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# AWS General Reference

## Reference guide

### Version 1.0



## AWS General Reference: Reference guide

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# AWS General Reference

The AWS General Reference provides information that is useful across Amazon Web Services.

## Contents

- [AWS security credentials \(p. 2\)](#)
- [Service endpoints and quotas \(p. 16\)](#)
- [AWS resources \(p. 627\)](#)
- [AWS IP address ranges \(p. 638\)](#)
- [AWS APIs \(p. 647\)](#)
- [Document conventions \(p. 688\)](#)
- [AWS glossary \(p. 690\)](#)

# AWS security credentials

When you interact with AWS, you specify your AWS *security credentials* to verify who you are and whether you have permission to access the resources that you are requesting. AWS uses the security credentials to authenticate and authorize your requests.

For example, if you want to download a protected file from an Amazon Simple Storage Service (Amazon S3) bucket, your credentials must allow that access. If your credentials aren't authorized to download the file, AWS denies your request. However, your AWS security credentials are not required to download a file in an Amazon S3 bucket that is publicly shared.

## Contents

- [AWS account root user credentials and IAM user credentials \(p. 2\)](#)
- [Understanding and getting your AWS credentials \(p. 3\)](#)
- [Your AWS account identifiers \(p. 6\)](#)
- [Best practices for managing AWS access keys \(p. 7\)](#)
- [AWS security audit guidelines \(p. 10\)](#)

## AWS account root user credentials and IAM user credentials

There are two different types of users in AWS. You are either the account owner (root user) or you are an AWS Identity and Access Management (IAM) user. The root user is created when the AWS account is created and IAM users are created by the root user or an IAM administrator for the account. All AWS users have security credentials.

### Root user credentials

The credentials of the account owner allow full access to all resources in the account. You cannot use [IAM policies](#) to explicitly deny the root user access to resources. You can only use an AWS Organizations [service control policy \(SCP\)](#) to limit the permissions of the root user. Because of this, we recommend that you create an IAM user with administrator permissions to use for everyday AWS tasks and lock away the access keys for the root user.

There are specific tasks that are restricted to the AWS account root user. For example, only the root user can close your account. If you need to perform a task that requires the root user, sign in to the AWS Management Console using the email address and password of the root user. For more information, see [Tasks that require root user credentials \(p. 3\)](#).

### IAM credentials

With IAM, you can securely control access to AWS services and resources for users in your AWS account. For example, if you require administrator-level permissions, you can [create an IAM user](#), grant that user full access, and then use those credentials to interact with AWS. If you need to modify or revoke your permissions, you can delete or modify the policies that are associated with that IAM user.

If you have multiple users that require access to your AWS account, you can create unique credentials for each user and define who has access to which resources. You don't need to share credentials. For example, you can create IAM users with read-only access to resources in your AWS account and distribute those credentials to users.

## Tasks that require root user credentials

We recommend that you use an IAM user with appropriate permissions to perform tasks and access AWS resources. However, you can perform the tasks listed below only when you sign in as the root user of an account.

### Tasks

- [Change your account settings](#). This includes the account name, email address, root user password, and root user access keys. Other account settings, such as contact information, payment currency preference, and Regions, do not require root user credentials.
- [Restore IAM user permissions](#). If the only IAM administrator accidentally revokes their own permissions, you can sign in as the root user to edit policies and restore those permissions.
- [Activate IAM access to the Billing and Cost Management console](#).
- View certain tax invoices. An IAM user with the [aws-portal:ViewBilling](#) permission can view and download VAT invoices from AWS Europe, but not AWS Inc or Amazon Internet Services Pvt. Ltd (AISPL).
- [Close your AWS account](#).
- [Change your AWS Support plan](#) or [Cancel your AWS Support plan](#). For more information, see [IAM for AWS Support](#).
- [Register as a seller](#) in the Reserved Instance Marketplace.
- [Configure an Amazon S3 bucket to enable MFA \(multi-factor authentication\)](#) [Delete](#).
- Edit or delete an Amazon S3 bucket policy that includes an invalid VPC ID or VPC endpoint ID.
- [Sign up for GovCloud](#).

### Troubleshooting

If you cannot complete any of these tasks using your root user credentials, your account might be a member of an organization in AWS Organizations. If your organizational administrator used a service control policy (SCP) to limit the permissions of your account, your root user permissions might be affected. For more information, see [Service control policies](#) in the [AWS Organizations User Guide](#).

## Understanding and getting your AWS credentials

AWS requires different types of security credentials depending on how you access AWS. For example, you need a user name and password to sign in to the AWS Management Console and you need access keys to make programmatic calls to AWS or to use the AWS Command Line Interface or AWS Tools for PowerShell.

### Considerations

- Be sure to save the following in a secure location: the email address associated with your AWS account, the AWS account ID, your password, and your secret access keys. If you forget or lose these credentials, you can't recover them. For security reasons, AWS doesn't provide the means for you or anyone else to retrieve your credentials.
- We strongly recommend that you create an IAM user with administrator permissions to use for everyday AWS tasks and lock away the password and access keys for the root user. Use the root user only for the tasks that are restricted to the root user.
- Security credentials are account-specific. If you have access to multiple AWS accounts, you have separate credentials for each account.
- Do not provide your AWS credentials to a third party.

## Credentials

- [Console access \(p. 4\)](#)
- [Programmatic access \(p. 5\)](#)
- [Temporary access keys \(p. 6\)](#)

# Console access

There are two different types of users in AWS. You are either the account owner (root user) or you are an AWS Identity and Access Management (IAM) user. How you sign in to the AWS Management Console depends on whether you are the root user or an IAM user.

## Contents

- [Root user email address and password \(p. 4\)](#)
- [IAM user name and password \(p. 4\)](#)
- [Multi-factor authentication \(MFA\) \(p. 4\)](#)

## Root user email address and password

When you first create an AWS account, you specify an email address for the account and a password for the root user. To sign in to your AWS account as the root user, you provide this email address and password. The root user can sign in to the AWS Management Console and change the account name, email address, and password using the [Security Credentials](#) page. If you forget the password for the root user, open the [console sign-in page](#) and choose **Forgot password?** to reset your password.

## IAM user name and password

IAM users are created by the root user or an IAM administrator within the AWS account. The user who created your IAM user should provide you with either the account alias or 12-digit AWS account ID, the IAM user name, and the password for the IAM user. An IAM user can sign in using either the console sign-in page or the following sign-in URL, replacing **account\_id\_or\_alias** with either the account alias or AWS account ID provided to you:

```
https://account_id_or_alias.signin.aws.amazon.com/console/
```

If you forget the password for your IAM user, contact your IAM administrator or the account owner. If your IAM administrator gave you permissions to manage your own AWS credentials, then you can change your password periodically, which is a security best practice, using the [Security Credentials](#) page.

## Multi-factor authentication (MFA)

Multi-factor authentication (MFA) provides an extra level of security that you can apply to your AWS account. For additional security, we recommend that you require MFA on the AWS account root user credentials and highly privileged IAM users. For more information, see [Using Multi-Factor Authentication \(MFA\) in AWS](#) in the *IAM User Guide*.

With MFA enabled, when you sign in to your AWS account, you are prompted for your user name and password, plus an authentication code from an MFA device. Adding MFA provides increased security for your AWS account settings and resources.

By default, MFA (multi-factor authentication) is not enabled. You can enable and manage MFA devices for the AWS account root user by going to the [Security Credentials](#) page or the [IAM](#) dashboard in the AWS Management Console. For more information about enabling MFA for IAM users, see [Enabling MFA Devices](#) in the *IAM User Guide*.

## Programmatic access

You must provide your AWS access keys to make programmatic calls to AWS or to use the AWS Command Line Interface or AWS Tools for PowerShell.

When you create your access keys, you create the access key ID (for example, AKIAIOSFODNN7EXAMPLE) and secret access key (for example, wJalrXUtnFEMI/K7MDENG/bPxRficyEXAMPLEKEY) as a set. The secret access key is available for download only when you create it. If you don't download your secret access key or if you lose it, you must create a new one.

You can assign up to two access keys per user (root user or IAM user). Having two access keys is useful when you want to rotate them. When you disable an access key, you can't use it, but it counts toward your limit of two access keys. After you delete an access key, it's gone forever and can't be restored, but it can be replaced with a new access key.

### To manage access keys when signed in as the root user

1. Sign in to the AWS Management Console as the root user. For more information, see [Sign in as the root user](#) in the *IAM User Guide*.
2. In the navigation bar on the upper right, choose your account name or number and then choose **My Security Credentials**.
3. Expand the **Access keys (access key ID and secret access key)** section.
4. Do one of the following:
  - To create an access key, choose **Create New Access Key**. If you already have two access keys, this button is disabled and you must delete an access key before you can create a new one. When prompted, choose either **Show Access Key** or **Download Key File**. This is your only opportunity to save your secret access key. After you've saved your secret access key in a secure location, chose **Close**.
  - To deactivate an access key, choose **Make Inactive**. When prompted for confirmation, choose **Deactivate**. A deactivated access key still counts toward your limit of two access keys.
  - To activate an access key, choose **Make Active**.
  - To delete an access key when you no longer need it, copy the access key ID and then choose **Delete**. Before you can delete the access key, you must choose **Deactivate**. We recommend that you verify that the access key is no longer in use before you permanently delete it. To confirm deletion, paste the access key ID in the text input field and then choose **Delete**.

### To manage access keys when signed in as an IAM user

1. Sign in to the AWS Management Console as an IAM user. For more information, see [Sign in as an IAM user](#) in the *IAM User Guide*.
2. In the navigation bar on the upper right, choose your user name and then choose **My Security Credentials**.

#### Tip

If you do not see the **My Security Credentials** page, you might be signed in as a federated user, not an IAM user. You can create and use [temporary access keys \(p. 6\)](#) instead.

3. Do one of the following:
  - To create an access key, choose **Create access key**. If you already have two access keys, this button is disabled and you must delete an access key before you can create a new one. When prompted, choose either **Show secret access key** or **Download .csv file**. This is your only opportunity to save your secret access key. After you've saved your secret access key in a secure location, chose **Close**.
  - To deactivate an access key, choose **Make inactive**. When prompted for confirmation, choose **Deactivate**. A deactivated access key still counts toward your limit of two access keys.

- To activate an access key, choose **Make active**. When prompted for confirmation, choose **Make active**.
- To delete an access key when you no longer need it, copy the access key ID and then choose **Delete**. This deactivates the access key. We recommend that you verify that the access key is no longer in use before you permanently delete it. To confirm deletion, paste the access key ID in the text input field and then choose **Delete**.

## Temporary access keys

You can also create and use temporary access keys, known as *temporary security credentials*. In addition to the access key ID and secret access key, temporary security credentials include a security token that you must send to AWS when you use temporary security credentials. The advantage of temporary security credentials is that they are short term. After they expire, they're no longer valid. You can use temporary access keys in less secure environments or distribute them to grant users temporary access to resources in your AWS account. For example, you can grant entities from other AWS accounts access to resources in your AWS account (cross-account access). You can also grant users who don't have AWS security credentials access to resources in your AWS account (federation). For more information, see [aws sts assume-role](#).

## Your AWS account identifiers

AWS assigns the following unique identifiers to each AWS account:

### AWS account ID

A 12-digit number, such as 123456789012, that uniquely identifies an AWS account. Many AWS resources include the account ID in their [Amazon Resource Names \(ARNs\)](#). The account ID portion distinguishes resources in one account from the resources in another account. If you are an IAM user, you can sign in to the AWS Management Console using either the account ID or account alias.

### Canonical user ID

An alpha-numeric identifier, such as 79a59df900b949e55d96a1e698fbacedfd6e09d98eacf8f8d5218e7cd47ef2be, that is an obfuscated form of the AWS account ID. You can use this ID to identify an AWS account when granting cross-account access to buckets and objects using Amazon S3. You can retrieve the canonical user ID for your AWS account as either the root user or an IAM user.

For more information, see [Finding the canonical user ID for your AWS account in the Amazon S3 User Guide](#).

You must be authenticated with AWS to view these identifiers.

### Warning

Do not provide your [AWS credentials \(p. 3\)](#) to a third party that needs your AWS account identifiers to share AWS resources with you. Doing so would give them the same access to the AWS account that you have.

## Finding your AWS account ID

You can find the AWS account ID in the AWS Management Console. The location of the account ID in the console depends on whether you are logged in as the root user or an IAM user. The account ID is the same whether you are logged in as the root user or an IAM user.

### Prerequisite

You must be signed in to the AWS Management Console. For more information, see [Signing in to the AWS Management Console](#) in the *IAM User Guide*.

### To find your AWS account ID when signed in as the root user

1. In the navigation bar on the upper right, choose your account name or number and then choose **My Security Credentials**.
2. Expand the **Account identifiers** section. The account number appears next to the label **AWS Account ID**.

### To find your AWS account ID when signed in as an IAM user

1. In the navigation bar on the upper right, choose your user name and then choose **My Security Credentials**.

#### Tip

If you do not see the **My Security Credentials** page, you might be signed in as a federated user, not an IAM user.

2. At the top of the page, under **Account details**, the account number appears next to the label **AWS account ID**.

### To find your AWS account ID using the AWS CLI

Use the [get-caller-identity](#) command as follows:

```
aws sts get-caller-identity --query Account --output text
```

## Best practices for managing AWS access keys

When you use AWS programmatically, you provide your AWS access keys so that AWS can verify your identity in programmatic calls. Your access keys consist of an access key ID (for example, `AKIAIOSFODNN7EXAMPLE`) and a secret access key (for example, `wJalrXUtnFEMI/K7MDENG/bPxRfiCYEXAMPLEKEY`).

Anyone who has your access keys has the same level of access to your AWS resources that you do. Consequently, AWS goes to significant lengths to protect your access keys, and, in keeping with our [shared-responsibility model](#), you should as well.

The steps that follow can help you protect your access keys. For background information, see [AWS security credentials \(p. 2\)](#).

#### Note

Your organization may have different security requirements and policies than those described in this topic. The suggestions provided here are intended as general guidelines.

## Protect or don't create your root user access key

You must use an access key (access key ID plus secret access key) to make programmatic requests to AWS. For example, when using the [AWS Command Line Interface](#), an [AWS SDK](#), or direct API calls. Anyone who has the access keys for your AWS account root user has unrestricted access to all resources in your AWS

account, including billing information. You can't reduce the permissions associated with the access key for the AWS account root user.

For more information, see [Lock away your AWS AWS account root user access key](#) in the *IAM User Guide*.

## Manage access keys for IAM users

Instead of sharing the credentials of the AWS account root user, create individual IAM users, granting each user only the permissions they require. For more information, see [Managing Access Keys for IAM Users](#) in the *IAM User Guide*.

Observe these precautions when using access keys:

- **Don't embed access keys directly into code.** The [AWS SDKs](#) and the [AWS Command Line Tools](#) enable you to put access keys in known locations so that you do not have to keep them in code.

Put access keys in one of the following locations:

- **The AWS credentials file.** The AWS SDKs and AWS CLI automatically use the credentials that you store in the AWS credentials file.

For information about using the AWS credentials file, see the documentation for your SDK. Examples include [Set up AWS Credentials and Region for Development](#) in the *AWS SDK for Java Developer Guide* and [Configuration and Credential Files](#) in the *AWS Command Line Interface User Guide*.

To store credentials for the AWS SDK for .NET and the AWS Tools for Windows PowerShell, we recommend that you use the SDK Store. For more information, see [Using the SDK Store](#) in the *AWS SDK for .NET Developer Guide*.

- **Environment variables.** On a multitenant system, choose user environment variables, not system environment variables.

For more information about using environment variables to store credentials, see [Environment Variables](#) in the *AWS Command Line Interface User Guide*.

- **Rotate access keys periodically.** Change access keys on a regular basis. For details, see [Rotating Access Keys \(AWS CLI, Tools for Windows PowerShell, and AWS API\)](#) in the *IAM User Guide* and [How to Rotate Access Keys for IAM Users](#) on the AWS Security Blog.
- **Remove unused access keys.** If a user leaves your organization, remove the corresponding IAM user so that the user can no longer access your resources. To find out when an access key was last used, use the [GetAccessKeyLastUsed](#) API (AWS CLI command: `aws iam get-access-key-last-used`).
- **Configure multi-factor authentication for your most sensitive operations.** For more information, see [Using Multi-Factor Authentication \(MFA\) in AWS](#) in the *IAM User Guide*.

## Use IAM roles instead of long-term access keys

In many scenarios, you don't need long-term access keys that never expire (as you have with an IAM user). Instead, you can create IAM roles and generate temporary security credentials. Temporary security credentials consist of an access key ID and a secret access key, but they also include a security token that indicates when the credentials expire.

Long-term access keys, such as those associated with IAM users and AWS account root users, remain valid until you manually revoke them. However, temporary security credentials obtained through IAM roles and other features of the AWS Security Token Service expire after a short period of time. Use temporary security credentials to help reduce your risk in case credentials are accidentally exposed.

Use an IAM role and temporary security credentials in these scenarios:

- **You have an application or AWS CLI scripts running on an Amazon EC2 instance.** Do not use access keys directly in your application. Don't pass access keys to the application, embed them in the application, or let the application read access keys from any source. Instead, define an IAM role that has appropriate permissions for your application and launch the Amazon EC2 instance with [roles for EC2](#). Doing this associates an IAM role with the Amazon EC2 instance. This practice also enables the application to get temporary security credentials that it can in turn use to make programmatic calls to AWS. The AWS SDKs and the AWS CLI can get temporary credentials from the role automatically.
- **You need to grant cross-account access.** Use an IAM role to establish trust between accounts, and then grant users in one account limited permissions to access the trusted account. For more information, see [Tutorial: Delegate Access Across AWS Accounts Using IAM Roles](#) in the *IAM User Guide*.
- **You have a mobile app.** Do not embed access keys with the app, even in encrypted storage. Instead, use [Amazon Cognito](#) to manage user identities in your app. This service lets you authenticate users using Login with Amazon, Facebook, Google, or any OpenID Connect (OIDC)-compatible identity provider. You can then use the Amazon Cognito credentials provider to manage credentials that your app uses to make requests to AWS. For more information, see [Using the Amazon Cognito Credentials Provider](#) on the AWS Mobile Blog.
- **You want to federate into AWS and your organization supports SAML 2.0.** If you work for an organization that has an identity provider that supports SAML 2.0, configure the provider to use SAML. You can use SAML to exchange authentication information with AWS and get back a set of temporary security credentials. For more information, see [About SAML 2.0-based Federation](#) in the *IAM User Guide*.
- **You want to federate into AWS and your organization has an on-premises identity store.** If users can authenticate inside your organization, you can write an application that can issue them temporary security credentials for access to AWS resources. For more information, see [Creating a URL that Enables Federated Users to Access the AWS Management Console \(Custom Federation Broker\)](#) in the *IAM User Guide*.

## Access the mobile app using AWS access keys

You can access a limited set of AWS services and features using the AWS mobile app. The mobile app helps you support incident response while on the go. For more information and to download the app, see [AWS Console Mobile Application](#).

You can sign in to the mobile app using your console password or your access keys. As a best practice, do not use root user access keys. Instead, we strongly recommend that in addition to using a password or biometric lock on your mobile device, you [create an IAM user](#) to manage AWS resources. If you lose your mobile device, you can remove the IAM user's access. For more information about generating access keys for an IAM user, see [Managing Access Keys for IAM Users](#) in the *IAM User Guide*.

### To sign in using access keys (mobile app)

1. Open the app on your mobile device.
2. If this is the first time that you're adding an identity to the device, choose **Add an identity** and then choose **Access keys**.

If you have already signed in using another identity, choose the menu icon and choose **Switch identity**. Then choose **Sign in as a different identity** and then **Access keys**.

3. On the **Access keys** page, enter your information:
  - **Access key ID** – Enter your access key ID.
  - **Secret access key** – Enter your secret access key.
  - **Identity name** – Enter the name of the identity that will appear in the mobile app. This does not need to match your IAM user name.
  - **Identity PIN** – Create a personal identification number (PIN) that you will use for future sign-ins.

**Note**

If you enable biometrics for the AWS mobile app, you will be prompted to use your fingerprint or facial recognition for verification instead of the PIN. If the biometrics fail, you might be prompted for the PIN instead.

4. Choose **Verify and add keys**.

You can now access a select set of your resources using the mobile app.

## Learn more

For more information about best practices for keeping your AWS account secure, see the following resources:

- [IAM Best Practices](#). Contains suggestions for using the AWS Identity and Access Management (IAM) service to help secure your AWS resources.
- The following pages provide guidance for setting up the AWS SDKs and the AWS CLI to use access keys.
  - [Set up AWS Credentials and Region for Development](#) in the *AWS SDK for Java Developer Guide*.
  - [Using the SDK Store](#) in the *AWS SDK for .NET Developer Guide*.
  - [Providing Credentials to the SDK](#) in the *AWS SDK for PHP Developer Guide*.
  - [Configuration](#) in the Boto 3 (AWS SDK for Python) documentation.
  - [Using AWS Credentials](#) in the *AWS Tools for Windows PowerShell* guide.
  - [Configuration and Credential Files](#) in the *AWS Command Line Interface User Guide*.
- [Granting Access Using an IAM Role](#). Discusses how programs written using the .NET SDK can automatically get temporary security credentials when running on an Amazon EC2 instance. Similar information is available for the [AWS SDK for Java](#).

## AWS security audit guidelines

You should periodically audit your security configuration to make sure it meets your current business needs. An audit gives you an opportunity to remove unneeded IAM users, roles, groups, and policies, and to make sure that your users and software have only the permissions that are required.

Following are guidelines for systematically reviewing and monitoring your AWS resources for security best practices.

### Contents

- [When you should perform a security audit \(p. 11\)](#)
- [Guidelines for auditing \(p. 11\)](#)
- [Review your AWS account credentials \(p. 11\)](#)
- [Review your IAM users \(p. 11\)](#)
- [Review your IAM groups \(p. 12\)](#)
- [Review your IAM roles \(p. 12\)](#)
- [Review your IAM providers for SAML and OpenID Connect \(OIDC\) \(p. 12\)](#)
- [Review Your mobile apps \(p. 12\)](#)
- [Review your Amazon EC2 security configuration \(p. 13\)](#)
- [Review AWS policies in other services \(p. 13\)](#)
- [Monitor activity in your AWS account \(p. 13\)](#)

- [Tips for reviewing IAM policies \(p. 14\)](#)
- [Learn more \(p. 15\)](#)

## When you should perform a security audit

You should audit your security configuration in the following situations:

- On a periodic basis. You should perform the steps described in this document at regular intervals as a best practice for security.
- If there are changes in your organization, such as people leaving.
- If you have stopped using one or more individual AWS services. This is important for removing permissions that users in your account no longer need.
- If you've added or removed software in your accounts, such as applications on Amazon EC2 instances, AWS OpsWorks stacks, AWS CloudFormation templates, etc.
- If you ever suspect that an unauthorized person might have accessed your account.

## Guidelines for auditing

As you review your account's security configuration, follow these guidelines:

- **Be thorough.** Look at all aspects of your security configuration, including those you might not use regularly.
- **Don't assume.** If you are unfamiliar with some aspect of your security configuration (for example, the reasoning behind a particular policy or the existence of a role), investigate the business need until you are satisfied.
- **Keep things simple.** To make auditing (and management) easier, use IAM groups, consistent naming schemes, and straightforward policies.

## Review your AWS account credentials

Take these steps when you audit your AWS account credentials:

1. If you're not using the root access keys for your account, you can remove them. We [strongly recommend](#) that you do not use root access keys for everyday work with AWS, and that instead you create IAM users.
2. If you do need to keep the access keys for your account, [rotate them regularly](#).

## Review your IAM users

Take these steps when you audit your existing IAM users:

1. [List your users](#) and then [delete users](#) that are inactive.
2. [Remove users from groups](#) that they don't need to be a part of.
3. Review the policies attached to the groups the user is in. See [Tips for reviewing IAM policies \(p. 14\)](#).
4. Delete security credentials that the user doesn't need or that might have been exposed. For example, an IAM user that is used for an application does not need a password (which is necessary only to sign in to AWS websites). Similarly, if a user does not use access keys, there's no reason for the user to have one. For more information, see [Managing Passwords for IAM Users](#) and [Managing Access Keys for IAM Users](#) in the *IAM User Guide*.

You can generate and download a credential report that lists all IAM users in your account and the status of their various credentials, including passwords, access keys, and MFA devices. For passwords and access keys, the credential report shows how recently the password or access key has been used. Credentials that have not been used recently might be good candidates for removal. For more information, see [Getting Credential Reports for your AWS Account](#) in the *IAM User Guide*.

5. Rotate (change) user security credentials periodically, or immediately if you ever share them with an unauthorized person. For more information, see [Managing Passwords for IAM Users](#) and [Managing Access Keys for IAM Users](#) in the *IAM User Guide*.

## Review your IAM groups

Take these steps when you audit your IAM groups:

1. [List your groups](#) and then [delete groups](#) that are unused.
2. [Review users](#) in each group and [remove users](#) that don't belong.
3. Review the policies attached to the group. See [Tips for reviewing IAM policies \(p. 14\)](#).

## Review your IAM roles

Take these steps when you audit your IAM roles:

1. [List your roles](#) and then [delete roles](#) that are unused.
2. [Review](#) the role's trust policy. Make sure that you know who the principal is and that you understand why that account or user needs to be able to assume the role.
3. [Review](#) the access policy for the role to be sure that it grants suitable permissions to whoever assumes the role—see [Tips for reviewing IAM policies \(p. 14\)](#).

## Review your IAM providers for SAML and OpenID Connect (OIDC)

If you have created an IAM entity for establishing trust with a [SAML or OIDC identity provider](#), take these steps:

1. Delete unused providers.
2. Download and review the AWS metadata documents for each SAML provider and make sure the documents reflect your current business needs. Alternatively, get the latest metadata documents from the SAML IdPs that you want to establish trust with and [update the provider in IAM](#).

## Review Your mobile apps

If you have created a mobile app that makes requests to AWS, take these steps:

1. Make sure that the mobile app does not contain embedded access keys, even if they are in encrypted storage.
2. Get temporary credentials for the app by using APIs that are designed for that purpose. We recommend that you use [Amazon Cognito](#) to manage user identity in your app. This service lets you authenticate users using Login with Amazon, Facebook, Google, or any OpenID Connect (OIDC)-compatible identity provider. You can then use the [Amazon Cognito credentials provider](#) to manage credentials that your app uses to make requests to AWS.

If your mobile app doesn't support authentication using Login with Amazon, Facebook, Google, or any other OIDC-compatible identity provider, you can [create a proxy server](#) that can dispense temporary credentials to your app.

## Review your Amazon EC2 security configuration

Take the following steps for [each AWS Region](#):

1. [Delete](#) Amazon EC2 key pairs that are unused or that might be known to people outside your organization.
2. Review your [Amazon EC2 security groups](#):
  - Remove security groups that no longer meet your needs.
  - Remove rules from security groups that no longer meet your needs. Make sure you know why the ports, protocols, and IP address ranges they permit have been allowed.
3. Terminate instances that aren't serving a business need or that might have been started by someone outside your organization for unapproved purposes. Remember that if an instance is started with a role, applications that run on that instance can access AWS resources using the permissions that are granted by that role.
4. Cancel [Spot Instance requests](#) that aren't serving a business need or that might have been made by someone outside your organization.
5. Review your [Auto Scaling](#) groups and configurations. [Shut down](#) any that no longer meet your needs or that might have been configured by someone outside your organization.

## Review AWS policies in other services

Review the permissions for services that use resource-based policies or that support other security mechanisms. In each case, make sure that only users and roles with a current business need have access to the service's resources, and that the permissions granted on the resources are the fewest necessary to meet your business needs.

- Review your [Amazon S3 bucket policies and ACLs](#).
- Review your [Amazon SQS queue policies](#).
- Review your [Amazon SNS topic policies](#).
- Review your [AWS OpsWorks permissions](#).
- Review your [AWS KMS key policies](#).

## Monitor activity in your AWS account

Follow these guidelines for monitoring AWS activity:

- Turn on [AWS CloudTrail](#) in each account and use it in each supported Region.
- Periodically examine CloudTrail log files. (CloudTrail has a number of [partners](#) who provide tools for reading and analyzing log files.)
- [Enable Amazon S3 bucket logging](#) to monitor requests made to each bucket.
- If you believe there has been unauthorized use of your account, pay particular attention to temporary credentials that have been issued. If temporary credentials have been issued that you don't recognize, [disable](#) their permissions.
- Enable [billing alerts](#) in each account and set a cost threshold that lets you know if your charges exceed your normal usage.

## Tips for reviewing IAM policies

Policies are powerful and subtle, so it's important to study and understand the permissions that are granted by each policy. Use the following guidelines when reviewing policies:

- As a [best practice](#), attach policies to groups instead of to individual users. If an individual user has a policy, make sure you understand why that user needs the policy.
- Make sure that IAM users, groups, and roles have only the permissions that they need.
- Use the [IAM Policy Simulator](#) to test policies that are attached to users or groups.
- Remember that a user's permissions are the result of all applicable policies—user policies, group policies, and resource-based policies (on Amazon S3 buckets, Amazon SQS queues, Amazon SNS topics, and AWS KMS keys). It's important to examine all the policies that apply to a user and to understand the complete set of permissions granted to an individual user.
- Be aware that allowing a user to create an IAM user, group, role, or policy and attach a policy to the principal entity is effectively granting that user all permissions to all resources in your account. That is, users who are allowed to create policies and attach them to a user, group, or role can grant themselves any permissions. In general, do not grant IAM permissions to users or roles whom you do not trust with full access to the resources in your account. The following list contains IAM permissions that you should review closely:
  - `iam:PutGroupPolicy`
  - `iam:PutRolePolicy`
  - `iam:PutUserPolicy`
  - `iam>CreatePolicy`
  - `iam:CreatePolicyVersion`
  - `iam:AttachGroupPolicy`
  - `iam:AttachRolePolicy`
  - `iam:AttachUserPolicy`
- Make sure policies don't grant permissions for services that you don't use. For example, if you use [AWS managed policies](#), make sure the AWS managed policies that are in use in your account are for services that you actually use. To find out which AWS managed policies are in use in your account, use the IAM [GetAccountAuthorizationDetails](#) API (AWS CLI command: `aws iam get-account-authorization-details`).
- If the policy grants a user permission to launch an Amazon EC2 instance, it might also allow the `iam:PassRole` action, but if so it should [explicitly list the roles](#) that the user is allowed to pass to the Amazon EC2 instance.
- Closely examine any values for the `Action` or `Resource` element that include `*`. It's a best practice to grant `Allow` access to only the individual actions and resources that users need. However, the following are reasons that it might be suitable to use `*` in a policy:
  - The policy is designed to grant administrative-level privileges.
  - The wildcard character is used for a set of similar actions (for example, `Describe*`) as a convenience, and you are comfortable with the complete list of actions that are referenced in this way.
  - The wildcard character is used to indicate a class of resources or a resource path (e.g., `arn:aws:iam::account-id:users/division_abc/*`), and you are comfortable granting access to all of the resources in that class or path.
  - A service action does not support resource-level permissions, and the only choice for a resource is `*`.
- Examine policy names to make sure they reflect the policy's function. For example, although a policy might have a name that includes "read only," the policy might actually grant write or change permissions.

## Learn more

For information about managing IAM resources, see the following:

- [IAM Users and Groups](#) in the *IAM User Guide*.
- [Permissions and Policies](#) in the *IAM User Guide*.
- [IAM Roles \(Delegation and Federation\)](#) in the *IAM User Guide*.
- [IAM Policy Simulator](#) in the *Using IAM Policy Simulator* guide.

For more information about Amazon EC2 security, see the following:

- [Network and Security](#) in the *Amazon EC2 User Guide for Linux Instances*.
- [Demystifying EC2 Resource-Level Permissions](#) on the AWS Security Blog.

For more information about monitoring an AWS account, see the re:Invent 2013 video presentation [Intrusion Detection in the Cloud](#).

# Service endpoints and quotas

The following pages describe the service endpoints and service quotas for AWS services. To connect programmatically to an AWS service, you use an endpoint. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

Click one of the following links to go to the page for that service. To view the service quotas for all AWS services in the documentation without switching pages, view the information in the [Service Endpoints and Quotas](#) page in the PDF instead.

## Services

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## Alexa for Business endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name           | Region    | Endpoint                    | Protocol |  |
|-----------------------|-----------|-----------------------------|----------|--|
| US East (N. Virginia) | us-east-1 | a4b.us-east-1.amazonaws.com | HTTPS    |  |

### Service quotas

| Name                             | Default | Adjustable |
|----------------------------------|---------|------------|
| Address books                    | 25      | Yes        |
| Contacts per account             | 10,000  | Yes        |
| Contacts per address book        | 100     | Yes        |
| Number of conference appliances  | 10,000  | Yes        |
| Number of devices                | 100,000 | Yes        |
| Number of devices per room       | 10      | Yes        |
| Number of gateways               | 100     | Yes        |
| Number of profiles               | 100     | Yes        |
| Number of rooms                  | 10,000  | Yes        |
| Number of skill groups           | 1,000   | Yes        |
| Number of skills                 | 100     | Yes        |
| Number of skills per skill group | 25      | Yes        |

| Name            | Default | Adjustable |
|-----------------|---------|------------|
| Number of users | 10,000  | Yes        |

## AWS Amplify

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Amplify endpoints

| Region Name              | Region         | Endpoint                             | Protocol |
|--------------------------|----------------|--------------------------------------|----------|
| US East (Ohio)           | us-east-2      | amplify.us-east-2.amazonaws.com      | HTTPS    |
| US East (N. Virginia)    | us-east-1      | amplify.us-east-1.amazonaws.com      | HTTPS    |
| US West (N. California)  | us-west-1      | amplify.us-west-1.amazonaws.com      | HTTPS    |
| US West (Oregon)         | us-west-2      | amplify.us-west-2.amazonaws.com      | HTTPS    |
| Asia Pacific (Hong Kong) | ap-east-1      | amplify.ap-east-1.amazonaws.com      | HTTPS    |
| Asia Pacific (Mumbai)    | ap-south-1     | amplify.ap-south-1.amazonaws.com     | HTTPS    |
| Asia Pacific (Seoul)     | ap-northeast-2 | amplify.ap-northeast-2.amazonaws.com | HTTPS    |
| Asia Pacific (Singapore) | ap-southeast-1 | amplify.ap-southeast-1.amazonaws.com | HTTPS    |
| Asia Pacific (Sydney)    | ap-southeast-2 | amplify.ap-southeast-2.amazonaws.com | HTTPS    |
| Asia Pacific (Tokyo)     | ap-northeast-1 | amplify.ap-northeast-1.amazonaws.com | HTTPS    |

| Region Name               | Region       | Endpoint                           | Protocol |  |
|---------------------------|--------------|------------------------------------|----------|--|
| Canada (Central)          | ca-central-1 | amplify.ca-central-1.amazonaws.com | HTTPS    |  |
| Europe (Frankfurt)        | eu-central-1 | amplify.eu-central-1.amazonaws.com | HTTPS    |  |
| Europe (Ireland)          | eu-west-1    | amplify.eu-west-1.amazonaws.com    | HTTPS    |  |
| Europe (London)           | eu-west-2    | amplify.eu-west-2.amazonaws.com    | HTTPS    |  |
| Europe (Milan)            | eu-south-1   | amplify.eu-south-1.amazonaws.com   | HTTPS    |  |
| Europe (Paris)            | eu-west-3    | amplify.eu-west-3.amazonaws.com    | HTTPS    |  |
| Europe (Stockholm)        | eu-north-1   | amplify.eu-north-1.amazonaws.com   | HTTPS    |  |
| Middle East (Bahrain)     | me-south-1   | amplify.me-south-1.amazonaws.com   | HTTPS    |  |
| South America (São Paulo) | sa-east-1    | amplify.sa-east-1.amazonaws.com    | HTTPS    |  |

## Amplify admin UI endpoints

| Region Name             | Region     | Endpoint                                | Protocol |  |
|-------------------------|------------|---|----------|--|
| US East (Ohio)          | us-east-2  | amplifybackend.us-east-2.amazonaws.com  | HTTPS    |  |
| US East (N. Virginia)   | us-east-1  | amplifybackend.us-east-1.amazonaws.com  | HTTPS    |  |
| US West (N. California) | us-west-1  | amplifybackend.us-west-1.amazonaws.com  | HTTPS    |  |
| US West (Oregon)        | us-west-2  | amplifybackend.us-west-2.amazonaws.com  | HTTPS    |  |
| Asia Pacific (Mumbai)   | ap-south-1 | amplifybackend.ap-south-1.amazonaws.com | HTTPS    |  |

| Region Name               | Region         | Endpoint                                    | Protocol |  |
|---------------------------|----------------|---|----------|--|
| Asia Pacific (Seoul)      | ap-northeast-2 | amplifybackend.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | amplifybackend.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | amplifybackend.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | amplifybackend.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)          | ca-central-1   | amplifybackend.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)        | eu-central-1   | amplifybackend.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)          | eu-west-1      | amplifybackend.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)           | eu-west-2      | amplifybackend.eu-west-2.amazonaws.com      | HTTPS    |  |
| Europe (Paris)            | eu-west-3      | amplifybackend.eu-west-3.amazonaws.com      | HTTPS    |  |
| Europe (Stockholm)        | eu-north-1     | amplifybackend.eu-north-1.amazonaws.com     | HTTPS    |  |
| Middle East (Bahrain)     | me-south-1     | amplifybackend.me-south-1.amazonaws.com     | HTTPS    |  |
| South America (São Paulo) | sa-east-1      | amplifybackend.sa-east-1.amazonaws.com      | HTTPS    |  |

## Service quotas

| Name                | Default     | Adjustable |
|---------------------|-------------|------------|
| Apps                | 25          | Yes        |
| Branches per app    | 50          | Yes        |
| Build artifact size | 5 Gigabytes | No         |

| Name                            | Default     | Adjustable |
|---------------------------------|-------------|------------|
| Cache artifact size             | 5 Gigabytes | No         |
| Concurrent jobs                 | 5           | Yes        |
| Domains per app                 | 5           | Yes        |
| Environment cache artifact size | 5 Gigabytes | No         |
| Manual deploy ZIP file size     | 5 Gigabytes | No         |
| Maximum app creations per hour  | 25          | No         |
| Subdomains per domain           | 50          | Yes        |
| Webhooks per app                | 50          | Yes        |

## Amazon API Gateway endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

Amazon API Gateway includes the API Gateway Control Plane (for creating and managing APIs) and the API Gateway Data Plane (for calling deployed APIs).

The Route 53 Hosted Zone ID column shows the Route 53 Hosted Zone IDs for API Gateway Regional endpoints. Route 53 Hosted Zone IDs are for use with the `execute-api` (API Gateway component service for API execution) domain. For edge-optimized endpoints, the Route 53 Hosted Zone ID is Z2FDTNDATAQYW2 for all Regions.

### Amazon API Gateway control plane

| Region Name             | Region    | Endpoint  | Protocol       |  |
|-------------------------|-----------|---|----------------|--|
| US East (Ohio)          | us-east-2 | apigateway.us-east-2.amazonaws.com<br>apigateway-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)   | us-east-1 | apigateway.us-east-1.amazonaws.com<br>apigateway-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California) | us-west-1 | apigateway.us-west-1.amazonaws.com<br>apigateway-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| US West (Oregon)         | us-west-2      | apigateway.us-west-2.amazonaws.com<br>apigateway-fips.us-west-2.amazonaws.com       | HTTPS<br>HTTPS  |  |
| Africa (Cape Town)       | af-south-1     | apigateway.af-south-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | apigateway.ap-east-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | apigateway.ap-south-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | apigateway.ap-northeast-3.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | apigateway.ap-northeast-2.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | apigateway.ap-southeast-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | apigateway.ap-southeast-2.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | apigateway.ap-northeast-1.amazonaws.com   | HTTPS           |  |
| Canada (Central)         | ca-central-1   | apigateway.ca-central-1.amazonaws.com<br>apigateway-fips.ca-central-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| Europe (Frankfurt)       | eu-central-1   | apigateway.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | apigateway.eu-west-1.amazonaws.com  | HTTPS           |  |
| Europe (London)          | eu-west-2      | apigateway.eu-west-2.amazonaws.com  | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | apigateway.eu-south-1.amazonaws.com   | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | apigateway.eu-west-3.amazonaws.com  | HTTPS           |  |

| <b>Region Name</b>        | <b>Region</b> | <b>Endpoint</b>   | <b>Protocol</b> |  |
|---------------------------|---------------|---|-----------------|--|
| Europe (Stockholm)        | eu-north-1    | apigateway.eu-north-1.amazonaws.com   | HTTPS           |  |
| Middle East (Bahrain)     | me-south-1    | apigateway.me-south-1.amazonaws.com   | HTTPS           |  |
| South America (São Paulo) | sa-east-1     | apigateway.sa-east-1.amazonaws.com  | HTTPS           |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | apigateway.us-gov-east-1.amazonaws.com<br>apigateway-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | apigateway.us-gov-west-1.amazonaws.com<br>apigateway-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |

## Amazon API Gateway data plane

| <b>Region Name</b>       | <b>Region</b> | <b>Endpoint</b>                      | <b>Protocol</b> | <b>Route 53 Hosted Zone ID</b> |  |
|--------------------------|---------------|--------------------------------------|-----------------|--------------------------------|--|
| US East (Ohio)           | us-east-2     | execute-api.us-east-2.amazonaws.com  | HTTPS           | ZOJJZC49E0EPZ                  |  |
| US East (N. Virginia)    | us-east-1     | execute-api.us-east-1.amazonaws.com  | HTTPS           | Z1UJRXOUUMOOFQ8                |  |
| US West (N. California)  | us-west-1     | execute-api.us-west-1.amazonaws.com  | HTTPS           | Z2MUQ32089INYE                 |  |
| US West (Oregon)         | us-west-2     | execute-api.us-west-2.amazonaws.com  | HTTPS           | Z2OJLYMUO9EFXC                 |  |
| Africa (Cape Town)       | af-south-1    | execute-api.af-south-1.amazonaws.com | HTTPS           | Z2DHW2332DAMTN                 |  |
| Asia Pacific (Hong Kong) | ap-east-1     | execute-api.ap-east-1.amazonaws.com  | HTTPS           | Z3FD1VL90ND7K5                 |  |
| Asia Pacific (Mumbai)    | ap-south-1    | execute-api.ap-south-1.amazonaws.com | HTTPS           | Z3VO1THU9YC4UR                 |  |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>                          | <b>Protocol</b> | <b>Route 53 Hosted Zone ID</b> |  |
|---------------------------|----------------|--|-----------------|--------------------------------|--|
| Asia Pacific (Seoul)      | ap-northeast-2 | execute-api.ap-northeast-2.amazonaws.com | HTTPS           | Z20JF4UZKIW1U8                 |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | execute-api.ap-southeast-1.amazonaws.com | HTTPS           | ZL327KTPIQFUL                  |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | execute-api.ap-southeast-2.amazonaws.com | HTTPS           | Z2RPCDW04V8134                 |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | execute-api.ap-northeast-1.amazonaws.com | HTTPS           | Z1YSHQZH15GKL                  |  |
| Canada (Central)          | ca-central-1   | execute-api.ca-central-1.amazonaws.com   | HTTPS           | Z19DQILCVOOWEC                 |  |
| Europe (Frankfurt)        | eu-central-1   | execute-api.eu-central-1.amazonaws.com   | HTTPS           | Z1U9ULNL0V5AJ3                 |  |
| Europe (Ireland)          | eu-west-1      | execute-api.eu-west-1.amazonaws.com      | HTTPS           | ZLY8HYME6SFDD                  |  |
| Europe (London)           | eu-west-2      | execute-api.eu-west-2.amazonaws.com      | HTTPS           | ZJ5UAJN8Y3Z2Q                  |  |
| Europe (Milan)            | eu-south-1     | execute-api.eu-south-1.amazonaws.com     | HTTPS           | Z3BT4WSQ9TDYZV                 |  |
| Europe (Paris)            | eu-west-3      | execute-api.eu-west-3.amazonaws.com      | HTTPS           | Z3KY65QIEKYHQQ                 |  |
| Europe (Stockholm)        | eu-north-1     | execute-api.eu-north-1.amazonaws.com     | HTTPS           | Z3UWIKFBOOGXPP                 |  |
| Middle East (Bahrain)     | me-south-1     | execute-api.me-south-1.amazonaws.com     | HTTPS           | Z20ZBPCOSS8806                 |  |
| South America (São Paulo) | sa-east-1      | execute-api.sa-east-1.amazonaws.com      | HTTPS           | ZCMLWB8V5SYIT                  |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | execute-api.us-gov-east-1.amazonaws.com  | HTTPS           | Z3SE9ATJCRCZJ                  |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | execute-api.us-gov-west-1.amazonaws.com  | HTTPS           | Z1K6XKP9SAGWDV                 |  |

## Service quotas

| Name  | Default             | Adjustable |
|---|---------------------|------------|
| API Payload Size                            | 10 Megabytes        | No         |
| API Stage throttles in a usage plan         | 100                 | No         |
| API keys                                    | 500                 | Yes        |
| AWS Lambda authorizer result size           | 8 Kilobytes         | No         |
| Client certificates                         | 60                  | Yes        |
| Connection duration for WebSocket API       | 7,200 Seconds       | No         |
| Custom Domain Names                         | 120                 | Yes        |
| Edge API URL Length                         | 8,192               | No         |
| Edge-optimized APIs                         | 120                 | No         |
| Maximum API caching TTL                     | 3,600 Seconds       | No         |
| Maximum Cached Response Size                | 1,048,576 Bytes     | No         |
| Maximum Combined Header Size                | 10,240 Bytes        | No         |
| Maximum Iterations In Mapping Template      | 1,000               | No         |
| Maximum integration timeout in milliseconds | 29,000 Milliseconds | No         |
| Maximum resource policy size in bytes       | 8,192               | Yes        |
| Method ARN Length                           | 1,600 Bytes         | No         |
| Private APIs                                | 600                 | No         |
| Regional API URL Length                     | 10,240              | No         |
| Regional APIs                               | 600                 | No         |
| Resources/Routes per REST/WebSocket API     | 300                 | Yes        |
| Routes per HTTP API                         | 300                 | Yes        |
| Stage Variable Key Length                   | 64                  | No         |
| Stage Variable Value Length                 | 512                 | No         |
| Stage variables per stage                   | 100                 | No         |
| Stages per API                              | 10                  | Yes        |

| Name                                 | Default       | Adjustable |
|--------------------------------------|---------------|------------|
| Subnets per VPC link(V2)             | 10            | Yes        |
| Tags Per Stage                       | 50            | No         |
| Throttle burst rate                  | 5,000         | No         |
| Throttle rate                        | 10,000        | Yes        |
| Usage plans                          | 300           | Yes        |
| Usage plans per API key              | 10            | Yes        |
| VPC links                            | 20            | Yes        |
| VPC links(V2)                        | 10            | Yes        |
| WebSocket Idle Connection Timeout    | 600 Seconds   | No         |
| WebSocket frame size                 | 32 Kilobytes  | No         |
| WebSocket message payload size       | 128 Kilobytes | No         |
| WebSocket new connections burst rate | 500           | No         |
| WebSocket new connections rate       | 500           | Yes        |

For more information, see [Quotas in Amazon API Gateway](#) in the *API Gateway Developer Guide*.

## AWS App Mesh endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name           | Region    | Endpoint   | Protocol |  |
|-----------------------|-----------|--|----------|--|
| US East (Ohio)        | us-east-2 | appmesh.us-east-2.amazonaws.com                  | HTTPS    |  |
|                       |           | appmesh-envoy-management.us-east-2.amazonaws.com | HTTPS    |  |
| US East (N. Virginia) | us-east-1 | appmesh.us-east-1.amazonaws.com                  | HTTPS    |  |
|                       |           | appmesh-envoy-management.us-east-1.amazonaws.com | HTTPS    |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| US West (N. California)  | us-west-1      | appmesh.us-west-1.amazonaws.com<br>appmesh-envoy-management.us-west-1.amazonaws.com           | HTTPS<br>HTTPS  |  |
| US West (Oregon)         | us-west-2      | appmesh.us-west-2.amazonaws.com<br>appmesh-envoy-management.us-west-2.amazonaws.com           | HTTPS<br>HTTPS  |  |
| Africa (Cape Town)       | af-south-1     | appmesh.af-south-1.amazonaws.com<br>appmesh-envoy-management.af-south-1.amazonaws.com         | HTTPS<br>HTTPS  |  |
| Asia Pacific (Hong Kong) | ap-east-1      | appmesh.ap-east-1.amazonaws.com<br>appmesh-envoy-management.ap-east-1.amazonaws.com           | HTTPS<br>HTTPS  |  |
| Asia Pacific (Mumbai)    | ap-south-1     | appmesh.ap-south-1.amazonaws.com<br>appmesh-envoy-management.ap-south-1.amazonaws.com         | HTTPS<br>HTTPS  |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | appmesh.ap-northeast-2.amazonaws.com<br>appmesh-envoy-management.ap-northeast-2.amazonaws.com | HTTPS<br>HTTPS  |  |
| Asia Pacific (Singapore) | ap-southeast-1 | appmesh.ap-southeast-1.amazonaws.com<br>appmesh-envoy-management.ap-southeast-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | appmesh.ap-southeast-2.amazonaws.com<br>appmesh-envoy-management.ap-southeast-2.amazonaws.com | HTTPS<br>HTTPS  |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | appmesh.ap-northeast-1.amazonaws.com<br>appmesh-envoy-management.ap-northeast-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| Canada (Central)         | ca-central-1   | appmesh.ca-central-1.amazonaws.com<br>appmesh-envoy-management.ca-central-1.amazonaws.com     | HTTPS<br>HTTPS  |  |
| Europe (Frankfurt)       | eu-central-1   | appmesh.eu-central-1.amazonaws.com<br>appmesh-envoy-management.eu-central-1.amazonaws.com     | HTTPS<br>HTTPS  |  |

| <b>Region Name</b>        | <b>Region</b> | <b>Endpoint</b>   | <b>Protocol</b> |  |
|---------------------------|---------------|---|-----------------|--|
| Europe (Ireland)          | eu-west-1     | appmesh.eu-west-1.amazonaws.com<br>appmesh-envoy-management.eu-west-1.amazonaws.com   | HTTPS<br>HTTPS  |  |
| Europe (London)           | eu-west-2     | appmesh.eu-west-2.amazonaws.com<br>appmesh-envoy-management.eu-west-2.amazonaws.com   | HTTPS<br>HTTPS  |  |
| Europe (Milan)            | eu-south-1    | appmesh.eu-south-1.amazonaws.com<br>appmesh-envoy-management.eu-south-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| Europe (Paris)            | eu-west-3     | appmesh.eu-west-3.amazonaws.com<br>appmesh-envoy-management.eu-west-3.amazonaws.com   | HTTPS<br>HTTPS  |  |
| Europe (Stockholm)        | eu-north-1    | appmesh.eu-north-1.amazonaws.com<br>appmesh-envoy-management.eu-north-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| Middle East (Bahrain)     | me-south-1    | appmesh.me-south-1.amazonaws.com<br>appmesh-envoy-management.me-south-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| South America (São Paulo) | sa-east-1     | appmesh.sa-east-1.amazonaws.com<br>appmesh-envoy-management.sa-east-1.amazonaws.com   | HTTPS<br>HTTPS  |  |

## Service quotas

| <b>Name</b>                                   | <b>Default</b> | <b>Adjustable</b> |
|---|----------------|-------------------|
| Backends per virtual node                     | 50             | Yes               |
| Connected Envoy processes per virtual gateway | 50             | Yes               |
| Connected Envoy processes per virtual node    | 50             | Yes               |
| Gateway routes per virtual gateway            | 10             | Yes               |
| Meshes per account                            | 15             | Yes               |
| Routes per virtual router                     | 50             | Yes               |
| Virtual gateways per mesh                     | 3              | Yes               |
| Virtual nodes per mesh                        | 200            | Yes               |

| Name                       | Default | Adjustable |
|----------------------------|---------|------------|
| Virtual routers per mesh   | 200     | Yes        |
| Virtual services per mesh  | 200     | Yes        |
| Weighted targets per route | 10      | No         |

## AWS App Runner endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name           | Region         | Endpoint                               | Protocol |
|-----------------------|----------------|--|----------|
| US East (Ohio)        | us-east-2      | apprunner.us-east-2.amazonaws.com      | HTTPS    |
| US East (N. Virginia) | us-east-1      | apprunner.us-east-1.amazonaws.com      | HTTPS    |
| US West (Oregon)      | us-west-2      | apprunner.us-west-2.amazonaws.com      | HTTPS    |
| Asia Pacific (Tokyo)  | ap-northeast-1 | apprunner.ap-northeast-1.amazonaws.com | HTTPS    |
| Europe (Ireland)      | eu-west-1      | apprunner.eu-west-1.amazonaws.com      | HTTPS    |

### Service quotas

| Name                        | Default | Adjustable |
|-----------------------------|---------|------------|
| Auto scaling configurations | 10      | Yes        |
| Connections                 | 10      | Yes        |
| Services                    | 10      | Yes        |

## Amazon AppFlow endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services

offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

You can't use IP allow listing in your Amazon S3 bucket policy to deny access to any other IP addresses besides Amazon AppFlow IP addresses. This is because Amazon AppFlow uses a VPC endpoint when placing data in your Amazon S3 buckets.

For more information about the IP addresses used by Amazon AppFlow, see [AWS IP address ranges](#) in the *Amazon Web Services General Reference*.

## Service endpoints

| Region Name              | Region         | Endpoint                             | Protocol |  |
|--------------------------|----------------|--------------------------------------|----------|--|
| US East (Ohio)           | us-east-2      | appflow.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | appflow.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (N. California)  | us-west-1      | appflow.us-west-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | appflow.us-west-2.amazonaws.com      | HTTPS    |  |
| Africa (Cape Town)       | af-south-1     | appflow.af-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Mumbai)    | ap-south-1     | appflow.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | appflow.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | appflow.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | appflow.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | appflow.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)         | ca-central-1   | appflow.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)       | eu-central-1   | appflow.eu-central-1.amazonaws.com   | HTTPS    |  |

| <b>Region Name</b>        | <b>Region</b> | <b>Endpoint</b>                 | <b>Protocol</b> |  |
|---------------------------|---------------|---------------------------------|-----------------|--|
| Europe (Ireland)          | eu-west-1     | appflow.eu-west-1.amazonaws.com | HTTPS           |  |
| Europe (London)           | eu-west-2     | appflow.eu-west-2.amazonaws.com | HTTPS           |  |
| Europe (Paris)            | eu-west-3     | appflow.eu-west-3.amazonaws.com | HTTPS           |  |
| South America (São Paulo) | sa-east-1     | appflow.sa-east-1.amazonaws.com | HTTPS           |  |

## Service quotas

| <b>Name</b>                        | <b>Default</b> | <b>Adjustable</b> |
|------------------------------------|----------------|-------------------|
| Amazon AppFlow flow run size       | 100 Gigabytes  | No                |
| Amazon EventBridge event size      | 256 Kilobytes  | No                |
| Amplitude flow run size            | 25 Megabytes   | No                |
| Concurrent flow runs               | 1,000          | Yes               |
| Connector profiles                 | 100            | Yes               |
| Google Analytics dimensions        | 9              | No                |
| Google Analytics metrics           | 10             | No                |
| Marketo flow run size              | 20 Megabytes   | No                |
| Monthly flow runs                  | 10,000,000     | Yes               |
| Rate of Amazon AppFlow flow runs   | 1              | No                |
| Rate of Amazon S3 flow runs        | 1              | No                |
| Rate of Amplitude flow runs        | 1              | No                |
| Rate of Datadog flow runs          | 1              | No                |
| Rate of Dynatrace flow runs        | 1              | No                |
| Rate of Google Analytics flow runs | 1              | No                |
| Rate of Infor Nexus flow runs      | 1              | No                |
| Rate of Marketo flow runs          | 1              | No                |

| Name                                 | Default       | Adjustable |
|--------------------------------------|---------------|------------|
| Rate of Salesforce Pardot flow runs  | 1             | No         |
| Rate of Salesforce flow runs         | 1             | No         |
| Rate of ServiceNow flow runs         | 1             | No         |
| Rate of Singular flow runs           | 1             | No         |
| Rate of Slack flow runs              | 1             | No         |
| Rate of TrendMicro flow runs         | 1             | No         |
| Rate of Veeva flow runs              | 1             | No         |
| Rate of Zendesk flow runs            | 1             | No         |
| Salesforce event size                | 1 Megabytes   | No         |
| Salesforce flow run data export size | 500 Megabytes | No         |
| Salesforce flow run data import size | 15 Gigabytes  | No         |
| ServiceNow records                   | 100,000       | No         |
| Total flows                          | 1,000         | Yes        |

For more information, see [Quotas for Amazon AppFlow](#) in the *Amazon AppFlow User Guide*.

## Application Auto Scaling endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name             | Region    | Endpoint  | Protocol       |  |
|-------------------------|-----------|---|----------------|--|
| US East (Ohio)          | us-east-2 | application-autoscaling.us-east-2.amazonaws.com | HTTP and HTTPS |  |
| US East (N. Virginia)   | us-east-1 | application-autoscaling.us-east-1.amazonaws.com | HTTP and HTTPS |  |
| US West (N. California) | us-west-1 | application-autoscaling.us-west-1.amazonaws.com | HTTP and HTTPS |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                                      | <b>Protocol</b> |  |
|--------------------------|----------------|--|-----------------|--|
| US West (Oregon)         | us-west-2      | application-autoscaling.us-west-2.amazonaws.com      | HTTP and HTTPS  |  |
| Africa (Cape Town)       | af-south-1     | application-autoscaling.af-south-1.amazonaws.com     | HTTP and HTTPS  |  |
| Asia Pacific (Hong Kong) | ap-east-1      | application-autoscaling.ap-east-1.amazonaws.com      | HTTP and HTTPS  |  |
| Asia Pacific (Mumbai)    | ap-south-1     | application-autoscaling.ap-south-1.amazonaws.com     | HTTP and HTTPS  |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | application-autoscaling.ap-northeast-3.amazonaws.com | HTTP and HTTPS  |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | application-autoscaling.ap-northeast-2.amazonaws.com | HTTP and HTTPS  |  |
| Asia Pacific (Singapore) | ap-southeast-1 | application-autoscaling.ap-southeast-1.amazonaws.com | HTTP and HTTPS  |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | application-autoscaling.ap-southeast-2.amazonaws.com | HTTP and HTTPS  |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | application-autoscaling.ap-northeast-1.amazonaws.com | HTTP and HTTPS  |  |
| Canada (Central)         | ca-central-1   | application-autoscaling.ca-central-1.amazonaws.com   | HTTP and HTTPS  |  |
| Europe (Frankfurt)       | eu-central-1   | application-autoscaling.eu-central-1.amazonaws.com   | HTTP and HTTPS  |  |
| Europe (Ireland)         | eu-west-1      | application-autoscaling.eu-west-1.amazonaws.com      | HTTP and HTTPS  |  |
| Europe (London)          | eu-west-2      | application-autoscaling.eu-west-2.amazonaws.com      | HTTP and HTTPS  |  |
| Europe (Milan)           | eu-south-1     | application-autoscaling.eu-south-1.amazonaws.com     | HTTP and HTTPS  |  |
| Europe (Paris)           | eu-west-3      | application-autoscaling.eu-west-3.amazonaws.com      | HTTP and HTTPS  |  |
| Europe (Stockholm)       | eu-north-1     | application-autoscaling.eu-north-1.amazonaws.com     | HTTP and HTTPS  |  |

| Region Name               | Region        | Endpoint  | Protocol       |  |
|---------------------------|---------------|---|----------------|--|
| Middle East (Bahrain)     | me-south-1    | application-autoscaling.me-south-1.amazonaws.com    | HTTP and HTTPS |  |
| South America (São Paulo) | sa-east-1     | application-autoscaling.sa-east-1.amazonaws.com     | HTTP and HTTPS |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | application-autoscaling.us-gov-east-1.amazonaws.com | HTTP and HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | application-autoscaling.us-gov-west-1.amazonaws.com | HTTP and HTTPS |  |

## Service quotas

| Name                                     | Default | Adjustable |
|--|---------|------------|
| Scalable targets for Amazon Keyspaces    | 500     | Yes        |
| Scalable targets for Amazon MSK          | 500     | Yes        |
| Scalable targets for AppStream           | 500     | Yes        |
| Scalable targets for Comprehend          | 500     | Yes        |
| Scalable targets for DynamoDB            | 3,000   | Yes        |
| Scalable targets for EC2                 | 500     | Yes        |
| Scalable targets for ECS                 | 3,000   | Yes        |
| Scalable targets for EMR                 | 500     | Yes        |
| Scalable targets for Lambda              | 500     | Yes        |
| Scalable targets for RDS                 | 500     | Yes        |
| Scalable targets for SageMaker           | 500     | Yes        |
| Scalable targets for custom resources    | 500     | Yes        |
| Scaling policies per scalable target     | 50      | No         |
| Scheduled actions per scalable target    | 200     | No         |
| Step adjustments per step scaling policy | 20      | No         |

For more information, see [Application Auto Scaling Service Quotas](#) in the *Application Auto Scaling User Guide*.

# AWS Application Discovery Service endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name           | Region         | Endpoint                               | Protocol |  |
|-----------------------|----------------|--|----------|--|
| US East (N. Virginia) | us-east-1      | discovery.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)      | us-west-2      | discovery.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Sydney) | ap-southeast-2 | discovery.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)  | ap-northeast-1 | discovery.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Europe (Frankfurt)    | eu-central-1   | discovery.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)      | eu-west-1      | discovery.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)       | eu-west-2      | discovery.eu-west-2.amazonaws.com      | HTTPS    |  |

## Service quotas

| Name   | Default | Adjustable |
|--|---------|------------|
| Active agents sending data to the service            | 1,000   | No         |
| Applications per account                             | 1,000   | No         |
| Deletions of import records per day                  | 25,000  | No         |
| Imported server records per account                  | 25,000  | No         |
| Imported servers per account                         | 10,000  | Yes        |
| Inactive agents heartbeating but not collecting data | 10,000  | No         |
| Servers per application                              | 400     | No         |

| Name            | Default | Adjustable |
|-----------------|---------|------------|
| Tags per server | 30      | No         |

## AWS Application Migration Service endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name              | Region         | Endpoint                         | Protocol |
|--------------------------|----------------|----------------------------------|----------|
| US East (Ohio)           | us-east-2      | mgn.us-east-2.amazonaws.com      | HTTPS    |
| US East (N. Virginia)    | us-east-1      | mgn.us-east-1.amazonaws.com      | HTTPS    |
| US West (N. California)  | us-west-1      | mgn.us-west-1.amazonaws.com      | HTTPS    |
| US West (Oregon)         | us-west-2      | mgn.us-west-2.amazonaws.com      | HTTPS    |
| Asia Pacific (Osaka)     | ap-northeast-3 | mgn.ap-northeast-3.amazonaws.com | HTTPS    |
| Asia Pacific (Singapore) | ap-southeast-1 | mgn.ap-southeast-1.amazonaws.com | HTTPS    |
| Asia Pacific (Sydney)    | ap-southeast-2 | mgn.ap-southeast-2.amazonaws.com | HTTPS    |
| Asia Pacific (Tokyo)     | ap-northeast-1 | mgn.ap-northeast-1.amazonaws.com | HTTPS    |
| Canada (Central)         | ca-central-1   | mgn.ca-central-1.amazonaws.com   | HTTPS    |
| Europe (Frankfurt)       | eu-central-1   | mgn.eu-central-1.amazonaws.com   | HTTPS    |
| Europe (Ireland)         | eu-west-1      | mgn.eu-west-1.amazonaws.com      | HTTPS    |

| Region Name               | Region     | Endpoint                     | Protocol |  |
|---------------------------|------------|------------------------------|----------|--|
| Europe (Stockholm)        | eu-north-1 | mgn.eu-north-1.amazonaws.com | HTTPS    |  |
| South America (São Paulo) | sa-east-1  | mgn.sa-east-1.amazonaws.com  | HTTPS    |  |

## Service quotas

| Name                                     | Default | Adjustable |
|--|---------|------------|
| Concurrent jobs in progress              | 20      | No         |
| Max Active Source Servers                | 20      | Yes        |
| Max Source Servers in a single Job       | 200     | No         |
| Max Source Servers in all Jobs           | 200     | No         |
| Max Total Source Servers Per AWS Account | 50,000  | No         |
| Max concurrent Jobs per Source Server    | 1       | No         |

The following table lists additional information.

| Resource           | Retention          |
|--------------------|--------------------|
| Job History        | Saved for 10 years |
| Individual Job log | Saved for 185 days |

## Amazon AppStream 2.0 endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name           | Region    | Endpoint  | Protocol       |  |
|-----------------------|-----------|---|----------------|--|
| US East (N. Virginia) | us-east-1 | appstream2.us-east-1.amazonaws.com<br>appstream2-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US West (Oregon)         | us-west-2      | appstream2.us-west-2.amazonaws.com<br>appstream2-fips.us-west-2.amazonaws.com         | HTTPS<br>HTTPS |  |
| Asia Pacific (Mumbai)    | ap-south-1     | appstream2.ap-south-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | appstream2.ap-northeast-2.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | appstream2.ap-southeast-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | appstream2.ap-southeast-2.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | appstream2.ap-northeast-1.amazonaws.com   | HTTPS          |  |
| Europe (Frankfurt)       | eu-central-1   | appstream2.eu-central-1.amazonaws.com   | HTTPS          |  |
| Europe (Ireland)         | eu-west-1      | appstream2.eu-west-1.amazonaws.com  | HTTPS          |  |
| Europe (London)          | eu-west-2      | appstream2.eu-west-2.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-West)   | us-gov-west-1  | appstream2.us-gov-west-1.amazonaws.com<br>appstream2-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Resource         | Default   |
|------------------|---|
| Stacks           | 10  |
| Fleets           | 10  |
| Fleet instances* | <ul style="list-style-type: none"> <li>• stream.standard.medium: 50</li> <li>• stream.standard.large: 50</li> <li>• stream.compute.large: 10</li> <li>• stream.compute.xlarge: 10</li> <li>• stream.graphics-design.large: 10</li> <li>• stream.graphics-design.xlarge: 10</li> </ul> |

| Resource   | Default  |
|--|--|
|  | <ul style="list-style-type: none"> <li>• stream.graphics-design.2xlarge: 10</li> <li>• stream.memory.large: 10</li> <li>• stream.memory.xlarge: 10</li> <li>• stream.memory.z1d.large: 10</li> <li>• stream.memory.z1d.xlarge: 10</li> </ul>   |
| Image builder instances                            | <ul style="list-style-type: none"> <li>• stream.standard.medium: 5</li> <li>• stream.standard.large: 5</li> <li>• stream.compute.large: 3</li> <li>• stream.compute.xlarge: 3</li> <li>• stream.graphics-design.large: 3</li> <li>• stream.graphics-design.xlarge: 3</li> <li>• stream.graphics-design.2xlarge: 3</li> <li>• stream.memory.large: 3</li> <li>• stream.memory.xlarge: 3</li> <li>• stream.memory.z1d.large: 3</li> <li>• stream.memory.z1d.xlarge: 3</li> </ul> |
| Images   | 10   |
| Number of AWS accounts an image can be shared with | 100  |
| Concurrent image copies                            | 2 per destination Region   |
| Image copies (per month)                           | 20   |
| Users in the user pool                             | 50   |

\*For fleets that have **Default Internet Access** enabled, the quota is 100 fleet instances. If your deployment must support more than 100 concurrent users, use a NAT gateway configuration instead.

## AWS AppSync endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

### AWS AppSync control plane

| Region Name              | Region         | Endpoint                             | Protocol |  |
|--------------------------|----------------|--------------------------------------|----------|--|
| US East (Ohio)           | us-east-2      | appsync.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | appsync.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (N. California)  | us-west-1      | appsync.us-west-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | appsync.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Hong Kong) | ap-east-1      | appsync.ap-east-1.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai)    | ap-south-1     | appsync.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | appsync.ap-northeast-3.amazonaws.com | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | appsync.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | appsync.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | appsync.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | appsync.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)         | ca-central-1   | appsync.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)       | eu-central-1   | appsync.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)         | eu-west-1      | appsync.eu-west-1.amazonaws.com      | HTTPS    |  |

| Region Name               | Region     | Endpoint                         | Protocol |  |
|---------------------------|------------|----------------------------------|----------|--|
| Europe (London)           | eu-west-2  | appsync.eu-west-2.amazonaws.com  | HTTPS    |  |
| Europe (Milan)            | eu-south-1 | appsync.eu-south-1.amazonaws.com | HTTPS    |  |
| Europe (Paris)            | eu-west-3  | appsync.eu-west-3.amazonaws.com  | HTTPS    |  |
| Europe (Stockholm)        | eu-north-1 | appsync.eu-north-1.amazonaws.com | HTTPS    |  |
| Middle East (Bahrain)     | me-south-1 | appsync.me-south-1.amazonaws.com | HTTPS    |  |
| South America (São Paulo) | sa-east-1  | appsync.sa-east-1.amazonaws.com  | HTTPS    |  |

## AWS AppSync data plane

| Region Name              | Region         | Endpoint   | Protocol |
|--------------------------|----------------|--|----------|
| US East (Ohio)           | us-east-2      | <unique-id>.appsync-api.us-east-2.amazonaws.com      | HTTPS    |
| US East (N. Virginia)    | us-east-1      | <unique-id>.appsync-api.us-east-1.amazonaws.com      | HTTPS    |
| US West (Oregon)         | us-west-2      | <unique-id>.appsync-api.us-west-2.amazonaws.com      | HTTPS    |
| Asia Pacific (Mumbai)    | ap-south-1     | <unique-id>.appsync-api.ap-south-1.amazonaws.com     | HTTPS    |
| Asia Pacific (Singapore) | ap-southeast-1 | <unique-id>.appsync-api.ap-southeast-1.amazonaws.com | HTTPS    |
| Asia Pacific (Sydney)    | ap-southeast-2 | <unique-id>.appsync-api.ap-southeast-2.amazonaws.com | HTTPS    |
| Asia Pacific (Tokyo)     | ap-northeast-1 | <unique-id>.appsync-api.ap-northeast-1.amazonaws.com | HTTPS    |
| Europe (Frankfurt)       | eu-central-1   | <unique-id>.appsync-api.eu-central-1.amazonaws.com   | HTTPS    |
| Europe (Ireland)         | eu-west-1      | <unique-id>.appsync-api.eu-west-1.amazonaws.com      | HTTPS    |

## Service quotas

| Name  | Default          | Adjustable |
|---|------------------|------------|
| API keys per API                                    | 50               | No         |
| APIs per region                                     | 25               | Yes        |
| Authentication providers per API                    | 50               | No         |
| Evaluated resolver template size                    | 5 Megabytes      | No         |
| Functions per pipeline resolver                     | 10               | No         |
| GraphQL request execution time                      | 30 Seconds       | No         |
| Iterations in a foreach loop in mapping templates   | 1,000            | No         |
| Number of caching keys                              | 25               | No         |
| Request mapping template size                       | 65,536 Bytes     | No         |
| Resolvers executed in a single request              | 10,000           | No         |
| Response mapping template size                      | 65,536 Bytes     | No         |
| Schema document size                                | 1,048,576 Bytes  | No         |
| Subscription payload size                           | 131,072 Bytes    | No         |
| Subscription payload size with MQTT over WebSockets | 131,072 Bytes    | No         |
| Subscription payload size with WebSockets           | 245,760 Bytes    | No         |
| Throttle rate per GraphQL API                       | 1,000 per second | Yes        |

## Amazon Athena endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | athena.us-east-2.amazonaws.com<br>athena-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | athena.us-east-1.amazonaws.com<br>athena-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | athena.us-west-1.amazonaws.com<br>athena-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | athena.us-west-2.amazonaws.com<br>athena-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Africa (Cape Town)       | af-south-1     | athena.af-south-1.amazonaws.com                                       | HTTPS          |  |
| Asia Pacific (Hong Kong) | ap-east-1      | athena.ap-east-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | athena.ap-south-1.amazonaws.com                                       | HTTPS          |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | athena.ap-northeast-3.amazonaws.com                                   | HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | athena.ap-northeast-2.amazonaws.com                                   | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | athena.ap-southeast-1.amazonaws.com                                   | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | athena.ap-southeast-2.amazonaws.com                                   | HTTPS          |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | athena.ap-northeast-1.amazonaws.com                                   | HTTPS          |  |
| Canada (Central)         | ca-central-1   | athena.ca-central-1.amazonaws.com                                     | HTTPS          |  |
| Europe (Frankfurt)       | eu-central-1   | athena.eu-central-1.amazonaws.com                                     | HTTPS          |  |

| Region Name               | Region        | Endpoint  | Protocol       |  |
|---------------------------|---------------|---|----------------|--|
| Europe (Ireland)          | eu-west-1     | athena.eu-west-1.amazonaws.com  | HTTPS          |  |
| Europe (London)           | eu-west-2     | athena.eu-west-2.amazonaws.com  | HTTPS          |  |
| Europe (Milan)            | eu-south-1    | athena.eu-south-1.amazonaws.com   | HTTPS          |  |
| Europe (Paris)            | eu-west-3     | athena.eu-west-3.amazonaws.com  | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1    | athena.eu-north-1.amazonaws.com   | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1    | athena.me-south-1.amazonaws.com   | HTTPS          |  |
| South America (São Paulo) | sa-east-1     | athena.sa-east-1.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | athena.us-gov-east-1.amazonaws.com<br>athena-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | athena.us-gov-west-1.amazonaws.com<br>athena-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

To download the latest version of the JDBC driver and its documentation, see [Using Athena with the JDBC Driver](#).

For more information about the previous versions of the JDBC driver and their documentation, see [Using the Previous Version of the JDBC Driver](#).

To download the latest and previous versions of the ODBC driver and their documentation, see [Connecting to Athena with ODBC](#).

## Service quotas

| Name              | Default | Adjustable |
|-------------------|---------|------------|
| DDL query limit   | 20      | Yes        |
| DDL query timeout | 600     | Yes        |
| DML query limit   | 25      | Yes        |
| DML query timeout | 30      | Yes        |

For more information, see [Service quotas](#) in the *Amazon Athena User Guide*.

# AWS Audit Manager endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint                                  | Protocol |  |
|--------------------------|----------------|---|----------|--|
| US East (Ohio)           | us-east-2      | auditmanager.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | auditmanager.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (N. California)  | us-west-1      | auditmanager.us-west-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | auditmanager.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai)    | ap-south-1     | auditmanager.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | auditmanager.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | auditmanager.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | auditmanager.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)         | ca-central-1   | auditmanager.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)       | eu-central-1   | auditmanager.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)         | eu-west-1      | auditmanager.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)          | eu-west-2      | auditmanager.eu-west-2.amazonaws.com      | HTTPS    |  |

## Service quotas

| Name                | Default | Adjustable |
|---------------------|---------|------------|
| Custom controls     | 500     | Yes        |
| Custom frameworks   | 100     | Yes        |
| Running assessments | 100     | Yes        |

## Amazon Augmented AI endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint                         | Protocol       |
|--------------------------|----------------|----------------------------------|----------------|
| US East (Ohio)           | us-east-2      | a2i.us-east-2.amazonaws.com      | HTTP and HTTPS |
| US East (N. Virginia)    | us-east-1      | a2i.us-east-1.amazonaws.com      | HTTP and HTTPS |
| US West (Oregon)         | us-west-2      | a2i.us-west-2.amazonaws.com      | HTTP and HTTPS |
| Asia Pacific (Mumbai)    | ap-south-1     | a2i.ap-south-1.amazonaws.com     | HTTP and HTTPS |
| Asia Pacific (Seoul)     | ap-northeast-2 | a2i.ap-northeast-2.amazonaws.com | HTTP and HTTPS |
| Asia Pacific (Singapore) | ap-southeast-1 | a2i.ap-southeast-1.amazonaws.com | HTTP and HTTPS |
| Asia Pacific (Sydney)    | ap-southeast-2 | a2i.ap-southeast-2.amazonaws.com | HTTP and HTTPS |
| Asia Pacific (Tokyo)     | ap-northeast-1 | a2i.ap-northeast-1.amazonaws.com | HTTP and HTTPS |
| Canada (Central)         | ca-central-1   | a2i.ca-central-1.amazonaws.com   | HTTP and HTTPS |

| Region Name        | Region       | Endpoint                       | Protocol       |  |
|--------------------|--------------|--------------------------------|----------------|--|
| Europe (Frankfurt) | eu-central-1 | a2i.eu-central-1.amazonaws.com | HTTP and HTTPS |  |
| Europe (Ireland)   | eu-west-1    | a2i.eu-west-1.amazonaws.com    | HTTP and HTTPS |  |
| Europe (London)    | eu-west-2    | a2i.eu-west-2.amazonaws.com    | HTTP and HTTPS |  |

## Service quotas

| Resource  | Default   |
|---|---|
| Flow definitions  | 100   |
| Worker task templates (HumanTaskUi's)   | 100   |
| <i>In-flight</i> human loops per flow definition (private or vendor work team)      | 5,000<br><br>Human loops are considered <i>in-flight</i> when their status is InProgress or Stopping. |
| <i>In-flight</i> human loops per flow definition (Amazon Mechanical Turk work team) | 1,000<br><br>Human loops are considered <i>in-flight</i> when their status is InProgress or Stopping. |

## Amazon Aurora endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

### Amazon Aurora MySQL-Compatible Edition

| Region Name           | Region    | Endpoint                    | Protocol |  |
|-----------------------|-----------|-----------------------------|----------|--|
| US East (Ohio)        | us-east-2 | rds.us-east-2.amazonaws.com | HTTPS    |  |
| US East (N. Virginia) | us-east-1 | rds.us-east-1.amazonaws.com | HTTPS    |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                  | <b>Protocol</b> |  |
|--------------------------|----------------|----------------------------------|-----------------|--|
| US West (N. California)  | us-west-1      | rds.us-west-1.amazonaws.com      | HTTPS           |  |
| US West (Oregon)         | us-west-2      | rds.us-west-2.amazonaws.com      | HTTPS           |  |
| Africa (Cape Town)       | af-south-1     | rds.af-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | rds.ap-east-1.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | rds.ap-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | rds.ap-northeast-3.amazonaws.com | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | rds.ap-northeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | rds.ap-southeast-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | rds.ap-southeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | rds.ap-northeast-1.amazonaws.com | HTTPS           |  |
| Canada (Central)         | ca-central-1   | rds.ca-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | rds.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | rds.eu-west-1.amazonaws.com      | HTTPS           |  |
| Europe (London)          | eu-west-2      | rds.eu-west-2.amazonaws.com      | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | rds.eu-south-1.amazonaws.com     | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | rds.eu-west-3.amazonaws.com      | HTTPS           |  |

| <b>Region Name</b>        | <b>Region</b> | <b>Endpoint</b>                 | <b>Protocol</b> |  |
|---------------------------|---------------|---------------------------------|-----------------|--|
| Europe (Stockholm)        | eu-north-1    | rds.eu-north-1.amazonaws.com    | HTTPS           |  |
| Middle East (Bahrain)     | me-south-1    | rds.me-south-1.amazonaws.com    | HTTPS           |  |
| South America (São Paulo) | sa-east-1     | rds.sa-east-1.amazonaws.com     | HTTPS           |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | rds.us-gov-east-1.amazonaws.com | HTTPS           |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | rds.us-gov-west-1.amazonaws.com | HTTPS           |  |

## Amazon Aurora PostgreSQL-Compatible Edition

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                  | <b>Protocol</b> |  |
|--------------------------|----------------|----------------------------------|-----------------|--|
| US East (Ohio)           | us-east-2      | rds.us-east-2.amazonaws.com      | HTTPS           |  |
| US East (N. Virginia)    | us-east-1      | rds.us-east-1.amazonaws.com      | HTTPS           |  |
| US West (N. California)  | us-west-1      | rds.us-west-1.amazonaws.com      | HTTPS           |  |
| US West (Oregon)         | us-west-2      | rds.us-west-2.amazonaws.com      | HTTPS           |  |
| Africa (Cape Town)       | af-south-1     | rds.af-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | rds.ap-east-1.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | rds.ap-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | rds.ap-northeast-3.amazonaws.com | HTTPS           |  |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>                  | <b>Protocol</b> |  |
|---------------------------|----------------|----------------------------------|-----------------|--|
| Asia Pacific (Seoul)      | ap-northeast-2 | rds.ap-northeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | rds.ap-southeast-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | rds.ap-southeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | rds.ap-northeast-1.amazonaws.com | HTTPS           |  |
| Canada (Central)          | ca-central-1   | rds.ca-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Frankfurt)        | eu-central-1   | rds.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)          | eu-west-1      | rds.eu-west-1.amazonaws.com      | HTTPS           |  |
| Europe (London)           | eu-west-2      | rds.eu-west-2.amazonaws.com      | HTTPS           |  |
| Europe (Milan)            | eu-south-1     | rds.eu-south-1.amazonaws.com     | HTTPS           |  |
| Europe (Paris)            | eu-west-3      | rds.eu-west-3.amazonaws.com      | HTTPS           |  |
| Europe (Stockholm)        | eu-north-1     | rds.eu-north-1.amazonaws.com     | HTTPS           |  |
| Middle East (Bahrain)     | me-south-1     | rds.me-south-1.amazonaws.com     | HTTPS           |  |
| South America (São Paulo) | sa-east-1      | rds.sa-east-1.amazonaws.com      | HTTPS           |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | rds.us-gov-east-1.amazonaws.com  | HTTPS           |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | rds.us-gov-west-1.amazonaws.com  | HTTPS           |  |

## Service quotas

| Name   | Default           | Adjustable |
|--|-------------------|------------|
| Authorizations per DB security group             | 20                | No         |
| Custom engine versions                           | 40                | Yes        |
| DB cluster parameter groups                      | 50                | No         |
| DB clusters                                      | 40                | Yes        |
| DB instances                                     | 40                | Yes        |
| DB subnet groups                                 | 50                | Yes        |
| Data API HTTP request body size                  | 4 Megabytes       | No         |
| Data API maximum concurrent cluster-secret pairs | 30                | No         |
| Data API maximum concurrent requests             | 500               | No         |
| Data API maximum result set size                 | 1 Megabytes       | No         |
| Data API requests per second                     | 1,000 per second  | No         |
| Event subscriptions                              | 20                | Yes        |
| IAM roles per DB cluster                         | 5                 | Yes        |
| IAM roles per DB instance                        | 5                 | Yes        |
| Manual DB cluster snapshots                      | 100               | Yes        |
| Manual DB instance snapshots                     | 100               | Yes        |
| Option groups                                    | 20                | Yes        |
| Parameter groups                                 | 50                | Yes        |
| Proxies  | 20                | Yes        |
| Read replicas per master                         | 5                 | Yes        |
| Reserved DB instances                            | 40                | Yes        |
| Rules per security group                         | 20                | No         |
| Security groups                                  | 25                | Yes        |
| Security groups (VPC)                            | 5                 | No         |
| Subnets per DB subnet group                      | 20                | No         |
| Tags per resource                                | 50                | No         |
| Total storage for all DB instances               | 100,000 Gigabytes | Yes        |

# AWS Auto Scaling endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint                                       | Protocol       |  |
|--------------------------|----------------|--|----------------|--|
| US East (Ohio)           | us-east-2      | autoscaling-plans.us-east-2.amazonaws.com      | HTTP and HTTPS |  |
| US East (N. Virginia)    | us-east-1      | autoscaling-plans.us-east-1.amazonaws.com      | HTTP and HTTPS |  |
| US West (N. California)  | us-west-1      | autoscaling-plans.us-west-1.amazonaws.com      | HTTP and HTTPS |  |
| US West (Oregon)         | us-west-2      | autoscaling-plans.us-west-2.amazonaws.com      | HTTP and HTTPS |  |
| Africa (Cape Town)       | af-south-1     | autoscaling-plans.af-south-1.amazonaws.com     | HTTP and HTTPS |  |
| Asia Pacific (Hong Kong) | ap-east-1      | autoscaling-plans.ap-east-1.amazonaws.com      | HTTP and HTTPS |  |
| Asia Pacific (Mumbai)    | ap-south-1     | autoscaling-plans.ap-south-1.amazonaws.com     | HTTP and HTTPS |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | autoscaling-plans.ap-northeast-3.amazonaws.com | HTTP and HTTPS |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | autoscaling-plans.ap-northeast-2.amazonaws.com | HTTP and HTTPS |  |
| Asia Pacific (Singapore) | ap-southeast-1 | autoscaling-plans.ap-southeast-1.amazonaws.com | HTTP and HTTPS |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | autoscaling-plans.ap-southeast-2.amazonaws.com | HTTP and HTTPS |  |

| Region Name               | Region         | Endpoint                                       | Protocol       |  |
|---------------------------|----------------|--|----------------|--|
| Asia Pacific (Tokyo)      | ap-northeast-1 | autoscaling-plans.ap-northeast-1.amazonaws.com | HTTP and HTTPS |  |
| Canada (Central)          | ca-central-1   | autoscaling-plans.ca-central-1.amazonaws.com   | HTTP and HTTPS |  |
| Europe (Frankfurt)        | eu-central-1   | autoscaling-plans.eu-central-1.amazonaws.com   | HTTP and HTTPS |  |
| Europe (Ireland)          | eu-west-1      | autoscaling-plans.eu-west-1.amazonaws.com      | HTTP and HTTPS |  |
| Europe (London)           | eu-west-2      | autoscaling-plans.eu-west-2.amazonaws.com      | HTTP and HTTPS |  |
| Europe (Milan)            | eu-south-1     | autoscaling-plans.eu-south-1.amazonaws.com     | HTTP and HTTPS |  |
| Europe (Paris)            | eu-west-3      | autoscaling-plans.eu-west-3.amazonaws.com      | HTTP and HTTPS |  |
| Europe (Stockholm)        | eu-north-1     | autoscaling-plans.eu-north-1.amazonaws.com     | HTTP and HTTPS |  |
| Middle East (Bahrain)     | me-south-1     | autoscaling-plans.me-south-1.amazonaws.com     | HTTP and HTTPS |  |
| South America (São Paulo) | sa-east-1      | autoscaling-plans.sa-east-1.amazonaws.com      | HTTP and HTTPS |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | autoscaling-plans.us-gov-east-1.amazonaws.com  | HTTP and HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | autoscaling-plans.us-gov-west-1.amazonaws.com  | HTTP and HTTPS |  |

## Service quotas

| Name   | Default | Adjustable |
|--|---------|------------|
| Scaling instructions per scaling plan                  | 500     | No         |
| Scaling plans  | 100     | Yes        |
| Target tracking configurations per scaling instruction | 10      | No         |

For more information, see [AWS Auto Scaling Service Quotas](#) in the *AWS Auto Scaling User Guide*.

