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 improve user engagement. Use Amazon Pinpoint to create campaigns that reach audience segments with tailored messages.

Amazon Pinpoint supports multiple messaging channels. You can choose to send push notifications, emails, or text messages (SMS) depending on the purpose of your campaign and the type of message.

With Amazon Pinpoint, you can do the following:

Define Audience Segments

To reach the right audience with your messages, define audience segments (p. 25). You can define dynamic segments based on data reported by your application, such as operating system or mobile device.

You can also import segments that you define outside of Amazon Pinpoint.

A segment designates which users receive the messages delivered by a campaign.

Engage Your Audience with Messaging Campaigns

Engage your audience segment by creating a messaging campaign (p. 32). A campaign sends tailored messages according to a schedule that you define. You can create a campaign that sends messages through any channel that is supported by Amazon Pinpoint: mobile push, email, or SMS.

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

Analyze User Behavior

Using the analytics (p. 46) provided by Amazon Pinpoint, you can gain insights about your audience and the effectiveness of your campaigns. 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. 53) to Amazon Kinesis or Amazon S3.

Get Started

Get started with Amazon Pinpoint by creating a project in AWS Mobile Hub. Your Mobile Hub project becomes available in Amazon Pinpoint. For more information, see Getting Started with Amazon Pinpoint (p. 3).

Currently, Amazon Pinpoint is available in the US East (N. Virginia) Region.

Getting Started with Amazon Pinpoint

To begin using Amazon Pinpoint, add a project to AWS Mobile Hub. Then, choose your project in the Amazon Pinpoint console to define user segments, create push notification campaigns, and view analytics.

Adding a Project to Amazon Pinpoint

Before you can use Amazon Pinpoint, you must create a project in the AWS Mobile Hub console at https://console.aws.amazon.com/mobilehub/.

Mobile Hub is an AWS service that helps you create and configure mobile app backend features and integrate them into your app. When you create your project, add the **Messaging & Analytics** feature. After you create the project in Mobile Hub, it becomes available in Amazon Pinpoint.

When you add the **Messaging & Analytics** feature, you choose one or more messaging channels to enable. After you create a project that supports at least one channel, you can manage channel settings, or enable other channels, in the Amazon Pinpoint console. For more information about creating a project and enabling a specific channel, see:

- Setting up Amazon Pinpoint Mobile Push Channels (p. 6)
- Setting up the Amazon Pinpoint Email Channel (p. 8)
- Setting up the Amazon Pinpoint SMS Channel (p. 15)

Getting Started with Amazon Pinpoint

After you add a project to Amazon Pinpoint, you can choose your project in the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/ to do the following tasks.

1. Define a user segment (p. 25) so that you can engage a specific subset of your audience with a messaging campaign.
2. Create a campaign (p. 32) to send tailored messages to your segment according to a schedule that you define.

3. View analytics (p. 46) to learn how many users your campaign is sending messages to, how many users are viewing those messages, and other information.

Amazon Pinpoint Channels

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

- Mobile push (p. 5)
- Email (p. 8)
- SMS (p. 14)

Before you can use Amazon Pinpoint to engage your audience, you must create an Amazon Pinpoint project, and that project must support one or more channels. To add a new project to Amazon Pinpoint, create a project using AWS Mobile Hub, and add the **Messaging & Analytics** feature to the project. After you create a project in Mobile Hub, it becomes available in Amazon Pinpoint.

After you create a project and enable a channel, you can use your project to send messages. You can define the audience segment (p. 25) that you want to engage and then define a campaign (p. 32) that sends messages to that segment. Or, to quickly send a message to a limited audience, you can send a direct message (p. 42) without creating a campaign.

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Amazon Pinpoint Mobile Push Channels

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

- Apple Push Notification service (APNs)

- Firebase Cloud Messaging (FCM) or its predecessor, Google Cloud Messaging (GCM)

To enable mobile push channels, you must first define your app as a project in AWS Mobile Hub. Then, integrate your app with Amazon Pinpoint.

Topics

Setting up Amazon Pinpoint Mobile Push Channels

Before you can use Amazon Pinpoint to send push notifications to your app, you must define your app as a project in AWS Mobile Hub and integrate your app with Amazon Pinpoint. Mobile Hub is an AWS service that helps you create and configure mobile app backend features and integrate them into your app. When you define your project in Mobile Hub, you set up the required channels for your app.

To add a mobile project to Mobile Hub, you need credentials that authorize Amazon Pinpoint to send push notifications to your app through the push notifications services for Android or iOS. To integrate your app with Amazon Pinpoint, download the necessary SDKs from Mobile Hub, and add these SDKs to your app code.

If you don't already have an app that is enabled for Amazon Pinpoint, see the following information in the *Amazon Pinpoint Developer Guide*:

- Setting Up Push Notifications for Amazon Pinpoint – Provides steps to create and download the required credentials from the Apple Developer website or the Google Firebase console.
- Getting Started: Creating an App With Amazon Pinpoint Support – Provides steps for adding your app as a project in AWS Mobile Hub and integrating your app with Amazon Pinpoint.

After you add an app to Amazon Pinpoint, you can update your push notification credentials on the **Settings** page in the Amazon Pinpoint console. For more information, see Managing Mobile Push Channels with Amazon Pinpoint (p. 7).

Monitoring Mobile Push Activity with Amazon Pinpoint

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

> **Note**
> To monitor push notification activity, you must use a campaign. You cannot monitor push notification activity outside of a campaign.

Streaming Mobile Push Event Data

To monitor data, such as successful and failed mobile push deliveries, configure Amazon Pinpoint to stream mobile push event data to Amazon Kinesis Streams or Amazon Kinesis Firehose. Then, you can use the Amazon Kinesis platform to analyze this push data. For more information, see Streaming Amazon Pinpoint Events to Amazon Kinesis (p. 53).

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

Amazon Pinpoint Analytics

The **Analytics** page in the Amazon Pinpoint console shows trends related to user engagement, campaign outreach, revenue, and more. To monitor your mobile push activity, you can view metrics such as:

Targeted

User devices to which Amazon Pinpoint attempted to deliver messages.

Delivered

The number of successful message deliveries.

Delivery rate

The percentage of all delivery attempts that were successful.

Total opened

The number of app openings resulting from users tapping notifications sent by the campaign.

Open rate

Percentage of recipients who opened your app after receiving a push notification from a campaign.

Opt out rate

Percentage of users who chose not to receive push notifications for your app.

For more information, see Amazon Pinpoint Analytics (p. 46).

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. These credentials are provided when your app is added to AWS Mobile Hub as a mobile project.

To update mobile push 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 mobile push settings.
3. In the navigation menu, choose **Settings**.
4. On the **Settings** page, choose **Channels**, and choose **Mobile Push**.
5. Under **Choose the platforms for which you want to enable push notifications**, you can update your credentials for the following platforms:
   - **Android** – Requires an API key and a sender ID, which you get from the Firebase console or the Google API console. These credentials authorize Amazon Pinpoint to send messages to your app through Firebase Cloud Messaging (FCM) or its predecessor, Google Cloud Messaging (GCM).
   - **iOS** – Requires an SSL certificate, which you get from the Apple Developer portal. The certificate authorizes Amazon Pinpoint to send messages to your app through Apple Push Notification service (APNs).
6. When you are finished, choose **Save**.

For more information about obtaining these credentials, see Setting Up Push Notifications for Amazon Pinpoint in the *Amazon Pinpoint Developer Guide*.

Amazon Pinpoint Email Channel

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

You can create an Amazon Pinpoint project with email support (p. 8) by creating a project in AWS Mobile Hub and adding the **Messaging & Analytics** feature. You can also enable the email channel in an existing project (p. 11) by using the **Settings** page in the Amazon Pinpoint console. Before you send email with Amazon Pinpoint, you must verify that you own the *from* address or the email domain.

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. 10).

You can monitor your email activity (p. 11) by viewing analytics in the Amazon Pinpoint console or by streaming email events to Amazon Kinesis.

As your email needs change, you can manage your email channel by updating your email address or domain (p. 11), or requesting a sending limits increase (p. 12).

Topics

Setting up the Amazon Pinpoint Email Channel

To set up the Amazon Pinpoint email channel, you create a project in AWS Mobile Hub (p. 8), enable the email channel for that project, and verify your email address or domain.

When you enable the email channel for the first time, Amazon Pinpoint does not 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. 10) through AWS Support.

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Creating an Amazon Pinpoint Project with Email Support

You can create a new project with email support by using AWS Mobile Hub. In the Mobile Hub console, create a project, and add the **Messaging & Analytics** feature. Then, enable the email channel as part of that feature. After you create a project in Mobile Hub, the project becomes available in Amazon Pinpoint.

You can also enable the email channel for an existing Amazon Pinpoint project by using the **Settings** page in the Amazon Pinpoint console. For more information, see Updating Email Settings (p. 11).

To create a project with email support

1. Sign in to the AWS Management Console and open the Mobile Hub console at https://console.aws.amazon.com/mobilehub.

2. If you have other Mobile Hub projects, choose **Create new mobile project**. If this is your first project, skip this step because you are taken directly to the page for creating a new project.
3. Enter a project name. The name you enter will be the name of your project in the Amazon Pinpoint console.
4. For the region, keep **US East (Virginia)**.
5. Choose **Create project**. Mobile Hub creates the project and shows the **Pick and configure features for your project** page.
6. Choose **Messaging & Analytics**.
7. On the **Messaging & Analytics** page, for **What engagement features do you want to enable?**, choose **Messaging**.
8. For **What Messaging Channels do you want to enable?**, choose **Email**.
9. For **Do you want to enable email messaging?**, choose **Enable**.
10. To verify your email address or domain, choose the **Amazon Pinpoint console** link. You are directed to the **Settings** page in the Amazon Pinpoint console, where you complete the following steps:

    a. Choose the email identity that you want to use: **Email address** or **Email domain**.

    b. Provide your email address or domain, and choose **Verify**. Then, follow the instructions displayed by 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 must add to the domain's DNS settings. For more information, see Domain Verification TXT Records (p. 10).

