Yes
Hong Kong	HK	Yes	Yes
Hungary	HU		Yes
Iceland	IS	Yes	
India	IN	Yes[1 (p. 60)]	Yes
Indonesia	ID	Yes[1 (p. 60)]	Yes
Iraq	IQ		
Ireland	IE	Yes	Yes
Israel	IL	Yes	Yes
Italy	IT	Yes	Yes
Ivory Coast	CI		
Jamaica	JM	Yes	
Japan	JP	Yes[2 (p. 60)]	Yes
Jordan	JO	Yes[1 (p. 60)]	
Kazakhstan	KZ		
Kenya	KE		
Kiribati	KI		
Kuwait	KW		

Country or region	ISO code	Supports sender IDs	Supports two-way SMS
Kyrgyzstan	KG		
Laos	LA		
Latvia	LV	Yes	Yes
Lebanon	LB	Yes	
Lesotho	LS	Yes	
Liberia	LR	Yes	
Libya	LY	Yes	
Liechtenstein	LI	Yes	
Lithuania	LT	Yes	Yes
Luxembourg	LU	Yes	
Macau	MO	Yes	
Macedonia	MK	Yes	
Madagascar	MG	Yes	
Malawi	MW	Yes	
Malaysia	MY		Yes
Maldives	MV	Yes	
Mali	ML		
Malta	MT	Yes	
Martinique	MQ	Yes	
Mauritania	MR	Yes	
Mauritius	MU	Yes	
Mexico	MX		Yes
Moldova	MD	Yes	
Monaco	MC		
Mongolia	MO	Yes	
Montenegro	ME	Yes	
Montserrat	MS	Yes	
Morocco	MA		
Mozambique	MZ		
Myanmar	MM		
Namibia	NA		

Country or region	ISO code	Supports sender IDs	Supports two-way SMS
Nepal	NP		
Netherlands	NL	Yes	Yes
Netherlands Antilles	AN	Yes	
New Caledonia	NC	Yes	
New Zealand	NZ		Yes
Nicaragua	NI		
Niger	NE	Yes	
Nigeria	NG	Yes[1 (p. 60)]	
Norway	NO	Yes	Yes
Oman	OM	Yes[1 (p. 60)]	
Pakistan	PK		
Palau	PW		
Palestinian Territories	PS	Yes[1 (p. 60)][3 (p. 60)]	
Panama	PA		
Papua New Guinea	PG	Yes	
Paraguay	PY	Yes	
Peru	PE	No	
Philippines	PH	Yes[1 (p. 60)]	Yes
Poland	PL	Yes	Yes
Portugal	PT	Yes	Yes
Puerto Rico	PR		Yes
Qatar	QA	Yes	
Republic of the Congo	CG		
Reunion Island	RE	Yes	
Romania	RO		Yes
Russia	RU	Yes[1 (p. 60)]	Yes
Rwanda	RW	Yes	
Saint Kitts and Nevis	KN		
Saint Lucia	LC		
Saint Vincent and the Grenadines	VC		

Country or region	ISO code	Supports sender IDs	Supports two-way SMS
Samoa	WS	Yes	
Sao Tome and Principe	ST	Yes	
Saudi Arabia	SA	Yes[1 (p. 60)]	
Senegal	SN	Yes	
Serbia	RS	Yes	
Seychelles	SC	Yes	
Sierra Leone	SL	Yes	
Singapore	SG	Yes	Yes
Slovakia	SK	Yes	Yes
Slovenia	SI	Yes	Yes
Solomon Islands	SB	Yes	
Somalia	SO	Yes	
South Africa	ZA		Yes
South Korea	KR		Yes
South Sudan	SS	Yes	
Spain	ES	Yes	Yes
Sri Lanka	LK		
Suriname	SR	Yes	
Swaziland	SZ	Yes	
Sweden	SE	Yes	Yes
Switzerland	CH	Yes	Yes
Taiwan	TW		Yes
Tajikistan	TJ	Yes	
Tanzania	TZ	Yes[1 (p. 60)]	
Thailand	TH	Yes	Yes
Togo	TG	Yes	
Tonga	TO	Yes	
Trinidad and Tobago	TT	Yes	
Tunisia	TN	Yes	
Turkey	TR	Yes[1 (p. 60)]	Yes

Country or region	ISO code	Supports sender IDs	Supports two-way SMS
Turkmenistan	TM	Yes	
Turks and Caicos Islands	TC	Yes	
Uganda	UG	Yes	
Ukraine	UA	Yes	Yes
United Arab Emirates	AE	Yes[1 (p. 60)]	
United Kingdom	GB	Yes	Yes
United States	US		Yes
Uruguay	UY		
Uzbekistan	UZ	Yes	
Vanuatu	VU	Yes	
Venezuela	VE		
Vietnam	VN		
Virgin Islands, British	VG	Yes	
Virgin Islands, US	VI	Yes	
Yemen	YE	Yes	
Zambia	ZM	Yes	
Zimbabwe	ZW	Yes	

Notes

1. Senders are required to use a sender ID. To request a sender ID from AWS Support, see the section called “Requesting Sender IDs” (p. 45).
2. All carriers in Japan except KDDI support sender ID.
3. Jawwal is the only carrier in the Palestinian Territories that supports alphabetic sender IDs.

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	• A long code in countries and regions where an alphabetic sender ID is not required.

If the recipient is located...	And your SMS message...	The message displays...
		• The word *NOTICE* in countries and regions where an alphabetic sender ID is required.
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.

SMS 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. 61)
- Obtain Permission (p. 62)
- Audit Your Customer Lists (p. 62)
- Keep Records (p. 63)
- Respond Appropriately (p. 63)
- Adjust Your Sending Based on Engagement (p. 63)
- Send at Appropriate Times (p. 63)
- Avoid Cross-Channel Fatigue (p. 64)
- Maintain Independent Lists (p. 64)
- Use Dedicated Short Codes (p. 64)

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 full text of the law (PDF format) at the Federal Communication 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 the 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 Dedicated Short Codes for SMS Messaging with Amazon Pinpoint (p. 40).

Validating Phone Numbers with Amazon Pinpoint

Before you send an SMS message, you can use Amazon Pinpoint to determine whether the destination phone number is valid. A valid phone number is:

- **Formatted correctly** – The number includes the country code, area code, and subscriber number. For example, a valid US phone number is formatted as +14085550100.
- **Assigned to a mobile phone** – Landline phone numbers are invalid destinations for SMS messages.

If you send an SMS message to an invalid number, the delivery fails. You can validate phone numbers to increase the likelihood that your audience receives your messages. You can improve your phone number records and your message deliverability in use cases such as the following.

Example Use Cases

- If your audience members opt in to your SMS program by providing a number on your website, you can check the number at the time of submission. Use your website's backend to validate the number with the Amazon Pinpoint API. The API response states whether the number is invalid—for example, because it's formatted incorrectly or it's a landline number. In such cases, your website can display a message that prompts the user to enter a valid number.
- If you have a database of customer phone numbers, you can validate each number and take action on invalid entries.
- If you intend to send an SMS message but you determine that the destination number is invalid, you can message the recipient through a different channel. For example, you can send an email if you know the recipient's email address.

The response from Amazon Pinpoint also includes data about the number. Amazon Pinpoint obtains this data from wireless carriers. It includes information such as the carrier that the number is registered with and the location where the number was originally registered.

To validate a number, issue an HTTP POST request to the `/v1/phone/number/validate/` URI in the Amazon Pinpoint API. For information about supported methods, parameters, and schemas, see Phone Number Validate in the *Amazon Pinpoint API Reference*.

Example Request with a Valid Phone Number

The example in this section passes a correctly formatted phone number to the Amazon Pinpoint API.

A phone number is formatted correctly if it includes the country code, area code, and subscriber number. Specifically, the number matches the E.164 format. E.164 is a standard for the phone number structure used for international telecommunication. Phone numbers that follow this format typically have up to 15 digits. They are prefixed with the plus character (+) and the country code.

Example Request

The following request includes the required HTTP headers and a simple JSON body. The body specifies the number to validate with the `PhoneNumber` parameter:

```
POST /v1/phone/number/validate/ HTTP/1.1
Host: pinpoint.us-east-1.amazonaws.com
Content-Type: application/json
X-Amz-Date: 20180420T162340Z
Authorization: AWS4-HMAC-SHA256 Credential=AKIAIOSFODNN7EXAMPLE/20180420/us-east-1/
mobiletargeting/aws4_request, SignedHeaders=content-length;content-type;host;x-amz-date,
 Signature=39df573629ddb283aea1fa2f7eef4106c0fb4826edf72e9934f03cf771276159
Cache-Control: no-cache

{
 "PhoneNumber": "+14085550100"
}
```

Example Response

If the request succeeds, the response provides data about the number, as in the following example:

```
Access-Control-Allow-Origin:*
Connection: keep-alive
Content-Length: 392
Content-Type: application/json
Date: Fri, 20 Apr 2018 16:23:44 GMT
X-Amzn-Trace-Id: Root=1-5ada140d-84d6b93a13855f08f1857133
x-amz-apigw-id: FpgSDEKqoAMFjjQ=
x-amzn-RequestId: 3015d110-44b7-11e8-8e9f-dd939118442c

{
    "CountryCodeIso2": "US",
    "CountryCodeNumeric": "1",
    "Country": "United States",
    "City": "Anytown",
    "ZipCode": "95037",
    "County": "Santa Clara",
    "Timezone": "America/Los_Angeles",
    "CleansedPhoneNumberNational": "4085550100",
    "CleansedPhoneNumberE164": "+14085550100",
    "Carrier": "AnyCompany",
    "PhoneTypeCode": 0,
    "PhoneType": "MOBILE",
    "OriginalPhoneNumber": "+14085550100",
    "OriginalCountryCodeIso2": "US"
}
```

The response states that the `PhoneType` is `MOBILE`. Because the phone number is formatted correctly and assigned to a mobile phone, it's a valid destination for SMS messages.

The `PhoneType` attribute is useful for determining whether you can send an SMS message to the phone number. Each possible `PhoneType` value has a corresponding `PhoneTypeCode` integer:

PhoneTypeCode	PhoneType
0	MOBILE
1	LANDLINE
2	VOIP
3	INVALID
4	OTHER
5	PREPAID

The other data in the response indicates that the phone number was originally registered in Santa Clara County, California, in the United States.

Note
The data provided in the response varies by country or region.

Example Responses for Invalid Phone Numbers

A phone number is invalid if it's formatted incorrectly or isn't assigned to a mobile phone.

Example Response for an Incorrectly Formatted Number

The following example JSON body includes the US phone number from the previous example, but it omits the country code for the US (1):

```
{
 "PhoneNumber": "4085550100"
}
```

When Amazon Pinpoint receives this request body, it discerns the country from the first digits in the number, as in the following response:

```
Access-Control-Allow-Origin: *
Connection: keep-alive
Content-Length: 229
Content-Type: application/json
Date: Mon, 23 Apr 2018 17:50:10 GMT
X-Amzn-Trace-Id: Root=1-5ade1ccb-1d7bb9e12d4e2b7bced8f4f4
x-amz-apigw-id: Fzlv2HFtoAMFa7w=
x-amzn-RequestId: c07d2cf1-471e-11e8-b276-57d2b8118b9d

{
    "CountryCodeIso2": "RO",
    "CountryCodeNumeric": "40",
    "Country": "Romania",
    "CleansedPhoneNumberNational": "85550100",
    "CleansedPhoneNumberE164": "+4085550100",
    "PhoneTypeCode": 3,
    "PhoneType": "INVALID",
    "OriginalPhoneNumber": "4085550100"
}
```

To detect invalid numbers, you can validate whether:

- The `PhoneType` attribute has a value of `MOBILE` or `PREPAID`.
- The country information matches what you expect.

- The cleansed phone number information matches the number that you want to message.

This response states that the phone was registered in `Romania`, which is an unexpected result for a US phone number. Also, the `PhoneType` value indicates that the phone number is `INVALID`, which might mean that the number isn't formatted correctly or isn't registered with the wireless carriers.

After receiving a response like this, you might purge the phone number from your database, or you might ask your customer to update his or her contact information.

Example Response for a Landline Number

If your request includes a landline phone number, Amazon Pinpoint returns a response like the following:

```
Access-Control-Allow-Origin:*
Connection: keep-alive
Content-Length: 331
Content-Type: application/json
Date: Mon, 23 Apr 2018 17:42:50 GMT
X-Amzn-Trace-Id: Root=1-5ade1b19-0c981399f4fac319aa44c89b
x-amz-apigw-id: Fzkr-EBxoAMF-zw=
x-amzn-RequestId: bd8c6b94-471d-11e8-9c10-eb82221e637d

{
    "CountryCodeIso2": "US",
    "CountryCodeNumeric": "1",
    "Country": "United States",
    "City": "Anytown",
    "ZipCode": "95037",
    "Timezone": "America/Los_Angeles",
    "CleansedPhoneNumberNational": "4085550101",
    "CleansedPhoneNumberE164": "14085550101",
    "Carrier": "AnyCompany",
    "PhoneTypeCode": 1,
    "PhoneType": "LANDLINE",
    "OriginalPhoneNumber": "+14085550101"
}
```

The `PhoneType` value indicates that the request provided a landline number.

Amazon Pinpoint Voice Channel

You can use the voice channel to create voice messages from a text script, and then deliver 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, users who use landlines or VoIP services).

Currently, you can only send voice messages by using the Amazon Pinpoint SMS and Voice API. However, you can use the Amazon Pinpoint console to request dedicated phone numbers for sending voice messages. For more information about managing the voice channel by using the console, see Managing the Amazon Pinpoint Voice Channel (p. 67).

To learn more about sending messages by using the Amazon Pinpoint SMS and Voice API, see the Amazon Pinpoint SMS and Voice API Reference.

Managing the Amazon Pinpoint Voice Channel

You can use the Amazon Pinpoint console to change some of the settings and limits that apply to the voice channel. For example, you can request production access for your account, or lease dedicated phone numbers for sending voice messages.

Topics in this section:

- Requesting Production Access (p. 68)
- Requesting Phone Numbers for the Voice Channel (p. 68)
- Relinquishing Dedicated Phone Numbers (p. 69)

Requesting Production Access

When you first start using the voice channel, your account is in the *sandbox*. While your account is in the sandbox, certain limits apply to your account. For more information about these limits, see Voice Limits in the *Amazon Pinpoint Developer Guide*.

To remove these limits 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*.

To request production access

1. Create a new case in Support Center.
2. Choose **Create case**.
3. For **Regarding**, choose **Service Limit Increase**.
4. For **Limit Type**, choose **Pinpoint Voice**.
5. For **Region**, choose the AWS Region that you use to send voice messages.
6. For **Limit**, choose **Production Access**.
7. For **New limit value**, type the maximum amount in USD that you want to spend on voice messages each calendar month.
8. 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.
   - Information about how users sign up to voluntarily receive your voice messages.
9. When you finish, choose **Submit**.

Requesting Phone Numbers for the Voice Channel

You can use the Amazon Pinpoint console to request phone numbers to use for making voice calls. These phone numbers are *dedicated*—that is, they're reserved for use only by your Amazon Pinpoint account. You can request local phone numbers that are based in a variety of countries or regions.