# AWS Backup endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | backup.us-east-2.amazonaws.com<br>backup-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | backup.us-east-1.amazonaws.com<br>backup-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | backup.us-west-1.amazonaws.com<br>backup-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | backup.us-west-2.amazonaws.com<br>backup-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Africa (Cape Town)       | af-south-1     | backup.af-south-1.amazonaws.com                                       | HTTPS          |  |
| Asia Pacific (Hong Kong) | ap-east-1      | backup.ap-east-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | backup.ap-south-1.amazonaws.com                                       | HTTPS          |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | backup.ap-northeast-3.amazonaws.com                                   | HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | backup.ap-northeast-2.amazonaws.com                                   | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | backup.ap-southeast-1.amazonaws.com                                   | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | backup.ap-southeast-2.amazonaws.com                                   | HTTPS          |  |

| Region Name               | Region         | Endpoint  | Protocol       |  |
|---------------------------|----------------|---|----------------|--|
| Asia Pacific (Tokyo)      | ap-northeast-1 | backup.ap-northeast-1.amazonaws.com   | HTTPS          |  |
| Canada (Central)          | ca-central-1   | backup.ca-central-1.amazonaws.com   | HTTPS          |  |
| Europe (Frankfurt)        | eu-central-1   | backup.eu-central-1.amazonaws.com   | HTTPS          |  |
| Europe (Ireland)          | eu-west-1      | backup.eu-west-1.amazonaws.com  | HTTPS          |  |
| Europe (London)           | eu-west-2      | backup.eu-west-2.amazonaws.com  | HTTPS          |  |
| Europe (Milan)            | eu-south-1     | backup.eu-south-1.amazonaws.com   | HTTPS          |  |
| Europe (Paris)            | eu-west-3      | backup.eu-west-3.amazonaws.com  | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1     | backup.eu-north-1.amazonaws.com   | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1     | backup.me-south-1.amazonaws.com   | HTTPS          |  |
| South America (São Paulo) | sa-east-1      | backup.sa-east-1.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | backup.us-gov-east-1.amazonaws.com<br>backup-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | backup.us-gov-west-1.amazonaws.com<br>backup-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name                                      | Default   | Adjustable |
|---|-----------|------------|
| Backup plans per Region per account       | 100       | Yes        |
| Backup vaults per Region per account      | 100       | Yes        |
| Framework controls per Region per account | 50        | Yes        |
| Frameworks per Region per account         | 10        | Yes        |
| Recovery points per backup vault          | 1,000,000 | Yes        |

| Name                                | Default | Adjustable |
|-------------------------------------|---------|------------|
| Report plans per Region per account | 20      | Yes        |
| Versions per backup plan            | 2,000   | Yes        |

If you regularly receive throttling exceptions, consider using a rate limiter.

| API name   | Default calls/sec |
|--|-------------------|
| CreateBackupPlan   CreateBackupSelection   DeleteBackupPlan   DeleteBackupSelection   DeleteBackupVault   DeleteBackupVaultAccessPolicy   DeleteBackupVaultNotifications   DescribeBackupVault   ExportBackupPlanTemplate   GetBackupPlanFromJSON   GetBackupPlanFromTemplate   PutBackupVaultNotifications   StartBackupJob   StartRestoreJob   StopBackupJob   TagResource   UntagResource   UpdateBackupPlan   UpdateRecoveryPointLifecycle | 5                 |
| DeleteRecoveryPoint   DescribeProtectedResource  | 10                |
| DescribeBackupJob   DescribeRecoveryPoint   DescribeRestoreJob   GetBackupPlan   GetBackupSelection   GetBackupVaultAccessPolicy   GetBackupVaultNotifications   GetRecoveryPointRestoreMetadata   GetSupportedResourceTypes   | 15                |
| ListBackupJobs   ListBackupPlans   ListBackupPlanTemplates   ListBackupPlanVersions   ListBackupSelections   ListBackupVaults   ListProtectedResources   ListRecoveryPointByResource   ListRecoveryPointsByBackupVault   ListRecoveryPointsByResource   ListRestoreJobs   ListTags   | 20                |
| Sum of All API Calls   | 50                |

For additional information, see [Quotas](#) in the *AWS Backup Developer Guide*.

## AWS Batch endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name    | Region    | Endpoint  | Protocol       |  |
|----------------|-----------|---|----------------|--|
| US East (Ohio) | us-east-2 | batch.us-east-2.amazonaws.com<br>fips.batch.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| US East (N. Virginia)    | us-east-1      | batch.us-east-1.amazonaws.com<br>fips.batch.us-east-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| US West (N. California)  | us-west-1      | batch.us-west-1.amazonaws.com<br>fips.batch.us-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| US West (Oregon)         | us-west-2      | batch.us-west-2.amazonaws.com<br>fips.batch.us-west-2.amazonaws.com | HTTPS<br>HTTPS  |  |
| Africa (Cape Town)       | af-south-1     | batch.af-south-1.amazonaws.com                                      | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | batch.ap-east-1.amazonaws.com                                       | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | batch.ap-south-1.amazonaws.com                                      | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | batch.ap-northeast-3.amazonaws.com                                  | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | batch.ap-northeast-2.amazonaws.com                                  | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | batch.ap-southeast-1.amazonaws.com                                  | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | batch.ap-southeast-2.amazonaws.com                                  | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | batch.ap-northeast-1.amazonaws.com                                  | HTTPS           |  |
| Canada (Central)         | ca-central-1   | batch.ca-central-1.amazonaws.com                                    | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | batch.eu-central-1.amazonaws.com                                    | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | batch.eu-west-1.amazonaws.com                                       | HTTPS           |  |
| Europe (London)          | eu-west-2      | batch.eu-west-2.amazonaws.com                                       | HTTPS           |  |

| Region Name               | Region        | Endpoint   | Protocol       |  |
|---------------------------|---------------|--|----------------|--|
| Europe (Milan)            | eu-south-1    | batch.eu-south-1.amazonaws.com   | HTTPS          |  |
| Europe (Paris)            | eu-west-3     | batch.eu-west-3.amazonaws.com  | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1    | batch.eu-north-1.amazonaws.com   | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1    | batch.me-south-1.amazonaws.com   | HTTPS          |  |
| South America (São Paulo) | sa-east-1     | batch.sa-east-1.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | batch.us-gov-east-1.amazonaws.com<br>batch.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | batch.us-gov-west-1.amazonaws.com<br>batch.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name                                      | Default   | Adjustable |
|---|-----------|------------|
| Compute environment limit                 | 50        | No         |
| Compute environments per job queue limit. | 3         | No         |
| Job dependencies limit                    | 20        | No         |
| Job payload size limit                    | 30        | No         |
| Job queue limit                           | 50        | No         |
| Maximum array size limit                  | 10,000    | No         |
| Submitted state jobs limit                | 1,000,000 | No         |

For more information, see [Service Quotas in the AWS Batch User Guide](#).

# AWS Billing and Cost Management endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

AWS Billing and Cost Management includes the AWS Cost Explorer API, the AWS Cost and Usage Reports API, the AWS Budgets API, and the AWS Price List API.

## Service Endpoints

### AWS Cost Explorer

| Region Name           | Region    | Endpoint                   | Protocol |  |
|-----------------------|-----------|----------------------------|----------|--|
| US East (N. Virginia) | us-east-1 | ce.us-east-1.amazonaws.com | HTTPS    |  |

### AWS Cost and Usage Reports

| Region Name           | Region    | Endpoint                    | Protocol |  |
|-----------------------|-----------|-----------------------------|----------|--|
| US East (N. Virginia) | us-east-1 | cur.us-east-1.amazonaws.com | HTTPS    |  |

### AWS Budgets

| Region Name             | Region     | Endpoint              | Protocol |  |
|-------------------------|------------|-----------------------|----------|--|
| US East (Ohio)          | us-east-2  | budgets.amazonaws.com | HTTPS    |  |
| US East (N. Virginia)   | us-east-1  | budgets.amazonaws.com | HTTPS    |  |
| US West (N. California) | us-west-1  | budgets.amazonaws.com | HTTPS    |  |
| US West (Oregon)        | us-west-2  | budgets.amazonaws.com | HTTPS    |  |
| Asia Pacific (Mumbai)   | ap-south-1 | budgets.amazonaws.com | HTTPS    |  |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>       | <b>Protocol</b> |  |
|---------------------------|----------------|-----------------------|-----------------|--|
| Asia Pacific (Seoul)      | ap-northeast-2 | budgets.amazonaws.com | HTTPS           |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | budgets.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | budgets.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | budgets.amazonaws.com | HTTPS           |  |
| Canada (Central)          | ca-central-1   | budgets.amazonaws.com | HTTPS           |  |
| Europe (Frankfurt)        | eu-central-1   | budgets.amazonaws.com | HTTPS           |  |
| Europe (Ireland)          | eu-west-1      | budgets.amazonaws.com | HTTPS           |  |
| Europe (London)           | eu-west-2      | budgets.amazonaws.com | HTTPS           |  |
| Europe (Paris)            | eu-west-3      | budgets.amazonaws.com | HTTPS           |  |
| South America (São Paulo) | sa-east-1      | budgets.amazonaws.com | HTTPS           |  |

## AWS Price List Service

| <b>Region Name</b>    | <b>Region</b> | <b>Endpoint</b>                      | <b>Protocol</b> |  |
|-----------------------|---------------|--------------------------------------|-----------------|--|
| US East (N. Virginia) | us-east-1     | api.pricing.us-east-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Mumbai) | ap-south-1    | api.pricing.ap-south-1.amazonaws.com | HTTPS           |  |

## Savings Plans

| Region Name              | Region         | Endpoint                   | Protocol |  |
|--------------------------|----------------|----------------------------|----------|--|
| US East (Ohio)           | us-east-2      | savingsplans.amazonaws.com | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | savingsplans.amazonaws.com | HTTPS    |  |
| US West (N. California)  | us-west-1      | savingsplans.amazonaws.com | HTTPS    |  |
| US West (Oregon)         | us-west-2      | savingsplans.amazonaws.com | HTTPS    |  |
| Africa (Cape Town)       | af-south-1     | savingsplans.amazonaws.com | HTTPS    |  |
| Asia Pacific (Hong Kong) | ap-east-1      | savingsplans.amazonaws.com | HTTPS    |  |
| Asia Pacific (Mumbai)    | ap-south-1     | savingsplans.amazonaws.com | HTTPS    |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | savingsplans.amazonaws.com | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | savingsplans.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | savingsplans.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | savingsplans.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | savingsplans.amazonaws.com | HTTPS    |  |
| Canada (Central)         | ca-central-1   | savingsplans.amazonaws.com | HTTPS    |  |
| Europe (Frankfurt)       | eu-central-1   | savingsplans.amazonaws.com | HTTPS    |  |
| Europe (Ireland)         | eu-west-1      | savingsplans.amazonaws.com | HTTPS    |  |

| Region Name               | Region     | Endpoint                   | Protocol |  |
|---------------------------|------------|----------------------------|----------|--|
| Europe (London)           | eu-west-2  | savingsplans.amazonaws.com | HTTPS    |  |
| Europe (Paris)            | eu-west-3  | savingsplans.amazonaws.com | HTTPS    |  |
| Europe (Stockholm)        | eu-north-1 | savingsplans.amazonaws.com | HTTPS    |  |
| Middle East (Bahrain)     | me-south-1 | savingsplans.amazonaws.com | HTTPS    |  |
| South America (São Paulo) | sa-east-1  | savingsplans.amazonaws.com | HTTPS    |  |

## Service Quotas

Billing and Cost Management has no increasable quotas. For more information, see [Quotas in AWS Billing and Cost Management](#).

## Amazon Braket endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name             | Region    | Endpoint                       | Protocol |  |
|-------------------------|-----------|--------------------------------|----------|--|
| US East (N. Virginia)   | us-east-1 | braket.us-east-1.amazonaws.com | HTTPS    |  |
| US West (N. California) | us-west-1 | braket.us-west-1.amazonaws.com | HTTPS    |  |
| US West (Oregon)        | us-west-2 | braket.us-west-2.amazonaws.com | HTTPS    |  |

## Service quotas

| Name                                      | Default        | Adjustable |
|---|----------------|------------|
| Burst rate of API requests                | 600            | No         |
| Burst rate of CancelQuantumTask requests  | 20             | No         |
| Burst rate of CreateQuantumTask requests  | 40             | No         |
| Burst rate of GetDevice requests          | 50             | No         |
| Burst rate of GetQuantumTask requests     | 500            | No         |
| Burst rate of SearchDevices requests      | 50             | No         |
| Burst rate of SearchQuantumTasks requests | 50             | No         |
| Number of concurrent SV1 tasks            | 35             | Yes        |
| Rate of API requests                      | 140            | Yes        |
| Rate of CancelQuantumTask requests        | 2 per second   | Yes        |
| Rate of CreateQuantumTask requests        | 20 per second  | Yes        |
| Rate of GetDevice requests                | 5 per second   | Yes        |
| Rate of GetQuantumTask requests           | 100 per second | Yes        |
| Rate of SearchDevices requests            | 5 per second   | Yes        |
| Rate of SearchQuantumTasks requests       | 5 per second   | Yes        |

## AWS BugBust endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name           | Region    | Endpoint                        | Protocol |
|-----------------------|-----------|---------------------------------|----------|
| US East (N. Virginia) | us-east-1 | bugbust.us-east-1.amazonaws.com | HTTPS    |

## Service quotas

| Resource                | Default                      |
|-------------------------|------------------------------|
| Associated repositories | 5 per BugBust event          |
| Profiling groups        | 25 per BugBust event         |
| Participants            | 50 per BugBust event         |
| Regions                 | 50 BugBust events per Region |

## AWS Certificate Manager endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region     | Endpoint                         | Protocol |
|--------------------------|------------|----------------------------------|----------|
| US East (Ohio)           | us-east-2  | acm.us-east-2.amazonaws.com      | HTTPS    |
|                          |            | acm-fips.us-east-2.amazonaws.com | HTTPS    |
| US East (N. Virginia)    | us-east-1  | acm.us-east-1.amazonaws.com      | HTTPS    |
|                          |            | acm-fips.us-east-1.amazonaws.com | HTTPS    |
| US West (N. California)  | us-west-1  | acm.us-west-1.amazonaws.com      | HTTPS    |
|                          |            | acm-fips.us-west-1.amazonaws.com | HTTPS    |
| US West (Oregon)         | us-west-2  | acm.us-west-2.amazonaws.com      | HTTPS    |
|                          |            | acm-fips.us-west-2.amazonaws.com | HTTPS    |
| Africa (Cape Town)       | af-south-1 | acm.af-south-1.amazonaws.com     | HTTPS    |
| Asia Pacific (Hong Kong) | ap-east-1  | acm.ap-east-1.amazonaws.com      | HTTPS    |
| Asia Pacific (Mumbai)    | ap-south-1 | acm.ap-south-1.amazonaws.com     | HTTPS    |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|---------------------------|----------------|---|-----------------|--|
| Asia Pacific (Osaka)      | ap-northeast-3 | acm.ap-northeast-3.amazonaws.com                                      | HTTPS           |  |
| Asia Pacific (Seoul)      | ap-northeast-2 | acm.ap-northeast-2.amazonaws.com                                      | HTTPS           |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | acm.ap-southeast-1.amazonaws.com                                      | HTTPS           |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | acm.ap-southeast-2.amazonaws.com                                      | HTTPS           |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | acm.ap-northeast-1.amazonaws.com                                      | HTTPS           |  |
| Canada (Central)          | ca-central-1   | acm.ca-central-1.amazonaws.com<br>acm-fips.ca-central-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| Europe (Frankfurt)        | eu-central-1   | acm.eu-central-1.amazonaws.com  | HTTPS           |  |
| Europe (Ireland)          | eu-west-1      | acm.eu-west-1.amazonaws.com   | HTTPS           |  |
| Europe (London)           | eu-west-2      | acm.eu-west-2.amazonaws.com   | HTTPS           |  |
| Europe (Milan)            | eu-south-1     | acm.eu-south-1.amazonaws.com  | HTTPS           |  |
| Europe (Paris)            | eu-west-3      | acm.eu-west-3.amazonaws.com   | HTTPS           |  |
| Europe (Stockholm)        | eu-north-1     | acm.eu-north-1.amazonaws.com  | HTTPS           |  |
| Middle East (Bahrain)     | me-south-1     | acm.me-south-1.amazonaws.com  | HTTPS           |  |
| South America (São Paulo) | sa-east-1      | acm.sa-east-1.amazonaws.com   | HTTPS           |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | acm.us-gov-east-1.amazonaws.com<br>acm.us-gov-east-1.amazonaws.com    | HTTPS<br>HTTPS  |  |

| Region Name            | Region        | Endpoint   | Protocol       |  |
|------------------------|---------------|--|----------------|--|
| AWS GovCloud (US-West) | us-gov-west-1 | acm.us-gov-west-1.amazonaws.com<br>acm.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
|                        |               |  |                |  |

## Service quotas

| Name                                      | Default | Adjustable |
|---|---------|------------|
| ACM certificates                          | 2,500   | Yes        |
| ACM certificates created in last 365 days | 5,000   | Yes        |
| Domain names per ACM certificate          | 10      | Yes        |
| Imported certificates                     | 2,500   | Yes        |
| Imported certificates in last 365 days    | 5,000   | Yes        |

For more information, see [Quotas](#) in the *AWS Certificate Manager User Guide*.

## AWS Certificate Manager Private Certificate Authority endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name             | Region    | Endpoint  | Protocol       |  |
|-------------------------|-----------|---|----------------|--|
| US East (Ohio)          | us-east-2 | acm-pca.us-east-2.amazonaws.com<br>acm-pca-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)   | us-east-1 | acm-pca.us-east-1.amazonaws.com<br>acm-pca-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California) | us-west-1 | acm-pca.us-west-1.amazonaws.com<br>acm-pca-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)        | us-west-2 | acm-pca.us-west-2.amazonaws.com<br>acm-pca-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| Africa (Cape Town)       | af-south-1     | acm-pca.af-south-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | acm-pca.ap-east-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | acm-pca.ap-south-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | acm-pca.ap-northeast-3.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | acm-pca.ap-northeast-2.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | acm-pca.ap-southeast-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | acm-pca.ap-southeast-2.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | acm-pca.ap-northeast-1.amazonaws.com  | HTTPS           |  |
| Canada (Central)         | ca-central-1   | acm-pca.ca-central-1.amazonaws.com<br>acm-pca-fips.ca-central-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| Europe (Frankfurt)       | eu-central-1   | acm-pca.eu-central-1.amazonaws.com  | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | acm-pca.eu-west-1.amazonaws.com   | HTTPS           |  |
| Europe (London)          | eu-west-2      | acm-pca.eu-west-2.amazonaws.com   | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | acm-pca.eu-south-1.amazonaws.com  | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | acm-pca.eu-west-3.amazonaws.com   | HTTPS           |  |
| Europe (Stockholm)       | eu-north-1     | acm-pca.eu-north-1.amazonaws.com  | HTTPS           |  |

| <b>Region Name</b>        | <b>Region</b> | <b>Endpoint</b>  | <b>Protocol</b> |  |
|---------------------------|---------------|--|-----------------|--|
| Middle East (Bahrain)     | me-south-1    | acm-pca.me-south-1.amazonaws.com   | HTTPS           |  |
| South America (São Paulo) | sa-east-1     | acm-pca.sa-east-1.amazonaws.com  | HTTPS           |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | acm-pca.us-gov-east-1.amazonaws.com<br>acm-pca.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | acm-pca.us-gov-west-1.amazonaws.com<br>acm-pca.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |

## Service quotas

| <b>Name</b>  | <b>Default</b> | <b>Adjustable</b> |
|--|----------------|-------------------|
| Number of private certificate authorities (CAs)          | 200            | Yes               |
| Number of private certificates per CA                    | 1,000,000      | Yes               |
| Number of revoked private certificates per CA            | 1,000,000      | No                |
| Rate of CreateCertificateAuthority requests              | 1              | No                |
| Rate of CreateCertificateAuthorityAuditReport requests   | 1              | No                |
| Rate of CreatePermission requests                        | 1              | No                |
| Rate of DeleteCertificateAuthority requests              | 10             | No                |
| Rate of DeletePermission requests                        | 1              | No                |
| Rate of DeletePolicy requests                            | 5              | No                |
| Rate of DescribeCertificateAuthority requests            | 20             | No                |
| Rate of DescribeCertificateAuthorityAuditReport requests | 20             | No                |
| Rate of GetCertificate requests                          | 75             | Yes               |
| Rate of GetCertificateAuthorityCertificate requests      | 20             | No                |
| Rate of GetCertificateAuthorityCsr requests              | 10             | No                |
| Rate of GetPolicy requests                               | 5              | No                |
| Rate of ImportCertificateAuthorityCertificate requests   | 10             | No                |
| Rate of IssueCertificate requests                        | 25             | Yes               |
| Rate of ListCertificateAuthorities requests              | 20             | No                |

| Name   | Default | Adjustable |
|--|---------|------------|
| Rate of ListPermissions requests             | 5       | No         |
| Rate of ListTags requests                    | 20      | No         |
| Rate of PutPolicy requests                   | 5       | No         |
| Rate of RestoreCertificateAuthority requests | 20      | No         |
| Rate of RevokeCertificate requests           | 20      | No         |
| Rate of TagCertificateAuthority requests     | 10      | No         |
| Rate of UntagCertificateAuthority requests   | 10      | No         |
| Rate of UpdateCertificateAuthority requests  | 10      | No         |

## AWS Chatbot endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region     | Endpoint                         | Protocol |  |
|--------------------------|------------|----------------------------------|----------|--|
| US East (Ohio)           | us-east-2  | chatbot.us-east-2.amazonaws.com  | HTTPS    |  |
| US East (N. Virginia)    | us-east-1  | chatbot.us-east-1.amazonaws.com  | HTTPS    |  |
| US West (N. California)  | us-west-1  | chatbot.us-west-1.amazonaws.com  | HTTPS    |  |
| US West (Oregon)         | us-west-2  | chatbot.us-west-2.amazonaws.com  | HTTPS    |  |
| Africa (Cape Town)       | af-south-1 | chatbot.af-south-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Hong Kong) | ap-east-1  | chatbot.ap-east-1.amazonaws.com  | HTTPS    |  |
| Asia Pacific (Mumbai)    | ap-south-1 | chatbot.ap-south-1.amazonaws.com | HTTPS    |  |

| Region Name               | Region         | Endpoint                             | Protocol |  |
|---------------------------|----------------|--------------------------------------|----------|--|
| Asia Pacific (Osaka)      | ap-northeast-3 | chatbot.ap-northeast-3.amazonaws.com | HTTPS    |  |
| Asia Pacific (Seoul)      | ap-northeast-2 | chatbot.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | chatbot.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | chatbot.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | chatbot.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)          | ca-central-1   | chatbot.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)        | eu-central-1   | chatbot.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)          | eu-west-1      | chatbot.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)           | eu-west-2      | chatbot.eu-west-2.amazonaws.com      | HTTPS    |  |
| Europe (Milan)            | eu-south-1     | chatbot.eu-south-1.amazonaws.com     | HTTPS    |  |
| Europe (Paris)            | eu-west-3      | chatbot.eu-west-3.amazonaws.com      | HTTPS    |  |
| Europe (Stockholm)        | eu-north-1     | chatbot.eu-north-1.amazonaws.com     | HTTPS    |  |
| Middle East (Bahrain)     | me-south-1     | chatbot.me-south-1.amazonaws.com     | HTTPS    |  |
| South America (São Paulo) | sa-east-1      | chatbot.sa-east-1.amazonaws.com      | HTTPS    |  |

## Service quotas

| Name  | Default | Adjustable |
|---|---------|------------|
| Maximum number of Amazon Chime webhook configurations per AWS account | 500     | Yes        |
| Maximum number of Slack channel configurations per AWS account        | 500     | Yes        |

## Amazon Chime endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

Amazon Chime has a single endpoint that supports HTTPS: [service.chime.aws.amazon.com](https://service.chime.aws.amazon.com)

## Service quotas

| Name  | Default | Adjustable |
|---|---------|------------|
| Active Amazon Chime SDK meetings per account                              | 250     | Yes        |
| All meeting management API requests burst limit                           | 20      | No         |
| All meeting management API requests rate limit in transactions per second | 10      | No         |
| Amazon Chime Business Calling provisioned phone numbers per account       | 25      | Yes        |
| Amazon Chime SDK attendees per meeting                                    | 250     | No         |
| Amazon Chime SDK video tiles per meeting                                  | 25      | Yes        |
| Amazon Chime SIP media applications per account                           | 30      | Yes        |
| Amazon Chime SIP rules per Amazon Chime SIP media application             | 25      | Yes        |
| Amazon Chime Voice Connector groups per account                           | 3       | Yes        |
| Amazon Chime Voice Connector provisioned phone numbers per account        | 25      | Yes        |
| Amazon Chime Voice Connectors per Amazon Chime Voice Connector group      | 3       | Yes        |
| Amazon Chime Voice Connectors per account                                 | 3       | Yes        |
| BatchCreateAttendees burst limit  | 20      | No         |
| BatchCreateAttendees rate limit in transactions per second                | 10      | No         |
| Calls per second for each Amazon Chime Voice Connector                    | 1       | Yes        |

| Name   | Default | Adjustable |
|--|---------|------------|
| CreateAttendee burst limit                                       | 20      | No         |
| CreateAttendee rate limit in transactions per second             | 10      | No         |
| CreateMeeting burst limit  | 20      | No         |
| CreateMeeting rate limit in transactions per second              | 10      | No         |
| CreateMeetingWithAttendees burst limit                           | 20      | No         |
| CreateMeetingWithAttendees rate limit in transactions per second | 10      | No         |
| DeleteAttendee burst limit                                       | 20      | No         |
| DeleteAttendee rate limit in transactions per second             | 10      | No         |
| DeleteMeeting burst limit  | 20      | No         |
| DeleteMeeting rate limit in transactions per second              | 10      | No         |
| GetMeeting burst limit   | 20      | No         |
| GetMeeting rate limit in transactions per second                 | 10      | No         |
| ListAttendees burst limit  | 20      | No         |
| ListAttendees rate limit in transactions per second              | 10      | No         |
| ListMeetings burst limit   | 20      | No         |
| ListMeetings rate limit in transactions per second               | 10      | No         |

The following table lists additional quotas for Amazon Chime rooms and memberships.

| Resource                | Default |
|-------------------------|---------|
| Rooms per account       | 1,500   |
| Rooms per profile       | 1,500   |
| Memberships per room    | 1,000   |
| Memberships per profile | 1,000   |

## Cloud Control API endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint  | Protocol |
|--------------------------|----------------|---|----------|
| US East (Ohio)           | us-east-2      | cloudcontrolapi.us-east-2.amazonaws.com<br>cloudcontrolapi-fips.us-east-2.amazonaws.com | HTTPS    |
| US East (N. Virginia)    | us-east-1      | cloudcontrolapi.us-east-1.amazonaws.com<br>cloudcontrolapi-fips.us-east-1.amazonaws.com | HTTPS    |
| US West (N. California)  | us-west-1      | cloudcontrolapi.us-west-1.amazonaws.com<br>cloudcontrolapi-fips.us-west-1.amazonaws.com | HTTPS    |
| US West (Oregon)         | us-west-2      | cloudcontrolapi.us-west-2.amazonaws.com<br>cloudcontrolapi-fips.us-west-2.amazonaws.com | HTTPS    |
| Africa (Cape Town)       | af-south-1     | cloudcontrolapi.af-south-1.amazonaws.com  | HTTPS    |
| Asia Pacific (Hong Kong) | ap-east-1      | cloudcontrolapi.ap-east-1.amazonaws.com   | HTTPS    |
| Asia Pacific (Mumbai)    | ap-south-1     | cloudcontrolapi.ap-south-1.amazonaws.com  | HTTPS    |
| Asia Pacific (Seoul)     | ap-northeast-2 | cloudcontrolapi.ap-northeast-2.amazonaws.com  | HTTPS    |
| Asia Pacific (Singapore) | ap-southeast-1 | cloudcontrolapi.ap-southeast-1.amazonaws.com  | HTTPS    |
| Asia Pacific (Sydney)    | ap-southeast-2 | cloudcontrolapi.ap-southeast-2.amazonaws.com  | HTTPS    |
| Asia Pacific (Tokyo)     | ap-northeast-1 | cloudcontrolapi.ap-northeast-1.amazonaws.com  | HTTPS    |
| Canada (Central)         | ca-central-1   | cloudcontrolapi.ca-central-1.amazonaws.com  | HTTPS    |
| Europe (Frankfurt)       | eu-central-1   | cloudcontrolapi.eu-central-1.amazonaws.com  | HTTPS    |
| Europe (Ireland)         | eu-west-1      | cloudcontrolapi.eu-west-1.amazonaws.com   | HTTPS    |

| Region Name               | Region        | Endpoint  | Protocol |
|---------------------------|---------------|---|----------|
| Europe (London)           | eu-west-2     | cloudcontrolapi.eu-west-2.amazonaws.com   | HTTPS    |
| Europe (Milan)            | eu-south-1    | cloudcontrolapi.eu-south-1.amazonaws.com  | HTTPS    |
| Europe (Paris)            | eu-west-3     | cloudcontrolapi.eu-west-3.amazonaws.com   | HTTPS    |
| Europe (Stockholm)        | eu-north-1    | cloudcontrolapi.eu-north-1.amazonaws.com  | HTTPS    |
| Middle East (Bahrain)     | me-south-1    | cloudcontrolapi.me-south-1.amazonaws.com  | HTTPS    |
| South America (São Paulo) | sa-east-1     | cloudcontrolapi.sa-east-1.amazonaws.com   | HTTPS    |
| AWS GovCloud (US-East)    | gov-us-east-1 | cloudcontrolapi.us-gov-east-1.amazonaws.com<br>cloudcontrolapi-fips.gov-us-east-1.amazonaws.com | HTTPS    |
| AWS GovCloud (US-West)    | gov-us-west-1 | cloudcontrolapi.us-gov-west-1.amazonaws.com<br>cloudcontrolapi-fips.gov-us-west-1.amazonaws.com | HTTPS    |

## AWS Cloud9 endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name             | Region    | Endpoint                       | Protocol |
|-------------------------|-----------|--------------------------------|----------|
| US East (Ohio)          | us-east-2 | cloud9.us-east-2.amazonaws.com | HTTPS    |
| US East (N. Virginia)   | us-east-1 | cloud9.us-east-1.amazonaws.com | HTTPS    |
| US West (N. California) | us-west-1 | cloud9.us-west-1.amazonaws.com | HTTPS    |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                     | <b>Protocol</b> |  |
|--------------------------|----------------|-------------------------------------|-----------------|--|
| US West (Oregon)         | us-west-2      | cloud9.us-west-2.amazonaws.com      | HTTPS           |  |
| Africa (Cape Town)       | af-south-1     | cloud9.af-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | cloud9.ap-east-1.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | cloud9.ap-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | cloud9.ap-northeast-3.amazonaws.com | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | cloud9.ap-northeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | cloud9.ap-southeast-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | cloud9.ap-southeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | cloud9.ap-northeast-1.amazonaws.com | HTTPS           |  |
| Canada (Central)         | ca-central-1   | cloud9.ca-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | cloud9.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | cloud9.eu-west-1.amazonaws.com      | HTTPS           |  |
| Europe (London)          | eu-west-2      | cloud9.eu-west-2.amazonaws.com      | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | cloud9.eu-south-1.amazonaws.com     | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | cloud9.eu-west-3.amazonaws.com      | HTTPS           |  |
| Europe (Stockholm)       | eu-north-1     | cloud9.eu-north-1.amazonaws.com     | HTTPS           |  |

| Region Name               | Region     | Endpoint                        | Protocol |  |
|---------------------------|------------|---------------------------------|----------|--|
| Middle East (Bahrain)     | me-south-1 | cloud9.me-south-1.amazonaws.com | HTTPS    |  |
| South America (São Paulo) | sa-east-1  | cloud9.sa-east-1.amazonaws.com  | HTTPS    |  |

## Service quotas

| Name                                | Default | Adjustable |
|-------------------------------------|---------|------------|
| EC2 development environments        | 200     | Yes        |
| EC2 development environments        | 100     | Yes        |
| Members per development environment | 8       | No         |
| SSH development environments        | 100     | Yes        |
| SSH development environments        | 200     | Yes        |

For more information, see [Quotas](#) in the *AWS Cloud9 User Guide*.

## Amazon Cloud Directory endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service Endpoints

| Region Name              | Region         | Endpoint                                    | Protocol |  |
|--------------------------|----------------|---|----------|--|
| US East (Ohio)           | us-east-2      | clouddirectory.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | clouddirectory.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | clouddirectory.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | clouddirectory.ap-southeast-1.amazonaws.com | HTTPS    |  |

| Region Name            | Region         | Endpoint                                    | Protocol |  |
|------------------------|----------------|---|----------|--|
| Asia Pacific (Sydney)  | ap-southeast-2 | clouddirectory.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Canada (Central)       | ca-central-1   | clouddirectory.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)     | eu-central-1   | clouddirectory.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)       | eu-west-1      | clouddirectory.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)        | eu-west-2      | clouddirectory.eu-west-2.amazonaws.com      | HTTPS    |  |
| AWS GovCloud (US-West) | us-gov-west-1  | clouddirectory.us-gov-west-1.amazonaws.com  | HTTPS    |  |

## AWS CloudFormation endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name             | Region     | Endpoint  | Protocol       |  |
|-------------------------|------------|---|----------------|--|
| US East (Ohio)          | us-east-2  | cloudformation.us-east-2.amazonaws.com<br>cloudformation-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)   | us-east-1  | cloudformation.us-east-1.amazonaws.com<br>cloudformation-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California) | us-west-1  | cloudformation.us-west-1.amazonaws.com<br>cloudformation-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)        | us-west-2  | cloudformation.us-west-2.amazonaws.com<br>cloudformation-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Africa (Cape Town)      | af-south-1 | cloudformation.af-south-1.amazonaws.com   | HTTPS          |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                             | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| Asia Pacific (Hong Kong) | ap-east-1      | cloudformation.ap-east-1.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | cloudformation.ap-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | cloudformation.ap-northeast-3.amazonaws.com | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | cloudformation.ap-northeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | cloudformation.ap-southeast-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | cloudformation.ap-southeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | cloudformation.ap-northeast-1.amazonaws.com | HTTPS           |  |
| Canada (Central)         | ca-central-1   | cloudformation.ca-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | cloudformation.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | cloudformation.eu-west-1.amazonaws.com      | HTTPS           |  |
| Europe (London)          | eu-west-2      | cloudformation.eu-west-2.amazonaws.com      | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | cloudformation.eu-south-1.amazonaws.com     | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | cloudformation.eu-west-3.amazonaws.com      | HTTPS           |  |
| Europe (Stockholm)       | eu-north-1     | cloudformation.eu-north-1.amazonaws.com     | HTTPS           |  |
| Middle East (Bahrain)    | me-south-1     | cloudformation.me-south-1.amazonaws.com     | HTTPS           |  |

| Region Name               | Region        | Endpoint   | Protocol       |  |
|---------------------------|---------------|--|----------------|--|
| South America (São Paulo) | sa-east-1     | cloudformation.sa-east-1.amazonaws.com   | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | cloudformation.us-gov-east-1.amazonaws.com<br>cloudformation.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | cloudformation.us-gov-west-1.amazonaws.com<br>cloudformation.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## StackSets regional support

StackSets is supported in the following Regions:

| Region Name              | Region         | Endpoint                               | Protocol |  |
|--------------------------|----------------|--|----------|--|
| US East (Ohio)           | us-east-2      | stacksets.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | stacksets.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (N. California)  | us-west-1      | stacksets.us-west-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | stacksets.us-west-2.amazonaws.com      | HTTPS    |  |
| Africa (Cape Town)       | af-south-1     | stacksets.af-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Hong Kong) | ap-east-1      | stacksets.ap-east-1.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai)    | ap-south-1     | stacksets.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | stacksets.ap-northeast-3.amazonaws.com | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | stacksets.ap-northeast-2.amazonaws.com | HTTPS    |  |

| Region Name               | Region         | Endpoint                               | Protocol |  |
|---------------------------|----------------|--|----------|--|
| Asia Pacific (Singapore)  | ap-southeast-1 | stacksets.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | stacksets.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | stacksets.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)          | ca-central-1   | stacksets.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)        | eu-central-1   | stacksets.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)          | eu-west-1      | stacksets.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)           | eu-west-2      | stacksets.eu-west-2.amazonaws.com      | HTTPS    |  |
| Europe (Milan)            | eu-south-1     | stacksets.eu-south-1.amazonaws.com     | HTTPS    |  |
| Europe (Paris)            | eu-west-3      | stacksets.eu-west-3.amazonaws.com      | HTTPS    |  |
| Europe (Stockholm)        | eu-north-1     | stacksets.eu-north-1.amazonaws.com     | HTTPS    |  |
| Middle East (Bahrain)     | me-south-1     | stacksets.me-south-1.amazonaws.com     | HTTPS    |  |
| South America (São Paulo) | sa-east-1      | stacksets.sa-east-1.amazonaws.com      | HTTPS    |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | stacksets.us-gov-east-1.amazonaws.com  | HTTPS    |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | stacksets.us-gov-west-1.amazonaws.com  | HTTPS    |  |

For more information, see [AWS CloudFormation StackSets](#) in the *AWS CloudFormation User Guide*.

## Service quotas

| Name   | Default      | Adjustable |
|--|--------------|------------|
| Attributes per mapping in CloudFormation template                    | 200          | No         |
| Data in custom resource provider                                     | 4,096 Bytes  | No         |
| Declared mappings in CloudFormation template.                        | 200          | No         |
| Maximum size of a template description in a cloud formation template | 1,024 Bytes  | No         |
| Module limit per account   | 100          | Yes        |
| Nested modules   | 3            | No         |
| Output count in CloudFormation template                              | 200          | No         |
| Parameters declared in CloudFormation template.                      | 200          | No         |
| Resource limit per account   | 50           | Yes        |
| Resources declared in a CloudFormation template                      | 500          | No         |
| Size of Mapping attribute name                                       | 255          | No         |
| Size of a parameter value in cloud formation template                | 4,096        | No         |
| Size of a resource name in cloud formation template                  | 255          | No         |
| Size of a template body in S3 object for a ValidateStack request     | 1 Megabytes  | No         |
| Size of output name in CloudFormation template                       | 255          | No         |
| Size of parameter name in CloudFormation template                    | 255          | No         |
| Size of template body in CreateStack request                         | 51,200 Bytes | No         |
| Stack count  | 2,000        | Yes        |
| Stack instance operations per administrator account                  | 3,500        | Yes        |
| Stack instances per stack set  | 2,000        | Yes        |
| Stack sets per administrator account                                 | 100          | Yes        |
| Version limit per module   | 100          | Yes        |
| Version limit per resource   | 50           | Yes        |
| cfn-signal wait condition data                                       | 4,096 Bytes  | No         |

For more information, see [AWS CloudFormation Quotas](#) in the *AWS CloudFormation User Guide*.

## Amazon CloudFront endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name                  | Region    | Endpoint  | Protocol       | Amazon Route 53 Hosted Zone ID* |
|------------------------------|-----------|---|----------------|---------------------------------|
| US East (N. Virginia) Region | us-east-1 | cloudfront.amazonaws.com<br>cloudfront-fips.amazonaws.com | HTTPS<br>HTTPS | Z2FDTNDAQYW2                    |

### Service quotas

| Name   | Default    | Adjustable |
|--|------------|------------|
| Alternate domain names (CNAMEs) per distribution   | 100        | Yes        |
| Cache behaviors per distribution   | 25         | Yes        |
| Cache policies per AWS account   | 20         | No         |
| Concurrent executions  | 1,000      | Yes        |
| Connection attempts per origin   | 3          | No         |
| Connection timeout per origin  | 10 Seconds | No         |
| Cookies per cache policy   | 10         | Yes        |
| Cookies per origin request policy  | 10         | Yes        |
| Custom headers: maximum length of a header name  | 256        | No         |
| Custom headers: maximum length of a header value   | 1,783      | No         |
| Custom headers: maximum length of all header values and names combined                                       | 10,240     | No         |
| Custom headers: maximum number of custom headers that you can configure CloudFront to add to origin requests | 10         | Yes        |
| Data transfer rate per distribution  | 150        | Yes        |
| Distributions associated with a single key group   | 100        | Yes        |
| Distributions associated with the same cache policy  | 100        | No         |
| Distributions associated with the same origin request policy   | 100        | No         |

| Name   | Default       | Adjustable |
|--|---------------|------------|
| Distributions per AWS account that you can create triggers for   | 25            | Yes        |
| File invalidation: maximum number of active wildcard invalidations allowed   | 15            | No         |
| File invalidation: maximum number of files allowed in active invalidation requests, excluding wildcard invalidations | 3,000         | No         |
| Function memory size (Viewer request and response event)   | 128 Megabytes | No         |
| Function timeout (Origin request and response event)   | 30 Seconds    | No         |
| Function timeout for a viewer request and response event   | 5 Seconds     | No         |
| Headers per cache policy   | 10            | Yes        |
| Headers per origin request policy  | 10            | Yes        |
| Key groups associated with a single distribution   | 4             | Yes        |
| Key groups per AWS account   | 10            | Yes        |
| Maximum compressed size of a Lambda function and any included libraries. (Origin request and response event)         | 50 Megabytes  | No         |
| Maximum compressed size of a Lambda function and any included libraries. (Viewer request and response event)         | 1 Megabytes   | No         |
| Maximum file size for HTTP GET, POST, and PUT requests   | 20 Gigabytes  | No         |
| Maximum length of a URL  | 8,192 Bytes   | No         |
| Maximum length of a field to encrypt   | 16 Kilobytes  | No         |
| Maximum length of a request body when field-level encryption is configured   | 1 Megabytes   | No         |
| Maximum length of a request, including headers and query strings, but not including the body content                 | 20,480 Bytes  | No         |
| Maximum number of CloudFront distributions that can be associated with a field-level encryption configuration        | 20            | No         |
| Maximum number of characters in a whitelisted query string   | 128           | No         |
| Maximum number of characters total for all whitelisted query strings in the same parameter                           | 512           | No         |
| Maximum number of field-level encryption configurations that can be associated with one AWS account                  | 10            | No         |
| Maximum number of field-level encryption profiles that can be associated with one AWS account                        | 10            | No         |

| Name   | Default          | Adjustable |
|--|------------------|------------|
| Maximum number of fields in a request body when field-level encryption is configured                             | 10               | No         |
| Maximum number of fields to encrypt that can be specified in one profile   | 10               | No         |
| Maximum number of public keys that can be added to one AWS account   | 10               | No         |
| Maximum number of query argument profile mappings that can be included in a field-level encryption configuration | 5                | No         |
| Origin access identities per account   | 100              | Yes        |
| Origin groups per distribution   | 10               | Yes        |
| Origin request policies per AWS account  | 20               | No         |
| Origin response timeout (idle timeout)   | 10               | No         |
| Origins per distribution   | 25               | Yes        |
| Public keys in a single key group  | 5                | Yes        |
| Query strings per cache policy   | 10               | Yes        |
| Query strings per origin request policy  | 10               | Yes        |
| RTMP distributions per AWS account   | 100              | Yes        |
| Range of file sizes that CloudFront compresses   | 10,000,000 Bytes | No         |
| Request body size for origin requests exposed to a Lambda@Edge function.   | 1 Megabytes      | No         |
| Request body size for origin requests when returning from a Lambda function (base64 encoding)                    | 1.33 Megabytes   | No         |
| Request body size for origin requests when returning from a Lambda function (text encoding)                      | 1 Megabytes      | No         |
| Request body size for viewer requests exposed to a Lambda@Edge function.   | 40 Kilobytes     | No         |
| Request body size for viewer requests when returning from a Lambda function (base64 encoding)                    | 53.2 Kilobytes   | No         |
| Request body size for viewer requests when returning from a Lambda function (text encoding)                      | 40 Kilobytes     | No         |
| Request timeout  | 30 Seconds       | Yes        |
| Requests per second  | 10,000           | Yes        |
| Requests per second per distribution   | 250,000          | Yes        |
| Response timeout per origin  | 60 Seconds       | Yes        |

| Name   | Default      | Adjustable |
|--|--------------|------------|
| SSL certificates per AWS account when serving HTTPS requests using dedicated IP addresses  | 2            | Yes        |
| SSL certificates that can be associated with a CloudFront web distribution   | 1            | No         |
| Size of a response that is generated by a Lambda function, including headers and body (Origin request and response event)          | 1 Megabytes  | No         |
| Size of a response that is generated by a Lambda function, including headers and body (Viewer request and response event)          | 40 Kilobytes | No         |
| Tags that can be added to a distribution   | 50           | No         |
| Total length of the URI including query string in a Lambda@Edge function   | 8,192        | No         |
| Total number of bytes in whitelisted cookie names (doesn't apply if you configure CloudFront to forward all cookies to the origin) | 512 Bytes    | No         |
| Triggers per distribution  | 100          | Yes        |
| Web distributions per AWS account  | 200          | Yes        |
| Whitelisted cookies per cache behavior   | 10           | Yes        |
| Whitelisted headers per cache behavior   | 10           | Yes        |
| Whitelisted query strings per cache behavior   | 10           | Yes        |

For more information, see [Quotas](#) in the *Amazon CloudFront Developer Guide*.

## AWS CloudHSM endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

#### AWS CloudHSM

| Region Name             | Region    | Endpoint                           | Protocol |  |
|-------------------------|-----------|------------------------------------|----------|--|
| US East (Ohio)          | us-east-2 | cloudhsmv2.us-east-2.amazonaws.com | HTTPS    |  |
| US East (N. Virginia)   | us-east-1 | cloudhsmv2.us-east-1.amazonaws.com | HTTPS    |  |
| US West (N. California) | us-west-1 | cloudhsmv2.us-west-1.amazonaws.com | HTTPS    |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                         | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| US West (Oregon)         | us-west-2      | cloudhsmv2.us-west-2.amazonaws.com      | HTTPS           |  |
| Africa (Cape Town)       | af-south-1     | cloudhsmv2.af-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | cloudhsmv2.ap-east-1.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | cloudhsmv2.ap-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | cloudhsmv2.ap-northeast-3.amazonaws.com | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | cloudhsmv2.ap-northeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | cloudhsmv2.ap-southeast-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | cloudhsmv2.ap-southeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | cloudhsmv2.ap-northeast-1.amazonaws.com | HTTPS           |  |
| Canada (Central)         | ca-central-1   | cloudhsmv2.ca-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | cloudhsmv2.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | cloudhsmv2.eu-west-1.amazonaws.com      | HTTPS           |  |
| Europe (London)          | eu-west-2      | cloudhsmv2.eu-west-2.amazonaws.com      | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | cloudhsmv2.eu-south-1.amazonaws.com     | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | cloudhsmv2.eu-west-3.amazonaws.com      | HTTPS           |  |
| Europe (Stockholm)       | eu-north-1     | cloudhsmv2.eu-north-1.amazonaws.com     | HTTPS           |  |

| <b>Region Name</b>        | <b>Region</b> | <b>Endpoint</b>                        | <b>Protocol</b> |  |
|---------------------------|---------------|--|-----------------|--|
| Middle East (Bahrain)     | me-south-1    | cloudhsmv2.me-south-1.amazonaws.com    | HTTPS           |  |
| South America (São Paulo) | sa-east-1     | cloudhsmv2.sa-east-1.amazonaws.com     | HTTPS           |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | cloudhsmv2.us-gov-east-1.amazonaws.com | HTTPS           |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | cloudhsmv2.us-gov-west-1.amazonaws.com | HTTPS           |  |

## AWS CloudHSM Classic

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                       | <b>Protocol</b> |  |
|--------------------------|----------------|---------------------------------------|-----------------|--|
| US East (Ohio)           | us-east-2      | cloudhsm.us-east-2.amazonaws.com      | HTTPS           |  |
| US East (N. Virginia)    | us-east-1      | cloudhsm.us-east-1.amazonaws.com      | HTTPS           |  |
| US West (N. California)  | us-west-1      | cloudhsm.us-west-1.amazonaws.com      | HTTPS           |  |
| US West (Oregon)         | us-west-2      | cloudhsm.us-west-2.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | cloudhsm.ap-southeast-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | cloudhsm.ap-southeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | cloudhsm.ap-northeast-1.amazonaws.com | HTTPS           |  |
| Canada (Central)         | ca-central-1   | cloudhsm.ca-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | cloudhsm.eu-central-1.amazonaws.com   | HTTPS           |  |

| Region Name            | Region        | Endpoint                             | Protocol |  |
|------------------------|---------------|--------------------------------------|----------|--|
| Europe (Ireland)       | eu-west-1     | cloudhsm.eu-west-1.amazonaws.com     | HTTPS    |  |
| AWS GovCloud (US-West) | us-gov-west-1 | cloudhsm.us-gov-west-1.amazonaws.com | HTTPS    |  |

## Service quotas

### AWS CloudHSM

| Name                                    | Default | Adjustable |
|---|---------|------------|
| Clusters per AWS Region and AWS account | 4       | Yes        |
| HSMs per AWS Region and AWS account     | 6       | Yes        |
| HSMs per CloudHSM cluster               | 28      | No         |
| Keys per CloudHSM cluster               | 3,300   | No         |
| Length of a Username                    | 31      | No         |
| Length of a password                    | 32      | No         |
| Minimum length of a password            | 7       | No         |
| Number of concurrent clients            | 900     | No         |
| Users per CloudHSM cluster              | 1,024   | No         |

For more information, see [Quotas](#) in the *AWS CloudHSM User Guide*.

### AWS CloudHSM Classic

| Resource                           | Default |
|------------------------------------|---------|
| HSM appliances                     | 3       |
| High-availability partition groups | 20      |

For more information, see [Quotas](#) in the *AWS CloudHSM Classic User Guide*.

## AWS Cloud Map endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#).

Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | servicediscovery.us-east-2.amazonaws.com<br>servicediscovery-fips.us-east-2.amazonaws.com       | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | servicediscovery.us-east-1.amazonaws.com<br>servicediscovery-fips.us-east-1.amazonaws.com       | HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | servicediscovery.us-west-1.amazonaws.com<br>servicediscovery-fips.us-west-1.amazonaws.com       | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | servicediscovery.us-west-2.amazonaws.com<br>servicediscovery-fips.us-west-2.amazonaws.com       | HTTPS<br>HTTPS |  |
| Africa (Cape Town)       | af-south-1     | servicediscovery.af-south-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Hong Kong) | ap-east-1      | servicediscovery.ap-east-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | servicediscovery.ap-south-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | servicediscovery.ap-northeast-2.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | servicediscovery.ap-southeast-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | servicediscovery.ap-southeast-2.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | servicediscovery.ap-northeast-1.amazonaws.com   | HTTPS          |  |
| Canada (Central)         | ca-central-1   | servicediscovery.ca-central-1.amazonaws.com<br>servicediscovery-fips.ca-central-1.amazonaws.com | HTTPS<br>HTTPS |  |
| Europe (Frankfurt)       | eu-central-1   | servicediscovery.eu-central-1.amazonaws.com   | HTTPS          |  |

| Region Name               | Region        | Endpoint  | Protocol       |  |
|---------------------------|---------------|---|----------------|--|
| Europe (Ireland)          | eu-west-1     | servicediscovery.eu-west-1.amazonaws.com  | HTTPS          |  |
| Europe (London)           | eu-west-2     | servicediscovery.eu-west-2.amazonaws.com  | HTTPS          |  |
| Europe (Milan)            | eu-south-1    | servicediscovery.eu-south-1.amazonaws.com   | HTTPS          |  |
| Europe (Paris)            | eu-west-3     | servicediscovery.eu-west-3.amazonaws.com  | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1    | servicediscovery.eu-north-1.amazonaws.com   | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1    | servicediscovery.me-south-1.amazonaws.com   | HTTPS          |  |
| South America (São Paulo) | sa-east-1     | servicediscovery.sa-east-1.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | servicediscovery.us-gov-east-1.amazonaws.com<br>servicediscovery-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | servicediscovery.us-gov-west-1.amazonaws.com<br>servicediscovery-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name  | Default | Adjustable |
|---|---------|------------|
| Custom attributes per instance                      | 30      | No         |
| DiscoverInstances operation per account burst rate  | 2,000   | Yes        |
| DiscoverInstances operation per account steady rate | 1,000   | Yes        |
| Instances per namespace                             | 2,000   | Yes        |
| Instances per service                               | 1,000   | No         |
| Namespaces per Region                               | 50      | Yes        |

For more information, see [AWS Cloud Map Quotas](#) in the *AWS Cloud Map Developer Guide*.

# Amazon CloudSearch endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name               | Region         | Endpoint                                 | Protocol |  |
|---------------------------|----------------|--|----------|--|
| US East (N. Virginia)     | us-east-1      | cloudsearch.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (N. California)   | us-west-1      | cloudsearch.us-west-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)          | us-west-2      | cloudsearch.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Seoul)      | ap-northeast-2 | cloudsearch.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | cloudsearch.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | cloudsearch.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | cloudsearch.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Europe (Frankfurt)        | eu-central-1   | cloudsearch.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)          | eu-west-1      | cloudsearch.eu-west-1.amazonaws.com      | HTTPS    |  |
| South America (São Paulo) | sa-east-1      | cloudsearch.sa-east-1.amazonaws.com      | HTTPS    |  |

## Service quotas

| Name                   | Default     | Adjustable |
|------------------------|-------------|------------|
| Document batch size    | 5 Megabytes | No         |
| Document size          | 1 Megabytes | No         |
| Domains per account    | 100         | No         |
| Index fields           | 200         | Yes        |
| Partition count        | 10          | Yes        |
| Replication count      | 5           | Yes        |
| Search document fields | 200         | No         |

For more information, see [Understanding Amazon CloudSearch Quotas](#) in the *Amazon CloudSearch Developer Guide*.

## AWS CloudShell endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name           | Region         | Endpoint                                | Protocol |
|-----------------------|----------------|---|----------|
| US East (Ohio)        | us-east-2      | cloudshell.us-east-2.amazonaws.com      | HTTPS    |
| US East (N. Virginia) | us-east-1      | cloudshell.us-east-1.amazonaws.com      | HTTPS    |
| US West (Oregon)      | us-west-2      | cloudshell.us-west-2.amazonaws.com      | HTTPS    |
| Asia Pacific (Mumbai) | ap-south-1     | cloudshell.ap-south-1.amazonaws.com     | HTTPS    |
| Asia Pacific (Sydney) | ap-southeast-2 | cloudshell.ap-southeast-2.amazonaws.com | HTTPS    |

| Region Name          | Region         | Endpoint                                | Protocol |  |
|----------------------|----------------|---|----------|--|
| Asia Pacific (Tokyo) | ap-northeast-1 | cloudshell.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Europe (Frankfurt)   | eu-central-1   | cloudshell.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)     | eu-west-1      | cloudshell.eu-west-1.amazonaws.com      | HTTPS    |  |

## Service quotas

| Name                | Default     | Adjustable |
|---------------------|-------------|------------|
| Data retention      | 120         | No         |
| Home directory size | 1 Gigabytes | No         |

## AWS CloudTrail endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name             | Region    | Endpoint  | Protocol       |  |
|-------------------------|-----------|---|----------------|--|
| US East (Ohio)          | us-east-2 | cloudtrail.us-east-2.amazonaws.com<br>cloudtrail-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)   | us-east-1 | cloudtrail.us-east-1.amazonaws.com<br>cloudtrail-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California) | us-west-1 | cloudtrail.us-west-1.amazonaws.com<br>cloudtrail-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)        | us-west-2 | cloudtrail.us-west-2.amazonaws.com<br>cloudtrail-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                         | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| Africa (Cape Town)       | af-south-1     | cloudtrail.af-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | cloudtrail.ap-east-1.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | cloudtrail.ap-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | cloudtrail.ap-northeast-3.amazonaws.com | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | cloudtrail.ap-northeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | cloudtrail.ap-southeast-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | cloudtrail.ap-southeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | cloudtrail.ap-northeast-1.amazonaws.com | HTTPS           |  |
| Canada (Central)         | ca-central-1   | cloudtrail.ca-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | cloudtrail.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | cloudtrail.eu-west-1.amazonaws.com      | HTTPS           |  |
| Europe (London)          | eu-west-2      | cloudtrail.eu-west-2.amazonaws.com      | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | cloudtrail.eu-south-1.amazonaws.com     | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | cloudtrail.eu-west-3.amazonaws.com      | HTTPS           |  |
| Europe (Stockholm)       | eu-north-1     | cloudtrail.eu-north-1.amazonaws.com     | HTTPS           |  |
| Middle East (Bahrain)    | me-south-1     | cloudtrail.me-south-1.amazonaws.com     | HTTPS           |  |

| Region Name               | Region        | Endpoint   | Protocol       |  |
|---------------------------|---------------|--|----------------|--|
| South America (São Paulo) | sa-east-1     | cloudtrail.sa-east-1.amazonaws.com   | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | cloudtrail.us-gov-east-1.amazonaws.com<br>cloudtrail.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | cloudtrail.us-gov-west-1.amazonaws.com<br>cloudtrail.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name   | Default       | Adjustable |
|--|---------------|------------|
| Conditions across all advanced event selectors                     | 500           | No         |
| Data resources across all event selectors in a trail               | 250           | No         |
| Event selectors  | 5             | No         |
| Event size   | 256 Kilobytes | No         |
| Trails per region  | 5             | No         |
| Transactions per second (TPS) for all other APIs                   | 1             | No         |
| Transactions per second (TPS) for the LookupEvents API             | 2             | No         |
| Transactions per second (TPS) for the get, describe, and list APIs | 10            | No         |

For more information, see [Quotas in AWS CloudTrail](#).

## Amazon CloudWatch endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint  | Protocol                |  |
|--------------------------|----------------|---|-------------------------|--|
| US East (Ohio)           | us-east-2      | monitoring.us-east-2.amazonaws.com<br>monitoring-fips.us-east-2.amazonaws.com | HTTP and HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | monitoring.us-east-1.amazonaws.com<br>monitoring-fips.us-east-1.amazonaws.com | HTTP and HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | monitoring.us-west-1.amazonaws.com<br>monitoring-fips.us-west-1.amazonaws.com | HTTP and HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | monitoring.us-west-2.amazonaws.com<br>monitoring-fips.us-west-2.amazonaws.com | HTTP and HTTPS<br>HTTPS |  |
| Africa (Cape Town)       | af-south-1     | monitoring.af-south-1.amazonaws.com   | HTTP and HTTPS          |  |
| Asia Pacific (Hong Kong) | ap-east-1      | monitoring.ap-east-1.amazonaws.com  | HTTP and HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | monitoring.ap-south-1.amazonaws.com   | HTTP and HTTPS          |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | monitoring.ap-northeast-3.amazonaws.com                                       | HTTP and HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | monitoring.ap-northeast-2.amazonaws.com                                       | HTTP and HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | monitoring.ap-southeast-1.amazonaws.com                                       | HTTP and HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | monitoring.ap-southeast-2.amazonaws.com                                       | HTTP and HTTPS          |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | monitoring.ap-northeast-1.amazonaws.com                                       | HTTP and HTTPS          |  |

| <b>Region Name</b>        | <b>Region</b> | <b>Endpoint</b>  | <b>Protocol</b>         |  |
|---------------------------|---------------|--|-------------------------|--|
| Canada (Central)          | ca-central-1  | monitoring.ca-central-1.amazonaws.com  | HTTP and HTTPS          |  |
| Europe (Frankfurt)        | eu-central-1  | monitoring.eu-central-1.amazonaws.com  | HTTP and HTTPS          |  |
| Europe (Ireland)          | eu-west-1     | monitoring.eu-west-1.amazonaws.com   | HTTP and HTTPS          |  |
| Europe (London)           | eu-west-2     | monitoring.eu-west-2.amazonaws.com   | HTTP and HTTPS          |  |
| Europe (Milan)            | eu-south-1    | monitoring.eu-south-1.amazonaws.com  | HTTP and HTTPS          |  |
| Europe (Paris)            | eu-west-3     | monitoring.eu-west-3.amazonaws.com   | HTTP and HTTPS          |  |
| Europe (Stockholm)        | eu-north-1    | monitoring.eu-north-1.amazonaws.com  | HTTP and HTTPS          |  |
| Middle East (Bahrain)     | me-south-1    | monitoring.me-south-1.amazonaws.com  | HTTP and HTTPS          |  |
| South America (São Paulo) | sa-east-1     | monitoring.sa-east-1.amazonaws.com   | HTTP and HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | monitoring.us-gov-east-1.amazonaws.com<br>monitoring.us-gov-east-1.amazonaws.com | HTTP and HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | monitoring.us-gov-west-1.amazonaws.com<br>monitoring.us-gov-west-1.amazonaws.com | HTTP and HTTPS<br>HTTPS |  |

## Service quotas

| <b>Name</b>                                   | <b>Default</b> | <b>Adjustable</b> |
|---|----------------|-------------------|
| Actions per CloudWatch alarm, per state       | 5              | No                |
| Canary limit                                  | 300            | Yes               |
| Data retention                                | 15             | No                |
| Dimensions per metric                         | 10             | No                |
| Metric data queries per GetMetricData request | 500            | No                |
| MetricDatum items per PutMetricData request   | 20             | No                |

| Name   | Default                | Adjustable |
|--|------------------------|------------|
| Metrics per dashboard  | 2,500                  | No         |
| Metrics per dashboard widget   | 500                    | No         |
| Minimum frequency  | 60,000<br>Milliseconds | No         |
| Number of Contributor Insights rules                                 | 100 per 5<br>minutes   | Yes        |
| Payload size for PutMetricData requests                              | 40                     | No         |
| Rate of DeleteAlarms requests  | 3 per<br>second        | No         |
| Rate of DeleteDashboards requests                                    | 10 per<br>second       | Yes        |
| Rate of DeleteInsightRules requests                                  | 1 per<br>second        | No         |
| Rate of DeleteMetricStream requests                                  | 10 per<br>second       | Yes        |
| Rate of DescribeAlarmHistory requests                                | 3 per<br>second        | No         |
| Rate of DescribeAlarms requests                                      | 9 per<br>second        | Yes        |
| Rate of DescribeAlarmsForMetric requests                             | 3 per<br>second        | No         |
| Rate of DescribeInsightRules requests                                | 1 per<br>second        | No         |
| Rate of DisableAlarmActions requests                                 | 3 per<br>second        | No         |
| Rate of DisableInsightRules requests                                 | 1 per<br>second        | No         |
| Rate of EnableAlarmActions requests                                  | 3 per<br>second        | No         |
| Rate of EnableInsightRules requests                                  | 1 per<br>second        | No         |
| Rate of GetDashboard requests  | 10 per<br>second       | Yes        |
| Rate of GetInsightRuleReport requests                                | 20 per<br>second       | Yes        |
| Rate of GetMetricData datapoints for metrics older than three hours  | 396,000                | No         |
| Rate of GetMetricData datapoints for the last three hours of metrics | 180,000                | No         |

| Name                                  | Default        | Adjustable |
|---------------------------------------|----------------|------------|
| Rate of GetMetricData requests        | 50 per second  | Yes        |
| Rate of GetMetricStatistics requests  | 400 per second | Yes        |
| Rate of GetMetricStream requests      | 10 per second  | Yes        |
| Rate of GetMetricWidgetImage requests | 20 per second  | Yes        |
| Rate of ListDashboards requests       | 10 per second  | Yes        |
| Rate of ListMetricStreams requests    | 10 per second  | Yes        |
| Rate of ListMetrics requests          | 25 per second  | Yes        |
| Rate of ListTagsForResource requests  | 10 per second  | No         |
| Rate of PutDashboard requests         | 10 per second  | Yes        |
| Rate of PutInsightRule requests       | 1 per second   | No         |
| Rate of PutMetricAlarm requests       | 3 per second   | Yes        |
| Rate of PutMetricData requests        | 150 per second | Yes        |
| Rate of PutMetricStream requests      | 10 per second  | Yes        |
| Rate of SetAlarmState requests        | 3 per second   | No         |
| Rate of StartMetricStreams requests   | 10 per second  | Yes        |
| Rate of StopMetricStreams requests    | 10 per second  | Yes        |
| Rate of TagResource requests          | 1 per second   | No         |
| Rate of UntagResource requests        | 1 per second   | No         |

For more information, see [CloudWatch Quotas](#) in the *Amazon CloudWatch User Guide*.

# Amazon CloudWatch Application Insights endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service Endpoints

| Region Name              | Region         | Endpoint   | Protocol |  |
|--------------------------|----------------|--|----------|--|
| US East (Ohio)           | us-east-2      | applicationinsights.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | applicationinsights.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (N. California)  | us-west-1      | applicationinsights.us-west-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | applicationinsights.us-west-2.amazonaws.com      | HTTPS    |  |
| Africa (Cape Town)       | af-south-1     | applicationinsights.af-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Hong Kong) | ap-east-1      | applicationinsights.ap-east-1.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai)    | ap-south-1     | applicationinsights.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | applicationinsights.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | applicationinsights.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | applicationinsights.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | applicationinsights.ap-northeast-1.amazonaws.com | HTTPS    |  |

| <b>Region Name</b>        | <b>Region</b> | <b>Endpoint</b>  | <b>Protocol</b> |  |
|---------------------------|---------------|--|-----------------|--|
| Canada (Central)          | ca-central-1  | applicationinsights.ca-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Frankfurt)        | eu-central-1  | applicationinsights.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)          | eu-west-1     | applicationinsights.eu-west-1.amazonaws.com  | HTTPS           |  |
| Europe (London)           | eu-west-2     | applicationinsights.eu-west-2.amazonaws.com  | HTTPS           |  |
| Europe (Milan)            | eu-south-1    | applicationinsights.eu-south-1.amazonaws.com   | HTTPS           |  |
| Europe (Paris)            | eu-west-3     | applicationinsights.eu-west-3.amazonaws.com  | HTTPS           |  |
| Europe (Stockholm)        | eu-north-1    | applicationinsights.eu-north-1.amazonaws.com   | HTTPS           |  |
| Middle East (Bahrain)     | me-south-1    | applicationinsights.me-south-1.amazonaws.com   | HTTPS           |  |
| South America (São Paulo) | sa-east-1     | applicationinsights.sa-east-1.amazonaws.com  | HTTPS           |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | applicationinsights.us-gov-east-1.amazonaws.com<br>applicationinsights.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | applicationinsights.us-gov-west-1.amazonaws.com<br>applicationinsights.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |

## Service Quotas

| <b>Resource</b>          | <b>Default quota</b>   |
|--------------------------|--|
| API requests             | All API actions are throttled to 5 TPS                                     |
| Applications             | 100 per account  |
| Log Streams              | 5 per resource   |
| Observations per problem | 20 per dashboard<br>40 per <code>DescribeProblemObservations</code> action |
| Metrics                  | 40 per resource  |

| Resource  | Default quota      |
|-----------|--------------------|
| Resources | 30 per application |

## Amazon CloudWatch Events endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | events.us-east-2.amazonaws.com<br>events-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | events.us-east-1.amazonaws.com<br>events-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | events.us-west-1.amazonaws.com<br>events-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | events.us-west-2.amazonaws.com<br>events-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Africa (Cape Town)       | af-south-1     | events.af-south-1.amazonaws.com                                       | HTTPS          |  |
| Asia Pacific (Hong Kong) | ap-east-1      | events.ap-east-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | events.ap-south-1.amazonaws.com                                       | HTTPS          |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | events.ap-northeast-3.amazonaws.com                                   | HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | events.ap-northeast-2.amazonaws.com                                   | HTTPS          |  |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>  | <b>Protocol</b> |  |
|---------------------------|----------------|--|-----------------|--|
| Asia Pacific (Singapore)  | ap-southeast-1 | events.ap-southeast-1.amazonaws.com                                      | HTTPS           |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | events.ap-southeast-2.amazonaws.com                                      | HTTPS           |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | events.ap-northeast-1.amazonaws.com                                      | HTTPS           |  |
| Canada (Central)          | ca-central-1   | events.ca-central-1.amazonaws.com  | HTTPS           |  |
| Europe (Frankfurt)        | eu-central-1   | events.eu-central-1.amazonaws.com  | HTTPS           |  |
| Europe (Ireland)          | eu-west-1      | events.eu-west-1.amazonaws.com   | HTTPS           |  |
| Europe (London)           | eu-west-2      | events.eu-west-2.amazonaws.com   | HTTPS           |  |
| Europe (Milan)            | eu-south-1     | events.eu-south-1.amazonaws.com  | HTTPS           |  |
| Europe (Paris)            | eu-west-3      | events.eu-west-3.amazonaws.com   | HTTPS           |  |
| Europe (Stockholm)        | eu-north-1     | events.eu-north-1.amazonaws.com  | HTTPS           |  |
| Middle East (Bahrain)     | me-south-1     | events.me-south-1.amazonaws.com  | HTTPS           |  |
| South America (São Paulo) | sa-east-1      | events.sa-east-1.amazonaws.com   | HTTPS           |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | events.us-gov-east-1.amazonaws.com<br>events.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | events.us-gov-west-1.amazonaws.com<br>events.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |

## Service quotas

| Name  | Default | Adjustable |
|---|---------|------------|
| Api destinations                                      | 3,000   | Yes        |
| Connections   | 3,000   | Yes        |
| Invocations throttle limit in transactions per second | 18,750  | Yes        |
| Number of rules                                       | 300     | Yes        |
| PutEvents throttle limit in transactions per second   | 10,000  | Yes        |
| Rate of invocations per API destination               | 300     | Yes        |
| Targets per rule                                      | 5       | No         |
| Throttle limit in transactions per second             | 50      | Yes        |

For more information, see [CloudWatch Events quotas](#) in the *Amazon CloudWatch Events User Guide*.

## Amazon CloudWatch Logs endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name             | Region     | Endpoint  | Protocol       |  |
|-------------------------|------------|---|----------------|--|
| US East (Ohio)          | us-east-2  | logs.us-east-2.amazonaws.com<br>logs-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)   | us-east-1  | logs.us-east-1.amazonaws.com<br>logs-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California) | us-west-1  | logs.us-west-1.amazonaws.com<br>logs-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)        | us-west-2  | logs.us-west-2.amazonaws.com<br>logs-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Africa (Cape Town)      | af-south-1 | logs.af-south-1.amazonaws.com                                     | HTTPS          |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                   | <b>Protocol</b> |  |
|--------------------------|----------------|-----------------------------------|-----------------|--|
| Asia Pacific (Hong Kong) | ap-east-1      | logs.ap-east-1.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | logs.ap-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | logs.ap-northeast-3.amazonaws.com | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | logs.ap-northeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | logs.ap-southeast-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | logs.ap-southeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | logs.ap-northeast-1.amazonaws.com | HTTPS           |  |
| Canada (Central)         | ca-central-1   | logs.ca-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | logs.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | logs.eu-west-1.amazonaws.com      | HTTPS           |  |
| Europe (London)          | eu-west-2      | logs.eu-west-2.amazonaws.com      | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | logs.eu-south-1.amazonaws.com     | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | logs.eu-west-3.amazonaws.com      | HTTPS           |  |
| Europe (Stockholm)       | eu-north-1     | logs.eu-north-1.amazonaws.com     | HTTPS           |  |
| Middle East (Bahrain)    | me-south-1     | logs.me-south-1.amazonaws.com     | HTTPS           |  |

| Region Name               | Region        | Endpoint   | Protocol       |  |
|---------------------------|---------------|--|----------------|--|
| South America (São Paulo) | sa-east-1     | logs.sa-east-1.amazonaws.com   | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | logs.us-gov-east-1.amazonaws.com<br>logs.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | logs.us-gov-west-1.amazonaws.com<br>logs.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name   | Default     | Adjustable |
|--|-------------|------------|
| Active export task   | 1           | No         |
| AssociateKmsKey throttle limit in transactions per second          | 5           | No         |
| Batch size   | 1 Megabytes | No         |
| CancelExportTask throttle limit in transactions per second         | 5           | No         |
| CreateExportTask throttle limit in transactions per second         | 5           | No         |
| CreateLogGroup throttle limit in transactions per second           | 5           | Yes        |
| CreateLogStream throttle limit in transactions per second          | 50          | Yes        |
| Data archiving   | 5 Gigabytes | No         |
| DeleteDestination throttle limit in transactions per second        | 5           | No         |
| DeleteLogGroup throttle limit in transactions per second           | 5           | Yes        |
| DeleteLogStream throttle limit in transactions per second          | 5           | No         |
| DeleteMetricFilter throttle limit in transactions per second       | 5           | No         |
| DeleteRetentionPolicy throttle limit in transactions per second    | 5           | No         |
| DeleteSubscriptionFilter throttle limit in transactions per second | 5           | No         |
| DescribeDestinations throttle limit in transactions per second     | 5           | No         |
| DescribeExportTasks throttle limit in transactions per second      | 5           | No         |
| DescribeLogGroups throttle limit in transactions per second        | 5           | Yes        |
| DescribeLogStreams throttle limit in transactions per second       | 5           | Yes        |
| DescribeMetricFilters throttle limit in transactions per second    | 5           | No         |

| Name  | Default       | Adjustable |
|---|---------------|------------|
| DescribeSubscriptionFilters throttle limit in transactions per second | 5             | No         |
| Event size  | 256 Kilobytes | No         |
| FilterLogEvents throttle limit in transactions per second             | 5             | No         |
| GetLogEvents throttle limit in transactions per second                | 10            | No         |
| GetQueryResults throttle limit in transactions per second             | 5             | No         |
| ListTagsLogGroup throttle limit in transactions per second            | 5             | No         |
| Log groups  | 1,000,000     | Yes        |
| Metrics filters per log group   | 100           | No         |
| PutDestination throttle limit in transactions per second              | 5             | No         |
| PutDestinationPolicy throttle limit in transactions per second        | 5             | No         |
| PutLogEvents throttle limit in transactions per second                | 1,500         | Yes        |
| PutMetricFilter throttle limit in transactions per second             | 5             | No         |
| PutRetentionPolicy throttle limit in transactions per second          | 5             | No         |
| PutSubscriptionFilter throttle limit in transactions per second       | 5             | No         |
| StartQuery throttle limit in transactions per second                  | 5             | No         |
| Subscription filters per log group                                    | 2             | No         |
| TagLogGroup throttle limit in transactions per second                 | 5             | No         |
| TestMetricFilter throttle limit in transactions per second            | 5             | No         |
| UntagLogGroup throttle limit in transactions per second               | 5             | No         |

For more information, see [CloudWatch Logs quotas](#) in the *Amazon CloudWatch Logs User Guide*.

## Amazon CloudWatch Synthetics endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service Endpoints

| Region Name              | Region         | Endpoint                                | Protocol |  |
|--------------------------|----------------|---|----------|--|
| US East (Ohio)           | us-east-2      | synthetics.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | synthetics.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (N. California)  | us-west-1      | synthetics.us-west-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | synthetics.us-west-2.amazonaws.com      | HTTPS    |  |
| Africa (Cape Town)       | af-south-1     | synthetics.af-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Hong Kong) | ap-east-1      | synthetics.ap-east-1.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai)    | ap-south-1     | synthetics.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | synthetics.ap-northeast-3.amazonaws.com | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | synthetics.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | synthetics.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | synthetics.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | synthetics.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)         | ca-central-1   | synthetics.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)       | eu-central-1   | synthetics.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)         | eu-west-1      | synthetics.eu-west-1.amazonaws.com      | HTTPS    |  |

| Region Name               | Region        | Endpoint                               | Protocol |  |
|---------------------------|---------------|--|----------|--|
| Europe (London)           | eu-west-2     | synthetics.eu-west-2.amazonaws.com     | HTTPS    |  |
| Europe (Milan)            | eu-south-1    | synthetics.eu-south-1.amazonaws.com    | HTTPS    |  |
| Europe (Paris)            | eu-west-3     | synthetics.eu-west-3.amazonaws.com     | HTTPS    |  |
| Europe (Stockholm)        | eu-north-1    | synthetics.eu-north-1.amazonaws.com    | HTTPS    |  |
| Middle East (Bahrain)     | me-south-1    | synthetics.me-south-1.amazonaws.com    | HTTPS    |  |
| South America (São Paulo) | sa-east-1     | synthetics.sa-east-1.amazonaws.com     | HTTPS    |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | synthetics.us-gov-east-1.amazonaws.com | HTTPS    |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | synthetics.us-gov-west-1.amazonaws.com | HTTPS    |  |

## Service Quotas

| Resource | Default   |
|----------|---|
| Canaries | 100 per Region per account in the following Regions: US East (N. Virginia), US East (Ohio), US West (Oregon), Europe (Ireland), and Asia Pacific (Tokyo). 20 per Region per account in all other Regions.<br><br>You can <a href="#">request a quota increase</a> . |

For more information, see [CloudWatch Quotas](#) in the *Amazon CloudWatch User Guide*.

## AWS CodeArtifact endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint                                  | Protocol |  |
|--------------------------|----------------|---|----------|--|
| US East (Ohio)           | us-east-2      | codeartifact.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | codeartifact.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | codeartifact.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai)    | ap-south-1     | codeartifact.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | codeartifact.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | codeartifact.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | codeartifact.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Europe (Frankfurt)       | eu-central-1   | codeartifact.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)         | eu-west-1      | codeartifact.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)          | eu-west-2      | codeartifact.eu-west-2.amazonaws.com      | HTTPS    |  |
| Europe (Milan)           | eu-south-1     | codeartifact.eu-south-1.amazonaws.com     | HTTPS    |  |
| Europe (Paris)           | eu-west-3      | codeartifact.eu-west-3.amazonaws.com      | HTTPS    |  |
| Europe (Stockholm)       | eu-north-1     | codeartifact.eu-north-1.amazonaws.com     | HTTPS    |  |

## Service quotas

| Name                               | Default     | Adjustable |
|------------------------------------|-------------|------------|
| Asset file size maximum            | 1 Gigabytes | No         |
| Assets per package version maximum | 100         | No         |

| Name  | Default | Adjustable |
|---|---------|------------|
| CopyPackageVersions maximum requests per second                         | 5       | No         |
| Direct upstream repository maximum                                      | 10      | No         |
| Domains per AWS account maximum   | 10      | No         |
| GetAuthorizationToken maximum requests per second                       | 40      | No         |
| GetPackageVersionAsset maximum requests per second                      | 50      | No         |
| ListPackageVersionAssets maximum requests per second                    | 20      | No         |
| ListPackageVersions maximum requests per second                         | 200     | No         |
| ListPackages maximum requests per second                                | 200     | No         |
| Maximum requests per second using a single authentication token.        | 800     | No         |
| Repositories per domain maximum   | 1,000   | No         |
| Repository maximum read requests per second from a single AWS account   | 800     | No         |
| Repository maximum read requests per second from multiple AWS accounts  | 800     | No         |
| Repository maximum write requests per second from a single AWS account  | 100     | No         |
| Repository maximum write requests per second from multiple AWS accounts | 100     | No         |
| Requests without authentication token per IP address maximum            | 600     | No         |
| Upstream repository search maximum                                      | 25      | No         |

## AWS CodeBuild endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name             | Region    | Endpoint                               | Protocol |
|-------------------------|-----------|--|----------|
| US East (Ohio)          | us-east-2 | codebuild.us-east-2.amazonaws.com      | HTTPS    |
|                         |           | codebuild-fips.us-east-2.amazonaws.com | HTTPS    |
| US East (N. Virginia)   | us-east-1 | codebuild.us-east-1.amazonaws.com      | HTTPS    |
|                         |           | codebuild-fips.us-east-1.amazonaws.com | HTTPS    |
| US West (N. California) | us-west-1 | codebuild.us-west-1.amazonaws.com      | HTTPS    |
|                         |           | codebuild-fips.us-west-1.amazonaws.com | HTTPS    |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| US West (Oregon)         | us-west-2      | codebuild.us-west-2.amazonaws.com<br>codebuild-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS  |  |
| Africa (Cape Town)       | af-south-1     | codebuild.af-south-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | codebuild.ap-east-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | codebuild.ap-south-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | codebuild.ap-northeast-3.amazonaws.com                                      | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | codebuild.ap-northeast-2.amazonaws.com                                      | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | codebuild.ap-southeast-1.amazonaws.com                                      | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | codebuild.ap-southeast-2.amazonaws.com                                      | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | codebuild.ap-northeast-1.amazonaws.com                                      | HTTPS           |  |
| Canada (Central)         | ca-central-1   | codebuild.ca-central-1.amazonaws.com  | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | codebuild.eu-central-1.amazonaws.com  | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | codebuild.eu-west-1.amazonaws.com   | HTTPS           |  |
| Europe (London)          | eu-west-2      | codebuild.eu-west-2.amazonaws.com   | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | codebuild.eu-south-1.amazonaws.com  | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | codebuild.eu-west-3.amazonaws.com   | HTTPS           |  |
| Europe (Stockholm)       | eu-north-1     | codebuild.eu-north-1.amazonaws.com  | HTTPS           |  |

| Region Name               | Region        | Endpoint  | Protocol       |  |
|---------------------------|---------------|---|----------------|--|
| Middle East (Bahrain)     | me-south-1    | codebuild.me-south-1.amazonaws.com  | HTTPS          |  |
| South America (São Paulo) | sa-east-1     | codebuild.sa-east-1.amazonaws.com   | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | codebuild.us-gov-east-1.amazonaws.com<br>codebuild-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | codebuild.us-gov-west-1.amazonaws.com<br>codebuild-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name  | Default | Adjustable |
|---|---------|------------|
| Associated tags per project                           | 50      | No         |
| Build projects  | 5,000   | Yes        |
| Build timeout in minutes                              | 480     | No         |
| Concurrent request for information about builds       | 100     | No         |
| Concurrent requests for information on build projects | 100     | No         |
| Concurrently running builds                           | 60      | Yes        |
| Minimum period for build timeout in minutes           | 5       | No         |
| Security groups under VPC configuration               | 5       | No         |
| Subnets under VPC configuration                       | 16      | No         |

For more information, see [Quotas for CodeBuild](#) in the *AWS CodeBuild User Guide*.

## AWS CodeCommit endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | codecommit.us-east-2.amazonaws.com<br>codecommit-fips.us-east-2.amazonaws.com       | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | codecommit.us-east-1.amazonaws.com<br>codecommit-fips.us-east-1.amazonaws.com       | HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | codecommit.us-west-1.amazonaws.com<br>codecommit-fips.us-west-1.amazonaws.com       | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | codecommit.us-west-2.amazonaws.com<br>codecommit-fips.us-west-2.amazonaws.com       | HTTPS<br>HTTPS |  |
| Africa (Cape Town)       | af-south-1     | codecommit.af-south-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Hong Kong) | ap-east-1      | codecommit.ap-east-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | codecommit.ap-south-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | codecommit.ap-northeast-3.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | codecommit.ap-northeast-2.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | codecommit.ap-southeast-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | codecommit.ap-southeast-2.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | codecommit.ap-northeast-1.amazonaws.com   | HTTPS          |  |
| Canada (Central)         | ca-central-1   | codecommit.ca-central-1.amazonaws.com<br>codecommit-fips.ca-central-1.amazonaws.com | HTTPS<br>HTTPS |  |

| Region Name               | Region        | Endpoint  | Protocol       |  |
|---------------------------|---------------|---|----------------|--|
| Europe (Frankfurt)        | eu-central-1  | codecommit.eu-central-1.amazonaws.com   | HTTPS          |  |
| Europe (Ireland)          | eu-west-1     | codecommit.eu-west-1.amazonaws.com  | HTTPS          |  |
| Europe (London)           | eu-west-2     | codecommit.eu-west-2.amazonaws.com  | HTTPS          |  |
| Europe (Milan)            | eu-south-1    | codecommit.eu-south-1.amazonaws.com   | HTTPS          |  |
| Europe (Paris)            | eu-west-3     | codecommit.eu-west-3.amazonaws.com  | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1    | codecommit.eu-north-1.amazonaws.com   | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1    | codecommit.me-south-1.amazonaws.com   | HTTPS          |  |
| South America (São Paulo) | sa-east-1     | codecommit.sa-east-1.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | codecommit.us-gov-east-1.amazonaws.com<br>codecommit-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | codecommit.us-gov-west-1.amazonaws.com<br>codecommit-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

For information about Git connection endpoints, including SSH and HTTPS information, see [Regions and Git Connection Endpoints for CodeCommit](#).

## Service quotas

| Name                 | Default | Adjustable |
|----------------------|---------|------------|
| Allowed repositories | 1,000   | Yes        |

For more information, see [Quotas in CodeCommit](#) in the *AWS CodeCommit User Guide*.

## AWS CodeDeploy endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#).

Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | codedeploy.us-east-2.amazonaws.com<br>codedeploy-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | codedeploy.us-east-1.amazonaws.com<br>codedeploy-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | codedeploy.us-west-1.amazonaws.com<br>codedeploy-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | codedeploy.us-west-2.amazonaws.com<br>codedeploy-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Africa (Cape Town)       | af-south-1     | codedeploy.af-south-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Hong Kong) | ap-east-1      | codedeploy.ap-east-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | codedeploy.ap-south-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | codedeploy.ap-northeast-3.amazonaws.com                                       | HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | codedeploy.ap-northeast-2.amazonaws.com                                       | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | codedeploy.ap-southeast-1.amazonaws.com                                       | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | codedeploy.ap-southeast-2.amazonaws.com                                       | HTTPS          |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | codedeploy.ap-northeast-1.amazonaws.com                                       | HTTPS          |  |
| Canada (Central)         | ca-central-1   | codedeploy.ca-central-1.amazonaws.com   | HTTPS          |  |

| <b>Region Name</b>        | <b>Region</b> | <b>Endpoint</b>   | <b>Protocol</b> |  |
|---------------------------|---------------|---|-----------------|--|
| Europe (Frankfurt)        | eu-central-1  | codedeploy.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)          | eu-west-1     | codedeploy.eu-west-1.amazonaws.com  | HTTPS           |  |
| Europe (London)           | eu-west-2     | codedeploy.eu-west-2.amazonaws.com  | HTTPS           |  |
| Europe (Milan)            | eu-south-1    | codedeploy.eu-south-1.amazonaws.com   | HTTPS           |  |
| Europe (Paris)            | eu-west-3     | codedeploy.eu-west-3.amazonaws.com  | HTTPS           |  |
| Europe (Stockholm)        | eu-north-1    | codedeploy.eu-north-1.amazonaws.com   | HTTPS           |  |
| Middle East (Bahrain)     | me-south-1    | codedeploy.me-south-1.amazonaws.com   | HTTPS           |  |
| South America (São Paulo) | sa-east-1     | codedeploy.sa-east-1.amazonaws.com  | HTTPS           |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | codedeploy.us-gov-east-1.amazonaws.com<br>codedeploy-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | codedeploy.us-gov-west-1.amazonaws.com<br>codedeploy-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |

## Service quotas

| <b>Name</b>  | <b>Default</b> | <b>Adjustable</b> |
|--|----------------|-------------------|
| AWS Lambda deployment run in hours                     | 50             | No                |
| Applications associated per account per region         | 1,000          | Yes               |
| Auto Scaling groups in a deployment group              | 10             | No                |
| Concurrent deployments per account                     | 1,000          | Yes               |
| Concurrent deployments per deployment group            | 1              | No                |
| Custom deployment configurations per account           | 50             | No                |
| Deployment groups associated with a single application | 1,000          | Yes               |
| EC2/On-Premises blue/green deployment run in hours     | 109            | No                |

| Name  | Default       | Adjustable |
|---|---------------|------------|
| EC2/On-Premises in-place deployment run in hours  | 8             | No         |
| Event notification triggers in a deployment group   | 10            | Yes        |
| GitHub connection tokens per account  | 25            | No         |
| Hours between the completion of a deployment and the termination of the original instances during an EC2/On-Premises blue/green deployment      | 48            | No         |
| Hours between the deployment of a revision and when traffic shifts to the replacement instances during an EC2/On-Premises blue/green deployment | 48            | No         |
| Instances count per deployment  | 2,000         | Yes        |
| Minutes a blue/green deployment can wait after a successful deployment before terminating instances from the original deployment                | 2,800         | No         |
| Minutes between the first and last traffic shift during an AWS Lambda canary or linear deployment   | 2,880         | No         |
| Minutes until a deployment fails if a lifecycle event doesn't start   | 5             | No         |
| Number of deployment groups that can be associated with an Amazon ECS service   | 1             | No         |
| Number of instances that can be passed to the BatchGetOnPremisesInstances API action  | 100           | No         |
| Number of instances used by concurrent deployments that are in progress per account   | 3,000         | Yes        |
| Number of listeners for a traffic route during an Amazon ECS deployment   | 1             | No         |
| Seconds until a deployment lifecycle event fails if not completed   | 3,600 Seconds | No         |
| Size of deployment group name   | 100           | No         |
| Size of tag key   | 128           | No         |
| Size of tag value   | 256           | No         |
| Tags in a deployment group  | 10            | No         |
| Traffic that can be shifted in one increment during an AWS Lambda deployment  | 99            | No         |

For more information, see [Quotas in CodeDeploy](#) in the *AWS CodeDeploy User Guide*.