    For more information on verifying an email address or domain, see Email Address or Domain Verification (p. 9).

    c. When you finish, choose **Save**.
11. In the Mobile Hub console, for **What engagement features do you want to enable?**, choose **Analytics**, and choose **Enable**. With analytics enabled, Amazon Pinpoint provides metrics about your email campaign activity.

Email Address or Domain Verification

To confirm that you own an email address or domain, and to prevent others from using it, you must verify the address or domain.

Email Address Verification

When verifying your email address, consider the following:

- You can verify up to 10,000 identities (domains and email addresses, in any combination) per AWS account.
- You can apply labels to verified email addresses by adding a plus sign (+) and a string of text after the recipient's user name, 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 an unlimited number of labels on each verified address. You can use labels in the From and Return-Path fields to implement Variable Envelope Return Path (VERP). For more information about VERP, see http://en.wikipedia.org/wiki/Variable_envelope_return_path.

  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 cannot use other labels with that address.

Domain Verification

Before you can use Amazon Pinpoint to send emails from a domain, verify your domain to confirm that you own it and to prevent others from using it. When you verify an entire domain, you are verifying all email addresses from that domain, so 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 user1@example.com, user2@example.com, or any other user at example.com.

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 do not 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 as many as 10,000 identities (domains and email addresses, in any combination) per AWS account.

Domain Verification TXT Records

Your domain is associated with a set of Domain Name System (DNS) records that you manage through your DNS provider. A TXT record is a type of DNS record that provides additional information about your domain. Each TXT record consists of a name and a value.

When you initiate domain verification using the Amazon Pinpoint console or API, Amazon Pinpoint gives you the name and value to use for the TXT record. For example, if your domain is *example.com*, the TXT record settings that Amazon Pinpoint generates look similar to the following example.

Name	Type	Value
_amazonses.example.com	TXT	pmBGN/7MjnfhTKUZ06Enqq

Add a TXT record to your domain's DNS server using the specified **Name** and **Value**. Amazon Pinpoint domain verification is complete when Amazon Pinpoint detects the existence of the TXT record in your domain's DNS settings.

If your DNS provider does not allow DNS record names to contain underscores, you can omit *_amazonses* from the **Name**. In that case, for the preceding example, the TXT record name would be *example.com* instead of *_amazonses.example.com*. To make the record easier to recognize and maintain, you can optionally prefix the **Value** with *amazonses:*. In the previous example, the value of the TXT record would therefore be *amazonses:pmBGN/7MjnfhTKUZ06Enqq1PeGUaOkw8lGhcfwefcHU=*.

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. 13).

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 cannot monitor email activity outside of a 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 Streams or Amazon Kinesis Firehose. Then, you can use the Amazon Kinesis platform to analyze this email data. For more information, see Streaming Amazon Pinpoint Events to Amazon Kinesis (p. 53).

For examples of the event data that Amazon Pinpoint streams to Amazon 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 email channel.

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

Use the Amazon Pinpoint console to update the email settings for your project. You can enable the email channel for an existing project, or you can update your email address or domain.

To set up a new project with email support, see Creating an Amazon Pinpoint Project with Email Support (p. 8).

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 menu, choose **Settings**.
4. On the **Settings** page, choose **Channels**, and then choose **Email**.
5. If you haven't already, choose **Enable email channel**.
6. Choose the email identity that you want to add or update: **Email address** or **Email domain**.

7. Provide your email address or domain, and choose **Verify**. Then, follow the instructions displayed by 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 must add to the domain's DNS settings. For more information, see Domain Verification TXT Records (p. 10).

   For more information on verifying an email address or domain, see Email Address or Domain Verification (p. 9).
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. 10). 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**.
   - **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.

Amazon Pinpoint SMS Channel

You can enable the SMS channel in Amazon Pinpoint to send text messages, or *SMS messages*, to SMS-enabled devices.

You can manage SMS channel settings (p. 16) to tailor your SMS deliveries for your use cases and budget. For example, you can choose whether your messages are optimized for cost or for reliable delivery. You can also specify spending limits for individual message deliveries and monthly spending limits.

Note
Your SMS channel settings apply to all SMS messages that you send from your AWS account. This includes messages sent with AWS services other than Amazon Pinpoint.

Where required by local laws and regulations (such as the US and Canada), SMS recipients can opt out (p. 17), which means that they choose to stop receiving SMS messages from your AWS account.

You can use Amazon Pinpoint to send SMS messages to more than 200 countries. For more information, see Supported Countries (p. 17).

Topics

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 create a new project with SMS support by using AWS Mobile Hub. In the AWS Mobile Hub console, create a project, and add the **Messaging & Analytics** feature. Then, enable the SMS channel as part of that feature. After you create a project in Mobile Hub, the project becomes available in Amazon Pinpoint.

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. 16).

To create a project with SMS support

1. Sign in to the AWS Management Console and open the Mobile Hub console at https://console.aws.amazon.com/mobilehub.
2. If you have other Mobile Hub projects, choose **Create new mobile project**. If this is your first project, skip this step because you are taken directly to the page for creating a new project.
3. Enter a project name. The name you enter will be the name of your project in the Amazon Pinpoint console.
4. For the region, keep **US East (Virginia)**.
5. Choose **Create project**. Mobile Hub creates the project and shows the **Pick and configure features for your project** page.
6. Choose **Messaging & Analytics**.
7. On the **Messaging & Analytics** page, for **What engagement features do you want to enable?**, choose **Messaging**.
8. For **What Messaging Channels do you want to enable?**, choose **SMS**.
9. For **Do you want to enable SMS messaging?**, choose **Enable**.
10. For **What engagement features do you want to enable?**, choose **Analytics**, and choose **Enable**. With analytics enabled, Amazon Pinpoint provides metrics about your SMS campaign activity.

In the Amazon Pinpoint console, you can specify SMS preferences. For more information, see Managing the Amazon Pinpoint SMS Channel (p. 16).

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 Streams or Amazon Kinesis Firehose. Then, you can use the Amazon Kinesis platform to analyze your SMS data. For more information, see Streaming Amazon Pinpoint Events to Amazon Kinesis (p. 53).

For examples of the event data that Amazon Pinpoint streams to Amazon 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.

Managing the Amazon Pinpoint SMS Channel

Use the Amazon Pinpoint console to enable the SMS channel and specify preferences, such as how your deliveries are optimized (for cost or for reliable delivery) and your monthly spending limit.

Updating SMS Settings

Your SMS channel settings apply to all SMS messages that you send from for your AWS account. This includes messages sent with AWS services other than Amazon Pinpoint.

To update SMS 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 SMS settings.
3. In the navigation menu, choose **Settings**.
4. On the **Settings** page, choose **Channels**, and then choose **SMS**.
5. If you haven't already, choose **Enable SMS channel**.
6. For **Default message type**, select the type of SMS message that you will usually send:

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

   You can override this setting when you send a message.
7. For **Account spend limit**, type the maximum amount, in USD, that you want to spend on SMS messages each calendar month. When Amazon Pinpoint determines that sending an SMS message would incur a cost that exceeds your spend limit for that month, Amazon Pinpoint 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 may incur costs that exceed your limit.

   By default, the spend limit is 1.00 USD. If you want to raise the limit, submit an Amazon Pinpoint limit increase case. For **New limit value**, enter your desired monthly spend limit. In the **Use Case Description** field, explain that you are requesting an SMS monthly spend limit increase.

8. For **Default 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. For more information, see Supported Countries (p. 17).

   You can override the this setting when you send a message.

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.

Supported Countries

You can use Amazon Pinpoint to send SMS messages to the following countries.

Support for sender IDs varies by country. For example, messages delivered to U.S. phone numbers will not display the sender ID. If you do not specify a sender ID when you send an SMS message, the message will display a long code as the sender ID in supported countries. For countries that require an alphabetic sender ID, the message displays *NOTICE* as the sender ID.

Country	ISO Code	Supports Sender IDs
Afghanistan	AF	
Albania	AL	Yes
Algeria	DZ	
Andorra	AD	Yes
Angola	AO	Yes
Anguilla	AI	Yes
Antigua and Barbuda	AG	Yes
Argentina	AR	

Country	ISO Code	Supports Sender IDs
Armenia	AM	Yes
Aruba	AW	Yes
Australia	AU	Yes
Austria	AT	Yes
Azerbaijan	AZ	
Bahamas	BS	Yes
Bahrain	BH	Yes
Bangladesh	BD	
Barbados	BB	Yes
Belarus	BY	Yes
Belgium	BE	
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	
Brunei	BN	Yes
Bulgaria	BG	Yes
Burkina Faso	BF	Yes
Burundi	BI	Yes
Cambodia	KH	Yes
Cameroon	CM	Yes
Canada	CA	
Cape Verde	CV	Yes
Cayman Islands	KY	Yes
Central African Republic	CF	Yes
Chad	TD	Yes
Chile	CL	

Country	ISO Code	Supports Sender IDs
China	CN	
Colombia	CO	
Comoros	KM	Yes
Cook Islands	CK	Yes
Costa Rica	CR	
Croatia	HR	
Cyprus	CY	Yes
Czech Republic	CZ	Yes
Democratic Republic of the Congo	CD	
Denmark	DK	Yes
Djibouti	DJ	Yes
Dominica	DM	Yes
Dominican republic	DO	
East Timor	TL	
Ecuador	EC	
Egypt	EG	
El Salvador	SV	
Equatorial Guinea	GQ	Yes
Estonia	EE	Yes
Ethiopia	ET	
Faroe Islands	FO	Yes
Fiji	FJ	Yes
Finland	FI	Yes
France	FR	Yes
French Guiana	GF	
Gabon	GA	Yes
Gambia	GM	Yes
Georgia	GE	Yes
Germany	DE	Yes
Ghana	GH	