To request a phone number for sending voice messages

1. Open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.
2. On the **All projects** page, choose a project.
3. Under **Settings**, choose **SMS and voice**.
4. In the **Number settings** section, choose **Request long codes**.
5. For **Target country or region**, choose the country or region that the long code should be based in. The long code that you receive uses the local number format for the country or region you selected.

   Note
   Currently, you can only lease long codes for a limited number of countries and regions by using the Amazon Pinpoint console. To obtain a long code for a country that isn't listed in the **Target country or region** list, open a new **Account and Billing Support** case in the AWS Support Center.

6. For **Quantity**, choose the number of phone numbers that you want to lease.
7. For **Default call type**, choose the option that best describes the type of messages that you plan to use this number to send.
8. (Optional) To add phone numbers for an additional country or region, choose **Request additional numbers**. Repeat steps 5 through 7 for each additional country or region.
9. When you finish, note the price shown next to **Subtotal**. We charge you this amount each month. If you agree to this monthly charge, choose **Submit** to request the phone numbers.

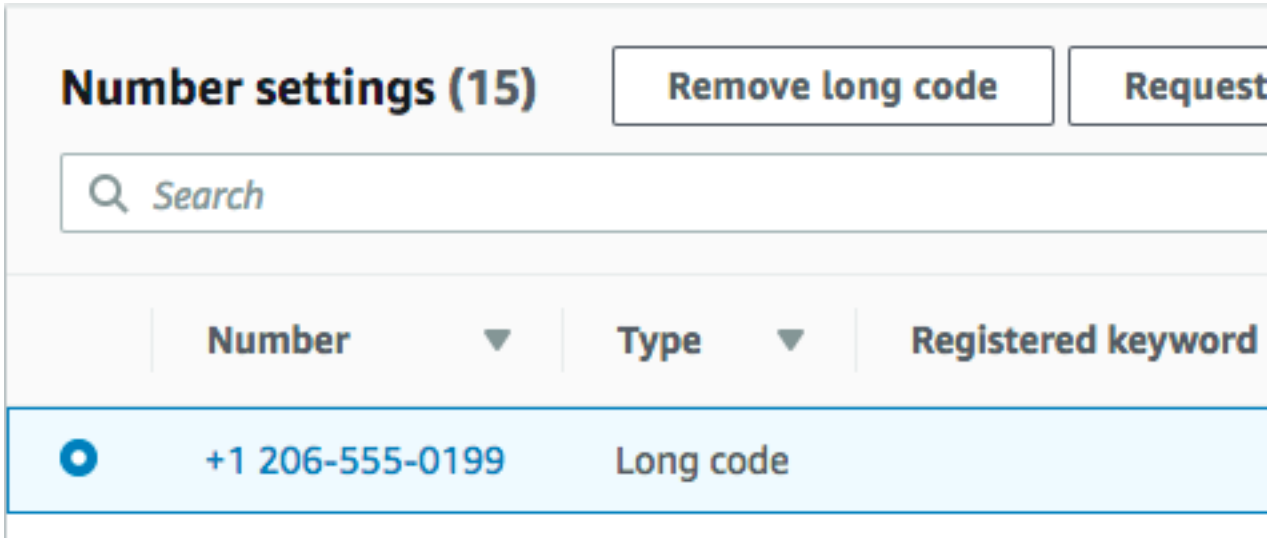
Relinquishing Dedicated Phone Numbers

If you don't need a dedicated phone number anymore, you can end your lease on that number by relinquishing it. When you relinquish a dedicated phone number, we stop charging you for it in your bill for the next calendar month.

> **Important**
> If you relinquish a dedicated phone number, you might not be able to obtain the same phone number again in the future.

To relinquish a phone number

1. Open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.
2. On the **All projects** page, choose a project.
3. Under **Settings**, choose **SMS and voice**.
4. Choose the number that you want to relinquish, as shown in the following image. Choose **Remove long code**.



5. On the **Remove number confirmation** window, confirm that you want to remove the phone number, and then choose **Confirm**.

Supported Countries and Regions

You can use Amazon Pinpoint to send voice messages to the countries and regions listed in the following table. If a country or region isn't listed in the following table, then you can't currently send voice messages to phone numbers in that country or region.

Note
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 **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
China	No	No
Colombia	No	No
Combodia	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

Country or Region	Local Address Required?	Supports SMS?
Indonesia	No	No
Ireland	Yes	No
Israel	No	No
Italy	Yes	No
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
Sudan	Yes	No
Switzerland	Yes	No
Taiwan	Yes	No

Country or Region	Local Address Required?	Supports SMS?
Tajikistan	Yes	No
Thailand	Yes	No
Trinidad and Tobago	No	No
United Kingdom	No	No
United States	No	Yes
Uruguay	Yes	No
Venezuela	Yes	No
Vietnam	No	No

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. 73).
- **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 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. 77).

Building Segments

Dynamic segments are based on the data that your apps provide to Amazon Pinpoint. When you create a dynamic segment, you choose the criteria that define that segment. For example, you could specify 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.

Segment Groups

When you create a dynamic segment, you create one or more *segment groups*. A segment group consists of two 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.
- **Filters** – Criteria that you apply on top of the base segments. In most cases, adding a filter reduces the number of endpoints who 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 two segment groups. If you add a second segment group to your segment, you can choose how the two segment groups are connected. There are two ways to connect the two segment groups in your segment:

- **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.

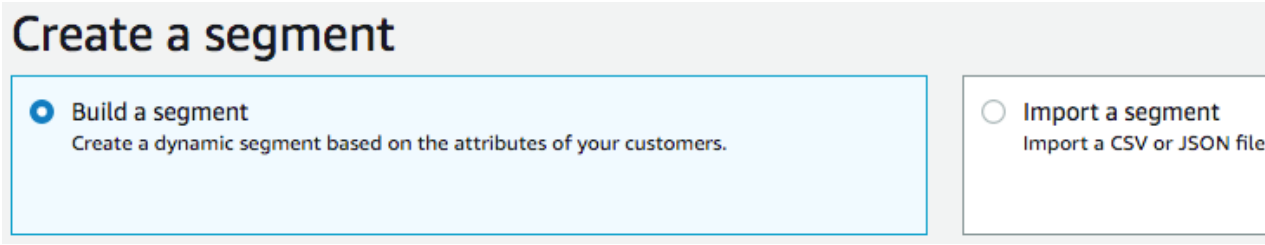
Creating a Dynamic Segment

There are two steps involved in creating a dynamic segment. First, you set up the segment. Next, you set up the segment groups for the segment.

Step 1: Set Up the Segment

To create 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 **Projects** page, choose the project to which you want to add the segment.
3. In the navigation menu, choose **Segments**. The **Segments** page opens, which displays previously defined segments and the number of active users that belong to them.
4. Choose **Create a segment**.
5. Under **Create a segment**, choose **Build segment**.

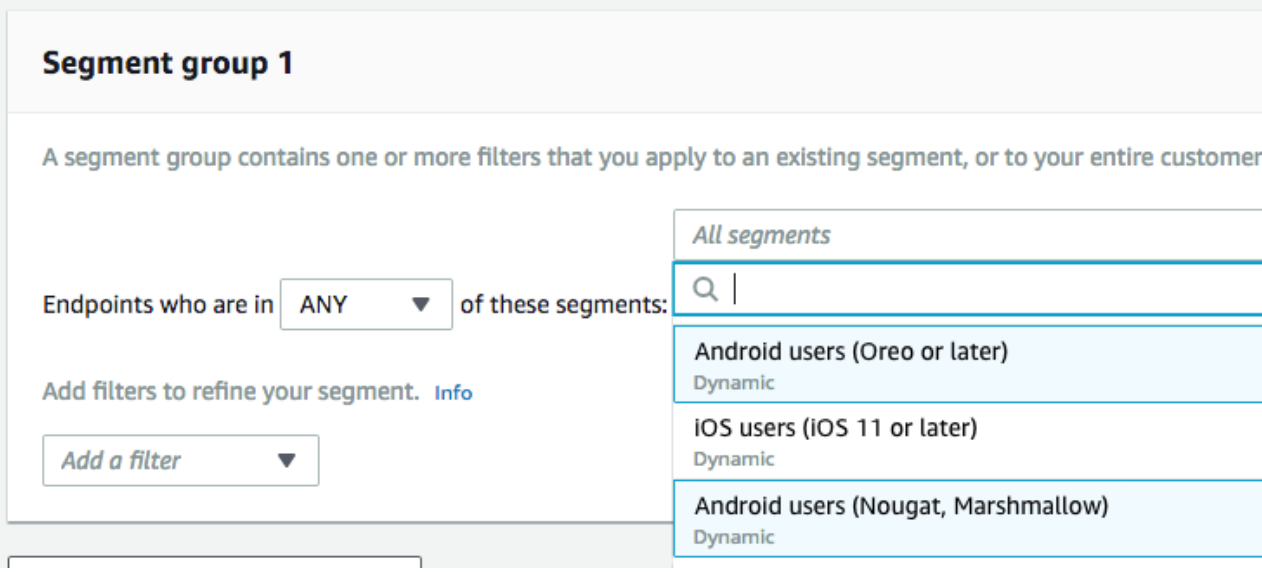


6. For **Segment name**, type a name for the segment to make it easy to recognize later.

Step 2: Configure Segment Groups

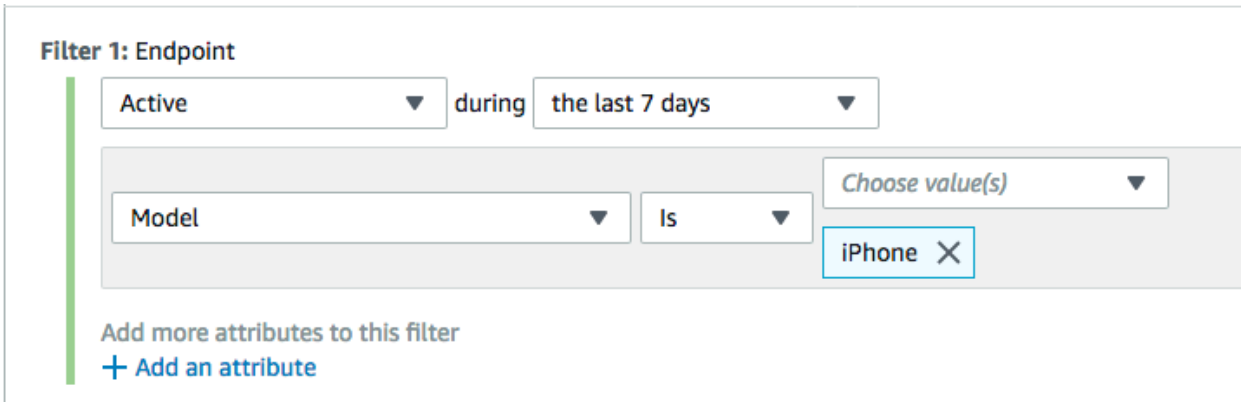
1. Under **Segment Group 1**, next to **Endpoints that are in**, choose one of the following options:
   - **any** – If you use more than one segment as a base segment, your new segment contains endpoints that are in at least one of the segments you select.
   - **all** – If you use more than one segment as a base segment, your new segment only contains endpoints that are in all of the selected segments.
2. Next to **of the following segments**, choose the segment or segments that you want to use as base segments, as shown in the following image.

   Tip
   The menu doesn't close when you select the first base segment. If you want to use several base segments, you can continue to select segments as necessary. When you're done choosing segments, choose an area outside the menu to close it.



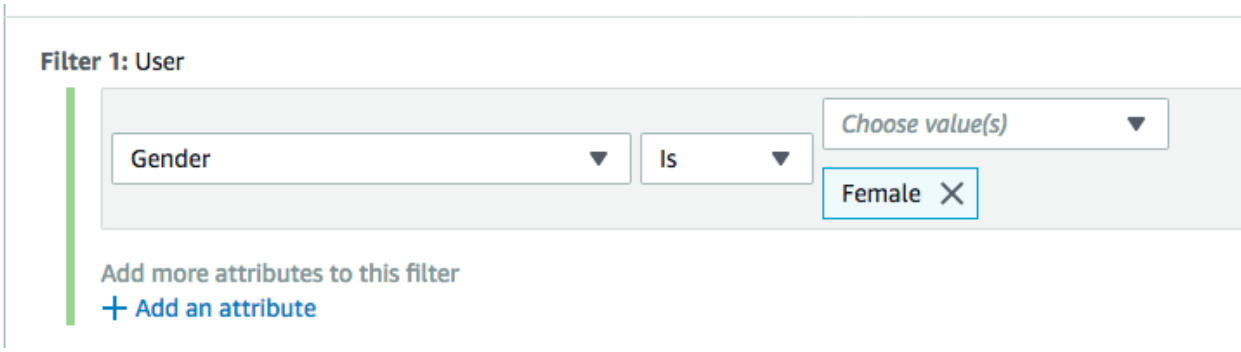
3. For **Add a filter**, choose the type of filter you want to add to the segment. You can choose from the following options:

   - **Filter by channel** – Use this option to filter the segment based on the channel of the recipient's endpoint. For example, when you choose **EMAIL**, your segm ent only contains endpoints that can receive email.
   - **Filter by endpoint** – 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. For example, this filter could include all customers who were active within the past 7 days who used an iPhone to access your app, as shown in the following image.

     You can add several attributes to this filter. To add another attribute, choose **Add an attribute**.

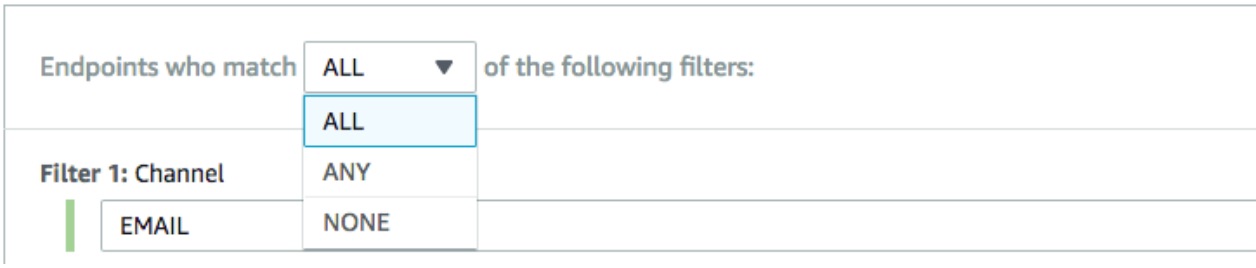
   - **Filter by user** – Use this option to filter the segment based on user attributes. User attributes are those attributes that are specific to the actual customers, as opposed endpoint attributes, which focus more on the specific endpoints that customers use to interact with your app. For example, you could set up this filter to include all users who are female, as shown in the following image.



You can add several attributes to this filter. To add another attribute, choose **Add an attribute**.