## Amazon CodeGuru Profiler endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#).

Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint                                       | Protocol |  |
|--------------------------|----------------|--|----------|--|
| US East (Ohio)           | us-east-2      | codeguru-profiler.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | codeguru-profiler.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | codeguru-profiler.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | codeguru-profiler.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | codeguru-profiler.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | codeguru-profiler.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Europe (Frankfurt)       | eu-central-1   | codeguru-profiler.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)         | eu-west-1      | codeguru-profiler.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)          | eu-west-2      | codeguru-profiler.eu-west-2.amazonaws.com      | HTTPS    |  |
| Europe (Stockholm)       | eu-north-1     | codeguru-profiler.eu-north-1.amazonaws.com     | HTTPS    |  |

## Service quotas

| Name   | Default | Adjustable |
|--|---------|------------|
| Number of profiling groups per account and region. | 50      | No         |

## Amazon CodeGuru Reviewer endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint                                       | Protocol |  |
|--------------------------|----------------|--|----------|--|
| US East (Ohio)           | us-east-2      | codeguru-reviewer.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | codeguru-reviewer.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | codeguru-reviewer.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | codeguru-reviewer.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | codeguru-reviewer.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | codeguru-reviewer.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Europe (Frankfurt)       | eu-central-1   | codeguru-reviewer.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)         | eu-west-1      | codeguru-reviewer.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)          | eu-west-2      | codeguru-reviewer.eu-west-2.amazonaws.com      | HTTPS    |  |
| Europe (Stockholm)       | eu-north-1     | codeguru-reviewer.eu-north-1.amazonaws.com     | HTTPS    |  |

## Service quotas

| Name                 | Default | Adjustable |
|----------------------|---------|------------|
| Allowed Code Reviews | 5,000   | Yes        |

## AWS CodePipeline endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | codepipeline.us-east-2.amazonaws.com<br>codepipeline-fips.us-east-2.amazonaws.com       | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | codepipeline.us-east-1.amazonaws.com<br>codepipeline-fips.us-east-1.amazonaws.com       | HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | codepipeline.us-west-1.amazonaws.com<br>codepipeline-fips.us-west-1.amazonaws.com       | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | codepipeline.us-west-2.amazonaws.com<br>codepipeline-fips.us-west-2.amazonaws.com       | HTTPS<br>HTTPS |  |
| Asia Pacific (Hong Kong) | ap-east-1      | codepipeline.ap-east-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | codepipeline.ap-south-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | codepipeline.ap-northeast-2.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | codepipeline.ap-southeast-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | codepipeline.ap-southeast-2.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | codepipeline.ap-northeast-1.amazonaws.com   | HTTPS          |  |
| Canada (Central)         | ca-central-1   | codepipeline.ca-central-1.amazonaws.com<br>codepipeline-fips.ca-central-1.amazonaws.com | HTTPS<br>HTTPS |  |
| Europe (Frankfurt)       | eu-central-1   | codepipeline.eu-central-1.amazonaws.com   | HTTPS          |  |
| Europe (Ireland)         | eu-west-1      | codepipeline.eu-west-1.amazonaws.com  | HTTPS          |  |
| Europe (London)          | eu-west-2      | codepipeline.eu-west-2.amazonaws.com  | HTTPS          |  |

| Region Name               | Region        | Endpoint  | Protocol       |  |
|---------------------------|---------------|---|----------------|--|
| Europe (Milan)            | eu-south-1    | codepipeline.eu-south-1.amazonaws.com   | HTTPS          |  |
| Europe (Paris)            | eu-west-3     | codepipeline.eu-west-3.amazonaws.com  | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1    | codepipeline.eu-north-1.amazonaws.com   | HTTPS          |  |
| South America (São Paulo) | sa-east-1     | codepipeline.sa-east-1.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | codepipeline.us-gov-west-1.amazonaws.com<br>codepipeline-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name  | Default     | Adjustable |
|---|-------------|------------|
| AWS CloudFormation action timeout                   | 3           | Yes        |
| AWS CodeBuild action timeout                        | 8           | Yes        |
| AWS CodeDeploy ECS (Blue/Green) action timeout      | 5           | Yes        |
| AWS CodeDeploy action timeout                       | 5           | Yes        |
| AWS Lambda action timeout                           | 1           | Yes        |
| Action configuration key length                     | 50          | No         |
| Action configuration value length                   | 1,000       | No         |
| Action timeout                                      | 1           | Yes        |
| Amazon S3 deployment action timeout                 | 20          | Yes        |
| Approval action timeout                             | 7           | No         |
| Minimum actions                                     | 1           | No         |
| Minimum stages per pipeline                         | 2           | No         |
| Total AWS CodeCommit or GitHub source artifact size | 1 Gigabytes | No         |
| Total Amazon S3 source artifact size                | 3 Gigabytes | No         |
| Total JSON object size for Parameter Overrides      | 1 Kilobytes | No         |

| Name  | Default       | Adjustable |
|---|---------------|------------|
| Total actions per pipeline  | 500           | No         |
| Total actions per stage   | 50            | No         |
| Total custom actions  | 50            | Yes        |
| Total image definitions JSON file size  | 100 Kilobytes | No         |
| Total input artifact size for AWS CloudFormation deployments                          | 256 Megabytes | No         |
| Total parallel actions per stage  | 50            | No         |
| Total period for execution history  | 12            | No         |
| Total pipelines   | 1,000         | Yes        |
| Total pipelines with change detection set to periodically checking for source changes | 300           | Yes        |
| Total sequential actions per stage  | 50            | No         |
| Total source artifact size for Amazon EBS deployments                                 | 512 Megabytes | No         |
| Total stages per pipeline   | 50            | No         |
| Total webhooks  | 300           | Yes        |

For more information, see [Quotas in CodePipeline](#) in the *AWS CodePipeline User Guide*.

## AWS CodeStar endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service Endpoints

#### AWS CodeStar

| Region Name           | Region    | Endpoint                         | Protocol |  |
|-----------------------|-----------|----------------------------------|----------|--|
| US East (Ohio)        | us-east-2 | codestar.us-east-2.amazonaws.com | HTTPS    |  |
| US East (N. Virginia) | us-east-1 | codestar.us-east-1.amazonaws.com | HTTPS    |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                       | <b>Protocol</b> |  |
|--------------------------|----------------|---------------------------------------|-----------------|--|
| US West (N. California)  | us-west-1      | codestar.us-west-1.amazonaws.com      | HTTPS           |  |
| US West (Oregon)         | us-west-2      | codestar.us-west-2.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | codestar.ap-northeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | codestar.ap-southeast-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | codestar.ap-southeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | codestar.ap-northeast-1.amazonaws.com | HTTPS           |  |
| Canada (Central)         | ca-central-1   | codestar.ca-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | codestar.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | codestar.eu-west-1.amazonaws.com      | HTTPS           |  |
| Europe (London)          | eu-west-2      | codestar.eu-west-2.amazonaws.com      | HTTPS           |  |
| Europe (Stockholm)       | eu-north-1     | codestar.eu-north-1.amazonaws.com     | HTTPS           |  |

## AWS CodeStar Notifications

| <b>Region Name</b>      | <b>Region</b> | <b>Endpoint</b>                                | <b>Protocol</b> |  |
|-------------------------|---------------|--|-----------------|--|
| US East (Ohio)          | us-east-2     | codestar-notifications.us-east-2.amazonaws.com | HTTPS           |  |
| US East (N. Virginia)   | us-east-1     | codestar-notifications.us-east-1.amazonaws.com | HTTPS           |  |
| US West (N. California) | us-west-1     | codestar-notifications.us-west-1.amazonaws.com | HTTPS           |  |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>                                     | <b>Protocol</b> |  |
|---------------------------|----------------|---|-----------------|--|
| US West (Oregon)          | us-west-2      | codestar-notifications.us-west-2.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Hong Kong)  | ap-east-1      | codestar-notifications.ap-east-1.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Mumbai)     | ap-south-1     | codestar-notifications.ap-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Seoul)      | ap-northeast-2 | codestar-notifications.ap-northeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | codestar-notifications.ap-southeast-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | codestar-notifications.ap-southeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | codestar-notifications.ap-northeast-1.amazonaws.com | HTTPS           |  |
| Canada (Central)          | ca-central-1   | codestar-notifications.ca-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Frankfurt)        | eu-central-1   | codestar-notifications.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)          | eu-west-1      | codestar-notifications.eu-west-1.amazonaws.com      | HTTPS           |  |
| Europe (London)           | eu-west-2      | codestar-notifications.eu-west-2.amazonaws.com      | HTTPS           |  |
| Europe (Paris)            | eu-west-3      | codestar-notifications.eu-west-3.amazonaws.com      | HTTPS           |  |
| Europe (Stockholm)        | eu-north-1     | codestar-notifications.eu-north-1.amazonaws.com     | HTTPS           |  |
| Middle East (Bahrain)     | me-south-1     | codestar-notifications.me-south-1.amazonaws.com     | HTTPS           |  |
| South America (São Paulo) | sa-east-1      | codestar-notifications.sa-east-1.amazonaws.com      | HTTPS           |  |

# Amazon Cognito Identity endpoints and quotas

Amazon Cognito Identity includes Amazon Cognito user pools and Amazon Cognito identity pools (federated identities).

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

### Amazon Cognito User Pools

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | cognito-idp.us-east-2.amazonaws.com<br>cognito-idp-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | cognito-idp.us-east-1.amazonaws.com<br>cognito-idp-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | cognito-idp.us-west-1.amazonaws.com<br>cognito-idp-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | cognito-idp.us-west-2.amazonaws.com<br>cognito-idp-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Asia Pacific (Mumbai)    | ap-south-1     | cognito-idp.ap-south-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | cognito-idp.ap-northeast-2.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | cognito-idp.ap-southeast-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | cognito-idp.ap-southeast-2.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | cognito-idp.ap-northeast-1.amazonaws.com  | HTTPS          |  |
| Canada (Central)         | ca-central-1   | cognito-idp.ca-central-1.amazonaws.com  | HTTPS          |  |

| Region Name               | Region        | Endpoint  | Protocol       |  |
|---------------------------|---------------|---|----------------|--|
| Europe (Frankfurt)        | eu-central-1  | cognito-idp.eu-central-1.amazonaws.com  | HTTPS          |  |
| Europe (Ireland)          | eu-west-1     | cognito-idp.eu-west-1.amazonaws.com   | HTTPS          |  |
| Europe (London)           | eu-west-2     | cognito-idp.eu-west-2.amazonaws.com   | HTTPS          |  |
| Europe (Paris)            | eu-west-3     | cognito-idp.eu-west-3.amazonaws.com   | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1    | cognito-idp.eu-north-1.amazonaws.com  | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1    | cognito-idp.me-south-1.amazonaws.com  | HTTPS          |  |
| South America (São Paulo) | sa-east-1     | cognito-idp.sa-east-1.amazonaws.com   | HTTPS          |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | cognito-idp.us-gov-west-1.amazonaws.com<br>cognito-idp-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Amazon Cognito Identity Pools

| Region Name             | Region     | Endpoint  | Protocol       |  |
|-------------------------|------------|---|----------------|--|
| US East (Ohio)          | us-east-2  | cognito-identity.us-east-2.amazonaws.com<br>cognito-identity-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)   | us-east-1  | cognito-identity.us-east-1.amazonaws.com<br>cognito-identity-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California) | us-west-1  | cognito-identity.us-west-1.amazonaws.com  | HTTPS          |  |
| US West (Oregon)        | us-west-2  | cognito-identity.us-west-2.amazonaws.com<br>cognito-identity-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Asia Pacific (Mumbai)   | ap-south-1 | cognito-identity.ap-south-1.amazonaws.com   | HTTPS          |  |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|---------------------------|----------------|---|-----------------|--|
| Asia Pacific (Seoul)      | ap-northeast-2 | cognito-identity.ap-northeast-2.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | cognito-identity.ap-southeast-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | cognito-identity.ap-southeast-2.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | cognito-identity.ap-northeast-1.amazonaws.com   | HTTPS           |  |
| Canada (Central)          | ca-central-1   | cognito-identity.ca-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Frankfurt)        | eu-central-1   | cognito-identity.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)          | eu-west-1      | cognito-identity.eu-west-1.amazonaws.com  | HTTPS           |  |
| Europe (London)           | eu-west-2      | cognito-identity.eu-west-2.amazonaws.com  | HTTPS           |  |
| Europe (Paris)            | eu-west-3      | cognito-identity.eu-west-3.amazonaws.com  | HTTPS           |  |
| Europe (Stockholm)        | eu-north-1     | cognito-identity.eu-north-1.amazonaws.com   | HTTPS           |  |
| Middle East (Bahrain)     | me-south-1     | cognito-identity.me-south-1.amazonaws.com   | HTTPS           |  |
| South America (São Paulo) | sa-east-1      | cognito-identity.sa-east-1.amazonaws.com  | HTTPS           |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | cognito-identity.us-gov-west-1.amazonaws.com<br>cognito-identity-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |

## Service quotas

### Amazon Cognito User Pools

| Name  | Default        | Adjustable |
|---|----------------|------------|
| Apps per user pool                                    | 1,000          | Yes        |
| Custom domains per account                            | 4              | No         |
| Groups per user                                       | 100            | No         |
| Groups per user pool                                  | 10,000         | No         |
| Identity providers per user pool                      | 300            | Yes        |
| Rate of UserAccountRecovery requests                  | 30 per second  | No         |
| Rate of UserAuthentication requests                   | 120 per second | Yes        |
| Rate of UserCreation requests                         | 50 per second  | Yes        |
| Rate of UserFederation requests                       | 25 per second  | Yes        |
| Rate of UserList requests                             | 30 per second  | No         |
| Rate of UserPoolClientRead requests per account       | 15 per second  | No         |
| Rate of UserPoolClientRead requests per user pool     | 5 per second   | No         |
| Rate of UserPoolClientUpdate requests per account     | 15 per second  | No         |
| Rate of UserPoolClientUpdate requests per user pool   | 5 per second   | No         |
| Rate of UserPoolRead requests                         | 15 per second  | No         |
| Rate of UserPoolResourceRead requests per account     | 20 per second  | No         |
| Rate of UserPoolResourceRead requests per user pool   | 5 per second   | No         |
| Rate of UserPoolResourceUpdate requests per account   | 15 per second  | No         |
| Rate of UserPoolResourceUpdate requests per user pool | 5 per second   | No         |

| Name                                | Default        | Adjustable |
|-------------------------------------|----------------|------------|
| Rate of UserPoolUpdate requests     | 15 per second  | No         |
| Rate of UserRead requests           | 120 per second | Yes        |
| Rate of UserResourceRead requests   | 50 per second  | Yes        |
| Rate of UserResourceUpdate requests | 25 per second  | No         |
| Rate of UserToken requests          | 120 per second | Yes        |
| Rate of UserUpdate requests         | 25 per second  | No         |
| Resource servers per user pool      | 25             | Yes        |
| Scopes per resource server          | 100            | No         |
| User import jobs per user pool      | 1,000          | Yes        |
| User pools per account              | 1,000          | Yes        |

For more information, see [Quotas in Amazon Cognito](#) in the *Amazon Cognito Developer Guide*.

## Amazon Cognito Federated Identities

| Name                                  | Default     | Adjustable |
|---------------------------------------|-------------|------------|
| Identity pool name size               | 128 Bytes   | No         |
| Identity pools per account            | 1,000       | Yes        |
| List API call results                 | 60          | No         |
| Login provider name size              | 2,048 Bytes | No         |
| Role-based access control rules       | 25          | No         |
| User pool providers per identity pool | 50          | Yes        |

For more information, see [Quotas in Amazon Cognito](#) in the *Amazon Cognito Developer Guide*.

## Amazon Cognito Sync endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#).

Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint                                  | Protocol |  |
|--------------------------|----------------|---|----------|--|
| US East (Ohio)           | us-east-2      | cognito-sync.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | cognito-sync.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | cognito-sync.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai)    | ap-south-1     | cognito-sync.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | cognito-sync.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | cognito-sync.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | cognito-sync.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | cognito-sync.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Europe (Frankfurt)       | eu-central-1   | cognito-sync.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)         | eu-west-1      | cognito-sync.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)          | eu-west-2      | cognito-sync.eu-west-2.amazonaws.com      | HTTPS    |  |

## Service quotas

| Name                   | Default     | Adjustable |
|------------------------|-------------|------------|
| Bulk publish wait time | 24          | No         |
| Dataset name size      | 128 Bytes   | No         |
| Dataset size           | 1 Megabytes | Yes        |
| Datasets per identity  | 20          | Yes        |

| Name                | Default | Adjustable |
|---------------------|---------|------------|
| Records per dataset | 1,024   | Yes        |

For more information, see [Quotas in Amazon Cognito](#) in the *Amazon Cognito Developer Guide*.

## Amazon Comprehend endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |
|--------------------------|----------------|---|----------------|
| US East (Ohio)           | us-east-2      | comprehend.us-east-2.amazonaws.com<br>comprehend-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |
| US East (N. Virginia)    | us-east-1      | comprehend.us-east-1.amazonaws.com<br>comprehend-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |
| US West (Oregon)         | us-west-2      | comprehend.us-west-2.amazonaws.com<br>comprehend-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |
| Asia Pacific (Mumbai)    | ap-south-1     | comprehend.ap-south-1.amazonaws.com   | HTTPS          |
| Asia Pacific (Seoul)     | ap-northeast-2 | comprehend.ap-northeast-2.amazonaws.com                                       | HTTPS          |
| Asia Pacific (Singapore) | ap-southeast-1 | comprehend.ap-southeast-1.amazonaws.com                                       | HTTPS          |
| Asia Pacific (Sydney)    | ap-southeast-2 | comprehend.ap-southeast-2.amazonaws.com                                       | HTTPS          |
| Asia Pacific (Tokyo)     | ap-northeast-1 | comprehend.ap-northeast-1.amazonaws.com                                       | HTTPS          |
| Canada (Central)         | ca-central-1   | comprehend.ca-central-1.amazonaws.com   | HTTPS          |
| Europe (Frankfurt)       | eu-central-1   | comprehend.eu-central-1.amazonaws.com   | HTTPS          |

| Region Name            | Region        | Endpoint  | Protocol       |  |
|------------------------|---------------|---|----------------|--|
| Europe (Ireland)       | eu-west-1     | comprehend.eu-west-1.amazonaws.com  | HTTPS          |  |
| Europe (London)        | eu-west-2     | comprehend.eu-west-2.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-West) | us-gov-west-1 | comprehend.us-gov-west-1.amazonaws.com<br>comprehend-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name  | Default | Adjustable |
|---|---------|------------|
| BatchDetectDominantLanguage throttle limit in transaction per second          | 10      | Yes        |
| BatchDetectEntities throttle limit in transaction per second                  | 10      | Yes        |
| BatchDetectKeyPhrases throttle limit in transaction per second                | 10      | Yes        |
| BatchDetectSentiment throttle limit in transaction per second                 | 10      | Yes        |
| BatchDetectSyntax throttle limit in transaction per second                    | 10      | Yes        |
| CreateDocumentClassifier throttle limit in transaction per second             | 1       | No         |
| CreateEntityRecognizer throttle limit in transaction per second               | 1       | No         |
| DeleteDocumentClassifier throttle limit in transaction per second             | 1       | No         |
| DeleteEntityRecognizer throttle limit in transaction per second               | 1       | No         |
| DescribeDocumentClassificationJob throttle limit in transaction per second    | 10      | No         |
| DescribeDocumentClassifier throttle limit in transaction per second           | 10      | No         |
| DescribeDominantLanguageDetectionJob throttle limit in transaction per second | 10      | No         |
| DescribeEntitiesDetectionJob throttle limit in transaction per second         | 10      | No         |
| DescribeEntityRecognizer throttle limit in transaction per second             | 10      | No         |
| DescribeKeyPhrasesDetectionJob throttle limit in transaction per second       | 10      | No         |
| DescribeSentimentDetectionJob throttle limit in transaction per second        | 10      | No         |
| DescribeTopicsDetectionJob throttle limit in transaction per second           | 10      | No         |
| DetectDominantLanguage max active jobs  | 10      | No         |
| DetectDominantLanguage throttle limit in transaction per second               | 40      | Yes        |
| DetectEntities max active jobs  | 10      | No         |
| DetectEntities throttle limit in transaction per second                       | 20      | Yes        |

| Name   | Default | Adjustable |
|--|---------|------------|
| DetectKeyPhrases max active jobs   | 10      | No         |
| DetectKeyPhrases throttle limit in transaction per second                  | 20      | Yes        |
| DetectSentiment max active jobs  | 10      | No         |
| DetectSentiment throttle limit in transaction per second                   | 25      | Yes        |
| DetectSyntax throttle limit in transaction per second                      | 20      | Yes        |
| DocumentClassification max active jobs                                     | 10      | No         |
| DocumentClassifier max active jobs   | 10      | No         |
| Endpoints max active endpoints   | 10      | Yes        |
| Endpoints max inference units per account                                  | 100     | Yes        |
| Endpoints max inference units per endpoint                                 | 10      | Yes        |
| EntityRecognizer max active jobs   | 10      | No         |
| ListDocumentClassificationJobs throttle limit in transaction per second    | 10      | No         |
| ListDocumentClassifiers throttle limit in transaction per second           | 10      | No         |
| ListDominantLanguageDetectionJobs throttle limit in transaction per second | 10      | No         |
| ListEntitiesDetectionJobs throttle limit in transaction per second         | 10      | No         |
| ListEntityRecognizers throttle limit in transaction per second             | 10      | No         |
| ListKeyPhrasesDetectionJobs throttle limit in transaction per second       | 10      | No         |
| ListSentimentDetectionJobs throttle limit in transaction per second        | 10      | No         |
| ListTagsForResource throttle limit in transaction per second               | 10      | No         |
| ListTopicsDetectionJobs throttle limit in transaction per second           | 10      | No         |
| StartDocumentClassificationJob throttle limit in transaction per second    | 1       | No         |
| StartDominantLanguageDetectionJob throttle limit in transaction per second | 1       | No         |
| StartEntitiesDetectionJob throttle limit in transaction per second         | 1       | No         |
| StartKeyPhrasesDetectionJob throttle limit in transaction per second       | 1       | No         |
| StartSentimentDetectionJob throttle limit in transaction per second        | 1       | No         |
| StartTopicsDetectionJob throttle limit in transaction per second           | 1       | No         |
| StopDominantLanguageDetectionJob throttle limit in transaction per second  | 1       | No         |
| StopEntitiesDetectionJob throttle limit in transaction per second          | 1       | No         |
| StopKeyPhrasesDetectionJob throttle limit in transaction per second        | 1       | No         |
| StopSentimentDetectionJob throttle limit in transaction per second         | 1       | No         |

| Name  | Default | Adjustable |
|---|---------|------------|
| StopTrainingDocumentClassifier throttle limit in transaction per second | 1       | No         |
| StopTrainingEntityRecognizer throttle limit in transaction per second   | 1       | No         |
| TagResource throttle limit in transaction per second                    | 1       | No         |
| TopicsDetection max active jobs   | 10      | No         |
| UntagResource throttle limit in transaction per second                  | 1       | No         |

For more information, see [Guidelines and Quotas](#) in the *Amazon Comprehend Developer Guide*.

## Amazon Comprehend Medical

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name           | Region         | Endpoint  | Protocol       |  |
|-----------------------|----------------|---|----------------|--|
| US East (Ohio)        | us-east-2      | comprehendmedical.us-east-2.amazonaws.com<br>comprehendmedical-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia) | us-east-1      | comprehendmedical.us-east-1.amazonaws.com<br>comprehendmedical-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)      | us-west-2      | comprehendmedical.us-west-2.amazonaws.com<br>comprehendmedical-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Asia Pacific (Sydney) | ap-southeast-2 | comprehendmedical.ap-southeast-2.amazonaws.com  | HTTPS          |  |
| Canada (Central)      | ca-central-1   | comprehendmedical.ca-central-1.amazonaws.com  | HTTPS          |  |
| Europe (Ireland)      | eu-west-1      | comprehendmedical.eu-west-1.amazonaws.com   | HTTPS          |  |
| Europe (London)       | eu-west-2      | comprehendmedical.eu-west-2.amazonaws.com   | HTTPS          |  |

| Region Name            | Region        | Endpoint  | Protocol           |  |
|------------------------|---------------|---|--------------------|--|
| AWS GovCloud (US-West) | us-gov-west-1 | comprehendmedical.us-gov-west-1.amazonaws.com<br><br>comprehendmedical-fips.us-gov-west-1.amazonaws.com | HTTPS<br><br>HTTPS |  |

## Service quotas

| Name   | Default      | Adjustable |
|--|--------------|------------|
| Characters per second (CPS) for the DetectEntities operation                   | 40,000       | Yes        |
| Characters per second (CPS) for the DetectEntities-v2 operation                | 40,000       | Yes        |
| Characters per second (CPS) for the DetectPHI operation                        | 40,000       | Yes        |
| Characters per second (CPS) for the InferICD10CM operation                     | 40,000       | Yes        |
| Characters per second (CPS) for the InferRxNorm operation                      | 40,000       | Yes        |
| Maximum document size (UTF-8 characters) for the DetectEntities operation      | 20,000 Bytes | No         |
| Maximum document size (UTF-8 characters) for the DetectEntities-v2 operation   | 20,000 Bytes | No         |
| Maximum document size (UTF-8 characters) for the DetectPHI operation           | 20,000 Bytes | No         |
| Maximum document size (UTF-8 characters) for the InferICD10CM operation        | 10,000 Bytes | No         |
| Maximum document size (UTF-8 characters) for the InferRxNorm operation         | 10,000 Bytes | No         |
| Maximum individual file size for batch jobs                                    | 40 Kilobytes | No         |
| Maximum number of files for batch jobs   | 5,000,000    | No         |
| Maximum size (in GB) of text analysis batch jobs (all files)                   | 10 Gigabytes | No         |
| Maximum size of ontology linking batch analysis jobs (all files)               | 5 Gigabytes  | No         |
| Minimum size of batch jobs (all files)   | 1 Bytes      | No         |
| Transactions per second (TPS) for the DescribeEntitiesDetectionV2Job operation | 10           | Yes        |
| Transactions per second (TPS) for the DescribeICD10CMInferenceJob operation    | 10           | Yes        |
| Transactions per second (TPS) for the DescribePHIDetectionJob operation        | 10           | Yes        |

| Name  | Default | Adjustable |
|---|---------|------------|
| Transactions per second (TPS) for the DescribeRxNormInferenceJob operation  | 10      | Yes        |
| Transactions per second (TPS) for the DetectEntities operation              | 100     | No         |
| Transactions per second (TPS) for the DetectEntities-v2 operation           | 100     | No         |
| Transactions per second (TPS) for the DetectPHI operation                   | 100     | No         |
| Transactions per second (TPS) for the InferICD10CM operation                | 100     | No         |
| Transactions per second (TPS) for the InferRxNorm operation                 | 100     | No         |
| Transactions per second (TPS) for the ListEntitiesDetectionV2Jobs operation | 10      | Yes        |
| Transactions per second (TPS) for the ListICD10CMIInferenceJobs operation   | 10      | Yes        |
| Transactions per second (TPS) for the ListPHIDetectionJobs operation        | 10      | Yes        |
| Transactions per second (TPS) for the ListRxNormInferenceJobs operation     | 10      | Yes        |
| Transactions per second (TPS) for the StartEntitiesDetectionV2Job operation | 5       | Yes        |
| Transactions per second (TPS) for the StartICD10CMIInferenceJob operation   | 5       | Yes        |
| Transactions per second (TPS) for the StartPHIDetectionJob operation        | 5       | Yes        |
| Transactions per second (TPS) for the StartRxNormInferenceJob operation     | 5       | Yes        |
| Transactions per second (TPS) for the StopEntitiesDetectionV2Job operation  | 5       | Yes        |
| Transactions per second (TPS) for the StopICD10CMIInferenceJob operation    | 5       | Yes        |
| Transactions per second (TPS) for the StopPHIDetectionJob operation         | 5       | Yes        |
| Transactions per second (TPS) for the StopRxNormInferenceJob operation      | 5       | Yes        |

## AWS Compute Optimizer endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name           | Region    | Endpoint                                  | Protocol |  |
|-----------------------|-----------|---|----------|--|
| US East (Ohio)        | us-east-2 | compute-optimizer.us-east-2.amazonaws.com | HTTPS    |  |
| US East (N. Virginia) | us-east-1 | compute-optimizer.us-east-1.amazonaws.com | HTTPS    |  |

| Region Name               | Region         | Endpoint                                       | Protocol |  |
|---------------------------|----------------|--|----------|--|
| US West (N. California)   | us-west-1      | compute-optimizer.us-west-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)          | us-west-2      | compute-optimizer.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai)     | ap-south-1     | compute-optimizer.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Seoul)      | ap-northeast-2 | compute-optimizer.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | compute-optimizer.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | compute-optimizer.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | compute-optimizer.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)          | ca-central-1   | compute-optimizer.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)        | eu-central-1   | compute-optimizer.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)          | eu-west-1      | compute-optimizer.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)           | eu-west-2      | compute-optimizer.eu-west-2.amazonaws.com      | HTTPS    |  |
| Europe (Paris)            | eu-west-3      | compute-optimizer.eu-west-3.amazonaws.com      | HTTPS    |  |
| Europe (Stockholm)        | eu-north-1     | compute-optimizer.eu-north-1.amazonaws.com     | HTTPS    |  |
| South America (São Paulo) | sa-east-1      | compute-optimizer.sa-east-1.amazonaws.com      | HTTPS    |  |

## Service quotas

| Name   | Default | Adjustable |
|--|---------|------------|
| The number of API calls per second per account | 5       | No         |

## AWS Config and AWS Config Rules endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |
|--------------------------|----------------|---|----------------|
| US East (Ohio)           | us-east-2      | config.us-east-2.amazonaws.com<br>config-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |
| US East (N. Virginia)    | us-east-1      | config.us-east-1.amazonaws.com<br>config-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |
| US West (N. California)  | us-west-1      | config.us-west-1.amazonaws.com<br>config-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |
| US West (Oregon)         | us-west-2      | config.us-west-2.amazonaws.com<br>config-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |
| Africa (Cape Town)       | af-south-1     | config.af-south-1.amazonaws.com                                       | HTTPS          |
| Asia Pacific (Hong Kong) | ap-east-1      | config.ap-east-1.amazonaws.com  | HTTPS          |
| Asia Pacific (Mumbai)    | ap-south-1     | config.ap-south-1.amazonaws.com                                       | HTTPS          |
| Asia Pacific (Osaka)     | ap-northeast-3 | config.ap-northeast-3.amazonaws.com                                   | HTTPS          |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>  | <b>Protocol</b> |  |
|---------------------------|----------------|--|-----------------|--|
| Asia Pacific (Seoul)      | ap-northeast-2 | config.ap-northeast-2.amazonaws.com                                      | HTTPS           |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | config.ap-southeast-1.amazonaws.com                                      | HTTPS           |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | config.ap-southeast-2.amazonaws.com                                      | HTTPS           |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | config.ap-northeast-1.amazonaws.com                                      | HTTPS           |  |
| Canada (Central)          | ca-central-1   | config.ca-central-1.amazonaws.com  | HTTPS           |  |
| Europe (Frankfurt)        | eu-central-1   | config.eu-central-1.amazonaws.com  | HTTPS           |  |
| Europe (Ireland)          | eu-west-1      | config.eu-west-1.amazonaws.com   | HTTPS           |  |
| Europe (London)           | eu-west-2      | config.eu-west-2.amazonaws.com   | HTTPS           |  |
| Europe (Milan)            | eu-south-1     | config.eu-south-1.amazonaws.com  | HTTPS           |  |
| Europe (Paris)            | eu-west-3      | config.eu-west-3.amazonaws.com   | HTTPS           |  |
| Europe (Stockholm)        | eu-north-1     | config.eu-north-1.amazonaws.com  | HTTPS           |  |
| Middle East (Bahrain)     | me-south-1     | config.me-south-1.amazonaws.com  | HTTPS           |  |
| South America (São Paulo) | sa-east-1      | config.sa-east-1.amazonaws.com   | HTTPS           |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | config.us-gov-east-1.amazonaws.com<br>config.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | config.us-gov-west-1.amazonaws.com<br>config.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |

## Service quotas

| Resource  | Default | Notes  |
|---|---------|--|
| Number of AWS Config rules per Region in your account | 250     | You can <a href="#">request a quota increase</a> . |
| Maximum Number of Configuration Aggregators           | 50      | You can <a href="#">request a quota increase</a> . |

## Amazon Connect endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (N. Virginia)    | us-east-1      | connect.us-east-1.amazonaws.com<br>connect-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | connect.us-west-2.amazonaws.com<br>connect-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Asia Pacific (Mumbai)    | ap-south-1     | connect.ap-south-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | connect.ap-southeast-1.amazonaws.com                                    | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | connect.ap-southeast-2.amazonaws.com                                    | HTTPS          |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | connect.ap-northeast-1.amazonaws.com                                    | HTTPS          |  |
| Europe (Frankfurt)       | eu-central-1   | connect.eu-central-1.amazonaws.com                                      | HTTPS          |  |
| Europe (London)          | eu-west-2      | connect.eu-west-2.amazonaws.com   | HTTPS          |  |

| Region Name            | Region        | Endpoint   | Protocol       |  |
|------------------------|---------------|--|----------------|--|
| AWS GovCloud (US-West) | us-gov-west-1 | connect.us-gov-west-1.amazonaws.com<br>connect.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Amazon Connect Contact Lens endpoints

The Amazon Connect Contact Lens Service has the following endpoints.

| Region Name           | Region         | Endpoint                                  | Protocol |  |
|-----------------------|----------------|---|----------|--|
| US East (N. Virginia) | us-east-1      | contact-lens.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)      | us-west-2      | contact-lens.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Sydney) | ap-southeast-2 | contact-lens.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)  | ap-northeast-1 | contact-lens.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)      | ca-central-1   | contact-lens.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)    | eu-central-1   | contact-lens.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (London)       | eu-west-2      | contact-lens.eu-west-2.amazonaws.com      | HTTPS    |  |

## Amazon Connect Participant Service endpoints

The Amazon Connect Participant Service has the following endpoints.

| Region Name              | Region         | Endpoint  | Protocol       |
|--------------------------|----------------|---|----------------|
| US East (N. Virginia)    | us-east-1      | participant.connect.us-east-1.amazonaws.com<br>participant.connect-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |
| US West (Oregon)         | us-west-2      | participant.connect.us-west-2.amazonaws.com<br>participant.connect-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |
| Asia Pacific (Singapore) | ap-southeast-1 | participant.connect.ap-southeast-1.amazonaws.com  | HTTPS          |

| <b>Region Name</b>     | <b>Region</b>  | <b>Endpoint</b>  | <b>Protocol</b> |
|------------------------|----------------|--|-----------------|
| Asia Pacific (Sydney)  | ap-southeast-2 | participant.connect.ap-southeast-2.amazonaws.com   | HTTPS           |
| Asia Pacific (Tokyo)   | ap-northeast-1 | participant.connect.ap-northeast-1.amazonaws.com   | HTTPS           |
| Canada (Central)       | ca-central-1   | participant.connect.ca-central-1.amazonaws.com   | HTTPS           |
| Europe (Frankfurt)     | eu-central-1   | participant.connect.eu-central-1.amazonaws.com   | HTTPS           |
| Europe (London)        | eu-west-2      | participant.connect.eu-west-2.amazonaws.com  | HTTPS           |
| AWS GovCloud (US-West) | us-gov-west-1  | participant.connect.us-gov-west-1.amazonaws.com<br>participant.connect.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS  |

## Amazon Connect Customer Profiles endpoints

The Amazon Connect Customer Profiles Service has the following endpoints.

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                      | <b>Protocol</b> |
|--------------------------|----------------|--------------------------------------|-----------------|
| US East (N. Virginia)    | us-east-1      | profile.us-east-1.amazonaws.com      | HTTPS           |
| US West (Oregon)         | us-west-2      | profile.us-west-2.amazonaws.com      | HTTPS           |
| Asia Pacific (Singapore) | ap-southeast-1 | profile.ap-southeast-1.amazonaws.com | HTTPS           |
| Asia Pacific (Sydney)    | ap-southeast-2 | profile.ap-southeast-2.amazonaws.com | HTTPS           |
| Asia Pacific (Tokyo)     | ap-northeast-1 | profile.ap-northeast-1.amazonaws.com | HTTPS           |
| Canada (Central)         | ca-central-1   | profile.ca-central-1.amazonaws.com   | HTTPS           |
| Europe (Frankfurt)       | eu-central-1   | profile.eu-central-1.amazonaws.com   | HTTPS           |
| Europe (London)          | eu-west-2      | profile.eu-west-2.amazonaws.com      | HTTPS           |

## AppIntegrations Service endpoints

The AppIntegrations Service has the following endpoints.

| Region Name              | Region         | Endpoint                                      | Protocol |  |
|--------------------------|----------------|---|----------|--|
| US East (N. Virginia)    | us-east-1      | app-integrations.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | app-integrations.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | app-integrations.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | app-integrations.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | app-integrations.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)         | ca-central-1   | app-integrations.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)       | eu-central-1   | app-integrations.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (London)          | eu-west-2      | app-integrations.eu-west-2.amazonaws.com      | HTTPS    |  |

## Service quotas

| Name                                   | Default | Adjustable |
|--|---------|------------|
| AWS Lambda functions per instance      | 35      | Yes        |
| Agent status per instance              | 50      | No         |
| Amazon Connect instance count          | 2       | Yes        |
| Amazon Lex V2 bot aliases per instance | 100     | Yes        |
| Amazon Lex bots per instance           | 50      | Yes        |
| Concurrent active calls per instance   | 10      | Yes        |
| Concurrent active chats per instance   | 100     | Yes        |
| Concurrent active tasks per instance   | 2,500   | Yes        |
| Contact flows per instance             | 100     | Yes        |
| Hours of operation per instance        | 100     | Yes        |

| Name   | Default      | Adjustable |
|--|--------------|------------|
| Phone numbers per instance                         | 5            | Yes        |
| Prompts per instance                               | 500          | Yes        |
| Queues per instance                                | 50           | Yes        |
| Queues per routing profile per instance            | 50           | Yes        |
| Quick connects per instance                        | 100          | Yes        |
| Rate of AssociateQueueQuickConnects API requests   | 2 per second | Yes        |
| Rate of AssociateRoutingProfileQueues API requests | 2 per second | Yes        |
| Rate of CreateQueue API requests                   | 2 per second | Yes        |
| Rate of CreateQuickConnect API requests            | 2 per second | Yes        |
| Rate of CreateRoutingProfile API requests          | 2 per second | Yes        |
| Rate of CreateUser API requests                    | 2 per second | Yes        |
| Rate of CreateUserHierarchyGroup API requests      | 2 per second | Yes        |
| Rate of DeleteQuickConnect API requests            | 2 per second | Yes        |
| Rate of DeleteUser API requests                    | 2 per second | Yes        |
| Rate of DeleteUserHierarchyGroup API requests      | 2 per second | Yes        |
| Rate of DescribeHoursOfOperation API requests      | 2 per second | Yes        |
| Rate of DescribeQueue API requests                 | 2 per second | Yes        |
| Rate of DescribeQuickConnect API requests          | 2 per second | Yes        |
| Rate of DescribeRoutingProfile API requests        | 2 per second | Yes        |
| Rate of DescribeUser API requests                  | 2 per second | Yes        |
| Rate of DescribeUserHierarchyGroup API requests    | 2 per second | Yes        |

| Name  | Default      | Adjustable |
|---|--------------|------------|
| Rate of DescribeUserHierarchyStructure API requests   | 2 per second | Yes        |
| Rate of DisassociateQueueQuickConnects API requests   | 2 per second | Yes        |
| Rate of DisassociateRoutingProfileQueues API requests | 2 per second | Yes        |
| Rate of GetContactAttributes API requests             | 2 per second | Yes        |
| Rate of GetCurrentMetricData API requests             | 5 per second | Yes        |
| Rate of GetFederationToken API requests               | 2 per second | Yes        |
| Rate of GetMetricData API requests                    | 5 per second | Yes        |
| Rate of ListContactFlows API requests                 | 2 per second | Yes        |
| Rate of ListHoursOfOperations API requests            | 2 per second | Yes        |
| Rate of ListPhoneNumbers API requests                 | 2 per second | Yes        |
| Rate of ListQueueQuickConnects API requests           | 2 per second | Yes        |
| Rate of ListQueues API requests                       | 2 per second | Yes        |
| Rate of ListQuickConnects API requests                | 2 per second | Yes        |
| Rate of ListRoutingProfileQueues API requests         | 2 per second | Yes        |
| Rate of ListRoutingProfiles API requests              | 2 per second | Yes        |
| Rate of ListSecurityProfiles API requests             | 2 per second | Yes        |
| Rate of ListTagsForResource API requests              | 2 per second | Yes        |
| Rate of ListUserHierarchyGroups API requests          | 2 per second | Yes        |
| Rate of ListUsers API requests                        | 2 per second | Yes        |
| Rate of StartOutboundVoiceContact API requests        | 2 per second | Yes        |

| Name  | Default      | Adjustable |
|---|--------------|------------|
| Rate of StopContact API requests                              | 2 per second | Yes        |
| Rate of TagResource API requests                              | 2 per second | Yes        |
| Rate of UntagResource API requests                            | 2 per second | Yes        |
| Rate of UpdateContactAttributes API requests                  | 2 per second | Yes        |
| Rate of UpdateQueueHoursOfOperation API requests              | 2 per second | Yes        |
| Rate of UpdateQueueMaxContacts API requests                   | 2 per second | Yes        |
| Rate of UpdateQueueName API requests                          | 2 per second | Yes        |
| Rate of UpdateQueueOutboundCallerConfig API requests          | 2 per second | Yes        |
| Rate of UpdateQueueStatus API requests                        | 2 per second | Yes        |
| Rate of UpdateQuickConnectConfig API requests                 | 2 per second | Yes        |
| Rate of UpdateQuickConnectName API requests                   | 2 per second | Yes        |
| Rate of UpdateRoutingProfileConcurrency API requests          | 2 per second | Yes        |
| Rate of UpdateRoutingProfileDefaultOutboundQueue API requests | 2 per second | Yes        |
| Rate of UpdateRoutingProfileName API requests                 | 2 per second | Yes        |
| Rate of UpdateRoutingProfileQueues API requests               | 2 per second | Yes        |
| Rate of UpdateUserHierarchy API requests                      | 2 per second | Yes        |
| Rate of UpdateUserHierarchyGroupName API requests             | 2 per second | Yes        |
| Rate of UpdateUserIdentityInfo API requests                   | 2 per second | Yes        |
| Rate of UpdateUserPhoneConfig API requests                    | 2 per second | Yes        |
| Rate of UpdateUserRoutingProfile API requests                 | 2 per second | Yes        |

| Name  | Default      | Adjustable |
|---|--------------|------------|
| Rate of UpdateUserSecurityProfiles API requests | 2 per second | Yes        |
| Reports per instance                            | 500          | Yes        |
| Routing profiles per instance                   | 100          | Yes        |
| Scheduled reports per instance                  | 50           | Yes        |
| Security profiles per instance                  | 100          | Yes        |
| User hierarchy groups per instance              | 500          | Yes        |
| Users per instance                              | 500          | Yes        |

## Amazon Connect Customer Profiles service quotas

The Amazon Connect Customer Profiles Service has the following quotas.

| Name  | Default          | Adjustable |
|---|------------------|------------|
| Amazon Connect Customer Profiles domain count | 100              | Yes        |
| Keys per object type                          | 10               | Yes        |
| Maximum expiration in days                    | 1,096            | Yes        |
| Maximum number of integrations                | 50               | Yes        |
| Maximum size of all objects for a profile     | 51,200 Kilobytes | Yes        |
| Object and profile maximum size               | 250 Kilobytes    | No         |
| Object types per domain                       | 100              | Yes        |
| Objects per profile                           | 1,000            | Yes        |

For more information, see [Amazon Connect Service Quotas](#) in the *Amazon Connect Administrator Guide*.

## AWS Data Exchange endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint                                  | Protocol |  |
|--------------------------|----------------|---|----------|--|
| US East (Ohio)           | us-east-2      | dataexchange.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | dataexchange.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (N. California)  | us-west-1      | dataexchange.us-west-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | dataexchange.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | dataexchange.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | dataexchange.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | dataexchange.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | dataexchange.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Europe (Frankfurt)       | eu-central-1   | dataexchange.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)         | eu-west-1      | dataexchange.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)          | eu-west-2      | dataexchange.eu-west-2.amazonaws.com      | HTTPS    |  |

## Service quotas

| Name                                 | Default      | Adjustable |
|--------------------------------------|--------------|------------|
| Asset per export job from Amazon S3  | 100          | No         |
| Asset size in GB                     | 10 Gigabytes | No         |
| Assets per import job from Amazon S3 | 100          | No         |
| Assets per revision                  | 10,000       | Yes        |

| Name   | Default | Adjustable |
|--|---------|------------|
| Auto export event actions per data set                         | 5       | Yes        |
| Bring-Your-Own-Subscription offers per account                 | 10      | Yes        |
| Concurrent in progress jobs to export assets to Amazon S3      | 10      | No         |
| Concurrent in progress jobs to export assets to a signed URL   | 10      | No         |
| Concurrent in progress jobs to export revisions to Amazon S3   | 5       | No         |
| Concurrent in progress jobs to import assets from Amazon S3    | 10      | No         |
| Concurrent in progress jobs to import assets from a signed URL | 10      | No         |
| Data sets per account  | 3,000   | Yes        |
| Data sets per product  | 25      | Yes        |
| Event actions per account                                      | 50      | Yes        |
| Private offers per account                                     | 25      | Yes        |
| Products per account   | 50      | Yes        |
| Products per data set  | 100     | Yes        |
| Revisions per addRevisions change set                          | 5       | No         |
| Revisions per data set   | 10,000  | Yes        |

For more information, see [AWS Data Exchange quotas](#) in the *AWS Data Exchange User Guide*.

## Amazon Data Lifecycle Manager endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name           | Region    | Endpoint                    | Protocol |  |
|-----------------------|-----------|-----------------------------|----------|--|
| US East (Ohio)        | us-east-2 | dlm.us-east-2.amazonaws.com | HTTPS    |  |
| US East (N. Virginia) | us-east-1 | dlm.us-east-1.amazonaws.com | HTTPS    |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                  | <b>Protocol</b> |  |
|--------------------------|----------------|----------------------------------|-----------------|--|
| US West (N. California)  | us-west-1      | dlm.us-west-1.amazonaws.com      | HTTPS           |  |
| US West (Oregon)         | us-west-2      | dlm.us-west-2.amazonaws.com      | HTTPS           |  |
| Africa (Cape Town)       | af-south-1     | dlm.af-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | dlm.ap-east-1.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | dlm.ap-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | dlm.ap-northeast-3.amazonaws.com | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | dlm.ap-northeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | dlm.ap-southeast-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | dlm.ap-southeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | dlm.ap-northeast-1.amazonaws.com | HTTPS           |  |
| Canada (Central)         | ca-central-1   | dlm.ca-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | dlm.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | dlm.eu-west-1.amazonaws.com      | HTTPS           |  |
| Europe (London)          | eu-west-2      | dlm.eu-west-2.amazonaws.com      | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | dlm.eu-south-1.amazonaws.com     | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | dlm.eu-west-3.amazonaws.com      | HTTPS           |  |

| Region Name               | Region        | Endpoint                        | Protocol |  |
|---------------------------|---------------|---------------------------------|----------|--|
| Europe (Stockholm)        | eu-north-1    | dlm.eu-north-1.amazonaws.com    | HTTPS    |  |
| Middle East (Bahrain)     | me-south-1    | dlm.me-south-1.amazonaws.com    | HTTPS    |  |
| South America (São Paulo) | sa-east-1     | dlm.sa-east-1.amazonaws.com     | HTTPS    |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | dlm.us-gov-east-1.amazonaws.com | HTTPS    |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | dlm.us-gov-west-1.amazonaws.com | HTTPS    |  |

## Service quotas

| Name                             | Default | Adjustable |
|----------------------------------|---------|------------|
| Policies per Region              | 100     | Yes        |
| Target accounts per sharing rule | 50      | Yes        |

## AWS Data Pipeline endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name           | Region         | Endpoint                                  | Protocol |  |
|-----------------------|----------------|---|----------|--|
| US East (N. Virginia) | us-east-1      | datapipeline.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)      | us-west-2      | datapipeline.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Sydney) | ap-southeast-2 | datapipeline.ap-southeast-2.amazonaws.com | HTTPS    |  |

| Region Name          | Region         | Endpoint                                  | Protocol |  |
|----------------------|----------------|---|----------|--|
| Asia Pacific (Tokyo) | ap-northeast-1 | datapipeline.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Europe (Ireland)     | eu-west-1      | datapipeline.eu-west-1.amazonaws.com      | HTTPS    |  |

## Service quotas

| Name  | Default         | Adjustable |
|---|-----------------|------------|
| Minimum delay between retry attempts in minutes   | 2               | No         |
| Minimum scheduling interval in minutes            | 15              | No         |
| Number of EC2 instances per Ec2Resource object    | 1               | No         |
| Number of UTF8 bytes per field                    | 10,240          | No         |
| Number of UTF8 bytes per field name or identifier | 256             | No         |
| Number of UTF8 bytes per object                   | 15,360          | No         |
| Number of active instances per object             | 5               | Yes        |
| Number of fields per object                       | 50              | No         |
| Number of objects per pipeline                    | 100             | Yes        |
| Number of pipelines you can create                | 100             | Yes        |
| Number of roll-ups into a single object           | 32              | No         |
| Rate of creation of an instance from an object    | 1 per 5 minutes | No         |
| Retries of a pipeline activity per task           | 5               | No         |

For more information, see [AWS Data Pipeline Quotas](#) in the *AWS Data Pipeline Developer Guide*.

## AWS DataSync endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | datasync.us-east-2.amazonaws.com<br>datasync-fips.us-east-2.amazonaws.com       | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | datasync.us-east-1.amazonaws.com<br>datasync-fips.us-east-1.amazonaws.com       | HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | datasync.us-west-1.amazonaws.com<br>datasync-fips.us-west-1.amazonaws.com       | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | datasync.us-west-2.amazonaws.com<br>datasync-fips.us-west-2.amazonaws.com       | HTTPS<br>HTTPS |  |
| Africa (Cape Town)       | af-south-1     | datasync.af-south-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Hong Kong) | ap-east-1      | datasync.ap-east-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | datasync.ap-south-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | datasync.ap-northeast-3.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | datasync.ap-northeast-2.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | datasync.ap-southeast-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | datasync.ap-southeast-2.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | datasync.ap-northeast-1.amazonaws.com   | HTTPS          |  |
| Canada (Central)         | ca-central-1   | datasync.ca-central-1.amazonaws.com<br>datasync-fips.ca-central-1.amazonaws.com | HTTPS<br>HTTPS |  |

| Region Name               | Region        | Endpoint  | Protocol       |  |
|---------------------------|---------------|---|----------------|--|
| Europe (Frankfurt)        | eu-central-1  | datasync.eu-central-1.amazonaws.com   | HTTPS          |  |
| Europe (Ireland)          | eu-west-1     | datasync.eu-west-1.amazonaws.com  | HTTPS          |  |
| Europe (London)           | eu-west-2     | datasync.eu-west-2.amazonaws.com  | HTTPS          |  |
| Europe (Milan)            | eu-south-1    | datasync.eu-south-1.amazonaws.com   | HTTPS          |  |
| Europe (Paris)            | eu-west-3     | datasync.eu-west-3.amazonaws.com  | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1    | datasync.eu-north-1.amazonaws.com   | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1    | datasync.me-south-1.amazonaws.com   | HTTPS          |  |
| South America (São Paulo) | sa-east-1     | datasync.sa-east-1.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | datasync.us-gov-east-1.amazonaws.com<br>datasync-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | datasync.us-gov-west-1.amazonaws.com<br>datasync-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name                | Default                | Adjustable |
|---------------------|------------------------|------------|
| Files per task      | 25,000,000             | Yes        |
| Tasks               | 100                    | Yes        |
| Throughput per task | 10 Gigabits per second | Yes        |

# AWS Database Migration Service endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | dms.us-east-2.amazonaws.com<br>dms-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | dms.us-east-1.amazonaws.com<br>dms-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | dms.us-west-1.amazonaws.com<br>dms-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | dms.us-west-2.amazonaws.com<br>dms-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Africa (Cape Town)       | af-south-1     | dms.af-south-1.amazonaws.com                                    | HTTPS          |  |
| Asia Pacific (Hong Kong) | ap-east-1      | dms.ap-east-1.amazonaws.com                                     | HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | dms.ap-south-1.amazonaws.com                                    | HTTPS          |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | dms.ap-northeast-3.amazonaws.com                                | HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | dms.ap-northeast-2.amazonaws.com                                | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | dms.ap-southeast-1.amazonaws.com                                | HTTPS          |  |

| Region Name               | Region         | Endpoint   | Protocol       |  |
|---------------------------|----------------|--|----------------|--|
| Asia Pacific (Sydney)     | ap-southeast-2 | dms.ap-southeast-2.amazonaws.com                                   | HTTPS          |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | dms.ap-northeast-1.amazonaws.com                                   | HTTPS          |  |
| Canada (Central)          | ca-central-1   | dms.ca-central-1.amazonaws.com                                     | HTTPS          |  |
| Europe (Frankfurt)        | eu-central-1   | dms.eu-central-1.amazonaws.com                                     | HTTPS          |  |
| Europe (Ireland)          | eu-west-1      | dms.eu-west-1.amazonaws.com  | HTTPS          |  |
| Europe (London)           | eu-west-2      | dms.eu-west-2.amazonaws.com  | HTTPS          |  |
| Europe (Milan)            | eu-south-1     | dms.eu-south-1.amazonaws.com                                       | HTTPS          |  |
| Europe (Paris)            | eu-west-3      | dms.eu-west-3.amazonaws.com  | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1     | dms.eu-north-1.amazonaws.com                                       | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1     | dms.me-south-1.amazonaws.com                                       | HTTPS          |  |
| South America (São Paulo) | sa-east-1      | dms.sa-east-1.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | dms.us-gov-east-1.amazonaws.com<br>dms.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | dms.us-gov-west-1.amazonaws.com<br>dms.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name              | Default | Adjustable |
|-------------------|---------|------------|
| Certificate count | 100     | Yes        |
| Endpoint count    | 1,000   | Yes        |

| Name                     | Default          | Adjustable |
|--------------------------|------------------|------------|
| Endpoints per instance   | 100              | Yes        |
| Event subscriptions      | 60               | Yes        |
| Replication instances    | 60               | Yes        |
| Subnet groups            | 60               | Yes        |
| Subnets per subnet group | 60               | Yes        |
| Task count               | 600              | Yes        |
| Total storage            | 30,000 Gigabytes | Yes        |

## AWS DeepLens endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name           | Region         | Endpoint                              | Protocol |
|-----------------------|----------------|---------------------------------------|----------|
| US East (N. Virginia) | us-east-1      | deeplens.us-east-1.amazonaws.com      | HTTPS    |
| Asia Pacific (Tokyo)  | ap-northeast-1 | deeplens.ap-northeast-1.amazonaws.com | HTTPS    |
| Europe (Frankfurt)    | eu-central-1   | deeplens.eu-central-1.amazonaws.com   | HTTPS    |

### Service quotas

| Name                 | Default | Adjustable |
|----------------------|---------|------------|
| Devices per account  | 200     | Yes        |
| Models per account   | 200     | Yes        |
| Projects per account | 200     | Yes        |
| Versions per project | 100     | No         |

## AWS DeepRacer endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name           | Region    | Endpoint                          | Protocol |  |
|-----------------------|-----------|-----------------------------------|----------|--|
| US East (N. Virginia) | us-east-1 | deepracer.us-east-1.amazonaws.com |          |  |

### Service quotas

| Name            | Default | Adjustable |
|-----------------|---------|------------|
| Cars            | 20      | Yes        |
| Evaluation jobs | 3       | Yes        |
| Training jobs   | 4       | Yes        |

## Amazon Detective endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service Endpoints

| Region Name             | Region    | Endpoint                                   | Protocol |  |
|-------------------------|-----------|--|----------|--|
| US East (Ohio)          | us-east-2 | api.detective.us-east-2.amazonaws.com      | HTTPS    |  |
|                         |           | api.detective-fips.us-east-2.amazonaws.com | HTTPS    |  |
| US East (N. Virginia)   | us-east-1 | api.detective.us-east-1.amazonaws.com      | HTTPS    |  |
|                         |           | api.detective-fips.us-east-1.amazonaws.com | HTTPS    |  |
| US West (N. California) | us-west-1 | api.detective.us-west-1.amazonaws.com      | HTTPS    |  |
|                         |           | api.detective-fips.us-west-1.amazonaws.com | HTTPS    |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| US West (Oregon)         | us-west-2      | api.detective.us-west-2.amazonaws.com<br>api.detective-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS  |  |
| Africa (Cape Town)       | af-south-1     | api.detective.af-south-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | api.detective.ap-east-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | api.detective.ap-south-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | api.detective.ap-northeast-2.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | api.detective.ap-southeast-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | api.detective.ap-southeast-2.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | api.detective.ap-northeast-1.amazonaws.com  | HTTPS           |  |
| Canada (Central)         | ca-central-1   | api.detective.ca-central-1.amazonaws.com  | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | api.detective.eu-central-1.amazonaws.com  | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | api.detective.eu-west-1.amazonaws.com   | HTTPS           |  |
| Europe (London)          | eu-west-2      | api.detective.eu-west-2.amazonaws.com   | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | api.detective.eu-south-1.amazonaws.com  | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | api.detective.eu-west-3.amazonaws.com   | HTTPS           |  |
| Europe (Stockholm)       | eu-north-1     | api.detective.eu-north-1.amazonaws.com  | HTTPS           |  |
| Middle East (Bahrain)    | me-south-1     | api.detective.me-south-1.amazonaws.com  | HTTPS           |  |

| Region Name               | Region        | Endpoint  | Protocol       |  |
|---------------------------|---------------|---|----------------|--|
| South America (São Paulo) | sa-east-1     | api.detective.sa-east-1.amazonaws.com   | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | api.detective.us-gov-east-1.amazonaws.com<br>api.detective-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | api.detective.us-gov-west-1.amazonaws.com<br>api.detective-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Amazon DevOps Guru endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service Endpoints

| Region Name              | Region         | Endpoint                                 | Protocol |  |
|--------------------------|----------------|--|----------|--|
| US East (Ohio)           | us-east-2      | devops-guru.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | devops-guru.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | devops-guru.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | devops-guru.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | devops-guru.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | devops-guru.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Europe (Frankfurt)       | eu-central-1   | devops-guru.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)         | eu-west-1      | devops-guru.eu-west-1.amazonaws.com      | HTTPS    |  |

| Region Name        | Region     | Endpoint                             | Protocol |  |
|--------------------|------------|--------------------------------------|----------|--|
| Europe (Stockholm) | eu-north-1 | devops-guru.eu-north-1.amazonaws.com | HTTPS    |  |

## Service quotas

| Resource  | Quota |
|---|-------|
| Maximum number of Amazon Simple Notification Service topics you can specify at once | 2     |
| Maximum number of AWS CloudFormation stacks you can specify                         | 1000  |

For more information, see [Quotas in Amazon DevOps Guru](#) in the *Amazon DevOps Guru User Guide*.

## AWS Device Farm endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name      | Region    | Endpoint                           | Protocol |  |
|------------------|-----------|------------------------------------|----------|--|
| US West (Oregon) | us-west-2 | devicefarm.us-west-2.amazonaws.com | HTTPS    |  |

## Service quotas

| Name  | Default     | Adjustable          |
|---|-------------|---------------------|
| Concurrency for automation tests on metered devices | 5           | <a href="#">Yes</a> |
| Concurrency for remote access on metered devices    | 2           | <a href="#">Yes</a> |
| Remote access session length in minutes             | 150         | No                  |
| Test run timeout per device in minutes              | 150         | No                  |
| Uploaded file size                                  | 4 Gigabytes | No                  |

# AWS Direct Connect endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | directconnect.us-east-2.amazonaws.com<br>directconnect-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | directconnect.us-east-1.amazonaws.com<br>directconnect-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | directconnect.us-west-1.amazonaws.com<br>directconnect-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | directconnect.us-west-2.amazonaws.com<br>directconnect-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Africa (Cape Town)       | af-south-1     | directconnect.af-south-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Hong Kong) | ap-east-1      | directconnect.ap-east-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | directconnect.ap-south-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | directconnect.ap-northeast-3.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | directconnect.ap-northeast-2.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | directconnect.ap-southeast-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | directconnect.ap-southeast-2.amazonaws.com  | HTTPS          |  |

| Region Name               | Region         | Endpoint   | Protocol       |  |
|---------------------------|----------------|--|----------------|--|
| Asia Pacific (Tokyo)      | ap-northeast-1 | directconnect.ap-northeast-1.amazonaws.com   | HTTPS          |  |
| Canada (Central)          | ca-central-1   | directconnect.ca-central-1.amazonaws.com   | HTTPS          |  |
| Europe (Frankfurt)        | eu-central-1   | directconnect.eu-central-1.amazonaws.com   | HTTPS          |  |
| Europe (Ireland)          | eu-west-1      | directconnect.eu-west-1.amazonaws.com  | HTTPS          |  |
| Europe (London)           | eu-west-2      | directconnect.eu-west-2.amazonaws.com  | HTTPS          |  |
| Europe (Milan)            | eu-south-1     | directconnect.eu-south-1.amazonaws.com   | HTTPS          |  |
| Europe (Paris)            | eu-west-3      | directconnect.eu-west-3.amazonaws.com  | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1     | directconnect.eu-north-1.amazonaws.com   | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1     | directconnect.me-south-1.amazonaws.com   | HTTPS          |  |
| South America (São Paulo) | sa-east-1      | directconnect.sa-east-1.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | directconnect.us-gov-east-1.amazonaws.com<br>directconnect.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | directconnect.us-gov-west-1.amazonaws.com<br>directconnect.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name   | Default | Adjustable |
|--|---------|------------|
| Active AWS Direct Connect dedicated connections per location             | 10      | No         |
| Dedicated connections, or interconnects per link aggregation group (LAG) | 4       | No         |
| Global maximum number of AWS Direct Connect gateways                     | 200     | Yes        |
| Link aggregation groups (LAGs) per AWS Region                            | 10      | No         |

| Name  | Default | Adjustable |
|---|---------|------------|
| Number of prefixes per AWS transit Gateway from AWS to on-premises on a transit virtual interface | 20      | No         |
| Private or public virtual interfaces per AWS Direct Connect dedicated connection                  | 50      | No         |
| Transit gateways per AWS Direct Connect gateway   | 3       | No         |
| Virtual interfaces per AWS Direct Connect gateway   | 30      | Yes        |
| Virtual private gateways per AWS Direct Connect gateway   | 10      | No         |

For more information, see [AWS Direct Connect Quotas](#) in the *AWS Direct Connect User Guide*.

## AWS Directory Service endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name              | Region     | Endpoint  | Protocol       |
|--------------------------|------------|---|----------------|
| US East (Ohio)           | us-east-2  | ds.us-east-2.amazonaws.com<br>ds-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |
| US East (N. Virginia)    | us-east-1  | ds.us-east-1.amazonaws.com<br>ds-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |
| US West (N. California)  | us-west-1  | ds.us-west-1.amazonaws.com<br>ds-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |
| US West (Oregon)         | us-west-2  | ds.us-west-2.amazonaws.com<br>ds-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |
| Africa (Cape Town)       | af-south-1 | ds.af-south-1.amazonaws.com                                   | HTTPS          |
| Asia Pacific (Hong Kong) | ap-east-1  | ds.ap-east-1.amazonaws.com                                    | HTTPS          |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|---------------------------|----------------|---|-----------------|--|
| Asia Pacific (Mumbai)     | ap-south-1     | ds.ap-south-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Osaka)      | ap-northeast-3 | ds.ap-northeast-3.amazonaws.com                                     | HTTPS           |  |
| Asia Pacific (Seoul)      | ap-northeast-2 | ds.ap-northeast-2.amazonaws.com                                     | HTTPS           |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | ds.ap-southeast-1.amazonaws.com                                     | HTTPS           |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | ds.ap-southeast-2.amazonaws.com                                     | HTTPS           |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | ds.ap-northeast-1.amazonaws.com                                     | HTTPS           |  |
| Canada (Central)          | ca-central-1   | ds.ca-central-1.amazonaws.com<br>ds-fips.ca-central-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| Europe (Frankfurt)        | eu-central-1   | ds.eu-central-1.amazonaws.com                                       | HTTPS           |  |
| Europe (Ireland)          | eu-west-1      | ds.eu-west-1.amazonaws.com  | HTTPS           |  |
| Europe (London)           | eu-west-2      | ds.eu-west-2.amazonaws.com  | HTTPS           |  |
| Europe (Milan)            | eu-south-1     | ds.eu-south-1.amazonaws.com   | HTTPS           |  |
| Europe (Paris)            | eu-west-3      | ds.eu-west-3.amazonaws.com  | HTTPS           |  |
| Europe (Stockholm)        | eu-north-1     | ds.eu-north-1.amazonaws.com   | HTTPS           |  |
| Middle East (Bahrain)     | me-south-1     | ds.me-south-1.amazonaws.com   | HTTPS           |  |
| South America (São Paulo) | sa-east-1      | ds.sa-east-1.amazonaws.com  | HTTPS           |  |

| Region Name            | Region        | Endpoint                            | Protocol |  |
|------------------------|---------------|-------------------------------------|----------|--|
| AWS GovCloud (US-East) | us-gov-east-1 | ds.us-gov-east-1.amazonaws.com      | HTTPS    |  |
|                        |               | ds-fips.us-gov-east-1.amazonaws.com | HTTPS    |  |
| AWS GovCloud (US-West) | us-gov-west-1 | ds.us-gov-west-1.amazonaws.com      | HTTPS    |  |
|                        |               | ds-fips.us-gov-west-1.amazonaws.com | HTTPS    |  |

For a list of supported endpoints by directory type, see [Region availability for AWS Directory Service](#).

## Service quotas

| Name  | Default | Adjustable |
|---|---------|------------|
| AD Connector directories                    | 10      | Yes        |
| AWS Managed Microsoft AD directories        | 20      | Yes        |
| AWS Managed Microsoft AD domain controllers | 20      | Yes        |
| AWS Managed Microsoft AD manual snapshots   | 5       | No         |
| Simple AD directories                       | 10      | Yes        |
| Simple AD manual snapshots                  | 5       | No         |

For more information, see the following:

- [AD Connector quotas](#)
- [AWS Managed Microsoft AD quotas](#)
- [Simple AD quotas](#)

## Amazon DocumentDB endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name    | Region    | Endpoint                    | Protocol       |  |
|----------------|-----------|-----------------------------|----------------|--|
| US East (Ohio) | us-east-2 | rds.us-east-2.amazonaws.com | HTTP and HTTPS |  |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>                  | <b>Protocol</b> |  |
|---------------------------|----------------|----------------------------------|-----------------|--|
| US East (N. Virginia)     | us-east-1      | rds.us-east-1.amazonaws.com      | HTTP and HTTPS  |  |
| US West (Oregon)          | us-west-2      | rds.us-west-2.amazonaws.com      | HTTP and HTTPS  |  |
| Asia Pacific (Mumbai)     | ap-south-1     | rds.ap-south-1.amazonaws.com     | HTTP and HTTPS  |  |
| Asia Pacific (Seoul)      | ap-northeast-2 | rds.ap-northeast-2.amazonaws.com | HTTP and HTTPS  |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | rds.ap-southeast-1.amazonaws.com | HTTP and HTTPS  |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | rds.ap-southeast-2.amazonaws.com | HTTP and HTTPS  |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | rds.ap-northeast-1.amazonaws.com | HTTP and HTTPS  |  |
| Canada (Central)          | ca-central-1   | rds.ca-central-1.amazonaws.com   | HTTP and HTTPS  |  |
| Europe (Frankfurt)        | eu-central-1   | rds.eu-central-1.amazonaws.com   | HTTP and HTTPS  |  |
| Europe (Ireland)          | eu-west-1      | rds.eu-west-1.amazonaws.com      | HTTP and HTTPS  |  |
| Europe (London)           | eu-west-2      | rds.eu-west-2.amazonaws.com      | HTTP and HTTPS  |  |
| Europe (Paris)            | eu-west-3      | rds.eu-west-3.amazonaws.com      | HTTP and HTTPS  |  |
| South America (São Paulo) | sa-east-1      | rds.sa-east-1.amazonaws.com      | HTTP and HTTPS  |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | rds.us-gov-west-1.amazonaws.com  | HTTP and HTTPS  |  |

For information on finding and connecting to your cluster or instance endpoints, see [Working with Amazon DocumentDB Endpoints](#) in the *Amazon DocumentDB Developer Guide*.

## Service quotas

| Name                             | Default | Adjustable |
|----------------------------------|---------|------------|
| Cluster parameter groups         | 50      | No         |
| Clusters                         | 40      | Yes        |
| Event subscriptions              | 20      | Yes        |
| Instances                        | 40      | Yes        |
| Manual cluster snapshots         | 100     | Yes        |
| Read replicas per cluster        | 15      | Yes        |
| Subnet groups                    | 50      | Yes        |
| Subnets per subnet group         | 20      | No         |
| Tags per resource                | 50      | No         |
| VPC security groups per instance | 5       | No         |

For more information, see [Amazon DocumentDB Service Quotas](#) in the *Amazon DocumentDB Developer Guide*.

## Amazon DynamoDB endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

#### DynamoDB

| Region Name             | Region    | Endpoint  | Protocol                |  |
|-------------------------|-----------|---|-------------------------|--|
| US East (Ohio)          | us-east-2 | dynamodb.us-east-2.amazonaws.com<br>dynamodb-fips.us-east-2.amazonaws.com | HTTP and HTTPS<br>HTTPS |  |
| US East (N. Virginia)   | us-east-1 | dynamodb.us-east-1.amazonaws.com<br>dynamodb-fips.us-east-1.amazonaws.com | HTTP and HTTPS<br>HTTPS |  |
| US West (N. California) | us-west-1 | dynamodb.us-west-1.amazonaws.com<br>dynamodb-fips.us-west-1.amazonaws.com | HTTP and HTTPS          |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b>         |  |
|--------------------------|----------------|---|-------------------------|--|
|                          |                |   | HTTPS                   |  |
| US West (Oregon)         | us-west-2      | dynamodb.us-west-2.amazonaws.com<br>dynamodb-fips.us-west-2.amazonaws.com       | HTTP and HTTPS<br>HTTPS |  |
| Africa (Cape Town)       | af-south-1     | dynamodb.af-south-1.amazonaws.com   | HTTP and HTTPS          |  |
| Asia Pacific (Hong Kong) | ap-east-1      | dynamodb.ap-east-1.amazonaws.com  | HTTP and HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | dynamodb.ap-south-1.amazonaws.com   | HTTP and HTTPS          |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | dynamodb.ap-northeast-3.amazonaws.com   | HTTP and HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | dynamodb.ap-northeast-2.amazonaws.com   | HTTP and HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | dynamodb.ap-southeast-1.amazonaws.com   | HTTP and HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | dynamodb.ap-southeast-2.amazonaws.com   | HTTP and HTTPS          |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | dynamodb.ap-northeast-1.amazonaws.com   | HTTP and HTTPS          |  |
| Canada (Central)         | ca-central-1   | dynamodb.ca-central-1.amazonaws.com<br>dynamodb-fips.ca-central-1.amazonaws.com | HTTP and HTTPS<br>HTTPS |  |
| Europe (Frankfurt)       | eu-central-1   | dynamodb.eu-central-1.amazonaws.com   | HTTP and HTTPS          |  |
| Europe (Ireland)         | eu-west-1      | dynamodb.eu-west-1.amazonaws.com  | HTTP and HTTPS          |  |
| Europe (London)          | eu-west-2      | dynamodb.eu-west-2.amazonaws.com  | HTTP and HTTPS          |  |
| Europe (Milan)           | eu-south-1     | dynamodb.eu-south-1.amazonaws.com   | HTTP and HTTPS          |  |

| <b>Region Name</b>        | <b>Region</b> | <b>Endpoint</b>  | <b>Protocol</b>         |  |
|---------------------------|---------------|--|-------------------------|--|
| Europe (Paris)            | eu-west-3     | dynamodb.eu-west-3.amazonaws.com   | HTTP and HTTPS          |  |
| Europe (Stockholm)        | eu-north-1    | dynamodb.eu-north-1.amazonaws.com  | HTTP and HTTPS          |  |
| Middle East (Bahrain)     | me-south-1    | dynamodb.me-south-1.amazonaws.com  | HTTP and HTTPS          |  |
| South America (São Paulo) | sa-east-1     | dynamodb.sa-east-1.amazonaws.com   | HTTP and HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | dynamodb.us-gov-east-1.amazonaws.com<br>dynamodb.us-gov-east-1.amazonaws.com | HTTP and HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | dynamodb.us-gov-west-1.amazonaws.com<br>dynamodb.us-gov-west-1.amazonaws.com | HTTP and HTTPS<br>HTTPS |  |

## DynamoDB Accelerator (DAX)

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                  | <b>Protocol</b> |  |
|--------------------------|----------------|----------------------------------|-----------------|--|
| US East (Ohio)           | us-east-2      | dax.us-east-2.amazonaws.com      | HTTP and HTTPS  |  |
| US East (N. Virginia)    | us-east-1      | dax.us-east-1.amazonaws.com      | HTTP and HTTPS  |  |
| US West (N. California)  | us-west-1      | dax.us-west-1.amazonaws.com      | HTTP and HTTPS  |  |
| US West (Oregon)         | us-west-2      | dax.us-west-2.amazonaws.com      | HTTP and HTTPS  |  |
| Asia Pacific (Mumbai)    | ap-south-1     | dax.ap-south-1.amazonaws.com     | HTTP and HTTPS  |  |
| Asia Pacific (Singapore) | ap-southeast-1 | dax.ap-southeast-1.amazonaws.com | HTTP and HTTPS  |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | dax.ap-southeast-2.amazonaws.com | HTTP and HTTPS  |  |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>                  | <b>Protocol</b> |  |
|---------------------------|----------------|----------------------------------|-----------------|--|
| Asia Pacific (Tokyo)      | ap-northeast-1 | dax.ap-northeast-1.amazonaws.com | HTTP and HTTPS  |  |
| Europe (Frankfurt)        | eu-central-1   | dax.eu-central-1.amazonaws.com   | HTTP and HTTPS  |  |
| Europe (Ireland)          | eu-west-1      | dax.eu-west-1.amazonaws.com      | HTTP and HTTPS  |  |
| Europe (London)           | eu-west-2      | dax.eu-west-2.amazonaws.com      | HTTP and HTTPS  |  |
| Europe (Paris)            | eu-west-3      | dax.eu-west-3.amazonaws.com      | HTTP and HTTPS  |  |
| South America (São Paulo) | sa-east-1      | dax.sa-east-1.amazonaws.com      | HTTP and HTTPS  |  |

## Amazon DynamoDB Streams

| <b>Region Name</b>       | <b>Region</b> | <b>Endpoint</b>                           | <b>Protocol</b> |  |
|--------------------------|---------------|---|-----------------|--|
| US East (Ohio)           | us-east-2     | streams.dynamodb.us-east-2.amazonaws.com  | HTTP and HTTPS  |  |
| US East (N. Virginia)    | us-east-1     | streams.dynamodb.us-east-1.amazonaws.com  | HTTP and HTTPS  |  |
| US West (N. California)  | us-west-1     | streams.dynamodb.us-west-1.amazonaws.com  | HTTP and HTTPS  |  |
| US West (Oregon)         | us-west-2     | streams.dynamodb.us-west-2.amazonaws.com  | HTTP and HTTPS  |  |
| Africa (Cape Town)       | af-south-1    | streams.dynamodb.af-south-1.amazonaws.com | HTTP and HTTPS  |  |
| Asia Pacific (Hong Kong) | ap-east-1     | streams.dynamodb.ap-east-1.amazonaws.com  | HTTP and HTTPS  |  |
| Asia Pacific (Mumbai)    | ap-south-1    | streams.dynamodb.ap-south-1.amazonaws.com | HTTP and HTTPS  |  |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>                               | <b>Protocol</b> |  |
|---------------------------|----------------|---|-----------------|--|
| Asia Pacific (Osaka)      | ap-northeast-3 | streams.dynamodb.ap-northeast-3.amazonaws.com | HTTP and HTTPS  |  |
| Asia Pacific (Seoul)      | ap-northeast-2 | streams.dynamodb.ap-northeast-2.amazonaws.com | HTTP and HTTPS  |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | streams.dynamodb.ap-southeast-1.amazonaws.com | HTTP and HTTPS  |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | streams.dynamodb.ap-southeast-2.amazonaws.com | HTTP and HTTPS  |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | streams.dynamodb.ap-northeast-1.amazonaws.com | HTTP and HTTPS  |  |
| Canada (Central)          | ca-central-1   | streams.dynamodb.ca-central-1.amazonaws.com   | HTTP and HTTPS  |  |
| Europe (Frankfurt)        | eu-central-1   | streams.dynamodb.eu-central-1.amazonaws.com   | HTTP and HTTPS  |  |
| Europe (Ireland)          | eu-west-1      | streams.dynamodb.eu-west-1.amazonaws.com      | HTTP and HTTPS  |  |
| Europe (London)           | eu-west-2      | streams.dynamodb.eu-west-2.amazonaws.com      | HTTP and HTTPS  |  |
| Europe (Milan)            | eu-south-1     | streams.dynamodb.eu-south-1.amazonaws.com     | HTTP and HTTPS  |  |
| Europe (Paris)            | eu-west-3      | streams.dynamodb.eu-west-3.amazonaws.com      | HTTP and HTTPS  |  |
| Europe (Stockholm)        | eu-north-1     | streams.dynamodb.eu-north-1.amazonaws.com     | HTTP and HTTPS  |  |
| Middle East (Bahrain)     | me-south-1     | streams.dynamodb.me-south-1.amazonaws.com     | HTTP and HTTPS  |  |
| South America (São Paulo) | sa-east-1      | streams.dynamodb.sa-east-1.amazonaws.com      | HTTP and HTTPS  |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | streams.dynamodb.us-gov-east-1.amazonaws.com  | HTTP and HTTPS  |  |
|                           |                | streams.dynamodb.us-gov-east-1.amazonaws.com  | HTTPS           |  |

| Region Name            | Region        | Endpoint   | Protocol                |  |
|------------------------|---------------|--|-------------------------|--|
| AWS GovCloud (US-West) | us-gov-west-1 | streams.dynamodb.us-gov-west-1.amazonaws.com<br>streams.dynamodb.us-gov-west-1.amazonaws.com | HTTP and HTTPS<br>HTTPS |  |

## Service quotas

| Name   | Default | Adjustable |
|--|---------|------------|
| Account-level read throughput limit (Provisioned mode)         | 80,000  | Yes        |
| Account-level write throughput limit (Provisioned mode)        | 80,000  | Yes        |
| Concurrent control plane operations                            | 50      | Yes        |
| Global Secondary Indexes per table                             | 20      | Yes        |
| Provisioned capacity decreases per day                         | 27      | Yes        |
| Table-level read throughput limit                              | 40,000  | Yes        |
| Table-level write throughput limit                             | 40,000  | Yes        |
| Tables per region  | 256     | Yes        |
| Write throughput limit for DynamoDB Streams (Provisioned mode) | 40,000  | Yes        |

DAX has the following quotas.

| Name                     | Default | Adjustable |
|--------------------------|---------|------------|
| Nodes per cluster        | 11      | No         |
| Parameter groups         | 20      | No         |
| Subnet groups            | 50      | No         |
| Subnets per subnet group | 20      | No         |
| Total number of nodes    | 50      | Yes        |

For more information, see [Quotas in Amazon DynamoDB](#) in the *Amazon DynamoDB Developer Guide*.