Country	ISO Code	Supports Sender IDs
Gibraltar	GI	Yes
Greece	GR	Yes
Greenland	GL	Yes
Grenada	GD	Yes
Guadeloupe	GP	Yes
Guam	GU	
Guatemala	GT	
Guinea	GN	Yes
Guinea-Bissau	GW	Yes
Guyana	GY	Yes
Haiti	HT	Yes
Honduras	HN	
Hong Kong	HK	Yes
Hungary	HU	
Iceland	IS	Yes
India	IN	
Indonesia	ID	
Iraq	IQ	
Ireland	IE	Yes
Israel	IL	Yes
Italy	IT	Yes
Ivory Coast	CI	
Jamaica	JM	Yes
Japan	JP	
Jordan	JO	Yes
Kazakhstan	KZ	
Kenya	KE	
Kiribati	KI	
Kuwait	KW	
Kyrgyzstan	KG	
Laos	LA	

Country	ISO Code	Supports Sender IDs
Latvia	LV	Yes
Lebanon	LB	Yes
Lesotho	LS	Yes
Liberia	LR	Yes
Libya	LY	Yes
Liechtenstein	LI	Yes
Lithuania	LT	Yes
Luxembourg	LU	Yes
Macau	MO	Yes
Macedonia	MK	Yes
Madagascar	MG	Yes
Malawi	MW	Yes
Malaysia	MY	
Maldives	MV	Yes
Mali	ML	
Malta	MT	Yes
Martinique	MQ	Yes
Mauritania	MR	Yes
Mauritius	MU	Yes
Mexico	MX	
Moldova	MD	Yes
Monaco	MC	
Mongolia	MO	Yes
Montenegro	ME	Yes
Montserrat	MS	Yes
Morocco	MA	
Mozambique	MZ	
Myanmar	MM	
Namibia	NA	
Nepal	NP	
Netherlands	NL	Yes

Country	ISO Code	Supports Sender IDs
Netherlands Antilles	AN	Yes
New Caledonia	NC	Yes
New Zealand	NZ	
Nicaragua	NI	
Niger	NE	Yes
Nigeria	NG	Yes
Norway	NO	Yes
Oman	OM	
Pakistan	PK	
Palau	PW	
Palestinian Territory	PS	Yes
Panama	PA	
Papua New Guinea	PG	Yes
Paraguay	PY	Yes
Peru	PE	Yes
Philippines	PH	
Poland	PL	Yes
Portugal	PT	Yes
Puerto Rico	PR	
Qatar	QA	
Republic of the Congo	CG	
Reunion Island	RE	Yes
Romania	RO	
Russia	RU	Yes
Rwanda	RW	Yes
Saint Kitts and Nevis	KN	
Saint Lucia	LC	
Saint Vincent and the Grenadines	VC	
Samoa	WS	Yes
Sao Tome and Principe	ST	Yes

Country	ISO Code	Supports Sender IDs
Saudi Arabia	SA	
Senegal	SN	Yes
Serbia	RS	
Seychelles	SC	Yes
Sierra Leone	SL	Yes
Singapore	SG	Yes
Slovakia	SK	Yes
Slovenia	SI	Yes
Solomon Islands	SB	Yes
Somalia	SO	Yes
South Africa	ZA	
South Korea	KR	
South Sudan	SS	Yes
Spain	ES	Yes
Sri Lanka	LK	
Suriname	SR	Yes
Swaziland	SZ	Yes
Sweden	SE	Yes
Switzerland	CH	Yes
Taiwan	TW	
Tajikistan	TJ	Yes
Tanzania	TZ	Yes
Thailand	TH	
Togo	TG	Yes
Tonga	TO	Yes
Trinidad and Tobago	TT	Yes
Tunisia	TN	
Turkey	TR	
Turkmenistan	TM	Yes
Turks and Caicos Islands	TC	Yes
Uganda	UG	Yes

Country	ISO Code	Supports Sender IDs
Ukraine	UA	Yes
United Arab Emirates	AE	
United Kingdom	GB	Yes
United States	US	
Uruguay	UY	
Uzbekistan	UZ	Yes
Vanuatu	VU	Yes
Venezuela	VE	
Vietnam	VN	
Virgin Islands, British	VG	Yes
Virgin Islands, US	VI	
Yemen	YE	Yes
Zambia	ZM	Yes
Zimbabwe	ZW	Yes

Amazon Pinpoint Segments

A user *segment* represents a subset of your audience based on shared characteristics, such as how recently the users have used your application or which device platform they use. A segment designates who receives the messages delivered by a campaign. Define segments so that you can reach the right audience when you want to invite users back to your application, make special offers, or otherwise increase user engagement and purchasing.

You can add segments to Amazon Pinpoint in either of the following ways:

- Building segments (p. 25) by choosing selection criteria that is based on data that your application reports to Amazon Pinpoint.
- Importing segments (p. 27) that you defined outside of Amazon Pinpoint.

After you create a segment, you can use it in one or more campaigns. A campaign delivers tailored messages to the users in the segment.

Topics

Building Segments

To reach the intended audience for a campaign, build a segment based on the data reported by your application.

For example, to reach users who haven't used your mobile app recently, you can define a segment for users who haven't used your app in the last 7 days.

User segments are defined by various criteria, including but not limited to:

- How recently they used your application
- The operating system they use

- The model of mobile device they use

Because the segment is built from segmentation criteria, it is dynamic, meaning the end users who belong to the segment vary over time based on user activity. For example, if your segment includes users who haven't used your application recently, users who respond to a campaign by using your application are removed from the segment.

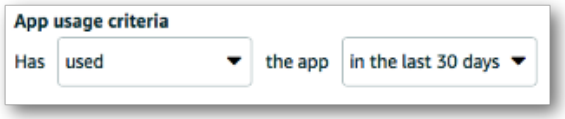
To create a static segment, which includes a fixed set of end users, import endpoints that represent those users. For more information, see Importing Segments (p. 27).

You can create segments separately from campaigns to assemble a collection of segments for multiple campaigns. You also can create a segment when creating a campaign (p. 32).

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 **New segment**.
5. For **Segment name**, type a name for your segment to make it easy to recognize later.
6. For **How would you like to define your segment**, keep **Build segment** selected.

7. For **What messaging channel do you want to use?**, choose the channel you will use to engage the segment with a campaign. The channel must be enabled in your Amazon Pinpoint project. For more information, see Amazon Pinpoint Channels (p. 5).
8. If you selected **Mobile push** as the channel type, define the **App usage criteria**. Select which users belong to the segment based on whether they have (or haven't) used your app within the specified number of days.



9. (Optional) For **Filter by standard attributes**, define which users belong to the segment based on the characteristics that are standard to Amazon Pinpoint.

10. (Optional) For **Filter by custom attributes** and **Filter by user attributes**, define which users belong to the segment based on custom attributes that you add to your Amazon Pinpoint endpoint resources.
11. When you are finished selecting criteria, choose **Create segment**.

Importing Segments

With Amazon Pinpoint, you can define a user segment by importing information about the users who belong to the segment.

Importing segments is useful if you have segments for your users 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 a fixed set of endpoints. Each endpoint represents a user. When Amazon Pinpoint sends a message to the segment, it sends the message to each of the segment's endpoints.

When you import a segment, Amazon Pinpoint gets the segment's endpoints from Amazon Simple Storage Service (Amazon S3). Before you import, you add the endpoints to Amazon S3, and you create an IAM role that grants Amazon Pinpoint access to Amazon S3. Then, you give Amazon Pinpoint the Amazon S3 location where the endpoints are stored, and Amazon Pinpoint adds each endpoint to the segment.

Adding Endpoints to Amazon S3

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

Before you import, create an S3 bucket and upload your endpoints to that bucket. Organize the endpoints for separate segments into separate folders. When Amazon Pinpoint imports the endpoints for a segment, it includes the endpoints 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. For Amazon S3 documentation for developers, see the Amazon Simple Storage Service Developer Guide.

Amazon Pinpoint can import endpoints that are written in either of the following formats:

- Newline-delimited JSON
- Comma-separated values (CSV) files

Amazon Pinpoint can import only one of these formats per segment, so your S3 bucket should contain only one format type. For examples of both formats, see Endpoint Files (p. 30).

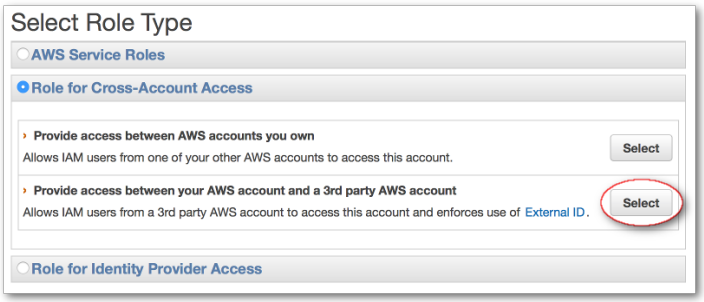
Creating an IAM Role for Importing

By default, Amazon Pinpoint does not have access to your S3 bucket. Before you can import endpoints for a segment, create an IAM role that allows Amazon Pinpoint to get the endpoints from Amazon S3.

To create the IAM role

1. Sign in to the IAM console at https://console.aws.amazon.com/iam/.

2. In the navigation pane, choose **Roles**, and choose **Create New Role**.
3. For the **Set Role Name** step, type a custom name to make the role easy to recognize later, and choose **Next Step**.
4. For the **Select Role Type** step, expand the **Role for Cross-Account Access** section. For **Provide access between your AWS account and a 3rd party AWS account**, choose **Select**.