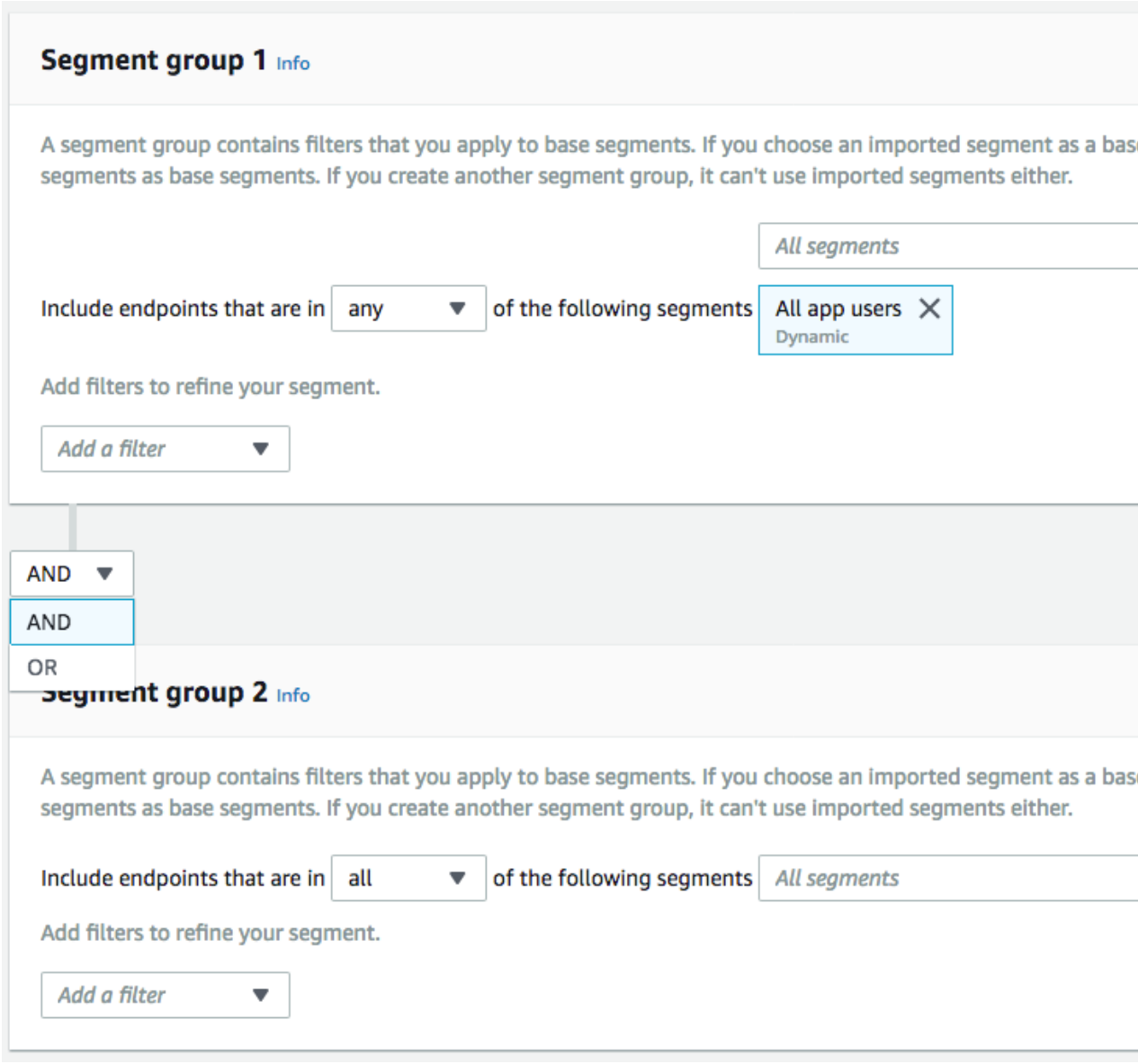
You can add several filters to a single segment group, and each filter can include several attributes.

If the segment group includes more than one filter, you can specify how the filters are related to each other. For example, you can set up the filter section to include customers who meet any of the filter criteria you specified, or to only include those customers who meet *all* of the specified criteria, or even to include only those customers who meet *none* of the specified criteria. To change this setting, change the value next to **Endpoints who match**, as shown in the following image.



4. If you want to add another segment group to the segment, choose **Add another segment group**. When you add another segment group, you have to specify how it relates to the first segment group, as shown in the following image.

   Note
   If you use an imported segment as the base segment for your first segment group, you can't create a second segment group.



If you select **AND**, the segment contains only those customers who meet the criteria for both segment groups. If you select **OR**, the segment contains those customers who meet the criteria in either one of the segment groups.

> **Note**
> When you create a segment by using the Amazon Pinpoint console, you can add a maximum of two segment groups.

5. When you finish setting up the segment, choose **Create segment**.

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 endpoint that's associated with each user ID that you list in the imported file.

To import a file, you first upload it to an Amazon Simple Storage Service (Amazon S3) bucket. Next, you provide Amazon Pinpoint with the name of the Amazon S3 bucket that contains the file. Amazon Pinpoint retrieves the file from Amazon S3 and adds each endpoint or user ID in the file to a segment.

When you create a new segment, you can use an imported segment as the base segment. You can then apply filters to the base segment to refine it according to your needs.

Segment Files

You define the endpoints or user IDs that belong to your segment in a comma-separated values (CSV) or JSON file. Then, you import the file into Amazon Pinpoint to create the segment.

When you import a segment, remember the following:

- If you're importing new endpoints, the `Address` and `ChannelType` attributes are required.
- If you're updating existing endpoints, the `Id` attribute is required for each endpoint that you want to update.
- Amazon Pinpoint can't import compressed files.
- The files that you import must use UTF-8 character encoding.
- Your endpoint definitions can only include certain attributes. For a list, see Available Attributes (p. 82).

Example Segment Files

The example files in this section are based on the following data:

Example Endpoint Attribute Values

ChannelType	Address	Location.Countr	Demographic.Pl	Demographic.M	User.UserId
SMS	+12365550182	CAN	Android	LG	example-user-id-1
APNS	1a2b3c4d5e6f7g8h9i0j1a2b3c4d5e6f	USA	iOS	Apple	example-user-id-2
EMAIL	john.stiles@example.com	USA	iOS	Apple	example-user-id-2
GCM	4d5e6f1a2b3c4d5e6f7g8h9i0j1a2b3c	CHN	Android	Google	example-user-id-3
EMAIL	wang.xiulan@example.com	CHN	Android	OnePlus	example-user-id-3

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,CAN,Android,LG,example-user-id-1
APNS,1a2b3c4d5e6f7g8h9i0j1a2b3c4d5e6f,USA,iOS,Apple,example-user-id-2
EMAIL,john.stiles@example.com,USA,iOS,Apple,example-user-id-2
GCM,4d5e6f1a2b3c4d5e6f7g8h9i0j1a2b3c,CHN,Android,Google,example-user-id-3
EMAIL,wang.xiulan@example.com,CHN,Android,OnePlus,example-user-id-3
```

The first line is the header, which contains the endpoint attributes. For the supported attributes, see Available Attributes (p. 82).

The subsequent lines define the endpoints by providing values for each attribute in the header.

To include a comma, line break, or double quote in a value, enclose the value in double quotes, as in `"aaa,bbb"`. For more information about the CSV format, see RFC 4180 Common Format and MIME Type for Comma-Separated Values (CSV) Files.

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":"CAN"},"Demographic":
{"Platform":"Android","Make":"LG"},"User":{"UserId":"example-user-id-1"}}
{"ChannelType":"APNS","Address":"1a2b3c4d5e6f7g8h9i0j1a2b3c4d5e6f","Location":
{"Country":"USA"},"Demographic":{"Platform":"iOS","Make":"Apple"},"User":
{"UserId":"example-user-id-2"}}
{"ChannelType":"EMAIL","Address":"john.stiles@example.com","Location":
{"Country":"USA"},"Demographic":{"Platform":"iOS","Make":"Apple"},"User":
{"UserId":"example-user-id-2"}}
{"ChannelType":"GCM","Address":"4d5e6f1a2b3c4d5e6f7g8h9i0j1a2b3c","Location":
{"Country":"CHN"},"Demographic":{"Platform":"Android","Make":"Google"},"User":
{"UserId":"example-user-id-3"}}
```

```
{"ChannelType":"EMAIL","Address":"wang.xiulan@example.com","Location":
{"Country":"CHN"},"Demographic":{"Platform":"Android","Make":"OnePlus"},"User":
{"UserId":"example-user-id-3"}}
```

For the supported attributes, see Available Attributes (p. 82).

Example File with User IDs

CSV

You can also import user IDs that are listed in a CSV file, 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 lines list 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.

Uploading Segment Files to Amazon S3

Amazon S3 is an AWS service that provides highly scalable cloud storage. Amazon S3 stores data as objects within buckets, and those objects can be grouped into folders.

Before you import a segment, you must create an 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 the following types of files:

- CSV

- Newline-delimited JSON

Amazon Pinpoint can import only one of these formats per segment, so the Amazon S3 path you specify should only contain one format type.

Importing a Segment

You can create a segment by importing the segment's endpoints or user IDs from Amazon S3.

To import 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 **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**.
6. For **Segment name**, type a name for your segment to make it easy to recognize later.
7. For **Amazon S3 URL**, type 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:

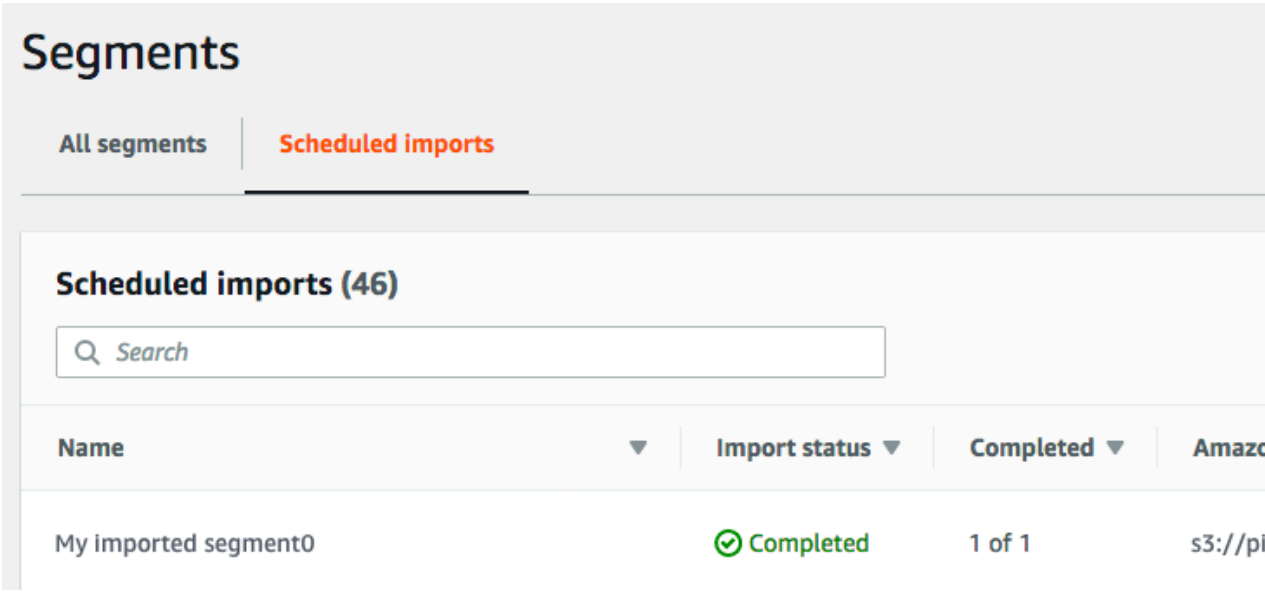
   ```
   s3://bucket-name/folder-name
   ```

   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**, type 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 a role from your account**. 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 Segments in the *Amazon Pinpoint Developer Guide*. After you create the role, specify it in the Amazon Pinpoint console.
9. Under **What is the format of the file**, 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**. Amazon Pinpoint imports the endpoints and user IDs from the specified Amazon S3 bucket and adds them to your segment.

    The **Scheduled imports** tab on the Segments page provides the status of your import. Refresh your browser to see the current status.



Available Attributes

The table in this section provides the attributes that you can specify in the endpoint definitions that you import into Amazon Pinpoint. If you import segments using CSV files, the headers in the file should match the names shown in the **Attributes** 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 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 EndpointRequest in the *Amazon Pinpoint API Reference*. However, not all attributes in the EndpointRequest schema are supported when you import segments, including `EndpointStatus` and `EffectiveDate`.

You can replace attribute names that are shown in italics with any value. For example, you can create custom attributes called `User.UserAttributes.FirstName` and `User.UserAttributes.LastName`.

Attribute	Description
`Address`	The unique destination of the endpoint, such as an email address, a mobile phone number, or a token for push notifications.

Attribute	Description
`Attributes.`*`custom_attribute`*	Custom attributes that your app reports to Amazon Pinpoint. You can use these attributes as selection criteria when you create a segment. You can replace *`custom_attribute`* with any value. You can specify up to 20 custom attributes per endpoint.
`ChannelType`	The channel type of the endpoint. Acceptable values: `GCM`, `APNS`, `SMS`, or `EMAIL`.
`Demographic.AppVersion`	The version number of the application that's associated with the endpoint.
`Demographic.Locale`	The locale of the endpoint in ISO 15897 format. For example, `en_US` (English language locale for the United States) or `zh_CN` (Chinese locale for China).
`Demographic.Make`	The manufacturer of the endpoint device, such as `Apple` or `Samsung`.
`Demographic.Model`	The model of the endpoint device, such as `iPhone`.
`Demographic.ModelVersion`	The model version of the endpoint device.
`Demographic.Platform`	The operating system of the endpoint device, such as `ios` or `android`.
`Demographic.PlatformVersion`	The platform version of the endpoint device.
`Demographic.Timezone`	The time zone of the endpoint. It's specified as a tz database value, such as `America/Los_Angeles`.
`EffectiveDate`	The time at which the endpoint was last updated, in ISO 8601 format. For example, `20171011T150548Z`.
`Id`	The unique ID of the endpoint.
`Location.City`	The city where the endpoint is located.
`Location.Country`	The three-letter code for the country or region where the endpoint is located, in ISO 3166-1 alpha-3 format. For example, `USA` (United States) or `CHN` (China). For a complete list of ISO 3166-1 alpha-3 abbreviations, see the ISO website.
`Location.Latitude`	The latitude of the endpoint location, rounded to one decimal place.
`Location.Longitude`	The longitude of the endpoint location, rounded to one decimal place.
`Location.PostalCode`	The postal or ZIP code of the endpoint.

Attribute	Description
`Location.Region`	The region of the endpoint location, such as a state or province.
`Metrics.`*`custom_attribute`*	Custom metrics, such as the number of sessions or number of items left in a cart, to use for segmentation purposes. You can replace *`custom_attribute`* with any value. You can specify up to 20 custom attributes per endpoint. These custom values can only be numeric. Because they're numeric, Amazon Pinpoint can perform arithmetic operations, such as the average or sum, on them.
`OptOut`	Indicates whether a user has opted out of receiving messages. Acceptable values: `ALL` (the user has opted out of all messages) or `NONE` (the user hasn't opted out and receives all messages).
`RequestId`	The unique ID of the most recent request to update the endpoint.
`User.UserAttributes.`*`custom_attribute`*	Custom attributes that are specific to the user. You can replace *`custom_attribute`* with any value, such as `FirstName` or `Age`. You can specify up to 20 custom attributes per endpoint.
`User.UserId`	The unique ID of the user.