## AWS Elastic Beanstalk endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

### Elastic Beanstalk

| Region Name              | Region         | Endpoint  | Protocol       | Route 53 Hosted Zone ID |  |
|--------------------------|----------------|---|----------------|-------------------------|--|
| US East (Ohio)           | us-east-2      | elasticbeanstalk.us-east-2.amazonaws.com<br>elasticbeanstalk-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS | Z14LCN19Q5QHIC          |  |
| US East (N. Virginia)    | us-east-1      | elasticbeanstalk.us-east-1.amazonaws.com<br>elasticbeanstalk-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS | Z117KPS5GTRQ2G          |  |
| US West (N. California)  | us-west-1      | elasticbeanstalk.us-west-1.amazonaws.com<br>elasticbeanstalk-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS | Z1LQECGX5PH1X           |  |
| US West (Oregon)         | us-west-2      | elasticbeanstalk.us-west-2.amazonaws.com<br>elasticbeanstalk-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS | Z38NKT9BP95V3O          |  |
| Africa (Cape Town)       | af-south-1     | elasticbeanstalk.af-south-1.amazonaws.com   | HTTPS          | Z1EI3BVKMKK4AM          |  |
| Asia Pacific (Hong Kong) | ap-east-1      | elasticbeanstalk.ap-east-1.amazonaws.com  | HTTPS          | ZPWYUBWRU171A           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | elasticbeanstalk.ap-south-1.amazonaws.com   | HTTPS          | Z18NTBI3Y7N9TZ          |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | elasticbeanstalk.ap-northeast-3.amazonaws.com   | HTTPS          | ZNE5GEY1TIAGY           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | elasticbeanstalk.ap-northeast-2.amazonaws.com   | HTTPS          | Z3JE5OI70TWKCP          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | elasticbeanstalk.ap-southeast-1.amazonaws.com   | HTTPS          | Z16FZ9L249IFLT          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | elasticbeanstalk.ap-southeast-2.amazonaws.com   | HTTPS          | Z2PCDNR3VC2G1N          |  |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>  | <b>Protocol</b> | <b>Route 53 Hosted Zone ID</b> |
|---------------------------|----------------|--|-----------------|--------------------------------|
| Asia Pacific (Tokyo)      | ap-northeast-1 | elasticbeanstalk.ap-northeast-1.amazonaws.com  | HTTPS           | Z1R25G3KIG2GBW                 |
| Canada (Central)          | ca-central-1   | elasticbeanstalk.ca-central-1.amazonaws.com  | HTTPS           | ZJFCZL7SSZB5I                  |
| Europe (Frankfurt)        | eu-central-1   | elasticbeanstalk.eu-central-1.amazonaws.com  | HTTPS           | Z1FRNW7UH4DEZJ                 |
| Europe (Ireland)          | eu-west-1      | elasticbeanstalk.eu-west-1.amazonaws.com   | HTTPS           | Z2NYPWQ7DFZAZH                 |
| Europe (London)           | eu-west-2      | elasticbeanstalk.eu-west-2.amazonaws.com   | HTTPS           | Z1GKAAAUGATPF1                 |
| Europe (Milan)            | eu-south-1     | elasticbeanstalk.eu-south-1.amazonaws.com  | HTTPS           | Z10VDYYOA2JFKM                 |
| Europe (Paris)            | eu-west-3      | elasticbeanstalk.eu-west-3.amazonaws.com   | HTTPS           | Z5WN6GAYWG5OB                  |
| Europe (Stockholm)        | eu-north-1     | elasticbeanstalk.eu-north-1.amazonaws.com  | HTTPS           | Z23GO28BZ5AETM                 |
| Middle East (Bahrain)     | me-south-1     | elasticbeanstalk.me-south-1.amazonaws.com  | HTTPS           | Z2BBTEKR2I36N2                 |
| South America (São Paulo) | sa-east-1      | elasticbeanstalk.sa-east-1.amazonaws.com   | HTTPS           | Z10X7K2B4QSOFV                 |
| AWS GovCloud (US-East)    | us-gov-east-1  | elasticbeanstalk.us-gov-east-1.amazonaws.com<br>elasticbeanstalk.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS  | Z35TSARG0EJ4VU                 |
| AWS GovCloud (US-West)    | us-gov-west-1  | elasticbeanstalk.us-gov-west-1.amazonaws.com<br>elasticbeanstalk.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS  | Z4KAURWC4UUUG                  |

## Elastic Beanstalk Health Service

| <b>Region Name</b> | <b>Region</b> | <b>Endpoint</b>                                 | <b>Protocol</b> |
|--------------------|---------------|---|-----------------|
| US East (Ohio)     | us-east-2     | elasticbeanstalk-health.us-east-2.amazonaws.com | HTTPS           |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                                      | <b>Protocol</b> |  |
|--------------------------|----------------|--|-----------------|--|
| US East (N. Virginia)    | us-east-1      | elasticbeanstalk-health.us-east-1.amazonaws.com      | HTTPS           |  |
| US West (N. California)  | us-west-1      | elasticbeanstalk-health.us-west-1.amazonaws.com      | HTTPS           |  |
| US West (Oregon)         | us-west-2      | elasticbeanstalk-health.us-west-2.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | elasticbeanstalk-health.ap-east-1.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | elasticbeanstalk-health.ap-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | elasticbeanstalk-health.ap-northeast-3.amazonaws.com | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | elasticbeanstalk-health.ap-northeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | elasticbeanstalk-health.ap-southeast-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | elasticbeanstalk-health.ap-southeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | elasticbeanstalk-health.ap-northeast-1.amazonaws.com | HTTPS           |  |
| Canada (Central)         | ca-central-1   | elasticbeanstalk-health.ca-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | elasticbeanstalk-health.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | elasticbeanstalk-health.eu-west-1.amazonaws.com      | HTTPS           |  |
| Europe (London)          | eu-west-2      | elasticbeanstalk-health.eu-west-2.amazonaws.com      | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | elasticbeanstalk-health.eu-west-3.amazonaws.com      | HTTPS           |  |
| Europe (Stockholm)       | eu-north-1     | elasticbeanstalk-health.eu-north-1.amazonaws.com     | HTTPS           |  |

| Region Name               | Region        | Endpoint  | Protocol |  |
|---------------------------|---------------|---|----------|--|
| Middle East (Bahrain)     | me-south-1    | elasticbeanstalk-health.me-south-1.amazonaws.com    | HTTPS    |  |
| South America (São Paulo) | sa-east-1     | elasticbeanstalk-health.sa-east-1.amazonaws.com     | HTTPS    |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | elasticbeanstalk-health.us-gov-east-1.amazonaws.com | HTTPS    |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | elasticbeanstalk-health.us-gov-west-1.amazonaws.com | HTTPS    |  |

## Service quotas

| Name                     | Default | Adjustable |
|--------------------------|---------|------------|
| Application versions     | 1,000   | Yes        |
| Applications             | 75      | Yes        |
| Configuration templates  | 2,000   | Yes        |
| Custom platform versions | 50      | Yes        |
| Environments             | 200     | Yes        |

## Amazon Elastic Block Store endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

### Topics

- [Endpoints for Amazon EBS in Amazon EC2 \(p. 183\)](#)
- [Endpoints for the EBS direct APIs \(p. 184\)](#)

## Endpoints for Amazon EBS in Amazon EC2

Use the Amazon EBS endpoints in Amazon Elastic Compute Cloud (Amazon EC2) to manage EBS volumes, snapshots, and encryption. For more information, see [Amazon EBS actions](#) in the *Amazon EC2 API Reference*.

| Region Name              | Region         | Endpoint                         | Protocol |  |
|--------------------------|----------------|----------------------------------|----------|--|
| US East (Ohio)           | us-east-2      | ec2.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | ec2.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (N. California)  | us-west-1      | ec2.us-west-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | ec2.us-west-2.amazonaws.com      | HTTPS    |  |
| Africa (Cape Town)       | af-south-1     | ec2.af-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Hong Kong) | ap-east-1      | ec2.ap-east-1.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai)    | ap-south-1     | ec2.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | ec2.ap-northeast-3.amazonaws.com | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | ec2.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | ec2.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | ec2.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | ec2.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)         | ca-central-1   | ec2.ca-central-1.amazonaws.com   | HTTPS    |  |

| Region Name               | Region        | Endpoint                        | Protocol |  |
|---------------------------|---------------|---------------------------------|----------|--|
| Europe (Frankfurt)        | eu-central-1  | ec2.eu-central-1.amazonaws.com  | HTTPS    |  |
| Europe (Ireland)          | eu-west-1     | ec2.eu-west-1.amazonaws.com     | HTTPS    |  |
| Europe (London)           | eu-west-2     | ec2.eu-west-2.amazonaws.com     | HTTPS    |  |
| Europe (Milan)            | eu-south-1    | ec2.eu-south-1.amazonaws.com    | HTTPS    |  |
| Europe (Paris)            | eu-west-3     | ec2.eu-west-3.amazonaws.com     | HTTPS    |  |
| Europe (Stockholm)        | eu-north-1    | ec2.eu-north-1.amazonaws.com    | HTTPS    |  |
| Middle East (Bahrain)     | me-south-1    | ec2.me-south-1.amazonaws.com    | HTTPS    |  |
| South America (São Paulo) | sa-east-1     | ec2.sa-east-1.amazonaws.com     | HTTPS    |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | ec2.us-gov-east-1.amazonaws.com | HTTPS    |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | ec2.us-gov-west-1.amazonaws.com | HTTPS    |  |

## Endpoints for the EBS direct APIs

Use the EBS direct APIs endpoints to directly read the data on your Amazon EBS snapshots, and identify the difference between two snapshots. For more information, see [Use EBS direct APIs to access the contents of an Amazon EBS snapshot](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Service quotas

| Name  | Default       | Adjustable |
|---|---------------|------------|
| CompleteSnapshot requests per account                     | 10 per second | No         |
| Concurrent snapshot copies per destination Region         | 20            | No         |
| Concurrent snapshots per Cold HDD (sc1) volume            | 1             | No         |
| Concurrent snapshots per General Purpose SSD (gp2) volume | 5             | No         |

| Name   | Default          | Adjustable |
|--|------------------|------------|
| Concurrent snapshots per General Purpose SSD (gp3) volume      | 5                | No         |
| Concurrent snapshots per Magnetic (standard) volume            | 5                | No         |
| Concurrent snapshots per Provisioned IOPS SSD (io1) volume     | 5                | No         |
| Concurrent snapshots per Provisioned IOPS SSD (io2) volume     | 5                | No         |
| Concurrent snapshots per Throughput Optimized HDD (st1) volume | 1                | No         |
| Fast snapshot restore  | 50               | Yes        |
| GetSnapshotBlock requests per account                          | 1,000 per second | Yes        |
| GetSnapshotBlock requests per snapshot                         | 1,000 per second | No         |
| IOPS for Provisioned IOPS SSD (io1) volumes                    | 300,000          | Yes        |
| IOPS for Provisioned IOPS SSD (io2) volumes                    | 100,000          | Yes        |
| IOPS modifications for Provisioned IOPS SSD (io1) volumes      | 500,000          | Yes        |
| IOPS modifications for Provisioned IOPS SSD (io2) volumes      | 100,000          | Yes        |
| ListChangedBlocks requests per account                         | 50 per second    | No         |
| ListSnapshotBlocks requests per account                        | 50 per second    | No         |
| Pending snapshots per account                                  | 100              | No         |
| PutSnapshotBlock requests per account                          | 1,000 per second | Yes        |
| PutSnapshotBlock requests per snapshot                         | 1,000 per second | No         |
| Snapshots per Region   | 100,000          | Yes        |
| StartSnapshot requests per account                             | 10 per second    | No         |
| Storage for Cold HDD (sc1) volumes, in TiB                     | 50               | Yes        |
| Storage for General Purpose SSD (gp2) volumes, in TiB          | 50               | Yes        |
| Storage for General Purpose SSD (gp3) volumes, in TiB          | 50               | Yes        |
| Storage for Magnetic (standard) volumes, in TiB                | 50               | Yes        |
| Storage for Provisioned IOPS SSD (io1) volumes, in TiB         | 50               | Yes        |
| Storage for Provisioned IOPS SSD (io2) volumes, in TiB         | 20               | Yes        |
| Storage for Throughput Optimized HDD (st1) volumes, in TiB     | 50               | Yes        |
| Storage modifications for Cold HDD (sc1) volumes, in TiB       | 500              | Yes        |

| Name   | Default | Adjustable |
|--|---------|------------|
| Storage modifications for General Purpose SSD (gp2) volumes, in TiB      | 500     | Yes        |
| Storage modifications for General Purpose SSD (gp3) volumes, in TiB      | 500     | Yes        |
| Storage modifications for Magnetic (standard) volumes, in TiB            | 500     | Yes        |
| Storage modifications for Provisioned IOPS SSD (io1) volumes, in TiB     | 500     | Yes        |
| Storage modifications for Provisioned IOPS SSD (io2) volumes, in TiB     | 20      | Yes        |
| Storage modifications for Throughput Optimized HDD (st1) volumes, in TiB | 500     | Yes        |

## Amazon Elastic Compute Cloud endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name             | Region    | Endpoint   | Protocol                         |  |
|-------------------------|-----------|--|----------------------------------|--|
| US East (Ohio)          | us-east-2 | ec2.us-east-2.amazonaws.com<br>ec2-fips.us-east-2.amazonaws.com<br>api.ec2.us-east-2.aws | HTTP and HTTPS<br>HTTPS<br>HTTPS |  |
| US East (N. Virginia)   | us-east-1 | ec2.us-east-1.amazonaws.com<br>ec2-fips.us-east-1.amazonaws.com<br>api.ec2.us-east-1.aws | HTTP and HTTPS<br>HTTPS<br>HTTPS |  |
| US West (N. California) | us-west-1 | ec2.us-west-1.amazonaws.com<br>ec2-fips.us-west-1.amazonaws.com                          | HTTP and HTTPS<br>HTTPS          |  |
| US West (Oregon)        | us-west-2 | ec2.us-west-2.amazonaws.com<br>ec2-fips.us-west-2.amazonaws.com<br>api.ec2.us-west-2.aws | HTTP and HTTPS<br>HTTPS<br>HTTPS |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b>         |  |
|--------------------------|----------------|---|-------------------------|--|
| Africa (Cape Town)       | af-south-1     | ec2.af-south-1.amazonaws.com  | HTTP and HTTPS          |  |
| Asia Pacific (Hong Kong) | ap-east-1      | ec2.ap-east-1.amazonaws.com   | HTTP and HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | ec2.ap-south-1.amazonaws.com<br>api.ec2.ap-south-1.aws                | HTTP and HTTPS<br>HTTPS |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | ec2.ap-northeast-3.amazonaws.com                                      | HTTP and HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | ec2.ap-northeast-2.amazonaws.com                                      | HTTP and HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | ec2.ap-southeast-1.amazonaws.com                                      | HTTP and HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | ec2.ap-southeast-2.amazonaws.com                                      | HTTP and HTTPS          |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | ec2.ap-northeast-1.amazonaws.com                                      | HTTP and HTTPS          |  |
| Canada (Central)         | ca-central-1   | ec2.ca-central-1.amazonaws.com<br>ec2-fips.ca-central-1.amazonaws.com | HTTP and HTTPS<br>HTTPS |  |
| Europe (Frankfurt)       | eu-central-1   | ec2.eu-central-1.amazonaws.com  | HTTP and HTTPS          |  |
| Europe (Ireland)         | eu-west-1      | ec2.eu-west-1.amazonaws.com<br>api.ec2.eu-west-1.aws                  | HTTP and HTTPS<br>HTTPS |  |
| Europe (London)          | eu-west-2      | ec2.eu-west-2.amazonaws.com   | HTTP and HTTPS          |  |
| Europe (Milan)           | eu-south-1     | ec2.eu-south-1.amazonaws.com  | HTTP and HTTPS          |  |
| Europe (Paris)           | eu-west-3      | ec2.eu-west-3.amazonaws.com   | HTTP and HTTPS          |  |

| <b>Region Name</b>        | <b>Region</b> | <b>Endpoint</b>  | <b>Protocol</b>         |  |
|---------------------------|---------------|--|-------------------------|--|
| Europe (Stockholm)        | eu-north-1    | ec2.eu-north-1.amazonaws.com                                       | HTTP and HTTPS          |  |
| Middle East (Bahrain)     | me-south-1    | ec2.me-south-1.amazonaws.com                                       | HTTP and HTTPS          |  |
| South America (São Paulo) | sa-east-1     | ec2.sa-east-1.amazonaws.com<br>api.ec2.sa-east-1.aws               | HTTP and HTTPS<br>HTTPS |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | ec2.us-gov-east-1.amazonaws.com<br>ec2.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS          |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | ec2.us-gov-west-1.amazonaws.com<br>ec2.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS          |  |

## Service quotas

| <b>Name</b>   | <b>Default</b> | <b>Adjustable</b> |
|---|----------------|-------------------|
| All F Spot Instance Requests                                    | 0              | Yes               |
| All G Spot Instance Requests                                    | 0              | Yes               |
| All Inf Spot Instance Requests                                  | 0              | Yes               |
| All P Spot Instance Requests                                    | 0              | Yes               |
| All Standard (A, C, D, H, I, M, R, T, Z) Spot Instance Requests | 5              | Yes               |
| All X Spot Instance Requests                                    | 0              | Yes               |
| Amazon FPGA images (AFIs)                                       | 100            | Yes               |
| Attachments per VPC   | 5              | No                |
| Attachments per transit gateway                                 | 5,000          | Yes               |
| Authorization rules per Client VPN endpoint                     | 50             | Yes               |
| Client VPN endpoints per Region                                 | 5              | Yes               |
| Concurrent client connections per Client VPN endpoint           | 20,000         | Yes               |
| Concurrent operations per Client VPN endpoint                   | 10             | No                |
| Customer gateways per region                                    | 50             | Yes               |
| Direct Connect gateways per transit gateway                     | 20             | No                |
| Dynamic routes advertised from CGW to VPN connection            | 100            | No                |

| Name   | Default | Adjustable |
|--|---------|------------|
| EC2-Classic Elastic IPs  | 5       | Yes        |
| EC2-VPC Elastic IPs  | 5       | Yes        |
| Entries in a client certificate revocation list for Client VPN endpoints | 20,000  | No         |
| Members per transit gateway multicast group                              | 100     | Yes        |
| Multicast Network Interfaces per transit gateway                         | 1,000   | Yes        |
| Multicast domain associations per VPC                                    | 20      | Yes        |
| Multicast domains per transit gateway                                    | 20      | Yes        |
| New Reserved Instances per month   | 20      | Yes        |
| Number of Elastic Graphics accelerators                                  | 20      | Yes        |
| Peering attachments per transit gateway                                  | 50      | Yes        |
| Pending peering attachments per transit gateway                          | 10      | Yes        |
| Route Tables per transit gateway   | 20      | Yes        |
| Routes advertised from VPN connection to CGW                             | 1,000   | No         |
| Routes per Client VPN endpoint   | 10      | Yes        |
| Routes per transit gateway   | 10,000  | Yes        |
| Running Dedicated a1 Hosts   | 0       | Yes        |
| Running Dedicated c3 Hosts   | 0       | Yes        |
| Running Dedicated c4 Hosts   | 0       | Yes        |
| Running Dedicated c5 Hosts   | 0       | Yes        |
| Running Dedicated c5d Hosts  | 0       | Yes        |
| Running Dedicated c5n Hosts  | 0       | Yes        |
| Running Dedicated c6g Hosts  | 0       | Yes        |
| Running Dedicated c6gd Hosts   | 0       | Yes        |
| Running Dedicated c6gn Hosts   | 0       | Yes        |
| Running Dedicated d2 Hosts   | 0       | Yes        |
| Running Dedicated f1 Hosts   | 0       | Yes        |
| Running Dedicated g2 Hosts   | 0       | Yes        |
| Running Dedicated g3 Hosts   | 0       | Yes        |
| Running Dedicated g3s Hosts  | 0       | Yes        |
| Running Dedicated g4ad Hosts   | 0       | Yes        |
| Running Dedicated g4dn Hosts   | 0       | Yes        |

| Name                         | Default | Adjustable |
|------------------------------|---------|------------|
| Running Dedicated h1 Hosts   | 0       | Yes        |
| Running Dedicated i2 Hosts   | 0       | Yes        |
| Running Dedicated i3 Hosts   | 0       | Yes        |
| Running Dedicated i3en Hosts | 0       | Yes        |
| Running Dedicated inf Hosts  | 0       | Yes        |
| Running Dedicated m3 Hosts   | 0       | Yes        |
| Running Dedicated m4 Hosts   | 0       | Yes        |
| Running Dedicated m5 Hosts   | 0       | Yes        |
| Running Dedicated m5a Hosts  | 0       | Yes        |
| Running Dedicated m5ad Hosts | 0       | Yes        |
| Running Dedicated m5d Hosts  | 0       | Yes        |
| Running Dedicated m5dn Hosts | 0       | Yes        |
| Running Dedicated m5n Hosts  | 0       | Yes        |
| Running Dedicated m5zn Hosts | 0       | Yes        |
| Running Dedicated m6g Hosts  | 0       | Yes        |
| Running Dedicated m6gd Hosts | 0       | Yes        |
| Running Dedicated m6i Hosts  | 0       | Yes        |
| Running Dedicated mac1 Hosts | 0       | Yes        |
| Running Dedicated p2 Hosts   | 0       | Yes        |
| Running Dedicated p3 Hosts   | 0       | Yes        |
| Running Dedicated p3dn Hosts | 0       | Yes        |
| Running Dedicated p4d Hosts  | 0       | Yes        |
| Running Dedicated r3 Hosts   | 0       | Yes        |
| Running Dedicated r4 Hosts   | 0       | Yes        |
| Running Dedicated r5 Hosts   | 0       | Yes        |
| Running Dedicated r5a Hosts  | 0       | Yes        |
| Running Dedicated r5ad Hosts | 0       | Yes        |
| Running Dedicated r5b Hosts  | 0       | Yes        |
| Running Dedicated r5d Hosts  | 0       | Yes        |
| Running Dedicated r5dn Hosts | 0       | Yes        |
| Running Dedicated r5n Hosts  | 0       | Yes        |

| Name   | Default                      | Adjustable |
|--|------------------------------|------------|
| Running Dedicated r6g Hosts                                      | 0                            | Yes        |
| Running Dedicated r6gd Hosts                                     | 0                            | Yes        |
| Running Dedicated t3 Hosts                                       | 0                            | Yes        |
| Running Dedicated u-12tb1 Hosts                                  | 0                            | Yes        |
| Running Dedicated u-6tb1 Hosts                                   | 0                            | Yes        |
| Running Dedicated u-9tb1 Hosts                                   | 0                            | Yes        |
| Running Dedicated vt1 Hosts                                      | 0                            | Yes        |
| Running Dedicated x1 Hosts                                       | 0                            | Yes        |
| Running Dedicated x1e Hosts                                      | 0                            | Yes        |
| Running Dedicated x2gd Hosts                                     | 0                            | Yes        |
| Running Dedicated z1d Hosts                                      | 0                            | Yes        |
| Running On-Demand F instances                                    | 0                            | Yes        |
| Running On-Demand G instances                                    | 0                            | Yes        |
| Running On-Demand High Memory instances                          | 0                            | Yes        |
| Running On-Demand Inf instances                                  | 0                            | Yes        |
| Running On-Demand P instances                                    | 0                            | Yes        |
| Running On-Demand Standard (A, C, D, H, I, M, R, T, Z) instances | 5                            | Yes        |
| Running On-Demand X instances                                    | 0                            | Yes        |
| Sources per transit gateway multicast group                      | 1                            | Yes        |
| Transit gateways per Direct Connect Gateway                      | 3                            | No         |
| Transit gateways per account                                     | 5                            | Yes        |
| VPC Attachment Bandwidth   | 50<br>Gigabits<br>per second | No         |
| VPN connections per VGW  | 10                           | Yes        |
| VPN connections per region                                       | 50                           | Yes        |
| Virtual private gateways per region                              | 5                            | Yes        |

The following quotas are for VM Import/Export.

| Name   | Default | Adjustable |
|--|---------|------------|
| Concurrent task limit for ImportImage, ImportSnapshot, and ExportImage | 20      | Yes        |

| Name   | Default | Adjustable |
|--|---------|------------|
| Concurrent task limit for ImportInstance, ImportVolume, and CreateInstanceExportTask | 5       | Yes        |

For more information, see the following:

- [On-Demand Instance quotas](#)
- [Spot Instance quotas](#)
- [Reserved Instance quotas](#)

## Amazon EC2 Auto Scaling endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name              | Region         | Endpoint                                 | Protocol       |  |
|--------------------------|----------------|--|----------------|--|
| US East (Ohio)           | us-east-2      | autoscaling.us-east-2.amazonaws.com      | HTTP and HTTPS |  |
| US East (N. Virginia)    | us-east-1      | autoscaling.us-east-1.amazonaws.com      | HTTP and HTTPS |  |
| US West (N. California)  | us-west-1      | autoscaling.us-west-1.amazonaws.com      | HTTP and HTTPS |  |
| US West (Oregon)         | us-west-2      | autoscaling.us-west-2.amazonaws.com      | HTTP and HTTPS |  |
| Africa (Cape Town)       | af-south-1     | autoscaling.af-south-1.amazonaws.com     | HTTP and HTTPS |  |
| Asia Pacific (Hong Kong) | ap-east-1      | autoscaling.ap-east-1.amazonaws.com      | HTTP and HTTPS |  |
| Asia Pacific (Mumbai)    | ap-south-1     | autoscaling.ap-south-1.amazonaws.com     | HTTP and HTTPS |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | autoscaling.ap-northeast-3.amazonaws.com | HTTP and HTTPS |  |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>                          | <b>Protocol</b> |  |
|---------------------------|----------------|--|-----------------|--|
| Asia Pacific (Seoul)      | ap-northeast-2 | autoscaling.ap-northeast-2.amazonaws.com | HTTP and HTTPS  |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | autoscaling.ap-southeast-1.amazonaws.com | HTTP and HTTPS  |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | autoscaling.ap-southeast-2.amazonaws.com | HTTP and HTTPS  |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | autoscaling.ap-northeast-1.amazonaws.com | HTTP and HTTPS  |  |
| Canada (Central)          | ca-central-1   | autoscaling.ca-central-1.amazonaws.com   | HTTP and HTTPS  |  |
| Europe (Frankfurt)        | eu-central-1   | autoscaling.eu-central-1.amazonaws.com   | HTTP and HTTPS  |  |
| Europe (Ireland)          | eu-west-1      | autoscaling.eu-west-1.amazonaws.com      | HTTP and HTTPS  |  |
| Europe (London)           | eu-west-2      | autoscaling.eu-west-2.amazonaws.com      | HTTP and HTTPS  |  |
| Europe (Milan)            | eu-south-1     | autoscaling.eu-south-1.amazonaws.com     | HTTP and HTTPS  |  |
| Europe (Paris)            | eu-west-3      | autoscaling.eu-west-3.amazonaws.com      | HTTP and HTTPS  |  |
| Europe (Stockholm)        | eu-north-1     | autoscaling.eu-north-1.amazonaws.com     | HTTP and HTTPS  |  |
| Middle East (Bahrain)     | me-south-1     | autoscaling.me-south-1.amazonaws.com     | HTTP and HTTPS  |  |
| South America (São Paulo) | sa-east-1      | autoscaling.sa-east-1.amazonaws.com      | HTTP and HTTPS  |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | autoscaling.us-gov-east-1.amazonaws.com  | HTTP and HTTPS  |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | autoscaling.us-gov-west-1.amazonaws.com  | HTTP and HTTPS  |  |

If you specify the general endpoint (autoscaling.amazonaws.com), Amazon EC2 Auto Scaling directs your request to the us-east-1 endpoint.

## Service quotas

| Name  | Default | Adjustable |
|---|---------|------------|
| Auto Scaling groups per region                | 200     | Yes        |
| Classic Load Balancers per Auto Scaling group | 50      | No         |
| Launch configurations per region              | 200     | Yes        |
| Lifecycle hooks per Auto Scaling group        | 50      | No         |
| SNS topics per Auto Scaling group             | 10      | No         |
| Scaling policies per Auto Scaling group       | 50      | No         |
| Scheduled actions per Auto Scaling group      | 125     | No         |
| Step adjustments per step scaling policy      | 20      | No         |
| Target groups per Auto Scaling group          | 50      | No         |

For more information, see [Amazon EC2 Auto Scaling Service Quotas](#) in the *Amazon EC2 Auto Scaling User Guide*.

## EC2 Image Builder endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name             | Region     | Endpoint                              | Protocol |
|-------------------------|------------|---------------------------------------|----------|
| US East (Ohio)          | us-east-2  | imagebuilder.us-east-2.amazonaws.com  | HTTPS    |
| US East (N. Virginia)   | us-east-1  | imagebuilder.us-east-1.amazonaws.com  | HTTPS    |
| US West (N. California) | us-west-1  | imagebuilder.us-west-1.amazonaws.com  | HTTPS    |
| US West (Oregon)        | us-west-2  | imagebuilder.us-west-2.amazonaws.com  | HTTPS    |
| Africa (Cape Town)      | af-south-1 | imagebuilder.af-south-1.amazonaws.com | HTTPS    |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                           | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| Asia Pacific (Hong Kong) | ap-east-1      | imagebuilder.ap-east-1.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | imagebuilder.ap-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | imagebuilder.ap-northeast-3.amazonaws.com | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | imagebuilder.ap-northeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | imagebuilder.ap-southeast-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | imagebuilder.ap-southeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | imagebuilder.ap-northeast-1.amazonaws.com | HTTPS           |  |
| Canada (Central)         | ca-central-1   | imagebuilder.ca-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | imagebuilder.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | imagebuilder.eu-west-1.amazonaws.com      | HTTPS           |  |
| Europe (London)          | eu-west-2      | imagebuilder.eu-west-2.amazonaws.com      | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | imagebuilder.eu-south-1.amazonaws.com     | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | imagebuilder.eu-west-3.amazonaws.com      | HTTPS           |  |
| Europe (Stockholm)       | eu-north-1     | imagebuilder.eu-north-1.amazonaws.com     | HTTPS           |  |
| Middle East (Bahrain)    | me-south-1     | imagebuilder.me-south-1.amazonaws.com     | HTTPS           |  |

| Region Name               | Region        | Endpoint                                 | Protocol |  |
|---------------------------|---------------|--|----------|--|
| South America (São Paulo) | sa-east-1     | imagebuilder.sa-east-1.amazonaws.com     | HTTPS    |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | imagebuilder.us-gov-east-1.amazonaws.com | HTTPS    |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | imagebuilder.us-gov-west-1.amazonaws.com | HTTPS    |  |

## Service quotas

| Name   | Default      | Adjustable |
|--|--------------|------------|
| Component parameter length                               | 1,024        | Yes        |
| Component size   | 64 Kilobytes | Yes        |
| Components   | 1,000        | Yes        |
| Components per image recipe                              | 20           | No         |
| Concurrent AMI copies per distribution configuration     | 50           | Yes        |
| Concurrent builds  | 100          | Yes        |
| Container recipes  | 1,000        | Yes        |
| Distribution configurations                              | 1,000        | Yes        |
| Docker template size                                     | 64 Kilobytes | Yes        |
| Image pipelines  | 75           | Yes        |
| Image recipes  | 1,000        | Yes        |
| Infrastructure configurations                            | 1,000        | Yes        |
| Launch templates modified per distribution configuration | 5            | Yes        |
| Parameters per component                                 | 25           | Yes        |

## Amazon ECR endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#).

Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

The `ecr` and `api.ecr` endpoints are used for calls to the Amazon ECR API. API actions such as `DescribeImages` and `CreateRepository` go to this endpoint. While the two endpoints function the same, the `api.ecr` endpoint is recommended and the default when using the AWS CLI or AWS SDKs. When connecting to Amazon ECR through an AWS PrivateLink VPC endpoint, you must use the `api.ecr` endpoint to make API calls. For more information, see [Amazon ECR Interface VPC Endpoints \(AWS PrivateLink\)](#) in the *Amazon Elastic Container Registry User Guide*.

For more information about FIPS endpoints, see [FIPS endpoints \(p. 629\)](#).

| Region Name              | Region     | Endpoint   | Protocol                         |
|--------------------------|------------|--|----------------------------------|
| US East (Ohio)           | us-east-2  | ecr.us-east-2.amazonaws.com<br>ecr-fips.us-east-2.amazonaws.com<br>api.ecr.us-east-2.amazonaws.com<br>dkr.ecr-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS<br>HTTPS |
| US East (N. Virginia)    | us-east-1  | ecr.us-east-1.amazonaws.com<br>dkr.ecr-fips.us-east-1.amazonaws.com<br>api.ecr.us-east-1.amazonaws.com<br>ecr-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS<br>HTTPS |
| US West (N. California)  | us-west-1  | ecr.us-west-1.amazonaws.com<br>dkr.ecr-fips.us-west-1.amazonaws.com<br>api.ecr.us-west-1.amazonaws.com<br>ecr-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS<br>HTTPS |
| US West (Oregon)         | us-west-2  | ecr.us-west-2.amazonaws.com<br>ecr-fips.us-west-2.amazonaws.com<br>api.ecr.us-west-2.amazonaws.com<br>dkr.ecr-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS<br>HTTPS |
| Africa (Cape Town)       | af-south-1 | ecr.af-south-1.amazonaws.com<br>api.ecr.af-south-1.amazonaws.com   | HTTPS<br>HTTPS                   |
| Asia Pacific (Hong Kong) | ap-east-1  | ecr.ap-east-1.amazonaws.com<br>api.ecr.ap-east-1.amazonaws.com   | HTTPS<br>HTTPS                   |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>  | <b>Protocol</b> |  |
|--------------------------|----------------|--|-----------------|--|
| Asia Pacific (Mumbai)    | ap-south-1     | ecr.ap-south-1.amazonaws.com<br>api.ecr.ap-south-1.amazonaws.com         | HTTPS<br>HTTPS  |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | ecr.ap-northeast-3.amazonaws.com<br>api.ecr.ap-northeast-3.amazonaws.com | HTTPS<br>HTTPS  |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | ecr.ap-northeast-2.amazonaws.com<br>api.ecr.ap-northeast-2.amazonaws.com | HTTPS<br>HTTPS  |  |
| Asia Pacific (Singapore) | ap-southeast-1 | ecr.ap-southeast-1.amazonaws.com<br>api.ecr.ap-southeast-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | ecr.ap-southeast-2.amazonaws.com<br>api.ecr.ap-southeast-2.amazonaws.com | HTTPS<br>HTTPS  |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | ecr.ap-northeast-1.amazonaws.com<br>api.ecr.ap-northeast-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| Canada (Central)         | ca-central-1   | ecr.ca-central-1.amazonaws.com<br>api.ecr.ca-central-1.amazonaws.com     | HTTPS<br>HTTPS  |  |
| Europe (Frankfurt)       | eu-central-1   | ecr.eu-central-1.amazonaws.com<br>api.ecr.eu-central-1.amazonaws.com     | HTTPS<br>HTTPS  |  |
| Europe (Ireland)         | eu-west-1      | ecr.eu-west-1.amazonaws.com<br>api.ecr.eu-west-1.amazonaws.com           | HTTPS<br>HTTPS  |  |
| Europe (London)          | eu-west-2      | ecr.eu-west-2.amazonaws.com<br>api.ecr.eu-west-2.amazonaws.com           | HTTPS<br>HTTPS  |  |
| Europe (Milan)           | eu-south-1     | ecr.eu-south-1.amazonaws.com<br>api.ecr.eu-south-1.amazonaws.com         | HTTPS<br>HTTPS  |  |
| Europe (Paris)           | eu-west-3      | ecr.eu-west-3.amazonaws.com<br>api.ecr.eu-west-3.amazonaws.com           | HTTPS<br>HTTPS  |  |
| Europe (Stockholm)       | eu-north-1     | ecr.eu-north-1.amazonaws.com<br>api.ecr.eu-north-1.amazonaws.com         | HTTPS<br>HTTPS  |  |
| Middle East (Bahrain)    | me-south-1     | ecr.me-south-1.amazonaws.com<br>api.ecr.me-south-1.amazonaws.com         | HTTPS<br>HTTPS  |  |

| Region Name               | Region        | Endpoint   | Protocol                         |  |
|---------------------------|---------------|--|----------------------------------|--|
| South America (São Paulo) | sa-east-1     | ecr.sa-east-1.amazonaws.com<br>api.ecr.sa-east-1.amazonaws.com   | HTTPS<br>HTTPS                   |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | ecr.us-gov-east-1.amazonaws.com<br>ecr-fips.us-gov-east-1.amazonaws.com<br>api.ecr.us-gov-east-1.amazonaws.com<br>dkr.ecr-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | ecr.us-gov-west-1.amazonaws.com<br>dkr.ecr-fips.us-gov-west-1.amazonaws.com<br>ecr-fips.us-gov-west-1.amazonaws.com<br>api.ecr.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS<br>HTTPS |  |

## Docker and OCI client endpoints

The Docker and OCI client endpoints are used for the Docker Registry APIs. Docker client commands such as `push` and `pull` use this endpoint.

For more information about FIPS endpoints, see [FIPS endpoints \(p. 629\)](#).

| Region Name              | Region         | Endpoint  | Protocol |
|--------------------------|----------------|---|----------|
| US East (Ohio)           | us-east-2      | < <i>registry-id</i> >.dkr.ecr.us-east-2.amazonaws.com<br>< <i>registry-id</i> >.dkr.ecr-fips.us-east-2.amazonaws.com | HTTPS    |
| US East (N. Virginia)    | us-east-1      | < <i>registry-id</i> >.dkr.ecr.us-east-1.amazonaws.com<br>< <i>registry-id</i> >.dkr.ecr-fips.us-east-1.amazonaws.com | HTTPS    |
| US West (N. California)  | us-west-1      | < <i>registry-id</i> >.dkr.ecr.us-west-1.amazonaws.com<br>< <i>registry-id</i> >.dkr.ecr-fips.us-west-1.amazonaws.com | HTTPS    |
| US West (Oregon)         | us-west-2      | < <i>registry-id</i> >.dkr.ecr.us-west-2.amazonaws.com<br>< <i>registry-id</i> >.dkr.ecr-fips.us-west-2.amazonaws.com | HTTPS    |
| Asia Pacific (Hong Kong) | ap-east-1      | < <i>registry-id</i> >.dkr.ecr.ap-east-1.amazonaws.com  | HTTPS    |
| Asia Pacific (Mumbai)    | ap-south-1     | < <i>registry-id</i> >.dkr.ecr.ap-south-1.amazonaws.com   | HTTPS    |
| Asia Pacific (Seoul)     | ap-northeast-2 | < <i>registry-id</i> >.dkr.ecr.ap-northeast-2.amazonaws.com   | HTTPS    |

| Region Name               | Region         | Endpoint  | Protocol |
|---------------------------|----------------|---|----------|
| Asia Pacific (Singapore)  | ap-southeast-1 | < <i>registry-id</i> >.dkr.ecr.ap-southeast-1.amazonaws.com   | HTTPS    |
| Asia Pacific (Sydney)     | ap-southeast-2 | < <i>registry-id</i> >.dkr.ecr.ap-southeast-2.amazonaws.com   | HTTPS    |
| Asia Pacific (Tokyo)      | ap-northeast-1 | < <i>registry-id</i> >.dkr.ecr.ap-northeast-1.amazonaws.com   | HTTPS    |
| Canada (Central)          | ca-central-1   | < <i>registry-id</i> >.dkr.ecr.ca-central-1.amazonaws.com   | HTTPS    |
| China (Beijing)           | cn-north-1     | < <i>registry-id</i> >.dkr.ecr.cn-north-1.amazonaws.com.cn  | HTTPS    |
| China (Ningxia)           | cn-northwest-1 | < <i>registry-id</i> >.dkr.ecr.cn-northwest-1.amazonaws.com.cn  | HTTPS    |
| Europe (Frankfurt)        | eu-central-1   | < <i>registry-id</i> >.dkr.ecr.eu-central-1.amazonaws.com   | HTTPS    |
| Europe (Ireland)          | eu-west-1      | < <i>registry-id</i> >.dkr.ecr.eu-west-1.amazonaws.com  | HTTPS    |
| Europe (London)           | eu-west-2      | < <i>registry-id</i> >.dkr.ecr.eu-west-2.amazonaws.com  | HTTPS    |
| Europe (Paris)            | eu-west-3      | < <i>registry-id</i> >.dkr.ecr.eu-west-3.amazonaws.com  | HTTPS    |
| Europe (Stockholm)        | eu-north-1     | < <i>registry-id</i> >.dkr.ecr.eu-north-1.amazonaws.com   | HTTPS    |
| Middle East (Bahrain)     | me-south-1     | < <i>registry-id</i> >.dkr.ecr.me-south-1.amazonaws.com   | HTTPS    |
| South America (São Paulo) | sa-east-1      | < <i>registry-id</i> >.dkr.ecr.sa-east-1.amazonaws.com  | HTTPS    |
| AWS GovCloud (US-East)    | us-gov-east-1  | < <i>registry-id</i> >.dkr.ecr.us-gov-east-1.amazonaws.com<br>< <i>registry-id</i> >.dkr.ecr-fips.us-gov-east-1.amazonaws.com | HTTPS    |
| AWS GovCloud (US-West)    | us-gov-west-1  | < <i>registry-id</i> >.dkr.ecr.us-gov-west-1.amazonaws.com<br>< <i>registry-id</i> >.dkr.ecr-fips.us-gov-west-1.amazonaws.com | HTTPS    |

## Service quotas

The following table provides the default limits for Amazon Elastic Container Registry (Amazon ECR).

| Service quota           | Description  | Default quota value |
|-------------------------|--|---------------------|
| Registered repositories | The maximum number of repositories that you can create per Region. | 10,000              |
| Image per repository    | The maximum number of images per repository.                       | 10,000              |

The following table provides the default rate quotas for each of the Amazon ECR API actions involved with the image push and image pull actions.

| Amazon ECR action | API operation                                | Description  | Default quota value |
|-------------------|--|--|---------------------|
| Authentication    | Rate of GetAuthorizationToken requests       | The rate of GetAuthorizationToken API requests that you can make per second, per Region.   | 500                 |
| Image push        | Rate of BatchCheckLayerAvailability requests | The rate of BatchCheckLayerAvailability API requests that you can make per second, per Region.<br><br>When an image is pushed to a repository, each image layer is checked to verify if it has been uploaded before. If it has been uploaded, then the image layer is skipped.   | 200                 |
|                   | Rate of InitiateLayerUpload requests         | The rate of InitiateLayerUpload API requests that you can make per second, per Region.<br><br>When an image is pushed, the InitiateLayerUpload API is called once per image layer that has not already been uploaded. Whether or not an image layer has been uploaded is determined by the BatchCheckLayerAvailability API action. | 10                  |

| Amazon ECR action | API operation                        | Description   | Default quota value |
|-------------------|--------------------------------------|---|---------------------|
|                   | Rate of CompleteLayerUpload requests | <p>The rate of CompleteLayerUpload API requests that you can make per second, per Region.</p> <p>When an image is pushed, the CompleteLayerUpload API is called once per each new image layer to verify that the upload has completed.</p>  | 10                  |
|                   | Rate of UploadLayerPart requests     | <p>The rate of UploadLayerPart API requests that you can make per second, per Region.</p> <p>When an image is pushed, each new image layer is uploaded in parts. The maximum size of each image layer part can be 20,971,520 bytes (or about 20MB). The UploadLayerPart API is called once per each new image layer part.</p> | 260                 |
|                   | Rate of PutImage requests            | <p>The rate of PutImage API requests that you can make per second, per Region.</p> <p>When an image is pushed and all new image layers have been uploaded, the PutImage API is called once to create or update the image manifest and the tags associated with the image.</p>   | 10                  |

| Amazon ECR action | API operation                           | Description   | Default quota value |
|-------------------|---|---|---------------------|
| Image pull        | Rate of BatchGetImage requests          | The rate of BatchGetImage API requests that you can make per second, per Region.<br><br>When an image is pulled, the BatchGetImage API is called once to retrieve the image manifest.                               | 2,000               |
|                   | Rate of GetDownloadUrlForLayer requests | The rate of GetDownloadUrlForLayer API requests that you can make per second, per Region.<br><br>When an image is pulled, the GetDownloadUrlForLayer API is called once per image layer that is not already cached. | 3,000               |

The following table provides other quotas for Amazon ECR and Docker images that cannot be changed.

**Note**

The layer part information mentioned in the following table is only applicable if you are calling the Amazon ECR API actions directly to initiate multipart uploads for image push operations. This is a rare action. We recommend that you use the Docker CLI to pull, tag, and push images.

| Service quota           | Description   | Quota value |
|-------------------------|---|-------------|
| Layer parts             | The maximum number of layer parts. This is only applicable if you are using Amazon ECR API actions directly to initiate multipart uploads for image push operations.      | 4,200       |
| Maximum layer size      | The maximum size (MiB) of a layer. **   | 42,000      |
| Minimum layer part size | The minimum size (MiB) of a layer part. This is only applicable if you are using Amazon ECR API actions directly to initiate multipart uploads for image push operations. | 5           |
| Maximum layer part size | The maximum size (MiB) of a layer part. This is only applicable if you are using Amazon ECR API actions directly to initiate  | 10          |

| Service quota              | Description  | Quota value |
|----------------------------|--|-------------|
|                            | multipart uploads for image push operations.               |             |
| Tags per image             | The maximum number of tags per image.                      | 1,000       |
| Lifecycle policy length    | The maximum number of characters in a lifecycle policy.    | 30,720      |
| Rules per lifecycle policy | The maximum number of rules in a lifecycle policy.         | 50          |
| Rate of image scans        | The maximum number of image scans per image, per 24 hours. | 1           |

\*\* The maximum layer size listed here is calculated by multiplying the maximum layer part size (10 MiB) by the maximum number of layer parts (4,200).

For more information, see [Amazon ECR Service Quotas](#) in the *Amazon Elastic Container Registry User Guide*.

## Amazon ECR Public endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

The `ecr-public` and `api.ecr-public` endpoints are used for calls to the Amazon ECR Public API. API actions such as `DescribeImages` and `CreateRepository` go to this endpoint. While the two endpoints function the same, the `api.ecr-public` endpoint is recommended and the default when using the AWS CLI or AWS SDKs.

| Region Name           | Region    | Endpoint   | Protocol       |  |
|-----------------------|-----------|--|----------------|--|
| US East (N. Virginia) | us-east-1 | ecr-public.us-east-1.amazonaws.com<br>api.ecr-public.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |

### Service quotas

For more information, see [Amazon ECR Public service quotas](#) in the *Amazon ECR Public user guide*.

## Amazon ECS endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | ecs.us-east-2.amazonaws.com<br>ecs-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | ecs.us-east-1.amazonaws.com<br>ecs-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | ecs.us-west-1.amazonaws.com<br>ecs-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | ecs.us-west-2.amazonaws.com<br>ecs-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Africa (Cape Town)       | af-south-1     | ecs.af-south-1.amazonaws.com                                    | HTTPS          |  |
| Asia Pacific (Hong Kong) | ap-east-1      | ecs.ap-east-1.amazonaws.com                                     | HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | ecs.ap-south-1.amazonaws.com                                    | HTTPS          |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | ecs.ap-northeast-3.amazonaws.com                                | HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | ecs.ap-northeast-2.amazonaws.com                                | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | ecs.ap-southeast-1.amazonaws.com                                | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | ecs.ap-southeast-2.amazonaws.com                                | HTTPS          |  |

| Region Name               | Region         | Endpoint  | Protocol       |  |
|---------------------------|----------------|---|----------------|--|
| Asia Pacific (Tokyo)      | ap-northeast-1 | ecs.ap-northeast-1.amazonaws.com  | HTTPS          |  |
| Canada (Central)          | ca-central-1   | ecs.ca-central-1.amazonaws.com  | HTTPS          |  |
| Europe (Frankfurt)        | eu-central-1   | ecs.eu-central-1.amazonaws.com  | HTTPS          |  |
| Europe (Ireland)          | eu-west-1      | ecs.eu-west-1.amazonaws.com   | HTTPS          |  |
| Europe (London)           | eu-west-2      | ecs.eu-west-2.amazonaws.com   | HTTPS          |  |
| Europe (Milan)            | eu-south-1     | ecs.eu-south-1.amazonaws.com  | HTTPS          |  |
| Europe (Paris)            | eu-west-3      | ecs.eu-west-3.amazonaws.com   | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1     | ecs.eu-north-1.amazonaws.com  | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1     | ecs.me-south-1.amazonaws.com  | HTTPS          |  |
| South America (São Paulo) | sa-east-1      | ecs.sa-east-1.amazonaws.com   | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | ecs.us-gov-east-1.amazonaws.com<br>ecs-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | ecs.us-gov-west-1.amazonaws.com<br>ecs-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

The following are Amazon ECS service quotas.

Most of these service quotas, but not all, are listed under the Amazon Elastic Container Service (Amazon ECS) namespace in the Service Quotas console. To request a quota increase, see [Requesting a quota increase](#) in the *Service Quotas User Guide*.

| Service quota | Description                            | Default quota value | Adjustable |
|---------------|--|---------------------|------------|
| Clusters      | The maximum number of clusters in this | 10,000              | Yes        |

| Service quota                              | Description  | Default quota value | Adjustable |
|--|--|---------------------|------------|
|  | account in the current Region.   |                     |            |
| Container instances per cluster            | The maximum number of container instances per cluster.   | 2,000               | Yes        |
| Services per cluster                       | The maximum number of services per cluster.  | 5,000               | Yes        |
| Tasks per service                          | The maximum number of tasks per service (the desired count).<br><br><b>Note</b><br>Services configured to use Amazon ECS service discovery have a limit of 1,000 tasks per service. This is due to the AWS Cloud Map service quota for the number of instances per service. For more information, see <a href="#">AWS Cloud Map service quotas</a> . | 5,000               | Yes        |
| Tasks launched (count) per <b>run-task</b> | The maximum number of tasks that can be launched per RunTask API action.   | 10                  | No         |
| Container instances per <b>start-task</b>  | The maximum number of container instances specified in a StartTask API action.   | 10                  | No         |
| Revisions per task definition family       | The maximum number of revisions per task definition family. Deregistering a task definition revision does not exclude it from being included in this limit.  | 1,000,000           | No         |
| Task definition size limit                 | The maximum size, in KiB, of a task definition.  | 32                  | No         |

| Service quota                                       | Description  | Default quota value | Adjustable |
|---|--|---------------------|------------|
| Task definition max containers                      | The maximum number of containers definitions within a task definition.   | 10                  | No         |
| Subnets specified in an awsvpcConfiguration         | The maximum number of subnets specified within an awsvpcConfiguration.   | 16                  | No         |
| Security groups specified in an awsvpcConfiguration | The maximum number of security groups specified within an awsvpcConfiguration.                                     | 5                   | No         |
| Target groups per service                           | The maximum number of target groups per service, if using an Application Load Balancer or a Network Load Balancer. | 5                   | No         |
| Classic Load Balancers per service                  | The maximum number of Classic Load Balancers per service.  | 1                   | No         |
| Tags per resource                                   | The maximum number of tags per resource. This applies to task definitions, clusters, tasks, and services.          | 50                  | No         |

For more information, see [Amazon ECS service quotas](#) in the *Amazon Elastic Container Service Developer Guide*.

## AWS Fargate quotas

The following are Amazon ECS on AWS Fargate service quotas.

These service quotas are listed under the AWS Fargate namespace in the Service Quotas console. To request a quota increase, see [Requesting a quota increase](#) in the *Service Quotas User Guide*.

| Service quota                    | Description   | Default quota value | Adjustable |
|----------------------------------|---|---------------------|------------|
| Fargate On-Demand resource count | The maximum number of Amazon ECS tasks and Amazon EKS pods running concurrently on Fargate in this account in the current Region. | 1,000               | Yes        |
| Fargate Spot resource count      | The maximum number of Amazon ECS tasks running concurrently on Fargate Spot in this   | 1,000               | Yes        |

| Service quota | Description                    | Default quota value | Adjustable |
|---------------|--------------------------------|---------------------|------------|
|               | account in the current Region. |                     |            |

## Amazon Elastic Kubernetes Service endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |
|--------------------------|----------------|---|----------------|
| US East (Ohio)           | us-east-2      | eks.us-east-2.amazonaws.com<br>fips.eks.us-east-2.amazonaws.com | HTTPS<br>HTTPS |
| US East (N. Virginia)    | us-east-1      | eks.us-east-1.amazonaws.com<br>fips.eks.us-east-1.amazonaws.com | HTTPS<br>HTTPS |
| US West (N. California)  | us-west-1      | eks.us-west-1.amazonaws.com<br>fips.eks.us-west-1.amazonaws.com | HTTPS<br>HTTPS |
| US West (Oregon)         | us-west-2      | eks.us-west-2.amazonaws.com<br>fips.eks.us-west-2.amazonaws.com | HTTPS<br>HTTPS |
| Africa (Cape Town)       | af-south-1     | eks.af-south-1.amazonaws.com                                    | HTTPS          |
| Asia Pacific (Hong Kong) | ap-east-1      | eks.ap-east-1.amazonaws.com                                     | HTTPS          |
| Asia Pacific (Mumbai)    | ap-south-1     | eks.ap-south-1.amazonaws.com                                    | HTTPS          |
| Asia Pacific (Osaka)     | ap-northeast-3 | eks.ap-northeast-3.amazonaws.com                                | HTTPS          |
| Asia Pacific (Seoul)     | ap-northeast-2 | eks.ap-northeast-2.amazonaws.com                                | HTTPS          |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>  | <b>Protocol</b> |  |
|---------------------------|----------------|--|-----------------|--|
| Asia Pacific (Singapore)  | ap-southeast-1 | eks.ap-southeast-1.amazonaws.com                                   | HTTPS           |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | eks.ap-southeast-2.amazonaws.com                                   | HTTPS           |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | eks.ap-northeast-1.amazonaws.com                                   | HTTPS           |  |
| Canada (Central)          | ca-central-1   | eks.ca-central-1.amazonaws.com                                     | HTTPS           |  |
| Europe (Frankfurt)        | eu-central-1   | eks.eu-central-1.amazonaws.com                                     | HTTPS           |  |
| Europe (Ireland)          | eu-west-1      | eks.eu-west-1.amazonaws.com  | HTTPS           |  |
| Europe (London)           | eu-west-2      | eks.eu-west-2.amazonaws.com  | HTTPS           |  |
| Europe (Milan)            | eu-south-1     | eks.eu-south-1.amazonaws.com                                       | HTTPS           |  |
| Europe (Paris)            | eu-west-3      | eks.eu-west-3.amazonaws.com  | HTTPS           |  |
| Europe (Stockholm)        | eu-north-1     | eks.eu-north-1.amazonaws.com                                       | HTTPS           |  |
| Middle East (Bahrain)     | me-south-1     | eks.me-south-1.amazonaws.com                                       | HTTPS           |  |
| South America (São Paulo) | sa-east-1      | eks.sa-east-1.amazonaws.com  | HTTPS           |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | eks.us-gov-east-1.amazonaws.com<br>eks.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | eks.us-gov-west-1.amazonaws.com<br>eks.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |

## Service quotas

| Name   | Default | Adjustable |
|--|---------|------------|
| Clusters                                       | 100     | Yes        |
| Control plane security groups per cluster      | 4       | No         |
| Fargate profiles per cluster                   | 10      | Yes        |
| Label pairs per Fargate profile selector       | 5       | Yes        |
| Managed node groups per cluster                | 30      | Yes        |
| Nodes per managed node group                   | 450     | Yes        |
| Public endpoint access CIDR ranges per cluster | 40      | No         |
| Registered clusters                            | 10      | No         |
| Selectors per Fargate profile                  | 5       | Yes        |

## AWS Fargate service quotas

The following are Amazon EKS on AWS Fargate service quotas.

These service quotas are listed under the AWS Fargate namespace in the Service Quotas console. To request a quota increase, see [Requesting a quota increase](#) in the *Service Quotas User Guide*.

| Service quota                    | Description   | Default quota value | Adjustable |
|----------------------------------|---|---------------------|------------|
| Fargate On-Demand resource count | The maximum number of Amazon ECS tasks and Amazon EKS pods running concurrently on Fargate in this account in the current Region. | 1,000               | Yes        |

## Amazon Elastic File System endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name    | Region    | Endpoint                                  | Protocol |
|----------------|-----------|---|----------|
| US East (Ohio) | us-east-2 | elasticfilesystem.us-east-2.amazonaws.com | HTTPS    |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
|                          |                | elasticfilesystem-fips.us-east-2.amazonaws.com  | HTTPS           |  |
| US East (N. Virginia)    | us-east-1      | elasticfilesystem.us-east-1.amazonaws.com<br>elasticfilesystem-fips.us-east-1.amazonaws.com           | HTTPS<br>HTTPS  |  |
| US West (N. California)  | us-west-1      | elasticfilesystem.us-west-1.amazonaws.com<br>elasticfilesystem-fips.us-west-1.amazonaws.com           | HTTPS<br>HTTPS  |  |
| US West (Oregon)         | us-west-2      | elasticfilesystem.us-west-2.amazonaws.com<br>elasticfilesystem-fips.us-west-2.amazonaws.com           | HTTPS<br>HTTPS  |  |
| Africa (Cape Town)       | af-south-1     | elasticfilesystem.af-south-1.amazonaws.com<br>elasticfilesystem-fips.af-south-1.amazonaws.com         | HTTPS<br>HTTPS  |  |
| Asia Pacific (Hong Kong) | ap-east-1      | elasticfilesystem.ap-east-1.amazonaws.com<br>elasticfilesystem-fips.ap-east-1.amazonaws.com           | HTTPS<br>HTTPS  |  |
| Asia Pacific (Mumbai)    | ap-south-1     | elasticfilesystem.ap-south-1.amazonaws.com<br>elasticfilesystem-fips.ap-south-1.amazonaws.com         | HTTPS<br>HTTPS  |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | elasticfilesystem.ap-northeast-3.amazonaws.com<br>elasticfilesystem-fips.ap-northeast-3.amazonaws.com | HTTPS<br>HTTPS  |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | elasticfilesystem.ap-northeast-2.amazonaws.com<br>elasticfilesystem-fips.ap-northeast-2.amazonaws.com | HTTPS<br>HTTPS  |  |
| Asia Pacific (Singapore) | ap-southeast-1 | elasticfilesystem.ap-southeast-1.amazonaws.com<br>elasticfilesystem-fips.ap-southeast-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | elasticfilesystem.ap-southeast-2.amazonaws.com<br>elasticfilesystem-fips.ap-southeast-2.amazonaws.com | HTTPS<br>HTTPS  |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | elasticfilesystem.ap-northeast-1.amazonaws.com<br>elasticfilesystem-fips.ap-northeast-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| Canada (Central)         | ca-central-1   | elasticfilesystem.ca-central-1.amazonaws.com<br>elasticfilesystem-fips.ca-central-1.amazonaws.com     | HTTPS<br>HTTPS  |  |

| <b>Region Name</b>        | <b>Region</b> | <b>Endpoint</b>   | <b>Protocol</b> |  |
|---------------------------|---------------|---|-----------------|--|
| Europe (Frankfurt)        | eu-central-1  | elasticfilesystem.eu-central-1.amazonaws.com<br>elasticfilesystem-fips.eu-central-1.amazonaws.com   | HTTPS<br>HTTPS  |  |
| Europe (Ireland)          | eu-west-1     | elasticfilesystem.eu-west-1.amazonaws.com<br>elasticfilesystem-fips.eu-west-1.amazonaws.com         | HTTPS<br>HTTPS  |  |
| Europe (London)           | eu-west-2     | elasticfilesystem.eu-west-2.amazonaws.com<br>elasticfilesystem-fips.eu-west-2.amazonaws.com         | HTTPS<br>HTTPS  |  |
| Europe (Milan)            | eu-south-1    | elasticfilesystem.eu-south-1.amazonaws.com<br>elasticfilesystem-fips.eu-south-1.amazonaws.com       | HTTPS<br>HTTPS  |  |
| Europe (Paris)            | eu-west-3     | elasticfilesystem.eu-west-3.amazonaws.com<br>elasticfilesystem-fips.eu-west-3.amazonaws.com         | HTTPS<br>HTTPS  |  |
| Europe (Stockholm)        | eu-north-1    | elasticfilesystem.eu-north-1.amazonaws.com<br>elasticfilesystem-fips.eu-north-1.amazonaws.com       | HTTPS<br>HTTPS  |  |
| Middle East (Bahrain)     | me-south-1    | elasticfilesystem.me-south-1.amazonaws.com<br>elasticfilesystem-fips.me-south-1.amazonaws.com       | HTTPS<br>HTTPS  |  |
| South America (São Paulo) | sa-east-1     | elasticfilesystem.sa-east-1.amazonaws.com<br>elasticfilesystem-fips.sa-east-1.amazonaws.com         | HTTPS<br>HTTPS  |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | elasticfilesystem.us-gov-east-1.amazonaws.com<br>elasticfilesystem-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | elasticfilesystem.us-gov-west-1.amazonaws.com<br>elasticfilesystem-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |

## Service quotas

| <b>Name</b>                 | <b>Default</b>             | <b>Adjustable</b> |
|-----------------------------|----------------------------|-------------------|
| Active users per NFS client | 128                        | No                |
| Bursting throughput         | 3,072 Megabytes per second | No                |
| Directory depth             | 1,000                      | No                |

| Name   | Default                    | Adjustable |
|--|----------------------------|------------|
| EFS file locks   | 512                        | No         |
| File hard links  | 177                        | No         |
| File size  | 52,673,613,155,872 Bytes   |            |
| File system name length                                    | 255 Bytes                  | No         |
| File system symbolic link (symlink) length                 | 4,080 Bytes                | No         |
| File systems per account                                   | 1,000                      | Yes        |
| Locks across unique file/process pairs                     | 8,192                      | No         |
| Minimum wait time between Provisioned Throughput decreases | 86,400 Seconds             | No         |
| Minimum wait time between Throughput mode changes          | 86,400 Seconds             | No         |
| Mount targets per Availability Zone                        | 1                          | No         |
| Mount targets per VPC                                      | 400                        | No         |
| Open files per NFS client                                  | 32,768                     | No         |
| Provisioned throughput                                     | 1,024 Megabytes per second | No         |
| Rate of file system operations                             | 7,000                      | No         |
| Security groups per mount target                           | 5                          | No         |
| Tags   | 50                         | No         |
| Throughput per NFS client                                  | 250 Megabytes per second   | No         |
| Unique file/process pairs                                  | 256                        | No         |
| VPCs per file system                                       | 1                          | No         |

For more information, see [Amazon EFS quotas](#) in the *Amazon Elastic File System User Guide*.

## Amazon Elastic Inference endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name           | Region         | Endpoint   | Protocol |  |
|-----------------------|----------------|--|----------|--|
| US East (Ohio)        | us-east-2      | api.elastic-inference.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia) | us-east-1      | api.elastic-inference.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)      | us-west-2      | api.elastic-inference.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Seoul)  | ap-northeast-2 | api.elastic-inference.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)  | ap-northeast-1 | api.elastic-inference.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Europe (Ireland)      | eu-west-1      | api.elastic-inference.eu-west-1.amazonaws.com      | HTTPS    |  |

## Service quotas

| Name                                     | Default | Adjustable |
|--|---------|------------|
| Number of Elastic Inference accelerators | 5       | Yes        |

## Elastic Load Balancing endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name    | Region    | Endpoint                                     | Route 53 Hosted Zone ID (Application Load Balancers, Classic Load Balancers) | Route 53 Hosted Zone ID (Network Load Balancers) |
|----------------|-----------|--|--|--|
| US East (Ohio) | us-east-2 | elasticloadbalancing.us-east-2.amazonaws.com | Z3AADJGX6KTTL2   | ZLMOA37VPKANP                                    |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Route 53 Hosted Zone ID (Application Load Balancers, Classic Load Balancers)</b> | <b>Route 53 Hosted Zone ID (Network Load Balancers)</b> |
|--------------------------|----------------|---|---|---|
|                          |                | elasticloadbalancing-fips.us-east-2.amazonaws.com   |   |   |
| US East (N. Virginia)    | us-east-1      | elasticloadbalancing.us-east-1.amazonaws.com<br><br>elasticloadbalancing-fips.us-east-1.amazonaws.com | Z35SXDOTRQ7X7K  | Z26RNL4JYFTOTI  |
| US West (N. California)  | us-west-1      | elasticloadbalancing.us-west-1.amazonaws.com<br><br>elasticloadbalancing-fips.us-west-1.amazonaws.com | Z368ELLRRE2KJ0  | Z24FKFUX50B4VW  |
| US West (Oregon)         | us-west-2      | elasticloadbalancing.us-west-2.amazonaws.com<br><br>elasticloadbalancing-fips.us-west-2.amazonaws.com | Z1H1FL5HABSF5   | Z18D5FSROUN65G  |
| Africa (Cape Town)       | af-south-1     | elasticloadbalancing.af-south-1.amazonaws.com   | Z268VQBMOI5EKX  | Z203XCE67M25HM  |
| Asia Pacific (Hong Kong) | ap-east-1      | elasticloadbalancing.ap-east-1.amazonaws.com  | Z3DQVH9N71FHZ0  | Z12Y7K3UBGUAD1  |
| Asia Pacific (Mumbai)    | ap-south-1     | elasticloadbalancing.ap-south-1.amazonaws.com   | ZP97RAFLXTNZK   | ZVDDRBQ08TROA   |
| Asia Pacific (Osaka)     | ap-northeast-3 | elasticloadbalancing.ap-northeast-3.amazonaws.com   | Z5LXEXXYW11ES   | Z1GWIQ4HH19I5X  |
| Asia Pacific (Seoul)     | ap-northeast-2 | elasticloadbalancing.ap-northeast-2.amazonaws.com   | ZWKZPGTI48KDX   | ZIBE1TIR4HY56   |
| Asia Pacific (Singapore) | ap-southeast-1 | elasticloadbalancing.ap-southeast-1.amazonaws.com   | Z1LMS91P8CMLE5  | ZKVM4W9LS7TM  |
| Asia Pacific (Sydney)    | ap-southeast-2 | elasticloadbalancing.ap-southeast-2.amazonaws.com   | Z1GM3OXH4ZPM65  | ZCT6FZBF4DROD   |
| Asia Pacific (Tokyo)     | ap-northeast-1 | elasticloadbalancing.ap-northeast-1.amazonaws.com   | Z14GRHDCWA56QT  | Z31USIVHYNEOWT  |
| Canada (Central)         | ca-central-1   | elasticloadbalancing.ca-central-1.amazonaws.com   | ZQSVJUPU6J1EY   | Z2EPGBW3API2WT  |
| China (Beijing)          | cn-north-1     | elasticloadbalancing.cn-north-1.amazonaws.com.cn  | Z1GDH35T77C1KE  | Z3QFB96KMJ7ED6  |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>                                      | <b>Route 53 Hosted Zone ID (Application Load Balancers, Classic Load Balancers)</b> | <b>Route 53 Hosted Zone ID (Network Load Balancers)</b> |
|---------------------------|----------------|--|---|---|
| China (Ningxia)           | cn-northwest-1 | elasticloadbalancing.cn-northwest-1.amazonaws.com.cn | ZM7IZAIOVVDZF   | ZQEIKTCZ8352D   |
| Europe (Frankfurt)        | eu-central-1   | elasticloadbalancing.eu-central-1.amazonaws.com      | Z215JYRZR1TBD5  | Z3F0SRJ5LGBH90  |
| Europe (Ireland)          | eu-west-1      | elasticloadbalancing.eu-west-1.amazonaws.com         | Z32O12XQLNTSW2  | Z2IFOLAFXWLO4F  |
| Europe (London)           | eu-west-2      | elasticloadbalancing.eu-west-2.amazonaws.com         | ZHURV8PSTC4K8   | ZD4D7Y8KGAS4G   |
| Europe (Milan)            | eu-south-1     | elasticloadbalancing.eu-south-1.amazonaws.com        | Z3ULH7SSC9OV64  | Z23146JA1KNAFP  |
| Europe (Paris)            | eu-west-3      | elasticloadbalancing.eu-west-3.amazonaws.com         | Z3Q77PNBQS71R4  | Z1CMS0P5QUZ6D5  |
| Europe (Stockholm)        | eu-north-1     | elasticloadbalancing.eu-north-1.amazonaws.com        | Z23TAZ6LKFMNIO  | Z1UDT6IFJ4EJM   |
| Middle East (Bahrain)     | me-south-1     | elasticloadbalancing.me-south-1.amazonaws.com        | ZS929ML54UICD   | Z3QSRYVP46NYYV  |
| South America (São Paulo) | sa-east-1      | elasticloadbalancing.sa-east-1.amazonaws.com         | Z2P70J7HTTPLU   | ZTK26PT1VY4CU   |
| AWS GovCloud (US-East)    | us-gov-east-1  | elasticloadbalancing.us-gov-east-1.amazonaws.com     | Z166TLBEWO07G0  | Z1ZSMQQ6Q24QQ8  |
| AWS GovCloud (US-West)    | us-gov-west-1  | elasticloadbalancing.us-gov-west-1.amazonaws.com     | Z33AYJ8TM3BH4J  | ZMG1MZ2THAWF1   |

## Service quotas

| <b>Name</b>                                | <b>Default</b> | <b>Adjustable</b> |
|--|----------------|-------------------|
| Application Load Balancers per Region      | 20             | Yes               |
| Certificates per Application Load Balancer | 25             | Yes               |
| Certificates per Network Load Balancer     | 25             | Yes               |
| Classic Load Balancers per Region          | 20             | Yes               |
| Condition Values per Rule                  | 5              | No                |
| Condition Wildcards per Rule               | 5              | No                |

| Name   | Default | Adjustable |
|--|---------|------------|
| Listeners per Application Load Balancer                                  | 50      | Yes        |
| Listeners per Classic Load Balancer                                      | 100     | Yes        |
| Listeners per Network Load Balancer                                      | 50      | Yes        |
| Network Load Balancer ENIs per VPC                                       | 300     | Yes        |
| Network Load Balancers per Region  | 50      | Yes        |
| Number of times a target can be registered per Application Load Balancer | 100     | Yes        |
| Registered Instances per Classic Load Balancer                           | 1,000   | Yes        |
| Rules per Application Load Balancer                                      | 100     | Yes        |
| Target Groups per Action per Application Load Balancer                   | 5       | No         |
| Target Groups per Action per Network Load Balancer                       | 1       | No         |
| Target Groups per Application Load Balancer                              | 100     | No         |
| Target Groups per Region   | 3,000   | Yes        |
| Targets per Application Load Balancer                                    | 1,000   | Yes        |
| Targets per Availability Zone per Network Load Balancer                  | 500     | Yes        |
| Targets per Network Load Balancer  | 3,000   | Yes        |
| Targets per Target Group per Region                                      | 1,000   | Yes        |

For more information, see the following:

- [Quotas for your Application Load Balancers](#)
- [Quotas for your Network Load Balancers](#)
- [Quotas for your Classic Load Balancers](#)
- [Quotas for your Gateway Load Balancers](#)

## Amazon Elastic Transcoder endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name           | Region    | Endpoint                                  | Protocol |  |
|-----------------------|-----------|---|----------|--|
| US East (N. Virginia) | us-east-1 | elastictranscoder.us-east-1.amazonaws.com | HTTPS    |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                                | <b>Protocol</b> |  |
|--------------------------|----------------|--|-----------------|--|
| US West (N. California)  | us-west-1      | elastictranscoder.us-west-1.amazonaws.com      | HTTPS           |  |
| US West (Oregon)         | us-west-2      | elastictranscoder.us-west-2.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | elastictranscoder.ap-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | elastictranscoder.ap-southeast-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | elastictranscoder.ap-southeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | elastictranscoder.ap-northeast-1.amazonaws.com | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | elastictranscoder.eu-west-1.amazonaws.com      | HTTPS           |  |

## Service quotas

| <b>Name</b>                       | <b>Default</b> | <b>Adjustable</b> |
|-----------------------------------|----------------|-------------------|
| Burst size of Create Job requests | 100            | Yes               |
| Burst size of Read Job requests   | 50             | Yes               |
| Concurrent jobs per pipeline      | 20             | Yes               |
| Pipelines                         | 4              | Yes               |
| Queued jobs per pipeline          | 1,000,000      | No                |
| Rate of Create Job requests       | 2              | Yes               |
| Rate of Read Job requests         | 4              | Yes               |
| User-defined presets              | 50             | Yes               |

For more information, see [Amazon Elastic Transcoder](#) quotas in the *Amazon Elastic Transcoder Developer Guide*.

# Amazon ElastiCache endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | elasticache.us-east-2.amazonaws.com<br>elasticache-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | elasticache.us-east-1.amazonaws.com<br>elasticache-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | elasticache.us-west-1.amazonaws.com<br>elasticache-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | elasticache.us-west-2.amazonaws.com<br>elasticache-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Africa (Cape Town)       | af-south-1     | elasticache.af-south-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Hong Kong) | ap-east-1      | elasticache.ap-east-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | elasticache.ap-south-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | elasticache.ap-northeast-3.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | elasticache.ap-northeast-2.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | elasticache.ap-southeast-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | elasticache.ap-southeast-2.amazonaws.com  | HTTPS          |  |

| Region Name               | Region         | Endpoint   | Protocol       |  |
|---------------------------|----------------|--|----------------|--|
| Asia Pacific (Tokyo)      | ap-northeast-1 | elasticache.ap-northeast-1.amazonaws.com   | HTTPS          |  |
| Canada (Central)          | ca-central-1   | elasticache.ca-central-1.amazonaws.com   | HTTPS          |  |
| Europe (Frankfurt)        | eu-central-1   | elasticache.eu-central-1.amazonaws.com   | HTTPS          |  |
| Europe (Ireland)          | eu-west-1      | elasticache.eu-west-1.amazonaws.com  | HTTPS          |  |
| Europe (London)           | eu-west-2      | elasticache.eu-west-2.amazonaws.com  | HTTPS          |  |
| Europe (Milan)            | eu-south-1     | elasticache.eu-south-1.amazonaws.com   | HTTPS          |  |
| Europe (Paris)            | eu-west-3      | elasticache.eu-west-3.amazonaws.com  | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1     | elasticache.eu-north-1.amazonaws.com   | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1     | elasticache.me-south-1.amazonaws.com   | HTTPS          |  |
| South America (São Paulo) | sa-east-1      | elasticache.sa-east-1.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | elasticache.us-gov-east-1.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | elasticache.us-gov-west-1.amazonaws.com<br>elasticache.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name   | Default | Adjustable |
|--|---------|------------|
| Nodes per Region   | 300     | Yes        |
| Nodes per cluster (Memcached)                                    | 40      | Yes        |
| Nodes per cluster per instance type (Redis cluster mode enabled) | 90      | Yes        |
| Nodes per shard (Redis)  | 6       | No         |
| Parameter groups per Region                                      | 150     | Yes        |

| Name   | Default | Adjustable |
|--|---------|------------|
| Security groups per Region                       | 50      | Yes        |
| Shards per cluster (Redis cluster mode disabled) | 1       | No         |
| Subnet groups per Region                         | 150     | Yes        |
| Subnets per subnet group                         | 20      | Yes        |

## Amazon MemoryDB for Redis endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name               | Region         | Endpoint                               | Protocol |
|---------------------------|----------------|--|----------|
| US East (N. Virginia)     | us-east-1      | memory-db.us-east-1.amazonaws.com      | HTTPS    |
|                           |                | memory-db-fips.us-east-1.amazonaws.com | HTTPS    |
| US West (Oregon)          | us-west-2      | memory-db.us-west-2.amazonaws.com      | HTTPS    |
|                           |                | memory-db-fips.us-west-2.amazonaws.com | HTTPS    |
| Asia Pacific (Mumbai)     | ap-south-1     | memory-db.ap-south-1.amazonaws.com     | HTTPS    |
| Asia Pacific (Tokyo)      | ap-northeast-1 | memory-db.ap-northeast-1.amazonaws.com | HTTPS    |
| Europe (Ireland)          | eu-west-1      | memory-db.eu-west-1.amazonaws.com      | HTTPS    |
| South America (São Paulo) | sa-east-1      | memory-db.sa-east-1.amazonaws.com      | HTTPS    |

## Service quotas

| Resource                            | Default |
|-------------------------------------|---------|
| Nodes per Region                    | 300     |
| Nodes per cluster per instance type | 90      |
| Nodes per shard                     | 6       |
| Parameter groups per Region         | 150     |
| Subnet groups per Region            | 150     |
| Subnets per subnet group            | 20      |

## Amazon EMR endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region     | Endpoint  | Protocol       |  |
|--------------------------|------------|---|----------------|--|
| US East (Ohio)           | us-east-2  | elasticmapreduce.us-east-2.amazonaws.com<br>elasticmapreduce-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1  | elasticmapreduce.us-east-1.amazonaws.com<br>elasticmapreduce-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1  | elasticmapreduce.us-west-1.amazonaws.com<br>elasticmapreduce-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2  | elasticmapreduce.us-west-2.amazonaws.com<br>elasticmapreduce-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Africa (Cape Town)       | af-south-1 | elasticmapreduce.af-south-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Hong Kong) | ap-east-1  | elasticmapreduce.ap-east-1.amazonaws.com  | HTTPS          |  |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|---------------------------|----------------|---|-----------------|--|
| Asia Pacific (Mumbai)     | ap-south-1     | elasticmapreduce.ap-south-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Osaka)      | ap-northeast-3 | elasticmapreduce.ap-northeast-3.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Seoul)      | ap-northeast-2 | elasticmapreduce.ap-northeast-2.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | elasticmapreduce.ap-southeast-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | elasticmapreduce.ap-southeast-2.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | elasticmapreduce.ap-northeast-1.amazonaws.com   | HTTPS           |  |
| Canada (Central)          | ca-central-1   | elasticmapreduce.ca-central-1.amazonaws.com<br>elasticmapreduce-fips.ca-central-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| Europe (Frankfurt)        | eu-central-1   | elasticmapreduce.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)          | eu-west-1      | elasticmapreduce.eu-west-1.amazonaws.com  | HTTPS           |  |
| Europe (London)           | eu-west-2      | elasticmapreduce.eu-west-2.amazonaws.com  | HTTPS           |  |
| Europe (Milan)            | eu-south-1     | elasticmapreduce.eu-south-1.amazonaws.com   | HTTPS           |  |
| Europe (Paris)            | eu-west-3      | elasticmapreduce.eu-west-3.amazonaws.com  | HTTPS           |  |
| Europe (Stockholm)        | eu-north-1     | elasticmapreduce.eu-north-1.amazonaws.com   | HTTPS           |  |
| Middle East (Bahrain)     | me-south-1     | elasticmapreduce.me-south-1.amazonaws.com   | HTTPS           |  |
| South America (São Paulo) | sa-east-1      | elasticmapreduce.sa-east-1.amazonaws.com  | HTTPS           |  |

| Region Name            | Region        | Endpoint                                     | Protocol |  |
|------------------------|---------------|--|----------|--|
| AWS GovCloud (US-East) | us-gov-east-1 | elasticmapreduce.us-gov-east-1.amazonaws.com | HTTPS    |  |
|                        |               | elasticmapreduce.us-gov-east-1.amazonaws.com | HTTPS    |  |
| AWS GovCloud (US-West) | us-gov-west-1 | elasticmapreduce.us-gov-west-1.amazonaws.com | HTTPS    |  |
|                        |               | elasticmapreduce.us-gov-west-1.amazonaws.com | HTTPS    |  |

If you specify the general endpoint (elasticmapreduce.amazonaws.com), Amazon EMR directs your request to an endpoint in the default Region. For accounts created on or after March 8, 2013, the default Region is us-west-2; for older accounts, the default Region is us-east-1.

## Service quotas

| Name  | Default | Adjustable |
|---|---------|------------|
| Replenishment rate of AddInstanceFleet calls              | 0.5     | Yes        |
| Replenishment rate of AddInstanceGroups calls             | 0.2     | Yes        |
| Replenishment rate of AddJobFlowSteps calls               | 0.5     | Yes        |
| Replenishment rate of AddTags calls                       | 0.5     | Yes        |
| Replenishment rate of CancelSteps calls                   | 0.5     | Yes        |
| Replenishment rate of CreateSecurityConfiguration calls   | 0.5     | Yes        |
| Replenishment rate of DeleteSecurityConfiguration calls   | 0.5     | Yes        |
| Replenishment rate of DescribeCluster calls               | 1       | Yes        |
| Replenishment rate of DescribeJobFlows calls              | 0.2     | Yes        |
| Replenishment rate of DescribeSecurityConfiguration calls | 0.5     | Yes        |
| Replenishment rate of DescribeStep calls                  | 0.5     | Yes        |
| Replenishment rate of ListBootstrapActions calls          | 1       | Yes        |
| Replenishment rate of ListClusters calls                  | 0.5     | Yes        |
| Replenishment rate of ListInstanceFleets calls            | 0.5     | Yes        |
| Replenishment rate of ListInstanceGroups calls            | 1       | Yes        |
| Replenishment rate of ListInstances calls                 | 0.5     | Yes        |
| Replenishment rate of ListSecurityConfigurations calls    | 0.5     | Yes        |
| Replenishment rate of ListSteps calls                     | 0.5     | Yes        |
| Replenishment rate of ModifyCluster calls                 | 0.5     | Yes        |
| Replenishment rate of ModifyInstanceFleet calls           | 0.5     | Yes        |

| Name   | Default       | Adjustable |
|--|---------------|------------|
| Replenishment rate of ModifyInstanceGroups calls   | 0.5           | Yes        |
| Replenishment rate of PutAutoScalingPolicy calls   | 0.5           | Yes        |
| Replenishment rate of RemoveAutoScalingPolicy calls  | 0.5           | Yes        |
| Replenishment rate of RemoveTags calls   | 0.5           | Yes        |
| Replenishment rate of RunJobFlow calls   | 0.5           | Yes        |
| Replenishment rate of SetTerminationProtection calls   | 0.2           | Yes        |
| Replenishment rate of SetVisibleToAllUsers calls   | 0.2           | Yes        |
| Replenishment rate of TerminateJobFlows calls  | 0.5           | Yes        |
| The maximum number of API requests that you can make per second.                               | 25 per second | Yes        |
| The maximum number of AWS SSO Groups assigned to each Amazon EMR Studio                        | 5             | No         |
| The maximum number of AWS SSO Users assigned to each Amazon EMR Studio                         | 100           | No         |
| The maximum number of AddInstanceFleet API requests that you can make per second.              | 5 per second  | Yes        |
| The maximum number of AddInstanceGroups API requests that you can make per second.             | 5 per second  | Yes        |
| The maximum number of AddJobFlowSteps API requests that you can make per second.               | 10 per second | Yes        |
| The maximum number of AddTags API requests that you can make per second.                       | 5 per second  | Yes        |
| The maximum number of Amazon EMR Studios per account   | 10            | No         |
| The maximum number of CancelSteps API requests that you can make per second.                   | 10 per second | Yes        |
| The maximum number of CreateSecurityConfiguration API requests that you can make per second.   | 5 per second  | Yes        |
| The maximum number of DeleteSecurityConfiguration API requests that you can make per second.   | 5 per second  | Yes        |
| The maximum number of DescribeCluster API requests that you can make per second.               | 10 per second | Yes        |
| The maximum number of DescribeJobFlows API requests that you can make per second.              | 20 per second | Yes        |
| The maximum number of DescribeSecurityConfiguration API requests that you can make per second. | 5 per second  | Yes        |
| The maximum number of DescribeStep API requests that you can make per second.                  | 10 per second | Yes        |

| Name  | Default       | Adjustable |
|---|---------------|------------|
| The maximum number of ListBootstrapActions API requests that you can make per second.       | 10 per second | Yes        |
| The maximum number of ListClusters API requests that you can make per second.               | 20 per second | Yes        |
| The maximum number of ListInstanceFleets API requests that you can make per second.         | 5 per second  | Yes        |
| The maximum number of ListInstanceGroups API requests that you can make per second.         | 10 per second | Yes        |
| The maximum number of ListInstances API requests that you can make per second.              | 10 per second | Yes        |
| The maximum number of ListSecurityConfigurations API requests that you can make per second. | 5 per second  | Yes        |
| The maximum number of ListSteps API requests that you can make per second.                  | 10 per second | Yes        |
| The maximum number of ModifyCluster API requests that you can make per second.              | 10 per second | Yes        |
| The maximum number of ModifyInstanceFleet API requests that you can make per second.        | 5 per second  | Yes        |
| The maximum number of ModifyInstanceGroups API requests that you can make per second.       | 5 per second  | Yes        |
| The maximum number of PutAutoScalingPolicy API requests that you can make per second.       | 5 per second  | Yes        |
| The maximum number of RemoveAutoScalingPolicy API requests that you can make per second.    | 5 per second  | Yes        |
| The maximum number of RemoveTags API requests that you can make per second.                 | 5 per second  | Yes        |
| The maximum number of RunJobFlow API requests that you can make per second.                 | 10 per second | Yes        |
| The maximum number of SetTerminationProtection API requests that you can make per second.   | 5 per second  | Yes        |
| The maximum number of SetVisibleToAllUsers API requests that you can make per second.       | 5 per second  | Yes        |
| The maximum number of TerminateJobFlows API requests that you can make per second.          | 10 per second | Yes        |
| The maximum number of active clusters can be run at the same time                           | 500           | Yes        |
| The maximum number of active instances per instance group                                   | 2,000         | Yes        |
| The maximum number of subnets associated with each Amazon EMR Studio                        | 5             | No         |
| The maximum rate at which your bucket replenishes for all EMR operations.                   | 5             | Yes        |

Amazon EMR throttles the following API requests for each AWS account on a per-Region basis. For more information about how throttling is applied, see [API Request Throttling](#) in the *Amazon EC2 API Reference*.

## Amazon EventBridge endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | events.us-east-2.amazonaws.com<br>events-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | events.us-east-1.amazonaws.com<br>events-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | events.us-west-1.amazonaws.com<br>events-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | events.us-west-2.amazonaws.com<br>events-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Africa (Cape Town)       | af-south-1     | events.af-south-1.amazonaws.com                                       | HTTPS          |  |
| Asia Pacific (Hong Kong) | ap-east-1      | events.ap-east-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | events.ap-south-1.amazonaws.com                                       | HTTPS          |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | events.ap-northeast-3.amazonaws.com                                   | HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | events.ap-northeast-2.amazonaws.com                                   | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | events.ap-southeast-1.amazonaws.com                                   | HTTPS          |  |

| Region Name               | Region         | Endpoint   | Protocol       |  |
|---------------------------|----------------|--|----------------|--|
| Asia Pacific (Sydney)     | ap-southeast-2 | events.ap-southeast-2.amazonaws.com                                      | HTTPS          |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | events.ap-northeast-1.amazonaws.com                                      | HTTPS          |  |
| Canada (Central)          | ca-central-1   | events.ca-central-1.amazonaws.com  | HTTPS          |  |
| Europe (Frankfurt)        | eu-central-1   | events.eu-central-1.amazonaws.com  | HTTPS          |  |
| Europe (Ireland)          | eu-west-1      | events.eu-west-1.amazonaws.com   | HTTPS          |  |
| Europe (London)           | eu-west-2      | events.eu-west-2.amazonaws.com   | HTTPS          |  |
| Europe (Milan)            | eu-south-1     | events.eu-south-1.amazonaws.com  | HTTPS          |  |
| Europe (Paris)            | eu-west-3      | events.eu-west-3.amazonaws.com   | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1     | events.eu-north-1.amazonaws.com  | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1     | events.me-south-1.amazonaws.com  | HTTPS          |  |
| South America (São Paulo) | sa-east-1      | events.sa-east-1.amazonaws.com   | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | events.us-gov-east-1.amazonaws.com<br>events.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | events.us-gov-west-1.amazonaws.com<br>events.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

For more information, see [EventBridge Quotas](#) in the *Amazon EventBridge User Guide*.