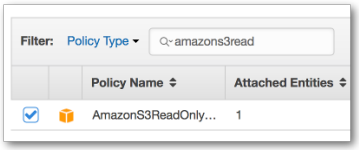


5. For the **Establish Trust** step, specify the following values:

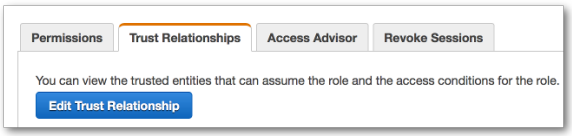
   - **Account ID** — Your 12-digit AWS account ID. Enter this value so that you can finish creating the policy. In a later step, you will replace your account ID with the Amazon Pinpoint service principal.
   - **External ID** — A unique, custom ID that restricts who can assume the role. Note your external ID because you will provide it when you import the endpoints for a segment.

   Then, choose **Next Step**.
6. For the **Attach Policy** step, select the **AmazonS3ReadOnlyAccess** policy, and choose **Next Step**.

   Tip
   To quickly find a policy, use the **Filter**.



7. For the **Review** step, check the details for your role, and choose **Create Role**.
8. In the list of roles, choose the role that you created to view the role details page.
9. In the **Trust Relationships** tab, choose **Edit Trust Relationship**.



   The **Edit Trust Relationship** page opens with the access control policy in the editor.
10. For the `Principal` object in your access control policy, replace:

```
"AWS": "arn:aws:iam::your-account-id:root"
```

    With:

```
"Service": "pinpoint.us-east-1.amazonaws.com"
```

    The complete trust policy should be the following:

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Principal": {
        "Service": "pinpoint.us-east-1.amazonaws.com"
      },
      "Action": "sts:AssumeRole",
      "Condition": {
        "StringEquals": {
          "sts:ExternalId": "myExternalId"
        }
      }
    }
  ]
}
```

When you're finished, choose **Update Trust Policy**.

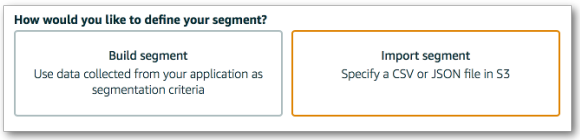
11. On the role details page, note the **Role ARN** because you will provide it when you import the endpoints for a segment.

Importing a Segment

You can create a segment by importing the segment's endpoints 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 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 **New segment**.
5. For **Segment name**, type a name for your segment to make it easy to recognize later.
6. For **How would you like to define your segment**, choose **Import segment**.



7. For **Amazon S3 URL**, type the Amazon S3 location that contains the endpoints for your segment. The URL should follow this format:

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

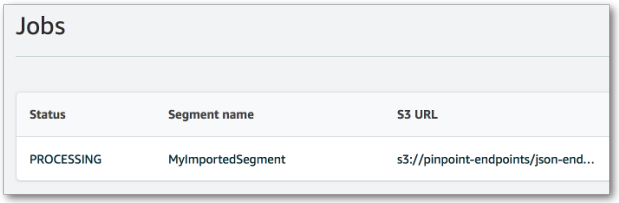
Amazon Pinpoint will import endpoints from this location and any subfolders it contains.

8. For **IAM role ARN** specify the Amazon Resource Name (ARN) of the IAM role that you created to grant Amazon Pinpoint access to Amazon S3.

9. For **External ID**, type the external ID that you assigned to the IAM role.

   If you need to reference the ID, go to the IAM console and choose the role to open its details page. Then, open the **Trust Relationships** tab. The external ID is provided in the **Conditions** section.
10. For **What is the format of the file**, choose the format of your endpoint files in Amazon S3: either **CSV** or **JSON**.
11. Choose **Import Segment**. Amazon Pinpoint imports the endpoints from the specified Amazon S3 location and adds them to your segment.

    The **Jobs** page provides the status of your import. Refresh your browser to see the current status.



Endpoint Files

Each endpoint represents an end user. You can define endpoints with newline-delimited JSON or CSV files.

We recommend that you import complete endpoint definitions, but if you want to minimize the endpoint attributes that you import, the required attributes are as follows:

- If the endpoint is already registered with Amazon Pinpoint, the `Id` attribute is required.
- If the endpoint is not registered with Amazon Pinpoint, the `Address` and `ChannelType` attributes are required.

If you import an endpoint that is already registered, Amazon Pinpoint will update the registered endpoint with the data that you import.

Do not compress your endpoint files. Use UTF-8 character encoding.

JSON Example of an Endpoint File

Amazon Pinpoint can import an endpoint that is defined with newline-delimited JSON, as in the following example:

```
{"ChannelType":"APNS","Address":"1a2b3c4d5e6f7g8h9i0j1a2b3c4d5e6f","Demographic":
{"Make":"apple"}}
{"ChannelType":"GCM","Address":"4d5e6f1a2b3c4d5e6f7g8h9i0j1a2b3c","Demographic":
{"Make":"android"}}
```

Each line contains an individual endpoint definition. For readability, each definition contains only a few attributes.

CSV Example of an Endpoint File

Amazon Pinpoint can import endpoints that are defined in a .csv file, as in the following example:

```
ChannelType,Address,Demographic.Make
APNS,1a2b3c4d5e6f7g8h9i0j1a2b3c4d5e6f,iPhone
```