Note
You can specify up to 20 custom attributes per endpoint for `Attributes`, `Metrics` and `User.UserAttributes`. However, you can create no more than 40 custom attributes per AWS account.

Managing Segments

You can use the Amazon Pinpoint console to create, update, duplicate, and delete segments. You can also use the Segments page in the console to create campaigns that target existing segments.

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 **Projects** page, choose the project that contains the segments that you want to manage.
3. In the list of segments, choose the segment that you want to manage.
4. On the **Actions** menu, choose one of the following options:

   - **View details** – Choose this option to show information about the segment, including the approximate number of endpoints that meet the segment criteria, 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 see the segment groups and filters that define the segment. When you view the details of an imported segment, you see the Amazon S3 location

that the segment was imported from, as well as the name of the IAM role that was used to import the segment.

- **Edit segment** – Choose this option to modify the segment. You can use this option with any type of segment to change the segment name. When you edit a dynamic segment, you can change the segment groups that define the segment. When you edit an imported segment, you can change the Amazon S3 location that the segment is imported from, as well as the IAM role that is used to import the segment.
- **Duplicate** – Choose this option to create a new segment that is a copy of the chosen segment. You can modify all of the settings in the new segment to meet your requirements.
- **Delete** – Choose this option to delete the segment. The segment becomes unavailable for future campaigns, but existing campaigns that use the segment are not affected.

Amazon Pinpoint Campaigns

A *campaign* is a messaging initiative that engages a specific audience segment (p. 73). 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 a week. To prevent users from receiving the message at inconvenient times, the schedule can include a quiet time during which no messages are sent.

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. 98) instead of creating a campaign.

Topics

- Step 1: Create a Campaign (p. 86)
- Step 2: Specify the Audience for the Campaign (p. 87)
- Step 3: Write the Message (p. 87)
- Step 4: Set the Campaign Schedule (p. 95)
- Step 5: Review and Launch the Campaign (p. 96)
- Managing Campaigns (p. 96)

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, and specify whether it should be a standard campaign or an A/B test campaign. (In an A/B test campaign, you create several versions of a message to compare their performance.)

To begin creating 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 **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**, type 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** – Behaves like a standard campaign, but enables you to define different treatments for the campaign's message or schedule.
7. Choose **Next**.

Next

Step 2: Specify the Audience for the Campaign (p. 87)

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. 86).

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. 73).
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. 87)

Step 3: Write the Message

After you specify the target segment for the campaign, you can choose the channel for the campaign, and then write the message.

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. 87).

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, under **Choose a channel for this campaign**, choose a channel that you want to use to send the campaign.

   If you choose **Email**, see Writing a Push Notification (p. 88).

   If you choose **SMS**, see Writing a Push Notification (p. 89).

   If you choose **Push notifications**, see Writing a Push Notification (p. 89).

Writing an Email Message

This section contains information about writing an email message.

1. Under **Message content**, choose whether you want to **Create a new message** or **Use an existing template**.
2. For **Subject**, type the subject line for your email.
3. For **Message**, type the email body. You can use the rich text editor to format your message:

   If you want to manually enter the HTML content of your message, choose the **source** (<>) icon.

   Note
   To include CSS formatting in your emails, use inline `span` elements. For example, to make the text in a level 1 heading red, use the following HTML:

```
<h1><span style="color:red;">First-Level Heading</span></h1>
```

   If you include style definitions in the `head` section of your message, or if you use `style` attributes directly within HTML elements (for example, `<h1 style="color:red;"...`), the editor removes them without providing a warning.
4. (Optional) When you finish writing your message, you can save it as a template and use it again later by choosing **Save as a template**.
5. (Optional) Under **Plain text message**, type a version of your message for email clients that accept only plain text emails.
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 **Email details** section.

7. Choose **Next**.

Writing an SMS Message

This section contains information about writing an SMS message.

1. For **Message type**, choose one of the following:

   - **Promotional** – Noncritical messages, such as marketing messages. 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. Amazon Pinpoint optimizes the message delivery to achieve the highest reliability.

   This campaign-level setting overrides your default message type, which you set on the **Settings** page.
2. Under **Message content**, choose whether you want to **Create a new message** or **Use an existing template**.
3. For **Message**, type the message body.

   Your text message can have up to 160 characters. A character counter below the left edge of the field counts down from 160 as you enter the text of the message.

   When you finish writing the message, you can save it as a template and use it again later by choosing **Save as template**.
4. (Optional) For **Sender ID**, type 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 receiving 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 (p. 53).

   This message-level sender ID overrides your default sender ID, which you set on the **Settings** page.
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 **SMS details** section.
6. 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.

Choose the notification type

- For **Notification type**, choose one of the following options:

  - **Standard notification** – A push notification with a title and message. Recipients are alerted by their mobile devices when they receive the notification.
  - **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 code 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.

To create a standard notification

To write a standard notification

1. Under **Message content**, choose whether you want to **Create a new message** or **Use an existing template**.
2. For **Title**, type the title you want to display above the message.
3. For **Message**, type the message body. Your push notification can have up to 200 characters. A character counter below the left edge of the field counts down from 200 as you add characters to the message.
4. (Optional) When you finish writing the message, you can save it as a template and use it again later by choosing **Save as template**.
5. For **Action**, select the action you want to occur when recipients tap the notification:
   - **Open your app** – Your app launches, or it becomes the foreground app if it has been sent to the background.
   - **Go to a URL** – The default mobile browser on the user's device launches and opens a web page at the URL 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. For example, this action can be useful to direct users to special promotions for in-app purchases.
6. (Optional) Under **Media URLs**, you can optionally provide URLs that point to media files that are displayed in your push notification. The URLs must be publicly accessible so that the push notification services for Android or iOS can retrieve the images.
7. 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.
8. Choose **Next**.

To create a silent notification

To create a silent notification

1. Under **Message content**, enter the content of the silent message in JSON format. The exact content of the message varies depending on the notification service you use and the values that your application 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**.

Testing Messages

Amazon Pinpoint can display a preview of a message that you can view before you schedule the message to be sent. You can also send a test message to a small group of recipients for testing purposes. You can send test messages for email, SMS, and mobile push campaigns.

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 USD $1.00 for sending the test emails. For more information about pricing, see Amazon Pinpoint Pricing.

- Test messages count toward your account's sending limits. 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. 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 Delivered chart in the Campaign dashboard includes the number of test messages that were successfully delivered.

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.

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 method you choose 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 to a group of testers that changes regularly, or to a dynamically generated address, you might find it easier to manually specify your recipients.

To send a test message to a segment

1. Under the message editor, choose **Test campaign message**.
2. On the **Test campaign** dialog box, under **Send test to**, choose **A segment**.
3. Use the drop-down list to choose the segment you want to send the test message to.

   Note
   Amazon Pinpoint automatically removes all segments that contain 100 endpoints or more from this list.
4. Choose **Send test campaign**.

To send a test message to specific recipients

1. Under the message editor, choose **Send a test message**.

2. On the **Test campaign** dialog box, under **Send test to**, choose one of the options in the following table.

If you're sending...	Choose...	And then type...
An email	**Email addresses**	A comma-separated list of valid email addresses.
An SMS message	**Phone numbers**	A comma-separated list of E.164-formatted phone numbers.
A mobile push notification	Either **Endpoint IDs** or **Device tokens**	A comma-separated list of endpoint IDs or device tokens, depending on the type of address you chose.

3. Choose **Send test campaign**.

Previewing an Email Without Sending It

Amazon Pinpoint can generate a preview of an email message without sending it. This feature is helpful when you want to quickly verify that a message renders as you expect it to before you send a test.

Note that this preview only shows how the message would appear if it were rendered by your web browser. As a best practice, you should still send test emails to several recipients and view those test messages using a variety of devices and email clients.

To preview an email

- Under the message editor, choose **Preview message**. A preview of your email appears in a new window.

Message Templates

To save your message and reuse it in a separate campaign or direct message, choose **Save as template** and provide a template name. Then, you can load the template for any message by choosing **Load template** and selecting it from a list of saved templates. Amazon Pinpoint populates your message with the template's content. Then, you can send the message as-is or customize as needed.

You can base a template on any supported message type, and you can use the same template for other message types. For example, you can write a push notification message, save it as a template, and use that template for an SMS message. Note that if you use a single template for multiple message types, Amazon Pinpoint loads the content differently for each type. For example, if you base a template on a mobile push message, and you load this template for an email message, the push notification *title* is used as the email *subject*. The correlations between message parts are as follows:

Mobile push templates

The mobile push . . .	Is used as the email . . .	Is used as the SMS . . .
Title	Subject	Not used
Message body	Plain text message	Message body

Email templates

The email . . .	Is used as the mobile push . . .	Is used as the SMS . . .
Subject	Title	Not used
Message body (HTML)	Not used	Not used
Plain text message	Message body	Message body

SMS templates

The SMS . . .	Is used as the mobile push . . .	Is used as the email . . .
Message type	Title	Subject
Message body	Message body	Plain text message

Email Template Restrictions

Email templates can only include the HTML elements and attributes listed in the following table.

Allowed Elements	Allowed Attributes
`a`	`dir`, `href`, `style`, `title`
`b`	`dir`, `style`, `title`
`blockquote`	`cite`, `dir`, `style`, `title`
`br`	`dir`, `style`, `title`
`caption`	`dir`, `style`, `title`
`cite`	`dir`, `style`, `title`
`code`	`dir`, `style`, `title`
`col`	`dir`, `span`, `style`, `title`
`colgroup`	`dir`, `span`, `style`, `title`
`dd`	`dir`, `style`, `title`
`div`	`dir`, `style`, `title`
`dl`	`dir`, `style`, `title`
`dt`	`dir`, `style`, `title`
`em`	`dir`, `style`, `title`
`h1`	`dir`, `style`, `title`
`h2`	`dir`, `style`, `title`
`h3`	`dir`, `style`, `title`
`h4`	`dir`, `style`, `title`

Allowed Elements	Allowed Attributes
h5	dir, style, title
h6	dir, style, title
i	dir, style, title
img	alt, dir, height, src, style, title, width
li	dir, style, title, value
ol	dir, reversed, start, style, title, type
p	dir, style, title
pre	dir, style, title
q	cite, dir, style, title
small	dir, style, title
span	dir, style, title
strike	dir, style, title
strong	dir, style, title
sub	dir, style, title
sup	dir, style, title
table	dir, style, title
tbody	dir, style, title
td	colspan, dir, rowspan, style, title
tfoot	dir, style, title
th	abbr, colspan, dir, rowspan, scope, sorted, style, title
thead	dir, style, title
tr	dir, style, title
u	dir, style, title
ul	dir, style, title

Additionally, some attributes—such as `src` or `href`—allow you to specify a protocol. If your HTML templates include these attributes, they can only specify certain protocols. The allowed protocols for these attributes are listed in the following table.

Element/attribute	Allowed protocols
<a href="...">	ftp, http, https, mailto
<blockquote cite="...">	http, https

Element/attribute	Allowed protocols
`<img src="...">`	`http`, `https`
`<q cite="...">`	`http`, `https`

Message Variables

To create a message that is personalized for each recipient, use message variables. Message variables refer to specific *endpoint* attributes. These attributes can include characteristics that you add to the endpoint resource, such as the recipient's name, city, device, or operating system. When Amazon Pinpoint sends the message, it substitutes the variables with the corresponding attribute values for the receiving endpoint.

For the attributes, see Endpoint Attributes.

To include a variable in your message, enclose the attribute name in double brackets, as in `{{Demographic.AppVersion}}`.

Often, the most useful endpoint attribute for message variables is `{{Attributes.`*`customAttributeName`*`}}`, where `customAttributeName` refers to custom attributes that you add to the endpoint. By using custom attributes for your variables, you can display 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 the user's name, activity, and personal record, you could use variables in the following message:

```
Hey {{Attributes.userName}}, congratulations on your new
{{Attributes.activity}} PR of {{Attributes.personalRecord}}!
```

When Amazon Pinpoint delivers this message, the content varies for each recipient after the variables are substituted. Possible final messages are:

```
Hey Jane Doe, congratulations on your new half marathon PR of 1:42:17!
```

Or:

```
Hey John Doe, congratulations on your new 5K PR of 20:52!
```

For examples of custom attributes for your app's code, see the iOS example or the Android example.

Next

Step 4: Set the Campaign Schedule (p. 95)

Step 4: Set the Campaign Schedule

After you write your message, you can schedule when and how often the campaign sends your message to your segment. By default, a campaign sends its message just once on the date and time you choose.

You create a recurring campaign by selecting a frequency, which sets the time interval between successive deliveries of the message. A recurring campaign runs for a fixed duration, beginning and ending when you specify.

Prerequisite

Before you begin, complete Step 3: Write the Message (p. 87).

To set a schedule

1. Under **How often should this campaign be sent?**, choose the frequency with which the campaign runs. The default selection is **Immediately**, but you can choose a recurring frequency (such as **Weekly**), or you can choose **Once** to send the message at a specific date and time.
2. If you choose to send the message at a specific time or on a recurring basis, specify when the message is sent:

   - If you chose **Once**, choose a **Start date and time**, as well as the **Time zone** that the start time is based on. The date and time you choose represent the date and time at which Amazon Pinpoint sends your message.

     If you want to ensure that the message arrives at the specified time in each recipient's time zone, choose **Use recipient's local time**.
   - If you chose a recurring frequency, specify a **Start date and time** and an **End date and time**. Also specify the **Time zone** that the start and end times are based on. The **Start date and time** represent the time at which Amazon Pinpoint sends the first message in the recurring campaign, and the **End date and time** represents the date and time at which Amazon Pinpoint sends the final message in the recurring campaign.

     If you want to ensure that the campaign begins and ends at the specified time in each recipient's time zone, choose **Use recipient's local time**.
3. Choose **Next** to continue to the final step.

Next

Step 5: Review and Launch the Campaign (p. 96)

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: Set the Campaign Schedule (p. 95).

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**.

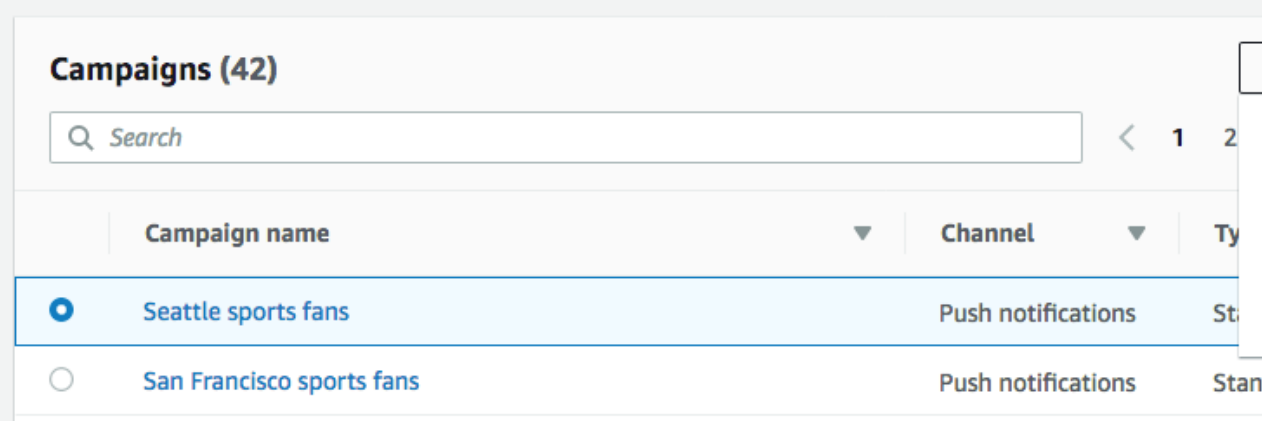
Managing Campaigns

In the Amazon Pinpoint console, you update the settings for a campaign, delete a campaign, or copy an existing campaign to a new campaign.