## Amazon FinSpace endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service quotas

| Name                                   | Default      | Adjustable          |
|--|--------------|---------------------|
| Attribute Sets                         | 100          | <a href="#">Yes</a> |
| Clusters per user                      | 1            | <a href="#">No</a>  |
| Concurrent Changesets processing       | 10           | <a href="#">Yes</a> |
| Concurrent data views processing       | 10           | <a href="#">Yes</a> |
| Controlled Vocabularies and Categories | 100          | <a href="#">Yes</a> |
| Data views per dataset                 | 3            | <a href="#">Yes</a> |
| Datasets                               | 1,500        | <a href="#">Yes</a> |
| Datasets per User Group                | 1,500        | <a href="#">Yes</a> |
| Environments                           | 2            | <a href="#">Yes</a> |
| Files per Changeset                    | 100,000      | <a href="#">No</a>  |
| Maximum file size per Changeset        | 50 Gigabytes | <a href="#">No</a>  |
| Notebook storage                       | 10 Gigabytes | <a href="#">No</a>  |
| User Groups                            | 20           | <a href="#">Yes</a> |
| Users                                  | 5            | <a href="#">Yes</a> |

## AWS Fault Injection Simulator endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint                         | Protocol |
|--------------------------|----------------|----------------------------------|----------|
| US East (Ohio)           | us-east-2      | fis.us-east-2.amazonaws.com      | HTTPS    |
| US East (N. Virginia)    | us-east-1      | fis.us-east-1.amazonaws.com      | HTTPS    |
| US West (N. California)  | us-west-1      | fis.us-west-1.amazonaws.com      | HTTPS    |
| US West (Oregon)         | us-west-2      | fis.us-west-2.amazonaws.com      | HTTPS    |
| Africa (Cape Town)       | af-south-1     | fis.af-south-1.amazonaws.com     | HTTPS    |
| Asia Pacific (Hong Kong) | ap-east-1      | fis.ap-east-1.amazonaws.com      | HTTPS    |
| Asia Pacific (Mumbai)    | ap-south-1     | fis.ap-south-1.amazonaws.com     | HTTPS    |
| Asia Pacific (Seoul)     | ap-northeast-2 | fis.ap-northeast-2.amazonaws.com | HTTPS    |
| Asia Pacific (Singapore) | ap-southeast-1 | fis.ap-southeast-1.amazonaws.com | HTTPS    |
| Asia Pacific (Sydney)    | ap-southeast-2 | fis.ap-southeast-2.amazonaws.com | HTTPS    |
| Asia Pacific (Tokyo)     | ap-northeast-1 | fis.ap-northeast-1.amazonaws.com | HTTPS    |
| Canada (Central)         | ca-central-1   | fis.ca-central-1.amazonaws.com   | HTTPS    |
| Europe (Frankfurt)       | eu-central-1   | fis.eu-central-1.amazonaws.com   | HTTPS    |
| Europe (Ireland)         | eu-west-1      | fis.eu-west-1.amazonaws.com      | HTTPS    |
| Europe (London)          | eu-west-2      | fis.eu-west-2.amazonaws.com      | HTTPS    |
| Europe (Milan)           | eu-south-1     | fis.eu-south-1.amazonaws.com     | HTTPS    |
| Europe (Paris)           | eu-west-3      | fis.eu-west-3.amazonaws.com      | HTTPS    |
| Europe (Stockholm)       | eu-north-1     | fis.eu-north-1.amazonaws.com     | HTTPS    |

| Region Name               | Region     | Endpoint                     | Protocol |
|---------------------------|------------|------------------------------|----------|
| Middle East (Bahrain)     | me-south-1 | fis.me-south-1.amazonaws.com | HTTPS    |
| South America (São Paulo) | sa-east-1  | fis.sa-east-1.amazonaws.com  | HTTPS    |

## Service quotas

| Name                                    | Default | Adjustable |
|---|---------|------------|
| Action duration                         | 12      | No         |
| Actions per experiment template         | 20      | No         |
| Active experiments                      | 5       | No         |
| Completed experiment data retention     | 120     | No         |
| Experiment duration                     | 12      | No         |
| Experiment templates                    | 500     | No         |
| Parallel actions per experiment         | 10      | No         |
| Resources per experiment target         | 5       | No         |
| Stop conditions per experiment template | 5       | No         |

## AWS Firewall Manager endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name           | Region    | Endpoint                         | Protocol |
|-----------------------|-----------|----------------------------------|----------|
| US East (Ohio)        | us-east-2 | fms.us-east-2.amazonaws.com      | HTTPS    |
|                       |           | fms-fips.us-east-2.amazonaws.com | HTTPS    |
| US East (N. Virginia) | us-east-1 | fms.us-east-1.amazonaws.com      | HTTPS    |
|                       |           | fms-fips.us-east-1.amazonaws.com | HTTPS    |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| US West (N. California)  | us-west-1      | fms.us-west-1.amazonaws.com<br>fms-fips.us-west-1.amazonaws.com           | HTTPS<br>HTTPS  |  |
| US West (Oregon)         | us-west-2      | fms.us-west-2.amazonaws.com<br>fms-fips.us-west-2.amazonaws.com           | HTTPS<br>HTTPS  |  |
| Africa (Cape Town)       | af-south-1     | fms.af-south-1.amazonaws.com<br>fms-fips.af-south-1.amazonaws.com         | HTTPS<br>HTTPS  |  |
| Asia Pacific (Hong Kong) | ap-east-1      | fms.ap-east-1.amazonaws.com<br>fms-fips.ap-east-1.amazonaws.com           | HTTPS<br>HTTPS  |  |
| Asia Pacific (Mumbai)    | ap-south-1     | fms.ap-south-1.amazonaws.com<br>fms-fips.ap-south-1.amazonaws.com         | HTTPS<br>HTTPS  |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | fms.ap-northeast-3.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | fms.ap-northeast-2.amazonaws.com<br>fms-fips.ap-northeast-2.amazonaws.com | HTTPS<br>HTTPS  |  |
| Asia Pacific (Singapore) | ap-southeast-1 | fms.ap-southeast-1.amazonaws.com<br>fms-fips.ap-southeast-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | fms.ap-southeast-2.amazonaws.com<br>fms-fips.ap-southeast-2.amazonaws.com | HTTPS<br>HTTPS  |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | fms.ap-northeast-1.amazonaws.com<br>fms-fips.ap-northeast-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| Canada (Central)         | ca-central-1   | fms.ca-central-1.amazonaws.com<br>fms-fips.ca-central-1.amazonaws.com     | HTTPS<br>HTTPS  |  |
| Europe (Frankfurt)       | eu-central-1   | fms.eu-central-1.amazonaws.com<br>fms-fips.eu-central-1.amazonaws.com     | HTTPS<br>HTTPS  |  |
| Europe (Ireland)         | eu-west-1      | fms.eu-west-1.amazonaws.com<br>fms-fips.eu-west-1.amazonaws.com           | HTTPS<br>HTTPS  |  |
| Europe (London)          | eu-west-2      | fms.eu-west-2.amazonaws.com<br>fms-fips.eu-west-2.amazonaws.com           | HTTPS<br>HTTPS  |  |

| Region Name               | Region        | Endpoint  | Protocol       |  |
|---------------------------|---------------|---|----------------|--|
| Europe (Milan)            | eu-south-1    | fms.eu-south-1.amazonaws.com<br>fms-fips.eu-south-1.amazonaws.com       | HTTPS<br>HTTPS |  |
| Europe (Paris)            | eu-west-3     | fms.eu-west-3.amazonaws.com<br>fms-fips.eu-west-3.amazonaws.com         | HTTPS<br>HTTPS |  |
| Europe (Stockholm)        | eu-north-1    | fms.eu-north-1.amazonaws.com  | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1    | fms.me-south-1.amazonaws.com<br>fms-fips.me-south-1.amazonaws.com       | HTTPS<br>HTTPS |  |
| South America (São Paulo) | sa-east-1     | fms.sa-east-1.amazonaws.com<br>fms-fips.sa-east-1.amazonaws.com         | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | fms.us-gov-east-1.amazonaws.com<br>fms-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | fms.us-gov-west-1.amazonaws.com<br>fms-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name  | Default | Adjustable |
|---|---------|------------|
| AWS WAF Classic rule groups per AWS WAF Classic policy                              | 2       | No         |
| Amazon VPC instances in scope of a common security group policy                     | 100     | Yes        |
| Applications per application list   | 50      | Yes        |
| Audit security groups per security group content audit policy                       | 1       | Yes        |
| Custom managed application lists in any content audit security group policy setting | 1       | Yes        |
| Custom managed application lists per account  | 10      | Yes        |
| Custom managed protocol lists in any content audit security group policy setting    | 1       | Yes        |
| Custom managed protocol lists per account   | 10      | Yes        |
| Explicitly included or excluded accounts per policy per Region                      | 200     | Yes        |
| Firewall Manager policies per organization per Region                               | 20      | Yes        |
| IPV4 CIDRs for a Network Firewall policy  | 50      | No         |

| Name   | Default | Adjustable |
|--|---------|------------|
| Organizational units in scope per policy per Region                    | 20      | Yes        |
| Primary security groups per common security group policy               | 1       | Yes        |
| Protocols per protocol list  | 5       | Yes        |
| Route 53 Resolver DNS Firewall rule groups per DNS Firewall policy     | 2       | Yes        |
| Rule groups per AWS WAF policy   | 50      | Yes        |
| Tags to include or exclude resources per policy                        | 8       | Yes        |
| VPCs that a single Network Firewall policy can automatically remediate | 1,000   | No         |
| Web ACL capacity units (WCU) used in an AWS WAF policy                 | 1,500   | Yes        |

For more information, see [AWS Firewall Manager quotas](#) in the *AWS Firewall Manager Developer Guide*.

## Amazon Forecast endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

#### Amazon Forecast

| Region Name           | Region         | Endpoint  | Protocol       |  |
|-----------------------|----------------|---|----------------|--|
| US East (Ohio)        | us-east-2      | forecast.us-east-2.amazonaws.com<br>forecast-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia) | us-east-1      | forecast.us-east-1.amazonaws.com<br>forecast-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)      | us-west-2      | forecast.us-west-2.amazonaws.com<br>forecast-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Asia Pacific (Mumbai) | ap-south-1     | forecast.ap-south-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Seoul)  | ap-northeast-2 | forecast.ap-northeast-2.amazonaws.com                                     | HTTPS          |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                       | <b>Protocol</b> |  |
|--------------------------|----------------|---------------------------------------|-----------------|--|
| Asia Pacific (Singapore) | ap-southeast-1 | forecast.ap-southeast-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | forecast.ap-southeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | forecast.ap-northeast-1.amazonaws.com | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | forecast.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | forecast.eu-west-1.amazonaws.com      | HTTPS           |  |

## Amazon Forecast Query

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| US East (Ohio)           | us-east-2      | forecastquery.us-east-2.amazonaws.com<br>forecastquery-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS  |  |
| US East (N. Virginia)    | us-east-1      | forecastquery.us-east-1.amazonaws.com<br>forecastquery-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| US West (Oregon)         | us-west-2      | forecastquery.us-west-2.amazonaws.com<br>forecastquery-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS  |  |
| Asia Pacific (Mumbai)    | ap-south-1     | forecastquery.ap-south-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | forecastquery.ap-northeast-2.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | forecastquery.ap-southeast-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | forecastquery.ap-southeast-2.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | forecastquery.ap-northeast-1.amazonaws.com  | HTTPS           |  |

| <b>Region Name</b> | <b>Region</b> | <b>Endpoint</b>                          | <b>Protocol</b> |  |
|--------------------|---------------|--|-----------------|--|
| Europe (Frankfurt) | eu-central-1  | forecastquery.eu-central-1.amazonaws.com | HTTPS           |  |
| Europe (Ireland)   | eu-west-1     | forecastquery.eu-west-1.amazonaws.com    | HTTPS           |  |

## Service quotas

| <b>Name</b>   | <b>Default</b> | <b>Adjustable</b> |
|---|----------------|-------------------|
| Maximum cumulative size of all files in your Amazon S3 bucket | 30 Gigabytes   | Yes               |
| Maximum forecast horizon                                      | 500            | No                |
| Maximum number of backtest windows                            | 5              | No                |
| Maximum number of columns in a related time series dataset    | 25             | No                |
| Maximum number of columns in a target time series dataset     | 13             | No                |
| Maximum number of columns in an item metadata dataset         | 10             | No                |
| Maximum number of dataset groups                              | 500            | Yes               |
| Maximum number of dataset import jobs                         | 1,000          | Yes               |
| Maximum number of datasets                                    | 1,500          | Yes               |
| Maximum number of datasets in a dataset group                 | 3              | No                |
| Maximum number of files in your Amazon S3 bucket              | 10,000         | No                |
| Maximum number of forecast export jobs                        | 1,000          | Yes               |
| Maximum number of forecasts                                   | 10             | Yes               |
| Maximum number of predictor backtest export jobs              | 1,000          | Yes               |
| Maximum number of predictors                                  | 500            | Yes               |
| Maximum number of rows in a dataset                           | 3,000,000,000  | Yes               |
| Maximum number of tags you can add to a resource              | 50             | No                |
| Maximum number of time series per predictor                   | 5,000,000      | Yes               |
| Maximum parallel running CreateDatasetImportJob tasks         | 3              | Yes               |
| Maximum parallel running CreateForecast tasks                 | 3              | Yes               |
| Maximum parallel running CreateForecastExportJob tasks        | 3              | Yes               |
| Maximum parallel running CreatePredictor tasks                | 3              | Yes               |
| Maximum parallel running CreatePredictor tasks using AutoML   | 3              | Yes               |

| Name   | Default | Adjustable |
|--|---------|------------|
| Maximum parallel running CreatePredictorBacktestExportJob tasks                  | 3       | Yes        |
| Maximum parallel running QueryForecast API tasks                                 | 10      | No         |
| Maximum parallel running Stop jobs per resource type                             | 3       | No         |
| Maximum time for which a forecast can be queried on console or QueryForecast API | 30      | No         |

## Amazon Fraud Detector endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name              | Region         | Endpoint                                   | Protocol |
|--------------------------|----------------|--|----------|
| US East (Ohio)           | us-east-2      | frauddetector.us-east-2.amazonaws.com      | HTTPS    |
| US East (N. Virginia)    | us-east-1      | frauddetector.us-east-1.amazonaws.com      | HTTPS    |
| US West (Oregon)         | us-west-2      | frauddetector.us-west-2.amazonaws.com      | HTTPS    |
| Asia Pacific (Singapore) | ap-southeast-1 | frauddetector.ap-southeast-1.amazonaws.com | HTTPS    |
| Asia Pacific (Sydney)    | ap-southeast-2 | frauddetector.ap-southeast-2.amazonaws.com | HTTPS    |
| Europe (Ireland)         | eu-west-1      | frauddetector.eu-west-1.amazonaws.com      | HTTPS    |

### Service quotas

| Name                               | Default | Adjustable |
|------------------------------------|---------|------------|
| Concurrent training jobs per model | 1       | No         |
| Deployed model versions            | 5       | No         |
| Detectors per account              | 100     | No         |

| Name   | Default       | Adjustable |
|--|---------------|------------|
| EntityType per account                                   | 100           | No         |
| EventType per account                                    | 100           | No         |
| Labels per account                                       | 100           | No         |
| Models including external models per detector version    | 10            | No         |
| Models per account                                       | 50            | No         |
| Outcomes per account                                     | 5,000         | No         |
| Rate of GetPrediction requests                           | 200           | Yes        |
| Rules per account  | 5,000         | No         |
| Size of GetPrediction requests                           | 256 Kilobytes | No         |
| Total concurrent Event Type statistics update operations | 1             | Yes        |
| Total concurrent training jobs                           | 3             | No         |
| Training data size                                       | 5 Gigabytes   | No         |
| Variables per account                                    | 5,000         | No         |
| Versions per detector                                    | 100           | No         |
| Versions per model                                       | 200           | No         |

For more information, see [Quotas](#) in the *Amazon Fraud Detector User Guide*.

## FreeRTOS endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service Endpoints

The following tables provide a list of Region-specific endpoints that FreeRTOS supports for Over-the-Air functionality. The FreeRTOS console is also supported in these Regions.

### FreeRTOS OTA Control Plane

| Region Name    | Region    | Endpoint                    | Protocol |  |
|----------------|-----------|-----------------------------|----------|--|
| US East (Ohio) | us-east-2 | iot.us-east-2.amazonaws.com | HTTPS    |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                  | <b>Protocol</b> |  |
|--------------------------|----------------|----------------------------------|-----------------|--|
| US East (N. Virginia)    | us-east-1      | iot.us-east-1.amazonaws.com      | HTTPS           |  |
| US West (N. California)  | us-west-1      | iot.us-west-1.amazonaws.com      | HTTPS           |  |
| US West (Oregon)         | us-west-2      | iot.us-west-2.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | iot.ap-east-1.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | iot.ap-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | iot.ap-northeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | iot.ap-southeast-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | iot.ap-southeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | iot.ap-northeast-1.amazonaws.com | HTTPS           |  |
| Canada (Central)         | ca-central-1   | iot.ca-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | iot.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | iot.eu-west-1.amazonaws.com      | HTTPS           |  |
| Europe (London)          | eu-west-2      | iot.eu-west-2.amazonaws.com      | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | iot.eu-west-3.amazonaws.com      | HTTPS           |  |
| Europe (Stockholm)       | eu-north-1     | iot.eu-north-1.amazonaws.com     | HTTPS           |  |
| Middle East (Bahrain)    | me-south-1     | iot.me-south-1.amazonaws.com     | HTTPS           |  |

| Region Name               | Region    | Endpoint                    | Protocol |  |
|---------------------------|-----------|-----------------------------|----------|--|
| South America (São Paulo) | sa-east-1 | iot.sa-east-1.amazonaws.com | HTTPS    |  |

## FreeRTOS OTA Data Plane

| Region Name              | Region         | Endpoint  | Protocol |
|--------------------------|----------------|---|----------|
| US East (Ohio)           | us-east-2      | <i>prefix</i> .iot.us-east-2.amazonaws.com      | MQTT     |
| US East (N. Virginia)    | us-east-1      | <i>prefix</i> .iot.us-east-1.amazonaws.com      | MQTT     |
| US West (N. California)  | us-west-1      | <i>prefix</i> .iot.us-west-1.amazonaws.com      | MQTT     |
| US West (Oregon)         | us-west-2      | <i>prefix</i> .iot.us-west-2.amazonaws.com      | MQTT     |
| Asia Pacific (Hong Kong) | ap-east-1      | <i>prefix</i> .iot.ap-east-1.amazonaws.com      | MQTT     |
| Asia Pacific (Mumbai)    | ap-south-1     | <i>prefix</i> .iot.ap-south-1.amazonaws.com     | MQTT     |
| Asia Pacific (Seoul)     | ap-northeast-2 | <i>prefix</i> .iot.ap-northeast-2.amazonaws.com | MQTT     |
| Asia Pacific (Singapore) | ap-southeast-1 | <i>prefix</i> .iot.ap-southeast-1.amazonaws.com | MQTT     |
| Asia Pacific (Sydney)    | ap-southeast-2 | <i>prefix</i> .iot.ap-southeast-2.amazonaws.com | MQTT     |
| Asia Pacific (Tokyo)     | ap-northeast-1 | <i>prefix</i> .iot.ap-northeast-1.amazonaws.com | MQTT     |
| Canada (Central)         | ca-central-1   | <i>prefix</i> .iot.ca-central-1.amazonaws.com   | MQTT     |
| Europe (Frankfurt)       | eu-central-1   | <i>prefix</i> .iot.eu-central-1.amazonaws.com   | MQTT     |
| Europe (Ireland)         | eu-west-1      | <i>prefix</i> .iot.eu-west-1.amazonaws.com      | MQTT     |
| Europe (London)          | eu-west-2      | <i>prefix</i> .iot.eu-west-2.amazonaws.com      | MQTT     |
| Europe (Paris)           | eu-west-3      | <i>prefix</i> .iot.eu-west-3.amazonaws.com      | MQTT     |
| Europe (Stockholm)       | eu-north-1     | <i>prefix</i> .iot.eu-north-1.amazonaws.com     | MQTT     |

| Region Name               | Region     | Endpoint                                   | Protocol |
|---------------------------|------------|--|----------|
| Middle East (Bahrain)     | me-south-1 | <i>prefix.iot.me-south-1.amazonaws.com</i> | MQTT     |
| South America (São Paulo) | sa-east-1  | <i>prefix.iot.sa-east-1.amazonaws.com</i>  | MQTT     |

## Service Quotas

### FreeRTOS OTA Resource Quotas

| Resource  | Default |
|-----------|---------|
| File size | 16MB    |

### FreeRTOS OTA Throttling

| API             | Transactions Per Second |
|-----------------|-------------------------|
| CreateOTAUpdate | 10 TPS                  |
| DeleteOTAUpdate | 5 TPS                   |
| GetOTAUpdate    | 15 TPS                  |
| ListOTAUpdates  | 15 TPS                  |

## Amazon FSx endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name             | Region    | Endpoint  | Protocol       |
|-------------------------|-----------|---|----------------|
| US East (Ohio)          | us-east-2 | fsx.us-east-2.amazonaws.com<br>fsx-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |
| US East (N. Virginia)   | us-east-1 | fsx.us-east-1.amazonaws.com<br>fsx-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |
| US West (N. California) | us-west-1 | fsx.us-west-1.amazonaws.com<br>fsx-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| US West (Oregon)         | us-west-2      | fsx.us-west-2.amazonaws.com<br>fsx-fips.us-west-2.amazonaws.com       | HTTPS<br>HTTPS  |  |
| Africa (Cape Town)       | af-south-1     | fsx.af-south-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | fsx.ap-east-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | fsx.ap-south-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | fsx.ap-northeast-3.amazonaws.com                                      | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | fsx.ap-northeast-2.amazonaws.com                                      | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | fsx.ap-southeast-1.amazonaws.com                                      | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | fsx.ap-southeast-2.amazonaws.com                                      | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | fsx.ap-northeast-1.amazonaws.com                                      | HTTPS           |  |
| Canada (Central)         | ca-central-1   | fsx.ca-central-1.amazonaws.com<br>fsx-fips.ca-central-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| Europe (Frankfurt)       | eu-central-1   | fsx.eu-central-1.amazonaws.com  | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | fsx.eu-west-1.amazonaws.com   | HTTPS           |  |
| Europe (London)          | eu-west-2      | fsx.eu-west-2.amazonaws.com   | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | fsx.eu-south-1.amazonaws.com  | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | fsx.eu-west-3.amazonaws.com   | HTTPS           |  |

| Region Name               | Region        | Endpoint  | Protocol       |  |
|---------------------------|---------------|---|----------------|--|
| Europe (Stockholm)        | eu-north-1    | fsx.eu-north-1.amazonaws.com  | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1    | fsx.me-south-1.amazonaws.com  | HTTPS          |  |
| South America (São Paulo) | sa-east-1     | fsx.sa-east-1.amazonaws.com   | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | fsx.us-gov-east-1.amazonaws.com<br>fsx-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | fsx.us-gov-west-1.amazonaws.com<br>fsx-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name   | Default | Adjustable |
|--|---------|------------|
| Lustre Persistent HDD storage capacity (per file system) | 102,000 | Yes        |
| Lustre Persistent file systems                           | 100     | Yes        |
| Lustre Persistent storage capacity                       | 100,800 | Yes        |
| Lustre Scratch file systems                              | 100     | Yes        |
| Lustre Scratch storage capacity                          | 100,800 | Yes        |
| Lustre backups   | 500     | Yes        |
| Windows HDD storage capacity                             | 524,288 | Yes        |
| Windows SSD storage capacity                             | 524,288 | Yes        |
| Windows backups  | 500     | Yes        |
| Windows file systems                                     | 100     | Yes        |
| Windows throughput capacity                              | 10,240  | Yes        |

For more information, see the following:

- [FSx Lustre quotas](#) in the *FSx for Lustre User Guide*
- [FSx for Windows quotas](#) in the *FSx for Windows File Server User Guide*

# Amazon GameLift endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint                              | Protocol |
|--------------------------|----------------|---------------------------------------|----------|
| US East (Ohio)           | us-east-2      | gamelift.us-east-2.amazonaws.com      | HTTPS    |
| US East (N. Virginia)    | us-east-1      | gamelift.us-east-1.amazonaws.com      | HTTPS    |
| US West (N. California)  | us-west-1      | gamelift.us-west-1.amazonaws.com      | HTTPS    |
| US West (Oregon)         | us-west-2      | gamelift.us-west-2.amazonaws.com      | HTTPS    |
| Asia Pacific (Mumbai)    | ap-south-1     | gamelift.ap-south-1.amazonaws.com     | HTTPS    |
| Asia Pacific (Seoul)     | ap-northeast-2 | gamelift.ap-northeast-2.amazonaws.com | HTTPS    |
| Asia Pacific (Singapore) | ap-southeast-1 | gamelift.ap-southeast-1.amazonaws.com | HTTPS    |
| Asia Pacific (Sydney)    | ap-southeast-2 | gamelift.ap-southeast-2.amazonaws.com | HTTPS    |
| Asia Pacific (Tokyo)     | ap-northeast-1 | gamelift.ap-northeast-1.amazonaws.com | HTTPS    |
| Canada (Central)         | ca-central-1   | gamelift.ca-central-1.amazonaws.com   | HTTPS    |
| Europe (Frankfurt)       | eu-central-1   | gamelift.eu-central-1.amazonaws.com   | HTTPS    |
| Europe (Ireland)         | eu-west-1      | gamelift.eu-west-1.amazonaws.com      | HTTPS    |
| Europe (London)          | eu-west-2      | gamelift.eu-west-2.amazonaws.com      | HTTPS    |

| Region Name               | Region    | Endpoint                         | Protocol |  |
|---------------------------|-----------|----------------------------------|----------|--|
| South America (São Paulo) | sa-east-1 | gamelift.sa-east-1.amazonaws.com | HTTPS    |  |

## Service quotas

| Name   | Default       | Adjustable |
|--|---------------|------------|
| Aliases per region                                     | 100           | Yes        |
| Build capacity   | 100 Gigabytes | No         |
| Builds per region                                      | 1,000         | Yes        |
| Fleets per region                                      | 20            | Yes        |
| Game server groups per region                          | 20            | Yes        |
| Game servers per game server group                     | 1,000         | Yes        |
| Game session log file size                             | 200 Megabytes | No         |
| Game session queues per region                         | 20            | Yes        |
| Instances per region                                   | 20            | Yes        |
| Matchmakers per account                                | 100           | Yes        |
| Player sessions per game session                       | 200           | No         |
| Queue destinations per game session queue              | 10            | Yes        |
| Scripts per region                                     | 1,000         | Yes        |
| Server processes per instance (GameLift SDK v2)        | 1             | No         |
| Server processes per instance (GameLift SDK v3 and up) | 50            | No         |

## Amazon S3 Glacier endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint  | Protocol                |  |
|--------------------------|----------------|---|-------------------------|--|
| US East (Ohio)           | us-east-2      | glacier.us-east-2.amazonaws.com<br>glacier-fips.us-east-2.amazonaws.com | HTTP and HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | glacier.us-east-1.amazonaws.com<br>glacier-fips.us-east-1.amazonaws.com | HTTP and HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | glacier.us-west-1.amazonaws.com<br>glacier-fips.us-west-1.amazonaws.com | HTTP and HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | glacier.us-west-2.amazonaws.com<br>glacier-fips.us-west-2.amazonaws.com | HTTP and HTTPS<br>HTTPS |  |
| Africa (Cape Town)       | af-south-1     | glacier.af-south-1.amazonaws.com  | HTTP and HTTPS          |  |
| Asia Pacific (Hong Kong) | ap-east-1      | glacier.ap-east-1.amazonaws.com   | HTTP and HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | glacier.ap-south-1.amazonaws.com  | HTTP and HTTPS          |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | glacier.ap-northeast-3.amazonaws.com                                    | HTTP and HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | glacier.ap-northeast-2.amazonaws.com                                    | HTTP and HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | glacier.ap-southeast-1.amazonaws.com                                    | HTTP and HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | glacier.ap-southeast-2.amazonaws.com                                    | HTTP and HTTPS          |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | glacier.ap-northeast-1.amazonaws.com                                    | HTTP and HTTPS          |  |

| Region Name               | Region        | Endpoint  | Protocol                |  |
|---------------------------|---------------|---|-------------------------|--|
| Canada (Central)          | ca-central-1  | glacier.ca-central-1.amazonaws.com<br>glacier-fips.ca-central-1.amazonaws.com | HTTP and HTTPS<br>HTTPS |  |
| Europe (Frankfurt)        | eu-central-1  | glacier.eu-central-1.amazonaws.com  | HTTP and HTTPS          |  |
| Europe (Ireland)          | eu-west-1     | glacier.eu-west-1.amazonaws.com   | HTTP and HTTPS          |  |
| Europe (London)           | eu-west-2     | glacier.eu-west-2.amazonaws.com   | HTTP and HTTPS          |  |
| Europe (Milan)            | eu-south-1    | glacier.eu-south-1.amazonaws.com  | HTTP and HTTPS          |  |
| Europe (Paris)            | eu-west-3     | glacier.eu-west-3.amazonaws.com   | HTTP and HTTPS          |  |
| Europe (Stockholm)        | eu-north-1    | glacier.eu-north-1.amazonaws.com  | HTTP and HTTPS          |  |
| Middle East (Bahrain)     | me-south-1    | glacier.me-south-1.amazonaws.com  | HTTP and HTTPS          |  |
| South America (São Paulo) | sa-east-1     | glacier.sa-east-1.amazonaws.com   | HTTP and HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | glacier.us-gov-east-1.amazonaws.com<br>glacier.us-gov-east-1.amazonaws.com    | HTTP and HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | glacier.us-gov-west-1.amazonaws.com<br>glacier.us-gov-west-1.amazonaws.com    | HTTP and HTTPS<br>HTTPS |  |

## Service quotas

| Name                  | Default          | Adjustable |
|-----------------------|------------------|------------|
| Archive size in GB.   | 40,000 Gigabytes | No         |
| Archive size.         | 4 Megabytes      | No         |
| Multipart parts size. | 4 Gigabytes      | No         |

| Name                               | Default | Adjustable |
|------------------------------------|---------|------------|
| Number of multipart parts.         | 10,000  | No         |
| Number of random restore requests. | 35      | No         |
| Number of vault tags.              | 50      | No         |
| Provisioned capacity units         | 2       | No         |
| Vaults per account                 | 1,000   | No         |

## AWS Global Accelerator

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name             | Region    | Endpoint                        | Protocol | Amazon Route 53 Hosted Zone ID* |
|-------------------------|-----------|---------------------------------|----------|---------------------------------|
| US West (Oregon) Region | us-west-2 | globalaccelerator.amazonaws.com | HTTPS    | Z2BJ6XQ5FK7U4H                  |

### Service quotas

| Name   | Default | Adjustable          |
|--|---------|---------------------|
| Accelerators per AWS account                               | 20      | <a href="#">Yes</a> |
| Endpoint groups per accelerator                            | 42      | No                  |
| Endpoints per endpoint group - Application Load Balancers  | 10      | No                  |
| Endpoints per endpoint group - EC2 instances               | 10      | <a href="#">Yes</a> |
| Endpoints per endpoint group - Elastic IP addresses        | 10      | <a href="#">Yes</a> |
| Endpoints per endpoint group - Network Load Balancers      | 10      | No                  |
| Endpoints per endpoint group - VPC subnets                 | 10      | <a href="#">Yes</a> |
| Endpoints per endpoint group - more than one endpoint type | 10      | No                  |
| Listeners per accelerator                                  | 10      | <a href="#">Yes</a> |
| Port overrides per endpoint group                          | 10      | <a href="#">Yes</a> |

| Name                     | Default | Adjustable |
|--------------------------|---------|------------|
| Port ranges per listener | 10      | No         |
| Tags per accelerator     | 50      | No         |

## AWS Glue endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |
|--------------------------|----------------|---|----------------|
| US East (Ohio)           | us-east-2      | glue.us-east-2.amazonaws.com<br>glue-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |
| US East (N. Virginia)    | us-east-1      | glue.us-east-1.amazonaws.com<br>glue-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |
| US West (N. California)  | us-west-1      | glue.us-west-1.amazonaws.com<br>glue-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |
| US West (Oregon)         | us-west-2      | glue.us-west-2.amazonaws.com<br>glue-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |
| Africa (Cape Town)       | af-south-1     | glue.af-south-1.amazonaws.com                                     | HTTPS          |
| Asia Pacific (Hong Kong) | ap-east-1      | glue.ap-east-1.amazonaws.com                                      | HTTPS          |
| Asia Pacific (Mumbai)    | ap-south-1     | glue.ap-south-1.amazonaws.com                                     | HTTPS          |
| Asia Pacific (Osaka)     | ap-northeast-3 | glue.ap-northeast-3.amazonaws.com                                 | HTTPS          |
| Asia Pacific (Seoul)     | ap-northeast-2 | glue.ap-northeast-2.amazonaws.com                                 | HTTPS          |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|---------------------------|----------------|---|-----------------|--|
| Asia Pacific (Singapore)  | ap-southeast-1 | glue.ap-southeast-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | glue.ap-southeast-2.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | glue.ap-northeast-1.amazonaws.com   | HTTPS           |  |
| Canada (Central)          | ca-central-1   | glue.ca-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Frankfurt)        | eu-central-1   | glue.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)          | eu-west-1      | glue.eu-west-1.amazonaws.com  | HTTPS           |  |
| Europe (London)           | eu-west-2      | glue.eu-west-2.amazonaws.com  | HTTPS           |  |
| Europe (Milan)            | eu-south-1     | glue.eu-south-1.amazonaws.com   | HTTPS           |  |
| Europe (Paris)            | eu-west-3      | glue.eu-west-3.amazonaws.com  | HTTPS           |  |
| Europe (Stockholm)        | eu-north-1     | glue.eu-north-1.amazonaws.com   | HTTPS           |  |
| Middle East (Bahrain)     | me-south-1     | glue.me-south-1.amazonaws.com   | HTTPS           |  |
| South America (São Paulo) | sa-east-1      | glue.sa-east-1.amazonaws.com  | HTTPS           |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | glue.us-gov-east-1.amazonaws.com<br>glue-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | glue.us-gov-west-1.amazonaws.com<br>glue-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |

## Service quotas

| Name   | Default      | Adjustable |
|--|--------------|------------|
| Concurrent machine learning task runs per transform    | 3            | Yes        |
| Label file size  | 10 Megabytes | Yes        |
| Max concurrent job runs per account                    | 50           | Yes        |
| Max concurrent job runs per job                        | 1,000        | Yes        |
| Max connection per account                             | 1,000        | Yes        |
| Max databases per account                              | 10,000       | Yes        |
| Max databases per catalog                              | 10,000       | Yes        |
| Max development endpoint per account                   | 25           | Yes        |
| Max dpus per dev endpoint                              | 50           | Yes        |
| Max functions per account                              | 100          | Yes        |
| Max functions per database                             | 100          | Yes        |
| Max jobs per account                                   | 1,000        | Yes        |
| Max jobs per trigger                                   | 50           | Yes        |
| Max partitions per account                             | 20,000,000   | Yes        |
| Max partitions per table                               | 10,000,000   | Yes        |
| Max security configurations per account                | 250          | Yes        |
| Max table versions per account                         | 1,000,000    | Yes        |
| Max table versions per table                           | 100,000      | Yes        |
| Max tables per account                                 | 1,000,000    | Yes        |
| Max tables per database                                | 200,000      | Yes        |
| Max task dpus per account                              | 300          | Yes        |
| Max triggers per account                               | 1,000        | Yes        |
| Number of Schema Registries.                           | 10           | Yes        |
| Number of Schema Versions.                             | 1,000        | Yes        |
| Number of crawlers per account                         | 1,000        | Yes        |
| Number of crawlers running concurrently per account    | 50           | Yes        |
| Number of machine learning transforms                  | 100          | Yes        |
| Number of metadata key value pairs per Schema Version. | 10           | No         |
| Number of workflows                                    | 250          | Yes        |

| Name   | Default | Adjustable |
|--|---------|------------|
| Total concurrent machine learning task runs for transforms per account | 30      | Yes        |

For more information, see [AWS Glue](#) in the *AWS GovCloud (US) User Guide*.

## Amazon Managed Grafana endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name              | Region         | Endpoint                             | Protocol |  |
|--------------------------|----------------|--------------------------------------|----------|--|
| US East (Ohio)           | us-east-2      | grafana.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | grafana.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | grafana.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | grafana.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | grafana.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | grafana.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | grafana.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Europe (Frankfurt)       | eu-central-1   | grafana.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)         | eu-west-1      | grafana.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)          | eu-west-2      | grafana.eu-west-2.amazonaws.com      | HTTPS    |  |

## Service quotas

| Resource   | Default Quota  |
|--|--|
| Alerts   | 100 per workspace.   |
| API operations. The APIs are not yet available publicly, but the following quotas apply to API operations that result from your actions in the Amazon Managed Grafana console. | CreateWorkspace and DeleteWorkspace: 1 transaction per second (TPS), with a burst limit of 5 TPS.<br><br>DescribeWorkspace and ListWorkspaces: 5 transaction per second (TPS), with a burst limit of 10 TPS.<br><br>UpdateWorkspace, ListPermissions, and UpdatePermissions: 10 transaction per second (TPS), with a burst limit of 25 TPS.<br><br>AssociateLicense and DisassociateLicense: 1 transaction per second (TPS), with a burst limit of 5 TPS.<br><br>DescribeWorkspaceAuthentication and UpdateWorkspaceAuthentication: 1 transaction per second (TPS), with a burst limit of 5 TPS. |
| Dashboards   | 100 per workspace.   |
| Data sources   | 100 per workspace.   |
| Users  | 500 per workspace.   |
| Workspaces per Region per account  | 5  |

For more information about Amazon Managed Grafana service quotas, see [Service quotas](#) in the *Amazon Managed Grafana User Guide*.

## AWS Glue DataBrew endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name           | Region    | Endpoint                         | Protocol |  |
|-----------------------|-----------|----------------------------------|----------|--|
| US East (Ohio)        | us-east-2 | databrew.us-east-2.amazonaws.com | HTTPS    |  |
| US East (N. Virginia) | us-east-1 | databrew.us-east-1.amazonaws.com | HTTPS    |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                       | <b>Protocol</b> |  |
|--------------------------|----------------|---------------------------------------|-----------------|--|
| US West (N. California)  | us-west-1      | databrew.us-west-1.amazonaws.com      | HTTPS           |  |
| US West (Oregon)         | us-west-2      | databrew.us-west-2.amazonaws.com      | HTTPS           |  |
| Africa (Cape Town)       | af-south-1     | databrew.af-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | databrew.ap-east-1.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | databrew.ap-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | databrew.ap-northeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | databrew.ap-southeast-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | databrew.ap-southeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | databrew.ap-northeast-1.amazonaws.com | HTTPS           |  |
| Canada (Central)         | ca-central-1   | databrew.ca-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | databrew.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | databrew.eu-west-1.amazonaws.com      | HTTPS           |  |
| Europe (London)          | eu-west-2      | databrew.eu-west-2.amazonaws.com      | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | databrew.eu-south-1.amazonaws.com     | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | databrew.eu-west-3.amazonaws.com      | HTTPS           |  |
| Europe (Stockholm)       | eu-north-1     | databrew.eu-north-1.amazonaws.com     | HTTPS           |  |

| Region Name               | Region        | Endpoint                             | Protocol |  |
|---------------------------|---------------|--------------------------------------|----------|--|
| South America (São Paulo) | sa-east-1     | databrew.sa-east-1.amazonaws.com     | HTTPS    |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | databrew.us-gov-west-1.amazonaws.com | HTTPS    |  |

## Service quotas

| Name                            | Default | Adjustable |
|---------------------------------|---------|------------|
| Concurrent jobs per AWS account | 10      | Yes        |
| Datasets per AWS account        | 100     | Yes        |
| Jobs per AWS account            | 100     | Yes        |
| Node capacity per AWS account   | 300     | Yes        |
| Open projects per AWS account   | 10      | Yes        |
| Projects per AWS account        | 100     | Yes        |
| Recipes per AWS account         | 100     | Yes        |
| Schedules per AWS account       | 10      | Yes        |
| Versions per recipe             | 100     | Yes        |

## AWS Ground Station endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name           | Region    | Endpoint  | Protocol       |  |
|-----------------------|-----------|---|----------------|--|
| US East (Ohio)        | us-east-2 | groundstation.us-east-2.amazonaws.com<br>groundstation-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia) | us-east-1 | groundstation.us-east-1.amazonaws.com<br>groundstation-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |

| Region Name           | Region         | Endpoint  | Protocol       |  |
|-----------------------|----------------|---|----------------|--|
| US West (Oregon)      | us-west-2      | groundstation.us-west-2.amazonaws.com<br>groundstation-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Africa (Cape Town)    | af-south-1     | groundstation.af-south-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Seoul)  | ap-northeast-2 | groundstation.ap-northeast-2.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Sydney) | ap-southeast-2 | groundstation.ap-southeast-2.amazonaws.com  | HTTPS          |  |
| Europe (Frankfurt)    | eu-central-1   | groundstation.eu-central-1.amazonaws.com  | HTTPS          |  |
| Europe (Ireland)      | eu-west-1      | groundstation.eu-west-1.amazonaws.com   | HTTPS          |  |
| Europe (Stockholm)    | eu-north-1     | groundstation.eu-north-1.amazonaws.com  | HTTPS          |  |
| Middle East (Bahrain) | me-south-1     | groundstation.me-south-1.amazonaws.com  | HTTPS          |  |

## Service quotas

| Name                               | Default | Adjustable |
|------------------------------------|---------|------------|
| Config limit                       | 100     | Yes        |
| Contact Lead Time Maximum          | 7       | Yes        |
| Dataflow endpoint group limit      | 100     | Yes        |
| Dataflow endpoints per group limit | 20      | Yes        |
| Maximum Contact Duration           | 20      | Yes        |
| Mission profile limit              | 100     | Yes        |
| Scheduled Contacts Limit           | 100     | Yes        |
| Scheduled Minutes Limit            | 1,000   | Yes        |

## Amazon GuardDuty endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services

offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | guardduty.us-east-2.amazonaws.com<br>guardduty-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | guardduty.us-east-1.amazonaws.com<br>guardduty-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | guardduty.us-west-1.amazonaws.com<br>guardduty-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | guardduty.us-west-2.amazonaws.com<br>guardduty-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Africa (Cape Town)       | af-south-1     | guardduty.af-south-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Hong Kong) | ap-east-1      | guardduty.ap-east-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | guardduty.ap-south-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | guardduty.ap-northeast-3.amazonaws.com                                      | HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | guardduty.ap-northeast-2.amazonaws.com                                      | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | guardduty.ap-southeast-1.amazonaws.com                                      | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | guardduty.ap-southeast-2.amazonaws.com                                      | HTTPS          |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | guardduty.ap-northeast-1.amazonaws.com                                      | HTTPS          |  |

| Region Name               | Region        | Endpoint   | Protocol       |  |
|---------------------------|---------------|--|----------------|--|
| Canada (Central)          | ca-central-1  | guardduty.ca-central-1.amazonaws.com   | HTTPS          |  |
| Europe (Frankfurt)        | eu-central-1  | guardduty.eu-central-1.amazonaws.com   | HTTPS          |  |
| Europe (Ireland)          | eu-west-1     | guardduty.eu-west-1.amazonaws.com  | HTTPS          |  |
| Europe (London)           | eu-west-2     | guardduty.eu-west-2.amazonaws.com  | HTTPS          |  |
| Europe (Milan)            | eu-south-1    | guardduty.eu-south-1.amazonaws.com   | HTTPS          |  |
| Europe (Paris)            | eu-west-3     | guardduty.eu-west-3.amazonaws.com  | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1    | guardduty.eu-north-1.amazonaws.com   | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1    | guardduty.me-south-1.amazonaws.com   | HTTPS          |  |
| South America (São Paulo) | sa-east-1     | guardduty.sa-east-1.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | guardduty.us-gov-east-1.amazonaws.com<br>guardduty.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | guardduty.us-gov-west-1.amazonaws.com<br>guardduty.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name                     | Default | Adjustable |
|--------------------------|---------|------------|
| Detectors                | 1       | No         |
| Filters                  | 100     | Yes        |
| Finding retention period | 90      | No         |
| Member accounts          | 5,000   | No         |
| Threat intel sets        | 6       | Yes        |
| Trusted IP sets          | 1       | No         |

# AWS Health endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service Endpoints

AWS Health has a single endpoint: `health.us-east-1.amazonaws.com (HTTPS)`.

## Quotas for Amazon HealthLake

### Regions and endpoints for Amazon HealthLake

| Region Name           | Region    | Endpoint  | Protocol |  |
|-----------------------|-----------|---|----------|--|
| US East (Ohio)        | us-east-2 | <code>healthlake.us-east-2.amazonaws.com</code> | HTTPS    |  |
| US East (N. Virginia) | us-east-1 | <code>healthlake.us-east-1.amazonaws.com</code> | HTTPS    |  |
| US West (Oregon)      | us-west-2 | <code>healthlake.us-west-2.amazonaws.com</code> | HTTPS    |  |

## Throttling and quotas for Amazon HealthLake

The following table describes throttling limits for resource management within Amazon HealthLake for each customer account. For information about limits that can be changed, see [AWS Service Limits](#). For all operations, users will receive a `ThrottlingException` error message if throttling limits are exceeded.

A maximum quota of ten Data Stores are allowed per an account. For information about requesting a quota increase, see the console support center [to create a case](#).

| Description                                  | Limit in Transactions per second(TPS) or requests per minute |
|--|--|
| CreateFHIRDatastore and DeleteFHIRDatastore  | 1 request per minute   |
| DescribeFHIRDatastore                        | 10 TPS   |
| ListFHIRDatastores                           | 10 TPS   |
| CreateResource, ReadResource, DeleteResource | 20 TPS   |
| UpdateResource                               | 100 TPS  |

| Description   | Limit in Transactions per second(TPS) or requests per minute |
|---|--|
| GetCapabilities   | 10 TPS   |
| SearchWithGet and SearchWithPost  | 100 TPS  |
| StartFHIRImportJob and StartFHIRExportJob   | 1 request per minute, only 1 job permitted at a time         |
| DescribeFHIRImportJob, DescribeFHIRExportJob, ListFHIRImportJob, FistFHIRExportJob                              | 10 TPS   |
| ListFHIRImportJobs, FistFHIRExportJobs  | 10 TPS   |
| TagResource, UntagResource, ListTagsforResource   | 10 TPS   |
| Maximum characters for a medical note within the DocumentReference ResourceType (CreateResource/UpdateResource) | 40,000 characters  |

The following table lists the quotas for Import jobs.

| Description              | Limit     |
|--------------------------|-----------|
| Maximum import job size  | 50 GB     |
| Maximum import file size | 50 MB     |
| Maximum number of files  | 10,000    |
| Supported file extension | '.ndjson' |

## Amazon Honeycode

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service Endpoints

Amazon Honeycode has a single endpoint: honeycode.us-west-2.amazonaws.com (HTTPS).

## AWS Identity and Access Management endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services

offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint                                    | Protocol       |
|--------------------------|----------------|---|----------------|
| US East (Ohio)           | us-east-2      | iam.amazonaws.com                           | HTTPS          |
| US East (N. Virginia)    | us-east-1      | iam.amazonaws.com<br>iam-fips.amazonaws.com | HTTPS<br>HTTPS |
| US West (N. California)  | us-west-1      | iam.amazonaws.com                           | HTTPS          |
| US West (Oregon)         | us-west-2      | iam.amazonaws.com                           | HTTPS          |
| Africa (Cape Town)       | af-south-1     | iam.amazonaws.com                           | HTTPS          |
| Asia Pacific (Hong Kong) | ap-east-1      | iam.amazonaws.com                           | HTTPS          |
| Asia Pacific (Mumbai)    | ap-south-1     | iam.amazonaws.com                           | HTTPS          |
| Asia Pacific (Osaka)     | ap-northeast-3 | iam.amazonaws.com                           | HTTPS          |
| Asia Pacific (Seoul)     | ap-northeast-2 | iam.amazonaws.com                           | HTTPS          |
| Asia Pacific (Singapore) | ap-southeast-1 | iam.amazonaws.com                           | HTTPS          |
| Asia Pacific (Sydney)    | ap-southeast-2 | iam.amazonaws.com                           | HTTPS          |
| Asia Pacific (Tokyo)     | ap-northeast-1 | iam.amazonaws.com                           | HTTPS          |
| Canada (Central)         | ca-central-1   | iam.amazonaws.com                           | HTTPS          |

| <b>Region Name</b>        | <b>Region</b> | <b>Endpoint</b>                                      | <b>Protocol</b> |  |
|---------------------------|---------------|--|-----------------|--|
| Europe (Frankfurt)        | eu-central-1  | iam.amazonaws.com                                    | HTTPS           |  |
| Europe (Ireland)          | eu-west-1     | iam.amazonaws.com                                    | HTTPS           |  |
| Europe (London)           | eu-west-2     | iam.amazonaws.com                                    | HTTPS           |  |
| Europe (Milan)            | eu-south-1    | iam.amazonaws.com                                    | HTTPS           |  |
| Europe (Paris)            | eu-west-3     | iam.amazonaws.com                                    | HTTPS           |  |
| Europe (Stockholm)        | eu-north-1    | iam.amazonaws.com                                    | HTTPS           |  |
| Middle East (Bahrain)     | me-south-1    | iam.amazonaws.com                                    | HTTPS           |  |
| South America (São Paulo) | sa-east-1     | iam.amazonaws.com                                    | HTTPS           |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | iam.us-gov.amazonaws.com                             | HTTPS           |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | iam.us-gov.amazonaws.com<br>iam.us-gov.amazonaws.com | HTTPS<br>HTTPS  |  |

## Service quotas

| <b>Name</b>                                     | <b>Default</b> | <b>Adjustable</b> |
|---|----------------|-------------------|
| Access keys per user                            | 2              | No                |
| Customer managed policies per account           | 1,500          | Yes               |
| Groups per account                              | 300            | Yes               |
| IAM groups per user                             | 10             | No                |
| Identity providers per IAM SAML provider object | 10             | No                |
| Instance profiles per account                   | 1,000          | Yes               |
| Keys per SAML provider                          | 10             | No                |
| MFA devices per user                            | 1              | No                |

| Name                                 | Default | Adjustable |
|--------------------------------------|---------|------------|
| Managed policies per group           | 10      | No         |
| Managed policies per role            | 10      | Yes        |
| Managed policies per user            | 10      | Yes        |
| Managed policy length                | 6,144   | No         |
| OpenId connect providers per account | 100     | No         |
| Role trust policy length             | 2,048   | Yes        |
| Roles per account                    | 1,000   | Yes        |
| SAML providers per account           | 100     | No         |
| SSH Public keys per user             | 5       | No         |
| Server certificates per account      | 20      | Yes        |
| Signing certificates per user        | 2       | No         |
| Tags per role                        | 50      | No         |
| Tags per user                        | 50      | No         |
| Users per account                    | 5,000   | No         |
| Versions per managed policy          | 5       | No         |

For more information about IAM quotas, see [IAM and AWS STS quotas](#) in the *IAM User Guide*.

## IAM Access Analyzer endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name           | Region    | Endpoint                                     | Protocol |
|-----------------------|-----------|--|----------|
| US East (Ohio)        | us-east-2 | access-analyzer.us-east-2.amazonaws.com      | HTTPS    |
|                       |           | access-analyzer-fips.us-east-2.amazonaws.com | HTTPS    |
| US East (N. Virginia) | us-east-1 | access-analyzer.us-east-1.amazonaws.com      | HTTPS    |
|                       |           | access-analyzer-fips.us-east-1.amazonaws.com | HTTPS    |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| US West (N. California)  | us-west-1      | access-analyzer.us-west-1.amazonaws.com<br>access-analyzer-fips.us-west-1.amazonaws.com       | HTTPS<br>HTTPS  |  |
| US West (Oregon)         | us-west-2      | access-analyzer.us-west-2.amazonaws.com<br>access-analyzer-fips.us-west-2.amazonaws.com       | HTTPS<br>HTTPS  |  |
| Africa (Cape Town)       | af-south-1     | access-analyzer.af-south-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | access-analyzer.ap-east-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | access-analyzer.ap-south-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | access-analyzer.ap-northeast-3.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | access-analyzer.ap-northeast-2.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | access-analyzer.ap-southeast-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | access-analyzer.ap-southeast-2.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | access-analyzer.ap-northeast-1.amazonaws.com  | HTTPS           |  |
| Canada (Central)         | ca-central-1   | access-analyzer.ca-central-1.amazonaws.com<br>access-analyzer-fips.ca-central-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| Europe (Frankfurt)       | eu-central-1   | access-analyzer.eu-central-1.amazonaws.com  | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | access-analyzer.eu-west-1.amazonaws.com   | HTTPS           |  |
| Europe (London)          | eu-west-2      | access-analyzer.eu-west-2.amazonaws.com   | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | access-analyzer.eu-south-1.amazonaws.com  | HTTPS           |  |

| Region Name               | Region        | Endpoint   | Protocol       |  |
|---------------------------|---------------|--|----------------|--|
| Europe (Paris)            | eu-west-3     | access-analyzer.eu-west-3.amazonaws.com  | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1    | access-analyzer.eu-north-1.amazonaws.com   | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1    | access-analyzer.me-south-1.amazonaws.com   | HTTPS          |  |
| South America (São Paulo) | sa-east-1     | access-analyzer.sa-east-1.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | access-analyzer.us-gov-east-1.amazonaws.com<br>access-analyzer.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | access-analyzer.us-gov-west-1.amazonaws.com<br>access-analyzer.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name   | Default      | Adjustable |
|--|--------------|------------|
| Access previews per analyzer per hour                | 1,000        | Yes        |
| Analyzers with an account zone of trust              | 1            | No         |
| Analyzers with an organization zone of trust         | 5            | Yes        |
| Archive rules per analyzer                           | 100          | Yes        |
| CloudTrail log files processed per policy generation | 100,000      | No         |
| Concurrent policy generations                        | 1            | No         |
| Policy generation CloudTrail data size               | 25 Gigabytes | No         |
| Policy generation CloudTrail time range              | 90           | No         |
| Policy generations per day                           | 5            | No         |

## AWS Import/Export endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#).

Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service Endpoints

| Endpoint                   | Protocol |
|----------------------------|----------|
| importexport.amazonaws.com | HTTPS    |

## AWS Systems Manager Incident Manager endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

Incident Manager, a feature of AWS Systems Manager, isn't supported in all Systems Manager Regions. The following shows the Regions supported by Incident Manager.

| Region Name              | Region         | Endpoint                                   | Protocol |
|--------------------------|----------------|--|----------|
| US East (Ohio)           | us-east-2      | ssm-incidents.us-east-2.amazonaws.com      | HTTPS    |
| US East (N. Virginia)    | us-east-1      | ssm-incidents.us-east-1.amazonaws.com      | HTTPS    |
| US West (Oregon)         | us-west-2      | ssm-incidents.us-west-2.amazonaws.com      | HTTPS    |
| Asia Pacific (Singapore) | ap-southeast-1 | ssm-incidents.ap-southeast-1.amazonaws.com | HTTPS    |
| Asia Pacific (Sydney)    | ap-southeast-2 | ssm-incidents.ap-southeast-2.amazonaws.com | HTTPS    |
| Asia Pacific (Tokyo)     | ap-northeast-1 | ssm-incidents.ap-northeast-1.amazonaws.com | HTTPS    |
| Europe (Frankfurt)       | eu-central-1   | ssm-incidents.eu-central-1.amazonaws.com   | HTTPS    |
| Europe (Ireland)         | eu-west-1      | ssm-incidents.eu-west-1.amazonaws.com      | HTTPS    |
| Europe (Stockholm)       | eu-north-1     | ssm-incidents.eu-north-1.amazonaws.com     | HTTPS    |

| Region Name              | Region         | Endpoint                                  | Protocol |
|--------------------------|----------------|---|----------|
| US East (Ohio)           | us-east-2      | ssm-contacts.us-east-2.amazonaws.com      | HTTPS    |
| US East (N. Virginia)    | us-east-1      | ssm-contacts.us-east-1.amazonaws.com      | HTTPS    |
| US West (Oregon)         | us-west-2      | ssm-contacts.us-west-2.amazonaws.com      | HTTPS    |
| Asia Pacific (Singapore) | ap-southeast-1 | ssm-contacts.ap-southeast-1.amazonaws.com | HTTPS    |
| Asia Pacific (Tokyo)     | ap-northeast-1 | ssm-contacts.ap-southeast-2.amazonaws.com | HTTPS    |
| Europe (Frankfurt)       | eu-central-1   | ssm-contacts.eu-central-1.amazonaws.com   | HTTPS    |
| Europe (Ireland)         | eu-west-1      | ssm-contacts.eu-west-1.amazonaws.com      | HTTPS    |
| Europe (Stockholm)       | eu-north-1     | ssm-contacts.eu-north-1.amazonaws.com     | HTTPS    |

## Service quotas

### Incident Manager incidents

| Name                                  | Default | Adjustable |
|---------------------------------------|---------|------------|
| All other operations quota            | 10      | Yes        |
| CreateReplicationSet quota            | 1       | Yes        |
| CreateResponsePlan quota              | 5       | Yes        |
| CreateTimelineEvent quota             | 5       | Yes        |
| DeleteIncidentRecord quota            | 5       | Yes        |
| DeleteReplicationSet quota            | 1       | Yes        |
| DeleteResourcePolicy quota            | 5       | Yes        |
| DeleteResponsePlan quota              | 5       | Yes        |
| DeleteTimelineEvent quota             | 5       | Yes        |
| Incidents per response plan per month | 200     | Yes        |
| PutResourcePolicy quota               | 5       | Yes        |
| Regions per replication set           | 3       | No         |
| Related items per incident            | 50      | Yes        |

| Name                         | Default | Adjustable |
|------------------------------|---------|------------|
| Replication sets per account | 1       | No         |
| StartIncident quota          | 5       | Yes        |
| TagResource quota            | 5       | Yes        |
| Timeline events per incident | 1,000   | Yes        |
| UntagResource quota          | 5       | Yes        |
| UpdateDeleteProtection quota | 1       | Yes        |
| UpdateIncidentRecord quota   | 5       | Yes        |
| UpdateRelatedItems quota     | 5       | Yes        |
| UpdateReplicationSet quota   | 1       | Yes        |
| UpdateResponsePlan quota     | 5       | Yes        |
| UpdateTimelineEvent quota    | 5       | Yes        |

## Incident Manager contacts

| Resource   | Default |
|--|---------|
| Contact per account                                  | 1000    |
| Stages per plan                                      | 5       |
| Contact channels per stage                           | 10      |
| Email engagements per contact per second             | .05     |
| SMS engagements per contact per second               | .05     |
| SNS engagements per contact per second               | .05     |
| Voice engagements per contact per second             | .05     |
| Push notification engagements per contact per second | .05     |
| StartEngagement requests per second                  | 2       |
| DescribeEngagement requests per second               | 1       |
| DescribePage requests per second                     | 1       |

| Resource                                  | Default |  |
|---|---------|--|
| ListEngagements requests per second       | 1       |  |
| ListPageReceipts requests per second      | 1       |  |
| ListPagesByContact requests per second    | 1       |  |
| ListPagesByEngagement requests per second | 1       |  |
| StopEngagement requests per second        | 10      |  |
| All other API requests per second         | 1       |  |

## Amazon Inspector

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name             | Region         | Endpoint  | Protocol       |  |
|-------------------------|----------------|---|----------------|--|
| US East (Ohio)          | us-east-2      | inspector.us-east-2.amazonaws.com<br>inspector-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)   | us-east-1      | inspector.us-east-1.amazonaws.com<br>inspector-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California) | us-west-1      | inspector.us-west-1.amazonaws.com<br>inspector-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)        | us-west-2      | inspector.us-west-2.amazonaws.com<br>inspector-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Asia Pacific (Mumbai)   | ap-south-1     | inspector.ap-south-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Seoul)    | ap-northeast-2 | inspector.ap-northeast-2.amazonaws.com                                      | HTTPS          |  |

| Region Name            | Region         | Endpoint  | Protocol       |  |
|------------------------|----------------|---|----------------|--|
| Asia Pacific (Sydney)  | ap-southeast-2 | inspector.ap-southeast-2.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Tokyo)   | ap-northeast-1 | inspector.ap-northeast-1.amazonaws.com  | HTTPS          |  |
| Europe (Frankfurt)     | eu-central-1   | inspector.eu-central-1.amazonaws.com  | HTTPS          |  |
| Europe (Ireland)       | eu-west-1      | inspector.eu-west-1.amazonaws.com   | HTTPS          |  |
| Europe (London)        | eu-west-2      | inspector.eu-west-2.amazonaws.com   | HTTPS          |  |
| Europe (Stockholm)     | eu-north-1     | inspector.eu-north-1.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-East) | us-gov-east-1  | inspector.us-gov-east-1.amazonaws.com<br>inspector-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West) | us-gov-west-1  | inspector.us-gov-west-1.amazonaws.com<br>inspector-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name                             | Default | Adjustable |
|----------------------------------|---------|------------|
| Assessment Targets               | 50      | Yes        |
| Assessment Templates             | 500     | Yes        |
| Assessment runs                  | 50,000  | Yes        |
| Instances in running assessments | 500     | Yes        |

For more information, see the [Amazon Inspector quotas](#) in the *Amazon Inspector User Guide*.

## AWS IoT 1-Click endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

### AWS IoT 1-Click Projects API

| Region Name           | Region         | Endpoint  | Protocol |  |
|-----------------------|----------------|---|----------|--|
| US East (Ohio)        | us-east-2      | projects.iot1click.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia) | us-east-1      | projects.iot1click.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)      | us-west-2      | projects.iot1click.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Tokyo)  | ap-northeast-1 | projects.iot1click.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Europe (Frankfurt)    | eu-central-1   | projects.iot1click.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)      | eu-west-1      | projects.iot1click.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)       | eu-west-2      | projects.iot1click.eu-west-2.amazonaws.com      | HTTPS    |  |

For more information, see the [AWS IoT 1-Click Projects API Reference](#).

### AWS IoT 1-Click Devices API

| Region Name      | Region    | Endpoint                                  | Protocol |  |
|------------------|-----------|---|----------|--|
| US West (Oregon) | us-west-2 | devices.iot1click.us-west-2.amazonaws.com | HTTPS    |  |

For more information, see the [AWS IoT 1-Click Devices API Reference](#).

## Service quotas

| Name                                 | Default | Adjustable |
|--------------------------------------|---------|------------|
| AssociateDeviceWithPlacement API TPS | 10      | No         |
| ClaimDevicesByClaimCode API TPS      | 10      | No         |
| CreatePlacement API TPS              | 10      | No         |
| CreateProject API TPS                | 10      | No         |

| Name                                    | Default | Adjustable |
|---|---------|------------|
| DeletePlacement API TPS                 | 10      | No         |
| DeleteProject API TPS                   | 10      | No         |
| DescribeDevice API TPS                  | 10      | No         |
| DescribePlacement API TPS               | 10      | No         |
| DescribeProject API TPS                 | 10      | No         |
| DisassociateDeviceFromPlacement API TPS | 10      | No         |
| FinalizeDeviceClaim API TPS             | 10      | No         |
| GetDeviceMethods API TPS                | 10      | No         |
| GetDevicesInPlacement API TPS           | 10      | No         |
| InitiateDeviceClaim API TPS             | 10      | No         |
| InvokeDeviceMethod API TPS              | 10      | No         |
| ListDeviceEvents API TPS                | 10      | No         |
| ListDevices API TPS                     | 10      | No         |
| ListPlacements API TPS                  | 10      | No         |
| ListProjects API TPS                    | 10      | No         |
| ListTagsForResource API TPS             | 10      | No         |
| TagResource API TPS                     | 10      | No         |
| UnclaimDevice API TPS                   | 10      | No         |
| UntagResource API TPS                   | 10      | No         |
| UpdateDeviceState API TPS               | 10      | No         |
| UpdatePlacement API TPS                 | 10      | No         |
| UpdateProject API TPS                   | 10      | No         |

## AWS IoT Analytics endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name           | Region         | Endpoint                                  | Protocol |  |
|-----------------------|----------------|---|----------|--|
| US East (Ohio)        | us-east-2      | iotanalytics.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia) | us-east-1      | iotanalytics.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)      | us-west-2      | iotanalytics.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai) | ap-south-1     | iotanalytics.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Sydney) | ap-southeast-2 | iotanalytics.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)  | ap-northeast-1 | iotanalytics.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Europe (Frankfurt)    | eu-central-1   | iotanalytics.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)      | eu-west-1      | iotanalytics.eu-west-1.amazonaws.com      | HTTPS    |  |

## Service quotas

| Name  | Default | Adjustable |
|---|---------|------------|
| Activities per pipeline                       | 25      | No         |
| Batch size of BatchPutMessage messages        | 100     | No         |
| Channels per account                          | 50      | Yes        |
| Concurrent container dataset runs             | 20      | No         |
| Concurrent data set content generation        | 2       | No         |
| Container datasets triggered per SQL data set | 10      | No         |
| Data sets per account                         | 100     | Yes        |
| Data stores per account                       | 25      | Yes        |
| Depth of Parquet SchemaDefinition column      | 100     | Yes        |
| Minimum data set refresh interval             | 15      | Yes        |
| Number of Parquet SchemaDefinition columns    | 100     | Yes        |

| Name   | Default       | Adjustable |
|--|---------------|------------|
| Number of StartPipelineReprocessing requests | 1,000         | Yes        |
| Number of partitions in a data store         | 100,000       | Yes        |
| Pipelines per account                        | 100           | Yes        |
| Rate of BatchPutMessage messages             | 100,000       | Yes        |
| Rate of CreateDatasetContent requests        | 1             | Yes        |
| Rate of RunPipelineActivity requests         | 1             | Yes        |
| Rate of SampleChannelData requests           | 1             | Yes        |
| Size of BatchPutMessage messages             | 128 Kilobytes | No         |

For more information, see [AWS IoT Analytics quotas](#) in the *AWS IoT Analytics User Guide*.

## AWS IoT Core endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service Endpoints

The following sections describe the service endpoints for AWS IoT Core.

### Note

You can use these endpoints to perform the operations in the [AWS IoT API Reference](#). The endpoints in the following sections are different from the device endpoints, which provide devices an MQTT publish/subscribe interface and a subset of the API operations. For more information about the data, credential access, and job management endpoints used by devices, see [AWS IoT device endpoints](#).

For information about connecting to and using the AWS IoT endpoints, see [Connecting devices to AWS IoT](#) in the *AWS IoT Developer Guide*.

### Topics

- [AWS IoT Core - control plane endpoints \(p. 276\)](#)
- [AWS IoT Core - data plane endpoints \(p. 277\)](#)
- [AWS IoT Device Management - jobs data endpoints \(p. 279\)](#)
- [AWS IoT Device Management - secure tunneling endpoints \(p. 281\)](#)
- [AWS IoT Core for LoRaWAN API endpoints \(p. 282\)](#)
- [AWS IoT FIPS endpoints \(p. 284\)](#)

## AWS IoT Core - control plane endpoints

The following table contains AWS Region-specific endpoints for AWS IoT Core - control plane operations. For information about the operations supported by the AWS IoT Core - control plane endpoints, see [AWS IoT operations](#) in the [AWS IoT API Reference](#).

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | iot.us-east-2.amazonaws.com<br>iot-fips.us-east-2.amazonaws.com       | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | iot.us-east-1.amazonaws.com<br>iot-fips.us-east-1.amazonaws.com       | HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | iot.us-west-1.amazonaws.com<br>iot-fips.us-west-1.amazonaws.com       | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | iot.us-west-2.amazonaws.com<br>iot-fips.us-west-2.amazonaws.com       | HTTPS<br>HTTPS |  |
| Asia Pacific (Hong Kong) | ap-east-1      | iot.ap-east-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | iot.ap-south-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | iot.ap-northeast-2.amazonaws.com                                      | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | iot.ap-southeast-1.amazonaws.com                                      | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | iot.ap-southeast-2.amazonaws.com                                      | HTTPS          |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | iot.ap-northeast-1.amazonaws.com                                      | HTTPS          |  |
| Canada (Central)         | ca-central-1   | iot.ca-central-1.amazonaws.com<br>iot-fips.ca-central-1.amazonaws.com | HTTPS<br>HTTPS |  |
| Europe (Frankfurt)       | eu-central-1   | iot.eu-central-1.amazonaws.com  | HTTPS          |  |
| Europe (Ireland)         | eu-west-1      | iot.eu-west-1.amazonaws.com   | HTTPS          |  |

| Region Name               | Region        | Endpoint  | Protocol       |  |
|---------------------------|---------------|---|----------------|--|
| Europe (London)           | eu-west-2     | iot.eu-west-2.amazonaws.com   | HTTPS          |  |
| Europe (Paris)            | eu-west-3     | iot.eu-west-3.amazonaws.com   | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1    | iot.eu-north-1.amazonaws.com  | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1    | iot.me-south-1.amazonaws.com  | HTTPS          |  |
| South America (São Paulo) | sa-east-1     | iot.sa-east-1.amazonaws.com   | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | iot.us-gov-east-1.amazonaws.com<br>iot-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | iot.us-gov-west-1.amazonaws.com<br>iot-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## AWS IoT Core - data plane endpoints

The AWS IoT Core - data plane endpoints are specific to each AWS account and AWS Region. To find the AWS IoT Core - data plane endpoint for your AWS account and AWS Region, use the [describe-endpoint](#) CLI command shown here, or the [DescribeEndpoint](#) REST API.

```
aws iot describe-endpoint --endpoint-type iot:Data-ATS
```

This command returns your Data Plane API endpoint in the following format:

```
account-specific-prefix.iot.aws-region.amazonaws.com
```

For information about the actions supported by the AWS IoT Core - data plane endpoints, see [AWS IoT data plane operations](#) in the [AWS IoT API Reference](#).

The following table contains generic representations of the AWS account-specific endpoints for each AWS Region that AWS IoT Core supports. In the **Endpoint** column, the **account-specific-prefix** from your Account-specific endpoint replaces data shown in the generic endpoint representation.

| Region Name    | Region    | Endpoint  | Protocol       |  |
|----------------|-----------|---|----------------|--|
| US East (Ohio) | us-east-2 | data.iot.us-east-2.amazonaws.com<br>data.iot-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| US East (N. Virginia)    | us-east-1      | data.iot.us-east-1.amazonaws.com<br>data.iot-fips.us-east-1.amazonaws.com       | HTTPS<br>HTTPS  |  |
| US West (N. California)  | us-west-1      | data.iot.us-west-1.amazonaws.com<br>data.iot-fips.us-west-1.amazonaws.com       | HTTPS<br>HTTPS  |  |
| US West (Oregon)         | us-west-2      | data.iot.us-west-2.amazonaws.com<br>data.iot-fips.us-west-2.amazonaws.com       | HTTPS<br>HTTPS  |  |
| Asia Pacific (Hong Kong) | ap-east-1      | data.iot.ap-east-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | data.iot.ap-south-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | data.iot.ap-northeast-2.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | data.iot.ap-southeast-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | data.iot.ap-southeast-2.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | data.iot.ap-northeast-1.amazonaws.com   | HTTPS           |  |
| Canada (Central)         | ca-central-1   | data.iot.ca-central-1.amazonaws.com<br>data.iot-fips.ca-central-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| Europe (Frankfurt)       | eu-central-1   | data.iot.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | data.iot.eu-west-1.amazonaws.com  | HTTPS           |  |
| Europe (London)          | eu-west-2      | data.iot.eu-west-2.amazonaws.com  | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | data.iot.eu-west-3.amazonaws.com  | HTTPS           |  |
| Europe (Stockholm)       | eu-north-1     | data.iot.eu-north-1.amazonaws.com   | HTTPS           |  |

| Region Name               | Region        | Endpoint  | Protocol       |  |
|---------------------------|---------------|---|----------------|--|
| Middle East (Bahrain)     | me-south-1    | data.iot.me-south-1.amazonaws.com   | HTTPS          |  |
| South America (São Paulo) | sa-east-1     | data.iot.sa-east-1.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | data.iot.us-gov-east-1.amazonaws.com<br>data.iot-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | data.iot.us-gov-west-1.amazonaws.com<br>data.iot-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## AWS IoT Device Management - jobs data endpoints

The AWS IoT Device Management - jobs dat endpoints are specific to each AWS account and AWS Region. To find the AWS IoT Device Management - jobs data endpoint for your AWS account and AWS Region, use the [describe-endpoint](#) CLI command shown here, or the [DescribeEndpoint](#) REST API.

```
aws iot describe-endpoint --endpoint-type iot:Jobs
```

This command returns your Jobs Data Plane API endpoint in the following format:

*account-specific-prefix*.jobs.iot.*aws-region*.amazonaws.com.

For information about the actions supported by the AWS IoT Device Management - jobs dat endpoints, see [AWS IoT jobs data plane operations](#) in the [AWS IoT API Reference](#).

The following table contains AWS Region-specific endpoints that AWS IoT Core supports for job data operations. In the **Endpoint** column, the *account-specific-prefix* from your Account-specific endpoint replaces *prefix* shown in the generic endpoint representation.

| Region Name             | Region    | Endpoint  | Protocol |  |
|-------------------------|-----------|---|----------|--|
| US East (Ohio)          | us-east-2 | <i>prefix</i> .jobs.iot.us-east-2.amazonaws.com | HTTPS    |  |
| US East (N. Virginia)   | us-east-1 | <i>prefix</i> .jobs.iot.us-east-1.amazonaws.com | HTTPS    |  |
| US West (N. California) | us-west-1 | <i>prefix</i> .jobs.iot.us-west-1.amazonaws.com | HTTPS    |  |
| US West (Oregon)        | us-west-2 | <i>prefix</i> .jobs.iot.us-west-2.amazonaws.com | HTTPS    |  |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>  | <b>Protocol</b> |  |
|---------------------------|----------------|--|-----------------|--|
| Asia Pacific (Hong Kong)  | ap-east-1      | <i>prefix.jobs.iot.ap-east-1.amazonaws.com</i>         | HTTPS           |  |
| Asia Pacific (Mumbai)     | ap-south-1     | <i>prefix.jobs.iot.ap-south-1.amazonaws.com</i>        | HTTPS           |  |
| Asia Pacific (Seoul)      | ap-northeast-2 | <i>prefix.jobs.iot.ap-northeast-2.amazonaws.com</i>    | HTTPS           |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | <i>prefix.jobs.iot.ap-southeast-1.amazonaws.com</i>    | HTTPS           |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | <i>prefix.jobs.iot.ap-southeast-2.amazonaws.com</i>    | HTTPS           |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | <i>prefix.jobs.iot.ap-northeast-1.amazonaws.com</i>    | HTTPS           |  |
| Canada (Central)          | ca-central-1   | <i>prefix.jobs.iot.ca-central-1.amazonaws.com</i>      | HTTPS           |  |
| China (Beijing)           | cn-north-1     | <i>prefix.jobs.iot.cn-north-1.amazonaws.com.cn</i>     | HTTPS           |  |
| China (Ningxia)           | cn-northwest-1 | <i>prefix.jobs.iot.cn-northwest-1.amazonaws.com.cn</i> | HTTPS           |  |
| Europe (Frankfurt)        | eu-central-1   | <i>prefix.jobs.iot.eu-central-1.amazonaws.com</i>      | HTTPS           |  |
| Europe (Ireland)          | eu-west-1      | <i>prefix.jobs.iot.eu-west-1.amazonaws.com</i>         | HTTPS           |  |
| Europe (London)           | eu-west-2      | <i>prefix.jobs.iot.eu-west-2.amazonaws.com</i>         | HTTPS           |  |
| Europe (Paris)            | eu-west-3      | <i>prefix.jobs.iot.eu-west-3.amazonaws.com</i>         | HTTPS           |  |
| Europe (Stockholm)        | eu-north-1     | <i>prefix.jobs.iot.eu-north-1.amazonaws.com</i>        | HTTPS           |  |
| Middle East (Bahrain)     | me-south-1     | <i>prefix.jobs.iot.me-south-1.amazonaws.com</i>        | HTTPS           |  |
| South America (São Paulo) | sa-east-1      | <i>prefix.jobs.iot.sa-east-1.amazonaws.com</i>         | HTTPS           |  |

| Region Name       | Region        | Endpoint   | Protocol |  |
|-------------------|---------------|--|----------|--|
| AWS GovCloud (US) | us-gov-west-1 | <i>prefix.jobs.iot.us-gov-west-1.amazonaws.com</i> | HTTPS    |  |

## AWS IoT Device Management - secure tunneling endpoints

The following table contains AWS Region-specific endpoints that AWS IoT Core supports for secure tunneling operations. For more information, see [AWS IoT secure tunneling operations](#) in the *AWS IoT API Reference*.

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | api.tunneling.iot.us-east-2.amazonaws.com<br>api.tunneling.iot-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | api.tunneling.iot.us-east-1.amazonaws.com<br>api.tunneling.iot-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | api.tunneling.iot.us-west-1.amazonaws.com<br>api.tunneling.iot-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | api.tunneling.iot.us-west-2.amazonaws.com<br>api.tunneling.iot-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Asia Pacific (Hong Kong) | ap-east-1      | api.tunneling.iot.ap-east-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | api.tunneling.iot.ap-south-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | api.tunneling.iot.ap-northeast-2.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | api.tunneling.iot.ap-southeast-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | api.tunneling.iot.ap-southeast-2.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | api.tunneling.iot.ap-northeast-1.amazonaws.com  | HTTPS          |  |

| <b>Region Name</b>        | <b>Region</b> | <b>Endpoint</b>   | <b>Protocol</b> |  |
|---------------------------|---------------|---|-----------------|--|
| Canada (Central)          | ca-central-1  | api.tunneling.iot.ca-central-1.amazonaws.com<br>api.tunneling.iot-fips.ca-central-1.amazonaws.com   | HTTPS<br>HTTPS  |  |
| Europe (Frankfurt)        | eu-central-1  | api.tunneling.iot.eu-central-1.amazonaws.com  | HTTPS           |  |
| Europe (Ireland)          | eu-west-1     | api.tunneling.iot.eu-west-1.amazonaws.com   | HTTPS           |  |
| Europe (London)           | eu-west-2     | api.tunneling.iot.eu-west-2.amazonaws.com   | HTTPS           |  |
| Europe (Paris)            | eu-west-3     | api.tunneling.iot.eu-west-3.amazonaws.com   | HTTPS           |  |
| Europe (Stockholm)        | eu-north-1    | api.tunneling.iot.eu-north-1.amazonaws.com  | HTTPS           |  |
| Middle East (Bahrain)     | me-south-1    | api.tunneling.iot.me-south-1.amazonaws.com  | HTTPS           |  |
| South America (São Paulo) | sa-east-1     | api.tunneling.iot.sa-east-1.amazonaws.com   | HTTPS           |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | api.tunneling.iot.us-gov-east-1.amazonaws.com<br>api.tunneling.iot-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | api.tunneling.iot.us-gov-west-1.amazonaws.com<br>api.tunneling.iot-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |

## AWS IoT Core for LoRaWAN API endpoints

### Control Plane API Endpoints

The following table contains AWS Region-specific endpoints that AWS IoT Core for LoRaWAN supports for operations to manage LoRaWAN gateways and devices.

| <b>Region Name</b>    | <b>Region</b> | <b>Endpoint</b>                         | <b>Protocol</b> |
|-----------------------|---------------|---|-----------------|
| US East (N. Virginia) | us-east-1     | api.iotwireless.us-east-1.amazonaws.com | HTTPS           |
| US West (Oregon)      | us-west-2     | api.iotwireless.us-west-2.amazonaws.com | HTTPS           |

| Region Name           | Region         | Endpoint                                     | Protocol |
|-----------------------|----------------|--|----------|
| Europe (Ireland)      | eu-west-1      | api.iotwireless.eu-west-1.amazonaws.com      | HTTPS    |
| Asia Pacific (Tokyo)  | ap-northeast-1 | api.iotwireless.ap-northeast-1.amazonaws.com | HTTPS    |
| Asia Pacific (Sydney) | ap-southeast-2 | api.iotwireless.ap-southeast-2.amazonaws.com | HTTPS    |

## Data Plane API Endpoints

The Data Plane API endpoints are specific to each AWS Account and Region. To find the Data Plane API endpoint for your AWS Account and Region, use the [get-service-endpoint](#) CLI command shown here, or the [GetServiceEndpoint](#) REST API.

```
aws iotwireless get-service-endpoint
```

This command returns information about:

- The service type for which you want to get endpoint information about, which can be **CUPS** or **LNS**.
- The CUPS or LNS server trust certificate depending on the endpoint specified.
- Your Data Plane API endpoint in the following format:

```
account-specific-prefix.service.lorawan.aws-region.amazonaws.com
```

where **service** can be **cups** or **lns**.

The following table contains generic representations of the AWS Account-specific LNS endpoints for each Region that AWS IoT Core supports. In the **Endpoint** column, the **account-specific-prefix** from your Account-specific endpoint replaces data shown in the generic endpoint representation.

## LNS endpoints

| Region Name           | Region         | Endpoint   | Protocol |
|-----------------------|----------------|--|----------|
| US East (N. Virginia) | us-east-1      | <i>prefix.lns.lorawan.us-east-1.amazonaws.com</i>      | WSS      |
| US West (Oregon)      | us-west-2      | <i>prefix.lns.lorawan.us-west-2.amazonaws.com</i>      | WSS      |
| Europe (Ireland)      | eu-west-1      | <i>prefix.lns.lorawan.eu-west-1.amazonaws.com</i>      | WSS      |
| Asia Pacific (Tokyo)  | ap-northeast-1 | <i>prefix.lns.lorawan.ap-northeast-1.amazonaws.com</i> | WSS      |
| Asia Pacific (Sydney) | ap-southeast-2 | <i>prefix.lns.lorawan.ap-southeast-2.amazonaws.com</i> | WSS      |

The following table contains generic representations of the AWS Account-specific CUPS endpoints for each Region that AWS IoT Core supports. In the **Endpoint** column, the **account-specific-prefix** from your Account-specific endpoint replaces data shown in the generic endpoint representation.

## CUPS endpoints

| Region Name           | Region         | Endpoint  | Protocol |
|-----------------------|----------------|---|----------|
| US East (N. Virginia) | us-east-1      | <i>prefix.cups.lorawan.us-east-1.amazonaws.com</i>      | HTTPS    |
| US West (Oregon)      | us-west-2      | <i>prefix.cups.lorawan.us-west-2.amazonaws.com</i>      | HTTPS    |
| Europe (Ireland)      | eu-west-1      | <i>prefix.cups.lorawan.eu-west-1.amazonaws.com</i>      | HTTPS    |
| Asia Pacific (Tokyo)  | ap-northeast-1 | <i>prefix.cups.lorawan.ap-northeast-1.amazonaws.com</i> | HTTPS    |
| Asia Pacific (Sydney) | ap-southeast-2 | <i>prefix.cups.lorawan.ap-southeast-2.amazonaws.com</i> | HTTPS    |

## AWS IoT FIPS endpoints

AWS IoT provides endpoints that support the [Federal Information Processing Standard \(FIPS\) 140-2](#). Choose the appropriate FIPS compliant endpoint to access AWS IoT features in your AWS Region from [FIPS Endpoints by Service](#). For more information about the FIPs endpoints provided by AWS IoT, see [Connecting to AWS IoT FIPS endpoints](#).