```
GCM,4d5e6f1a2b3c4d5e6f7g8h9i0j1a2b3c,android
```

For readability, this example shows only a few attributes. For all attributes, see Endpoints in the Amazon Pinpoint API Reference.

The first line is the header, which contains the endpoint attributes. These attributes are the same as those in the endpoint JSON format. Use a period to address attributes that are nested in the JSON structure. For example, the header for the device make is `Demographic.Make`.

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

If you want 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.

Managing Segments

Using Amazon Pinpoint, you can update a segment's settings, copy it to make a new segment, delete the segment, and more.

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 for which you want to manage segments.
3. On the navigation menu, choose **Segments**.
4. On the **Segments** page, choose the segment that you want to manage.

On the **Segment** page, for a segment that is built from segmentation criteria (p. 25), you can do the following:

- **Create campaign** – Create a campaign (p. 32) in which the campaign's segment is automatically set as the segment you are managing.
- **Copy to new** – Copy the segment to use its settings as a template for a new segment, in which you can change or keep any of the original settings.
- **Edit segment** – Change any of the segment's settings, such as the segmentation criteria that define which users belong to the segment.
- **Delete segment** – Remove the segment from Amazon Pinpoint. The segment becomes unavailable for future campaigns, but preexisting campaigns that use the segment are unaffected.

For an imported segment (p. 27), you can do the following:

- **Create campaign** – Create a campaign (p. 32) in which the campaign's segment is automatically set as the segment you are managing.
- **Reimport segment** – Update the segment with the endpoint files that are currently stored in the Amazon S3 location from which you originally imported the segment.
- **Delete segment** – Remove the segment from Amazon Pinpoint. The segment becomes unavailable for future campaigns, but preexisting campaigns that use the segment are unaffected.

Amazon Pinpoint Campaigns

A *campaign* is a messaging initiative that engages a specific audience segment (p. 25). 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. 42) instead of creating a campaign.

Topics

Step 1: Begin a New Campaign

Use the Amazon Pinpoint console to create a campaign. You will:

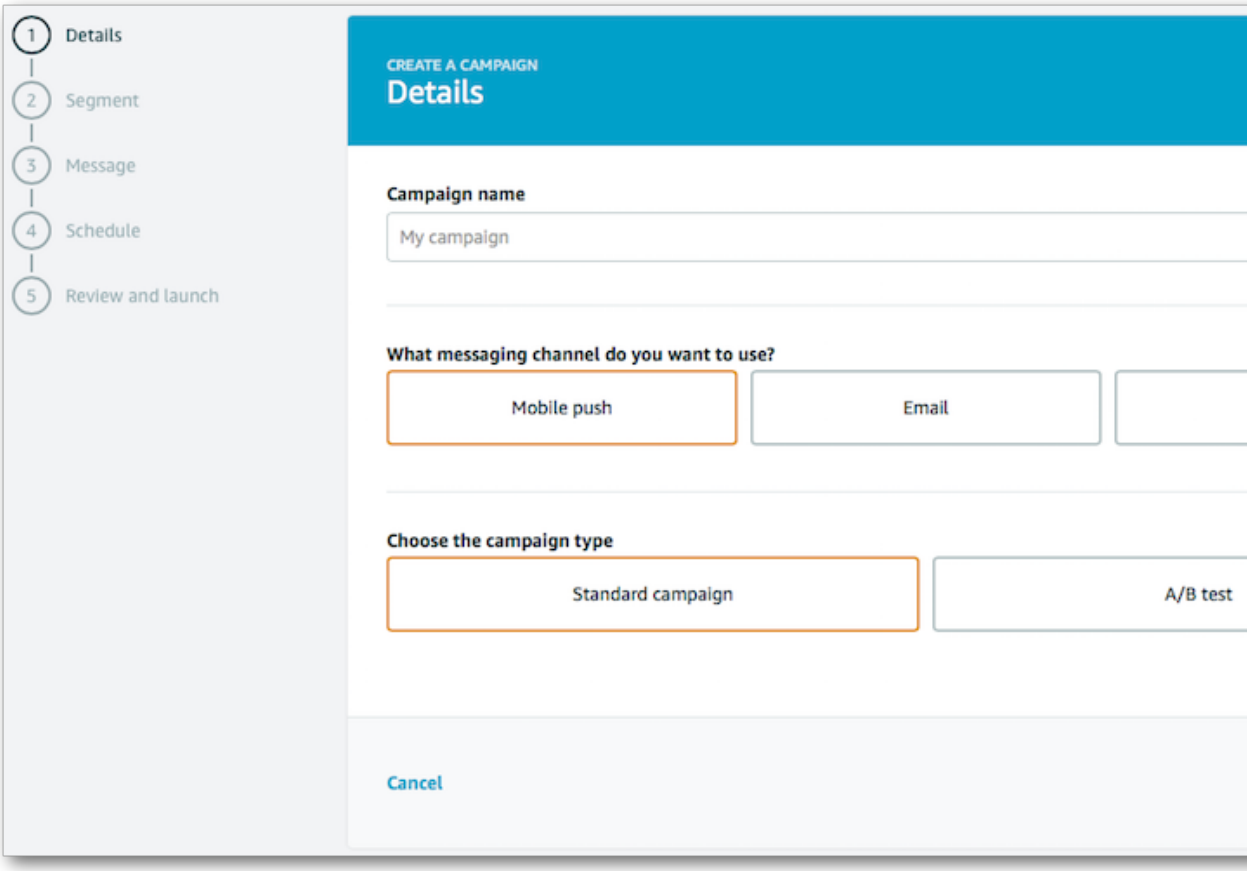
- Choose the messaging channel (mobile push, email, or SMS).

- Choose the user segment for the campaign.
- Write the message.
- Define the schedule on which the campaign runs.

Optionally, you can set up your campaign as an A/B test to experiment with different treatments of the message or schedule. As users respond to your campaign, you can view campaign analytics to compare the effectiveness of each treatment.

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 for which you want to create a campaign.
3. In the navigation menu, choose **Campaigns**. The **Campaigns** page opens, and it displays summary information for previously defined campaigns.
4. Choose **New campaign**. The **Create a campaign** page opens at the **Details** step.



5. For **Campaign name**, type a name to make the campaign easy to recognize later.
6. For **What messaging channel do you want to use?**, choose the channel you will use to deliver your message. The channel must be enabled in your Amazon Pinpoint project. For more information, see Amazon Pinpoint Channels (p. 5).
7. For **Choose the campaign type**, choose one of the following:

   - **Standard campaign** – Sends a custom message to a specified segment according to 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.

8. If you choose to create an A/B test, for **Choose what you will test for**, choose whether you will test variations of the campaign's **Messages** or **Schedule**.

9. Choose **Next step**.

Next

Step 2: Specify the Audience Segment for the Campaign (p. 34)

Step 2: Specify the Audience Segment for the Campaign

When creating a campaign, you can specify which audience segment to reach with your campaign by creating a new segment or choosing one that was previously created.

Prerequisite

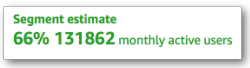
Before you begin, complete Step 1: Begin a New Campaign (p. 32).

To specify a segment

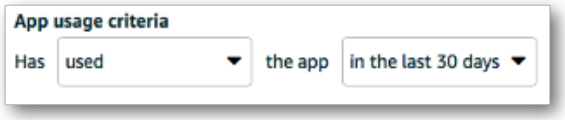
- For the **Segment** step in **Create a campaign**, specify a segment in one of the following ways:
  - Choose **Create a new segment** and follow the steps under *To build a segment*.
  - Choose **Use a previously defined segment** and select the segment that you want to target. Then, choose **Next step**.

To build a segment

To build your segment, define the segmentation criteria. As you choose criteria, the **Segment estimate** shows how many users the segment includes.



1. For **Name your segment to reuse it later**, type a name to make your segment easy to recognize.
2. If you selected **Mobile push** as the channel type, define the **App usage criteria**. Select which users belong to the segment based on whether they have (or haven't) used your app within the specified number of days.



3. (Optional) For **Filter by standard attributes**, define which users belong to the segment based on the characteristics that are standard to Amazon Pinpoint.

4. (Optional) For **Filter by custom attributes** and **Filter by user attributes**, define which users belong to the segment based on custom attributes that you add to your Amazon Pinpoint endpoint resources.
5. If you chose to create a standard campaign, you can use this page to allocate the **holdout**, which is the percentage of users in the segment who will not receive messages from the campaign.

   If you're creating an A/B test, you allocate the holdout when you define the message or schedule.
6. When you finish defining the segment, choose **Next step**.

Next

Step 3: Write the Message (p. 35)

Step 3: Write the Message

Write the message that your campaign delivers to your audience segment. If you chose to create a standard campaign, you write a single message, which you can revise after you launch the campaign.

If you chose to create an A/B test for your campaign's message, you define two or more *treatments*, which are variations of your message that the campaign sends to different portions of the segment. You cannot revise your treatments after you launch the campaign.

Prerequisite

Before you begin, complete Step 2: Specify the Audience Segment for the Campaign (p. 34).

Writing a Mobile Push Message

If you chose **Mobile push** as the channel type, write the push notification that your campaign sends to your user segment, and choose the action that occurs when a user opens the notification.

Choose the notification type

- Choose the type of notification that your campaign delivers:

  - **Standard notification** – A push notification with a title and message. Users 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 alerting users. Use silent notifications to send data that your app code is designed to receive and handle, for example to update the app's configuration or to show messages in the app.

To write a standard notification

1. If you previously saved a template that you want to use for your message, load it by choosing **Load template**. The **Title** and **Message** are populated with the contents of the 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 right edge of the field counts down from 200 as you enter the text of the message.

   When you finish writing your message, you can save it as a template for later use by choosing **Save as template**.
4. 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 web page at the URL you specify. For example, this action can be useful for sending users to a blog post.
   - **Deep link** – Your app opens and displays a designated user interface. Deep link is an iOS and Android feature. For example, this action can be useful to direct users to special promotions for in-app purchases.
5. (Optional) In the **Media URLs** section, 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.
6. If you are creating an A/B test for the campaign message, complete steps under *Creating a Message A/B Test*. Otherwise, choose **Next step**.

Writing an Email Message

If you chose **Email** as the channel type, write the email that your campaign sends to your user segment.

1. If you previously saved a template that you want to use for your message, load it by choosing **Load template**. The **Subject** and **Message** are populated with the contents of the template.
2. For **Subject**, type the subject for your email.

3. For **Message**, type the email body. You can use the rich text editor to format your message:

   To write your message body as HTML, choose the source icon:

   When you finish writing your message, you can save it as a template for later use by choosing **Save as template**.
4. (Optional) Under **Plain text message**, type a version of your message for email clients that accept only plain text emails.
5. If you are creating an A/B test for the campaign message, complete steps under *Creating a Message A/B Test*. Otherwise, choose **Next step**.

Writing an SMS Message

If you selected **SMS** as the channel type, write the text message that your campaign sends to your user segment.

1. If you previously saved a template that you want to use for your message, load it by choosing **Load template**. The **Message** is populated with the contents of the template.
2. 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.

   This campaign-level setting overrides your default message type, which you set on the **Settings** page.
3. For **Message**, type the message body.

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

   When you finish writing your message, you can save it as a template for later use 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. For more information, see Supported Countries (p. 17).

   This message-level sender ID overrides your default sender ID, which you set on the **Settings** page.
5. If you are creating an A/B test for the campaign message, complete steps under *Creating a Message A/B Test*. Otherwise, choose **Next step**.

Creating a Message A/B Test

For a campaign that includes an A/B test of the message, define two or more message treatments.

1. To help you start, Amazon Pinpoint provides two treatments. If you want more treatments, choose **Add more**.

2. For each treatment, do the following:

   a. Customize the treatment name to make it easy to recognize later.
   b. Define the message settings and write the message content.
   c. Set the **Treatment allocation** to specify the percentage of users in the segment who will receive the message for the treatment.

      As you set the allocation for each treatment, the **Holdout** value adjusts to represent the total percentage of users who will not receive messages delivered by this campaign.

3. When you finish defining your treatments, choose **Next step**.

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. 39)

Step 4: Set the Campaign Schedule

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.

If you chose to create a standard campaign, you set only one schedule. After you launch the campaign, you can change any of the schedule's settings except for the frequency.

If you chose to create an A/B test for your campaign's schedule, you define two or more *treatments*, which are variations of the schedule that apply to different portions of the segment. You cannot revise your treatments after you launch the campaign.

Prerequisite

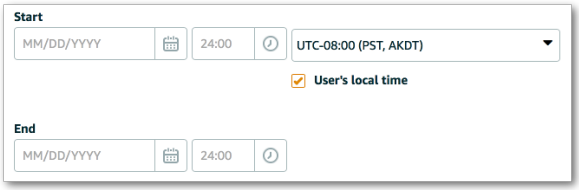
Before you begin, complete Step 3: Write the Message (p. 35).

To set a schedule

1. Select the frequency with which the campaign runs. The default selection is once, but you can choose a recurring frequency (such as **Weekly**), or you can choose **Immediate** to send the message when you launch the campaign.

2. Unless you are sending the message immediately, choose when the message is sent:

   - If you chose to send the message only once, for **When**, select the date, time, and time zone.
   - If you chose a recurring frequency, for **Start**, select the date, time, and time zone for the beginning of the campaign. The default date is the current date and the default time is immediately (approximately 15 minutes from the current time). For **End**, select a date and time to end the campaign.



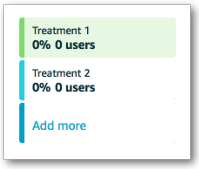
3. Enable **User's local time** if you want to make the schedule take effect according to each recipient's local time. For example, if the campaign start time is 2:00 PM, and the time zone is UTC-05:00 (Eastern Standard Time), then recipients in New York receive the message at 2:00 PM in their local time. One hour later, when the campaign sends its message for UTC-06:00 (Central Standard Time), users in Kansas City receive the message at 2:00 PM in their local time.

   Disable **User's local time** if you want all recipients to receive the message simultaneously, regardless of their local time. For example, this can be useful if you want to send a critical alert to all of your organization's employees at the same moment.

4. For **Quiet Time Start** and **Quiet Time End**, set the time interval during which your campaign sends no messages. For example, set a quiet time to ensure users receive no messages at night. The quiet time takes effect in each user's local time, regardless of whether the **User's local time** option is disabled.
5. If you are creating an A/B test for the campaign schedule, use the following steps. Otherwise, choose **Next step** to move on to the final step.

To create a schedule A/B test

1. To help you start, Amazon Pinpoint provides two treatments. If you want more treatments, choose **Add more**.



2. For each treatment, do the following:

   a. Customize the treatment name to make it easy to recognize later.
   b. Set the schedule.
   c. Set the **Treatment Allocation** to specify the percentage of users in the segment who will receive messages according to the treatment's schedule.

      As you set the allocation for each treatment, the **Holdout** value adjusts to represent the total percentage of users who will not receive messages delivered by the campaign.
3. When you are finished defining your treatments, choose **Next step**.

Next

Step 5: Review and Launch the Campaign (p. 40)

Step 5: Review and Launch the Campaign

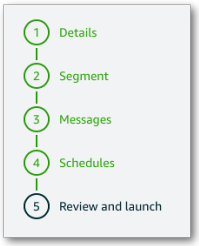
Before you launch the campaign, review your settings and make changes if needed.

Prerequisite

Before you begin, complete Step 4: Set the Campaign Schedule (p. 39).

To review and launch a campaign

1. For the **Review and launch** step, review the campaign settings. If you need to make changes, choose an earlier stage in the campaign creation process.



2. If all of the settings are correct, choose **Launch campaign**. The console displays the **Campaign details** page for your campaign.

After you launch the campaign, it runs according to the schedule specified. You can monitor campaign analytics to measure the success of the campaign, and you can manage the campaign from its details page.

Managing Campaigns

Using Amazon Pinpoint, you can pause a campaign to suspend message deliveries, update its settings, copy it to make a new campaign, and more.

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 menu, choose **Campaigns**.
4. On the **Campaigns** page, choose the campaign that you want to manage.

On the **Campaign details** page, you can do the following:

- **Pause** – Stop sending messages until you resume the campaign. This option is available only for recurring campaigns that you created.
- **Copy to new campaign** – 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.
- **Edit campaign** – Change the campaign's settings, such as the campaign name, the segment to which it sends messages, the message it delivers, and schedule settings (except for the frequency). If you are editing an A/B test campaign, you cannot edit the message or schedule treatments.
- **Delete campaign** – Remove the campaign from Amazon Pinpoint and stop sending messages through the campaign.
- View **Campaign analytics** – Go to the **Analytics** page to view analytics for the campaign.

Direct Messages with Amazon Pinpoint

With Amazon Pinpoint, you can send a *direct message*, which is a one time message that you send to a limited audience without creating a campaign. Sending a direct message is useful if, before creating a campaign, you want to test how your message appears to recipients.

You can send the message to up to 15 recipients. You cannot use the message to engage a segment. When you send the message, Amazon Pinpoint delivers it immediately, and you cannot schedule the delivery. To engage a user segment, and to schedule the message delivery, create a campaign (p. 32) instead of sending a direct message.

You can send a direct message as a push notification to your mobile app or as an SMS message to SMS-enabled devices.

Send direct messages by using the **Direct** page in the Amazon Pinpoint console.

To access the Direct 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 **Direct**.

Sending a Mobile Push Notification

To send a direct push notification, you must use a project in which the mobile push channel is enabled. To create a new project with mobile push support, see Setting up Amazon Pinpoint Mobile Push Channels (p. 6). To add mobile push support to an existing project, see Managing Mobile Push Channels with Amazon Pinpoint (p. 7).

You can send push notifications through Apple Push Notification service (APNs), Firebase Cloud Messaging (FCM), or the FCM predecessor, Google Cloud Messaging (GCM).

To send a direct push notification

1. On the **Direct** page, choose **Mobile push**.