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 **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 **Campaign details** page for the selected campaign. On the **Campaign details** page, you can see information about the campaign, such as the campaign type, the number of endpoints targeted, and the number of messages delivered.
- **View analytics** – Shows the **Campaign analytics** page for the selected campaign. For more information about campaign analytics, see Campaign Charts (p. 111).
- **Change settings** – Change the settings for the campaign, including the target segment, the message content, and the delivery time. You can only choose this option 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.

Send Test Messages with Amazon Pinpoint

With Amazon Pinpoint, you can send *test messages*, which are one-time messages that you send to a specific set of recipients without creating a campaign. Sending a test message is useful if you want to test the deliverability of your messages, or to see how your message appears to recipients. We charge you for each test message you send, just as if it were a normal campaign message. However, unlike campaign messages, we don't bill you based on your monthly targeted audience (MTA) when you send test messages.

You can send test messages to up to 15 recipients. You can't use the message to engage a segment. When you send the message, Amazon Pinpoint delivers it immediately, and you can't schedule the delivery. Additionally, test messages don't generate messaging metrics, such as open and bounce rates. If you want to engage a user segment, schedule the message delivery, and observe message engagement rates, you should create a campaign (p. 86) instead of sending a test message.

You can send test messages using any channel that is supported by Amazon Pinpoint: push notifications, email, or SMS.

Send test messages by using the **Test messaging** page in the Amazon Pinpoint console.

To access the Test messaging page

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.
2. On the **Projects** page, choose the project for which you want to send a message.
3. In the navigation menu, choose **Test messaging**.

Sending an Email Message

To send a test email message, you have to use a project in which the email channel is enabled. To create a new project with email support, see Setting up the Amazon Pinpoint Email Channel (p. 21). To add email support to an existing project, see Managing the Amazon Pinpoint Email Channel (p. 25).

1. Open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.
2. On the **Projects** page, choose a project in which the push notification channel is enabled.
3. In the navigation pane, choose **Test messaging**.
4. Under **Channel**, choose **Email**.
5. For **Destination type**, choose one of the following destinations for your message:
   - **Email addresses** – Each destination is the recipient's email address.
   - **Endpoint IDs** – Each destination is a unique ID assigned to an Amazon Pinpoint *endpoint* resource.
6. Depending on your selection for **Destination type**, type one or more **Endpoint IDs** or **Email addresses**. You can type up to 15 values. Use commas to separate multiple values.
7. 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 a template from the **Template** menu.

If you choose to create a new message, specify a title in the **Title** field, and a message body in the **Message** field. You can also modify the title and body of the message if you choose an existing template.

8. (Optional) Under **Plain text message**, type a version of your message for email clients that accept only plain text emails.
9. When you finish, choose **Send message**.

Sending a Push Notification

To send a test push notification, you first have to create a project in which the push notifications channel is enabled. To create a new project with push notification support, see Setting up Amazon Pinpoint Mobile Push Channels (p. 17). To add push notification support to an existing project, see Managing Mobile Push Channels with Amazon Pinpoint (p. 18).

You can send push notifications through Apple Push Notification service (APNs), Firebase Cloud Messaging (FCM), Amazon Device Messaging (ADM), or Baidu Cloud Push.

To send a test push notification

1. Open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.
2. On the **Projects** page, choose a project in which the push notification channel is enabled.
3. In the navigation pane, choose **Test messaging**.
4. 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 assigned to an Amazon Pinpoint *endpoint* resource.
   - **Device tokens** – Each destination is a token assigned to the instance of the app that you are messaging. For example, this value can be the device token assigned by APNs, or the registration token assigned by FCM.
6. Depending on your selection for **Destination type**, type one or more **Endpoint IDs** or **Device tokens**. You can type 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 provider in a single delivery.

   If you use endpoint IDs as the destination type, this limitation does not apply, and you can specify endpoint resources that use any push notification service.
7. For **Push notification service**, specify the push notification service through which you are sending the message. If you use endpoint IDs as the destination type, Amazon Pinpoint detects the service automatically.
8. 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 a template from the **Template** menu.

   If you choose to create a new message, specify a **Title** and **Body** for the message. You can also modify the **Title** and **Body** of the message if you choose an existing template.
9. For **Action**, select the action you want to occur if the user opens the notification:

   - **Open app** – Your app launches, or it becomes the foreground app if it has been sent to the background.

- **Go to URL** – The default mobile browser on the user's device launches and opens a webpage at the URL 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 within the app. Deep link is an iOS and Android feature. For example, this action is useful to direct users to special promotions for in-app purchases.

10. (Optional) In the **Media URLs** section, provide URLs that point to media files that are displayed in your push notification. The URLs must be publicly accessible so that the push notification services for Android or iOS can retrieve the images.
11. When you finish, choose **Send message**.

Sending an SMS Message

To send a test SMS message, you have to use a project in which the SMS channel is enabled. To create a new project with SMS support, see the section called “Setting up” (p. 36). To add SMS support to an existing project, see Managing the Amazon Pinpoint SMS Channel (p. 49).

To send a test SMS message

1. Open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.
2. On the **Projects** page, choose a project in which the push notification channel is enabled.
3. In the navigation pane, choose **Test messaging**.
4. Under **Channel**, choose **SMS**.
5. On the **Test messaging** page, choose **SMS**.
6. For **Destination type**, choose one of the following destinations for your message:

   - **Phone numbers** – Each destination is the recipient's phone number.
   - **Endpoint IDs** – Each destination is a unique ID assigned to an Amazon Pinpoint *endpoint* resource.
7. Depending on your selection for **Destination type**, type one or more **Endpoint IDs** or **Phone numbers**. You can type 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 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.
8. For **Message type**, choose one of the following:

   - **Promotional** – Noncritical messages, such as marketing messages. Amazon Pinpoint optimizes the message delivery to incur the lowest cost.
   - **Transactional** – Critical messages that support customer transactions, such as one-time passcodes for multi-factor authentication. Amazon Pinpoint optimizes the message delivery to achieve the highest reliability.

   Note
   This message-level setting overrides the default message type that you set 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 a template from the **Template** menu.

If you choose to create a new message, specify the content of message in the **Message** field. You can also modify the body of the message if you choose an existing template.

10. (Optional) For **Sender ID**, type 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 receiving 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 (p. 53).

    This message-level sender ID overrides your default sender ID, which you set on the **Settings** page.
11. When you finish, choose **Send message**.

Message Templates

To save your message and reuse it in a separate campaign or test message, choose **Save as template** and provide a template name. Then, you can load the template for any message by choosing **Load template** and selecting it from a list of saved templates. Amazon Pinpoint populates your message with the template's content. Then, you can send the message as-is or customize as needed.

You can base a template on any supported message type, and you can use the same template for other message types. For example, you can write a push notification message, save it as a template, and use that template for an SMS message. Note that if you use a single template for multiple message types, Amazon Pinpoint loads the content differently for each type. For example, if you base a template on a push notification, and you load this template for an email message, the push notification *title* is used as the email *subject*. The correlations between message parts are as follows:

Mobile push templates

The push notification . . .	Is used as the email . . .	Is used as the SMS . . .
Title	Subject	Not used
Message body	Plain text message	Message body

Email templates

The email . . .	Is used as the push notification . . .	Is used as the SMS . . .
Subject	Title	Not used
Message body (HTML)	Not used	Not used
Plain text message	Message body	Message body

SMS templates

The SMS . . .	Is used as the push notification . . .	Is used as the email . . .
Message type	Title	Subject
Message body	Message body	Plain text message

Amazon Pinpoint Analytics

Using the analytics provided by Amazon Pinpoint, 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 application, the application can report data to Amazon Pinpoint that you can view to learn about your users' level of engagement (p. 105), purchase activity (p. 108), and demographics (p. 110). For example, you can view charts that show how many users open your app each day, the times at which users open your app, and the revenue generated by your app. By viewing charts about device attributes, you can learn which platforms and devices your app is installed on.

You can monitor campaign analytics (p. 111) to see how your campaigns are performing in aggregate as well as individually. You can follow the total number of push notifications sent, the percentage of push notifications that resulted in opening the app, opt-out rates, and other information. If you created a campaign that includes an A/B test, you can use analytics to compare the effectiveness of the campaign treatments. For example, you can assess whether users are more likely to open your app as a result of a variation on your campaign message.

You can create and monitor funnels (p. 118) to analyze how many users are completing each step in a conversion process, such as purchasing an item or upgrading your app.

To analyze or store the analytics data outside of Amazon Pinpoint, you can configure Amazon Pinpoint to stream the data to Amazon Kinesis (p. 119).

To report metrics from your 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*.

Topics

- Chart Reference for Amazon Pinpoint Analytics (p. 102)
- Funnel Analytics (p. 118)
- Streaming App and Campaign Events with Amazon Pinpoint (p. 119)

Chart Reference for Amazon Pinpoint Analytics

On the **Analytics** page, Amazon Pinpoint provides an overview of key metrics, as well as dashboards that provide details about campaigns, demographics, funnels, usage, revenue, and users. You can filter these dashboards by date for further analysis. You can also filter some dashboards by other attributes, such as event or channel.

Topics

- Endpoints and Users in Charts (p. 103)
- Exporting Dashboards (p. 103)
- Overview Charts (p. 103)
- Usage Charts (p. 105)
- Revenue Charts (p. 108)
- Events Charts (p. 109)
- Demographics Charts (p. 110)
- Campaign Charts (p. 111)

- Transactional Messaging Charts (p. 116)

Endpoints and Users in Charts

Some of the charts in these dashboards provide data about *endpoints*. Other charts 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.

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 your mobile app, see Registering Endpoints (iOS) or Registering Endpoints (Android) in the *Amazon Pinpoint Developer Guide*. For information about registering endpoints and assigning user IDs by using the AWS SDK for Java, see Adding Endpoints in the *Amazon Pinpoint Developer Guide*. For information about importing endpoint definitions, see Importing Segments (p. 77).

Exporting Dashboards

You can export the dashboards on the **Usage**, **Revenue**, **Events**, **Demographics**, and **Campaigns** pages to comma-separated values (.csv) format. When you export a dashboard, Amazon Pinpoint creates a .zip file that contains a separate .csv file for each chart in the dashboard. You can open these files in any modern spreadsheet or data analysis application.

To export a dashboard, choose a date range for the reports (and other attributes, if applicable), and then choose **Download CSV**.

Overview Charts

The **Analytics** page contains several charts that give you an overview of the application usage and campaign responses for your project.

Viewing the Analytics Overview Charts

You can view the **Analytics** overview page in the Amazon Pinpoint console.

To view and filter the Analytics overview charts

1. Open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.
2. On the **Pinpoint Projects** page, choose the project that you want to view the Analytics charts for.
3. In the navigation pane, choose **Analytics**.
4. (Optional) Choose **Last 30 days** to choose a range of dates. When you choose a new date range, the charts update to show data for the specified time period.

Chart Descriptions

The **Analytics Overview** page contains two sections: App analytics (p. 104) and Campaign analytics (p. 104).

App analytics

The **App analytics** section contains some of the most commonly used metrics that are related to using your application.

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.

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.

New endpoints

Shows the number of endpoints that were registered with Amazon Pinpoint for the first time for on 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 8 days ago, and then opened it again at some point in the following 7 days. This chart also provides the average 7-day retention rate for the entire time period, and the percentage change in the 7-day retention rate from the beginning to the end of the time period.

Sessions

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

The revenue, in USD, that was reported by your app for each day in the selected time period. This chart also provides the average daily 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 help you understand the success of your campaigns. The metrics in this section provide aggregated metrics for all the campaigns in the current application or project.

Active targetable endpoints

Shows the number of endpoints that are opted in to receive messages from you, and that have opened your app in the past 30 days. This section displays the number of active targetable endpoints by channel (push notification, email, and SMS), as well as the total number of active targetable endpoints.

Campaigns

Shows information about the campaigns that were active during the time period you selected. This section includes the following information:

Active campaigns

The number of campaigns that were active during the selected time period.

Endpoints messaged

The number of endpoints that received a message during the selected time period.

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.

Email open rate

The number of email messages sent from this project that were opened by their recipients, divided by the number of messages that were received by their recipients.

Push open rate

The number of recipients who opened your app as a result of receiving a push notification from this project, divided by the number of recipients who received the message.

Opt out rate

The percentage of customers who opted out after receiving the message. Amazon Pinpoint calculates this rate by dividing the number of recipients who received your message and opted out by the number of messages that were received by their intended recipients. (The recipients could have opted out by clicking an unsubscribe link in an email, or by replying to an SMS message with the keyword `STOP`).

Usage Charts

The **Usage** page includes charts that show you how often your app is being used and how successfully it retains user interest over time.

Note
Some of the charts on the **Usage** page refer to *endpoints*, while others refer to *users*. For more information about the difference between users and endpoints, see Endpoints and Users in Charts (p. 103).

Viewing the Usage Charts

You can view the **Usage** charts in the Amazon Pinpoint console.

To view and filter the Usage charts

1. Open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.
2. On the **Pinpoint Projects** page, choose the project that you want to view usage metrics for.
3. In the navigation pane, under **Analytics**, choose **Usage**.
4. (Optional) Choose **Last 30 days** to choose a range of dates. When you choose a new date range, the charts update to show data for the specified time period.

Chart Descriptions

The **Usage** page contains three sections: Users Metrics (p. 106), Sessions Metrics (p. 107), and Authentication Metrics (p. 107).

Users Metrics

The **Users metrics** section contains information about how users and endpoints interacted with your app. These charts help you better understand user retention—that is, the likelihood that a customer who used your app in the past will open it again at a later time.

For more information about the difference between users and endpoints, see Endpoints and Users in Charts (p. 103).

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.

Monthly active endpoints

Shows the number of endpoints that opened your app 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.

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 app 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 8 days prior, and then opened it again at some point in the following 7 days. This chart also provides the average 7-day retention rate for the entire time period, and the percentage change in the 7-day retention 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, as well as the percentage change in the sticky factor rate from the beginning to the end of the time period.

Sessions Metrics

The **Sessions metrics** section contains information about how often your app was opened. These metrics help you to 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 includes 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 new 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.

Active users month to date

Shows the number of users who opened your app at least once in the current calendar month.

Revenue Charts

The charts on the **Revenue** page provide details about user purchase activity and the revenue that's generated by your app.

> **Note**
> Some of the charts on the **Revenue** page refer to *endpoints*, while others refer to *users*. For more information about the difference between users and endpoints, see Endpoints and Users in Charts (p. 103).

Viewing the Revenue Charts

You can view the **Revenue** charts in the Amazon Pinpoint console.