## Service Quotas

### Contents

- [AWS IoT Core Bulk Thing Registration \(p. 285\)](#)
- [AWS IoT Core Rules Engine \(p. 285\)](#)
- [AWS IoT Core Rules Engine HTTP Actions \(p. 286\)](#)
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## AWS IoT Core Bulk Thing Registration

| Resource                      | Description   | Default |  |
|-------------------------------|---|---------|--|
| Allowed registration tasks    | For any given AWS account, only one bulk registration task can run at a time.   | 1       |  |
| Data retention policy         | After the bulk registration task (which can be long lived) is complete, data related to bulk thing registration is permanently deleted after 30 days. | 30 days |  |
| Maximum line length           | Each line in an <a href="#">Amazon S3 input JSON file</a> can't exceed 256K in length.  | 256K    |  |
| Registration task termination | Any pending or incomplete bulk registration tasks are terminated after 30 days.   | 30 days |  |

## AWS IoT Core Rules Engine

| Resource                                    | Description   | Quota                              | Adjustable          |
|---|---|------------------------------------|---------------------|
| Rule evaluations per second per AWS account | The maximum number rules that can be evaluated per second per AWS account. This quota includes rule evaluations that result from inbound <a href="#">Basic Ingest</a> messages. | 20,000<br>2,000 in select regions* | <a href="#">Yes</a> |
| Maximum number of actions per rule          | The maximum number of entries in the rule's actions property.   | 10                                 | No                  |
| Maximum number of rules per AWS account     | The maximum number of rules that can be defined in a single AWS account.  | 1,000                              | <a href="#">Yes</a> |
| Rule size                                   | The maximum size that a rule document definition can contain, measured by number of UTF-8 encoded   | 256 KB                             | No                  |

| Resource | Description                         | Quota | Adjustable |
|----------|-------------------------------------|-------|------------|
|          | characters, including white spaces. |       |            |

\***Select regions:** Asia Pacific (Hong Kong), Canada (Central), Europe (Stockholm), Europe (Paris), Middle East (Bahrain), AWS GovCloud (US-East), AWS GovCloud (US-West), US West (N. California), South America (São Paulo)

## AWS IoT Core Rules Engine HTTP Actions

| Resource  | Description   | Quota        | Adjustable |
|---|---|--------------|------------|
| Maximum length of an endpoint URL               | Maximum length of an endpoint URL for topic rule HTTP Action.   | 2 KB         | No         |
| Maximum number of headers per action            | Maximum number of headers per HTTP action. When specifying the list of headers to include in the HTTP request, it must contain a header key and a header value. For more information, see <a href="#">HTTPS</a> .   | 100          | No         |
| Maximum size of a header key                    | Maximum size of a header key for topic rule HTTP action. The header file for a HTTP request includes this header key and a header value.  | 256 bytes    | No         |
| Maximum topic rule destinations per AWS account | Maximum number of topic rule destinations per AWS account for topic rule HTTPS action. You must confirm and enable HTTPS endpoints before the rules engine can use them. For more information, see <a href="#">Working with topic rule destinations</a> . | 1,000        | Yes        |
| Ports allowed for HTTP action                   | Number of ports allowed per HTTP action.  | 443 and 8443 | No         |
| Request timeout                                 | Request timeout for topic rule HTTP action. The AWS IoT rules engine retries the HTTPS action until the total time to complete a request exceeds the timeout quota.   | 3,000 ms     | No         |

## AWS IoT Core Rules Engine Apache Kafka Actions

| Resource                               | Limits    |
|--|-----------|
| Bootstrap server ports                 | 9000-9100 |
| Kerberos key distribution center (KDC) | 88        |

## AWS IoT Core Rules Engine VPC Actions

| Resource                           | Quota                    |
|------------------------------------|--------------------------|
| Maximum number of VPC destinations | 5 per account per Region |

## AWS IoT Core Throttling

This table describes the maximum number of transactions per second (TPS) that can be made to each AWS IoT API.

| API                               | Quota (tps) | Adjustable |
|-----------------------------------|-------------|------------|
| AcceptCertificateTransfer         | 10          | Yes        |
| AddThingToBillingGroup            | 60          | Yes        |
| AddThingToThingGroup              | 60          | Yes        |
| AssociateTargetsWithJob           | 10          | Yes        |
| AttachPolicy                      | 15          | Yes        |
| AttachPrincipalPolicy             | 15          | Yes        |
| AttachThingPrincipal              | 15          | No         |
| CancelCertificateTransfer         | 10          | Yes        |
| CancelJob                         | 10          | Yes        |
| CancelJobExecution                | 10          | Yes        |
| ClearDefaultAuthorizer            | 10          | Yes        |
| CreateAuthorizer                  | 10          | Yes        |
| CreateBillingGroup                | 25          | Yes        |
| CreateCertificateFromCsr          | 15          | Yes        |
| CreateDomainConfiguration         | 1           | No         |
| CreateDynamicThingGroup           | 5           | Yes        |
| CreateJob                         | 10          | No         |
| CreateKeysAndCertificate          | 10          | Yes        |
| CreatePolicy                      | 10          | Yes        |
| CreatePolicyVersion               | 10          | Yes        |
| CreateProvisioningClaim           | 10          | Yes        |
| CreateProvisioningTemplate        | 10          | Yes        |
| CreateProvisioningTemplateVersion | 10          | Yes        |

| API  | Quota (tps) | Adjustable |
|--|-------------|------------|
| CreateRoleAlias  | 10          | Yes        |
| CreateThing  | 15          | Yes        |
| CreateThingGroup   | 25          | Yes        |
| CreateThingType  | 15          | Yes        |
| CreateTopicRule  | 5           | Yes        |
| CreateTopicRuleDestination   | 5           | Yes        |
| DeleteAuthorizer   | 10          | Yes        |
| DeleteBillingGroup   | 15          | Yes        |
| DeleteCertificate  | 10          | Yes        |
| DeleteDomainConfiguration  | 10          | Yes        |
| DeleteCACertificate  | 10          | Yes        |
| DeleteDynamicThingGroup  | 5           | Yes        |
| DeleteJob  | 10          | Yes        |
| DeleteJobExecution   | 10          | Yes        |
| DeletePolicy   | 10          | Yes        |
| DeletePolicyVersion  | 10          | Yes        |
| DeleteProvisioningTemplate   | 10          | Yes        |
| DeleteProvisioningTemplateVersion  | 10          | Yes        |
| DeleteRegistrationCode   | 10          | Yes        |
| DeleteRoleAlias  | 10          | Yes        |
| DeleteThing  | 15          | Yes        |
| DeleteThingGroup   | 15          | Yes        |
| DeleteThingType  | 15          | Yes        |
| DeprecateThingType   | 15          | Yes        |
| DeleteTopicRule  | 20          | Yes        |
| <b>AWS Regions:</b> Asia Pacific (Tokyo), Asia Pacific (Seoul), Asia Pacific (Mumbai), Asia Pacific (Singapore), Asia Pacific (Sydney), Europe (Frankfurt), Europe (Ireland), Europe (London), US East (N. Virginia), US East (Ohio), US West (Oregon) |             |            |

| API   | Quota (tps) | Adjustable |
|---|-------------|------------|
| DeleteTopicRule   | 5           | Yes        |
| <b>AWS Regions:</b> Asia Pacific (Hong Kong), Canada (Central), Europe (Stockholm), Europe (Paris), Middle East (Bahrain), AWS GovCloud (US-East), AWS GovCloud (US-West), US West (N. California), South America (São Paulo) |             |            |
| DeleteTopicRuleDestination  | 5           | Yes        |
| DeleteV2LogLevel  | 2           | No         |
| DescribeAuthorizer  | 10          | Yes        |
| DescribeBillingGroup  | 100         | Yes        |
| DescribeCertificate   | 10          | Yes        |
| DescribeCertificateTag  | 10          | Yes        |
| DescribeCACertificate   | 10          | Yes        |
| DescribeDomainConfiguration   | 10          | Yes        |
| DescribeEndpoint  | 10          | Yes        |
| DescribeDefaultAuthorizer   | 10          | Yes        |
| DescribeJob   | 10          | Yes        |
| DescribeJobExecution  | 10          | Yes        |
| DescribeProvisioningTemplate  | 10          | Yes        |
| DescribeProvisioningTemplateVersion   | 10          | Yes        |
| DescribeRoleAlias   | 10          | Yes        |
| DescribeThing   | 350         | Yes        |
| DescribeThingGroup  | 100         | Yes        |
| DescribeThingType   | 10          | Yes        |
| DetachThingPrincipal  | 15          | Yes        |
| DisableTopicRule  | 5           | Yes        |
| EnableTopicRule   | 5           | Yes        |
| DetachPrincipalPolicy   | 15          | Yes        |
| DetachPolicy  | 15          | Yes        |
| GetEffectivePolicies  | 50          | Yes        |
| GetJobDocument  | 10          |            |

| API  | Quota (tps) | Adjustable |
|--|-------------|------------|
| GetLoggingOptions  | 2           | No         |
| GetPolicy  | 10          | Yes        |
| GetPolicyVersion   | 15          | Yes        |
| GetRegistrationCode  | 10          | Yes        |
| GetRetainedMessage   | 500         | Yes        |
| <b>AWS Regions:</b> Asia Pacific (Tokyo), Asia Pacific (Seoul), Asia Pacific (Mumbai), Asia Pacific (Singapore), Asia Pacific (Sydney), Europe (Frankfurt), Europe (Ireland), Europe (London), US East (N. Virginia), US East (Ohio), US West (Oregon) |             |            |
| GetRetainedMessage   | 50          | Yes        |
| <b>AWS Regions:</b> Asia Pacific (Hong Kong), Canada (Central), Europe (Stockholm), Europe (Paris), Middle East (Bahrain), AWS GovCloud (US-East), AWS GovCloud (US-West), US West (N. California), South America (São Paulo)                          |             |            |
| GetTopicRule   | 200         | Yes        |
| <b>AWS Regions:</b> Asia Pacific (Tokyo), Asia Pacific (Seoul), Asia Pacific (Mumbai), Asia Pacific (Singapore), Asia Pacific (Sydney), Europe (Frankfurt), Europe (Ireland), Europe (London), US East (N. Virginia), US East (Ohio), US West (Oregon) |             |            |
| GetTopicRule   | 20          | Yes        |
| <b>AWS Regions:</b> Asia Pacific (Hong Kong), Canada (Central), Europe (Stockholm), Europe (Paris), Middle East (Bahrain), AWS GovCloud (US-East), AWS GovCloud (US-West), US West (N. California), South America (São Paulo)                          |             |            |

| API   | Quota (tps) | Adjustable |
|---|-------------|------------|
| GetTopicRuleDestination<br><br><b>AWS Regions:</b> Asia Pacific (Tokyo), Asia Pacific (Seoul), Asia Pacific (Mumbai), Asia Pacific (Singapore), Asia Pacific (Sydney), Europe (Frankfurt), Europe (Ireland), Europe (London), US East (N. Virginia), US East (Ohio), US West (Oregon) | 50          | Yes        |
| GetTopicRuleDestination<br><br><b>AWS Regions:</b> Asia Pacific (Hong Kong), Canada (Central), Europe (Stockholm), Europe (Paris), Middle East (Bahrain), AWS GovCloud (US-East), AWS GovCloud (US-West), US West (N. California), South America (São Paulo)                          | 5           | Yes        |
| GetV2LoggingOptions   | 2           | No         |
| ListAttachedPolicies  | 15          | Yes        |
| ListAuthorizers   | 10          | Yes        |
| ListBillingGroups   | 10          | Yes        |
| ListCACertificates  | 10          | Yes        |
| ListCertificates  | 10          | Yes        |
| ListDomainConfigurations  | 10          | Yes        |
| ListCertificatesByCA  | 10          | Yes        |
| ListJobExecutionsForJob   | 10          | Yes        |
| ListJobExecutionsForThing   | 10          | Yes        |
| ListJobs  | 10          | Yes        |
| ListOutgoingCertificates  | 10          | Yes        |
| ListPolicies  | 10          | Yes        |
| ListPolicyPrincipals  | 10          | Yes        |
| ListPolicyVersions  | 10          | Yes        |
| ListPrincipalPolicies   | 15          | Yes        |
| ListPrincipalThings   | 10          | Yes        |
| ListProvisioningTemplates   | 10          | Yes        |

| API                              | Quota (tps) | Adjustable |
|----------------------------------|-------------|------------|
| ListProvisioningTemplateVersions | 10          | Yes        |
| ListRetainedMessages             | 10          | Yes        |
| ListRoleAliases                  | 10          | Yes        |
| ListTagsForResource              | 10          | Yes        |
| ListTargetsForPolicy             | 10          | Yes        |
| ListThingGroups                  | 10          | Yes        |
| ListThingGroupsForThing          | 10          | Yes        |
| ListThingPrincipals              | 10          | Yes        |
| ListThings                       | 10          | Yes        |
| ListThingsInBillingGroup         | 25          | Yes        |
| ListThingsInThingGroup           | 25          | Yes        |
| ListThingTypes                   | 10          | Yes        |
| ListTopicRuleDestinations        | 1           | Yes        |
| ListTopicRules                   | 1           | Yes        |
| ListV2LoggingLevels              | 2           | No         |
| RegisterCertificate              | 10          | Yes        |
| RegisterCertificateWithoutCA     | 10          | Yes        |
| RegisterCACertificate            | 10          | Yes        |
| RegisterThing                    | 10          | Yes        |
| RejectCertificateTransfer        | 10          | Yes        |
| RemoveThingFromBillingGroup      | 15          | Yes        |
| RemoveThingFromThingGroup        | 15          | Yes        |
| ReplaceTopicRule                 | 5           | Yes        |
| SetDefaultAuthorizer             | 10          | Yes        |
| SetDefaultPolicyVersion          | 10          | Yes        |
| SetLoggingOptions                | 2           | No         |
| SetV2LogLevel                    | 2           | No         |
| SetV2LoggingOptions              | 2           | No         |
| TagResource                      | 10          | Yes        |
| TestAuthorization                | 10          | Yes        |
| TestInvokeAuthorizer             | 10          | Yes        |

| API                        | Quota (tps) | Adjustable |
|----------------------------|-------------|------------|
| TransferCertificate        | 10          | Yes        |
| UntagResource              | 10          | Yes        |
| UpdateAuthorizer           | 10          | Yes        |
| UpdateBillingGroup         | 15          | Yes        |
| UpdateCertificate          | 10          | Yes        |
| UpdateCertificateMode      | 10          | Yes        |
| UpdateCertificateTag       | 10          | Yes        |
| UpdateDomainConfiguration  | 10          | Yes        |
| UpdateCACertificate        | 10          | Yes        |
| UpdateDynamicThingGroup    | 5           | Yes        |
| UpdateJob                  | 10          | Yes        |
| UpdateProvisioningTemplate | 10          | Yes        |
| UpdateRoleAlias            | 10          | Yes        |
| UpdateThing                | 10          | Yes        |
| UpdateThingGroup           | 15          | Yes        |
| UpdateTopicRuleDestination | 5           | Yes        |

## AWS IoT Core for LoRaWAN limits

### Device data quotas

The following service quotas apply to AWS IoT Core for LoRaWAN device data, which are transmitted between LoRaWAN devices, gateways, and AWS IoT Core for LoRaWAN.

| Resource           | Description   | Quota (messages/second) | Adjustable |
|--------------------|---|-------------------------|------------|
| Uplink messages    | These are messages from LoRaWAN devices and received by AWS IoT Core for LoRaWAN. | 50                      | Yes        |
| Downlink messages  | These are messages sent from AWS IoT Core for LoRaWAN and received by devices.    | 10                      | Yes        |
| Connected Gateways | These are messages sent between the LoRaWAN devices and gateways.                 | 100                     | Yes        |

## API Throttling

The following tables describes the maximum number of transactions per second (TPS) that can be made to each action in the [AWS IoT Wireless API](#), which includes AWS IoT Core for LoRaWAN and Amazon Sidewalk Integration.

### LoRaWAN Gateways API Throttling

This table describes the maximum TPS for APIs used with LoRaWAN gateways. The gateways route messages between LoRaWAN devices and AWS IoT Core for LoRaWAN.

#### LoRaWAN Gateways API Throttling

| API  | Quota (tps) | Adjustable |
|--|-------------|------------|
| AssociateWirelessGatewayWithCertificate    | 10          | No         |
| AssociateWirelessGatewayWithThing          | 10          | Yes        |
| CreateWirelessGateway                      | 10          | Yes        |
| CreateWirelessGatewayTask                  | 10          | No         |
| CreateWirelessGatewayTaskDefinition        | 10          | No         |
| DeleteWirelessGateway                      | 10          | Yes        |
| DeleteWirelessGatewayTask                  | 10          | No         |
| DeleteWirelessGatewayTaskDefinition        | 10          | No         |
| DisassociateWirelessGatewayFromCertificate | 10          | No         |
| DisassociateWirelessGatewayFromThing       | 10          | Yes        |
| GetWirelessGateway                         | 10          | Yes        |
| GetWirelessGatewayCertificate              | 10          | No         |
| GetWirelessGatewayFirmwareInformation      | 10          | No         |
| GetWirelessGatewayStatistics               | 10          | No         |
| GetWirelessGatewayTask                     | 10          | No         |
| GetWirelessGatewayTaskDefinition           | 10          | No         |
| ListWirelessGatewayTaskDefinitions         | 10          | No         |
| ListWirelessGateways                       | 10          | Yes        |
| UpdateWirelessGateway                      | 10          | Yes        |

### LoRaWAN Devices API Throttling

This table describes the maximum TPS for APIs used with LoRaWAN devices.

#### LoRaWAN Devices API Throttling

| API                              | Quota (tps) | Adjustable |
|----------------------------------|-------------|------------|
| AssociateWirelessDeviceWithThing | 10          | Yes        |

| API                                 | Quota (tps) | Adjustable |
|-------------------------------------|-------------|------------|
| CreateWirelessDevice                | 10          | Yes        |
| DeleteWirelessDevice                | 10          | Yes        |
| DisassociateWirelessDeviceFromThing | 10          | Yes        |
| GetWirelessDevice                   | 10          | Yes        |
| GetWirelessDeviceStatistics         | 10          | No         |
| ListWirelessDevices                 | 10          | Yes        |
| SendDataToWirelessDevice            | 10          | Yes        |
| TestWirelessDevice                  | 10          | Yes        |
| UpdateWirelessDevice                | 10          | Yes        |

### Device Profiles and Destination API Throttling

This table describes device profiles and service profiles and destinations that can route messages to other AWS services.

### LoRaWAN Devices API Throttling

| API                                 | Quota (tps) | Adjustable |
|-------------------------------------|-------------|------------|
| CreateDestination                   | 10          | Yes        |
| CreateDeviceProfile                 | 10          | Yes        |
| CreateServiceProfile                | 10          | Yes        |
| DeleteDestination                   | 10          | Yes        |
| DeleteDeviceProfile                 | 10          | Yes        |
| DeleteServiceProfile                | 10          | Yes        |
| DisassociateWirelessDeviceFromThing | 10          | Yes        |
| GetDestination                      | 10          | Yes        |
| GetDeviceProfile                    | 10          | Yes        |
| GetServiceProfile                   | 10          | Yes        |
| ListDestinations                    | 10          | Yes        |
| ListDeviceProfiles                  | 10          | Yes        |
| ListServiceProfiles                 | 10          | Yes        |
| UpdateDestination                   | 10          | Yes        |

### Sidewalk and Logging API Throttling

This table describes the maximum TPS for Amazon Sidewalk APIs and APIs that are used for log levels based on resource types.

## Sidewalk and Logging API Throttling

| API                                      | Quota (tps) | Adjustable |
|--|-------------|------------|
| AssociateAwsAccountWithPartnerAccount    | 10          | Yes        |
| DisassociateAwsAccountFromPartnerAccount | 10          | Yes        |
| GetLogLevelByResourceType                | 10          | Yes        |
| GetPartnerAccount                        | 10          | Yes        |
| GetResourceLogLevel                      | 10          | Yes        |
| ListPartnerAccounts                      | 10          | Yes        |
| PutResourceLogLevel                      | 10          | Yes        |
| ResetAllResourceLogLevels                | 10          | Yes        |
| ResetResourceLogLevel                    | 10          | Yes        |
| UpdateLogLevelByResourceType             | 10          | Yes        |
| UpdatePartnerAccount                     | 10          | Yes        |

## Tagging and GetServiceEndpoint API Throttling

This table describes the maximum TPS for the GetServiceEndpoint API and APIs used for tagging resources.

## Tagging and GetServiceEndpoint API Throttling

| API                 | Quota (tps) | Adjustable |
|---------------------|-------------|------------|
| GetServiceEndpoint  | 10          | No         |
| ListTagsForResource | 10          | Yes        |
| TagResource         | 10          | Yes        |
| UntagResource       | 10          | Yes        |

## Billing Group Restrictions

- A thing can belong to exactly one billing group.
- Unlike thing groups, billing groups cannot be organized into hierarchies.
- For its usage to be registered for tagging or billing purposes, a device must:
  - Be registered as a thing in AWS IoT Core.
  - Communicate with AWS IoT Core using MQTT only.
  - Authenticate with AWS IoT Core using only its thing name as the client ID.
  - Use an X.509 certificate or Amazon Cognito Identity to authenticate.

For more information, see [Managing Devices with AWS IoT](#), [Authentication](#), and [Device Provisioning](#). You can use the [AttachThingPrincipal](#) API operation to attach a certificate or other credential to a thing.

- The maximum number of billing groups per AWS account is 20,000.

## Device Shadow service

The [Device Shadow service API](#) is subject to these per-account limits, depending on the Region.

### Device Shadow service API limits

| Region  | Quota   | Adjustable |
|---|---|------------|
| <ul style="list-style-type: none"> <li>• ap-northeast-1</li> <li>• ap-northeast-2</li> <li>• ap-south-1</li> <li>• ap-southeast-1</li> <li>• ap-southeast-2</li> <li>• eu-central-1</li> <li>• eu-west-1</li> <li>• eu-west-2</li> <li>• us-east-1</li> <li>• us-east-2</li> <li>• us-west-2</li> </ul> | 4,000 Device Shadow API requests/second per account | Yes        |
| All other Regions   | 400 Device Shadow API requests/second per account   | Yes        |

Device Shadow service resources are subject to these limits.

### Device Shadow service resource limits

| Resource   | Description   | Quotas    | Adjustable |
|--|---|-----------|------------|
| Maximum depth of JSON device state documents                   | <p>The maximum number of levels in the desired or reported section of the JSON device state document is 5. For example:</p> <pre>"desired": {     "one": {         "two": {             "three": {                 "four": {                     "five": {}                 }             }         }     } }</pre> | 5         | No         |
| Maximum number of in-flight, unacknowledged messages per thing | <p>The Device Shadow service supports up to 10 in-flight, unacknowledged messages per thing on a single connection. When this quota is reached, all new Device Shadow service requests are rejected with a 429 error code until the number of in-flight requests drop below the limit.</p>                          | 10        | No         |
| Maximum number of  | The maximum number of JSON objects per AWS account, which is unlimited.   | Unlimited | N/A        |

| Resource   | Description   | Quotas    | Adjustable |
|--|---|-----------|------------|
| JSON objects per AWS account                       |   |           |            |
| Maximum number of Device Shadows in an AWS account | The maximum number of Device Shadows in an AWS account.   | Unlimited | N/A        |
| Maximum size of a JSON state document              | <p>By default, each individual Device Shadow document must be 8KB or less in size. The maximum Device Shadow document size can be adjusted from 8KB to 30KB.</p> <p>Metadata doesn't contribute to the document size for service quotas or pricing.</p> | 8 KB      | Yes        |
| Maximum thing name size                            | Maximum size of the thing name, which is 128 bytes of UTF-8 encoded characters.   | 128 bytes | No         |
| Maximum Device Shadow name size                    | Maximum size of the Device Shadow name, in bytes of UTF-8 encoded characters.   | 64 bytes  | No         |
| Requests per second per thing                      | The Device Shadow service requests per second per thing. This quota is per thing resource, not per API.   | 20        | No         |

**Note**

AWS IoT Core deletes a Device Shadow document after the creating account is deleted or upon customer request. For operational purposes, AWS IoT service backups are retained for 6 months.

## AWS IoT Core Fleet Provisioning

Following are throttling limits for some fleet provisioning APIs per AWS account.

### Fleet Provisioning API Throttling

| API                      | Transactions Per Second (TPS) | Adjustable |
|--------------------------|-------------------------------|------------|
| CreateKeysAndCertificate | 10                            | Yes        |
| CreateCertificateFromCsr | 100                           | Yes        |
| RegisterThing            | 10                            | Yes        |

Fleet provisioning is also subject to these quotas.

| Resource   | Description   | Quota  | Adjustable |
|--|---|--------|------------|
| Maximum number of fleet provisioning template versions per template                    | Maximum number of fleet provisioning template versions per template. Each template version has a version ID and a creation date for devices connecting to AWS IoT using fleet provisioning.   | 5      | No         |
| Maximum number of fleet provisioning templates per customer                            | Maximum number of fleet provisioning templates per customer. Use fleet provisioning templates to generate certificates and private keys for your devices to securely connect to AWS IoT.  | 256    | No         |
| Maximum size of fleet provisioning template  | Maximum size of fleet provisioning templates in Kilobytes. Fleet provisioning templates allow you to generate certificates and private keys for your devices to securely connect to AWS IoT.  | 10 Kb  | No         |
| Maximum number of provisioning claims that can be generated per second by trusted user | The maximum number of provisioning claims that can be generated per second by a trusted user. A trusted user can be an end user or installation technician who uses a mobile app or web application to configure the device in its deployed location. | 10 tps | No         |

## AWS IoT Core Message Broker

| Resource  | Description  | Default | Default (in select regions)* | Adjustable |
|---|--|---------|------------------------------|------------|
| Connect requests per second per account         | AWS IoT Core restricts an account to a maximum number of MQTT CONNECT requests per second.   | 500     | 100                          | Yes        |
| Connect requests per second per client ID       | AWS IoT Core restricts MQTT CONNECT requests from the same <code>accountId</code> and <code>clientId</code> to 1 MQTT CONNECT operation per second.  | 1       | 1                            | No         |
| Inbound publish requests per second per account | Inbound publish requests count for all the messages that AWS IoT Core processes before routing the messages to the subscribed clients or the rules engine. For example, a single message published on <code>\$aws/things/<i>device</i>/shadow/update</code> topic can result in publishing 3 additional messages to <code>\$aws/things/<i>device</i>/shadow/update/accepted</code> , <code>\$aws/things/<i>device</i>/shadow/update/documents</code> , and <code>\$aws/things/<i>device</i>/shadow/delta</code> topics. In this case, AWS IoT Core counts those as 4 inbound publish requests. However, a single message to an | 20,000  | 2,000                        | Yes        |

| Resource   | Description   | Default | Default (in select regions)* | Adjustable |
|--|---|---------|------------------------------|------------|
|  | unreserved topic like a/b is counted as a single inbound publish request.   |         |                              |            |
| Maximum concurrent client connections per account      | The maximum number of concurrent connections allowed per account.   | 500,000 | 100,000                      | Yes        |
| Maximum number of retained messages per account        | The number of stored retained messages per account.<br><br>When this limit is reached, no new retained messages are stored for this account and all retained publishes with payloads greater than 0 bytes are throttled.  | 5,000   | 500                          | Yes        |
| Maximum inbound unacknowledged QoS 1 publish requests  | AWS IoT Core restricts the number of unacknowledged inbound publish requests per client. When this quota is reached, no new publish requests are accepted from this client until a PUBACK message is returned by the server.  | 100     | 100                          | No         |
| Maximum outbound unacknowledged QoS 1 publish requests | AWS IoT Core restricts the number of unacknowledged outbound publish requests per client. When this quota is reached, no new publish requests are sent to the client until the client acknowledges the publish requests.  | 100     | 100                          | No         |
| Maximum retry interval for delivering QoS 1 messages   | AWS IoT Core retries delivery of unacknowledged quality of service 1 (QoS 1) publish requests to a client for up to one hour. If AWS IoT Core does not receive a PUBACK message from the client after one hour, it drops the publish requests.  | 1 hour  | 1 hour                       | No         |
| Outbound publish requests per second per account       | Outbound publish requests count for every message that resulted in matching a client's subscription or matching a rules engine subscription. For example, 2 clients are subscribed to topic filter a/b and a rule is subscribed to topic filter a/#. An inbound publish request on topic a/b results in a total of 3 outbound publish requests.   | 20,000  | 2,000                        | Yes        |
| Persistent session expiry period                       | The duration for which the message broker stores an MQTT persistent session. The expiry period begins when the message broker detects the session has become disconnected. After the expiry period has elapsed, the message broker terminates the session and discards any associated queued messages. You can adjust this to a value from 1 hour to 7 days by using the standard limit increase process. | 1 hour  | 1 hour                       | Yes        |

| Resource   | Description  | Default | Default (in select regions) <sup>*</sup> | Adjustable |
|--|--|---------|--|------------|
| Queued session message requests per second per account           | AWS IoT Core restricts an account to a maximum number of queued message per second per account. This limit applies when AWS IoT Core stores the messages sent to offline persistent sessions.  | 500     | 500                                      | Yes        |
| Publish requests per second per connection                       | AWS IoT Core restricts each client connection to a maximum number of inbound and outbound publish requests per second. This limit includes messages sent to offline persistent session. Publish requests that exceed that quota are discarded.   | 100     | 100                                      | No         |
| Retained message inbound publish requests per second per account | The maximum rate that AWS IoT Core can accept inbound publish requests of MQTT messages with the RETAIN flag set.<br><br>This rate includes all inbound publish requests whether invoked by the HTTP or MQTT protocol.   | 500     | 50                                       | Yes        |
| Retained message inbound publish requests per second per topic   | MQTT/HTTP publish requests with RETAIN flag set made to the same topic per second.   | 1       | 1  | No         |
| Subscriptions per account  | AWS IoT Core restricts an account to a maximum number of subscriptions across all active connections.  | 500,000 | 100,000                                  | Yes        |
| Subscriptions per connection                                     | AWS IoT Core supports 50 subscriptions per connection. AWS IoT Core might reject subscription requests on the same connection in excess of this amount and the connection is closed. Clients should validate the SUBACK message to ensure that their subscription requests have been successfully processed. | 50      | 50                                       | No         |
| Subscriptions per second per account                             | AWS IoT Core restricts an account to a maximum number of subscriptions per second. For example, if there are 2 MQTT SUBSCRIBE requests sent within a second, each with 3 subscriptions (topic filters), AWS IoT Core counts those as 6 subscriptions.  | 500     | 200                                      | Yes        |
| Throughput per second per connection                             | Data received or sent over a client connection is processed at a maximum throughput rate. Data that exceeds the maximum throughput is delayed in processing.   | 512 KB  | 512 KB                                   | No         |

<sup>\*</sup>**Select regions:** Asia Pacific (Hong Kong), Canada (Central), Europe (Stockholm), Europe (Paris), Middle East (Bahrain), AWS GovCloud (US-East), AWS GovCloud (US-West), US West (N. California), South America (São Paulo)

## Protocols

| Resource                                    | Description  | Default | Adjustable |
|---|--|---------|------------|
| Client ID size                              | Size of the client ID, which is 128 bytes of UTF-8 encoded characters.   | 128     | No         |
| Connection inactivity (keep-alive interval) | <p>For MQTT (or MQTT over WebSocket) connections, a client can request a keep-alive interval between 30—1200 seconds as part of the MQTT CONNECT message. AWS IoT Core starts the keep-alive timer for a client when sending CONNACK in response to the CONNECT message. This timer is reset whenever AWS IoT receives a PUBLISH, SUBSCRIBE, PING, or PUBACK message from the client. AWS IoT Core disconnects a client whose keep-alive timer has reached 1.5x the specified keep-alive interval (i.e., by a factor of 1.5).</p> <p>The default keep-alive interval is 1200 seconds. If a client requests a keep-alive interval of zero, the default keep-alive interval is used. If a client requests a keep-alive interval greater than 1200 seconds, the default keep-alive interval is used. If a client requests a keep-alive interval shorter than 30 seconds but greater than zero, the server treats the client as though it requested a keep-alive interval of 30 seconds.</p> | 1200    | No         |

| Resource  | Description   | Default | Adjustable |
|---|---|---------|------------|
| Maximum number of slashes in topic and topic filter | A topic in a publish or subscribe request can have no more than 7 forward slashes (/). This excludes the first 3 slashes in the mandatory segments for Basic Ingest topics ( <code>\$AWS/rules/<i>rule-name</i>/</code> ).                        | 7       | No         |
| Maximum subscriptions per subscribe request         | A single <code>SUBSCRIBE</code> request has a quota of 8 subscriptions.   | 8       | No         |
| Message size  | The payload for every publish request can be no larger than 128 KiB. AWS IoT Core rejects publish and connect requests larger than this size.   | 128 KB  | No         |
| Restricted client ID prefix                         | <code>\$</code> is reserved for AWS IoT Core-generated client IDs.  | N/A     | N/A        |
| Restricted topic prefix                             | Topics that start with <code>\$</code> are reserved by AWS IoT Core. They are not supported for publishing and subscribing except for using the specific topic names defined by AWS IoT Core services (for example, the Device Shadow service).   | N/A     | N/A        |
| Topic size  | The topic passed to AWS IoT Core when sending a publish request can be no larger than 256 bytes of UTF-8 encoded characters. This excludes the first 3 mandatory segments for Basic Ingest topics ( <code>\$AWS/rules/<i>rule-name</i>/</code> ). | 256     | No         |

| Resource                      | Description  | Default | Adjustable |
|-------------------------------|--|---------|------------|
| WebSocket connection duration | The WebSocket connection quota is 24 hours. If the quota is exceeded, the WebSocket connection is closed when the client or server attempts to send a message. | 86400   | No         |

## AWS IoT Core Credential Provider

Following shows the throttling limit for the `AssumeRoleWithCertificate` API.

| Region                                    | Transactions Per Second (TPS) | Adjustable |
|---|-------------------------------|------------|
| • us-east-1<br>• us-west-2<br>• eu-west-1 | 100                           | Yes        |
| All other Regions                         | 50                            | Yes        |

AWS IoT Core Credential Provider is also subject to the following limit.

| Resource   | Description  | Default | Adjustable |
|--|--|---------|------------|
| Maximum number of AWS IoT Core role aliases per AWS Account per AWS Region | Maximum number of AWS IoT Core role aliases registered in your AWS account. AWS IoT Core role alias allows connected devices to authenticate to AWS IoT using X.509 certificates and obtain short-lived AWS credentials from an IAM role that is associated with the role alias. | 100     | No         |

## Security and Identity

| Resource   | Description  | Default | Adjustable |
|--|--|---------|------------|
| Maximum number of CA certificates with the same subject field allowed per AWS account per Region | The maximum number of CA certificates with the same subject field allowed per AWS account per Region. If you have more than one CA certificate with the same subject field, you must specify the CA certificate that was used to sign the device certificate being registered. | 10      | No         |
| Maximum number of device certificates that can be registered per second                          | The maximum number of device certificates that can be registered per second. You can select up to 15 files to register.  | 15      | Yes        |

| Resource  | Description  | Default                                 | Adjustable |
|---|--|---|------------|
| Maximum number of named policy versions per policy  | The maximum number of named policy versions. A managed AWS IoT policy can have up to five versions. To update a policy, create a new policy version. If the policy has five versions, you must delete an existing version before creating a new one.   | 5                                       | No         |
| Maximum number of policies that can be attached to a certificate or Amazon Cognito identity       | The maximum number of policies that can be attached to a client certificate or an Amazon Cognito identity, which is 10. Amazon Cognito identity enables you to create temporary, limited-privilege AWS credentials for use in mobile and web applications.   | 10                                      | No         |
| Maximum policy document size  | The maximum size of the policy document, which is 2048 characters excluding white spaces.  | 2048 characters (excluding white space) | No         |
| Maximum number of domain configurations per AWS Account per AWS Region                            | The maximum number of domain configurations per AWS Account per AWS Region.  | 10                                      | Yes        |
| Custom authentication: maximum number of authorizers per AWS Account per AWS Region               | The maximum number of authorizers that can be registered to your AWS account. Authorizers have a lambda function that implements custom authentication and authorization.  | 10                                      | No         |
| Custom authentication: minimum connection duration (value of <code>DisconnectAfterInSecs</code> ) | The Lambda function of a custom authorizer uses a <code>DisconnectAfterInSeconds</code> parameter to indicate the maximum duration (in seconds) of the connection to the AWS IoT Core gateway. The connection is terminated if it exceeds this value.  | 300                                     | No         |
| Custom authentication: maximum connection duration (value of <code>DisconnectAfterInSecs</code> ) | The maximum duration (in seconds) of the connection to the AWS IoT Core gateway, defined by the value of <code>DisconnectAfterInSeconds</code> .   | 86,400                                  | No         |
| Custom authentication: minimum policy refresh rate (value of <code>RefreshAfterInSecs</code> )    | The Lambda function of a custom authorizer uses a <code>RefreshAfterInSeconds</code> parameter to indicate the interval (in seconds) between policy refreshes when connected to the AWS IoT Core gateway. When this interval passes, AWS IoT Core invokes the Lambda function to allow for policy refreshes. | 300                                     | No         |
| Custom authentication: maximum policy refresh rate (value of <code>RefreshAfterInSecs</code> )    | The maximum time interval between policy refreshes when connected to the AWS IoT Core gateway, defined by the value of <code>RefreshAfterInSeconds</code> .  | 86,400                                  | No         |

## MQTT-based File Delivery

### MQTT-based File Delivery Resource Quotas

| Resource   | Description   | Default      | Adjustable |
|--|---|--------------|------------|
| Streams per account  | The maximum number of streams per account.                                  | 10,000*      | No         |
| Files per stream   | The maximum number of files per stream.                                     | 10           | No         |
| File size  | The maximum file size (in MB).  | 24 MB        | No         |
| Maximum data block size                                      | The maximum data block size.  | 128 KB       | No         |
| Minimum data block size                                      | The minimum data block size.  | 256 bytes    | No         |
| Maximum block offset specified in a stream file request      | The maximum block offset specified in a stream file request.                | 98,304       | No         |
| Maximum blocks that can be requested per stream file request | The maximum number of blocks that can be requested per stream file request. | 98,304       | No         |
| Maximum block bitmap size                                    | The maximum block bitmap size.  | 12,288 bytes | No         |

\* For additional information, see [Using AWS IoT MQTT-based file delivery in devices](#) in the *AWS IoT Developer Guide*.

### MQTT-based File Delivery Throttling

| API            | Transactions Per Second |
|----------------|-------------------------|
| CreateStream   | 15 TPS                  |
| DeleteStream   | 15 TPS                  |
| DescribeStream | 15 TPS                  |
| ListStreams    | 15 TPS                  |
| UpdateStream   | 15 TPS                  |

## Things

| Resource   | Description  | Default | Adjustable |
|--|--|---------|------------|
| Maximum number of thing attributes for a thing with a thing type | Maximum number of thing attributes for a thing with a thing type. Thing types are optional and make it easier to discover things. Things with a thing type can have up to 50 attributes. | 50      | Yes        |

| Resource  | Description  | Default   | Adjustable |
|---|--|-----------|------------|
| Maximum number of thing attributes for a thing without a thing type | Maximum number of thing attributes for a thing without a thing type. Things without a thing type can have up to three attributes.  | 3         | No         |
| Maximum number of groups to which a thing can belong                | The maximum number of groups to which a thing can belong.  | 10        | No         |
| Maximum number of thing types in an AWS account                     | An AWS account can have an unlimited number of thing types. Thing types allow you to store description and configuration information that is common to all things associated with the same thing type. | Unlimited | N/A        |
| Number of thing types that can be associated with a thing           | Thing types make it easier to discover things. A thing can be associated with only one thing type.   | 1         | No         |
| Maximum thing name size   | Maximum size of a thing name, which is 128 bytes of UTF-8 encoded characters.  | 128 bytes | No         |
| Size of thing attributes per thing                                  | The size of thing attributes per thing, which is 47 kilobytes. Thing attributes are optional name-value pairs that store information about the thing, which makes their use easier to discover things. | 47 KB     | Yes        |

## Thing Groups

| Resource   | Description  | Default   | Adjustable |
|--|--|-----------|------------|
| Maximum number of thing groups a thing can belong to | A thing can be added to a maximum of 10 thing groups. But you cannot add a thing to more than one group in the same hierarchy. This means that a thing cannot be added to two groups that share a common parent. | 10        | No         |
| Maximum number of things in a thing group            | The maximum number of things that can be defined a thing group, which is unlimited.  | Unlimited | No         |

| Resource  | Description  | Default   | Adjustable |
|---|--|-----------|------------|
| Maximum depth of a thing group hierarchy                    | The maximum depth of a hierarchy of thing groups. When you build a hierarchy of groups, the policy attached to the parent group is inherited by its child group, and by all the things in the group and its child groups. This makes it easier to manage permissions for large number of things. | 7         | No         |
| Maximum number of attributes associated with a thing group  | Maximum number of attributes associated with a thing group. Attributes are name-value pairs you can use to store information about a group. You can add, delete, or update the attributes of a group.  | 50        | No         |
| Maximum number of direct child groups                       | The maximum number of direct child groups that a thing group can have in a thing group hierarchy.  | 100       | No         |
| Maximum number of dynamic groups                            | The maximum number of dynamic groups.  | 100       | No         |
| Maximum thing group name size                               | The maximum thing group name size, which is 128 bytes of UTF-8 encoded characters.   | 128 bytes | No         |
| Maximum size of a thing group attribute name, in chars.     | The maximum size of a thing group attribute name, in chars.  | 128       | No         |
| Maximum size of a thing group attribute value, in chars.    | The maximum size of a thing group attribute value, in chars.   | 800       | No         |
| Maximum number of policies attached to a static thing group | You can attach a policy to a static thing group and so, by extension, to all things in that group and things in any of its child groups. A maximum of 2 policies can be attached to a group.   | 2         | No         |

## AWS IoT Device Defender endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#).

Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint                         | Protocol |  |
|--------------------------|----------------|----------------------------------|----------|--|
| US East (Ohio)           | us-east-2      | iot.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | iot.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (N. California)  | us-west-1      | iot.us-west-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | iot.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Hong Kong) | ap-east-1      | iot.ap-east-1.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai)    | ap-south-1     | iot.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | iot.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | iot.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | iot.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | iot.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)         | ca-central-1   | iot.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)       | eu-central-1   | iot.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)         | eu-west-1      | iot.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)          | eu-west-2      | iot.eu-west-2.amazonaws.com      | HTTPS    |  |

| Region Name            | Region        | Endpoint                        | Protocol |  |
|------------------------|---------------|---------------------------------|----------|--|
| Europe (Paris)         | eu-west-3     | iot.eu-west-3.amazonaws.com     | HTTPS    |  |
| Europe (Stockholm)     | eu-north-1    | iot.eu-north-1.amazonaws.com    | HTTPS    |  |
| Middle East (Bahrain)  | me-south-1    | iot.me-south-1.amazonaws.com    | HTTPS    |  |
| AWS GovCloud (US-East) | us-gov-east-1 | iot.us-gov-east-1.amazonaws.com | HTTPS    |  |
| AWS GovCloud (US-West) | us-gov-west-1 | iot.us-gov-west-1.amazonaws.com | HTTPS    |  |

## Service quotas

### Audits

| Resource   | Quota           | Adjustable |
|--|-----------------|------------|
| Number of scheduled audits                               | 5 maximum       | No         |
| Number of simultaneous in progress on-demand audits      | 10 maximum      | No         |
| Time that audit findings are stored after being reported | 90 days maximum | No         |

The following service quotas apply to mitigation actions and audit mitigation action tasks:

### Audit mitigation actions

| Resource   | Quota               |
|--|---------------------|
| Number of audit mitigation action tasks running at the same time | 10 tasks maximum    |
| Number of mitigation actions in an AWS account                   | 100 actions maximum |
| Retention period for audit mitigation action tasks               | 90 days             |

### Detect

| Resource                       | Quota       | Description | Adjustable |
|--------------------------------|-------------|-------------|------------|
| Behaviors per security profile | 100 maximum |             | No         |

| Resource   | Quota  | Description   | Adjustable |
|--|--|---|------------|
| Custom metrics per account   | 100 maximum  |   | Yes        |
| Dimensions per account   | 10 maximum   |   | Yes        |
| Device Defender Detect violations  | 30 days maximum  | Violations are stored for 30 days after they have been generated.                           | No         |
| Device metric reporting  | Throttled to 1 value per metric per device per 5 minutes | A device can report a value for every metric for every device at most once every 5 minutes. | Yes        |
| Number of device-side metric reports that can be sent from all devices in an account | 3500 per second maximum                                  |   | Yes        |
| Number of value elements (counts, IP addresses, ports) per Security Profile          | 1000 maximum   |   | No         |
| Security Profiles per target (thing group or user account)                           | 5 maximum  |   | No         |

### ML Detect

| Resource  | Quota           | Adjustable |
|---|-----------------|------------|
| Number of Detect mitigation action tasks that can be running at the same time | 5 maximum       | Yes        |
| Retention period for Detect mitigation action tasks                           | 90 days maximum | Yes        |
| Retention period for models (time after which models are expired)             | 30 days maximum | No         |

## AWS IoT Device Management endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

### Topics

- [AWS IoT Core - control plane endpoints \(p. 312\)](#)
- [AWS IoT Core - data plane endpoints \(p. 313\)](#)
- [AWS IoT Device Management - jobs data endpoints \(p. 314\)](#)
- [AWS IoT Device Management - secure tunneling endpoints \(p. 315\)](#)
- [AWS IoT FIPS endpoints \(p. 318\)](#)

### AWS IoT Core - control plane endpoints

| Region Name              | Region         | Endpoint                            | Protocol |
|--------------------------|----------------|-------------------------------------|----------|
| US East (Ohio)           | us-east-2      | iot.us-east-2.amazonaws.com         | HTTPS    |
| US East (N. Virginia)    | us-east-1      | iot.us-east-1.amazonaws.com         | HTTPS    |
| US West (N. California)  | us-west-1      | iot.us-west-1.amazonaws.com         | HTTPS    |
| US West (Oregon)         | us-west-2      | iot.us-west-2.amazonaws.com         | HTTPS    |
| Asia Pacific (Hong Kong) | ap-east-1      | iot.ap-east-1.amazonaws.com         | HTTPS    |
| Asia Pacific (Mumbai)    | ap-south-1     | iot.ap-south-1.amazonaws.com        | HTTPS    |
| Asia Pacific (Seoul)     | ap-northeast-2 | iot.ap-northeast-2.amazonaws.com    | HTTPS    |
| Asia Pacific (Singapore) | ap-southeast-1 | iot.ap-southeast-1.amazonaws.com    | HTTPS    |
| Asia Pacific (Sydney)    | ap-southeast-2 | iot.ap-southeast-2.amazonaws.com    | HTTPS    |
| Asia Pacific (Tokyo)     | ap-northeast-1 | iot.ap-northeast-1.amazonaws.com    | HTTPS    |
| Canada (Central)         | ca-central-1   | iot.ca-central-1.amazonaws.com      | HTTPS    |
| China (Beijing)          | cn-north-1     | iot.cn-north-1.amazonaws.com.cn     | HTTPS    |
| China (Ningxia)          | cn-northwest-1 | iot.cn-northwest-1.amazonaws.com.cn | HTTPS    |
| Europe (Frankfurt)       | eu-central-1   | iot.eu-central-1.amazonaws.com      | HTTPS    |
| Europe (Ireland)         | eu-west-1      | iot.eu-west-1.amazonaws.com         | HTTPS    |

| <b>Region Name</b>        | <b>Region</b> | <b>Endpoint</b>                 | <b>Protocol</b> |
|---------------------------|---------------|---------------------------------|-----------------|
| Europe (London)           | eu-west-2     | iot.eu-west-2.amazonaws.com     | HTTPS           |
| Europe (Paris)            | eu-west-3     | iot.eu-west-3.amazonaws.com     | HTTPS           |
| Europe (Stockholm)        | eu-north-1    | iot.eu-north-1.amazonaws.com    | HTTPS           |
| Middle East (Bahrain)     | me-south-1    | iot.me-south-1.amazonaws.com    | HTTPS           |
| South America (São Paulo) | sa-east-1     | iot.sa-east-1.amazonaws.com     | HTTPS           |
| AWS GovCloud (US-East)    | us-gov-east-1 | iot.us-gov-east-1.amazonaws.com | HTTPS, MQTT     |
| AWS GovCloud (US-West)    | us-gov-west-1 | iot.us-gov-west-1.amazonaws.com | HTTPS           |

## AWS IoT Core - data plane endpoints

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                                 | <b>Protocol</b> |
|--------------------------|----------------|---|-----------------|
| US East (Ohio)           | us-east-2      | <i>prefix</i> .iot.us-east-2.amazonaws.com      | MQTT            |
| US East (N. Virginia)    | us-east-1      | <i>prefix</i> .iot.us-east-1.amazonaws.com      | MQTT            |
| US West (N. California)  | us-west-1      | <i>prefix</i> .iot.us-west-1.amazonaws.com      | MQTT            |
| US West (Oregon)         | us-west-2      | <i>prefix</i> .iot.us-west-2.amazonaws.com      | MQTT            |
| Asia Pacific (Hong Kong) | ap-east-1      | <i>prefix</i> .iot.ap-east-1.amazonaws.com      | MQTT            |
| Asia Pacific (Mumbai)    | ap-south-1     | <i>prefix</i> .iot.ap-south-1.amazonaws.com     | MQTT            |
| Asia Pacific (Seoul)     | ap-northeast-2 | <i>prefix</i> .iot.ap-northeast-2.amazonaws.com | MQTT            |
| Asia Pacific (Singapore) | ap-southeast-1 | <i>prefix</i> .iot.ap-southeast-1.amazonaws.com | MQTT            |
| Asia Pacific (Sydney)    | ap-southeast-2 | <i>prefix</i> .iot.ap-southeast-2.amazonaws.com | MQTT            |
| Asia Pacific (Tokyo)     | ap-northeast-1 | <i>prefix</i> .iot.ap-northeast-1.amazonaws.com | MQTT            |
| Canada (Central)         | ca-central-1   | <i>prefix</i> .iot.ca-central-1.amazonaws.com   | MQTT            |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>                                   | <b>Protocol</b> |
|---------------------------|----------------|---|-----------------|
| China (Beijing)           | cn-north-1     | <i>prefix.iot.cn-north-1.amazonaws.com.cn</i>     | MQTT            |
| China (Ningxia)           | cn-northwest-1 | <i>prefix.iot.cn-northwest-1.amazonaws.com.cn</i> | MQTT            |
| Europe (Frankfurt)        | eu-central-1   | <i>prefix.iot.eu-central-1.amazonaws.com</i>      | MQTT            |
| Europe (Ireland)          | eu-west-1      | <i>prefix.iot.eu-west-1.amazonaws.com</i>         | MQTT            |
| Europe (London)           | eu-west-2      | <i>prefix.iot.eu-west-2.amazonaws.com</i>         | MQTT            |
| Europe (Paris)            | eu-west-3      | <i>prefix.iot.eu-west-3.amazonaws.com</i>         | MQTT            |
| Europe (Stockholm)        | eu-north-1     | <i>prefix.iot.eu-north-1.amazonaws.com</i>        | MQTT            |
| Middle East (Bahrain)     | me-south-1     | <i>prefix.iot.me-south-1.amazonaws.com</i>        | MQTT            |
| South America (São Paulo) | sa-east-1      | <i>prefix.iot.sa-east-1.amazonaws.com</i>         | MQTT            |
| AWS GovCloud (US-East)    | us-gov-east-1  | <i>prefix.iot.us-gov-east-1.amazonaws.com</i>     | MQTT            |
| AWS GovCloud (US-West)    | us-gov-west-1  | <i>prefix.iot.us-gov-west-1.amazonaws.com</i>     | MQTT            |

## AWS IoT Device Management - jobs data endpoints

AWS IoT Device Management supports additional endpoints for working with jobs. These endpoints add an AWS account-specific prefix to the endpoints already listed and can be used with both the MQTT and HTTPS protocols. To look up your account-specific prefix, use the [describe-endpoint](#) command:

| <b>Region Name</b>       | <b>Region</b> | <b>Endpoint</b>                                 | <b>Protocol</b> |
|--------------------------|---------------|---|-----------------|
| US East (Ohio)           | us-east-2     | <i>prefix.jobs.iot.us-east-2.amazonaws.com</i>  | HTTPS           |
| US East (N. Virginia)    | us-east-1     | <i>prefix.jobs.iot.us-east-1.amazonaws.com</i>  | HTTPS           |
| US West (N. California)  | us-west-1     | <i>prefix.jobs.iot.us-west-1.amazonaws.com</i>  | HTTPS           |
| US West (Oregon)         | us-west-2     | <i>prefix.jobs.iot.us-west-2.amazonaws.com</i>  | HTTPS           |
| Asia Pacific (Hong Kong) | ap-east-1     | <i>prefix.jobs.iot.ap-east-1.amazonaws.com</i>  | HTTPS           |
| Asia Pacific (Mumbai)    | ap-south-1    | <i>prefix.jobs.iot.ap-south-1.amazonaws.com</i> | HTTPS           |

| Region Name               | Region         | Endpoint   | Protocol |
|---------------------------|----------------|--|----------|
| Asia Pacific (Seoul)      | ap-northeast-2 | <i>prefix.jobs.iot.ap-northeast-2.amazonaws.com</i>    | HTTPS    |
| Asia Pacific (Singapore)  | ap-southeast-1 | <i>prefix.jobs.iot.ap-southeast-1.amazonaws.com</i>    | HTTPS    |
| Asia Pacific (Sydney)     | ap-southeast-2 | <i>prefix.jobs.iot.ap-southeast-2.amazonaws.com</i>    | HTTPS    |
| Asia Pacific (Tokyo)      | ap-northeast-1 | <i>prefix.jobs.iot.ap-northeast-1.amazonaws.com</i>    | HTTPS    |
| Canada (Central)          | ca-central-1   | <i>prefix.jobs.iot.ca-central-1.amazonaws.com</i>      | HTTPS    |
| China (Beijing)           | cn-north-1     | <i>prefix.jobs.iot.cn-north-1.amazonaws.com.cn</i>     | HTTPS    |
| China (Ningxia)           | cn-northwest-1 | <i>prefix.jobs.iot.cn-northwest-1.amazonaws.com.cn</i> | HTTPS    |
| Europe (Frankfurt)        | eu-central-1   | <i>prefix.jobs.iot.eu-central-1.amazonaws.com</i>      | HTTPS    |
| Europe (Ireland)          | eu-west-1      | <i>prefix.jobs.iot.eu-west-1.amazonaws.com</i>         | HTTPS    |
| Europe (London)           | eu-west-2      | <i>prefix.jobs.iot.eu-west-2.amazonaws.com</i>         | HTTPS    |
| Europe (Paris)            | eu-west-3      | <i>prefix.jobs.iot.eu-west-3.amazonaws.com</i>         | HTTPS    |
| Europe (Stockholm)        | eu-north-1     | <i>prefix.jobs.iot.eu-north-1.amazonaws.com</i>        | HTTPS    |
| Middle East (Bahrain)     | me-south-1     | <i>prefix.jobs.iot.me-south-1.amazonaws.com</i>        | HTTPS    |
| South America (São Paulo) | sa-east-1      | <i>prefix.jobs.iot.sa-east-1.amazonaws.com</i>         | HTTPS    |
| AWS GovCloud (US-East)    | us-gov-east-1  | <i>prefix.jobs.iot.us-gov-east-1.amazonaws.com</i>     | HTTPS    |
| AWS GovCloud (US-West)    | us-gov-west-1  | <i>prefix.jobs.iot.us-gov-west-1.amazonaws.com</i>     | HTTPS    |

## AWS IoT Device Management - secure tunneling endpoints

AWS IoT supports additional endpoints for secure tunneling.

### Secure Tunneling Management APIs Endpoints

| Region Name    | Region    | Endpoint   | Protocol |  |
|----------------|-----------|--|----------|--|
| US East (Ohio) | us-east-2 | <i>api.tunneling.iot.us-east-2.amazonaws.com</i> | HTTPS    |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                                   | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
|                          |                | api.tunneling.iot-fips.us-east-2.amazonaws.com    | HTTPS           |  |
| US East (N. Virginia)    | us-east-1      | api.tunneling.iot.us-east-1.amazonaws.com         | HTTPS           |  |
|                          |                | api.tunneling.iot-fips.us-east-1.amazonaws.com    | HTTPS           |  |
| US West (N. California)  | us-west-1      | api.tunneling.iot.us-west-1.amazonaws.com         | HTTPS           |  |
|                          |                | api.tunneling.iot-fips.us-west-1.amazonaws.com    | HTTPS           |  |
| US West (Oregon)         | us-west-2      | api.tunneling.iot.us-west-2.amazonaws.com         | HTTPS           |  |
|                          |                | api.tunneling.iot-fips.us-west-2.amazonaws.com    | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | api.tunneling.iot.ap-east-1.amazonaws.com         | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | api.tunneling.iot.ap-south-1.amazonaws.com        | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | api.tunneling.iot.ap-northeast-2.amazonaws.com    | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | api.tunneling.iot.ap-southeast-1.amazonaws.com    | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | api.tunneling.iot.ap-southeast-2.amazonaws.com    | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | api.tunneling.iot.ap-northeast-1.amazonaws.com    | HTTPS           |  |
| Canada (Central)         | ca-central-1   | api.tunneling.iot.ca-central-1.amazonaws.com      | HTTPS           |  |
|                          |                | api.tunneling.iot-fips.ca-central-1.amazonaws.com | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | api.tunneling.iot.eu-central-1.amazonaws.com      | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | api.tunneling.iot.eu-west-1.amazonaws.com         | HTTPS           |  |
| Europe (London)          | eu-west-2      | api.tunneling.iot.eu-west-2.amazonaws.com         | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | api.tunneling.iot.eu-west-3.amazonaws.com         | HTTPS           |  |
| Europe (Stockholm)       | eu-north-1     | api.tunneling.iot.eu-north-1.amazonaws.com        | HTTPS           |  |

| <b>Region Name</b>        | <b>Region</b> | <b>Endpoint</b>   | <b>Protocol</b> |  |
|---------------------------|---------------|---|-----------------|--|
| Middle East (Bahrain)     | me-south-1    | api.tunneling.iot.me-south-1.amazonaws.com  | HTTPS           |  |
| South America (São Paulo) | sa-east-1     | api.tunneling.iot.sa-east-1.amazonaws.com   | HTTPS           |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | api.tunneling.iot.us-gov-east-1.amazonaws.com<br>api.tunneling.iot-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | api.tunneling.iot.us-gov-west-1.amazonaws.com<br>api.tunneling.iot-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |

### Secure Tunneling Device Connection Endpoints

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                                       | <b>Protocol</b> |
|--------------------------|----------------|---|-----------------|
| US East (Ohio)           | us-east-2      | wss://data.tunneling.iot.us-east-2.amazonaws.com      | HTTPS           |
| US East (N. Virginia)    | us-east-1      | wss://data.tunneling.iot.us-east-1.amazonaws.com      | HTTPS           |
| US West (N. California)  | us-west-1      | wss://data.tunneling.iot.us-west-1.amazonaws.com      | HTTPS           |
| US West (Oregon)         | us-west-2      | wss://data.tunneling.iot.us-west-2.amazonaws.com      | HTTPS           |
| Asia Pacific (Mumbai)    | ap-south-1     | wss://data.tunneling.iot.ap-south-1.amazonaws.com     | HTTPS           |
| Asia Pacific (Seoul)     | ap-northeast-2 | wss://data.tunneling.iot.ap-northeast-2.amazonaws.com | HTTPS           |
| Asia Pacific (Singapore) | ap-southeast-1 | wss://data.tunneling.iot.ap-southeast-1.amazonaws.com | HTTPS           |
| Asia Pacific (Sydney)    | ap-southeast-2 | wss://data.tunneling.iot.ap-southeast-2.amazonaws.com | HTTPS           |
| Asia Pacific (Tokyo)     | ap-northeast-1 | wss://data.tunneling.iot.ap-northeast-1.amazonaws.com | HTTPS           |
| Asia Pacific (Hong Kong) | ap-east-1      | wss://data.tunneling.iot.ap-east-1.amazonaws.com      | HTTPS           |
| Canada (Central)         | ca-central-1   | wss://data.tunneling.iot.ca-central-1.amazonaws.com   | HTTPS           |

| Region Name               | Region         | Endpoint   | Protocol |
|---------------------------|----------------|--|----------|
| China (Beijing)           | cn-north-1     | wss://data.tunneling.iot.cn-north-1.amazonaws.com.cn     | HTTPS    |
| China (Ningxia)           | cn-northwest-1 | wss://data.tunneling.iot.cn-northwest-1.amazonaws.com.cn | HTTPS    |
| Europe (Frankfurt)        | eu-central-1   | wss://data.tunneling.iot.eu-central-1.amazonaws.com      | HTTPS    |
| Europe (Ireland)          | eu-west-1      | wss://data.tunneling.iot.eu-west-1.amazonaws.com         | HTTPS    |
| Europe (London)           | eu-west-2      | wss://data.tunneling.iot.eu-west-2.amazonaws.com         | HTTPS    |
| Europe (Paris)            | eu-west-3      | wss://data.tunneling.iot.eu-west-3.amazonaws.com         | HTTPS    |
| Europe (Stockholm)        | eu-north-1     | wss://data.tunneling.iot.eu-north-1.amazonaws.com        | HTTPS    |
| South America (São Paulo) | sa-east-1      | wss://data.tunneling.iot.sa-east-1.amazonaws.com         | HTTPS    |
| Middle East (Bahrain)     | me-south-1     | wss://data.tunneling.iot.me-south-1.amazonaws.com        | HTTPS    |
| AWS GovCloud (US-East)    | us-gov-east-1  | wss://data.tunneling.iot.us-gov-east-1.amazonaws.com     | HTTPS    |
| AWS GovCloud (US-West)    | us-gov-west-1  | wss://data.tunneling.iot.us-gov-west-1.amazonaws.com     | HTTPS    |

## AWS IoT FIPS endpoints

AWS IoT provides endpoints that support the [Federal Information Processing Standard \(FIPS\) 140-2](#). Choose the appropriate FIPS compliant endpoint to access AWS IoT features in your AWS Region from [FIPS Endpoints by Service](#). For more information about the FIPs endpoints provided by AWS IoT, see [Connecting to AWS IoT FIPS endpoints](#).

## Service Quotas

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| <a href="#">AWS IoT Fleet Indexing (p. 319)</a>   |
| <a href="#">AWS IoT Jobs (p. 320)</a>             |
| <a href="#">AWS IoT Secure Tunneling (p. 323)</a> |

## AWS IoT Fleet Indexing

| Resource  | Default   | Notes                     | Adjustable |
|---|-----------|---------------------------|------------|
| Maximum length of a custom field name                     | 1024      |                           | Yes        |
| Maximum number of custom fields in AWS things index       | 5         |                           | Yes        |
| Maximum number of custom fields in AWS thing groups index | 5         |                           | Yes        |
| Maximum number of dynamic groups in the fleet index       | 100       |                           | Yes        |
| Maximum number of queries per second                      | 15        |                           | Yes        |
| Maximum number of query results per query                 | 500       |                           | No         |
| Maximum number of query terms per query                   | 5         |                           | Yes        |
| Maximum number of things in the fleet index               | Unlimited |                           | No         |
| Maximum number of * wildcard operators per query term     | 2         |                           | No         |
| Maximum number of ? wildcard operators per query term     | 5         |                           | No         |
| Maximum query length                                      | 1000      | UTF-8 encoded characters. | Yes        |

## AWS IoT Fleet Indexing Throttling

| API                      | Max Calls Per Second | Adjustable |
|--------------------------|----------------------|------------|
| DescribeIndex            | 10                   | Yes        |
| GetCardinality           | 15                   | Yes        |
| GetIndexingConfiguration | 20                   | Yes        |
| GetPercentiles           | 15                   | Yes        |
| GetStatistics            | 15                   | Yes        |
| ListIndices              | 5                    | Yes        |

| API                         | Max Calls Per Second | Adjustable |
|-----------------------------|----------------------|------------|
| SearchIndex                 | 15                   | Yes        |
| UpdateIndexingConfiguration | 1                    | Yes        |

## AWS IoT Jobs

| Resource                            | Minimum | Maximum         | Notes   | Adjustable |
|-------------------------------------|---------|-----------------|---|------------|
| Active snapshot and continuous jobs | 0       | 1000            | The maximum number of active jobs is 1000 (both snapshot and continuous jobs contribute to the limit).                          | Yes        |
| Data retention                      | N/A     | 730 days        | Job data and job execution data for inactive jobs (jobs that aren't IN_PROGRESS) is purged after 730 days.                      | No         |
| Job document variable substitution  | 0       | 10              | Jobs allows variable substitution for up to 10 pre-signed URLs in the Job Doc. Only pre-signed URLs are supported as variables. | No         |
| Concurrent jobs being deleted       | 0       | 10              | The maximum number of jobs that can have a DELETION_IN_PROGRESS status at the same time.  | Yes        |
| Comment                             | N/A     | 2028 characters |   | No         |
| Description                         | N/A     | 2028 characters |   | No         |
| Document                            | N/A     | 32768 bytes     | The maximum size of an Amazon S3 job document that can be sent to an AWS IoT device is 32 KB.                                   | Yes        |
| DocumentSource                      | N/A     | 1350 characters |   | No         |

| Resource                         | Minimum          | Maximum            | Notes   | Adjustable |
|----------------------------------|------------------|--------------------|---|------------|
| ExpiresInSec                     | 60 seconds       | 3600 seconds       | The lifetime of pre signed URLs must be configured greater than 60 seconds and less than 1 hour.  | No         |
| JobId                            | 1 character      | 64 characters      |   | No         |
| JobTemplateId                    | 1 character      | 64 characters      |   | No         |
| Job template description         | 1 character      | 2028 characters    |   | No         |
| Job templates per account        | N/A              | 100                |   | Yes        |
| CreateJobTemplate                | N/A              | 10 TPS             |   | Yes        |
| DescribeJobTemplate              | N/A              | 10 TPS             |   | Yes        |
| DeleteJobTemplate                | N/A              | 10 TPS             |   | Yes        |
| ListJobTemplates                 | N/A              | 10 TPS             |   | Yes        |
| MaximumJobExecutionsPerMinute    |                  | 1000               | Configures the roll out speed for a job. The minimum job execution roll rate must be 1 but the maximum roll rate for executing a job is adjustable. | Yes        |
| MaxResults                       | 1                | 250                | The maximum number of list results per page.  | No         |
| StatusDetail map key size        | 1 character      | 128 characters     |   | No         |
| StatusDetail map key:value pairs | 1 key:value pair | 10 key:value pairs |   | No         |
| StatusDetail map value size      | 1 character      | 1024 characters    |   | No         |
| Targets                          | 1                | 100                | The maximum number of targets that you can assign to a job.   | No         |

| Resource   | Minimum | Maximum             | Notes  | Adjustable |
|--|---------|---------------------|--|------------|
| <a href="#">DescribeJobExecutions</a><br>and<br><a href="#">GetPendingJobExecutions</a>  | N/A     | 200 TPS per account | If invoking one or more of these read APIs in the data plane <sup>†</sup> causes the associated AWS account to exceed 200 read transactions per second (TPS) in total, then the offending API invocation is throttled to maintain the maximum allowed 200 read TPS per AWS account. Be aware that in the control plane <sup>†</sup> , <a href="#">DescribeJobExecution</a> has a quota of 10 TPS per invocation. | No         |
| <a href="#">inProgressTimeoutInMinutes</a><br>property of<br><a href="#">TimeoutConfig</a>   | 1       | 10080               | Values are in minutes (1 minute to 7 days).  | No         |
| <a href="#">StartNextPendingJobExecution</a><br>and<br><a href="#">UpdateJobExecution</a>  | N/A     | 200 TPS per account | If invoking one or more of these write APIs in the data plane <sup>†</sup> causes the associated AWS account to exceed 200 write transactions per second (TPS) in total, then the offending API invocation is throttled to maintain the maximum allowed 200 write TPS per AWS account.   | No         |
| <a href="#">stepTimeoutInMinutes</a><br>value passed with<br><a href="#">UpdateJobExecution</a><br>and<br><a href="#">StartNextPendingJobExecution</a> | -1      | 10080               | Values are in minutes (1 minute to 7 days). A value of -1 is also valid when using the <a href="#">UpdateJobExecution</a> API and discards a previously set timer.   | No         |

<sup>†</sup> For definitions of data plane and control plane, see [What are the ways for accessing AWS IoT Core?](#) in the [AWS IoT Core FAQs](#)

## AWS IoT Secure Tunneling

| Resource                     | Quota  | Notes  | Adjustable |
|------------------------------|--|--|------------|
| Maximum bandwidth per tunnel | 800 kbps   |  | No         |
| Maximum services per tunnel  | 3  | You can initiate 1, 2, or 3 services per tunnel. | Yes        |
| Maximum connection rate      | 10 TPS   |  | Yes        |
| Maximum tunnel lifetime      | 12 hours   |  | No         |
| Tagging                      | See <a href="#">Tag Restrictions</a> in the <i>Amazon EC2 User Guide</i> . |  | No         |

| API                              | Transactions per second | Adjustable |
|----------------------------------|-------------------------|------------|
| <code>CloseTunnel</code>         | 1                       | Yes        |
| <code>DescribeTunnel</code>      | 10                      | Yes        |
| <code>ListTagsForResource</code> | 10                      | Yes        |
| <code>ListTunnels</code>         | 10                      | Yes        |
| <code>OpenTunnel</code>          | 1                       | Yes        |
| <code>TagResource</code>         | 10                      | Yes        |
| <code>UntagResource</code>       | 10                      | Yes        |

## Fleet Hub for AWS IoT Device Management

| Resource                         | Quota                      | Adjustable |
|----------------------------------|----------------------------|------------|
| Web applications                 | 10 per Region per account  | Yes        |
| Alarms                           | 100 per Region per account | Yes        |
| <code>CreateApplication</code>   | 10 TPS                     | Yes        |
| <code>DeleteApplication</code>   | 10 TPS                     | Yes        |
| <code>DescribeApplication</code> | 10 TPS                     | Yes        |
| <code>ListApplications</code>    | 10 TPS                     | Yes        |
| <code>ListTagsForResource</code> | 10 TPS                     | Yes        |

| Resource          | Quota  | Adjustable |
|-------------------|--------|------------|
| TagResource       | 10 TPS | Yes        |
| UntagResource     | 10 TPS | Yes        |
| UpdateApplication | 10 TPS | Yes        |

## AWS IoT Events endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

#### Control plane endpoints

The following table contains AWS Region-specific endpoints that AWS IoT Events supports for control plane operations. For more information, see [AWS IoT Events operations](#) in the *AWS IoT Events API Reference*.

| Region Name              | Region         | Endpoint                               | Protocol |
|--------------------------|----------------|--|----------|
| US East (Ohio)           | us-east-2      | iotevents.us-east-2.amazonaws.com      | HTTPS    |
| US East (N. Virginia)    | us-east-1      | iotevents.us-east-1.amazonaws.com      | HTTPS    |
| US West (Oregon)         | us-west-2      | iotevents.us-west-2.amazonaws.com      | HTTPS    |
| Asia Pacific (Mumbai)    | ap-south-1     | iotevents.ap-south-1.amazonaws.com     | HTTPS    |
| Asia Pacific (Seoul)     | ap-northeast-2 | iotevents.ap-northeast-2.amazonaws.com | HTTPS    |
| Asia Pacific (Singapore) | ap-southeast-1 | iotevents.ap-southeast-1.amazonaws.com | HTTPS    |
| Asia Pacific (Sydney)    | ap-southeast-2 | iotevents.ap-southeast-2.amazonaws.com | HTTPS    |
| Asia Pacific (Tokyo)     | ap-northeast-1 | iotevents.ap-northeast-1.amazonaws.com | HTTPS    |

| Region Name            | Region        | Endpoint                              | Protocol |  |
|------------------------|---------------|---------------------------------------|----------|--|
| Europe (Frankfurt)     | eu-central-1  | iotevents.eu-central-1.amazonaws.com  | HTTPS    |  |
| Europe (Ireland)       | eu-west-1     | iotevents.eu-west-1.amazonaws.com     | HTTPS    |  |
| Europe (London)        | eu-west-2     | iotevents.eu-west-2.amazonaws.com     | HTTPS    |  |
| AWS GovCloud (US-West) | us-gov-west-1 | iotevents.us-gov-west-1.amazonaws.com | HTTPS    |  |

## Data plane endpoints

The following table contains AWS Region-specific endpoints that AWS IoT Events supports for data plane operations. For more information, see [AWS IoT Events data operations](#) in the *AWS IoT Events API Reference*.

| Region Name              | Region         | Endpoint                                    | Protocol |  |
|--------------------------|----------------|---|----------|--|
| US East (Ohio)           | us-east-2      | data.iotevents.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | data.iotevents.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | data.iotevents.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai)    | ap-south-1     | data.iotevents.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | data.iotevents.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | data.iotevents.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | data.iotevents.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | data.iotevents.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Europe (Frankfurt)       | eu-central-1   | data.iotevents.eu-central-1.amazonaws.com   | HTTPS    |  |

| <b>Region Name</b>     | <b>Region</b> | <b>Endpoint</b>                            | <b>Protocol</b> |  |
|------------------------|---------------|--|-----------------|--|
| Europe (Ireland)       | eu-west-1     | data.iotevents.eu-west-1.amazonaws.com     | HTTPS           |  |
| Europe (London)        | eu-west-2     | data.iotevents.eu-west-2.amazonaws.com     | HTTPS           |  |
| AWS GovCloud (US-West) | us-gov-west-1 | data.iotevents.us-gov-west-1.amazonaws.com | HTTPS           |  |

## Service quotas

| <b>Name</b>  | <b>Default</b> | <b>Adjustable</b> |
|--|----------------|-------------------|
| Detector model definition size   | 512 Kilobytes  | No                |
| Detector model versions  | 500            | Yes               |
| Detector models  | 50             | Yes               |
| Detector models per input  | 10             | No                |
| Detectors per detector model   | 100,000        | Yes               |
| Inputs   | 50             | Yes               |
| Maximum actions per alarm model  | 10             | Yes               |
| Maximum actions per event  | 10             | Yes               |
| Maximum alarm model versions per alarm model                                   | 500            | Yes               |
| Maximum alarm models per account   | 200            | Yes               |
| Maximum alarm models per input   | 10             | No                |
| Maximum alarms per alarm model   | 100,000        | Yes               |
| Maximum events per state   | 20             | Yes               |
| Maximum messages per alarm per second  | 10             | No                |
| Maximum number of alarm models per property in an AWS IoT SiteWise asset model | 10             | Yes               |
| Maximum number of recipients per notification action in an alarm model         | 10             | Yes               |
| Maximum total messages evaluated per second                                    | 1,000          | Yes               |
| Maximum transition events per state  | 20             | Yes               |
| Message size   | 1 Kilobytes    | Yes               |
| Messages per detector per second   | 10             | No                |

| Name  | Default    | Adjustable |
|---|------------|------------|
| Minimum timer duration                              | 60 Seconds | Yes        |
| Number of detector model analyses in RUNNING status | 10         | Yes        |
| State variables per detector model definition       | 50         | Yes        |
| States per detector model                           | 20         | Yes        |
| Timers scheduled per detector                       | 5          | Yes        |
| Trigger expressions                                 | 20         | Yes        |

For more information, see [AWS IoT Events quotas](#) in the *AWS IoT Events User Guide*.

## AWS IoT Greengrass V1 endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service Endpoints

#### Control Plane Operations

The following table contains AWS Region-specific endpoints that AWS IoT Greengrass supports for group management operations.

| Region Name              | Region         | Endpoint                                | Protocol |
|--------------------------|----------------|---|----------|
| US East (Ohio)           | us-east-2      | greengrass.us-east-2.amazonaws.com      | HTTPS    |
| US East (N. Virginia)    | us-east-1      | greengrass.us-east-1.amazonaws.com      | HTTPS    |
| US West (Oregon)         | us-west-2      | greengrass.us-west-2.amazonaws.com      | HTTPS    |
| Asia Pacific (Mumbai)    | ap-south-1     | greengrass.ap-south-1.amazonaws.com     | HTTPS    |
| Asia Pacific (Seoul)     | ap-northeast-2 | greengrass.ap-northeast-2.amazonaws.com | HTTPS    |
| Asia Pacific (Singapore) | ap-southeast-1 | greengrass.ap-southeast-1.amazonaws.com | HTTPS    |

| Region Name            | Region         | Endpoint  | Protocol                                  |  |
|------------------------|----------------|---|---|--|
| Asia Pacific (Sydney)  | ap-southeast-2 | greengrass.ap-southeast-2.amazonaws.com   | HTTPS                                     |  |
| Asia Pacific (Tokyo)   | ap-northeast-1 | greengrass.ap-northeast-1.amazonaws.com   | HTTPS                                     |  |
| Europe (Frankfurt)     | eu-central-1   | greengrass.eu-central-1.amazonaws.com   | HTTPS                                     |  |
| Europe (Ireland)       | eu-west-1      | greengrass.eu-west-1.amazonaws.com  | HTTPS                                     |  |
| Europe (London)        | eu-west-2      | greengrass.eu-west-2.amazonaws.com  | HTTPS                                     |  |
| AWS GovCloud (US-East) | us-gov-east-1  | greengrass.us-gov-east-1.amazonaws.com<br>greengrass.us-gov-east-1.amazonaws.com<br>greengrass-ats.iot.us-gov-east-1.amazonaws.com<br>greengrass-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS<br>MQTT and HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West) | us-gov-west-1  | greengrass.us-gov-west-1.amazonaws.com<br>greengrass-ats.iot.us-gov-west-1.amazonaws.com<br>greengrass.us-gov-west-1.amazonaws.com  | HTTPS<br>MQTT and HTTPS<br>HTTPS          |  |

## AWS IoT Device Operations

The following table contains AWS Region-specific Amazon Trust Services (ATS) endpoints for AWS IoT device management operations, such as shadow sync. This is a data plane API.

To look up your account-specific endpoint, use the [aws iot describe-endpoint --endpoint-type iot:Data-ATS](#) command.

| Region Name           | Region     | Endpoint                                       | Protocol    |
|-----------------------|------------|--|-------------|
| US East (Ohio)        | us-east-2  | <i>prefix-ats.iot.us-east-2.amazonaws.com</i>  | HTTPS, MQTT |
| US East (N. Virginia) | us-east-1  | <i>prefix-ats.iot.us-east-1.amazonaws.com</i>  | HTTPS, MQTT |
| US West (Oregon)      | us-west-2  | <i>prefix-ats.iot.us-west-2.amazonaws.com</i>  | HTTPS, MQTT |
| Asia Pacific (Mumbai) | ap-south-1 | <i>prefix-ats.iot.ap-south-1.amazonaws.com</i> | HTTPS, MQTT |

| Region Name              | Region         | Endpoint   | Protocol    |
|--------------------------|----------------|--|-------------|
| Asia Pacific (Seoul)     | ap-northeast-2 | <i>prefix-ats.iot.ap-northeast-2.amazonaws.com</i> | HTTPS, MQTT |
| Asia Pacific (Singapore) | ap-southeast-1 | <i>prefix-ats.iot.ap-southeast-1.amazonaws.com</i> | HTTPS, MQTT |
| Asia Pacific (Sydney)    | ap-southeast-2 | <i>prefix-ats.iot.ap-southeast-2.amazonaws.com</i> | HTTPS, MQTT |
| Asia Pacific (Tokyo)     | ap-northeast-1 | <i>prefix-ats.iot.ap-northeast-1.amazonaws.com</i> | HTTPS, MQTT |
| China (Beijing)          | cn-north-1     | <i>prefix.ats.iot.cn-north-1.amazonaws.com.cn</i>  | HTTPS, MQTT |
| Europe (Frankfurt)       | eu-central-1   | <i>prefix-ats.iot.eu-central-1.amazonaws.com</i>   | HTTPS, MQTT |
| Europe (Ireland)         | eu-west-1      | <i>prefix-ats.iot.eu-west-1.amazonaws.com</i>      | HTTPS, MQTT |
| Europe (London)          | eu-west-2      | <i>prefix-ats.iot.eu-west-2.amazonaws.com</i>      | HTTPS, MQTT |
| AWS GovCloud (US-West)   | us-gov-west-1  | <i>prefix-ats.iot.us-gov-west-1.amazonaws.com</i>  | HTTPS, MQTT |
| AWS GovCloud (US-East)   | us-gov-east-1  | <i>prefix-ats.iot.us-gov-east-1.amazonaws.com</i>  | HTTPS, MQTT |

**Note**

Legacy Verisign endpoints are currently supported for [some Regions \(p. 330\)](#), but we recommend that you use ATS endpoints with ATS root certificate authority (CA) certificates. For more information, see [Server Authentication](#) in the *AWS IoT Developer Guide*.

## Discovery Operations

The following table contains AWS Region-specific ATS endpoints for device discovery operations using the [AWS IoT Greengrass Discovery API](#). This is a data plane API.

| Region Name           | Region         | Endpoint   | Protocol |
|-----------------------|----------------|--|----------|
| US East (Ohio)        | us-east-2      | <i>greengrass-ats.iot.us-east-2.amazonaws.com</i>      | HTTPS    |
| US East (N. Virginia) | us-east-1      | <i>greengrass-ats.iot.us-east-1.amazonaws.com</i>      | HTTPS    |
| US West (Oregon)      | us-west-2      | <i>greengrass-ats.iot.us-west-2.amazonaws.com</i>      | HTTPS    |
| Asia Pacific (Mumbai) | ap-south-1     | <i>greengrass-ats.iot.ap-south-1.amazonaws.com</i>     | HTTPS    |
| Asia Pacific (Seoul)  | ap-northeast-2 | <i>greengrass-ats.iot.ap-northeast-2.amazonaws.com</i> | HTTPS    |

| Region Name              | Region         | Endpoint  | Protocol |
|--------------------------|----------------|---|----------|
| Asia Pacific (Singapore) | ap-southeast-1 | greengrass-ats.iot.ap-southeast-1.amazonaws.com | HTTPS    |
| Asia Pacific (Sydney)    | ap-southeast-2 | greengrass-ats.iot.ap-southeast-2.amazonaws.com | HTTPS    |
| Asia Pacific (Tokyo)     | ap-northeast-1 | greengrass-ats.iot.ap-northeast-1.amazonaws.com | HTTPS    |
| China (Beijing)          | cn-north-1     | greengrass.ats.iot.cn-north-1.amazonaws.com.cn  | HTTPS    |
| Europe (Frankfurt)       | eu-central-1   | greengrass-ats.iot.eu-central-1.amazonaws.com   | HTTPS    |
| Europe (Ireland)         | eu-west-1      | greengrass-ats.iot.eu-west-1.amazonaws.com      | HTTPS    |
| Europe (London)          | eu-west-2      | greengrass-ats.iot.eu-west-2.amazonaws.com      | HTTPS    |
| AWS GovCloud (US-West)   | us-gov-west-1  | greengrass-ats.iot.us-gov-west-1.amazonaws.com  | HTTPS    |
| AWS GovCloud (US-East)   | us-gov-east-1  | greengrass-ats.iot.us-gov-east-1.amazonaws.com  | HTTPS    |

#### Note

Legacy Verisign endpoints are currently supported for [some Regions \(p. 330\)](#), but we recommend that you use ATS endpoints with ATS root CA certificates. For more information, see [Server authentication](#) in the *AWS IoT Developer Guide*.

## Supported Legacy Endpoints

We recommend that you use the ATS endpoints in the preceding tables with ATS root CA certificates. For backward compatibility, AWS IoT Greengrass currently supports legacy Verisign endpoints in the following AWS Regions. This support is expected to end in the future. For more information, see [Server authentication](#) in the *AWS IoT Developer Guide*.

When using legacy Verisign endpoints, you must use Verisign root CA certificates.

#### AWS IoT Device Operations (Legacy Endpoints)

| Region Name           | Region         | Endpoint  | Protocol    |
|-----------------------|----------------|---|-------------|
| US East (N. Virginia) | us-east-1      | <i>prefix</i> .iot.us-east-1.amazonaws.com      | HTTPS, MQTT |
| US West (Oregon)      | us-west-2      | <i>prefix</i> .iot.us-west-2.amazonaws.com      | HTTPS, MQTT |
| Asia Pacific (Sydney) | ap-southeast-2 | <i>prefix</i> .iot.ap-southeast-2.amazonaws.com | HTTPS, MQTT |
| Asia Pacific (Tokyo)  | ap-northeast-1 | <i>prefix</i> .iot.ap-northeast-1.amazonaws.com | HTTPS, MQTT |

| Region Name        | Region       | Endpoint                                     | Protocol    |
|--------------------|--------------|--|-------------|
| Europe (Frankfurt) | eu-central-1 | <i>prefix.iot.eu-central-1.amazonaws.com</i> | HTTPS, MQTT |
| Europe (Ireland)   | eu-west-1    | <i>prefix.iot.eu-west-1.amazonaws.com</i>    | HTTPS, MQTT |

To look up your account-specific legacy endpoint, use the [aws iot describe-endpoint --endpoint-type iot:Data](#) command.

#### Discovery Operations (Legacy Endpoints)

| Region Name           | Region         | Endpoint                                    | Protocol |
|-----------------------|----------------|---|----------|
| US East (N. Virginia) | us-east-1      | greengrass.iot.us-east-1.amazonaws.com      | HTTPS    |
| US West (Oregon)      | us-west-2      | greengrass.iot.us-west-2.amazonaws.com      | HTTPS    |
| Asia Pacific (Sydney) | ap-southeast-2 | greengrass.iot.ap-southeast-2.amazonaws.com | HTTPS    |
| Asia Pacific (Tokyo)  | ap-northeast-1 | greengrass.iot.ap-northeast-1.amazonaws.com | HTTPS    |
| Europe (Frankfurt)    | eu-central-1   | greengrass.iot.eu-central-1.amazonaws.com   | HTTPS    |
| Europe (Ireland)      | eu-west-1      | greengrass.iot.eu-west-1.amazonaws.com      | HTTPS    |

## Service Quotas

### AWS IoT Greengrass Cloud API

| Description   | Default   |
|---|---|
| Maximum number of AWS IoT devices per AWS IoT Greengrass group.                 | 2500  |
| Maximum number of Lambda functions per group.                                   | 200   |
| Maximum number of resources per Lambda function.                                | 20  |
| Maximum number of resources per group.  | 200   |
| Maximum number of transactions per second (TPS) on the AWS IoT Greengrass APIs. | See <a href="#">the section called "TPS" (p. 332)</a> . |
| Maximum number of subscriptions per group.                                      | 10000   |
| Maximum number of subscriptions that specify Cloud as the source per group.     | 50  |

| Description                          | Default                                |
|--------------------------------------|--|
| Maximum length of a core thing name. | 124 bytes of UTF-8 encoded characters. |

## TPS

The default quota for the maximum number of transactions per second on the AWS IoT Greengrass APIs depends on the API and the AWS Region where AWS IoT Greengrass is used.

For most APIs and [supported AWS Regions \(p. 327\)](#), the default quota is 30. Exceptions are noted in the following tables.

### API exceptions

| API              | Default |
|------------------|---------|
| CreateDeployment | 20      |

### AWS Region exceptions

| AWS Region             | Default |
|------------------------|---------|
| China (Beijing)        | 10      |
| AWS GovCloud (US-West) | 10      |
| AWS GovCloud (US-East) | 10      |

This quota applies per account and per API. For example, in the US East (N. Virginia) Region, each account has a default quota of 30 TPS, which is the aggregate of all API operation requests. Each API (such as `CreateGroupVersion` or `ListFunctionDefinitions`) has a quota of 30 TPS. This includes control plane and data plane operations. Requests that exceed the account or API quotas are throttled. To request account and API quota increases, including quotas for specific APIs, contact your AWS Enterprise Support representative.

## AWS IoT Greengrass Core

| Description   | Default   |
|---|---|
| Maximum number of routing table entries that specify Cloud as the source. | 50 (matches AWS IoT subscription quota)                 |
| Maximum size of messages sent by an AWS IoT device.                       | 128 KB (matches AWS IoT message size quota)             |
| Minimum message queue size in the Greengrass core router.                 | 256 KB  |
| Maximum length of a topic string.   | 256 bytes of UTF-8 encoded characters.                  |
| Maximum number of forward slashes (/) in a topic or topic filter.         | 7   |
| Minimum disk space needed to run the Greengrass Core software.            | 128 MB<br>400 MB when using <a href="#">OTA updates</a> |

| Description                                      | Default  |
|--|--|
| Minimum RAM to run the Greengrass Core software. | 128 MB   |
|  | 198 MB when using <a href="#">stream manager</a> |

The Greengrass Core software provides a service to detect the IP addresses of your Greengrass core devices. It sends this information to the AWS IoT Greengrass cloud service and allows AWS IoT devices to download the IP address of the Greengrass core they need to connect to.

Do not use this feature if any of the following is true:

- The IP address of a Greengrass core device changes frequently.
- The Greengrass core device is not always available to AWS IoT devices in its group.
- The Greengrass core has multiple IP addresses and an AWS IoT device is unable to reliably determine which address to use.
- Your organization's security policies don't allow you to send devices' IP addresses to the AWS Cloud.

## AWS IoT Greengrass V2 endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service Endpoints

#### Control Plane Operations

The following table contains AWS Region-specific endpoints that AWS IoT Greengrass supports for operations to manage components, devices, and deployments.

| Region Name           | Region         | Endpoint                                | Protocol |
|-----------------------|----------------|---|----------|
| US East (Ohio)        | us-east-2      | greengrass.us-east-2.amazonaws.com      | HTTPS    |
| US East (N. Virginia) | us-east-1      | greengrass.us-east-1.amazonaws.com      | HTTPS    |
| US West (Oregon)      | us-west-2      | greengrass.us-west-2.amazonaws.com      | HTTPS    |
| Asia Pacific (Mumbai) | ap-south-1     | greengrass.ap-south-1.amazonaws.com     | HTTPS    |
| Asia Pacific (Seoul)  | ap-northeast-2 | greengrass.ap-northeast-2.amazonaws.com | HTTPS    |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>  | <b>Protocol</b>                  |  |
|--------------------------|----------------|--|----------------------------------|--|
| Asia Pacific (Singapore) | ap-southeast-1 | greengrass.ap-southeast-1.amazonaws.com  | HTTPS                            |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | greengrass.ap-southeast-2.amazonaws.com  | HTTPS                            |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | greengrass.ap-northeast-1.amazonaws.com  | HTTPS                            |  |
| China (Beijing)          | cn-north-1     | greengrass.cn-north-1.amazonaws.com.cn   | HTTPS                            |  |
| Europe (Frankfurt)       | eu-central-1   | greengrass.eu-central-1.amazonaws.com  | HTTPS                            |  |
| Europe (Ireland)         | eu-west-1      | greengrass.eu-west-1.amazonaws.com   | HTTPS                            |  |
| Europe (London)          | eu-west-2      | greengrass.eu-west-2.amazonaws.com   | HTTPS                            |  |
| AWS GovCloud (US-West)   | us-gov-west-1  | greengrass.us-gov-west-1.amazonaws.com<br>greengrass.us-gov-west-1.amazonaws.com<br>greengrass-ats.iot.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS<br>MQTT and HTTPS |  |
| AWS GovCloud (US-East)   | us-gov-east-1  | greengrass.us-gov-east-1.amazonaws.com<br>greengrass.us-gov-east-1.amazonaws.com<br>greengrass-ats.iot.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS<br>MQTT and HTTPS |  |

For information about using AWS IoT Greengrass V2 in the AWS GovCloud Region, see [AWS GovCloud Endpoints](#).

## AWS IoT Device Operations

The following table contains AWS Region-specific Amazon Trust Services (ATS) endpoints for AWS IoT device management operations, such as shadow sync. This is a data plane API.

To look up your account-specific endpoint, use the `aws iot describe-endpoint --endpoint-type iot:Data-ATS` command.

| <b>Region Name</b>    | <b>Region</b> | <b>Endpoint</b>                               | <b>Protocol</b> |
|-----------------------|---------------|---|-----------------|
| US East (Ohio)        | us-east-2     | <i>prefix-ats.iot.us-east-2.amazonaws.com</i> | HTTPS, MQTT     |
| US East (N. Virginia) | us-east-1     | <i>prefix-ats.iot.us-east-1.amazonaws.com</i> | HTTPS, MQTT     |

| Region Name              | Region         | Endpoint   | Protocol    |
|--------------------------|----------------|--|-------------|
| US West (Oregon)         | us-west-2      | <i>prefix-ats.iot.us-west-2.amazonaws.com</i>      | HTTPS, MQTT |
| Asia Pacific (Mumbai)    | ap-south-1     | <i>prefix-ats.iot.ap-south-1.amazonaws.com</i>     | HTTPS, MQTT |
| Asia Pacific (Seoul)     | ap-northeast-2 | <i>prefix-ats.iot.ap-northeast-2.amazonaws.com</i> | HTTPS, MQTT |
| Asia Pacific (Singapore) | ap-southeast-1 | <i>prefix-ats.iot.ap-southeast-1.amazonaws.com</i> | HTTPS, MQTT |
| Asia Pacific (Sydney)    | ap-southeast-2 | <i>prefix-ats.iot.ap-southeast-2.amazonaws.com</i> | HTTPS, MQTT |
| Asia Pacific (Tokyo)     | ap-northeast-1 | <i>prefix-ats.iot.ap-northeast-1.amazonaws.com</i> | HTTPS, MQTT |
| China (Beijing)          | cn-north-1     | <i>prefix.ats.iot.cn-north-1.amazonaws.com.cn</i>  | HTTPS, MQTT |
| Europe (Frankfurt)       | eu-central-1   | <i>prefix-ats.iot.eu-central-1.amazonaws.com</i>   | HTTPS, MQTT |
| Europe (Ireland)         | eu-west-1      | <i>prefix-ats.iot.eu-west-1.amazonaws.com</i>      | HTTPS, MQTT |
| Europe (London)          | eu-west-2      | <i>prefix-ats.iot.eu-west-2.amazonaws.com</i>      | HTTPS, MQTT |
| AWS GovCloud (US-West)   | us-gov-west-1  | <i>prefix-ats.iot.us-gov-west-1.amazonaws.com</i>  | HTTPS, MQTT |
| AWS GovCloud (US-East)   | us-gov-east-1  | <i>prefix-ats.iot.us-gov-east-1.amazonaws.com</i>  | HTTPS, MQTT |

**Note**

Legacy Verisign endpoints are currently supported for [some Regions \(p. 336\)](#), but we recommend that you use ATS endpoints with ATS root certificate authority (CA) certificates. For more information, see [Server Authentication](#) in the *AWS IoT Developer Guide*.