2. For **Destination type**, choose one of the following destinations for your message:

   - **Endpoint ID** – Each destination is a unique ID assigned to an Amazon Pinpoint *endpoint* resource.
   - **Device token** – Each destination is a token assigned to the instance of the app that you are messaging. This can be the device token assigned by APNs or the registration token assigned by FCM or GCM.
3. Depending on your selection for **Destination type**, type one or more **Endpoint IDs** or **Device tokens**. You can type up to 15 values. Separate each on its own line.

   If you use device tokens as the destination type, specify tokens assigned only by Apple (APNs) or only by Google (FCM or GCM). Amazon Pinpoint can send the message through only one of these push notification providers 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 either push notification provider.
4. For **Service**, specify the push notification service through which you are sending the message: **FCM/GCM** or **APNs**. If you use endpoint IDs as the destination type, Amazon Pinpoint detects the service automatically.
5. If you previously saved a template that you want to use for your message, load it by choosing **Load template**. The **Title** and **Message** are populated with the contents of the template.
6. For **Title**, type the title you want to display above the message.
7. For **Message**, type the message body. A character counter below the right edge of the field counts down from 200 as you enter the text of the message.

   When you finish writing your message, you can save it as a template for later use by choosing **Save as template**.
8. 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.
   - **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.
9. (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.
10. When you finish, choose **Send**.

Sending an SMS Message

To send a direct SMS message, you must 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. 15). To add SMS support to an existing project, see Managing the Amazon Pinpoint SMS Channel (p. 16).

To send a direct SMS message

1. On the **Direct** page, choose **SMS**.
2. For **Destination type**, choose one of the following destinations for your message:

- **Endpoint ID** – Each destination is a unique ID assigned to an Amazon Pinpoint *endpoint* resource.
- **Phone number** – Each destination is the recipient's phone number.

3. Depending on your selection for **Destination type**, type one or more **Endpoint IDs** or **Phone numbers**. You can type up to 15 values. Separate each on its own line.

   If you use phone numbers as the destination type, specify each number using 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 +1206XXX5550100.
4. 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.

   This message-level setting overrides your default message type, which you set on the **Settings** page.
5. If you previously saved a template that you want to use for your message, load it by choosing **Load template**. The **Message** is populated with the contents of the template.
6. For **Message**, type the message body.

   The character limit for a single SMS message is 160. A character counter below the right edge of the field counts down from 160 as you enter the text of the message.

   When you finish writing your message, you can save it as a template for later use by choosing **Save as template**.
7. (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. For more information, see Supported Countries (p. 17).

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

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.

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. 50), purchase activity (p. 51), and demographics (p. 49). 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. 47) 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. 51) 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 or Amazon S3 (p. 53).

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

On the **Analytics** page, Amazon Pinpoint provides an **overview** of key metrics, and it provides details for **campaigns**, **demographics**, **funnels**, **usage**, and **revenue**. For further analysis, you can choose any **event** that is reported by your app to see related trends.

Topics

Overview Charts

The charts on the **Overview** tab summarize metrics related to user engagement and campaigns.

Active targetable users

The number of users who have been registered to Amazon Pinpoint as an endpoint in the previous 30 days. Does not include users who have opted out of notifications.

Daily active users

Users who opened your app on a specific day.

Monthly active users

Users who opened your app in the previous 30 days.

New users

Users who opened your app for the first time.

Sessions

Number of times your app was opened.

7-day retention rate

Out of the users who opened your app 8 days ago, the percentage who opened it again in the following 7 days.

Campaigns

Open rate –Percentage of recipients who opened your app after receiving a push notification from a campaign.

Delivered – Messages that were successfully sent to the push notification services for iOS and Android.

Active campaigns – Campaigns that are scheduled to start, pending their next run, or currently running. Does not include campaigns that are complete, paused, or deleted.

Revenue

Total spent within your app by all users.

Campaigns Charts

The charts on the **Campaigns** tab provide the following aggregate information from all of the campaigns for the app.

Active users

Users who opened your app in the previous 30 days.

Delivered

Messages that were successfully sent to the push notification services for iOS and Android.

Open rate

Percentage of recipients who opened your app after receiving a push notification from a campaign.

Opt out rate

Percentage of users who chose not to receive push notifications for your app.

Each campaign for the app is summarized with the following metrics.

Type

Standard – Sends a customized push notification to a specified segment.

A/B test – Includes 2 or more treatments for the message or schedule.

Schedule

The frequency with which the campaign sends push notifications.

User devices messaged

User devices to which the campaign sent push notifications.

Delivered

Messages that were successfully sent to the push notification services for iOS and Android.

Open rate

Percentage of recipients who opened your app after receiving a push notification from a campaign.

Individual Campaign Charts – Standard

In addition to the aggregate analytics for all campaigns on the **Campaigns** tab, you can view the analytics for an individual campaign. The **Analytics** page provides the following information for a standard campaign.

Delivery metrics

Open rate – Percentage of recipients who opened your app after receiving a push notification from a campaign.

Delivery rate – Percentage of the campaign's delivery attempts that were successfully sent to the push notification services for iOS and Android.

User devices messaged – User devices to which the campaign sent push notifications.

Campaign session heat map

The days and times at which users opened your app from a push notification sent by the campaign. Darker colors represent greater numbers of users. Times are based on each user's local time.

Campaign metrics

Sent – Attempted push notification deliveries.

Delivered – Messages that were successfully sent to the push notification services for iOS and Android.

Direct opened – The number of times users opened your app from a push notification sent by the campaign.

Sessions per user

Average number of app sessions started by each user since the start of the campaign.

Purchases per user

Average number of in-app purchases made by each user since the start of the campaign.

For a campaign that has delivered messages at least once, the run history is summarized with the following metrics.

Targeted

User devices to which Amazon Pinpoint attempted to deliver messages.

Delivered

The number of successful message deliveries.

Delivery rate

The percentage of all delivery attempts that were successful.

Total opened

The number of app openings resulting from users tapping the notifications sent by the campaign.

Open rate

The percentage of app openings resulting from users tapping the notifications sent by the campaign.

Individual Campaign Charts – A/B Test

For a campaign that includes an A/B test, you can use the campaign's **Analytics** page to compare the effectiveness of the campaign treatments.

Treatment comparisons

Name – Custom name assigned to the treatment.

Allocation – Percentage of users in the campaign's segment who are engaged by the treatment.

Sessions per user – Average number of app sessions started by each user engaged by the treatment since the start of the campaign.

Purchases per user – Average number of purchases from each user engaged by the treatment since the start of the campaign.

vs Holdout – Difference between the *per user* metric and the same metric for users who belong to the campaign's holdout. For example, if, on average, the users engaged by the treatment start 10 app sessions, and the users who belong to the holdout start 5 app sessions, the vs holdout value is `+5`.

Campaign session heat map

The days and times at which users opened your app from a push notification sent by the campaign. Darker colors represent greater numbers of users. Times are based on each user's local time.

Demographics Charts

The charts on the **Demographics** tab provide the characteristics of the devices on which your app is installed. If your app reports custom metrics, those are also displayed.

Platforms

Device platforms on which your app is installed.

App versions

Versions of your app installed on your users' devices.

Models

Device models on which your app is installed.

Makes

Device makes on which your app is installed.

Countries

Countries where your users are located.

Custom charts

Custom attributes reported by your app.

Events Charts

On the **Events** tab, you can choose any event that is reported by your app to see related trends.

Event count

Events reported by your app that match the selected event type and attributes.

Events per session

Average number of matching events that occur in each app session.

User count

Users for whom your app is reporting the selected event.

Usage Charts

The charts on the **Usage** tab indicate how frequently your app is being used and how successfully it retains user interest over time.

Daily active users

Users who opened your app on a specific day.

Monthly active users

Users who opened your app in the previous 30 days.

Purchases

Items purchased by using your app.

Sessions

Number of times your app was opened.

Sessions per user

Average number of times your app was opened by each user.

Sticky factor

Fraction of monthly active users using your app on a specific day. For example, a sticky factor of .25 means that on a specific day, 25% of your active users from the previous 30 days used your app.

Session heat map

The days and times at which users opened your app based on each user's local time. Darker colors represent greater numbers of users.

Countries

Countries where your users are located.

Revenue Charts

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

Revenue

Total spent within your app by all users.

Revenue per user

The average revenue from each app user.

Paying users

Users who made one or more purchases by using your app.

Revenue per paying user

The average revenue from each paying user.

Units sold

Total items purchased within your app by all users.

Revenue per unit sold

The average revenue from each unit sold.

Purchases

Number of times users made a purchase by using your app.

Units per purchase

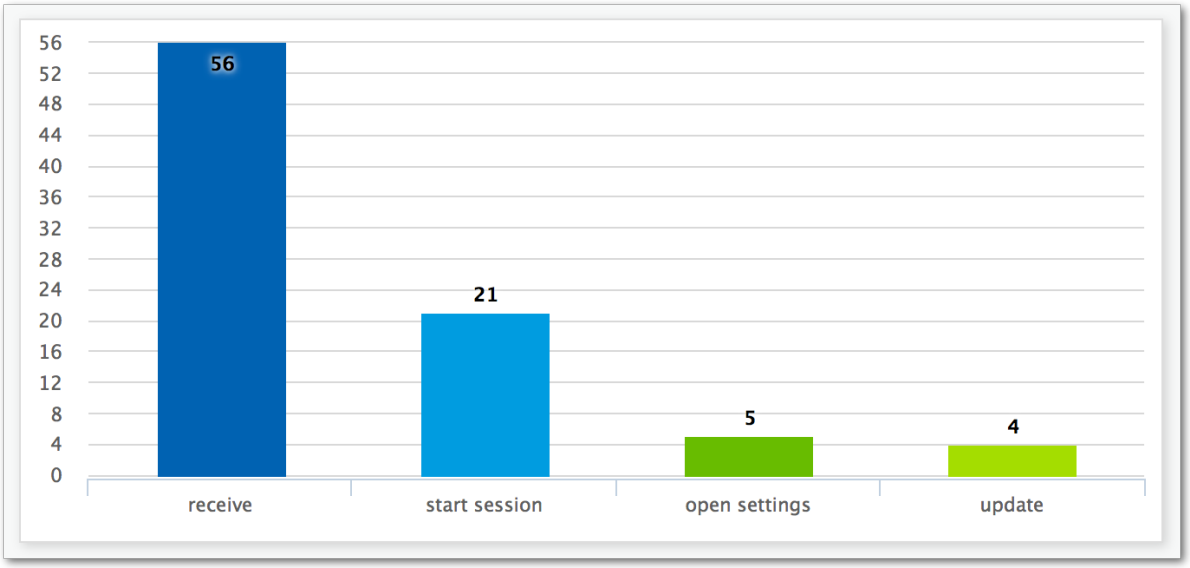
The average number of units sold with each purchase.

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. Your app reports these events to Amazon Pinpoint as long as it integrates Amazon Mobile Analytics through one of the supported AWS SDKs. If your app is a project in AWS Mobile Hub, you integrate Amazon Mobile Analytics by enabling the App Analytics feature in the AWS Mobile Hub console.

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.

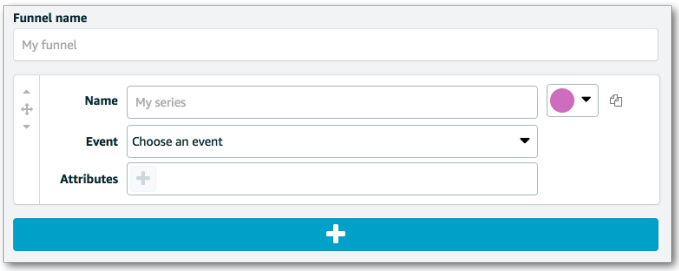
For information about creating events using the AWS Mobile SDK for Android or the AWS Mobile SDK for iOS, see Generating Mobile Analytics Events in the *Amazon Mobile Analytics User Guide*.

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 for which you want to create a funnel.
3. On the **Analytics** page, choose **Funnels**. The **Funnels** page opens, and it displays any previously defined funnels.
4. Choose **Create funnel**.

5. For **Funnel name**, type a custom name to make the funnel easy to recognize later.
6. To create the funnel, specify the events that you want to add to the funnel chart. For each event, specify the following:

   - **Name** – A name for the funnel 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 the add (+) button, or copy an event by choosing the copy icon.

Streaming App and Campaign Events with Amazon Pinpoint

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

After your app is integrated 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 long term, or to analyze it with custom queries and tools, you can configure Amazon Pinpoint to send events to Amazon Kinesis or Amazon S3.

Topics

Streaming Amazon Pinpoint Events to Amazon Kinesis

The Amazon 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 Streams or Amazon Kinesis 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 write SQL queries on streaming data with Amazon Kinesis Analytics.

Amazon Kinesis Streams

Amazon Kinesis 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 Amazon Kinesis 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 Streams Developer Guide.

Amazon Kinesis Firehose

Amazon Kinesis 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 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 Firehose Developer Guide.

Setting up Event Streaming

Complete the following steps in Amazon Pinpoint to set up event streaming.

Prerequisites
You will require:

- An Amazon Kinesis stream or Firehose delivery stream in your AWS account. For information about creating these resources, see Amazon Kinesis Streams in the *Amazon Kinesis Streams Developer Guide* or Creating an Amazon Kinesis Firehose Delivery Stream in the *Amazon Kinesis Firehose Developer Guide*.
- An IAM role that grants permission to send data to your stream. Amazon Pinpoint can create this role automatically when you use the console to set up event streaming. If you want to create the role manually, see IAM Role for Streaming Events to Amazon Kinesis in the *Amazon Pinpoint Developer Guide*.

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 **Apps** page, choose the app for which you want to set up data streaming.
3. In the navigation menu, choose **Manage**.
4. On the **Manage** page, choose **Event stream**.
5. For **Choose how to stream the data**, select **Stream to Amazon Kinesis**.
6. Under **Stream to Amazon Kinesis**, choose whether you want to send your events to an Amazon Kinesis stream or a Firehose delivery stream. Then, select the stream.
7. For **IAM role**, select whether you want to:

- **Automatically create a role** – Amazon Pinpoint creates an IAM role with the required permissions for you. This role authorizes Amazon Pinpoint to send data to the stream you selected.
- **Choose a role from your account** – Amazon Pinpoint assumes a role that you created in your account.

8. Choose **Save**.

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

Exporting Amazon Pinpoint Events to Amazon S3

Amazon Pinpoint can automatically export event data from your apps to an Amazon S3 bucket. Amazon S3 buckets provide secure, durable, highly scalable object storage. By exporting your events, you can analyze app usage in detail and combine this information with other business intelligence data.

Unlike the data streamed to Amazon Kinesis, the data that Amazon Pinpoint exports to Amazon S3 does not include campaign events.

Setting up Automatic Exports to Amazon S3

To set up automatic exports, first create the following resources in your AWS account:

- Amazon S3 bucket to store the exported data.
- AWS Identity and Access Management (IAM) policy that grants Amazon Pinpoint write access to the bucket.
- IAM role that Amazon Pinpoint can assume to gain the permissions in the policy.

Then provide Amazon Pinpoint the name of the Amazon S3 bucket and the Amazon Resource Name (ARN) of the IAM role.

To create the Amazon S3 bucket

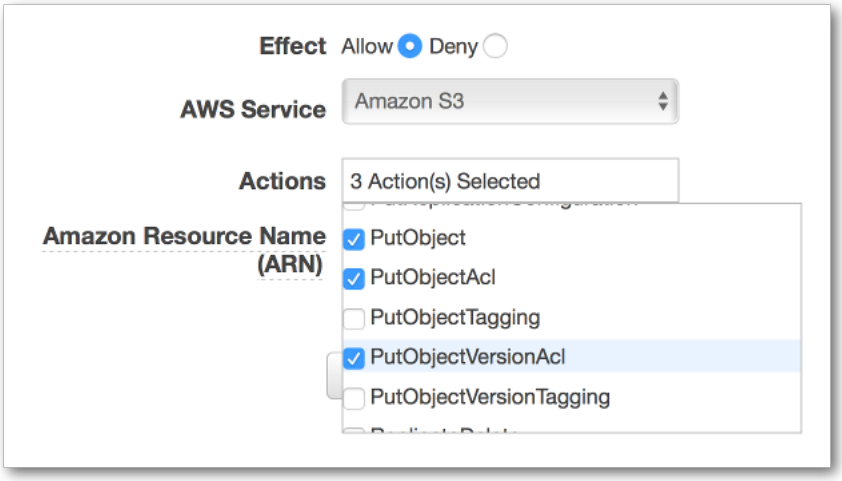
1. Sign in to the AWS Management Console and open the Amazon S3 console at https://console.aws.amazon.com/s3/.
2. Choose **Create bucket**.
3. For **Bucket name**, type a unique name, and for **Region**, select the region in which you use Amazon Pinpoint.
4. Choose **Create**.

To create the IAM policy

1. Open the IAM console at https://console.aws.amazon.com/iam/.
2. In the navigation pane, choose **Policies**, and then choose **Create Policy**.
3. On the **Create Policy** page, choose **Select** for the **Policy Generator** option.
4. On the **Edit Permissions** page, for **Effect**, keep **Allow**.
5. For **AWS Service**, choose **Amazon S3**.
6. For **Actions**, select:

   - **PutObject**

- **PutObjectAcl**
- **PutObjectVersionAcl**



7. For **Amazon Resource Name (ARN)**, type `arn:aws:s3:::your-bucket-name/*`.

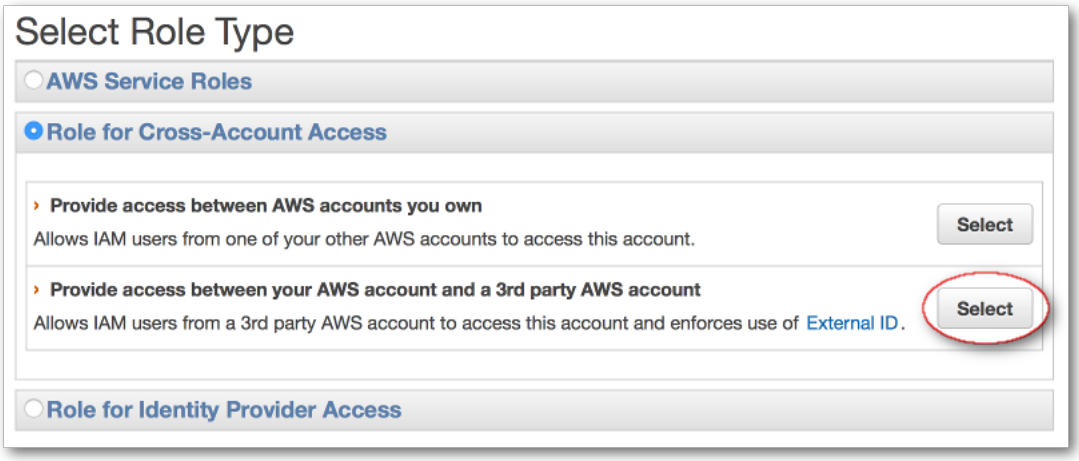
   For `your-bucket-name`, type the name of the bucket that you created to store the exported data.
8. Choose **Add Statement**, and then choose **Next Step**.
9. On the **Review Policy** page, for **Policy Name**, type a name that makes the policy easy to recognize later, such as `PinpointAutoExportPermissions`.
10. Verify that the **Policy Document** editor contains the following:

```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Sid": "Stmt1234567890123",
            "Effect": "Allow",
            "Action": [
                "s3:PutObject",
                "s3:PutObjectAcl",
                "s3:PutObjectVersionAcl"
            ],
            "Resource": [
                "arn:aws:s3:::your-bucket-name/*"
            ]
        }
    ]
}
```

11. Choose **Create Policy**.

To create the IAM role

1. In the navigation pane in the IAM console, choose **Roles**, and then choose **Create New Role**.
2. For the **Set Role Name** step, type a name that makes the role easy to recognize later, such as `PinpointAutoExport`. Then choose **Next Step**.
3. For the **Select Role Type** step, expand the **Role for Cross-Account Access** section. For **Provide access between your AWS account and a 3rd party AWS account**, choose **Select**.

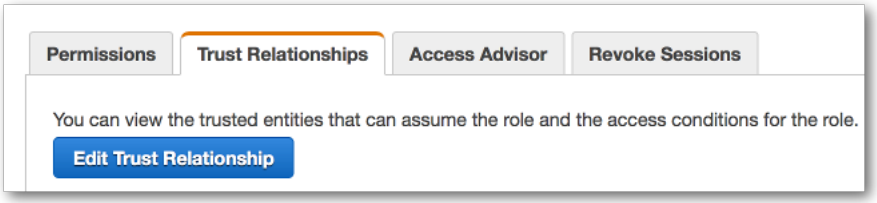


4. For the **Establish Trust** step, specify the following values:

   - **Account ID** — Your 12-digit AWS account ID. Enter this value so that you can finish creating the initial policy in the IAM console. In a later step, you will replace your account ID with the Amazon Mobile Analytics service principal.
   - **External ID** — Use your 12-digit AWS account ID.

   Then, choose **Next Step**.
5. For the **Attach Policy** step, select the policy you created to grant Amazon Pinpoint write access to your Amazon S3 bucket. Then, choose **Next Step**.

   Tip
   To quickly find a policy, use the **Filter**.
6. For the **Review** step, check the details for your role, and choose **Create Role**.
7. In the list of roles, choose the role that you created to view the role details page.
8. In the **Trust Relationships** tab, choose **Edit Trust Relationship**.



   The **Edit Trust Relationship** page opens with the trust policy in the editor.
9. For the `Principal` object in your access control policy, replace:

```
"AWS": "arn:aws:iam::your-account-id:root"
```

   With:

```
"Service": "mobileanalytics.amazonaws.com"
```

   The complete trust policy looks like the following:

```
{
```

```
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Principal": {
        "Service": "mobileanalytics.amazonaws.com"
      },
      "Action": "sts:AssumeRole",
      "Condition": {
        "StringEquals": {
          "sts:ExternalId": "yourAccountID"
        }
      }
    }
  ]
}
```

When you're finished, choose **Update Trust Policy**.

10. On the role details page, note the **Role ARN** because you will provide it when you set up automatic exports.

To set up automatic exports

1. Open the Amazon Pinpoint console at https://console.aws.amazon.com/pinpoint/.
2. On the **Apps** page, choose the app for which you want to set up automatic exports.
3. In the navigation menu, choose **Manage**.
4. On the **Manage** page, choose **Event stream**.
5. For **Choose how to stream the data**, select **Export to Amazon S3**.
6. Select the **Amazon S3 bucket** and the **IAM role** that you created.
7. Choose **Save**.

Events Written to Amazon S3

As Amazon Pinpoint receives events from your app, it writes the data as a gzip (.gz) archive file to your Amazon S3 bucket. If the volume of data is high, Amazon Pinpoint might write the file in multiple parts.

Amazon Pinpoint writes the files to Amazon S3 with the following naming convention:

```
bucket-name/awsma/events/appId/YYYY/MM/DD/hh/appId-mm-part-partNum-hexCode.gz
```

bucket-name

The name of the destination Amazon S3 bucket.

appId

The application ID GUID.

YYYY

The four-digit year.

MM

The two-digit month.

DD

The two-digit day.

hh

The two-digit hour of day.

mm

The two-digit minute.

partNum

The four-digit part number of the event archive.

hexCode

An opaque 32 character hexadecimal string.

The files are written *at least once*, which means that Amazon Pinpoint usually writes each file once, but in some cases it rewrites a file with the same name and contents. Consequently, if Amazon S3 event notifications are enabled, you might receive multiple notifications for a file that is written multiple times. To handle these cases, design all processes that consume these files to handle repeated notifications.

Managing Projects in Amazon Pinpoint

You can use the Amazon Pinpoint console to specify default settings for your project, such as the maximum number of messages that each campaign can deliver to your users.

To manage the default project 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 settings.
3. In the navigation menu, choose **Settings**.

On the **Settings** page, under the **Project** tab, you can set the following options:

- **Maximum number of messages a user can receive per day** – The number of messages that each campaign for the app can send to each user daily.
- **Maximum number of messages a user can receive for a campaign** – The total number of messages that each campaign for the app can send.
- **Quiet time** – The default quiet time for the app. Each campaign for this app sends no messages during this time unless the campaign overrides the default with a quiet time of its own.
- **Abbreviated numbers** – Simplifies large numbers in the Amazon Pinpoint console. For example, 10,534,534 will be represented as 10.53 M.

Under the **Event streams** tab, you can configure Amazon Pinpoint to stream app and campaign events to Amazon Kinesis. For more information, see Exporting Amazon Pinpoint Events to Amazon S3 (p. 55).

Under the **Channels** tab, you can manage the settings for your mobile push, email, and SMS channels. For more information, see:

- Managing Mobile Push Channels with Amazon Pinpoint (p. 7)
- Updating Email Settings (p. 11)
- Updating SMS Settings (p. 16)

Document History for Amazon Pinpoint

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

- **Latest documentation update:** June 08, 2017

Change	Description	Date
New channels: email and SMS	In addition to the mobile push (p. 5) channel, you can enable email (p. 8) and SMS (p. 14) 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. 42), to a limited audience, without creating a campaign or engaging a segment.	June 08, 2017
Revenue charts	You can view revenue charts (p. 51) 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 Amazon Kinesis stream (p. 53).	March 24, 2017

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