To view and filter the Revenue charts

1. Open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.
2. On the **Pinpoint Projects** page, choose the project that you want to view revenue metrics for.
3. In the navigation pane, under **Analytics**, choose **Revenue**.
4. (Optional) Choose **Last 30 days** to choose a range of dates. When you choose a new date range, the charts update to show data for the specified time period.

Chart Descriptions

The **Revenue** page contains the following charts:

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, as well as 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, as well as 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, as well as 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, as well as 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, as well as 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, as well as 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 on the **Events** page help you see trends by displaying charts for a specified event type and its attributes. You can filter the charts on the page to show any event that your application reports.

Viewing the Events Charts

You can view the **Events** charts in the Amazon Pinpoint console. You can filter the charts on this page by date, event type, and event attributes.

To view and filter the Events charts

1. Open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.
2. On the **Pinpoint Projects** page, choose the project that you want to view revenue metrics for.
3. In the navigation pane, under **Analytics**, choose **Events**.
4. (Optional) To filter the charts by a specific date or range of dates, choose **Last 30 days**, and then specify a date range.
5. For **Event**, choose an event type to filter the charts by.
6. For **Attributes**, specify the event attributes to filter the charts by.

Chart Descriptions

The **Events** page includes the following charts:

Event count

This chart displays the number of events that are 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 occur 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 the characteristics of the devices that your customers use to access your app. If you've configured your app to report custom metrics, this page also shows those metrics.

Viewing the Demographics Charts

You can view the **Demographics** charts in the Amazon Pinpoint console. You can filter the charts on this page by date.

To view and filter the Demographics charts

1. Open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.
2. On the **Pinpoint Projects** page, choose the project that you want to view revenue metrics for.
3. In the navigation pane, under **Analytics**, choose **Demographics**.
4. (Optional) To filter the charts by a specific date or range of dates, choose **Last 30 days**, and then specify a date range.
5. (Optional) To filter the charts by a specific channel, choose **All channels**, and then choose a channel.

Chart Descriptions

The **Demographics** page includes the following charts:

Platform

Shows the proportion of customers who use your app on various platforms.

App version

Shows the proportion of app users who use various versions of your app.

Device model

Shows the proportions of app users who use various device models (such as iPhone X or Galaxy S9).

Device make

Shows the proportions of app users who use various device makes (such as Apple or Samsung).

User location

Shows Shows the countries and regions where users of your apps are located.

Custom attributes

Shows custom attributes that are reported by your app.

Campaign Charts

The charts on the **Campaigns** page provide information about all of the campaigns for the chosen app or project. You can also choose a specific campaign to view additional delivery and engagement metrics for that campaign.

Viewing the Campaign Charts

You can view the **Campaigns** charts in the Amazon Pinpoint console.

To view and filter the Campaigns charts

1. Open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.
2. On the **Pinpoint Projects** page, choose the project that you want to view campaign metrics for.
3. In the navigation pane, under **Analytics**, choose **Campaigns**.
4. (Optional) Choose **Last 30 days** to choose a range of dates. When you choose a new date range, the charts update to show data for the specified time period.

Chart Descriptions

The **Campaigns** page includes a section that provides aggregated metrics for all campaigns that were active during the selected time period. When you choose a specific campaign, you see a new set of charts that contain metrics specific to that campaign.

Aggregated Campaign Metrics

The **Campaigns** page includes the following metrics, which are aggregated across all campaigns that were active during the selected time period.

Active targetable endpoints

Shows the total number of *targetable endpoints*. Targetable endpoints are endpoints that have opened your app at least once in the past 30 days, and that haven't opted out of receiving messages from you. This section includes the total number of active targetable endpoints, as well as the number of active targetable endpoints for each channel (push notification, email, and SMS).

Campaigns

Shows the total number of campaigns that were active in the time period you selected. Also shows the number of endpoints that you sent messages to in the selected time period, and the delivery, open, and opt-out rates for campaigns sent in the selected time period.

Metrics for Individual Campaigns

When you choose a campaign from the list of campaigns, you see metrics that are specific to that campaign. The metrics that you see depend on the channel of the campaign.

Note
When you select an A/B test campaign, you see the metrics listed in the following sections for each treatment. This report makes it easy to compare the effectiveness of various treatments for your campaign.

Email Campaigns

When you select a standard campaign that uses the email channel, you see the following charts:

Delivery count metrics

Provides the following metrics that relate to the delivery of messages from this campaign:

Endpoints messaged

The number of unique email endpoints that received email from this campaign.

Messages sent

The number of messages sent from the campaign.

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 total number of messages you sent.

Links clicked

The number of times that recipients of the campaign clicked a link in the email. If a single recipient clicks multiple links in an email, or clicks the same link more than once, each click is counted as a separate event.

Delivery rate metrics

Provides the following metrics that relate to the delivery of messages from this campaign:

Delivery rate

The percentage of emails 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 sent.

Open rate

The percentage of emails that were opened by their 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 emails 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 emails by the number of messages sent.

Campaign runs

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 was sent.

Endpoints targeted

The number of unique endpoints that you attempted to send this message to.

Messages sent

The number of messages that were sent during this campaign run. This number might differ from the number of endpoints targeted, if the targeted segment includes email addresses that are incorrectly formatted or are known to produce hard bounces. This number also omits endpoints that have opted out.

Messages delivered

The number of messages sent from this campaign run that were delivered to their intended recipients.

Delivery rate

The percentage of messages sent from this campaign run that were delivered. Amazon Pinpoint calculates this rate by dividing **Messages delivered** by **Messages sent**.

Total email opened

The number of messages that were opened by their recipients. Because of technical limitations, this value only includes recipients who opened the message in an email client that supports images.

Email open rate

The percentage of messages that were opened by their recipients. Amazon Pinpoint calculates this rate by dividing **Total opened** by **Messages delivered**.

Bounce rate

The percentage of messages that couldn't be delivered to their recipients. This metric only measures hard bounces. Amazon Pinpoint calculates this rate by dividing the number of emails 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:

Campaign delivery counts

Provides the following metrics that relate to the delivery of messages from this campaign:

Endpoints messaged

The number of unique push notification endpoints that received a notification from this campaign.

Messages sent

The number of messages sent from the campaign.

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 total number of messages you sent.

Campaign engagement rates

Provides the following metrics that relate to the delivery of messages from this campaign:

Delivery rate

The percentage of push notifications that were delivered to their intended recipients. Amazon Pinpoint calculates this rate by dividing **Messages delivered** by **Messages sent**.

Push open rate

The percentage of notifications that led to the recipient opening your app. Amazon Pinpoint calculates this rate by dividing the number of recipients who received a message from you and later opened your app by **Messages delivered**.

Sessions per endpoint

Shows the average number of times an endpoint opened your app during the selected time period. Amazon Pinpoint calculates this number by finding the number of times endpoints targeted by this campaign opened your app, and dividing that by the number of unique endpoints targeted by the campaign.

Purchases per endpoint

Shows the average number of purchases per endpoint during the selected time period. Amazon Pinpoint calculates this number by finding the number of purchases made by endpoints targeted by this campaign, and dividing that by the number of unique endpoints targeted by the campaign.

Campaign session heat map

The days and times when users opened your app after receiving a push notification notification that was sent by this campaign. Darker rectangles represent greater numbers of users. Times are based on each user's local time zone.

Campaign runs

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 was sent.

Endpoints targeted

The number of unique endpoints that you attempted to send this message to.

Messages sent

The number of messages that were sent during this campaign run. This number might differ from the number of endpoints targeted if the targeted segment includes invalid tokens, or endpoints that have opted out.

Messages delivered

The number of messages sent from this campaign run that were delivered to their intended recipients.

Delivery rate

The percentage of messages sent from this campaign run that were delivered. Amazon Pinpoint calculates this rate by dividing **Messages delivered** by **Messages sent**.

Total push opened

The number of messages that led to their recipients opening your app.

Push open rate

The percentage of messages that led to their recipients opening your app. Amazon Pinpoint calculates this rate by dividing **Total opened** by **Messages delivered**.

SMS Campaigns

When you select a standard campaign that uses the SMS channel, you see the following charts:

Delivery metrics

Provides the following metrics that relate to the delivery of messages from this campaign:

Endpoints messaged

The number of unique SMS endpoints that received a notification from this campaign.

Messages sent

The number of messages that were sent from the campaign.

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 total number of messages you sent.

Delivery rate

The percentage of messages that were delivered to their intended recipients. Amazon Pinpoint calculates this rate by dividing **Messages sent** by **Messages delivered**.

Total SMS spend

Shows the total amount of money, in USD, that you spent sending SMS messages in the selected time period.

Campaign runs

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 was sent.

Endpoints targeted

The number of unique endpoints that you attempted to send this message to.

Messages sent

The number of messages that were sent during this campaign run. This number might differ from the number of endpoints targeted if the targeted segment includes invalid phone numbers, or endpoints that have opted out.

Messages delivered

The number of messages sent from this campaign run that were delivered to their intended recipients.

Delivery rate

The percentage of messages sent from this campaign run that were delivered. Amazon Pinpoint calculates this rate by dividing **Messages delivered** by **Messages sent**.

Transactional Messaging Charts

The **Transactional Messaging** page contains charts that show you how many transactional emails you've sent. It also includes charts that help you measure your recipients' responses to your transactional emails—that is, the number of messages that were delivered, opened, clicked, or that bounced or were reported as spam.

Viewing the Transactional Email Charts

You can view the **Transactional Messaging** charts in the Amazon Pinpoint console. You can filter the charts on this page by date.

To view and filter the Transactional Messaging charts

1. Open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.
2. On the **Pinpoint Projects** page, choose the project that you want to view transactional email metrics for.
3. In the navigation pane, under **Analytics**, choose **Transactional Messaging**.
4. (Optional) To filter the charts by a specific date or range of dates, choose **Last 30 days**, and then specify a date range.

Chart Descriptions

The Transactional Messaging page contains several charts that provide information about how your recipients have responded to the transactional emails that you've sent in the time period you selected. These charts are discussed in greater detail below.

> **Note**
> These charts only include information about transactional emails. They don't include information about emails that you sent by using campaigns. For metrics related to emails sent from campaigns, see the Campaigns charts (p. 111).

Sends and Responses

Sends

The total number of transactional email messages you sent in the time period you selected.

Deliveries

The number of transactional email messages that were delivered to their recipients in the time period. There are several factors that could cause this value to differ from the number of emails that were sent. For example, if an email bounces, it is counted as sent, but not delivered.

Opens

The number of transactional messages that were received by their recipients and opened. Amazon Pinpoint adds a very small, transparent image to the end of each transactional message you send. When a recipient opens an email that contains one of these images, their email client downloads the image from our servers, and we count the message as opened. If a recipient opens the same message more than once, we count each of those opens separately.

Clicks

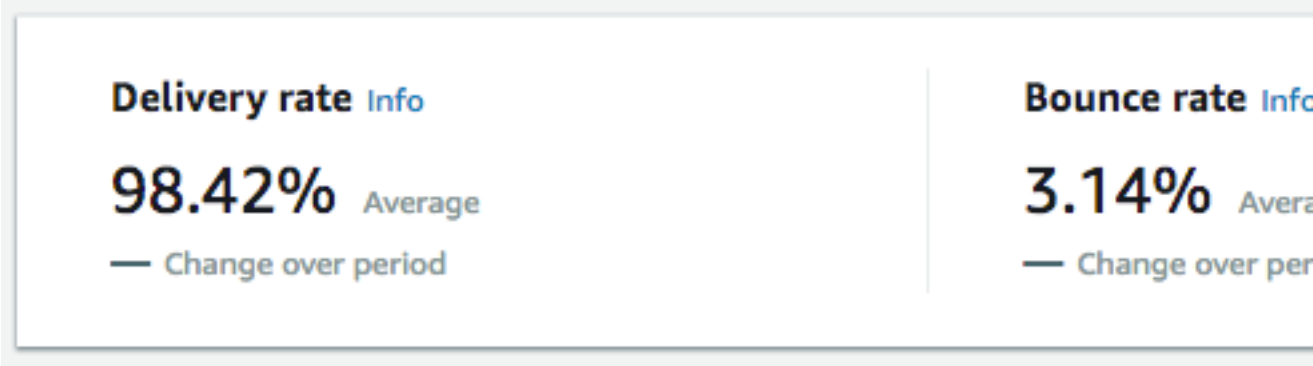
The number of transactional messages that contained links that were clicked by their recipients. When you send a transactional email that contains links, Amazon Pinpoint replaces those links with links that refer to our servers. When a recipient clicks one of these links, we redirect the recipient

to their intended location, and count the message as clicked. If a recipient clicks a link in the same message more than once, or clicks multiple links in the same message, we count each of those clicks separately.

Complaints

The number of transactional messages that were reported by their recipients as spam. When a recipient uses the **Mark as Spam** or similar function in their email client, the recipient's email provider notifies us that the message was reported.

Rates



This section provides rates for deliveries, bounces, and complaints. For each rate, we divide the number of events that occurred for that metric in the time period by the number of messages that you sent in the same period. For example, if you sent 10 emails in a given time period and 8 were delivered, this section shows a **Delivery rate** of 80%.

Each part of this section also shows an **Average** rate. To calculate this value, we calculate the rate for each day in the selected time period, and then calculate the average of those values. For example, assume you were analyzing a period of three days, and your delivery rates for each of those three days were 78%, 79%, and 83%. In this example, the daily average rate is 80%.

Each part of this section also shows the percentage change in the daily rate from the first day of the time period to the last (**Change over period**). We calculate this value by subtracting the daily rate on the first day from the rate on the last day, and then dividing the difference by the value on the first day. If the value on the first day was 0%, we show a dash (—) in this section, because it isn't possible to calculate a percentage change when the first value is 0.

Unique User Events and Bounce and Complaint Events

This section contains the following charts, which help compare certain response metrics in a single chart:

Unique recipient metrics

This chart shows the numbers of opens and clicks for the time period you selected. Unlike the Opens and Clicks charts described in the Sends and Responses section (p. 116), these charts show the numbers of recipients who opened or clicked messages, as opposed to the number of open and click events that occurred. In other words, if a single user opens a message five times, we only count one open in this chart.