## Date Plane Operations

The following table contains AWS Region-specific ATS endpoints for data plane API operations, such as [ResolveComponentCandidates](#).

| Region Name           | Region    | Endpoint  | Protocol |
|-----------------------|-----------|---|----------|
| US East (Ohio)        | us-east-2 | <i>greengrass-ats.iot.us-east-2.amazonaws.com</i> | HTTPS    |
| US East (N. Virginia) | us-east-1 | <i>greengrass-ats.iot.us-east-1.amazonaws.com</i> | HTTPS    |
| US West (Oregon)      | us-west-2 | <i>greengrass-ats.iot.us-west-2.amazonaws.com</i> | HTTPS    |

| Region Name              | Region         | Endpoint  | Protocol |
|--------------------------|----------------|---|----------|
| Asia Pacific (Mumbai)    | ap-south-1     | greengrass-ats.iot.ap-south-1.amazonaws.com     | HTTPS    |
| Asia Pacific (Seoul)     | ap-northeast-2 | greengrass-ats.iot.ap-northeast-2.amazonaws.com | HTTPS    |
| Asia Pacific (Singapore) | ap-southeast-1 | greengrass-ats.iot.ap-southeast-1.amazonaws.com | HTTPS    |
| Asia Pacific (Sydney)    | ap-southeast-2 | greengrass-ats.iot.ap-southeast-2.amazonaws.com | HTTPS    |
| Asia Pacific (Tokyo)     | ap-northeast-1 | greengrass-ats.iot.ap-northeast-1.amazonaws.com | HTTPS    |
| China (Beijing)          | cn-north-1     | greengrass.ats.iot.cn-north-1.amazonaws.com.cn  | HTTPS    |
| Europe (Frankfurt)       | eu-central-1   | greengrass-ats.iot.eu-central-1.amazonaws.com   | HTTPS    |
| Europe (Ireland)         | eu-west-1      | greengrass-ats.iot.eu-west-1.amazonaws.com      | HTTPS    |
| Europe (London)          | eu-west-2      | greengrass-ats.iot.eu-west-2.amazonaws.com      | HTTPS    |
| AWS GovCloud (US-West)   | us-gov-west-1  | greengrass-ats.iot.us-gov-west-1.amazonaws.com  | HTTPS    |
| AWS GovCloud (US-East)   | us-gov-east-1  | greengrass-ats.iot.us-gov-east-1.amazonaws.com  | HTTPS    |

#### Note

Legacy Verisign endpoints are currently supported for [some Regions \(p. 336\)](#), but we recommend that you use ATS endpoints with ATS root CA certificates. For more information, see [Server authentication](#) in the *AWS IoT Developer Guide*.

## Supported Legacy Endpoints

We recommend that you use the ATS endpoints in the preceding tables with ATS root CA certificates. For backward compatibility, AWS IoT Greengrass currently supports legacy Verisign endpoints in the following AWS Regions. This support is expected to end in the future. For more information, see [Server authentication](#) in the *AWS IoT Developer Guide*.

When using legacy Verisign endpoints, you must use Verisign root CA certificates.

[AWS IoT Device Operations \(Legacy Endpoints\)](#)

| Region Name           | Region    | Endpoint                                   | Protocol    |
|-----------------------|-----------|--|-------------|
| US East (N. Virginia) | us-east-1 | <i>prefix</i> .iot.us-east-1.amazonaws.com | HTTPS, MQTT |
| US West (Oregon)      | us-west-2 | <i>prefix</i> .iot.us-west-2.amazonaws.com | HTTPS, MQTT |

| Region Name           | Region         | Endpoint                                       | Protocol    |
|-----------------------|----------------|--|-------------|
| Asia Pacific (Sydney) | ap-southeast-2 | <i>prefix.iot.ap-southeast-2.amazonaws.com</i> | HTTPS, MQTT |
| Asia Pacific (Tokyo)  | ap-northeast-1 | <i>prefix.iot.ap-northeast-1.amazonaws.com</i> | HTTPS, MQTT |
| Europe (Frankfurt)    | eu-central-1   | <i>prefix.iot.eu-central-1.amazonaws.com</i>   | HTTPS, MQTT |
| Europe (Ireland)      | eu-west-1      | <i>prefix.iot.eu-west-1.amazonaws.com</i>      | HTTPS, MQTT |

To look up your account-specific legacy endpoint, use the `aws iot describe-endpoint --endpoint-type iot:Data` command.

#### Data Plane Operations (Legacy Endpoints)

| Region Name           | Region         | Endpoint                                    | Protocol |
|-----------------------|----------------|---|----------|
| US East (N. Virginia) | us-east-1      | greengrass.iot.us-east-1.amazonaws.com      | HTTPS    |
| US West (Oregon)      | us-west-2      | greengrass.iot.us-west-2.amazonaws.com      | HTTPS    |
| Asia Pacific (Sydney) | ap-southeast-2 | greengrass.iot.ap-southeast-2.amazonaws.com | HTTPS    |
| Asia Pacific (Tokyo)  | ap-northeast-1 | greengrass.iot.ap-northeast-1.amazonaws.com | HTTPS    |
| Europe (Frankfurt)    | eu-central-1   | greengrass.iot.eu-central-1.amazonaws.com   | HTTPS    |
| Europe (Ireland)      | eu-west-1      | greengrass.iot.eu-west-1.amazonaws.com      | HTTPS    |

## Service Quotas

The following tables describe quotas in AWS IoT Greengrass V2. For more information about quotas and how to request quota increases, see [AWS service quotas \(p. 631\)](#).

### Quotas for core devices

| Resource                                   | Quota                                 | Adjustable |
|--|---------------------------------------|------------|
| Maximum length of a core device thing name | 124 bytes of UTF-8 encoded characters | No         |

## Quotas for components

| Resource                                  | Quota                                   | Adjustable | Notes   |
|---|---|------------|---|
| Maximum number of components              | 5,000 components per Region             | Yes        |   |
| Maximum number of component versions      | 5,000 versions per component per Region | Yes        |   |
| Maximum size of component recipe          | 8 KB                                    | No         |   |
| Maximum total size of component artifacts | 2 GB                                    | No         | This quota applies to the sum of all artifacts for a component.   |
| Request rate for CreateComponentVersion   | 1 request per second per Region         | No         |   |
| Request rate for other API operations     | 30 requests per second per Region       | No         | <p>This quota applies per API operation.</p> <p><b>Exceptions</b></p> <ul style="list-style-type: none"> <li>• China (Beijing) – 10 requests per second per Region</li> <li>• AWS GovCloud (US-West) – 10 requests per second per Region</li> <li>• AWS GovCloud (US-East) – 10 requests per second per Region</li> </ul> |

## Quotas for deployments

| Resource   | Quota | Adjustable | Notes   |
|--|-------|------------|---|
| Maximum size of deployment document for a thing deployment (without large configuration support)       | 7 KB  | No         | The deployment document includes the component configurations, deployment configurations, and payload overhead. |
| Maximum size of deployment document for a thing group deployment (without large configuration support) | 31 KB | No         | The deployment document includes the component configurations, deployment configurations, and payload overhead. |

| Resource   | Quota | Adjustable | Notes   |
|--|-------|------------|---|
| Maximum size of deployment document with large configuration support | 10 MB | No         | The deployment document includes the component configurations, deployment configurations, and payload overhead. |

## AWS IoT SiteWise endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name              | Region         | Endpoint                                 | Protocol |
|--------------------------|----------------|--|----------|
| US East (N. Virginia)    | us-east-1      | iotsitewise.us-east-1.amazonaws.com      | HTTPS    |
| US West (Oregon)         | us-west-2      | iotsitewise.us-west-2.amazonaws.com      | HTTPS    |
| Asia Pacific (Singapore) | ap-southeast-1 | iotsitewise.ap-southeast-1.amazonaws.com | HTTPS    |
| Asia Pacific (Sydney)    | ap-southeast-2 | iotsitewise.ap-southeast-2.amazonaws.com | HTTPS    |
| Europe (Frankfurt)       | eu-central-1   | iotsitewise.eu-central-1.amazonaws.com   | HTTPS    |
| Europe (Ireland)         | eu-west-1      | iotsitewise.eu-west-1.amazonaws.com      | HTTPS    |
| AWS GovCloud (US-West)   | us-gov-west-1  | iotsitewise.us-gov-west-1.amazonaws.com  | HTTPS    |

### Service quotas

| Name                          | Default | Adjustable |
|-------------------------------|---------|------------|
| Depth of asset hierarchy tree | 10      | Yes        |

| Name   | Default | Adjustable |
|--|---------|------------|
| Number of OPC UA sources per gateway   | 100     | No         |
| Number of asset hierarchy definitions per asset model  | 10      | No         |
| Number of asset models per Region per AWS account  | 100     | Yes        |
| Number of asset models per hierarchy tree  | 20      | Yes        |
| Number of assets per asset model   | 10,000  | Yes        |
| Number of child assets per parent asset  | 100     | Yes        |
| Number of dashboards per project   | 100     | Yes        |
| Number of data points per second per data quality per asset property                               | 10      | No         |
| Number of data points processed per metric computation   | 200,000 | No         |
| Number of days between the start date in the past and today for GetInterpolatedAssetPropertyValues | 28      | Yes        |
| Number of functions per property formula expression  | 10      | No         |
| Number of gateways per Region per AWS account  | 100     | Yes        |
| Number of metrics per dashboard visualization  | 5       | Yes        |
| Number of portals per Region per AWS account   | 100     | Yes        |
| Number of projects per portal  | 100     | Yes        |
| Number of properties per asset model   | 200     | Yes        |
| Number of properties that depend on a single property  | 30      | No         |
| Number of properties that directly depend on a single property                                     | 20      | Yes        |
| Number of property variables per property formula expression                                       | 10      | No         |
| Number of results per GetInterpolatedAssetPropertyValues request                                   | 10      | Yes        |
| Number of root assets per project  | 1       | No         |
| Number of visualizations per dashboard   | 10      | Yes        |
| Rate of BatchPutAssetPropertyValue entries ingested per asset property                             | 10      | Yes        |
| Rate of GetInterpolatedAssetPropertyValues requests  | 500     | Yes        |
| Rate of data points computed   | 10,000  | Yes        |
| Rate of data points ingested   | 1,000   | Yes        |
| Request rate for asset API actions   | 30      | Yes        |
| Request rate for asset property data API actions   | 1,000   | Yes        |
| Request rate for model API actions and logging options   | 10      | Yes        |

For more information, see [AWS IoT SiteWise quotas](#) in the *AWS IoT SiteWise User Guide*.

# AWS IoT Things Graph endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name           | Region         | Endpoint                                    | Protocol |  |
|-----------------------|----------------|---|----------|--|
| US East (N. Virginia) | us-east-1      | iotthingsgraph.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)      | us-west-2      | iotthingsgraph.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Seoul)  | ap-northeast-2 | iotthingsgraph.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney) | ap-southeast-2 | iotthingsgraph.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)  | ap-northeast-1 | iotthingsgraph.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Europe (Ireland)      | eu-west-1      | iotthingsgraph.eu-west-1.amazonaws.com      | HTTPS    |  |

## Service quotas

| Name  | Default         | Adjustable          |
|---|-----------------|---------------------|
| Flow definition size                            | 10 Kilobytes    | <a href="#">Yes</a> |
| Maximum number of flows triggered               | 5 Count/Second  | <a href="#">Yes</a> |
| Maximum number of steps executed per deployment | 50 Count/Second | <a href="#">Yes</a> |
| TPS limit for AssociateEntityToThing            | 10 Count/Second | <a href="#">Yes</a> |
| TPS limit for CreateDeploymentConfiguration     | 10 Count/Second | <a href="#">Yes</a> |
| TPS limit for CreateFlowTemplate                | 10 Count/Second | <a href="#">Yes</a> |

| Name   | Default             | Adjustable |
|--|---------------------|------------|
| TPS limit for CreateSystemInstance             | 10 Count/<br>Second | Yes        |
| TPS limit for CreateSystemTemplate             | 10 Count/<br>Second | Yes        |
| TPS limit for DeleteDeploymentConfiguration    | 10 Count/<br>Second | Yes        |
| TPS limit for DeleteFlowTemplate               | 10 Count/<br>Second | Yes        |
| TPS limit for DeleteNamespace                  | 10 Count/<br>Second | Yes        |
| TPS limit for DeleteSystemInstance             | 10 Count/<br>Second | Yes        |
| TPS limit for DeleteSystemTemplate             | 10 Count/<br>Second | Yes        |
| TPS limit for DeployConfigurationToTarget      | 10 Count/<br>Second | Yes        |
| TPS limit for DeploySystemInstance             | 10 Count/<br>Second | Yes        |
| TPS limit for DeprecateDeploymentConfiguration | 10 Count/<br>Second | Yes        |
| TPS limit for DeprecateFlowTemplate            | 10 Count/<br>Second | Yes        |
| TPS limit for DeprecateSystemTemplate          | 10 Count/<br>Second | Yes        |
| TPS limit for DescribeNamespace                | 10 Count/<br>Second | Yes        |
| TPS limit for DissociateEntityFromThing        | 10 Count/<br>Second | Yes        |
| TPS limit for GetDeploymentConfiguration       | 10 Count/<br>Second | Yes        |
| TPS limit for GetEntities                      | 10 Count/<br>Second | Yes        |
| TPS limit for GetFlowTemplate                  | 10 Count/<br>Second | Yes        |
| TPS limit for GetFlowTemplateRevisions         | 10 Count/<br>Second | Yes        |
| TPS limit for GetNamespaceDeletionStatus       | 10 Count/<br>Second | Yes        |
| TPS limit for GetRecentUploads                 | 10 Count/<br>Second | Yes        |

| Name   | Default             | Adjustable |
|--|---------------------|------------|
| TPS limit for GetSystemInstance                | 10 Count/<br>Second | Yes        |
| TPS limit for GetSystemTemplate                | 10 Count/<br>Second | Yes        |
| TPS limit for GetSystemTemplateRevisions       | 10 Count/<br>Second | Yes        |
| TPS limit for GetUploadStatus                  | 10 Count/<br>Second | Yes        |
| TPS limit for ListFlowExecutionMessages        | 10 Count/<br>Second | Yes        |
| TPS limit for ListMappingPaths                 | 10 Count/<br>Second | Yes        |
| TPS limit for SearchDeploymentConfigurations   | 10 Count/<br>Second | Yes        |
| TPS limit for SearchEntities                   | 10 Count/<br>Second | Yes        |
| TPS limit for SearchFlowExecutions             | 10 Count/<br>Second | Yes        |
| TPS limit for SearchFlowTemplates              | 10 Count/<br>Second | Yes        |
| TPS limit for SearchSystemInstance             | 10 Count/<br>Second | Yes        |
| TPS limit for SearchSystemTemplates            | 10 Count/<br>Second | Yes        |
| TPS limit for SearchThings                     | 10 Count/<br>Second | Yes        |
| TPS limit for UndeploySystemInstance           | 10 Count/<br>Second | Yes        |
| TPS limit for UpdateFlowTemplate               | 10 Count/<br>Second | Yes        |
| TPS limit for UpdateSystemTemplate             | 10 Count/<br>Second | Yes        |
| TPS limit for UploadEntityDefinitions          | 10 Count/<br>Second | Yes        |
| TPS limit for ValidateEntityDefinitions        | 10 Count/<br>Second | Yes        |
| Total deployment configurations in a namespace | 100 Count           | Yes        |
| Total entities in a namespace                  | 500 Count           | Yes        |
| Total flow definitions in a namespace          | 100 Count           | Yes        |

| Name                | Default     | Adjustable |
|---------------------|-------------|------------|
| Upload request size | 1 Megabytes | No         |

## Amazon Interactive Video Service

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name           | Region    | Endpoint                    | Protocol |
|-----------------------|-----------|-----------------------------|----------|
| US East (N. Virginia) | us-east-1 | ivs.us-east-1.amazonaws.com | HTTPS    |
| US West (Oregon)      | us-west-2 | ivs.us-west-2.amazonaws.com | HTTPS    |
| Europe (Ireland)      | eu-west-1 | ivs.eu-west-1.amazonaws.com | HTTPS    |

### Service quotas

| Name                                   | Default                 | Adjustable |
|--|-------------------------|------------|
| Channels                               | 5,000                   | Yes        |
| Concurrent streams                     | 100                     | Yes        |
| Concurrent views                       | 15,000                  | Yes        |
| Ingest bitrate (channel type BASIC)    | 1.5 Megabits per second | No         |
| Ingest bitrate (channel type STANDARD) | 8.5 Megabits per second | No         |
| Metadata payload                       | 1 Kilobytes             | No         |
| Playback authorization key pairs       | 3                       | No         |
| Playback token size                    | 2 Kilobytes             | No         |

| Name                         | Default      | Adjustable |
|------------------------------|--------------|------------|
| PutMetadata rate per channel | 5 per second | No         |
| Recording configurations     | 20           | Yes        |
| Stream Key                   | 1            | No         |

For more information, see [Service Quotas in the Amazon IVS User Guide](#).

## Amazon Kendra endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#).

Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | kendra.us-east-2.amazonaws.com<br>kendra-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | kendra.us-east-1.amazonaws.com<br>kendra-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | kendra.us-west-2.amazonaws.com<br>kendra-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Asia Pacific (Singapore) | ap-southeast-1 | kendra.ap-southeast-1.amazonaws.com                                   | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | kendra.ap-southeast-2.amazonaws.com                                   | HTTPS          |  |
| Canada (Central)         | ca-central-1   | kendra.ca-central-1.amazonaws.com                                     | HTTPS          |  |
| Europe (Ireland)         | eu-west-1      | kendra.eu-west-1.amazonaws.com  | HTTPS          |  |

## Service quotas

| Name                                    | Default      | Adjustable |
|---|--------------|------------|
| Data sources (developer edition)        | 5            | No         |
| Data sources (enterprise edition)       | 50           | Yes        |
| Developer edition indexes               | 5            | Yes        |
| Enterprise edition indexes              | 5            | Yes        |
| Extracted text size                     | 5 Megabytes  | Yes        |
| FAQs                                    | 30           | Yes        |
| File size                               | 50 Megabytes | Yes        |
| Ingestion attributes string list size   | 10           | Yes        |
| Items in a query suggestions block list | 20,000       | Yes        |
| Query attributes user group list size   | 10           | Yes        |
| Query capacity units                    | 100          | Yes        |
| Query suggestions block list file size  | 2 Megabytes  | Yes        |
| Query suggestions block lists           | 1            | No         |
| Storage capacity units                  | 100          | Yes        |
| Synonym rules per thesaurus             | 10,000       | Yes        |
| Synonyms per term                       | 10           | No         |
| Thesauri                                | 1            | No         |
| Thesaurus file size                     | 5 Megabytes  | Yes        |

## Amazon Keyspaces (for Apache Cassandra) endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint                               | Protocol |  |
|--------------------------|----------------|--|----------|--|
| US East (Ohio)           | us-east-2      | cassandra.us-east-2.amazonaws.com      | TLS      |  |
| US East (N. Virginia)    | us-east-1      | cassandra.us-east-1.amazonaws.com      | TLS      |  |
| US West (N. California)  | us-west-1      | cassandra.us-west-1.amazonaws.com      | TLS      |  |
| US West (Oregon)         | us-west-2      | cassandra.us-west-2.amazonaws.com      | TLS      |  |
| Asia Pacific (Hong Kong) | ap-east-1      | cassandra.ap-east-1.amazonaws.com      | TLS      |  |
| Asia Pacific (Mumbai)    | ap-south-1     | cassandra.ap-south-1.amazonaws.com     | TLS      |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | cassandra.ap-northeast-2.amazonaws.com | TLS      |  |
| Asia Pacific (Singapore) | ap-southeast-1 | cassandra.ap-southeast-1.amazonaws.com | TLS      |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | cassandra.ap-southeast-2.amazonaws.com | TLS      |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | cassandra.ap-northeast-1.amazonaws.com | TLS      |  |
| Canada (Central)         | ca-central-1   | cassandra.ca-central-1.amazonaws.com   | TLS      |  |
| Europe (Frankfurt)       | eu-central-1   | cassandra.eu-central-1.amazonaws.com   | TLS      |  |
| Europe (Ireland)         | eu-west-1      | cassandra.eu-west-1.amazonaws.com      | TLS      |  |
| Europe (London)          | eu-west-2      | cassandra.eu-west-2.amazonaws.com      | TLS      |  |
| Europe (Paris)           | eu-west-3      | cassandra.eu-west-3.amazonaws.com      | TLS      |  |

| <b>Region Name</b>        | <b>Region</b> | <b>Endpoint</b>                    | <b>Protocol</b> |  |
|---------------------------|---------------|------------------------------------|-----------------|--|
| Europe (Stockholm)        | eu-north-1    | cassandra.eu-north-1.amazonaws.com | TLS             |  |
| Middle East (Bahrain)     | me-south-1    | cassandra.me-south-1.amazonaws.com | TLS             |  |
| South America (São Paulo) | sa-east-1     | cassandra.sa-east-1.amazonaws.com  | TLS             |  |

For the following AWS Regions, FIPS endpoints are available.

| <b>Region Name</b>    | <b>Region</b> | <b>FIPS Endpoint</b>                   | <b>Protocol</b> |
|-----------------------|---------------|--|-----------------|
| US East (N. Virginia) | us-east-1     | cassandra-fips.us-east-1.amazonaws.com | TLS             |
| US West (Oregon)      | us-west-2     | cassandra-fips.us-west-2.amazonaws.com | TLS             |

## Service quotas

| <b>Name</b>   | <b>Default</b> | <b>Adjustable</b> |
|---|----------------|-------------------|
| Account-level read throughput quota (Provisioned mode)            | 80,000         | Yes               |
| Account-level write throughput quota (Provisioned mode)           | 80,000         | Yes               |
| Concurrent DDL operations   | 50             | No                |
| Keyspaces per region  | 256            | Yes               |
| Max Schema size   | 358,400 Bytes  | No                |
| Max amount of data restored using Point-in-time Recovery (PITR)   | 5 Terabytes    | Yes               |
| Max clustering key size   | 850 Bytes      | No                |
| Max concurrent table restores using Point-in-time Recovery (PITR) | 4              | Yes               |
| Max partition key size  | 2,048 Bytes    | No                |
| Max row size  | 1 Megabytes    | No                |
| Max static data per logical partition                             | 1 Megabytes    | No                |

| Name                               | Default | Adjustable |
|------------------------------------|---------|------------|
| Table-level read throughput quota  | 40,000  | Yes        |
| Table-level write throughput quota | 40,000  | Yes        |
| Tables per region                  | 256     | Yes        |

For more information, see [Quotas for Amazon Keyspaces \(for Apache Cassandra\)](#) in the *Amazon Keyspaces (for Apache Cassandra) Developer Guide*.

## AWS Key Management Service endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name              | Region     | Endpoint                          | Protocol |
|--------------------------|------------|-----------------------------------|----------|
| US East (Ohio)           | us-east-2  | kms.us-east-2.amazonaws.com       | HTTPS    |
|                          |            | kms-fips.us-east-2.amazonaws.com  | HTTPS    |
| US East (N. Virginia)    | us-east-1  | kms.us-east-1.amazonaws.com       | HTTPS    |
|                          |            | kms-fips.us-east-1.amazonaws.com  | HTTPS    |
| US West (N. California)  | us-west-1  | kms.us-west-1.amazonaws.com       | HTTPS    |
|                          |            | kms-fips.us-west-1.amazonaws.com  | HTTPS    |
| US West (Oregon)         | us-west-2  | kms.us-west-2.amazonaws.com       | HTTPS    |
|                          |            | kms-fips.us-west-2.amazonaws.com  | HTTPS    |
| Africa (Cape Town)       | af-south-1 | kms.af-south-1.amazonaws.com      | HTTPS    |
|                          |            | kms-fips.af-south-1.amazonaws.com | HTTPS    |
| Asia Pacific (Hong Kong) | ap-east-1  | kms.ap-east-1.amazonaws.com       | HTTPS    |
|                          |            | kms-fips.ap-east-1.amazonaws.com  | HTTPS    |
| Asia Pacific (Mumbai)    | ap-south-1 | kms.ap-south-1.amazonaws.com      | HTTPS    |
|                          |            | kms-fips.ap-south-1.amazonaws.com | HTTPS    |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|---------------------------|----------------|---|-----------------|--|
| Asia Pacific (Osaka)      | ap-northeast-3 | kms.ap-northeast-3.amazonaws.com<br>kms-fips.ap-northeast-3.amazonaws.com | HTTPS<br>HTTPS  |  |
| Asia Pacific (Seoul)      | ap-northeast-2 | kms.ap-northeast-2.amazonaws.com<br>kms-fips.ap-northeast-2.amazonaws.com | HTTPS<br>HTTPS  |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | kms.ap-southeast-1.amazonaws.com<br>kms-fips.ap-southeast-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | kms.ap-southeast-2.amazonaws.com<br>kms-fips.ap-southeast-2.amazonaws.com | HTTPS<br>HTTPS  |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | kms.ap-northeast-1.amazonaws.com<br>kms-fips.ap-northeast-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| Canada (Central)          | ca-central-1   | kms.ca-central-1.amazonaws.com<br>kms-fips.ca-central-1.amazonaws.com     | HTTPS<br>HTTPS  |  |
| Europe (Frankfurt)        | eu-central-1   | kms.eu-central-1.amazonaws.com<br>kms-fips.eu-central-1.amazonaws.com     | HTTPS<br>HTTPS  |  |
| Europe (Ireland)          | eu-west-1      | kms.eu-west-1.amazonaws.com<br>kms-fips.eu-west-1.amazonaws.com           | HTTPS<br>HTTPS  |  |
| Europe (London)           | eu-west-2      | kms.eu-west-2.amazonaws.com<br>kms-fips.eu-west-2.amazonaws.com           | HTTPS<br>HTTPS  |  |
| Europe (Milan)            | eu-south-1     | kms.eu-south-1.amazonaws.com<br>kms-fips.eu-south-1.amazonaws.com         | HTTPS<br>HTTPS  |  |
| Europe (Paris)            | eu-west-3      | kms.eu-west-3.amazonaws.com<br>kms-fips.eu-west-3.amazonaws.com           | HTTPS<br>HTTPS  |  |
| Europe (Stockholm)        | eu-north-1     | kms.eu-north-1.amazonaws.com<br>kms-fips.eu-north-1.amazonaws.com         | HTTPS<br>HTTPS  |  |
| Middle East (Bahrain)     | me-south-1     | kms.me-south-1.amazonaws.com<br>kms-fips.me-south-1.amazonaws.com         | HTTPS<br>HTTPS  |  |
| South America (São Paulo) | sa-east-1      | kms.sa-east-1.amazonaws.com<br>kms-fips.sa-east-1.amazonaws.com           | HTTPS<br>HTTPS  |  |

| Region Name            | Region        | Endpoint                             | Protocol |  |
|------------------------|---------------|--------------------------------------|----------|--|
| AWS GovCloud (US-East) | us-gov-east-1 | kms.us-gov-east-1.amazonaws.com      | HTTPS    |  |
|                        |               | kms-fips.us-gov-east-1.amazonaws.com | HTTPS    |  |
| AWS GovCloud (US-West) | us-gov-west-1 | kms.us-gov-west-1.amazonaws.com      | HTTPS    |  |
|                        |               | kms-fips.us-gov-west-1.amazonaws.com | HTTPS    |  |

## Service quotas

### Note

The default value of the Cryptographic operations (symmetric) request rate quota varies by Region. For detailed information about Cryptographic operations (symmetric) request rate and the other AWS KMS quotas, see [Quotas](#) in the *AWS Key Management Service Developer Guide* or the [Service Quotas console](#).

| Name  | Default           | Adjustable |
|---|-------------------|------------|
| Aliases per CMK                                   | 50                | Yes        |
| CancelKeyDeletion request rate                    | 5 per second      | Yes        |
| ConnectCustomKeyStore request rate                | 5 per second      | Yes        |
| CreateAlias request rate                          | 5 per second      | Yes        |
| CreateCustomKeyStore request rate                 | 5 per second      | Yes        |
| CreateGrant request rate                          | 50 per second     | Yes        |
| CreateKey request rate                            | 5 per second      | Yes        |
| Cryptographic operations (ECC) request rate       | 300 per second    | Yes        |
| Cryptographic operations (RSA) request rate       | 500 per second    | Yes        |
| Cryptographic operations (symmetric) request rate | 50,000 per second | Yes        |
| Customer Master Keys (CMKs)                       | 10,000            | Yes        |
| DeleteAlias request rate                          | 15 per second     | Yes        |
| DeleteCustomKeyStore request rate                 | 5 per second      | Yes        |

| Name   | Default          | Adjustable |
|--|------------------|------------|
| DeleteImportedKeyMaterial request rate             | 5 per second     | Yes        |
| DescribeCustomKeyStores request rate               | 5 per second     | Yes        |
| DescribeKey request rate                           | 2,000 per second | Yes        |
| DisableKey request rate                            | 5 per second     | Yes        |
| DisableKeyRotation request rate                    | 5 per second     | Yes        |
| DisconnectCustomKeyStore request rate              | 5 per second     | Yes        |
| EnableKey request rate                             | 5 per second     | Yes        |
| EnableKeyRotation request rate                     | 15 per second    | Yes        |
| GenerateDataKeyPair (ECC_NIST_P256) request rate   | 25 per second    | Yes        |
| GenerateDataKeyPair (ECC_NIST_P384) request rate   | 10 per second    | Yes        |
| GenerateDataKeyPair (ECC_NIST_P521) request rate   | 5 per second     | Yes        |
| GenerateDataKeyPair (ECC_SECG_P256K1) request rate | 25 per second    | Yes        |
| GenerateDataKeyPair (RSA_2048) request rate        | 1 per second     | Yes        |
| GenerateDataKeyPair (RSA_3072) request rate        | 0.5 per second   | Yes        |
| GenerateDataKeyPair (RSA_4096) request rate        | 0.1 per second   | Yes        |
| GetKeyPolicy request rate                          | 1,000 per second | Yes        |
| GetKeyRotationStatus request rate                  | 1,000 per second | Yes        |
| GetParametersForImport request rate                | 0.25 per second  | Yes        |
| GetPublicKey request rate                          | 2,000 per second | Yes        |
| Grants per CMK                                     | 50,000           | Yes        |

| Name                              | Default          | Adjustable |
|-----------------------------------|------------------|------------|
| ImportKeyMaterial request rate    | 5 per second     | Yes        |
| Key policy document size          | 32,768 Bytes     | Yes        |
| ListAliases request rate          | 500 per second   | Yes        |
| ListGrants request rate           | 100 per second   | Yes        |
| ListKeyPolicies request rate      | 100 per second   | Yes        |
| ListKeys request rate             | 500 per second   | Yes        |
| ListResourceTags request rate     | 2,000 per second | Yes        |
| ListRetirableGrants request rate  | 100 per second   | Yes        |
| PutKeyPolicy request rate         | 15 per second    | Yes        |
| ReplicateKey request rate         | 5 per second     | Yes        |
| RetireGrant request rate          | 30 per second    | Yes        |
| RevokeGrant request rate          | 30 per second    | Yes        |
| ScheduleKeyDeletion request rate  | 15 per second    | Yes        |
| TagResource request rate          | 10 per second    | Yes        |
| UntagResource request rate        | 5 per second     | Yes        |
| UpdateAlias request rate          | 5 per second     | Yes        |
| UpdateCustomKeyStore request rate | 5 per second     | Yes        |
| UpdateKeyDescription request rate | 5 per second     | Yes        |
| UpdatePrimaryRegion request rate  | 5 per second     | Yes        |

# Amazon Kinesis Data Analytics endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint                                      | Protocol |  |
|--------------------------|----------------|---|----------|--|
| US East (Ohio)           | us-east-2      | kinesisanalytics.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | kinesisanalytics.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (N. California)  | us-west-1      | kinesisanalytics.us-west-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | kinesisanalytics.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Hong Kong) | ap-east-1      | kinesisanalytics.ap-east-1.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai)    | ap-south-1     | kinesisanalytics.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | kinesisanalytics.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | kinesisanalytics.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | kinesisanalytics.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | kinesisanalytics.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)         | ca-central-1   | kinesisanalytics.ca-central-1.amazonaws.com   | HTTPS    |  |

| Region Name               | Region        | Endpoint                                     | Protocol |  |
|---------------------------|---------------|--|----------|--|
| Europe (Frankfurt)        | eu-central-1  | kinesisanalytics.eu-central-1.amazonaws.com  | HTTPS    |  |
| Europe (Ireland)          | eu-west-1     | kinesisanalytics.eu-west-1.amazonaws.com     | HTTPS    |  |
| Europe (London)           | eu-west-2     | kinesisanalytics.eu-west-2.amazonaws.com     | HTTPS    |  |
| Europe (Milan)            | eu-south-1    | kinesisanalytics.eu-south-1.amazonaws.com    | HTTPS    |  |
| Europe (Paris)            | eu-west-3     | kinesisanalytics.eu-west-3.amazonaws.com     | HTTPS    |  |
| Europe (Stockholm)        | eu-north-1    | kinesisanalytics.eu-north-1.amazonaws.com    | HTTPS    |  |
| Middle East (Bahrain)     | me-south-1    | kinesisanalytics.me-south-1.amazonaws.com    | HTTPS    |  |
| South America (São Paulo) | sa-east-1     | kinesisanalytics.sa-east-1.amazonaws.com     | HTTPS    |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | kinesisanalytics.us-gov-east-1.amazonaws.com | HTTPS    |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | kinesisanalytics.us-gov-west-1.amazonaws.com | HTTPS    |  |

## Service quotas

| Name  | Default | Adjustable |
|---|---------|------------|
| Apache Flink Kinesis Processing Units (KPUss)           | 32      | Yes        |
| Application count                                       | 50      | Yes        |
| Input Parallelism in input streams for SQL applications | 64      | No         |
| Kinesis Processing Units (KPUss)                        | 8       | Yes        |
| SQL Kinesis Processing Units (KPUss)                    | 8       | Yes        |

For more information, see [Quotas](#) in the *Amazon Kinesis Data Analytics for Apache Flink Developer Guide*.

# Amazon Kinesis Data Firehose endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | firehose.us-east-2.amazonaws.com<br>firehose-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | firehose.us-east-1.amazonaws.com<br>firehose-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | firehose.us-west-1.amazonaws.com<br>firehose-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | firehose.us-west-2.amazonaws.com<br>firehose-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Africa (Cape Town)       | af-south-1     | firehose.af-south-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Hong Kong) | ap-east-1      | firehose.ap-east-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | firehose.ap-south-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | firehose.ap-northeast-3.amazonaws.com                                     | HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | firehose.ap-northeast-2.amazonaws.com                                     | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | firehose.ap-southeast-1.amazonaws.com                                     | HTTPS          |  |

| Region Name               | Region         | Endpoint  | Protocol       |  |
|---------------------------|----------------|---|----------------|--|
| Asia Pacific (Sydney)     | ap-southeast-2 | firehose.ap-southeast-2.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | firehose.ap-northeast-1.amazonaws.com   | HTTPS          |  |
| Canada (Central)          | ca-central-1   | firehose.ca-central-1.amazonaws.com   | HTTPS          |  |
| Europe (Frankfurt)        | eu-central-1   | firehose.eu-central-1.amazonaws.com   | HTTPS          |  |
| Europe (Ireland)          | eu-west-1      | firehose.eu-west-1.amazonaws.com  | HTTPS          |  |
| Europe (London)           | eu-west-2      | firehose.eu-west-2.amazonaws.com  | HTTPS          |  |
| Europe (Milan)            | eu-south-1     | firehose.eu-south-1.amazonaws.com   | HTTPS          |  |
| Europe (Paris)            | eu-west-3      | firehose.eu-west-3.amazonaws.com  | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1     | firehose.eu-north-1.amazonaws.com   | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1     | firehose.me-south-1.amazonaws.com   | HTTPS          |  |
| South America (São Paulo) | sa-east-1      | firehose.sa-east-1.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | firehose.us-gov-east-1.amazonaws.com<br>firehose-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | firehose.us-gov-west-1.amazonaws.com<br>firehose-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name                                  | Default | Adjustable |
|---------------------------------------|---------|------------|
| Delivery streams                      | 50      | Yes        |
| Rate of CreateDeliveryStream requests | 5       | No         |

| Name   | Default | Adjustable |
|--|---------|------------|
| Rate of DeleteDeliveryStream requests          | 5       | No         |
| Rate of DescribeDeliveryStream requests        | 5       | No         |
| Rate of ListDeliveryStream requests            | 5       | No         |
| Rate of ListTagsForDeliveryStream requests     | 5       | No         |
| Rate of Put requests                           | 2,000   | No         |
| Rate of StartDeliveryStreamEncryption requests | 5       | No         |
| Rate of StopDeliveryStreamEncryption requests  | 5       | No         |
| Rate of TagDeliveryStream requests             | 5       | No         |
| Rate of UntagDeliveryStream requests           | 5       | No         |
| Rate of UpdateDestination requests             | 5       | No         |
| Rate of data                                   | 5       | No         |
| Rate of records                                | 500,000 | No         |

For more information, see [Amazon Kinesis Data Firehose Quotas](#) in the *Amazon Kinesis Data Firehose Developer Guide*.

## Amazon Kinesis Data Streams endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name             | Region    | Endpoint                             | Protocol |
|-------------------------|-----------|--------------------------------------|----------|
| US East (Ohio)          | us-east-2 | kinesis.us-east-2.amazonaws.com      | HTTPS    |
|                         |           | kinesis-fips.us-east-2.amazonaws.com | HTTPS    |
| US East (N. Virginia)   | us-east-1 | kinesis.us-east-1.amazonaws.com      | HTTPS    |
|                         |           | kinesis-fips.us-east-1.amazonaws.com | HTTPS    |
| US West (N. California) | us-west-1 | kinesis.us-west-1.amazonaws.com      | HTTPS    |
|                         |           | kinesis-fips.us-west-1.amazonaws.com | HTTPS    |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| US West (Oregon)         | us-west-2      | kinesis.us-west-2.amazonaws.com<br>kinesis-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS  |  |
| Africa (Cape Town)       | af-south-1     | kinesis.af-south-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | kinesis.ap-east-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | kinesis.ap-south-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | kinesis.ap-northeast-3.amazonaws.com                                    | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | kinesis.ap-northeast-2.amazonaws.com                                    | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | kinesis.ap-southeast-1.amazonaws.com                                    | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | kinesis.ap-southeast-2.amazonaws.com                                    | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | kinesis.ap-northeast-1.amazonaws.com                                    | HTTPS           |  |
| Canada (Central)         | ca-central-1   | kinesis.ca-central-1.amazonaws.com                                      | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | kinesis.eu-central-1.amazonaws.com                                      | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | kinesis.eu-west-1.amazonaws.com   | HTTPS           |  |
| Europe (London)          | eu-west-2      | kinesis.eu-west-2.amazonaws.com   | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | kinesis.eu-south-1.amazonaws.com  | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | kinesis.eu-west-3.amazonaws.com   | HTTPS           |  |
| Europe (Stockholm)       | eu-north-1     | kinesis.eu-north-1.amazonaws.com  | HTTPS           |  |

| Region Name               | Region        | Endpoint   | Protocol       |  |
|---------------------------|---------------|--|----------------|--|
| Middle East (Bahrain)     | me-south-1    | kinesis.me-south-1.amazonaws.com   | HTTPS          |  |
| South America (São Paulo) | sa-east-1     | kinesis.sa-east-1.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | kinesis.us-gov-east-1.amazonaws.com<br>kinesis.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | kinesis.us-gov-west-1.amazonaws.com<br>kinesis.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name              | Default | Adjustable |
|-------------------|---------|------------|
| Shards per Region | 500     | Yes        |

For more information, see [Amazon Kinesis Data Streams Quotas](#) in the *Amazon Kinesis Data Streams Developer Guide*.

## Amazon Kinesis Video Streams endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name           | Region    | Endpoint                             | Protocol |  |
|-----------------------|-----------|--------------------------------------|----------|--|
| US East (Ohio)        | us-east-2 | kinesisvideo.us-east-2.amazonaws.com | HTTPS    |  |
| US East (N. Virginia) | us-east-1 | kinesisvideo.us-east-1.amazonaws.com | HTTPS    |  |
| US West (Oregon)      | us-west-2 | kinesisvideo.us-west-2.amazonaws.com | HTTPS    |  |

| Region Name               | Region         | Endpoint                                  | Protocol |  |
|---------------------------|----------------|---|----------|--|
| Asia Pacific (Hong Kong)  | ap-east-1      | kinesisvideo.ap-east-1.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai)     | ap-south-1     | kinesisvideo.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Seoul)      | ap-northeast-2 | kinesisvideo.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | kinesisvideo.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | kinesisvideo.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | kinesisvideo.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)          | ca-central-1   | kinesisvideo.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)        | eu-central-1   | kinesisvideo.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)          | eu-west-1      | kinesisvideo.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)           | eu-west-2      | kinesisvideo.eu-west-2.amazonaws.com      | HTTPS    |  |
| Europe (Paris)            | eu-west-3      | kinesisvideo.eu-west-3.amazonaws.com      | HTTPS    |  |
| South America (São Paulo) | sa-east-1      | kinesisvideo.sa-east-1.amazonaws.com      | HTTPS    |  |

## Service quotas

| Name   | Default       | Adjustable |
|--|---------------|------------|
| ConnectAsMaster GO_AWAY message grace period | 60 Seconds    | No         |
| ConnectAsMaster connection duration          | 3,600 Seconds | No         |

| Name  | Default                 | Adjustable |
|---|-------------------------|------------|
| ConnectAsMaster connections per signaling channel | 1                       | No         |
| ConnectAsMaster idle connection timeout           | 600 Seconds             | No         |
| ConnectAsViewer GO_AWAY message grace period      | 60 Seconds              | No         |
| ConnectAsViewer connection duration               | 3,600 Seconds           | No         |
| ConnectAsViewer connections per signaling channel | 10                      | Yes        |
| ConnectAsViewer idle connection timeout           | 600 Seconds             | No         |
| GetClip file size                                 | 100 Megabytes           | No         |
| GetClip fragments                                 | 200                     | No         |
| GetDASHManifestPlaylist fragments                 | 5,000                   | No         |
| GetHLSMediaPlaylist fragments                     | 5,000                   | No         |
| GetMedia bandwidth                                | 200 Megabits per second | Yes        |
| GetMedia concurrent connections per stream        | 3                       | Yes        |
| GetMediaForFragmentList bandwidth                 | 200 Megabits per second | Yes        |
| GetMediaForFragmentList connections per stream    | 5                       | No         |
| GetMediaForFragmentList fragments                 | 1,000                   | No         |
| Number of signaling channels                      | 1,000                   | Yes        |
| Number of video streams                           | 2,500                   | Yes        |
| PutMedia bandwidth                                | 100 Megabits per second | Yes        |
| PutMedia concurrent connections per stream        | 1                       | No         |
| PutMedia fragment duration                        | 10 Seconds              | Yes        |
| PutMedia fragment size                            | 50 Megabytes            | No         |
| PutMedia minimum fragment duration                | 1 Seconds               | No         |
| PutMedia tracks                                   | 3                       | No         |

| Name   | Default        | Adjustable |
|--|----------------|------------|
| Rate of ConnectAsMasterAPI requests per signaling channel          | 3 per second   | No         |
| Rate of ConnectAsViewerAPI requests per signaling channel          | 3 per second   | No         |
| Rate of CreateSignalingChannelAPI requests                         | 50 per second  | Yes        |
| Rate of CreateStreamAPI requests                                   | 50 per second  | Yes        |
| Rate of DeleteSignalingChannelAPI requests                         | 50 per second  | Yes        |
| Rate of DeleteSignalingChannelAPI requests per signaling channel   | 5 per second   | Yes        |
| Rate of DeleteStreamAPI requests                                   | 50 per second  | Yes        |
| Rate of DeleteStreamAPI requests per stream                        | 5 per second   | Yes        |
| Rate of DescribeSignalingChannelAPI requests                       | 300 per second | Yes        |
| Rate of DescribeSignalingChannelAPI requests per signaling channel | 5 per second   | Yes        |
| Rate of DescribeStreamAPI requests                                 | 300 per second | Yes        |
| Rate of DescribeStreamAPI requests per stream                      | 5 per second   | Yes        |
| Rate of GetDASHManifestPlaylistAPI requests per session            | 5 per second   | Yes        |
| Rate of GetDASHStreamingSessionURLAPI requests per stream          | 25 per second  | Yes        |
| Rate of GetDataEndpointAPI requests                                | 300 per second | Yes        |
| Rate of GetDataEndpointAPI requests per stream                     | 5 per second   | Yes        |
| Rate of GetHLSMasterPlaylistAPI requests per session               | 5 per second   | Yes        |
| Rate of GetHLSMediaPlaylistAPI requests per session                | 5 per second   | Yes        |
| Rate of GetHLSStreamingSessionURLAPI requests per stream           | 25 per second  | Yes        |
| Rate of GetICEServerConfigAPI requests per signaling channel       | 5 per second   | No         |

| Name  | Default        | Adjustable |
|---|----------------|------------|
| Rate of GetMP4InitFragmentAPI requests per session                    | 5 per second   | Yes        |
| Rate of GetMP4MediaFragmentAPI requests per session                   | 20 per second  | Yes        |
| Rate of GetMediaAPI requests per stream                               | 5 per second   | Yes        |
| Rate of GetSignalingChannelEndpointAPI requests                       | 300 per second | Yes        |
| Rate of GetSignalingChannelEndpointAPI requests per signaling channel | 5 per second   | Yes        |
| Rate of GetTSFragmentAPI requests per session                         | 20 per second  | Yes        |
| Rate of ListSignalingChannelsAPI requests                             | 50 per second  | Yes        |
| Rate of ListStreamsAPI requests                                       | 50 per second  | Yes        |
| Rate of ListTagsForResourceAPI requests                               | 50 per second  | Yes        |
| Rate of ListTagsForResourceAPI requests per resource                  | 5 per second   | Yes        |
| Rate of ListTagsForStreamAPI requests                                 | 50 per second  | Yes        |
| Rate of ListTagsForStreamAPI requests per stream                      | 5 per second   | Yes        |
| Rate of PutMediaAPI requests per stream                               | 5 per second   | Yes        |
| Rate of SendAlexaOfferToMasterAPI requests per signaling channel      | 5 per second   | No         |
| Rate of SendICECandidateAPI requests per websocket connection         | 20 per second  | No         |
| Rate of SendSDPAnswerAPI requests per websocket connection            | 5 per second   | No         |
| Rate of SendSDPOfferAPI requests per websocket connection             | 5 per second   | No         |
| Rate of TagResourceAPI requests                                       | 50 per second  | Yes        |
| Rate of TagResourceAPI requests per resource                          | 5 per second   | Yes        |
| Rate of TagStreamAPI requests   | 50 per second  | Yes        |

| Name   | Default               | Adjustable |
|--|-----------------------|------------|
| Rate of TagStreamAPI requests per stream                         | 5 per second          | Yes        |
| Rate of UntagResourceAPI requests                                | 50 per second         | Yes        |
| Rate of UntagResourceAPI requests per resource                   | 5 per second          | Yes        |
| Rate of UntagStreamAPI requests                                  | 50 per second         | Yes        |
| Rate of UntagStreamAPI requests per stream                       | 5 per second          | Yes        |
| Rate of UpdateDataRetentionAPI requests                          | 50 per second         | Yes        |
| Rate of UpdateDataRetentionAPI requests per stream               | 5 per second          | Yes        |
| Rate of UpdateSignalingChannelAPI requests                       | 50 per second         | Yes        |
| Rate of UpdateSignalingChannelAPI requests per signaling channel | 5 per second          | Yes        |
| Rate of UpdateStreamAPI requests                                 | 50 per second         | Yes        |
| Rate of UpdateStreamAPI requests per stream                      | 5 per second          | Yes        |
| Rate of archived fragment media per stream                       | 500 per second        | Yes        |
| Rate of archived fragment metadata per stream                    | 10,000 per second     | Yes        |
| SendICECandidate message payload size                            | 10 Kilobytes          | No         |
| SendSDPAnswer message payload size                               | 10 Kilobytes          | No         |
| SendSDPOffer message payload size                                | 10 Kilobytes          | No         |
| TURN session bandwidth   | 5 Megabits per second | No         |
| TURN session concurrent allocations per signaling channel        | 50                    | No         |
| TURN session expiration  | 300 Seconds           | No         |

For more information, see [Kinesis Video Streams quotas](#) in the *Amazon Kinesis Video Streams Developer Guide*.

# AWS Lake Formation endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | lakeformation.us-east-2.amazonaws.com<br>lakeformation-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | lakeformation.us-east-1.amazonaws.com<br>lakeformation-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | lakeformation.us-west-1.amazonaws.com<br>lakeformation-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | lakeformation.us-west-2.amazonaws.com<br>lakeformation-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Africa (Cape Town)       | af-south-1     | lakeformation.af-south-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Hong Kong) | ap-east-1      | lakeformation.ap-east-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | lakeformation.ap-south-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | lakeformation.ap-northeast-3.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | lakeformation.ap-northeast-2.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | lakeformation.ap-southeast-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | lakeformation.ap-southeast-2.amazonaws.com  | HTTPS          |  |

| Region Name               | Region         | Endpoint  | Protocol       |  |
|---------------------------|----------------|---|----------------|--|
| Asia Pacific (Tokyo)      | ap-northeast-1 | lakeformation.ap-northeast-1.amazonaws.com  | HTTPS          |  |
| Canada (Central)          | ca-central-1   | lakeformation.ca-central-1.amazonaws.com  | HTTPS          |  |
| Europe (Frankfurt)        | eu-central-1   | lakeformation.eu-central-1.amazonaws.com  | HTTPS          |  |
| Europe (Ireland)          | eu-west-1      | lakeformation.eu-west-1.amazonaws.com   | HTTPS          |  |
| Europe (London)           | eu-west-2      | lakeformation.eu-west-2.amazonaws.com   | HTTPS          |  |
| Europe (Milan)            | eu-south-1     | lakeformation.eu-south-1.amazonaws.com  | HTTPS          |  |
| Europe (Paris)            | eu-west-3      | lakeformation.eu-west-3.amazonaws.com   | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1     | lakeformation.eu-north-1.amazonaws.com  | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1     | lakeformation.me-south-1.amazonaws.com  | HTTPS          |  |
| South America (São Paulo) | sa-east-1      | lakeformation.sa-east-1.amazonaws.com   | HTTPS          |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | lakeformation.us-gov-west-1.amazonaws.com<br>lakeformation-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name                                      | Default | Adjustable |
|---|---------|------------|
| Length of a path that can be registered   | 700     | Yes        |
| Number of cross-account grants            | 1,600   | Yes        |
| Number of data lake administrators        | 10      | Yes        |
| Number of registered paths                | 10,000  | Yes        |
| Number of subfolders in an Amazon S3 path | 20      | Yes        |

# AWS Lambda endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | lambda.us-east-2.amazonaws.com<br>lambda-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | lambda.us-east-1.amazonaws.com<br>lambda-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | lambda.us-west-1.amazonaws.com<br>lambda-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | lambda.us-west-2.amazonaws.com<br>lambda-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Africa (Cape Town)       | af-south-1     | lambda.af-south-1.amazonaws.com                                       | HTTPS          |  |
| Asia Pacific (Hong Kong) | ap-east-1      | lambda.ap-east-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | lambda.ap-south-1.amazonaws.com                                       | HTTPS          |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | lambda.ap-northeast-3.amazonaws.com                                   | HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | lambda.ap-northeast-2.amazonaws.com                                   | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | lambda.ap-southeast-1.amazonaws.com                                   | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | lambda.ap-southeast-2.amazonaws.com                                   | HTTPS          |  |

| Region Name               | Region         | Endpoint  | Protocol       |  |
|---------------------------|----------------|---|----------------|--|
| Asia Pacific (Tokyo)      | ap-northeast-1 | lambda.ap-northeast-1.amazonaws.com   | HTTPS          |  |
| Canada (Central)          | ca-central-1   | lambda.ca-central-1.amazonaws.com   | HTTPS          |  |
| Europe (Frankfurt)        | eu-central-1   | lambda.eu-central-1.amazonaws.com   | HTTPS          |  |
| Europe (Ireland)          | eu-west-1      | lambda.eu-west-1.amazonaws.com  | HTTPS          |  |
| Europe (London)           | eu-west-2      | lambda.eu-west-2.amazonaws.com  | HTTPS          |  |
| Europe (Milan)            | eu-south-1     | lambda.eu-south-1.amazonaws.com   | HTTPS          |  |
| Europe (Paris)            | eu-west-3      | lambda.eu-west-3.amazonaws.com  | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1     | lambda.eu-north-1.amazonaws.com   | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1     | lambda.me-south-1.amazonaws.com   | HTTPS          |  |
| South America (São Paulo) | sa-east-1      | lambda.sa-east-1.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | lambda.us-gov-east-1.amazonaws.com<br>lambda-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | lambda.us-gov-west-1.amazonaws.com<br>lambda-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name                  | Default       | Adjustable |
|-----------------------|---------------|------------|
| Asynchronous payload  | 256 Kilobytes | No         |
| Burst concurrency     | 3,000         | No         |
| Concurrent executions | 1,000         | Yes        |

| Name  | Default          | Adjustable |
|---|------------------|------------|
| Deployment package size (console editor)  | 3 Megabytes      | No         |
| Deployment package size (direct upload)   | 50 Megabytes     | No         |
| Deployment package size (unzipped)  | 250 Megabytes    | No         |
| Elastic network interfaces per VPC  | 250              | Yes        |
| Environment variable size   | 4 Kilobytes      | No         |
| File descriptors  | 1,024            | No         |
| Function and layer storage  | 75 Gigabytes     | Yes        |
| Function layers   | 5                | No         |
| Function memory maximum   | 10,240 Megabytes | No         |
| Function memory minimum   | 128 Megabytes    | No         |
| Function resource-based policy  | 20 Kilobytes     | No         |
| Function timeout  | 900              | No         |
| Processes and threads   | 1,024            | No         |
| Rate of GetFunction API requests  | 100              | No         |
| Rate of GetPolicy API requests  | 15               | No         |
| Rate of control plane API requests (excludes invocation, GetFunction, and GetPolicy requests) | 15               | No         |
| Synchronous payload   | 6 Megabytes      | No         |
| Temporary storage   | 512 Megabytes    | No         |
| Test events (console editor)  | 10               | No         |

For more information, see [Lambda quotas in the AWS Lambda Developer Guide](#).

## AWS Launch Wizard endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#).

Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                        | <b>Protocol</b> |  |
|--------------------------|----------------|--|-----------------|--|
| US East (Ohio)           | us-east-2      | appwizard.us-east-2.amazonaws.com      | HTTP and HTTPS  |  |
| US East (N. Virginia)    | us-east-1      | appwizard.us-east-1.amazonaws.com      | HTTP and HTTPS  |  |
| US West (N. California)  | us-west-1      | appwizard.us-west-1.amazonaws.com      | HTTP and HTTPS  |  |
| US West (Oregon)         | us-west-2      | appwizard.us-west-2.amazonaws.com      | HTTP and HTTPS  |  |
| Africa (Cape Town)       | af-south-1     | appwizard.af-south-1.amazonaws.com     | HTTP and HTTPS  |  |
| Asia Pacific (Hong Kong) | ap-east-1      | appwizard.ap-east-1.amazonaws.com      | HTTP and HTTPS  |  |
| Asia Pacific (Mumbai)    | ap-south-1     | appwizard.ap-south-1.amazonaws.com     | HTTP and HTTPS  |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | appwizard.ap-northeast-3.amazonaws.com | HTTP and HTTPS  |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | appwizard.ap-northeast-2.amazonaws.com | HTTP and HTTPS  |  |
| Asia Pacific (Singapore) | ap-southeast-1 | appwizard.ap-southeast-1.amazonaws.com | HTTP and HTTPS  |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | appwizard.ap-southeast-2.amazonaws.com | HTTP and HTTPS  |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | appwizard.ap-northeast-1.amazonaws.com | HTTP and HTTPS  |  |
| Canada (Central)         | ca-central-1   | appwizard.ca-central-1.amazonaws.com   | HTTP and HTTPS  |  |
| Europe (Frankfurt)       | eu-central-1   | appwizard.eu-central-1.amazonaws.com   | HTTP and HTTPS  |  |

| Region Name               | Region        | Endpoint                              | Protocol       |  |
|---------------------------|---------------|---------------------------------------|----------------|--|
| Europe (Ireland)          | eu-west-1     | appwizard.eu-west-1.amazonaws.com     | HTTP and HTTPS |  |
| Europe (London)           | eu-west-2     | appwizard.eu-west-2.amazonaws.com     | HTTP and HTTPS |  |
| Europe (Milan)            | eu-south-1    | appwizard.eu-south-1.amazonaws.com    | HTTP and HTTPS |  |
| Europe (Paris)            | eu-west-3     | appwizard.eu-west-3.amazonaws.com     | HTTP and HTTPS |  |
| Europe (Stockholm)        | eu-north-1    | appwizard.eu-north-1.amazonaws.com    | HTTP and HTTPS |  |
| Middle East (Bahrain)     | me-south-1    | appwizard.me-south-1.amazonaws.com    | HTTP and HTTPS |  |
| South America (São Paulo) | sa-east-1     | appwizard.sa-east-1.amazonaws.com     | HTTP and HTTPS |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | appwizard.us-gov-east-1.amazonaws.com | HTTP and HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | appwizard.us-gov-west-1.amazonaws.com | HTTP and HTTPS |  |

## Service quotas

| Name                    | Default | Adjustable |
|-------------------------|---------|------------|
| Active applications     | 25      | Yes        |
| Application name length | 10      | No         |
| Applications            | 150     | Yes        |
| Parallel deployments    | 3       | No         |

## Amazon Lex endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## V2 service endpoints

### Model building endpoints

| Region Name              | Region         | Endpoint                                   | Protocol |  |
|--------------------------|----------------|--|----------|--|
| US East (N. Virginia)    | us-east-1      | models-v2-lex.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | models-v2-lex.us-west-2.amazonaws.com      | HTTPS    |  |
| Africa (Cape Town)       | af-south-1     | models-v2-lex.af-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | models-v2-lex.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | models-v2-lex.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | models-v2-lex.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | models-v2-lex.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)         | ca-central-1   | models-v2-lex.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)       | eu-central-1   | models-v2-lex.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)         | eu-west-1      | models-v2-lex.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)          | eu-west-2      | models-v2-lex.eu-west-2.amazonaws.com      | HTTPS    |  |

### Runtime endpoints

| Region Name           | Region    | Endpoint                               | Protocol |  |
|-----------------------|-----------|--|----------|--|
| US East (N. Virginia) | us-east-1 | runtime-v2-lex.us-east-1.amazonaws.com | HTTPS    |  |
| US West (Oregon)      | us-west-2 | runtime-v2-lex.us-west-2.amazonaws.com | HTTPS    |  |

| Region Name              | Region         | Endpoint                                    | Protocol |  |
|--------------------------|----------------|---|----------|--|
| Africa (Cape Town)       | af-south-1     | runtime-v2-lex.af-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | runtime-v2-lex.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | runtime-v2-lex.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | runtime-v2-lex.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | runtime-v2-lex.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)         | ca-central-1   | runtime-v2-lex.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)       | eu-central-1   | runtime-v2-lex.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)         | eu-west-1      | runtime-v2-lex.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)          | eu-west-2      | runtime-v2-lex.eu-west-2.amazonaws.com      | HTTPS    |  |

## V1 service endpoints

### Model building endpoints

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (N. Virginia)    | us-east-1      | models.lex.us-east-1.amazonaws.com<br>models-fips.lex.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | models.lex.us-west-2.amazonaws.com<br>models-fips.lex.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Asia Pacific (Singapore) | ap-southeast-1 | models.lex.ap-southeast-1.amazonaws.com                                       | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | models.lex.ap-southeast-2.amazonaws.com                                       | HTTPS          |  |

| <b>Region Name</b>     | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|------------------------|----------------|---|-----------------|--|
| Asia Pacific (Tokyo)   | ap-northeast-1 | models.lex.ap-northeast-1.amazonaws.com   | HTTPS           |  |
| Europe (Frankfurt)     | eu-central-1   | models.lex.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)       | eu-west-1      | models.lex.eu-west-1.amazonaws.com  | HTTPS           |  |
| Europe (London)        | eu-west-2      | models.lex.eu-west-2.amazonaws.com  | HTTPS           |  |
| AWS GovCloud (US-West) | us-gov-west-1  | models.lex.us-gov-west-1.amazonaws.com<br>models-fips.lex.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |

## Runtime endpoints

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| US East (N. Virginia)    | us-east-1      | runtime.lex.us-east-1.amazonaws.com<br>runtime-fips.lex.us-east-1.amazonaws.com         | HTTPS<br>HTTPS  |  |
| US West (Oregon)         | us-west-2      | runtime.lex.us-west-2.amazonaws.com<br>runtime-fips.lex.us-west-2.amazonaws.com         | HTTPS<br>HTTPS  |  |
| Asia Pacific (Singapore) | ap-southeast-1 | runtime.lex.ap-southeast-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | runtime.lex.ap-southeast-2.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | runtime.lex.ap-northeast-1.amazonaws.com  | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | runtime.lex.eu-central-1.amazonaws.com  | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | runtime.lex.eu-west-1.amazonaws.com   | HTTPS           |  |
| Europe (London)          | eu-west-2      | runtime.lex.eu-west-2.amazonaws.com   | HTTPS           |  |
| AWS GovCloud (US-West)   | us-gov-west-1  | runtime.lex.us-gov-west-1.amazonaws.com<br>runtime-fips.lex.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |

## Service quotas

| Name  | Default | Adjustable |
|---|---------|------------|
| Bot channel associations per bot alias (V2)               | 10      | No         |
| Bots per account (V2)                                     | 100     | Yes        |
| Characters per custom slot type value (V2)                | 500     | No         |
| Characters per sample utterance (V2)                      | 500     | No         |
| Custom slot type values and synonyms per bot locale (V2)  | 50,000  | No         |
| Custom slot types per bot locale (V2)                     | 100     | No         |
| Sample utterances per intent (V2)                         | 1,500   | Yes        |
| Sample utterances per slot (V2)                           | 10      | Yes        |
| Slots per bot locale (V2)                                 | 2,000   | No         |
| Slots per intent (V2)                                     | 100     | No         |
| Total characters in sample utterances per bot locale (V2) | 200,000 | No         |
| Values and synonyms per custom slot type (V2)             | 10,000  | No         |
| Versions per bot (V2)                                     | 100     | No         |

## AWS License Manager endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name             | Region    | Endpoint                                     | Protocol |
|-------------------------|-----------|--|----------|
| US East (Ohio)          | us-east-2 | license-manager.us-east-2.amazonaws.com      | HTTPS    |
|                         |           | license-manager-fips.us-east-2.amazonaws.com | HTTPS    |
| US East (N. Virginia)   | us-east-1 | license-manager.us-east-1.amazonaws.com      | HTTPS    |
|                         |           | license-manager-fips.us-east-1.amazonaws.com | HTTPS    |
| US West (N. California) | us-west-1 | license-manager.us-west-1.amazonaws.com      | HTTPS    |
|                         |           | license-manager-fips.us-west-1.amazonaws.com | HTTPS    |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| US West (Oregon)         | us-west-2      | license-manager.us-west-2.amazonaws.com<br>license-manager-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS  |  |
| Africa (Cape Town)       | af-south-1     | license-manager.af-south-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | license-manager.ap-east-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | license-manager.ap-south-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | license-manager.ap-northeast-3.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | license-manager.ap-northeast-2.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | license-manager.ap-southeast-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | license-manager.ap-southeast-2.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | license-manager.ap-northeast-1.amazonaws.com  | HTTPS           |  |
| Canada (Central)         | ca-central-1   | license-manager.ca-central-1.amazonaws.com  | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | license-manager.eu-central-1.amazonaws.com  | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | license-manager.eu-west-1.amazonaws.com   | HTTPS           |  |
| Europe (London)          | eu-west-2      | license-manager.eu-west-2.amazonaws.com   | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | license-manager.eu-south-1.amazonaws.com  | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | license-manager.eu-west-3.amazonaws.com   | HTTPS           |  |
| Europe (Stockholm)       | eu-north-1     | license-manager.eu-north-1.amazonaws.com  | HTTPS           |  |

| Region Name               | Region        | Endpoint  | Protocol       |  |
|---------------------------|---------------|---|----------------|--|
| Middle East (Bahrain)     | me-south-1    | license-manager.me-south-1.amazonaws.com  | HTTPS          |  |
| South America (São Paulo) | sa-east-1     | license-manager.sa-east-1.amazonaws.com   | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | license-manager.us-gov-east-1.amazonaws.com<br>license-manager-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | license-manager.us-gov-west-1.amazonaws.com<br>license-manager-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name   | Default | Adjustable |
|--|---------|------------|
| Extend license consumption per consumption token           | 1       | No         |
| GetAccessTokens calls                                      | 10      | No         |
| License configuration associations per resource            | 10      | Yes        |
| License configurations                                     | 25      | Yes        |
| License conversion tasks per resource per day              | 5       | Yes        |
| Maximum number of concurrent organization grant activities | 10      | No         |
| Number of Report generators                                | 25      | No         |
| Number of account discovery mode updates per day           | 1       | No         |
| Number of grants per license                               | 2,000   | No         |
| Number of licenses you can create                          | 2,000   | No         |
| Number of received licenses per product                    | 10      | No         |
| Number of tokens per account and license                   | 10      | No         |
| Number of updates for a report generator per day           | 25      | No         |
| Total number counted entitlements per checkout             | 5       | No         |
| Total number counted entitlements per license              | 25      | No         |
| Total number uncounted entitlements per license            | 25      | No         |

## Amazon Lightsail endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name              | Region         | Endpoint                               | Protocol |  |
|--------------------------|----------------|--|----------|--|
| US East (Ohio)           | us-east-2      | lightsail.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | lightsail.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | lightsail.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai)    | ap-south-1     | lightsail.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | lightsail.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | lightsail.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | lightsail.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | lightsail.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)         | ca-central-1   | lightsail.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)       | eu-central-1   | lightsail.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)         | eu-west-1      | lightsail.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)          | eu-west-2      | lightsail.eu-west-2.amazonaws.com      | HTTPS    |  |
| Europe (Paris)           | eu-west-3      | lightsail.eu-west-3.amazonaws.com      | HTTPS    |  |

| Region Name        | Region     | Endpoint                           | Protocol |  |
|--------------------|------------|------------------------------------|----------|--|
| Europe (Stockholm) | eu-north-1 | lightsail.eu-north-1.amazonaws.com | HTTPS    |  |

## Service quotas

New AWS accounts might start with quotas that are lower than those described here.

| Name  | Default          | Adjustable |
|---|------------------|------------|
| Allowed cookies per cache behavior for a distribution       | 10               | No         |
| Allowed headers per cache behavior for a distribution       | 10               | No         |
| Allowed query strings per cache behavior for a distribution | 10               | No         |
| Block storage disks per instance                            | 15               | No         |
| Container service certificates                              | 4                | No         |
| Container service custom domains                            | 4                | No         |
| Container service deployment containers                     | 10               | No         |
| Container service deployment versions                       | 50               | No         |
| Container service logs storage days                         | 4                | No         |
| Container service nodes                                     | 20               | No         |
| Container service stored container images                   | 150              | No         |
| Container services  | 100              | No         |
| Custom domain names per distribution                        | 10               | No         |
| DNS zones (or domains)                                      | 3                | No         |
| Data transfer rate per distribution                         | 150              | No         |
| Databases   | 40               | No         |
| Default behaviors (default cache behavior) per distribution | 1                | No         |
| Directory and file overrides per distribution               | 25               | No         |
| Distributions   | 20               | No         |
| Instances   | 20               | Yes        |
| Load balancers  | 5                | No         |
| Maximum active certificates                                 | 10               | No         |
| Maximum block storage disk space                            | 16,000 Gigabytes | No         |
| Maximum certificates  | 20               | No         |

| Name  | Default          | Adjustable |
|---|------------------|------------|
| Minimum block storage disk space                            | 8 Gigabytes      | No         |
| Origins per distribution                                    | 1                | No         |
| Parallel RDP connections using the browser-based RDP client | 1                | No         |
| Parallel SSH connections using the browser-based SSH client | 5                | No         |
| Response timeout per origin for a distribution              | 60 Seconds       | No         |
| Static IP addresses   | 5                | Yes        |
| Tags  | 50               | No         |
| Total attached block storage disk space                     | 20,000 Gigabytes | No         |

## Amazon Location Service endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

Amazon Location is available in the following AWS Regions:

| Region name              | Region code    |
|--------------------------|----------------|
| Asia Pacific (Tokyo)     | ap-northeast-1 |
| Asia Pacific (Singapore) | ap-southeast-1 |
| Asia Pacific (Sydney)    | ap-southeast-2 |
| Europe (Frankfurt)       | eu-central-1   |
| Europe (Ireland)         | eu-west-1      |
| Europe (Stockholm)       | eu-north-1     |
| US East (N. Virginia)    | us-east-1      |
| US East (Ohio)           | us-east-2      |
| US West (Oregon)         | us-west-2      |

The general syntax for an Amazon Location regional endpoint is as follows:

```
protocol://service-code.geo.region-code.amazonaws.com
```

Within this syntax, Amazon Location uses the following service codes:

| Service                   | Service code |
|---------------------------|--------------|
| Amazon Location Maps      | maps         |
| Amazon Location Places    | places       |
| Amazon Location Routes    | routes       |
| Amazon Location Geofences | geofencing   |
| Amazon Location Trackers  | tracking     |

For example, the regional endpoint for Amazon Location Maps for US East (N. Virginia) is:  
<https://maps.geo.us-east-1.amazonaws.com>.

## Service quotas

| Resource                                    | Description   | Quota | Adjustable |
|---|---|-------|------------|
| Maps per account and Region                 | The maximum number of map resources that you can create per account and Region.                 | 20    | Yes        |
| Place indexes per account and Region.       | The maximum number of place index resources that you can create per account and Region.         | 20    | Yes        |
| Route calculators per account and Region    | The maximum number of route calculator resources that you can create per account and Region.    | 20    | Yes        |
| Trackers per account and Region.            | The maximum number of tracker resources that you can create per account and Region.             | 100   | Yes        |
| Geofence collections per account and Region | The maximum number of geofence collection resources that you can create per account and Region. | 1000  | Yes        |
| Geofences per geofence collection           | The maximum number of geofences that you can create per geofence collection.                    | 50000 | Yes        |
| Tracker consumers per tracker               | The maximum number of geofence collection that tracker resource can be associated with.         | 5     | Yes        |

| Resource                                   | Description   | Quota | Adjustable |
|--|---|-------|------------|
| Rate of CreateMap API requests             | The maximum number of CreateMap requests that you can make per second. Additional requests are throttled.             | 10    | Yes        |
| Rate of DeleteMap API requests             | The maximum number of DeleteMap requests that you can make per second. Additional requests are throttled.             | 10    | Yes        |
| Rate of DescribeMap API requests           | The maximum number of DescribeMap requests that you can make per second. Additional requests are throttled.           | 10    | Yes        |
| Rate of ListMaps API requests              | The maximum number of ListMaps requests that you can make per second. Additional requests are throttled.              | 10    | Yes        |
| Rate of GetMapGlyphs API requests          | The maximum number of GetMapGlyphs requests that you can make per second. Additional requests are throttled.          | 50    | Yes        |
| Rate of GetMapSprites API requests         | The maximum number of GetMapSprites requests that you can make per second. Additional requests are throttled.         | 50    | Yes        |
| Rate of GetMapStyleDescriptor API requests | The maximum number of GetMapStyleDescriptor requests that you can make per second. Additional requests are throttled. | 50    | Yes        |
| Rate of GetMapTile API requests            | The maximum number of GetMapTile requests that you can make per second. Additional requests are throttled.            | 500   | Yes        |

| Resource  | Description  | Quota | Adjustable |
|---|--|-------|------------|
| Rate of <code>CreatePlaceIndex</code> API requests            | The maximum number of <code>CreatePlaceIndex</code> requests that you can make per second. Additional requests are throttled.            | 10    | Yes        |
| Rate of <code>DeletePlaceIndex</code> API requests            | The maximum number of <code>DeletePlaceIndex</code> requests that you can make per second. Additional requests are throttled.            | 10    | Yes        |
| Rate of <code>DescribePlaceIndex</code> API requests          | The maximum number of <code>DescribePlaceIndex</code> requests that you can make per second. Additional requests are throttled.          | 10    | Yes        |
| Rate of <code>ListPlaceIndexes</code> API requests            | The maximum number of <code>ListPlaceIndexes</code> requests that you can make per second. Additional requests are throttled.            | 10    | Yes        |
| Rate of <code>SearchPlaceIndexForPosition</code> API requests | The maximum number of <code>SearchPlaceIndexForPosition</code> requests that you can make per second. Additional requests are throttled. | 50    | Yes        |
| Rate of <code>CreateRouteCalculator</code> API requests       | The maximum number of <code>CreateRouteCalculator</code> requests that you can make per second. Additional requests are throttled.       | 10    | Yes        |
| Rate of <code>SearchPlaceIndexForText</code> API requests     | The maximum number of <code>SearchPlaceIndexForText</code> requests that you can make per second. Additional requests are throttled.     | 50    | Yes        |

| Resource                                     | Description   | Quota | Adjustable |
|--|---|-------|------------|
| Rate of DeleteRouteCalculator API requests   | The maximum number of DeleteRouteCalculator requests that you can make per second. Additional requests are throttled.   | 10    | Yes        |
| Rate of DescribeRouteCalculator API requests | The maximum number of DescribeRouteCalculator requests that you can make per second. Additional requests are throttled. | 10    | Yes        |
| Rate of ListRouteCalculator API requests     | The maximum number of ListRouteCalculator requests that you can make per second. Additional requests are throttled.     | 10    | Yes        |
| Rate of CalculateRoute API requests          | The maximum number of CalculateRoute requests that you can make per second. Additional requests are throttled.          | 10    | Yes        |
| Rate of CreateTracker API requests           | The maximum number of CreateTracker requests that you can make per second. Additional requests are throttled.           | 10    | Yes        |
| Rate of DeleteTracker API requests           | The maximum number of DeleteTracker requests that you can make per second. Additional requests are throttled.           | 10    | Yes        |
| Rate of DescribeTracker API requests         | The maximum number of DescribeTracker requests that you can make per second. Additional requests are throttled.         | 10    | Yes        |

| Resource  | Description  | Quota | Adjustable |
|---|--|-------|------------|
| Rate of <code>ListTrackers</code> API requests                | The maximum number of <code>ListTrackers</code> requests that you can make per second. Additional requests are throttled.                | 10    | Yes        |
| Rate of <code>AssociateTrackerConsumer</code> API requests    | The maximum number of <code>AssociateTrackerConsumer</code> requests that you can make per second. Additional requests are throttled.    | 10    | Yes        |
| Rate of <code>DisassociateTrackerConsumer</code> API requests | The maximum number of <code>DisassociateTrackerConsumer</code> requests that you can make per second. Additional requests are throttled. | 10    | Yes        |
| Rate of <code>ListTrackerConsumers</code> API requests        | The maximum number of <code>ListTrackerConsumers</code> requests that you can make per second. Additional requests are throttled.        | 10    | Yes        |
| Rate of <code>BatchUpdateDevicePosition</code> API requests   | The maximum number of <code>BatchUpdateDevicePosition</code> requests that you can make per second. Additional requests are throttled.   | 50    | Yes        |
| Rate of <code>ListDevicePositions</code> API requests         | The maximum number of <code>ListDevicePositions</code> requests that you can make per second. Additional requests are throttled.         | 50    | Yes        |
| Rate of <code>BatchGetDevicePosition</code> API requests      | The maximum number of <code>BatchGetDevicePosition</code> requests that you can make per second. Additional requests are throttled.      | 50    | Yes        |

| Resource  | Description  | Quota | Adjustable |
|---|--|-------|------------|
| Rate of GetDevicePosition API requests                | The maximum number of GetDevicePosition requests that you can make per second. Additional requests are throttled.                | 50    | Yes        |
| Rate of GetDevicePosition API requests                | The maximum number of GetDevicePosition requests that you can make per second. Additional requests are throttled.                | 50    | Yes        |
| Rate of BatchDeleteDevicePositionHistory API requests | The maximum number of BatchDeleteDevicePositionHistory requests that you can make per second. Additional requests are throttled. | 50    | Yes        |
| Rate of CreateGeofenceCollection API requests         | The maximum number of CreateGeofenceCollection requests that you can make per second. Additional requests are throttled.         | 10    | Yes        |
| Rate of DeleteGeofenceCollection API requests         | The maximum number of DeleteGeofenceCollection requests that you can make per second. Additional requests are throttled.         | 10    | Yes        |
| Rate of DescribeGeofenceCollection API requests       | The maximum number of DescribeGeofenceCollection requests that you can make per second. Additional requests are throttled.       | 10    | Yes        |
| Rate of BatchDeleteGeofence API requests              | The maximum number of BatchDeleteGeofence requests that you can make per second. Additional requests are throttled.              | 50    | Yes        |

| Resource   | Description   | Quota | Adjustable |
|--|---|-------|------------|
| Rate of <code>BatchEvaluateGeofences</code> API requests | The maximum number of <code>BatchEvaluateGeofences</code> requests that you can make per second. Additional requests are throttled. | 50    | Yes        |
| Rate of <code>BatchPutGeofence</code> API requests       | The maximum number of <code>BatchPutGeofence</code> requests that you can make per second. Additional requests are throttled.       | 50    | Yes        |
| Rate of <code>GetGeofence</code> API requests            | The maximum number of <code>GetGeofence</code> requests that you can make per second. Additional requests are throttled.            | 50    | Yes        |
| Rate of <code>PutGeofence</code> API requests            | The maximum number of <code>PutGeofence</code> requests that you can make per second. Additional requests are throttled.            | 50    | Yes        |
| Rate of <code>ListGeofences</code> API requests          | The maximum number of <code>ListGeofences</code> requests that you can make per second. Additional requests are throttled.          | 50    | Yes        |
| Rate of <code>TagResource</code> API requests            | The maximum number of <code>TagResource</code> requests that you can make per second. Additional requests are throttled.            | 10    | Yes        |
| Rate of <code>UntagResource</code> API requests          | The maximum number of <code>UntagResource</code> requests that you can make per second. Additional requests are throttled.          | 10    | Yes        |

| Resource  | Description  | Quota | Adjustable |
|---|--|-------|------------|
| Rate of <code>ListTagsForResource</code> API requests | The maximum number of <code>ListTagsForResource</code> requests that you can make per second. Additional requests are throttled. | 10    | Yes        |

For more information, see [Amazon Location Service Quotas](#) in the *Amazon Location Service Developer Guide*.

## Amazon Lookout for Equipment endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name           | Region         | Endpoint                                      | Protocol |
|-----------------------|----------------|---|----------|
| US East (N. Virginia) | us-east-1      | lookoutequipment.us-east-1.amazonaws.com      | HTTPS    |
| Asia Pacific (Seoul)  | ap-northeast-2 | lookoutequipment.ap-northeast-2.amazonaws.com | HTTPS    |
| Europe (Ireland)      | eu-west-1      | lookoutequipment.eu-west-1.amazonaws.com      | HTTPS    |

### Service quotas

| Name                           | Default | Adjustable |
|--------------------------------|---------|------------|
| Components per dataset         | 3,000   | No         |
| Datasets                       | 15      | Yes        |
| Inference schedulers per model | 1       | No         |
| Length of component name       | 200     | No         |
| Models                         | 15      | Yes        |

| Name   | Default      | Adjustable |
|--|--------------|------------|
| Number of columns across components in training data (excluding timestamp)             | 300          | No         |
| Number of columns across components per dataset (excluding timestamp)                  | 3,000        | No         |
| Number of components in training data  | 300          | No         |
| Number of files per component (per dataset)  | 1,000        | No         |
| Number of files per component (per inference execution)                                | 60           | No         |
| Number of rows in evaluation data (after resampling)                                   | 1,500,000    | No         |
| Number of rows in inference input data, after resampling (1-hour scheduling frequency) | 3,600        | No         |
| Number of rows in inference input data, after resampling (10-min scheduling frequency) | 600          | No         |
| Number of rows in inference input data, after resampling (15-min scheduling frequency) | 900          | No         |
| Number of rows in inference input data, after resampling (30-min scheduling frequency) | 1,800        | No         |
| Number of rows in inference input data, after resampling (5-min scheduling frequency)  | 300          | No         |
| Number of rows in training data (after resampling)                                     | 1,500,000    | No         |
| Pending data ingestion jobs  | 5            | Yes        |
| Pending models   | 5            | Yes        |
| Size of raw data in inference input data (1-hour scheduling frequency)                 | 60 Megabytes | No         |
| Size of raw data in inference input data (10-min scheduling frequency)                 | 10 Megabytes | No         |
| Size of raw data in inference input data (15-min scheduling frequency)                 | 15 Megabytes | No         |
| Size of raw data in inference input data (30-min scheduling frequency)                 | 30 Megabytes | No         |
| Size of raw data in inference input data (5-min scheduling frequency)                  | 5 Megabytes  | No         |
| Size per dataset   | 50 Gigabytes | No         |
| Size per file  | 5 Gigabytes  | No         |
| Timespan of training data  | 180 per day  | No         |

# Amazon Lookout for Metrics endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint                                    | Protocol |
|--------------------------|----------------|---|----------|
| US East (Ohio)           | us-east-2      | lookoutmetrics.us-east-2.amazonaws.com      | HTTPS    |
| US East (N. Virginia)    | us-east-1      | lookoutmetrics.us-east-1.amazonaws.com      | HTTPS    |
| US West (Oregon)         | us-west-2      | lookoutmetrics.us-west-2.amazonaws.com      | HTTPS    |
| Asia Pacific (Singapore) | ap-southeast-1 | lookoutmetrics.ap-southeast-1.amazonaws.com | HTTPS    |
| Asia Pacific (Sydney)    | ap-southeast-2 | lookoutmetrics.ap-southeast-2.amazonaws.com | HTTPS    |
| Asia Pacific (Tokyo)     | ap-northeast-1 | lookoutmetrics.ap-northeast-1.amazonaws.com | HTTPS    |
| Europe (Frankfurt)       | eu-central-1   | lookoutmetrics.eu-central-1.amazonaws.com   | HTTPS    |
| Europe (Ireland)         | eu-west-1      | lookoutmetrics.eu-west-1.amazonaws.com      | HTTPS    |
| Europe (Stockholm)       | eu-north-1     | lookoutmetrics.eu-north-1.amazonaws.com     | HTTPS    |

## Service quotas

| Name  | Default       | Adjustable          |
|---|---------------|---------------------|
| Alerts  | 10            | <a href="#">Yes</a> |
| Data size for historical data (backtest mode)   | 102,400       | No                  |
| Data size for historical data (continuous mode) | 102,400       | No                  |
| Data size per interval (10m)                    | 200 Megabytes | No                  |

| Name   | Default       | Adjustable |
|--|---------------|------------|
| Data size per interval (1d)                        | 200 Megabytes | No         |
| Data size per interval (1h)                        | 200 Megabytes | No         |
| Data size per interval (5m)                        | 200 Megabytes | No         |
| Datasets per detector                              | 1             | No         |
| Datasources per dataset                            | 1             | No         |
| Detectors  | 10            | Yes        |
| Dimensions per dataset                             | 5             | No         |
| Files in historical data                           | 3,000         | No         |
| Files per interval (10m)                           | 5             | Yes        |
| Files per interval (1d)                            | 10            | Yes        |
| Files per interval (1h)                            | 10            | Yes        |
| Files per interval (5m)                            | 5             | Yes        |
| Intervals in historical data (backtest mode)       | 3,000         | No         |
| Intervals in historical data (continuous mode)     | 2,500         | No         |
| Measures per dataset                               | 5             | No         |
| Records per interval (10m)                         | 24,000        | Yes        |
| Records per interval (1d)                          | 150,000       | Yes        |
| Records per interval (1h)                          | 150,000       | Yes        |
| Records per interval (5m)                          | 15,000        | Yes        |
| Throttle rate                                      | 10            | Yes        |
| Throttle rate (ActivateAnomalyDetector)            | 1             | Yes        |
| Throttle rate (BackTestAnomalyDetector)            | 1             | Yes        |
| Throttle rate (CreateAlert)                        | 1             | Yes        |
| Throttle rate (CreateAnomalyDetector)              | 1             | Yes        |
| Throttle rate (CreateMetricSet)                    | 1             | Yes        |
| Throttle rate (DeleteAlert)                        | 1             | Yes        |
| Throttle rate (DeleteAnomalyDetector)              | 1             | Yes        |
| Throttle rate (DescribeAlert)                      | 2             | Yes        |
| Throttle rate (DescribeAnomalyDetectionExecutions) | 2             | Yes        |

| Name                                       | Default  | Adjustable |
|--|----------|------------|
| Throttle rate (DescribeAnomalyDetector)    | 2        | Yes        |
| Throttle rate (DescribeMetricSet)          | 2        | Yes        |
| Throttle rate (GetAnomalyGroup)            | 2        | Yes        |
| Throttle rate (GetDataQualityMetrics)      | 2        | Yes        |
| Throttle rate (GetFeedback)                | 2        | Yes        |
| Throttle rate (GetSampleData)              | 2        | Yes        |
| Throttle rate (ListAlerts)                 | 2        | Yes        |
| Throttle rate (ListAnomalyDetectors)       | 2        | Yes        |
| Throttle rate (ListAnomalyGroupSummaries)  | 2        | Yes        |
| Throttle rate (ListAnomalyGroupTimeSeries) | 2        | Yes        |
| Throttle rate (ListMetricSets)             | 2        | Yes        |
| Throttle rate (ListTagsForResource)        | 1        | Yes        |
| Throttle rate (PutFeedback)                | 1        | Yes        |
| Throttle rate (TagResource)                | 1        | Yes        |
| Throttle rate (UntagResource)              | 1        | Yes        |
| Throttle rate (UpdateAnomalyDetector)      | 1        | Yes        |
| Throttle rate (UpdateMetricSet)            | 1        | Yes        |
| Time series per interval (10m)             | 10,000   | No         |
| Time series per interval (1d)              | 50,000   | No         |
| Time series per interval (1h)              | 50,000   | No         |
| Time series per interval (5m)              | 5,000    | No         |
| Value length                               | 40 Bytes | Yes        |

## Amazon Lookout for Vision endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name           | Region         | Endpoint                                   | Protocol |  |
|-----------------------|----------------|--|----------|--|
| US East (Ohio)        | us-east-2      | lookoutvision.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia) | us-east-1      | lookoutvision.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)      | us-west-2      | lookoutvision.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Seoul)  | ap-northeast-2 | lookoutvision.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)  | ap-northeast-1 | lookoutvision.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Europe (Frankfurt)    | eu-central-1   | lookoutvision.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)      | eu-west-1      | lookoutvision.eu-west-1.amazonaws.com      | HTTPS    |  |

## Service quotas

| Resource  | Default   |
|---|---|
| Transactions per second per account for individual Amazon Lookout for Vision data plane operations:<br><br><ul style="list-style-type: none"> <li>• <a href="#">DetectAnomalies</a></li> </ul>  | <ul style="list-style-type: none"> <li>• In all regions that Amazon Lookout for Vision supports – 10</li> </ul> |
| Transactions per second per account for individual Amazon Lookout for Vision control plane operations:<br><br><ul style="list-style-type: none"> <li>• <a href="#">CreateDataset</a></li> <li>• <a href="#">CreateModel</a></li> <li>• <a href="#">CreateProject</a></li> <li>• <a href="#">DeleteDataset</a></li> <li>• <a href="#">DeleteModel</a></li> <li>• <a href="#">DeleteProject</a></li> <li>• <a href="#">DescribeDataset</a></li> <li>• <a href="#">DescribeModel</a></li> <li>• <a href="#">DescribeProject</a></li> <li>• <a href="#">ListDatasetEntries</a></li> <li>• <a href="#">ListModels</a></li> <li>• <a href="#">ListProjects</a></li> </ul> | In each Region that Amazon Lookout for Vision supports – 5  |

| Resource  | Default |
|---|---------|
| • <a href="#">StartModel</a><br>• <a href="#">StopModel</a><br>• <a href="#">UpdateDatasetEntries</a> |         |
| Maximum number of Amazon Lookout for Vision projects per account.                                     | 100     |
| Maximum number of Amazon Lookout for Vision models per project.                                       | 100     |
| Maximum number of concurrent Amazon Lookout for Vision training jobs per account.                     | 2       |
| Maximum number of concurrently running Amazon Lookout for Vision models per account.                  | 2       |
| Maximum number of concurrently running Amazon Lookout for Vision trial detections per account.        | 2       |
| Maximum inference units per started model.  | 5       |

For more information, see [Quotas in Amazon Lookout for Vision](#).