Bounce and complaint metrics

This chart shows the numbers 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 the message, we count it as a soft bounce. Hard bounces are permanent. For example, if a recipient's

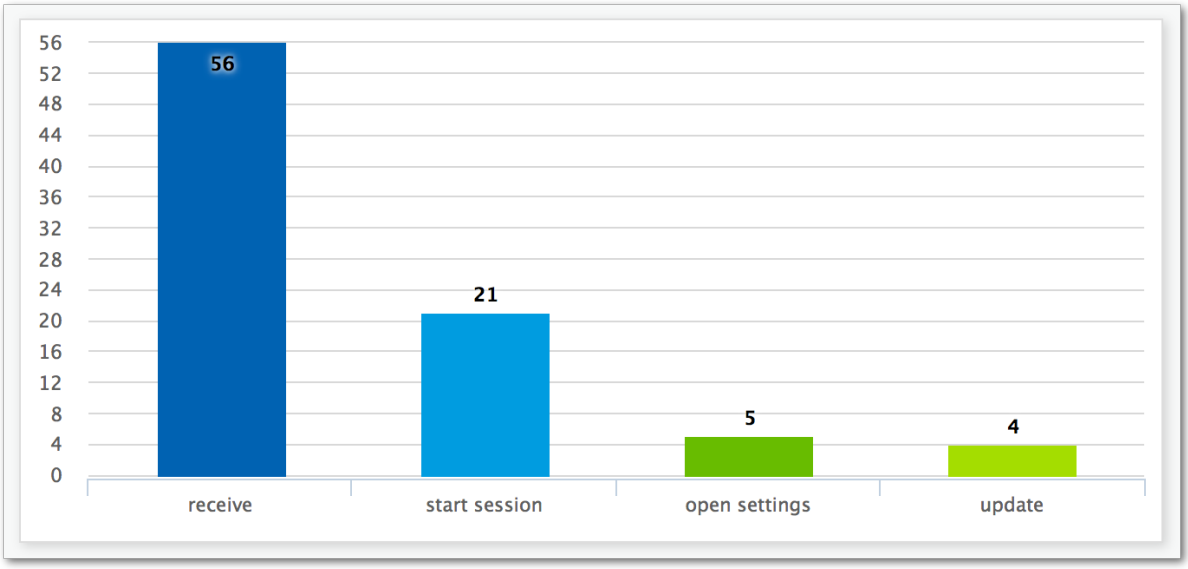
email address doesn't exist or their mail server doesn't accept mail from your domain, we count it as a hard bounce.

Funnel Analytics

You can use Amazon Pinpoint to analyze *funnels*, which visualize how many users complete each of a series of steps in your app. 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 made to your app or because of an Amazon Pinpoint campaign.

After you specify which steps belong in your funnel, the **Create funnel** page displays a chart like the following example:



This example chart shows the percentage of users who complete 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% drop off between users who receive a notification and those who start an app session. Then there is a 19% 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 is part of the conversion process you want to analyze. When you add events to your funnel, you can choose any event that is reported by your app. Your app can report the following types of events:

- Standard events – Includes events that automatically report when an app session starts or stops. The event type names 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 – Defined by you to monitor activities specific to your app, such as completing a level in a game, posting to social media, or setting particular app preferences.

To create a funnel

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.

2. On the Amazon Pinpoint homepage, choose the app that you want to create a funnel for.
3. In the navigation panel, under **Analytics**, choose **Funnels**.
4. Choose **Create funnel**.
5. For **Funnel name**, type 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 event type reported by your app to Amazon Pinpoint.
   - **Attributes** – The attribute-value pairs that are assigned to the events 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**.

Streaming App and Campaign Events with Amazon Pinpoint

Amazon Pinpoint can stream app usage and campaign engagement data, known as *events*, to supported AWS services, which provide more options for analysis and storage.

After you integrate your app with Amazon Pinpoint, it reports app events, such as the number of app sessions started by users. Amazon Pinpoint provides this data in the analytics charts for that app in the console. The analytics charts also show campaign events generated by Amazon Pinpoint, such as the number of devices the campaign sent messages to.

Amazon Pinpoint retains this data for 90 days; however, you can't directly access it for custom analysis. 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 events to Kinesis.

Topics in this section:

- About Amazon Kinesis (p. 119)
- Streaming Amazon Pinpoint Events to Kinesis (p. 120)

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 app and campaign 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 apps 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 execute 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 your 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. 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 Elasticsearch Service.
- 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 app and campaign events to Amazon Kinesis Data Streams for processing in external applications or third-party analytics tools. You can also configure Amazon Pinpoint to stream this event data to AWS datastores (such as Amazon Redshift) using Amazon Kinesis Data Firehose.

Prerequisites

Before you complete the procedure in this section, create either 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 Kinesis 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 do not create this role, Amazon Pinpoint can create one for you. For more information about creating this policy manually, see Permissions Policies 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 **Pinpoint Projects** page, choose the app for which you want to set up data streaming.
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 **Stream**, choose one of the following options:

   - **Send events to an Amazon Kinesis 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 delivery stream** – choose this option if you want to send event data to an AWS datastore, such as Amazon Redshift.

7. For **Amazon Kinesis stream** or **Amazon Kinesis Data Firehose delivery 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 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 you chose in step 6.
9. Choose **Save**.

As Amazon Pinpoint receives events from your app and generates campaign events, it sends this data to your Kinesis stream. For more information about the data that Amazon Pinpoint sends for an event, see Event Data in the *Amazon Pinpoint Developer Guide*.

Amazon Pinpoint Settings

Generally, you configure settings for each project. These settings apply to all campaigns within the project by default.

You can also configure certain settings for individual campaigns. When you change settings at the campaign level, those settings override the settings for the project that the campaign resides in.

> **Note**
> Some settings related to sending SMS messages apply to all projects in your Amazon Pinpoint account, and to other AWS services that send SMS messages. These settings are shown in the **Account-level settings** section of the **Edit SMS Settings** page.

Topics

- General Settings (p. 122)
- Email Settings (p. 122)
- SMS and Voice Settings (p. 126)
- Push Notification Settings (p. 129)
- Mobile and Web App Analytics Settings (p. 131)
- Event Stream Settings (p. 131)

General Settings

The **General settings** page contains several settings that impact the delivery of your campaigns.

1. Open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.
2. On the **Pinpoint Projects** page, choose the project that you want to change the settings for.
3. Choose **Edit**.
4. On the **Edit general settings** page, you can change the following settings:
   - **Quiet time** – Change these settings to prevent Amazon Pinpoint from sending messages during specific hours. When you configure this setting, you provide a Start time and an End time. The times you specify have to be in the format HH:MM, and have to use 24-hour notation.
   - **Max daily messages per endpoint** – Change this setting to specify the maximum number of messages that Amazon Pinpoint can send to a single endpoint in a 24-hour period. The value you specify can't be larger than 100.
   - **Max campaign messages per endpoint** – Change this setting to specify the maximum number of messages that a single campaign can send to a single endpoint. The value you specify can't be larger than 100.
   - **Max messages per second** – Change this setting to specify the maximum number of messages that Amazon Pinpoint can send each second. The value you specify has to be at least 50, and can't be larger than 20,000.
   - **Max campaign run time** – Change this setting to specify the amount of time, in seconds, that individual campaigns are allowed to run. The minimum value for this setting is 60 seconds.
5. When you finish making changes, choose **Save**.

Email Settings

On the **Email Settings** page, you can enable or disable the email channel for your current project. When you disable the email channel for a project, you can't send campaign-based emails from that project.

However, you can still send transactional emails from your Amazon Pinpoint account. You can also use this page to verify additional email identities. In Amazon Pinpoint, an identity is an email address or domain that you use to send email. Every email address that you use as a "From," "Source," "Sender," or "Return-path" in your emails has to be verified. Finally, you can use this page to view information about the number of emails you've sent over the past 24 hours. You can also see how many emails you can send in a 24-hour period (your sending quota), as well as the maximum number of emails you can send per second (your maximum sending rate).

This section contains the following topics:

- Enabling and Disabling the Email Channel (p. 123)
- Viewing Details About Email Usage (p. 123)
- Verifying Identities (p. 124)

Enabling and Disabling the Email Channel

You can change the status of the email channel for the current project. You have to enable to email channel in each project that you want to send email campaigns from.

To enable the email channel for a project

1. Open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.
2. Choose a project.
3. In the navigation pane, choose **Email**.
4. If you haven't yet verified an identity, complete the procedures in the next section. Otherwise, choose an identity to use, and then choose **Save**.

The process for disabling the email channel is similar. When the email channel is disabled, you can't send email campaigns from the project. However, you can still 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. Choose a project.
3. In the navigation pane, choose **Email**.
4. On the **Identities** tab, choose **Edit**.
5. Clear the box next to **Enable the email channel for this project**, and then choose **Save**.

Viewing Details About Email Usage

The **Email Settings** page provides information about your email usage. On this page, you can see how many emails have been sent from your account in the past 24 hours, and compare that number to the maximum number of emails that your account is allowed to send in a 24-hour period (also referred to as your *sending quota*). This page also displays the maximum number of emails you can send per second (your *sending rate*), and indicates whether or not 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 only send email to verified addresses or domains.

For more information about requesting an increase to your sending quota or sending rate, or to learn how to have your account removed from the sandbox, see Managing Email Sending Limits (p. 26).

For more detailed email reports, see the Campaigns (p. 111) and Transactional Messaging (p. 116) analytics pages.

Verifying Identities

An *identity* is an email address or domain that you use to send email. You can verify up to 10,000 email addresses or domains, in any combination, in each AWS Region. Every address that you use as the "From," "Source," "Sender," or "Return-path" address has to be verified.

Verifying an Email Address

If you aren't able to change the DNS settings for your domain, you can verify individual email addresses. You can also verify individual email addresses if you want to send email from an address on a commercial domain, such as *gmail.com* or *hotmail.com*.

To verify an email address

1. Complete the procedure in the previous section (p. 123) to enable the email channel.
2. Under **Identity type**, choose **Email address**, and then choose **Verify a new email address**.
3. For **Email address**, type the email address that you want to verify, and then choose **Verify email address**.
4. Check your inbox for an email from *no-reply-aws@amazon.com*. Click the link in the email to complete the verification process for the email address.

   Note
   You should receive the verification email within 5 minutes. If you don't receive the email, do the following:

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

   Also note that the link in the verification email expires after 24 hours. To re-send the verification email, choose **Send the verification email again**.

Verifying a Domain

If you plan to send email from a domain that you own, you should verify that domain, rather than verify individual email addresses. When you verify a domain, you can send email from any address on that 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 *sender1@example.com* and *sender2@subdomain.example.com*.

Important
In order 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 your domain vary depending on who your DNS provider is. See the documentation for your DNS provider for more information.

To verify a domain

1. Complete the procedures in the previous section to enable the email channel.
2. Under **Identity type**, choose **Domain**, and then choose **Verify a new domain**.
3. For **Domain**, type the name of the domain that you want to verify.

4. For **Default sender address**, type an email address to use as the default sending address for the domain. When you send emails, you can specify a different address. However, if you don't specify a different address for an 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. Alternatively, choose **Download record set** to save the records to your computer.
7. Log in to the management console for your DNS provider. Create three new CNAME records that contain the values that you copied in the previous step. See the next section for links to the documentation for several major DNS 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.

Instructions for Configuring DNS Records for Various Providers

The procedures for updating the DNS records for your domain depend which DNS provider you use. This section includes links to the documentation for several common DNS providers. This list isn't exhaustive. If your provider isn't listed below, you can probably still use it with Amazon Pinpoint.

DNS/Hosting Provider Name	Documentation Link
Amazon Route 53	Creating Records by Using the Amazon Route 53 Console
GoDaddy	Add a CNAME record (external link)
Dreamhost	How do I add custom DNS records? (external link)
Cloudflare	How do I add a CNAME record? (external link)
HostGator	Manage DNS Records with HostGator/eNom (external link)
Namecheap	How do I add TXT/SPF/DKIM/DMARC records for my domain? (external link)
Names.co.uk	Changing your domains DNS Settings (external link)
Wix	Adding or Updating CNAME Records in Your Wix Account (external link)

Note
This list contains links to the documentation for several common DNS providers. It isn't a complete list of providers. Inclusion on this list isn't an endorsement or recommendation of any company's products or services.

Domain Registration 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 DNS providers refer to the **Name/host** field as the *Host* or *Hostname*. Some providers label the **Value** field as the *Points to* or *Result*.

- Make sure that your provider didn't automatically append your domain name to the end of the value in the name column. Some providers append the domain name without providing any indication that they've done so. If your provider does append the domain name onto the end of the value, remove the domain name from the end of the value in the Name column.
- The underscore character (_) is required in the name of each record. If your provider doesn't allow you to include 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 regions using Amazon Pinpoint, you have to validate the domain in each of those regions.

SMS and Voice Settings

On the **SMS and Voice** settings page, you can enable or disable the SMS channel. You can also modify the SMS settings that apply to your entire AWS account, and view a list of phone numbers that you can use to deliver voice messages. To learn more about sending voice messages, see the Amazon Pinpoint SMS and Voice API Reference.

1. Open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.
2. On the **Pinpoint Projects** page, choose the project that you want to change the SMS settings for.
3. In the navigation pane, under **Settings**, choose **SMS**.
4. Next to **General**, choose **Edit**.
5. On the **Edit SMS settings** page, you can change the following settings:
   - **Enable the SMS channel for your project** – Enable this option to make the SMS channel active for the selected project.
   - **Account-level settings** – In this section, you can modify the SMS settings for your AWS account. These settings apply to your entire Amazon Pinpoint account, and to all AWS services that send SMS messages, such as Amazon SNS. You can change the following settings:
     - **Default message type** – Choose the type of SMS messages you plan to send. If you plan to send time-sensitive content, choose **Transactional**. If you plan to send marketing-related content, choose **Promotional**.
     - **Account spend limit** – Specify the maximum amount of money, in US Dollars, that you want to spend sending SMS messages each calendar month.
     - **Default sender ID** – Optionally, you can 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 vary by country or region. For more information, see Supported Countries and Regions (p. 53).
6. When you finish making changes, choose **Save**.

Number Settings

You can manage settings for the dedicated *short codes* and *long codes* that you've requested from AWS Support that are assigned to your account.

A short code is a 5-digit or 6-digit number that's meant for high-volume SMS messaging. To request a dedicated short code, see the section called "Requesting Short Codes" (p. 40).

A long code is a standard 10-digit phone number that is meant for low-volume, person-to-person communication. To request a dedicated long code, see the section called "Requesting Long Codes" (p. 43).

After you receive one or more dedicated short codes or long codes from AWS, those numbers are provided under **Number settings**, where you can manage settings for keywords and two-way SMS.

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 the 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 guidelines 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 blacklisting your number and blocking your messages.

Default Keywords

The following keywords are required by wireless carriers in the US for short codes. They are expected by AWS for all long codes and short codes:

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 all opt-out keywords, see SMS Opt Out (p. 49). After your number receives 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 are no longer 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 mobile carriers. Customers can send this keyword to your short code to get more information about the products and services you offer.

Managing Keyword Settings

Use the Amazon Pinpoint console to customize the keyword responses for your number.

1. On the **Account settings** page, under **Number settings**, choose the short code or long code that you want to manage keyword responses for.

   The **Number settings** page displays. Under **Keywords**, the console provides:

- The default keywords HELP and STOP. 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 must first open a case with AWS Support and request to update your keyword with the wireless carriers. Then, you must 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 you want to edit, choose **Edit**, and edit the keyword and response message as needed.
3. When you finish making your changes, choose **Save**.

Two-Way SMS Settings

You can define keywords for messages that you want to receive and process outside of 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 SNS topic in your account. You can 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 **Projects** page, choose the project that you want to manage two-way SMS settings for.
2. In the navigation pane, under **Settings**, choose **SMS**.
3. Under **Short Codes and Long Codes**, choose the phone number that you want to configure two-way SMS for.
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 with one of the following options:

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

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.

7. When you finish, 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 outside of 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 for that number.

When you enable this feature, there are three changes to the way 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 the keyword settings section (p. 127) 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 automatically responding to the sender.

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 that you have systems and processes in place for capturing and managing opt-outs.

To enable self-managed opt-outs

1. On the **Account settings** page, 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, expand the **Two-way SMS** section.
3. Enable and set up two-way SMS, if you haven't already done so. For more information about setting up two-way SMS, see Two-Way SMS Settings (p. 128).
4. Under **Opt-outs**, choose **Enable self-managed opt-outs**.

Push Notification Settings

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

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

To update push notification settings

1. Sign in to the AWS Management Console and open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.
2. On the **Projects** page, choose the project for which you want to manage push notification settings.
3. In the navigation pane, under **Settings**, choose **Push notifications**.
4. Next to **Push notifications**, choose **Edit**.
5. On the **Push notification services** page, you can update your credentials for the following services:

   - **FCM** – Requires an API key (also referred to as a server key), which you get from the Firebase console. For more information about obtaining FCM credentials, see Credentials in the Firebase documentation.
   - **APNs** – Requires an authentication token signing key or a TLS certificate, which you get from your Apple developer account. For more information, see the *Managing APNs Settings* section.
   - **Baidu** – Requires an API key and a secret key, which you get from your Baidu Cloud Push project.
   - **ADM** – Requires the OAuth Credentials (Client ID and Client Secret) from your Amazon Developer account. For more information, see Obtaining Amazon Device Messaging Credentials in the Amazon Developer documentation.

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

Managing APNs Settings

On the **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 does not 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 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, 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 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.
4. When you finish, choose **Save**.

Mobile and Web App Analytics Settings

You can set up your web and mobile apps to send usage data to Amazon Pinpoint. This data includes metrics that help you determine how your customers use your apps. For example, you can determine the number of customers who logged in to your app in the past 30 days, or how many customers used a specific feature of your app, or the percentage of customers who accessed your app by using an Android device. You can use this data to improve the usability of your apps, and to increase customer satisfaction and retention.

The **Mobile app analytics** and **Web app analytics** pages contain information about how you can set up your mobile and web apps, respectively, to report data to Amazon Pinpoint.

Event Stream Settings

On the **Event stream** settings page, you can enable or disable 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 **Pinpoint Projects** page, choose the app for which you want to set up data streaming.
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 **Stream**, choose one of the following options:

   - **Send events to an Amazon Kinesis 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 delivery stream** – choose this option if you want to send event data to an AWS datastore, such as Amazon Redshift.
7. For **Amazon Kinesis stream** or **Amazon Kinesis Data Firehose delivery 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 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 you chose in step 6.

9. Choose **Save**.

As Amazon Pinpoint receives events from your app and generates campaign events, it sends this data to your Kinesis stream. For more information about the data that Amazon Pinpoint sends for an event, see Event Data 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. 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 alert you when metrics exceed the 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. 133)
- View Amazon Pinpoint Metrics in CloudWatch (p. 136)
- Create CloudWatch Alarms for Amazon Pinpoint Metrics (p. 136)

Amazon Pinpoint Metrics That Are Exported to CloudWatch

The following sections describe the metrics that Amazon Pinpoint exports to CloudWatch.

Topics in this section:

- Metrics Related to Message Delivery (p. 133)
- Metrics Related to Endpoints (p. 135)
- Metrics Related to Import Jobs (p. 135)
- Metrics Related to Events (p. 135)

Metrics Related to Message Delivery

Metric	Description
`DirectSendMessagePermanentFailure`	The number of direct messages that weren't sent because of a permanent issue. This type of issue usually occurs when an endpoint token is expired or invalid. Units: *Count* Dimensions: ApplicationId, ChannelType
`DirectSendMessageTemporaryFailure`	The number of direct messages that failed to send because of a temporary issue. 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

Metric	Description
	issue occurs, Amazon Pinpoint doesn't attempt to redeliver the message. Units: *Count* Dimensions: ApplicationId, ChannelType
`CampaignSendMessagePermanentFailure`	The number of campaign messages that weren't sent because of a permanent issue. This type of issue usually occurs when an endpoint token is expired or invalid. Units: *Count* Dimensions: ApplicationId, ChannelType
`CampaignSendMessageTemporaryFailure`	The number of campaign messages that weren't sent because of a temporary issue. 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. Units: *Count* Dimensions: ApplicationId, ChannelType
`DirectSendMessageThrottled`	The number of direct messages that weren't sent because your account's ability to send messages was throttled. Units: *Count* Dimensions: ApplicationId, ChannelType
`CampaignSendMessageThrottled`	The number of campaign messages that weren't sent because your account's ability to send messages was throttled. Units: *Count* Dimensions: ApplicationId, ChannelType
`CampaignSendMessageLatency`	The amount of time, in seconds, that passed between the time when the campaign started running and the time when it finished running. Units: *Count* Dimensions: ApplicationId, ChannelType

Metrics Related to Endpoints

Metric	Description
`EndpointRegistrationFailure`	The number of endpoint registrations submitted through an AWS SDK or the Amazon Pinpoint API that couldn't be imported. This type of issue usually occurs when an incoming endpoint record is invalid. Units: *Count* Dimensions: ApplicationId

Metrics Related to Import Jobs

Metric	Description
`ImportedEndpointFailure`	The number of endpoints in an import job that couldn't be imported because they were invalid. Units: *Count* Dimensions: ApplicationId
`ImportJobFailure`	The number of import jobs that couldn't be completed for any reason. Units: *Count* Dimensions: ApplicationId
`ImportJobDuration`	The amount of time, in seconds, that elapsed between the beginning and the end of each import job. Units: *Count* Dimensions: ApplicationId

Metrics Related to Events

Metric	Description
`TotalEvents`	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. Units: *Count* Dimensions: ApplicationId

Metric	Description
`ExportedEvents`	The total number of events that were successfully written to the event stream for exporting. Units: *Count* Dimensions: ApplicationId
`ExportEventErrors`	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. For example, this error could occur when the volume of events that you stream to Kinesis Data Firehose exceeds your provisioned throughput. Units: *Count* Dimensions: ApplicationId, ErrorCode

View Amazon Pinpoint Metrics in CloudWatch

You can monitor metrics for Amazon Pinpoint by using the CloudWatch console or the CloudWatch API. The following procedures show you how to access the metrics using these different options.

To view metrics using the CloudWatch console

1. Sign in to the AWS Management Console and 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. Choose a metric to add it to the chart.

You can also use CloudWatch to create alarms that send you notifications related to changes in these metrics. For more information, see Create CloudWatch Alarms for Amazon Pinpoint Metrics (p. 136).

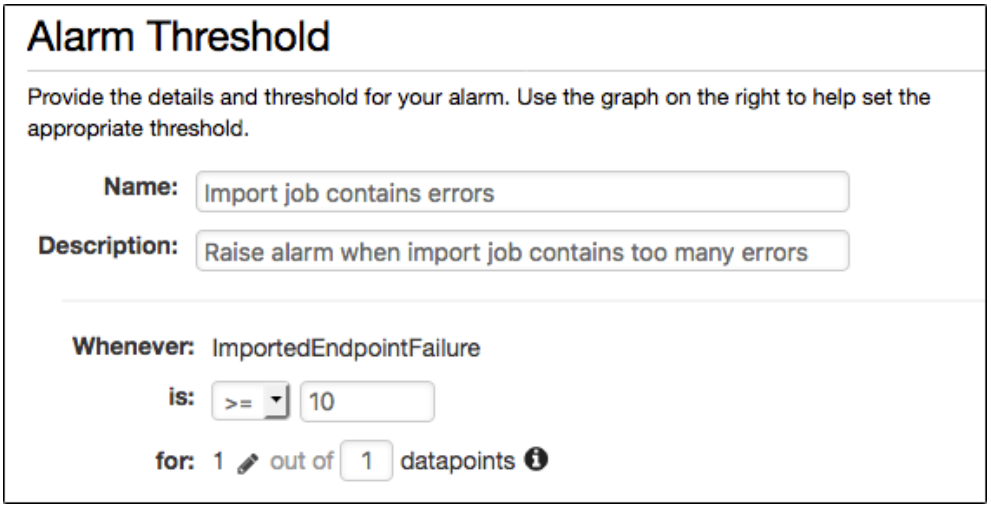
Create CloudWatch Alarms for Amazon Pinpoint Metrics

In CloudWatch, you can create alarms that send notifications when specific metrics exceed a particular value. For example, you could set an alarm that sends you an email when the **ImportedEndpointFailure** metric exceeds a certain value. In this example, if the number of endpoint import failures exceeds the threshold that you specified, you receive an email alerting you of the issue. This section contains procedures for setting up an alarm for Amazon Pinpoint metrics in the CloudWatch console.

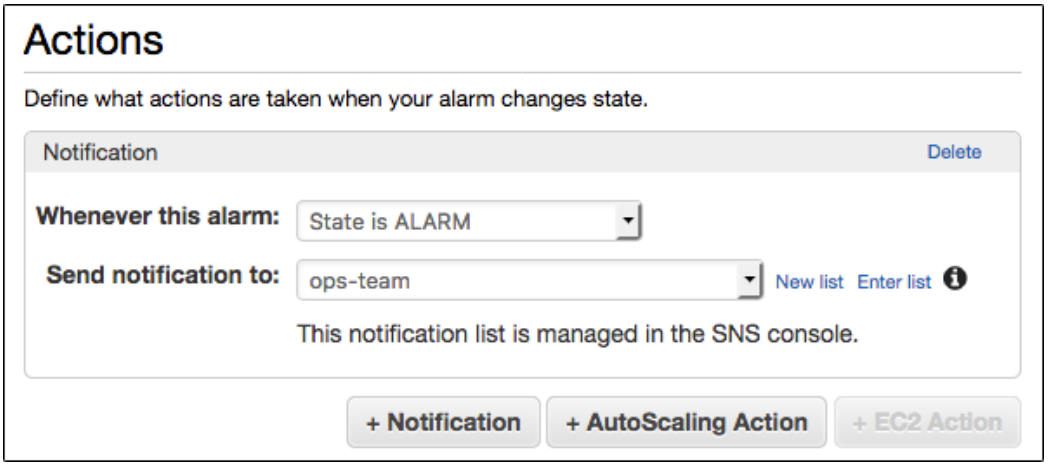
> **Important**
> Before you can complete the procedures in this section, you first have to create an Amazon SNS topic and subscribe an endpoint to it. For more information, see Create a Topic and Subscribe to a Topic in the *Amazon Simple Notification Service Developer Guide*.

To create an alarm for Amazon Pinpoint metrics in the CloudWatch console

1. Open the CloudWatch console at https://console.aws.amazon.com/cloudwatch/.
2. Choose **Alarms**, and then choose the **Create Alarm** button. The **Create Alarm** wizard appears.
3. In the **Pinpoint Metrics** section, choose the metric you want to create an alarm for. Choose **Next**.
4. In the **Alarm Threshold** section, do the following:
   - Type a **Name** and a **Description** for the alarm.
   - Specify the value that causes CloudWatch to raise an alarm, as shown in the following image.



5. In the **Actions** section, do the following:
   - For **Whenever this alarm**, choose **State is ALARM**. This setting tells CloudWatch to send a notification when the state of the alarm is `ALARM` (as opposed to `OK` or `INSUFFICIENT`).
   - For **Send notification to**, choose the Amazon SNS topic that should be notified when the alarm is triggered, as shown in the following image.



6. Choose **Create Alarm**.

> **Note**
> There are additional settings that you can configure when you create a CloudWatch alarm. For additional information about configuring CloudWatch alarms, see Create or Edit a CloudWatch Alarm in the *Amazon CloudWatch User Guide*.

For more information about using CloudWatch and alarms, see the CloudWatch Documentation.

Document History for Amazon Pinpoint

The following table describes the documentation for this release of Amazon Pinpoint.

- **Latest documentation update:** November 15, 2018

Change	Description	Date
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 Amazon Pinpoint Voice Channel (p. 67).	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 Sending Email in Amazon Pinpoint (p. 28). For more information about setting up the email channel, see Email Settings (p. 122).	November 5, 2018
EU (Ireland) Availability	Amazon Pinpoint is now available in the EU (Ireland) AWS 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 in the Amazon Pinpoint console, rather than having to create them in AWS Mobile Hub.	October 4, 2018
Advanced segmentation	Added the ability to create dynamic segments (p. 73) that include advanced logic and comparisons.	October 4, 2018

Change	Description	Date
Monitoring with CloudWatch	You can now use Amazon CloudWatch to monitor and analyze metrics related to your Amazon Pinpoint account.	October 4, 2018
Email tutorial	Added a tutorial (p. 5) that includes complete procedures for setting up a campaign and sending an email.	June 19, 2018
Analytics chart references	The **Analytics** section now includes several new and updated reports. We've added documentation (p. 102) that gives you additional information about each metric.	June 12, 2018
Testing campaigns	You can now test your messages (p. 90) 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 importing a file that contains a list of user IDs (p. 77). 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
Phone number verification for SMS	Use the Amazon Pinpoint API to verify a phone number (p. 64) to determine whether it is a valid destination for SMS messages.	April 23, 2018
Self-managed opt-outs and dashboard exports	You can configure your SMS account settings so that you can manage SMS opt-outs outside of Amazon Pinpoint (p. 128). You can also export Amazon Pinpoint dashboards (p. 103) for further analysis.	March 28, 2018
Email project creation and identity verification	Added information about creating email projects (p. 21) and verifying identities used to send email (p. 22).	March 21, 2018
SMS best practices	Added a best practices guide (p. 61) that contains tips and information related to SMS campaigns.	February 23, 2018

Change	Description	Date
Requesting support for SMS use cases	Contact AWS Support to request support for your SMS use case (p. 37) if you want to increase your spending limit, reserve an origination number, or reserve a sender ID.	February 21, 2018
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 table of Supported Countries and Regions for the SMS channel (p. 53) to list the countries and regions that support 2-way SMS.	February 5, 2018
Time to Live value for mobile push	In the Amazon Pinpoint console, you can specify a Time to Live (TTL) value when you write a mobile push message (p. 89) 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 the section called “Streaming Events” (p. 119).	December 18, 2017
Segment import documentation	Importing Segments (p. 77) 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 APNs channel settings (p. 19) 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

Change	Description	Date
ADM and Baidu mobile push	Enable mobile push channels (p. 18) for Amazon Device Message and Baidu Cloud Push in your projects.	September 27, 2017
User analytics with Amazon Cognito user pools	To enable analytics about users and authentication (p. 105), use Amazon Cognito user pools to manage user sign-in.	September 26, 2017
Account settings	Use the SMS settings (p. 126) page in the console to manage account-level SMS settings that take effect for all of your projects.	September 11, 2017
Users analytics	Users charts (p. 105) in the Amazon Pinpoint console provide metrics about app usage and user authentication.	August 31, 2017
Direct email messages	You can send email messages directly (p. 98), to a limited audience, without creating a campaign or engaging a segment.	July 05, 2017
New channels: email and SMS	In addition to the mobile push (p. 17) channel, you can enable email (p. 20) and SMS (p. 33) 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 send push notifications and text messages directly (p. 98), to a limited audience, without creating a campaign or engaging a segment.	June 08, 2017
Revenue charts	You can view revenue charts (p. 108) in the Amazon Pinpoint console to see the revenue that is generated by your app and the number of items purchased by users.	March 31, 2017
Event streams	You can configure Amazon Pinpoint to send your app and campaign events to an Kinesis stream (p. 119).	March 24, 2017

Change	Description	Date
Amazon Pinpoint general availability	This release introduces Amazon Pinpoint.	December 1, 2016