## Amazon Macie endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

#### Amazon Macie

| Region Name             | Region    | Endpoint  | Protocol       |
|-------------------------|-----------|---|----------------|
| US East (Ohio)          | us-east-2 | macie2.us-east-2.amazonaws.com<br>macie2-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |
| US East (N. Virginia)   | us-east-1 | macie2.us-east-1.amazonaws.com<br>macie2-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |
| US West (N. California) | us-west-1 | macie2.us-west-1.amazonaws.com<br>macie2-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |
| US West (Oregon)        | us-west-2 | macie2.us-west-2.amazonaws.com<br>macie2-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                     | <b>Protocol</b> |  |
|--------------------------|----------------|-------------------------------------|-----------------|--|
| Africa (Cape Town)       | af-south-1     | macie2.af-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | macie2.ap-east-1.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | macie2.ap-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | macie2.ap-northeast-3.amazonaws.com | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | macie2.ap-northeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | macie2.ap-southeast-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | macie2.ap-southeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | macie2.ap-northeast-1.amazonaws.com | HTTPS           |  |
| Canada (Central)         | ca-central-1   | macie2.ca-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | macie2.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | macie2.eu-west-1.amazonaws.com      | HTTPS           |  |
| Europe (London)          | eu-west-2      | macie2.eu-west-2.amazonaws.com      | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | macie2.eu-south-1.amazonaws.com     | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | macie2.eu-west-3.amazonaws.com      | HTTPS           |  |
| Europe (Stockholm)       | eu-north-1     | macie2.eu-north-1.amazonaws.com     | HTTPS           |  |
| Middle East (Bahrain)    | me-south-1     | macie2.me-south-1.amazonaws.com     | HTTPS           |  |

| Region Name               | Region    | Endpoint                       | Protocol |  |
|---------------------------|-----------|--------------------------------|----------|--|
| South America (São Paulo) | sa-east-1 | macie2.sa-east-1.amazonaws.com | HTTPS    |  |

## Amazon Macie Classic

| Region Name           | Region    | Endpoint  | Protocol       |  |
|-----------------------|-----------|---|----------------|--|
| US East (N. Virginia) | us-east-1 | macie.us-east-1.amazonaws.com<br>macie-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)      | us-west-2 | macie.us-west-2.amazonaws.com<br>macie-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

### Amazon Macie

| Name                                      | Default     | Adjustable |
|---|-------------|------------|
| Data classification per month per account | 5 Terabytes | Yes        |

For information about Amazon Macie quotas, see [Amazon Macie Quotas](#) in the *Amazon Macie User Guide*.

### Amazon Macie Classic

| Name                                 | Default     | Adjustable |
|--------------------------------------|-------------|------------|
| Macie member accounts                | 10          | Yes        |
| Macie-integrated S3 buckets/prefixes | 250         | No         |
| Rate of data classification          | 3 Terabytes | Yes        |

## Amazon Machine Learning endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services

offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name           | Region    | Endpoint                                | Protocol |  |
|-----------------------|-----------|---|----------|--|
| US East (N. Virginia) | us-east-1 | machinelearning.us-east-1.amazonaws.com | HTTPS    |  |
| Europe (Ireland)      | eu-west-1 | machinelearning.eu-west-1.amazonaws.com | HTTPS    |  |

## Service quotas

| Name   | Default       | Adjustable |
|--|---------------|------------|
| Batch prediction input records                     | 100,000,000   | Yes        |
| Batch prediction input size                        | 1 Terabytes   | Yes        |
| Classes for multiclass ML models                   | 100           | Yes        |
| Job runtime  | 7             | No         |
| ML model size                                      | 2 Gigabytes   | No         |
| Observation size                                   | 100 Kilobytes | Yes        |
| Rate of real-time prediction requests per endpoint | 200           | Yes        |
| Recipe complexity                                  | 10,000        | Yes        |
| Simultaneous jobs                                  | 25            | Yes        |
| Tags per object                                    | 50            | No         |
| Total RAM for all real-time prediction endpoints   | 10 Gigabytes  | Yes        |
| Total rate of all real-time prediction requests    | 10,000        | Yes        |
| Training data size                                 | 100 Gigabytes | Yes        |
| Variables per data file                            | 1,000         | Yes        |

For more information, see [Amazon ML Quotas](#) in the *Amazon Machine Learning Developer Guide*.

# Amazon Managed Blockchain endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint                                       | Protocol |  |
|--------------------------|----------------|--|----------|--|
| US East (N. Virginia)    | us-east-1      | managedblockchain.us-east-1.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | managedblockchain.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | managedblockchain.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | managedblockchain.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Europe (Ireland)         | eu-west-1      | managedblockchain.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)          | eu-west-2      | managedblockchain.eu-west-2.amazonaws.com      | HTTPS    |  |

## Service quotas

| Name  | Default | Adjustable |
|---|---------|------------|
| Number of Hyperledger Fabric channels per Standard Edition network            | 8       | Yes        |
| Number of Hyperledger Fabric channels per Starter Edition network             | 8       | Yes        |
| Number of Standard Edition networks in which an AWS account can have a member | 6       | Yes        |
| Number of starter Edition networks in which an AWS account can have a member  | 6       | Yes        |

For information about attributes of Starter Edition and Standard Edition networks, such as the number of members per network, peer nodes per member, available instance types, and more, see [Amazon Managed Blockchain Pricing](#).

# Amazon Managed Workflows for Apache Airflow endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint                             | Protocol |  |
|--------------------------|----------------|--------------------------------------|----------|--|
| US East (Ohio)           | us-east-2      | airflow.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | airflow.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | airflow.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai)    | ap-south-1     | airflow.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | airflow.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | airflow.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | airflow.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | airflow.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)         | ca-central-1   | airflow.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)       | eu-central-1   | airflow.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)         | eu-west-1      | airflow.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)          | eu-west-2      | airflow.eu-west-2.amazonaws.com      | HTTPS    |  |

| Region Name               | Region     | Endpoint                         | Protocol |  |
|---------------------------|------------|----------------------------------|----------|--|
| Europe (Paris)            | eu-west-3  | airflow.eu-west-3.amazonaws.com  | HTTPS    |  |
| Europe (Stockholm)        | eu-north-1 | airflow.eu-north-1.amazonaws.com | HTTPS    |  |
| South America (São Paulo) | sa-east-1  | airflow.sa-east-1.amazonaws.com  | HTTPS    |  |

## Service quotas

| Name                                | Default | Adjustable |
|-------------------------------------|---------|------------|
| Environments per account per Region | 10      | Yes        |
| Workers per environment             | 25      | Yes        |

## AWS Marketplace endpoints and quotas

AWS Marketplace is a curated digital catalog that makes it easy for customers to find, buy, deploy, and manage third-party software and services that customers need to build solutions and run their businesses.

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service Endpoints

The AWS Marketplace website is available globally. The AWS Marketplace console is available in the US East (N. Virginia) Region. The product vendor determines the Regions in which their products are available.

## AWS Marketplace Commerce Analytics

| Region Name           | Region    | Endpoint   | Protocol |  |
|-----------------------|-----------|--|----------|--|
| US East (N. Virginia) | us-east-1 | marketplacecommerceanalytics.us-east-1.amazonaws.com | HTTPS    |  |

## AWS Marketplace Entitlement Service

| Region Name           | Region    | Endpoint  | Protocol |  |
|-----------------------|-----------|---|----------|--|
| US East (N. Virginia) | us-east-1 | entitlement.marketplace.us-east-1.amazonaws.com | HTTPS    |  |

## AWS Marketplace Metering Service

| Region Name              | Region         | Endpoint  | Protocol |  |
|--------------------------|----------------|---|----------|--|
| US East (Ohio)           | us-east-2      | metering.marketplace.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | metering.marketplace.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (N. California)  | us-west-1      | metering.marketplace.us-west-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | metering.marketplace.us-west-2.amazonaws.com      | HTTPS    |  |
| Africa (Cape Town)       | af-south-1     | metering.marketplace.af-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Hong Kong) | ap-east-1      | metering.marketplace.ap-east-1.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai)    | ap-south-1     | metering.marketplace.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | metering.marketplace.ap-northeast-3.amazonaws.com | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | metering.marketplace.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | metering.marketplace.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | metering.marketplace.ap-southeast-2.amazonaws.com | HTTPS    |  |

| Region Name               | Region         | Endpoint  | Protocol |  |
|---------------------------|----------------|---|----------|--|
| Asia Pacific (Tokyo)      | ap-northeast-1 | metering.marketplace.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)          | ca-central-1   | metering.marketplace.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)        | eu-central-1   | metering.marketplace.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)          | eu-west-1      | metering.marketplace.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)           | eu-west-2      | metering.marketplace.eu-west-2.amazonaws.com      | HTTPS    |  |
| Europe (Milan)            | eu-south-1     | metering.marketplace.eu-south-1.amazonaws.com     | HTTPS    |  |
| Europe (Paris)            | eu-west-3      | metering.marketplace.eu-west-3.amazonaws.com      | HTTPS    |  |
| Europe (Stockholm)        | eu-north-1     | metering.marketplace.eu-north-1.amazonaws.com     | HTTPS    |  |
| Middle East (Bahrain)     | me-south-1     | metering.marketplace.me-south-1.amazonaws.com     | HTTPS    |  |
| South America (São Paulo) | sa-east-1      | metering.marketplace.sa-east-1.amazonaws.com      | HTTPS    |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | metering.marketplace.us-gov-east-1.amazonaws.com  | HTTPS    |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | metering.marketplace.us-gov-west-1.amazonaws.com  | HTTPS    |  |

## Amazon Mechanical Turk endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region  | Endpoint  | Protocol |
|---|---|----------|
| Sandbox endpoint for Amazon Mechanical Turk actions.    | mturk-requester-sandbox.us-east-1.amazonaws.com | HTTPS    |
| Production endpoint for Amazon Mechanical Turk actions. | mturk-requester.us-east-1.amazonaws.com         | HTTPS    |

## Service quotas

| Name          | Default | Adjustable |
|---------------|---------|------------|
| Monthly Usage | 1,000   | Yes        |

## Amazon Managed Streaming for Apache Kafka endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name             | Region    | Endpoint                      | Protocol |
|-------------------------|-----------|-------------------------------|----------|
| US East (Ohio)          | us-east-2 | kafka.us-east-2.amazonaws.com | HTTPS    |
| US East (N. Virginia)   | us-east-1 | kafka.us-east-1.amazonaws.com | HTTPS    |
| US West (N. California) | us-west-1 | kafka.us-west-1.amazonaws.com | HTTPS    |
| US West (Oregon)        | us-west-2 | kafka.us-west-2.amazonaws.com | HTTPS    |
| Asia Pacific            | ap-east-1 | kafka.ap-east-1.amazonaws.com | HTTPS    |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>                    | <b>Protocol</b> |  |
|---------------------------|----------------|------------------------------------|-----------------|--|
| (Hong Kong)               |                |                                    |                 |  |
| Asia Pacific (Mumbai)     | ap-south-1     | kafka.ap-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Seoul)      | ap-northeast-2 | kafka.ap-northeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | kafka.ap-southeast-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | kafka.ap-southeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | kafka.ap-northeast-1.amazonaws.com | HTTPS           |  |
| Canada (Central)          | ca-central-1   | kafka.ca-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Frankfurt)        | eu-central-1   | kafka.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)          | eu-west-1      | kafka.eu-west-1.amazonaws.com      | HTTPS           |  |
| Europe (London)           | eu-west-2      | kafka.eu-west-2.amazonaws.com      | HTTPS           |  |
| Europe (Milan)            | eu-south-1     | kafka.eu-south-1.amazonaws.com     | HTTPS           |  |
| Europe (Paris)            | eu-west-3      | kafka.eu-west-3.amazonaws.com      | HTTPS           |  |
| Europe (Stockholm)        | eu-north-1     | kafka.eu-north-1.amazonaws.com     | HTTPS           |  |
| Middle East (Bahrain)     | me-south-1     | kafka.me-south-1.amazonaws.com     | HTTPS           |  |
| South America (São Paulo) | sa-east-1      | kafka.sa-east-1.amazonaws.com      | HTTPS           |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | kafka.us-gov-east-1.amazonaws.com  | HTTPS           |  |

| Region Name            | Region        | Endpoint                          | Protocol |  |
|------------------------|---------------|-----------------------------------|----------|--|
| AWS GovCloud (US-West) | us-gov-west-1 | kafka.us-gov-west-1.amazonaws.com | HTTPS    |  |

## Service quotas

| Name                                  | Default | Adjustable |
|---------------------------------------|---------|------------|
| Number of brokers per account         | 90      | Yes        |
| Number of brokers per cluster         | 30      | Yes        |
| Number of configurations per account  | 100     | Yes        |
| Number of revisions per configuration | 50      | Yes        |

## AWS Elemental MediaConnect endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region    | Endpoint                             | Protocol |  |
|--------------------------|-----------|--------------------------------------|----------|--|
| US East (Ohio)           | us-east-2 | mediaconnect.us-east-2.amazonaws.com | HTTPS    |  |
| US East (N. Virginia)    | us-east-1 | mediaconnect.us-east-1.amazonaws.com | HTTPS    |  |
| US West (N. California)  | us-west-1 | mediaconnect.us-west-1.amazonaws.com | HTTPS    |  |
| US West (Oregon)         | us-west-2 | mediaconnect.us-west-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Hong Kong) | ap-east-1 | mediaconnect.ap-east-1.amazonaws.com | HTTPS    |  |

| Region Name               | Region         | Endpoint                                  | Protocol |  |
|---------------------------|----------------|---|----------|--|
| Asia Pacific (Mumbai)     | ap-south-1     | mediaconnect.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Seoul)      | ap-northeast-2 | mediaconnect.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | mediaconnect.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | mediaconnect.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | mediaconnect.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Europe (Frankfurt)        | eu-central-1   | mediaconnect.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)          | eu-west-1      | mediaconnect.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)           | eu-west-2      | mediaconnect.eu-west-2.amazonaws.com      | HTTPS    |  |
| Europe (Paris)            | eu-west-3      | mediaconnect.eu-west-3.amazonaws.com      | HTTPS    |  |
| Europe (Stockholm)        | eu-north-1     | mediaconnect.eu-north-1.amazonaws.com     | HTTPS    |  |
| South America (São Paulo) | sa-east-1      | mediaconnect.sa-east-1.amazonaws.com      | HTTPS    |  |

## Service quotas

| Name         | Default | Adjustable |
|--------------|---------|------------|
| Entitlements | 50      | No         |
| Flows        | 20      | Yes        |
| Outputs      | 50      | No         |

For more information, see [Quotas](#) in the *AWS Elemental MediaConnect User Guide*.

# AWS Elemental MediaConvert endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

Use these endpoints only to request an account-specific endpoint, using the [DescribeEndpoints](#) operation. Send all your transcoding requests to the account-specific endpoint that the service returns. For more information, see [Getting Started with the API](#) in the *MediaConvert API Reference*.

| Region Name              | Region         | Endpoint                                  | Protocol |  |
|--------------------------|----------------|---|----------|--|
| US East (Ohio)           | us-east-2      | mediaconvert.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | mediaconvert.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (N. California)  | us-west-1      | mediaconvert.us-west-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | mediaconvert.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai)    | ap-south-1     | mediaconvert.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | mediaconvert.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | mediaconvert.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | mediaconvert.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | mediaconvert.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)         | ca-central-1   | mediaconvert.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)       | eu-central-1   | mediaconvert.eu-central-1.amazonaws.com   | HTTPS    |  |

| Region Name               | Region        | Endpoint                                 | Protocol |  |
|---------------------------|---------------|--|----------|--|
| Europe (Ireland)          | eu-west-1     | mediaconvert.eu-west-1.amazonaws.com     | HTTPS    |  |
| Europe (London)           | eu-west-2     | mediaconvert.eu-west-2.amazonaws.com     | HTTPS    |  |
| Europe (Paris)            | eu-west-3     | mediaconvert.eu-west-3.amazonaws.com     | HTTPS    |  |
| Europe (Stockholm)        | eu-north-1    | mediaconvert.eu-north-1.amazonaws.com    | HTTPS    |  |
| South America (São Paulo) | sa-east-1     | mediaconvert.sa-east-1.amazonaws.com     | HTTPS    |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | mediaconvert.us-gov-west-1.amazonaws.com | HTTPS    |  |

## Service quotas

| Name  | Default | Adjustable |
|---|---------|------------|
| Concurrent jobs across all on-demand queues, baseline | 40      | Yes        |
| Concurrent jobs per on-demand queue, peak             | 200     | Yes        |
| Custom job templates                                  | 100     | Yes        |
| Custom output presets                                 | 100     | Yes        |
| Queues (on-demand) per Region, per account            | 10      | Yes        |
| Queues (reserved) per Region, per account             | 30      | Yes        |
| Request rate for API calls in aggregate               | 2       | Yes        |
| Request rate for API calls in aggregate, in a burst   | 100     | Yes        |
| Request rate for DescribeEndpoints                    | 0.01667 | Yes        |
| Request rate for DescribeEndpoints, in a burst        | 0       | Yes        |

## AWS Elemental MediaLive endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#).

Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

When you submit requests using the AWS CLI or SDKs, either leave the Region and endpoint unspecified, or specify us-east-1 as the Region. When you submit requests using the MediaLive API, use the us-east-1 Region to sign requests. For more information about signing MediaLive API requests, see [Signature Version 4 signing process \(p. 650\)](#).

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | medialive.us-east-2.amazonaws.com<br>medialive-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | medialive.us-east-1.amazonaws.com<br>medialive-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | medialive.us-west-2.amazonaws.com<br>medialive-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Asia Pacific (Mumbai)    | ap-south-1     | medialive.ap-south-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | medialive.ap-northeast-2.amazonaws.com                                      | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | medialive.ap-southeast-1.amazonaws.com                                      | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | medialive.ap-southeast-2.amazonaws.com                                      | HTTPS          |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | medialive.ap-northeast-1.amazonaws.com                                      | HTTPS          |  |
| Europe (Frankfurt)       | eu-central-1   | medialive.eu-central-1.amazonaws.com  | HTTPS          |  |
| Europe (Ireland)         | eu-west-1      | medialive.eu-west-1.amazonaws.com   | HTTPS          |  |
| Europe (London)          | eu-west-2      | medialive.eu-west-2.amazonaws.com   | HTTPS          |  |
| Europe (Paris)           | eu-west-3      | medialive.eu-west-3.amazonaws.com   | HTTPS          |  |
| Europe (Stockholm)       | eu-north-1     | medialive.eu-north-1.amazonaws.com  | HTTPS          |  |
| South America            | sa-east-1      | medialive.sa-east-1.amazonaws.com   | HTTPS          |  |

| Region Name | Region | Endpoint | Protocol |  |
|-------------|--------|----------|----------|--|
| (São Paulo) |        |          |          |  |

## Service quotas

| Name                  | Default | Adjustable |
|-----------------------|---------|------------|
| CDI Channels          | 2       | Yes        |
| Channels              | 5       | Yes        |
| Device Inputs         | 100     | Yes        |
| HEVC Channels         | 5       | Yes        |
| Input Security Groups | 5       | Yes        |
| Multiplexes           | 2       | Yes        |
| Pull Inputs           | 100     | Yes        |
| Push Inputs           | 5       | Yes        |
| Reservations          | 50      | Yes        |
| UHD Channels          | 1       | Yes        |
| VPC Inputs            | 50      | Yes        |

## AWS Elemental MediaPackage endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

These are the endpoints for live content workflows.

| Region Name           | Region    | Endpoint                             | Protocol |  |
|-----------------------|-----------|--------------------------------------|----------|--|
| US East (Ohio)        | us-east-2 | mediapackage.us-east-2.amazonaws.com | HTTPS    |  |
| US East (N. Virginia) | us-east-1 | mediapackage.us-east-1.amazonaws.com | HTTPS    |  |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>                           | <b>Protocol</b> |  |
|---------------------------|----------------|---|-----------------|--|
| US West (N. California)   | us-west-1      | mediapackage.us-west-1.amazonaws.com      | HTTPS           |  |
| US West (Oregon)          | us-west-2      | mediapackage.us-west-2.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Mumbai)     | ap-south-1     | mediapackage.ap-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Seoul)      | ap-northeast-2 | mediapackage.ap-northeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | mediapackage.ap-southeast-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | mediapackage.ap-southeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | mediapackage.ap-northeast-1.amazonaws.com | HTTPS           |  |
| Europe (Frankfurt)        | eu-central-1   | mediapackage.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)          | eu-west-1      | mediapackage.eu-west-1.amazonaws.com      | HTTPS           |  |
| Europe (London)           | eu-west-2      | mediapackage.eu-west-2.amazonaws.com      | HTTPS           |  |
| Europe (Paris)            | eu-west-3      | mediapackage.eu-west-3.amazonaws.com      | HTTPS           |  |
| Europe (Stockholm)        | eu-north-1     | mediapackage.eu-north-1.amazonaws.com     | HTTPS           |  |
| South America (São Paulo) | sa-east-1      | mediapackage.sa-east-1.amazonaws.com      | HTTPS           |  |

These are the endpoints for video on demand (VOD) content workflows.

| <b>Region Name</b> | <b>Region</b> | <b>Endpoint</b>                          | <b>Protocol</b> |  |
|--------------------|---------------|--|-----------------|--|
| US East (Ohio)     | us-east-2     | mediapackage-vod.us-east-2.amazonaws.com | HTTPS           |  |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>                               | <b>Protocol</b> |  |
|---------------------------|----------------|---|-----------------|--|
| US East (N. Virginia)     | us-east-1      | mediapackage-vod.us-east-1.amazonaws.com      | HTTPS           |  |
| US West (N. California)   | us-west-1      | mediapackage-vod.us-west-1.amazonaws.com      | HTTPS           |  |
| US West (Oregon)          | us-west-2      | mediapackage-vod.us-west-2.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Mumbai)     | ap-south-1     | mediapackage-vod.ap-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Seoul)      | ap-northeast-2 | mediapackage-vod.ap-northeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | mediapackage-vod.ap-southeast-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | mediapackage-vod.ap-southeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | mediapackage-vod.ap-northeast-1.amazonaws.com | HTTPS           |  |
| Europe (Frankfurt)        | eu-central-1   | mediapackage-vod.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)          | eu-west-1      | mediapackage-vod.eu-west-1.amazonaws.com      | HTTPS           |  |
| Europe (London)           | eu-west-2      | mediapackage-vod.eu-west-2.amazonaws.com      | HTTPS           |  |
| Europe (Paris)            | eu-west-3      | mediapackage-vod.eu-west-3.amazonaws.com      | HTTPS           |  |
| Europe (Stockholm)        | eu-north-1     | mediapackage-vod.eu-north-1.amazonaws.com     | HTTPS           |  |
| South America (São Paulo) | sa-east-1      | mediapackage-vod.sa-east-1.amazonaws.com      | HTTPS           |  |

## Service quotas

| Name   | Default | Adjustable |
|--|---------|------------|
| Assets per packaging group                   | 10,000  | Yes        |
| Burst rate of REST API requests (Live)       | 50      | No         |
| Burst rate of REST API requests (VOD)        | 50      | No         |
| Channels                                     | 30      | Yes        |
| Concurrent harvest jobs                      | 10      | Yes        |
| Content retention                            | 336     | No         |
| Endpoints per channel                        | 10      | Yes        |
| Ingest streams per asset                     | 20      | No         |
| Ingest streams per channel                   | 20      | No         |
| Live manifest length                         | 5       | Yes        |
| Packaging configurations per packaging group | 10      | Yes        |
| Packaging groups                             | 10      | Yes        |
| Rate of REST API requests (Live)             | 5       | No         |
| Rate of REST API requests (VOD)              | 5       | No         |
| Rate of egress requests per asset            | 200     | No         |
| Rate of egress requests per channel          | 200     | No         |
| Rate of ingest requests per channel          | 50      | No         |
| Time-shifted manifest length                 | 24      | No         |
| Tracks per ingest stream (Live)              | 10      | No         |
| Tracks per ingest stream (VOD)               | 10      | No         |

For more information, see [Quotas](#) in the *AWS Elemental MediaPackage User Guide*.

## AWS Elemental MediaStore endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name           | Region         | Endpoint                                | Protocol |  |
|-----------------------|----------------|---|----------|--|
| US East (N. Virginia) | us-east-1      | mediastore.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)      | us-west-2      | mediastore.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Seoul)  | ap-northeast-2 | mediastore.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney) | ap-southeast-2 | mediastore.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)  | ap-northeast-1 | mediastore.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Europe (Frankfurt)    | eu-central-1   | mediastore.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)      | eu-west-1      | mediastore.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)       | eu-west-2      | mediastore.eu-west-2.amazonaws.com      | HTTPS    |  |
| Europe (Stockholm)    | eu-north-1     | mediastore.eu-north-1.amazonaws.com     | HTTPS    |  |

## Service quotas

| Name   | Default      | Adjustable |
|--|--------------|------------|
| Containers   | 100          | No         |
| Folder levels  | 10           | No         |
| Object size  | 25 Megabytes | No         |
| Rate of DeleteObject API requests                                | 100          | Yes        |
| Rate of DescribeObject API requests                              | 1,000        | Yes        |
| Rate of GetObject API requests for standard upload availability  | 1,000        | Yes        |
| Rate of GetObject API requests for streaming upload availability | 25           | Yes        |
| Rate of ListItems API requests                                   | 5            | Yes        |

| Name   | Default | Adjustable |
|--|---------|------------|
| Rate of PutObject API requests for chunked transfer encoding (also known as streaming upload availability) | 10      | Yes        |
| Rate of PutObject API requests for standard upload availability  | 100     | Yes        |

For more information, see [Quotas](#) in the *AWS Elemental MediaStore User Guide*.

## AWS Elemental MediaTailor endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name              | Region         | Endpoint                                     | Protocol       |
|--------------------------|----------------|--|----------------|
| US East (N. Virginia)    | us-east-1      | api.mediatailor.us-east-1.amazonaws.com      | HTTP and HTTPS |
| US West (Oregon)         | us-west-2      | api.mediatailor.us-west-2.amazonaws.com      | HTTP and HTTPS |
| Asia Pacific (Singapore) | ap-southeast-1 | api.mediatailor.ap-southeast-1.amazonaws.com | HTTP and HTTPS |
| Asia Pacific (Sydney)    | ap-southeast-2 | api.mediatailor.ap-southeast-2.amazonaws.com | HTTP and HTTPS |
| Asia Pacific (Tokyo)     | ap-northeast-1 | api.mediatailor.ap-northeast-1.amazonaws.com | HTTP and HTTPS |
| Europe (Frankfurt)       | eu-central-1   | api.mediatailor.eu-central-1.amazonaws.com   | HTTP and HTTPS |
| Europe (Ireland)         | eu-west-1      | api.mediatailor.eu-west-1.amazonaws.com      | HTTP and HTTPS |

### Service quotas

| Name                            | Default | Adjustable |
|---------------------------------|---------|------------|
| Ad decision server (ADS) length | 25,000  | No         |

| Name                               | Default      | Adjustable |
|------------------------------------|--------------|------------|
| Ad decision server (ADS) redirects | 5            | No         |
| Ad decision server (ADS) timeout   | 3 Seconds    | No         |
| Configurations                     | 1,000        | No         |
| Content origin length              | 512          | No         |
| Content origin server timeout      | 2 Seconds    | No         |
| Manifest size                      | 2 Megabytes  | No         |
| Session expiration                 | 10 Megabytes | No         |
| Transactions                       | 10,000       | Yes        |

For more information, see [Quotas](#) in the *AWS Elemental MediaTailor User Guide*.

## AWS Migration Hub endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

The migration tools that integrate with AWS Migration Hub send migration status to the Migration Hub in the home Region you choose. For information about choosing a home Region, see [The AWS Migration Hub Home Region](#) in the *AWS Migration Hub User Guide*.

| Region Name           | Region         | Endpoint                         | Protocol |
|-----------------------|----------------|----------------------------------|----------|
| US East (N. Virginia) | us-east-1      | mgh.us-east-1.amazonaws.com      | HTTPS    |
| US West (Oregon)      | us-west-2      | mgh.us-west-2.amazonaws.com      | HTTPS    |
| Asia Pacific (Sydney) | ap-southeast-2 | mgh.ap-southeast-2.amazonaws.com | HTTPS    |
| Asia Pacific (Tokyo)  | ap-northeast-1 | mgh.ap-northeast-1.amazonaws.com | HTTPS    |
| Europe (Frankfurt)    | eu-central-1   | mgh.eu-central-1.amazonaws.com   | HTTPS    |

| Region Name      | Region    | Endpoint                    | Protocol |  |
|------------------|-----------|-----------------------------|----------|--|
| Europe (Ireland) | eu-west-1 | mgh.eu-west-1.amazonaws.com | HTTPS    |  |
| Europe (London)  | eu-west-2 | mgh.eu-west-2.amazonaws.com | HTTPS    |  |

## Service quotas

The quotas associated with AWS Migration Hub are the AWS Application Discovery Service quotas. For more information, see [AWS Application Discovery Service Quotas \(p. 39\)](#).

## Amazon Monitron endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

Amazon Monitron is currently supported in the following Regions:

- US East (N. Virginia): us-east-1
- Europe (Ireland): eu-west-1

### Service quotas

| Name                 | Default | Adjustable |
|----------------------|---------|------------|
| Assets per site      | 100     | Yes        |
| Gateways per site    | 200     | Yes        |
| Positions per asset  | 20      | Yes        |
| Projects per account | 10      | Yes        |
| Sites per project    | 50      | Yes        |
| Users per site       | 20      | Yes        |

## Amazon MQ endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#).

Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | mq.us-east-2.amazonaws.com<br>mq-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | mq.us-east-1.amazonaws.com<br>mq-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | mq.us-west-1.amazonaws.com<br>mq-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | mq.us-west-2.amazonaws.com<br>mq-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Asia Pacific (Hong Kong) | ap-east-1      | mq.ap-east-1.amazonaws.com                                    | HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | mq.ap-south-1.amazonaws.com                                   | HTTPS          |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | mq.ap-northeast-3.amazonaws.com                               | HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | mq.ap-northeast-2.amazonaws.com                               | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | mq.ap-southeast-1.amazonaws.com                               | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | mq.ap-southeast-2.amazonaws.com                               | HTTPS          |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | mq.ap-northeast-1.amazonaws.com                               | HTTPS          |  |
| Canada (Central)         | ca-central-1   | mq.ca-central-1.amazonaws.com                                 | HTTPS          |  |
| Europe (Frankfurt)       | eu-central-1   | mq.eu-central-1.amazonaws.com                                 | HTTPS          |  |

| <b>Region Name</b>        | <b>Region</b> | <b>Endpoint</b>   | <b>Protocol</b> |  |
|---------------------------|---------------|---|-----------------|--|
| Europe (Ireland)          | eu-west-1     | mq.eu-west-1.amazonaws.com  | HTTPS           |  |
| Europe (London)           | eu-west-2     | mq.eu-west-2.amazonaws.com  | HTTPS           |  |
| Europe (Milan)            | eu-south-1    | mq.eu-south-1.amazonaws.com   | HTTPS           |  |
| Europe (Paris)            | eu-west-3     | mq.eu-west-3.amazonaws.com  | HTTPS           |  |
| Europe (Stockholm)        | eu-north-1    | mq.eu-north-1.amazonaws.com   | HTTPS           |  |
| Middle East (Bahrain)     | me-south-1    | mq.me-south-1.amazonaws.com   | HTTPS           |  |
| South America (São Paulo) | sa-east-1     | mq.sa-east-1.amazonaws.com  | HTTPS           |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | mq.us-gov-east-1.amazonaws.com<br>mq-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | mq.us-gov-west-1.amazonaws.com<br>mq-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |

## Service quotas

| <b>Name</b>   | <b>Default</b> | <b>Adjustable</b> |
|---|----------------|-------------------|
| API burst limit   | 100            | No                |
| API rate limit  | 15             | No                |
| Destinations monitored in CloudWatch (ActiveMQ)           | 200            | No                |
| Destinations monitored in CloudWatch (RabbitMQ)           | 500            | No                |
| Groups per user (simple auth)                             | 20             | No                |
| Job scheduler usage limit per broker backed by Amazon EBS | 50 Gigabytes   | No                |
| Number of brokers, per region                             | 20             | Yes               |
| Revisions per configuration                               | 300            | No                |
| Security groups per broker                                | 5              | No                |

| Name  | Default       | Adjustable |
|---|---------------|------------|
| Storage capacity per larger broker            | 200 Gigabytes | No         |
| Storage capacity per smaller broker           | 20 Gigabytes  | No         |
| Tags per broker                               | 50            | No         |
| Temporary storage capacity per larger broker  | 50 Gigabytes  | No         |
| Temporary storage capacity per smaller broker | 5 Gigabytes   | No         |
| Users per broker (simple auth)                | 250           | No         |
| Wire-level connections per larger broker      | 1,000         | Yes        |
| Wire-level connections per smaller broker     | 100           | Yes        |

For more information, see [Quotas in Amazon MQ](#) in the *Amazon MQ Developer Guide*.

## Amazon Neptune endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name              | Region    | Endpoint                    | Protocol       |
|--------------------------|-----------|-----------------------------|----------------|
| US East (Ohio)           | us-east-2 | rds.us-east-2.amazonaws.com | HTTP and HTTPS |
| US East (N. Virginia)    | us-east-1 | rds.us-east-1.amazonaws.com | HTTP and HTTPS |
| US West (N. California)  | us-west-1 | rds.us-west-1.amazonaws.com | HTTP and HTTPS |
| US West (Oregon)         | us-west-2 | rds.us-west-2.amazonaws.com | HTTP and HTTPS |
| Asia Pacific (Hong Kong) | ap-east-1 | rds.ap-east-1.amazonaws.com | HTTP and HTTPS |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>                  | <b>Protocol</b> |  |
|---------------------------|----------------|----------------------------------|-----------------|--|
| Asia Pacific (Mumbai)     | ap-south-1     | rds.ap-south-1.amazonaws.com     | HTTP and HTTPS  |  |
| Asia Pacific (Seoul)      | ap-northeast-2 | rds.ap-northeast-2.amazonaws.com | HTTP and HTTPS  |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | rds.ap-southeast-1.amazonaws.com | HTTP and HTTPS  |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | rds.ap-southeast-2.amazonaws.com | HTTP and HTTPS  |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | rds.ap-northeast-1.amazonaws.com | HTTP and HTTPS  |  |
| Canada (Central)          | ca-central-1   | rds.ca-central-1.amazonaws.com   | HTTP and HTTPS  |  |
| Europe (Frankfurt)        | eu-central-1   | rds.eu-central-1.amazonaws.com   | HTTP and HTTPS  |  |
| Europe (Ireland)          | eu-west-1      | rds.eu-west-1.amazonaws.com      | HTTP and HTTPS  |  |
| Europe (London)           | eu-west-2      | rds.eu-west-2.amazonaws.com      | HTTP and HTTPS  |  |
| Europe (Paris)            | eu-west-3      | rds.eu-west-3.amazonaws.com      | HTTP and HTTPS  |  |
| Europe (Stockholm)        | eu-north-1     | rds.eu-north-1.amazonaws.com     | HTTP and HTTPS  |  |
| Middle East (Bahrain)     | me-south-1     | rds.me-south-1.amazonaws.com     | HTTP and HTTPS  |  |
| South America (São Paulo) | sa-east-1      | rds.sa-east-1.amazonaws.com      | HTTP and HTTPS  |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | rds.us-gov-east-1.amazonaws.com  | HTTP and HTTPS  |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | rds.us-gov-west-1.amazonaws.com  | HTTP and HTTPS  |  |

## Service quotas

| Name                                | Default | Adjustable |
|-------------------------------------|---------|------------|
| Cluster endpoints per DB cluster    | 5       | Yes        |
| Cross-region snapshot copy requests | 5       | Yes        |
| DB cluster Roles                    | 5       | Yes        |
| DB cluster manual snapshots         | 100     | Yes        |
| DB cluster parameter groups         | 50      | Yes        |
| DB clusters                         | 40      | Yes        |
| DB instance parameter groups        | 50      | Yes        |
| DB instances                        | 40      | Yes        |
| DB subnet groups                    | 50      | Yes        |
| Event subscriptions                 | 20      | Yes        |
| Read replicas per cluster           | 15      | No         |
| Reserved DB instances               | 40      | Yes        |
| Tags per resource                   | 50      | Yes        |

For more information, see [Amazon Neptune quotas](#) in the *Amazon Neptune User Guide*.

## AWS Network Firewall endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name           | Region    | Endpoint                                      | Protocol |  |
|-----------------------|-----------|---|----------|--|
| US East (Ohio)        | us-east-2 | network-firewall.us-east-2.amazonaws.com      | HTTPS    |  |
|                       |           | network-firewall-fips.us-east-2.amazonaws.com | HTTPS    |  |
| US East (N. Virginia) | us-east-1 | network-firewall.us-east-1.amazonaws.com      | HTTPS    |  |
|                       |           | network-firewall-fips.us-east-1.amazonaws.com | HTTPS    |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| US West (N. California)  | us-west-1      | network-firewall.us-west-1.amazonaws.com<br>network-firewall-fips.us-west-1.amazonaws.com       | HTTPS<br>HTTPS  |  |
| US West (Oregon)         | us-west-2      | network-firewall.us-west-2.amazonaws.com<br>network-firewall-fips.us-west-2.amazonaws.com       | HTTPS<br>HTTPS  |  |
| Africa (Cape Town)       | af-south-1     | network-firewall.af-south-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | network-firewall.ap-east-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | network-firewall.ap-south-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | network-firewall.ap-northeast-3.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | network-firewall.ap-northeast-2.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | network-firewall.ap-southeast-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | network-firewall.ap-southeast-2.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | network-firewall.ap-northeast-1.amazonaws.com   | HTTPS           |  |
| Canada (Central)         | ca-central-1   | network-firewall.ca-central-1.amazonaws.com<br>network-firewall-fips.ca-central-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| Europe (Frankfurt)       | eu-central-1   | network-firewall.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | network-firewall.eu-west-1.amazonaws.com  | HTTPS           |  |
| Europe (London)          | eu-west-2      | network-firewall.eu-west-2.amazonaws.com  | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | network-firewall.eu-south-1.amazonaws.com   | HTTPS           |  |

| Region Name               | Region        | Endpoint   | Protocol       |  |
|---------------------------|---------------|--|----------------|--|
| Europe (Paris)            | eu-west-3     | network-firewall.eu-west-3.amazonaws.com   | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1    | network-firewall.eu-north-1.amazonaws.com  | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1    | network-firewall.me-south-1.amazonaws.com  | HTTPS          |  |
| South America (São Paulo) | sa-east-1     | network-firewall.sa-east-1.amazonaws.com   | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | network-firewall-fips.us-gov-east-1.amazonaws.com<br>network-firewall-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | network-firewall-fips.us-gov-west-1.amazonaws.com<br>network-firewall-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name                 | Default | Adjustable |
|----------------------|---------|------------|
| Firewall policies    | 20      | Yes        |
| Firewalls            | 5       | Yes        |
| Stateful rulegroups  | 50      | Yes        |
| Stateless rulegroups | 50      | Yes        |

For more information, see [AWS Network Firewall quotas](#) in the *Network Firewall Developer Guide*.

## Transit Gateway Network Manager

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name      | Region    | Endpoint                               | Protocol |  |
|------------------|-----------|--|----------|--|
| US West (Oregon) | us-west-2 | networkmanager.us-west-2.amazonaws.com | HTTPS    |  |

## Service quotas

| Name                           | Default | Adjustable |
|--------------------------------|---------|------------|
| Connections per Global Network | 500     | Yes        |
| Devices per Global Network     | 200     | Yes        |
| Global Networks per account    | 5       | Yes        |
| Links per Global Network       | 200     | Yes        |
| Sites per Global Network       | 200     | Yes        |

For more information, see [Network Manager quotas](#).

## Amazon Nimble Studio endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name           | Region         | Endpoint                            | Protocol |  |
|-----------------------|----------------|-------------------------------------|----------|--|
| US East (N. Virginia) | us-east-1      | nimble.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)      | us-west-2      | nimble.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Sydney) | ap-southeast-2 | nimble.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Canada (Central)      | ca-central-1   | nimble.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (London)       | eu-west-2      | nimble.eu-west-2.amazonaws.com      | HTTPS    |  |

## Service quotas

| Name  | Default | Adjustable |
|---|---------|------------|
| Active Directory studio components per studio   | 1       | No         |
| Custom streaming images per studio              | 10      | Yes        |
| Launch profiles per studio                      | 50      | Yes        |
| Shared file system studio components per studio | 10      | Yes        |
| Streaming sessions per studio                   | 2       | Yes        |
| Studio components per studio                    | 50      | Yes        |
| Studio creation per account                     | 1       | No         |

## Amazon OpenSearch Service endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region     | Endpoint                        | Protocol |
|--------------------------|------------|---------------------------------|----------|
| US East (Ohio)           | us-east-2  | es.us-east-2.amazonaws.com      | HTTPS    |
|                          |            | es-fips.us-east-2.amazonaws.com | HTTPS    |
| US East (N. Virginia)    | us-east-1  | es.us-east-1.amazonaws.com      | HTTPS    |
|                          |            | es-fips.us-east-1.amazonaws.com | HTTPS    |
| US West (N. California)  | us-west-1  | es.us-west-1.amazonaws.com      | HTTPS    |
|                          |            | es-fips.us-west-1.amazonaws.com | HTTPS    |
| US West (Oregon)         | us-west-2  | es.us-west-2.amazonaws.com      | HTTPS    |
|                          |            | es-fips.us-west-2.amazonaws.com | HTTPS    |
| Africa (Cape Town)       | af-south-1 | es.af-south-1.amazonaws.com     | HTTPS    |
| Asia Pacific (Hong Kong) | ap-east-1  | es.ap-east-1.amazonaws.com      | HTTPS    |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|---------------------------|----------------|---|-----------------|--|
| Asia Pacific (Mumbai)     | ap-south-1     | es.ap-south-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Osaka)      | ap-northeast-3 | es.ap-northeast-3.amazonaws.com                                       | HTTPS           |  |
| Asia Pacific (Seoul)      | ap-northeast-2 | es.ap-northeast-2.amazonaws.com                                       | HTTPS           |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | es.ap-southeast-1.amazonaws.com                                       | HTTPS           |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | es.ap-southeast-2.amazonaws.com                                       | HTTPS           |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | es.ap-northeast-1.amazonaws.com                                       | HTTPS           |  |
| Canada (Central)          | ca-central-1   | es.ca-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Frankfurt)        | eu-central-1   | es.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)          | eu-west-1      | es.eu-west-1.amazonaws.com  | HTTPS           |  |
| Europe (London)           | eu-west-2      | es.eu-west-2.amazonaws.com  | HTTPS           |  |
| Europe (Milan)            | eu-south-1     | es.eu-south-1.amazonaws.com   | HTTPS           |  |
| Europe (Paris)            | eu-west-3      | es.eu-west-3.amazonaws.com  | HTTPS           |  |
| Europe (Stockholm)        | eu-north-1     | es.eu-north-1.amazonaws.com   | HTTPS           |  |
| Middle East (Bahrain)     | me-south-1     | es.me-south-1.amazonaws.com   | HTTPS           |  |
| South America (São Paulo) | sa-east-1      | es.sa-east-1.amazonaws.com  | HTTPS           |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | es.us-gov-east-1.amazonaws.com<br>es-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS  |  |

| Region Name            | Region        | Endpoint  | Protocol       |  |
|------------------------|---------------|---|----------------|--|
| AWS GovCloud (US-West) | us-gov-west-1 | es.us-gov-west-1.amazonaws.com<br>es-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name                                    | Default | Adjustable |
|---|---------|------------|
| Dedicated master instances per domain   | 5       | No         |
| Domains per region                      | 100     | No         |
| Instances per domain                    | 40      | Yes        |
| Instances per domain (T2 instance type) | 10      | No         |

For more information, see [Amazon OpenSearch Service limits](#).

## AWS OpsWorks endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

### AWS OpsWorks CM

You can create and manage AWS OpsWorks for Chef Automate and AWS OpsWorks for Puppet Enterprise servers in the following Regions. Resources can be managed only in the Region in which they are created. Resources that are created in one Regional endpoint are not available, nor can they be cloned to, another Regional endpoint.

| Region Name             | Region    | Endpoint                            | Protocol |  |
|-------------------------|-----------|-------------------------------------|----------|--|
| US East (Ohio)          | us-east-2 | opsworks-cm.us-east-2.amazonaws.com | HTTPS    |  |
| US East (N. Virginia)   | us-east-1 | opsworks-cm.us-east-1.amazonaws.com | HTTPS    |  |
| US West (N. California) | us-west-1 | opsworks-cm.us-west-1.amazonaws.com | HTTPS    |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                          | <b>Protocol</b> |  |
|--------------------------|----------------|--|-----------------|--|
| US West (Oregon)         | us-west-2      | opsworks-cm.us-west-2.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | opsworks-cm.ap-southeast-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | opsworks-cm.ap-southeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | opsworks-cm.ap-northeast-1.amazonaws.com | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | opsworks-cm.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | opsworks-cm.eu-west-1.amazonaws.com      | HTTPS           |  |

## AWS OpsWorks Stacks

You can create and manage AWS OpsWorks resources in all Regions except AWS GovCloud (US-West) and the China (Beijing) Region. The Canada (Central) Region is API-only; you cannot create stacks in Canada (Central) Region by using the AWS Management Console. Resources can be managed only in the Region in which they are created. Resources that are created in one Regional endpoint are not available, nor can they be cloned to, another Regional endpoint.

| <b>Region Name</b>      | <b>Region</b>  | <b>Endpoint</b>                       | <b>Protocol</b> |  |
|-------------------------|----------------|---------------------------------------|-----------------|--|
| US East (Ohio)          | us-east-2      | opsworks.us-east-2.amazonaws.com      | HTTPS           |  |
| US East (N. Virginia)   | us-east-1      | opsworks.us-east-1.amazonaws.com      | HTTPS           |  |
| US West (N. California) | us-west-1      | opsworks.us-west-1.amazonaws.com      | HTTPS           |  |
| US West (Oregon)        | us-west-2      | opsworks.us-west-2.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Mumbai)   | ap-south-1     | opsworks.ap-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Seoul)    | ap-northeast-2 | opsworks.ap-northeast-2.amazonaws.com | HTTPS           |  |

| Region Name               | Region         | Endpoint                              | Protocol |  |
|---------------------------|----------------|---------------------------------------|----------|--|
| Asia Pacific (Singapore)  | ap-southeast-1 | opsworks.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | opsworks.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | opsworks.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)          | ca-central-1   | opsworks.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)        | eu-central-1   | opsworks.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)          | eu-west-1      | opsworks.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)           | eu-west-2      | opsworks.eu-west-2.amazonaws.com      | HTTPS    |  |
| Europe (Paris)            | eu-west-3      | opsworks.eu-west-3.amazonaws.com      | HTTPS    |  |
| South America (São Paulo) | sa-east-1      | opsworks.sa-east-1.amazonaws.com      | HTTPS    |  |

## Service quotas

The following quotas are for AWS OpsWorks CM.

| Name  | Default | Adjustable |
|---|---------|------------|
| Automated (scheduled) backup generations per server | 10      | Yes        |
| Chef Automate or Puppet Enterprise servers          | 5       | Yes        |
| Manual backups per server                           | 10      | Yes        |

The following quotas are for AWS OpsWorks stacks.

| Name                | Default | Adjustable |
|---------------------|---------|------------|
| Apps per stack      | 40      | Yes        |
| Instances per stack | 40      | Yes        |
| Layers per stack    | 40      | Yes        |

| Name   | Default | Adjustable |
|--------|---------|------------|
| Stacks | 40      | Yes        |

## AWS Organizations endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

Because AWS Organizations is a global service, there is a single global endpoint for all of the AWS Regions in each partition.

| Region Name              | Region     | Endpoint   | Protocol                |  |
|--------------------------|------------|--|-------------------------|--|
| US East (Ohio)           | us-east-2  | organizations.us-east-1.amazonaws.com<br>organizations-fips.us-east-1.amazonaws.com<br>organizations.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1  | organizations.us-east-1.amazonaws.com<br>organizations-fips.us-east-1.amazonaws.com<br>organizations.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1  | organizations.us-east-1.amazonaws.com<br>organizations-fips.us-east-1.amazonaws.com<br>organizations.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2  | organizations.us-east-1.amazonaws.com<br>organizations-fips.us-east-1.amazonaws.com<br>organizations.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |
| Africa (Cape Town)       | af-south-1 | organizations.us-east-1.amazonaws.com<br>organizations-fips.us-east-1.amazonaws.com<br>organizations.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |
| Asia Pacific (Hong Kong) | ap-east-1  | organizations.us-east-1.amazonaws.com<br>organizations-fips.us-east-1.amazonaws.com<br>organizations.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>  | <b>Protocol</b>         |  |
|--------------------------|----------------|--|-------------------------|--|
| Asia Pacific (Mumbai)    | ap-south-1     | organizations.us-east-1.amazonaws.com<br>organizations-fips.us-east-1.amazonaws.com<br>organizations.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | organizations.us-east-1.amazonaws.com<br>organizations-fips.us-east-1.amazonaws.com<br>organizations.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | organizations.us-east-1.amazonaws.com<br>organizations-fips.us-east-1.amazonaws.com<br>organizations.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |
| Asia Pacific (Singapore) | ap-southeast-1 | organizations.us-east-1.amazonaws.com<br>organizations-fips.us-east-1.amazonaws.com<br>organizations.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | organizations.us-east-1.amazonaws.com<br>organizations-fips.us-east-1.amazonaws.com<br>organizations.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | organizations.us-east-1.amazonaws.com<br>organizations-fips.us-east-1.amazonaws.com<br>organizations.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |
| Canada (Central)         | ca-central-1   | organizations.us-east-1.amazonaws.com<br>organizations-fips.us-east-1.amazonaws.com<br>organizations.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |
| Europe (Frankfurt)       | eu-central-1   | organizations.us-east-1.amazonaws.com<br>organizations-fips.us-east-1.amazonaws.com<br>organizations.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |
| Europe (Ireland)         | eu-west-1      | organizations.us-east-1.amazonaws.com<br>organizations-fips.us-east-1.amazonaws.com<br>organizations.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |
| Europe (London)          | eu-west-2      | organizations.us-east-1.amazonaws.com<br>organizations-fips.us-east-1.amazonaws.com<br>organizations.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |

| Region Name               | Region        | Endpoint  | Protocol                |  |
|---------------------------|---------------|---|-------------------------|--|
| Europe (Milan)            | eu-south-1    | organizations.us-east-1.amazonaws.com<br>organizations-fips.us-east-1.amazonaws.com<br>organizations.us-east-1.amazonaws.com        | HTTPS<br>HTTPS<br>HTTPS |  |
| Europe (Paris)            | eu-west-3     | organizations.us-east-1.amazonaws.com<br>organizations-fips.us-east-1.amazonaws.com<br>organizations.us-east-1.amazonaws.com        | HTTPS<br>HTTPS<br>HTTPS |  |
| Europe (Stockholm)        | eu-north-1    | organizations.us-east-1.amazonaws.com<br>organizations-fips.us-east-1.amazonaws.com<br>organizations.us-east-1.amazonaws.com        | HTTPS<br>HTTPS<br>HTTPS |  |
| Middle East (Bahrain)     | me-south-1    | organizations.us-east-1.amazonaws.com<br>organizations-fips.us-east-1.amazonaws.com<br>organizations.us-east-1.amazonaws.com        | HTTPS<br>HTTPS<br>HTTPS |  |
| South America (São Paulo) | sa-east-1     | organizations.us-east-1.amazonaws.com<br>organizations-fips.us-east-1.amazonaws.com<br>organizations.us-east-1.amazonaws.com        | HTTPS<br>HTTPS<br>HTTPS |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | organizations.us-gov-west-1.amazonaws.com<br>organizations.us-gov-west-1.amazonaws.com<br>organizations.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | organizations.us-gov-west-1.amazonaws.com<br>organizations.us-gov-west-1.amazonaws.com<br>organizations.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |

## Service quotas

| Name  | Default | Adjustable |
|---|---------|------------|
| Default maximum number of accounts          | 4       | Yes        |
| Enable all features request expiration      | 90      | No         |
| Handshake expiration                        | 30      | No         |
| Invitation acceptance expiration            | 15      | No         |
| Member accounts you can concurrently create | 5       | No         |

| Name  | Default     | Adjustable |
|---|-------------|------------|
| Minimum age for removal of created accounts                       | 7           | No         |
| Number of invitation attempts you can perform in a 24-hour period | 20          | No         |
| OU maximum nesting in a root                                      | 5           | No         |
| OUs in an organization  | 1,000       | No         |
| Policies in an organization                                       | 1,000       | No         |
| Roots in an organization  | 1           | No         |
| Service control policies per OU                                   | 5           | No         |
| Service control policies per account                              | 5           | No         |
| Service control policies per root                                 | 5           | No         |
| Service control policy (SCP) document size                        | 5,120 Bytes | No         |

For more information, see [Quotas for AWS Organizations](#) in the *AWS Organizations User Guide*.

## AWS Outposts endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name             | Region    | Endpoint  | Protocol       |
|-------------------------|-----------|---|----------------|
| US East (Ohio)          | us-east-2 | outposts.us-east-2.amazonaws.com<br>outposts-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |
| US East (N. Virginia)   | us-east-1 | outposts.us-east-1.amazonaws.com<br>outposts-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |
| US West (N. California) | us-west-1 | outposts.us-west-1.amazonaws.com<br>outposts-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |
| US West (Oregon)        | us-west-2 | outposts.us-west-2.amazonaws.com<br>outposts-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| Africa (Cape Town)       | af-south-1     | outposts.af-south-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | outposts.ap-east-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | outposts.ap-south-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | outposts.ap-northeast-3.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | outposts.ap-northeast-2.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | outposts.ap-southeast-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | outposts.ap-southeast-2.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | outposts.ap-northeast-1.amazonaws.com   | HTTPS           |  |
| Canada (Central)         | ca-central-1   | outposts.ca-central-1.amazonaws.com<br>outposts-fips.ca-central-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| Europe (Frankfurt)       | eu-central-1   | outposts.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | outposts.eu-west-1.amazonaws.com  | HTTPS           |  |
| Europe (London)          | eu-west-2      | outposts.eu-west-2.amazonaws.com  | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | outposts.eu-south-1.amazonaws.com   | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | outposts.eu-west-3.amazonaws.com  | HTTPS           |  |
| Europe (Stockholm)       | eu-north-1     | outposts.eu-north-1.amazonaws.com   | HTTPS           |  |

| Region Name               | Region        | Endpoint   | Protocol       |  |
|---------------------------|---------------|--|----------------|--|
| Middle East (Bahrain)     | me-south-1    | outposts.me-south-1.amazonaws.com  | HTTPS          |  |
| South America (São Paulo) | sa-east-1     | outposts.sa-east-1.amazonaws.com   | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | outposts.us-gov-east-1.amazonaws.com<br>outposts.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | outposts.us-gov-west-1.amazonaws.com<br>outposts.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Amazon Personalize endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

#### Amazon Personalize

| Region Name              | Region         | Endpoint                                 | Protocol |
|--------------------------|----------------|--|----------|
| US East (N. Virginia)    | us-east-1      | personalize.us-east-1.amazonaws.com      | HTTPS    |
| US East (Ohio)           | us-east-2      | personalize.us-east-2.amazonaws.com      | HTTPS    |
| US West (Oregon)         | us-west-2      | personalize.us-west-2.amazonaws.com      | HTTPS    |
| Asia Pacific (Tokyo)     | ap-northeast-1 | personalize.ap-northeast-1.amazonaws.com | HTTPS    |
| Asia Pacific (Mumbai)    | ap-south-1     | personalize.ap-south-1.amazonaws.com     | HTTPS    |
| Asia Pacific (Seoul)     | ap-northeast-2 | personalize.ap-northeast-2.amazonaws.com | HTTPS    |
| Asia Pacific (Singapore) | ap-southeast-1 | personalize.ap-southeast-1.amazonaws.com | HTTPS    |

| Region Name           | Region         | Endpoint                                 | Protocol |
|-----------------------|----------------|--|----------|
| Asia Pacific (Sydney) | ap-southeast-2 | personalize.ap-southeast-2.amazonaws.com | HTTPS    |
| China (Beijing)       | cn-north-1     | personalize.cn-north-1.amazonaws.com.cn  | HTTPS    |
| Canada (Central)      | ca-central-1   | personalize.ca-central-1.amazonaws.com   | HTTPS    |
| Europe (Ireland)      | eu-west-1      | personalize.eu-west-1.amazonaws.com      | HTTPS    |
| Europe (Frankfurt)    | eu-central-1   | personalize.eu-central-1.amazonaws.com   | HTTPS    |

## Amazon Personalize Events

| Region Name              | Region         | Endpoint  | Protocol |
|--------------------------|----------------|---|----------|
| US East (N. Virginia)    | us-east-1      | personalize-events.us-east-1.amazonaws.com      | HTTPS    |
| US East (Ohio)           | us-east-2      | personalize-events.us-east-2.amazonaws.com      | HTTPS    |
| US West (Oregon)         | us-west-2      | personalize-events.us-west-2.amazonaws.com      | HTTPS    |
| Asia Pacific (Tokyo)     | ap-northeast-1 | personalize-events.ap-northeast-1.amazonaws.com | HTTPS    |
| Asia Pacific (Mumbai)    | ap-south-1     | personalize-events.ap-south-1.amazonaws.com     | HTTPS    |
| Asia Pacific (Seoul)     | ap-northeast-2 | personalize-events.ap-northeast-2.amazonaws.com | HTTPS    |
| Asia Pacific (Singapore) | ap-southeast-1 | personalize-events.ap-southeast-1.amazonaws.com | HTTPS    |
| Asia Pacific (Sydney)    | ap-southeast-2 | personalize-events.ap-southeast-2.amazonaws.com | HTTPS    |
| China (Beijing)          | cn-north-1     | personalize-events.cn-north-1.amazonaws.com.cn  | HTTPS    |
| Canada (Central)         | ca-central-1   | personalize-events.ca-central-1.amazonaws.com   | HTTPS    |
| Europe (Ireland)         | eu-west-1      | personalize-events.eu-west-1.amazonaws.com      | HTTPS    |
| Europe (Frankfurt)       | eu-central-1   | personalize-events.eu-central-1.amazonaws.com   | HTTPS    |

## Amazon Personalize Runtime

| Region Name              | Region         | Endpoint   | Protocol |
|--------------------------|----------------|--|----------|
| US East (N. Virginia)    | us-east-1      | personalize-runtime.us-east-1.amazonaws.com      | HTTPS    |
| US East (Ohio)           | us-east-2      | personalize-runtime.us-east-2.amazonaws.com      | HTTPS    |
| US West (Oregon)         | us-west-2      | personalize-runtime.us-west-2.amazonaws.com      | HTTPS    |
| Asia Pacific (Tokyo)     | ap-northeast-1 | personalize-runtime.ap-northeast-1.amazonaws.com | HTTPS    |
| Asia Pacific (Mumbai)    | ap-south-1     | personalize-runtime.ap-south-1.amazonaws.com     | HTTPS    |
| Asia Pacific (Seoul)     | ap-northeast-2 | personalize-runtime.ap-northeast-2.amazonaws.com | HTTPS    |
| Asia Pacific (Singapore) | ap-southeast-1 | personalize-runtime.ap-southeast-1.amazonaws.com | HTTPS    |
| Asia Pacific (Sydney)    | ap-southeast-2 | personalize-runtime.ap-southeast-2.amazonaws.com | HTTPS    |
| China (Beijing)          | cn-north-1     | personalize-runtime.cn-north-1.amazonaws.com.cn  | HTTPS    |
| Canada (Central)         | ca-central-1   | personalize-runtime.ca-central-1.amazonaws.com   | HTTPS    |
| Europe (Ireland)         | eu-west-1      | personalize-runtime.eu-west-1.amazonaws.com      | HTTPS    |
| Europe (Frankfurt)       | eu-central-1   | personalize-runtime.eu-central-1.amazonaws.com   | HTTPS    |

## Service quotas

| Name                  | Default | Adjustable |
|-----------------------|---------|------------|
| Active campaigns      | 5       | Yes        |
| Active dataset groups | 500     | No         |
| Active datasets       | 500     | No         |
| Active event trackers | 500     | No         |
| Active filters        | 10      | Yes        |
| Active solutions      | 500     | No         |

| Name  | Default       | Adjustable |
|---|---------------|------------|
| Amount of data for HRNN recipe                                    | 100 Gigabytes | No         |
| Amount of data for Personalized-Ranking recipe                    | 100 Gigabytes | No         |
| Amount of data for Popularity-Count recipe                        | 100 Gigabytes | No         |
| Amount of data for SIMS recipe                                    | 100 Gigabytes | No         |
| Amount of interactions data for HRNN-coldstart recipe             | 100 Gigabytes | No         |
| Amount of interactions data for HRNN-metadata recipe              | 100 Gigabytes | No         |
| Amount of users and items data combined for HRNN-coldstart recipe | 5 Gigabytes   | No         |
| Amount of users and items data combined for HRNN-metadata recipe  | 5 Gigabytes   | No         |
| Event size  | 10 Kilobytes  | No         |
| Minimum data points for model training                            | 1,000         | No         |
| Minimum unique users for model training                           | 25            | No         |
| Number of events in PutEvents call                                | 10            | No         |
| Number of interactions for model training                         | 500,000,000   | No         |
| Number of items used in model training                            | 750,000       | No         |
| Number of schemas   | 500           | No         |
| Pending or In Progress batch inference jobs                       | 5             | Yes        |
| Pending or In Progress solution versions                          | 20            | Yes        |
| Rate of CreateCampaign requests                                   | 1             | No         |
| Rate of CreateDataset requests                                    | 1             | No         |
| Rate of CreateDatasetGroup requests                               | 1             | No         |
| Rate of CreateDatasetImportJob requests                           | 1             | No         |
| Rate of CreateEventTracker requests                               | 1             | No         |
| Rate of CreateSchema requests                                     | 1             | No         |
| Rate of CreateSolution requests                                   | 1             | No         |
| Rate of CreateSolutionVersion requests                            | 1             | No         |
| Rate of DeleteCampaign requests                                   | 1             | No         |

| Name   | Default | Adjustable |
|--|---------|------------|
| Rate of DeleteDataset requests                       | 1       | No         |
| Rate of DeleteDatasetGroup requests                  | 1       | No         |
| Rate of DeleteDatasetImportJob requests              | 1       | No         |
| Rate of DeleteEventTracker requests                  | 1       | No         |
| Rate of DeleteSchema requests                        | 1       | No         |
| Rate of DeleteSolution requests                      | 1       | No         |
| Rate of DescribeAlgorithm requests                   | 1       | No         |
| Rate of DescribeCampaign requests                    | 1       | No         |
| Rate of DescribeDataset requests                     | 1       | No         |
| Rate of DescribeDatasetGroup requests                | 1       | No         |
| Rate of DescribeDatasetImportJob requests            | 1       | No         |
| Rate of DescribeEventTracker requests                | 1       | No         |
| Rate of DescribeFeatureTransformation requests       | 1       | No         |
| Rate of DescribeRecipe requests                      | 1       | No         |
| Rate of DescribeSchema requests                      | 1       | No         |
| Rate of DescribeSolution requests                    | 1       | No         |
| Rate of GetPersonalizedRanking requests per campaign | 500     | No         |
| Rate of GetRecommendations requests per campaign     | 500     | No         |
| Rate of GetSolutionMetrics requests                  | 1       | No         |
| Rate of ListCampaigns requests                       | 1       | No         |
| Rate of ListDatasetGroups requests                   | 1       | No         |
| Rate of ListDatasetImportJobRuns requests            | 1       | No         |
| Rate of ListDatasetImportJobs requests               | 1       | No         |
| Rate of ListDatasets requests                        | 1       | No         |
| Rate of ListEventTrackers requests                   | 1       | No         |
| Rate of ListRecipes requests                         | 1       | No         |
| Rate of ListSchemas requests                         | 1       | No         |
| Rate of ListSolutionVersions requests                | 1       | No         |
| Rate of ListSolutions requests                       | 1       | No         |
| Rate of PutEvents requests                           | 1,000   | Yes        |
| Rate of UpdateCampaign requests                      | 1       | No         |

| Name                             | Default | Adjustable |
|----------------------------------|---------|------------|
| Rate of UpdateDataset requests   | 1       | No         |
| Rate of transactions per account | 2,500   | No         |

## Amazon Pinpoint endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

Amazon Pinpoint includes the Amazon Pinpoint API and the Amazon Pinpoint SMS and Voice API.

### Service endpoints

#### Amazon Pinpoint API

| Region Name              | Region         | Endpoint                              | Protocol |
|--------------------------|----------------|---------------------------------------|----------|
| US East (N. Virginia)    | us-east-1      | pinpoint.us-east-1.amazonaws.com      | HTTPS    |
| US West (Oregon)         | us-west-2      | pinpoint.us-west-2.amazonaws.com      | HTTPS    |
| Asia Pacific (Mumbai)    | ap-south-1     | pinpoint.ap-south-1.amazonaws.com     | HTTPS    |
| Asia Pacific (Seoul)     | ap-northeast-2 | pinpoint.ap-northeast-2.amazonaws.com | HTTPS    |
| Asia Pacific (Singapore) | ap-southeast-1 | pinpoint.ap-southeast-1.amazonaws.com | HTTPS    |
| Asia Pacific (Sydney)    | ap-southeast-2 | pinpoint.ap-southeast-2.amazonaws.com | HTTPS    |
| Asia Pacific (Tokyo)     | ap-northeast-1 | pinpoint.ap-northeast-1.amazonaws.com | HTTPS    |
| Canada (Central)         | ca-central-1   | pinpoint.ca-central-1.amazonaws.com   | HTTPS    |
| Europe (Frankfurt)       | eu-central-1   | pinpoint.eu-central-1.amazonaws.com   | HTTPS    |

| Region Name            | Region        | Endpoint                             | Protocol |  |
|------------------------|---------------|--------------------------------------|----------|--|
| Europe (Ireland)       | eu-west-1     | pinpoint.eu-west-1.amazonaws.com     | HTTPS    |  |
| Europe (London)        | eu-west-2     | pinpoint.eu-west-2.amazonaws.com     | HTTPS    |  |
| AWS GovCloud (US-West) | us-gov-west-1 | pinpoint.us-gov-west-1.amazonaws.com | HTTPS    |  |

**Note**

You can't use the Amazon Pinpoint API to send SMS messages in the Asia Pacific (Seoul) Region.

## Amazon Pinpoint SMS and Voice API

| Region Name           | Region         | Endpoint  | Protocol |  |
|-----------------------|----------------|---|----------|--|
| US East (N. Virginia) | us-east-1      | sms-voice.pinpoint.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)      | us-west-2      | sms-voice.pinpoint.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai) | ap-south-1     | sms-voice.pinpoint.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Sydney) | ap-southeast-2 | sms-voice.pinpoint.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Europe (Frankfurt)    | eu-central-1   | sms-voice.pinpoint.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)      | eu-west-1      | sms-voice.pinpoint.eu-west-1.amazonaws.com      | HTTPS    |  |

**Note**

The Amazon Pinpoint SMS and Voice API is not available in the following Regions:

- Asia Pacific (Seoul) Region
- Asia Pacific (Singapore) Region
- Asia Pacific (Tokyo) Region
- Canada (Central) Region
- Europe (London) Region

## Service quotas

| Name  | Default     | Adjustable |
|---|-------------|------------|
| APNs sandbox message payload size per message                           | 4 Kilobytes | No         |
| Active campaigns per account  | 200         | Yes        |
| All other operations burst quota  | 300         | No         |
| All other operations rate quota   | 300         | No         |
| Amazon Device Messaging (ADM) message payload size per message          | 6 Kilobytes | No         |
| Apple Push Notification service (APNs) message payload size per message | 4 Kilobytes | No         |
| Attribute name length   | 50          | No         |
| Attribute value length  | 100         | No         |
| Baidu Cloud Push message payload size per message                       | 4 Kilobytes | No         |
| CreateCampaign operation burst quota                                    | 25          | No         |
| CreateCampaign operation rate quota                                     | 25          | No         |
| CreateSegment operation burst quota                                     | 25          | No         |
| CreateSegment operation rate quota                                      | 25          | No         |
| DeleteCampaign operation burst quota                                    | 25          | No         |
| DeleteCampaign operation rate quota                                     | 25          | No         |
| DeleteEndpoint operation burst quota                                    | 1,000       | No         |
| DeleteEndpoint operation rate quota                                     | 1,000       | No         |
| DeleteSegment operation burst quota                                     | 25          | No         |
| DeleteSegment operation rate quota                                      | 25          | No         |
| Firebase Cloud Messaging (FCM) message payload size per message         | 4 Kilobytes | No         |
| GetEndpoint operation burst quota                                       | 7,000       | No         |
| GetEndpoint operation rate quota  | 7,000       | No         |
| Import size per import job  | 1           | Yes        |
| Invocation payload size   | 7 Megabytes | No         |
| Maximum amount of time to wait for a Lambda function to process data    | 15 Seconds  | No         |

| Name  | Default      | Adjustable |
|---|--------------|------------|
| Maximum length of a recommended attribute display name  | 25           | No         |
| Maximum length of a recommended attribute name  | 50           | No         |
| Maximum length of a recommended attribute value that's retrieved from Amazon Personalize      | 100          | No         |
| Maximum message size, including attachments   | 10 Megabytes | No         |
| Maximum number of active journeys per account   | 50           | Yes        |
| Maximum number of attempts to invoke a Lambda function  | 3 Seconds    | No         |
| Maximum number of attribute keys and metric keys for each event per request                   | 40           | No         |
| Maximum number of characters in ADM-specific template parts of a push notification template   | 4,000        | No         |
| Maximum number of characters in APN-specific template parts of a push notification template   | 2,000        | No         |
| Maximum number of characters in Baidu-specific template parts of a push notification template | 4,000        | No         |
| Maximum number of characters in FCM-specific template parts of a push notification template   | 4,000        | No         |
| Maximum number of characters in a voice template  | 10,000       | No         |
| Maximum number of characters in an SMS template   | 1,600        | No         |
| Maximum number of characters in an email template   | 500,000      | No         |
| Maximum number of characters in the default template parts of a push notification template    | 2,000        | No         |
| Maximum number of characters per attribute key  | 50           | No         |
| Maximum number of characters per attribute value  | 200          | No         |
| Maximum number of custom attribute keys per app   | 500          | No         |
| Maximum number of custom attribute values per attribute key                                   | 100,000      | No         |
| Maximum number of custom event types per app  | 1,500        | No         |
| Maximum number of custom metric keys per app  | 500          | No         |
| Maximum number of dimensions that can be used to create a segment                             | 100          | No         |
| Maximum number of events in a request   | 100          | No         |
| Maximum number of journey activities per journey  | 40           | Yes        |
| Maximum number of message templates per account   | 10,000       | Yes        |
| Maximum number of model configurations per account  | 100          | No         |

| Name   | Default         | Adjustable |
|--|-----------------|------------|
| Maximum number of model configurations per message template  | 1               | No         |
| Maximum number of push notifications that can be sent per second in a campaign                       | 25,000          | Yes        |
| Maximum number of recommendations per endpoint or user   | 5               | No         |
| Maximum number of recommended attributes per endpoint or user  | 1               | No         |
| Maximum number of recommended attributes per endpoint or user (AWS Lambda function)                  | 10              | No         |
| Maximum number of versions per template  | 5,000           | No         |
| Maximum segment size per campaign  | 100,000,000     | No         |
| Maximum segment size per journey   | 100,000,000     | No         |
| Maximum size of a request  | 4 Megabytes     | No         |
| Maximum size of an individual event  | 1,000 Kilobytes | No         |
| Maximum size of an invocation payload (request and response) for a Lambda function                   | 6 Megabytes     | No         |
| Maximum size per endpoint  | 15 Kilobytes    | Yes        |
| Number of Amazon Pinpoint projects   | 100             | No         |
| Number of Amazon SNS topics for two-way SMS per account  | 100,000         | Yes        |
| Number of EndpointBatchItem objects in an EndpointBatchRequest payload                               | 100             | No         |
| Number of SMS messages that can be sent each second (sending rate)                                   | 20              | Yes        |
| Number of SMS messages that can be sent to a single recipient each second                            | 1               | No         |
| Number of attributes assigned to the Attributes parameter  | 250             | Yes        |
| Number of attributes assigned to the Attributes, Metrics, and UserAttributes parameters collectively | 250             | Yes        |
| Number of attributes assigned to the Metrics parameter   | 250             | Yes        |
| Number of attributes assigned to the UserAttributes parameter  | 250             | Yes        |
| Number of characters in a voice message  | 6,000           | No         |
| Number of concurrent import jobs   | 10              | Yes        |
| Number of emails that can be sent each second (sending rate)   | 1               | Yes        |
| Number of emails that can be sent per 24-hour period (sending quota)                                 | 200             | Yes        |
| Number of endpoints with the same user ID  | 10              | No         |
| Number of event-based campaigns  | 25              | Yes        |

| Name  | Default | Adjustable |
|---|---------|------------|
| Number of identities that you can verify  | 10,000  | No         |
| Number of recipients per message  | 50      | No         |
| Number of values assigned to the Attributes parameter attributes per attribute              | 50      | No         |
| Number of values assigned to the UserAttributes parameter attributes per attribute          | 50      | No         |
| Number of verified identities   | 10,000  | No         |
| Number of voice configuration sets per AWS region   | 10,000  | No         |
| Number of voice messages that can be sent during a 24-hour period                           | 20      | No         |
| Number of voice messages that can be sent from a single originating phone number per second | 1       | No         |
| Number of voice messages that can be sent per minute  | 5       | No         |
| Number of voice messages that can be sent to a single recipient during a 24-hour period     | 5       | No         |
| PhoneNumberValidate operation burst quota   | 20      | No         |
| PhoneNumberValidate operation rate quota  | 20      | No         |
| PutEvents operation burst quota   | 7,000   | No         |
| PutEvents operation rate quota  | 7,000   | No         |
| SMS spending threshold  | 1       | Yes        |
| SendMessages operation burst quota  | 4,000   | No         |
| SendMessages operation rate quota   | 4,000   | No         |
| SendUsersMessages operation burst quota   | 6,000   | No         |
| SendUsersMessages operation rate quota  | 6,000   | No         |
| UpdateCampaign operation burst quota  | 25      | No         |
| UpdateCampaign operation rate quota   | 25      | No         |
| UpdateEndpoint operation burst quota  | 5,000   | No         |
| UpdateEndpoint operation rate quota   | 5,000   | No         |
| UpdateEndpointsBatch operation burst quota  | 5,000   | No         |
| UpdateEndpointsBatch operation rate quota   | 5,000   | No         |
| UpdateSegment operation burst quota   | 25      | No         |
| UpdateSegment operation rate quota  | 25      | No         |
| Voice message length  | 30      | No         |

For more information, see [Amazon Pinpoint quotas](#) in the *Amazon Pinpoint Developer Guide*.

## Amazon Polly endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | polly.us-east-2.amazonaws.com<br>polly-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | polly.us-east-1.amazonaws.com<br>polly-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | polly.us-west-1.amazonaws.com<br>polly-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | polly.us-west-2.amazonaws.com<br>polly-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Africa (Cape Town)       | af-south-1     | polly.af-south-1.amazonaws.com                                      | HTTPS          |  |
| Asia Pacific (Hong Kong) | ap-east-1      | polly.ap-east-1.amazonaws.com                                       | HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | polly.ap-south-1.amazonaws.com                                      | HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | polly.ap-northeast-2.amazonaws.com                                  | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | polly.ap-southeast-1.amazonaws.com                                  | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | polly.ap-southeast-2.amazonaws.com                                  | HTTPS          |  |

| Region Name               | Region         | Endpoint  | Protocol       |  |
|---------------------------|----------------|---|----------------|--|
| Asia Pacific (Tokyo)      | ap-northeast-1 | polly.ap-northeast-1.amazonaws.com  | HTTPS          |  |
| Canada (Central)          | ca-central-1   | polly.ca-central-1.amazonaws.com  | HTTPS          |  |
| Europe (Frankfurt)        | eu-central-1   | polly.eu-central-1.amazonaws.com  | HTTPS          |  |
| Europe (Ireland)          | eu-west-1      | polly.eu-west-1.amazonaws.com   | HTTPS          |  |
| Europe (London)           | eu-west-2      | polly.eu-west-2.amazonaws.com   | HTTPS          |  |
| Europe (Paris)            | eu-west-3      | polly.eu-west-3.amazonaws.com   | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1     | polly.eu-north-1.amazonaws.com  | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1     | polly.me-south-1.amazonaws.com  | HTTPS          |  |
| South America (São Paulo) | sa-east-1      | polly.sa-east-1.amazonaws.com   | HTTPS          |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | polly.us-gov-west-1.amazonaws.com<br>polly-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name                                      | Default | Adjustable |
|---|---------|------------|
| Burst size of API requests                | 120     | Yes        |
| Burst size of lexicon management requests | 4       | Yes        |
| Burst size of speech requests             | 100     | Yes        |
| Concurrent connections                    | 90      | Yes        |
| Lexicon size                              | 4,000   | No         |
| Number of lexicons                        | 100     | No         |
| Rate of API requests                      | 100     | Yes        |
| Rate of StartSpeechSynthesisTask requests | 10      | Yes        |

| Name   | Default | Adjustable |
|--|---------|------------|
| Rate of lexicon management requests              | 2       | Yes        |
| Rate of speech requests                          | 80      | Yes        |
| Rate of speech synthesis task requests           | 10      | Yes        |
| StartSpeechSynthesisTask billed characters limit | 100,000 | Yes        |
| StartSpeechSynthesisTask lexicons count          | 5       | No         |
| StartSpeechSynthesisTask total characters limit  | 200,000 | Yes        |
| SynthesizeSpeech billed characters limit         | 3,000   | Yes        |
| SynthesizeSpeech lexicons count                  | 5       | No         |
| SynthesizeSpeech total characters limit          | 6,000   | Yes        |

For more information, see [Quotas](#) in the *Amazon Polly Developer Guide*.

## Amazon Managed Service for Prometheus endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name              | Region         | Endpoint                         | Protocol |
|--------------------------|----------------|----------------------------------|----------|
| US East (Ohio)           | us-east-2      | aps.us-east-2.amazonaws.com      | HTTPS    |
| US East (N. Virginia)    | us-east-1      | aps.us-east-1.amazonaws.com      | HTTPS    |
| US West (Oregon)         | us-west-2      | aps.us-west-2.amazonaws.com      | HTTPS    |
| Asia Pacific (Singapore) | ap-southeast-1 | aps.ap-southeast-1.amazonaws.com | HTTPS    |
| Asia Pacific (Sydney)    | ap-southeast-2 | aps.ap-southeast-2.amazonaws.com | HTTPS    |

| Region Name          | Region         | Endpoint                         | Protocol |  |
|----------------------|----------------|----------------------------------|----------|--|
| Asia Pacific (Tokyo) | ap-northeast-1 | aps.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Europe (Frankfurt)   | eu-central-1   | aps.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)     | eu-west-1      | aps.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (Stockholm)   | eu-north-1     | aps.eu-north-1.amazonaws.com     | HTTPS    |  |

## Service quotas

Amazon Managed Service for Prometheus has the following quotas for series, labels, and API requests. The **Possible error message** column shows what error message you might see if your Prometheus data exceeds a limit. If you see one of these error messages, you should request an increase to the corresponding limit.

| Resource  | Default quota   | Possible error message   |
|---|---|--|
| Active series (metrics that have reported data in the past 5 minutes) per workspace | 1,000,000. You can <a href="#">request a quota increase</a> .                     | per-user series limit of 1000000 exceeded, please contact administrator to raise it  |
| Active series per metric name   | 200,000. You can <a href="#">request a quota increase</a> .                       | per-metric series limit of 200000 exceeded, please contact administrator to raise it |
| Ingestion rate  | 70,000 samples per second. You can <a href="#">request a quota increase</a> .     | ingestion rate limit (...) exceeded  |
| Ingestion burst size  | 1,000,000 samples. You can <a href="#">request a quota increase</a> .             | ingestion rate limit (...) exceeded  |
| Labels per metric series.   | 70. You can <a href="#">request a quota increase</a> .                            | series has too many labels (...) series: '%s'  |
| Query bytes for instant queries   | 750MB that can be scanned by a single instant query. This quota can't be changed. | the query hit the aggregated   |

| Resource  | Default quota  | Possible error message   |
|---|--|--|
|   |  | chunks size limit<br><br>(A <i>chunk</i> stores raw samples of series for a certain time span.)                              |
| Query bytes for range queries   | 750MB that can be scanned per 24-hour interval in a single range query. This quota can't be changed.               | the query hit the aggregated chunks size limit<br><br>(A <i>chunk</i> stores raw samples of series for a certain time span.) |
| Query time range  | 32 days between the start time and the end time of a PromQL query. This quota cannot be changed.                   | the query time range exceeds the limit (query length: xxx, limit: yyy)   |
| Query samples   | 12,000,000 samples that can be scanned during a single query. This quota can't be changed.                         | query processing would load too many samples into memory in query execution  |
| Retention time for ingested data  | 150 days. Data older than this is deleted from the workspace.  |  |
| Workspaces per Region per account   | 10. You can <a href="#">request a quota increase</a> .   | Limit exceeded. Maximum workspaces per account.  |
| Workspace management API operations, including CreateWorkspace, DeleteWorkspace, DescribeWorkspaces, ListWorkspaces, and UpdateWorkspaceAlias | 10 transactions per second (TPS), with a burst limit of 10 TPS. You can <a href="#">request a quota increase</a> . |  |

#### Rules and alert manager quotas

| Resource  | Default quota  |
|---|--|
| Active alerts   | 1000. You can <a href="#">request a quota increase</a> .     |
| Alert aggregation group size  | 1K. You can <a href="#">request a quota increase</a> .       |
| Alert manager API operations, including CreateAlertManagerDefinition, DeleteAlertManagerDefinition, DescribeAlertManagerDefinition, and PutAlertManagerDefinition | 100 transactions per second (TPS).                           |
| Alert manager definition file size  | 1 MB. This quota can't be changed.                           |
| Alerts per workspace, in size   | 20 MB. You can <a href="#">request a quota increase</a> .    |
| Inhibition rules  | 100. You can <a href="#">request a quota increase</a> .      |
| Nodes in the alert manager routing tree   | 100. You can <a href="#">request a quota increase</a> .      |
| Rule evaluation interval  | Rules are evaluated every 60 seconds. This can't be changed. |
| Rule groups in a workspace  | 100. You can <a href="#">request a quota increase</a> .      |
| Rule groups namespaces in a workspace   | 10. You can <a href="#">request a quota increase</a> .       |
| Rules in a rule group   | 20. You can <a href="#">request a quota increase</a> .       |
| Rules definition file size  | 1 MB. This quota can't be changed.                           |
| Templates in the alert manager definition file  | 100. You can <a href="#">request a quota increase</a> .      |

## Additional quotas for ingested data

Amazon Managed Service for Prometheus has additional quotas for data that's ingested into Amazon Managed Service for Prometheus workspaces.

- Metric samples older than 1 hour are refused from being ingested.
- Every sample and metadata must have a metric name.
- Maximum length accepted for label names: 1024 bytes
- Maximum length accepted for label value: 2048 bytes
- Maximum number of metadata per metric: 10
- Maximum size of ingestion or query request: 1 MB
- Maximum length accepted for metric metadata, which includes metric name, HELP, and UNIT: 1024 bytes
- Maximum number of active metrics with metadata per workspace: 20,000
- Maximum retention time for ingested metrics: 150 days. Data older than this is deleted from the workspace.

## AWS Proton

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services

offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name           | Region         | Endpoint                            | Protocol |  |
|-----------------------|----------------|-------------------------------------|----------|--|
| US East (Ohio)        | us-east-2      | proton.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia) | us-east-1      | proton.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)      | us-west-2      | proton.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Tokyo)  | ap-northeast-1 | proton.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Europe (Ireland)      | eu-west-1      | proton.eu-west-1.amazonaws.com      | HTTPS    |  |

## Service quotas

| Name  | Default | Adjustable |
|---|---------|------------|
| Environment account connections per environment account | 5       | Yes        |
| Environments per account                                | 100     | Yes        |
| Service instances per service                           | 100     | Yes        |
| Services per account                                    | 1,000   | Yes        |
| Template versions per template                          | 500     | Yes        |
| Templates per account                                   | 100     | Yes        |

For more information, see [AWS Proton template and template bundle name and size limits](#) in the [AWS Proton Administration Guide](#).

## Amazon QLDB endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

### QLDB control plane

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | qldb.us-east-2.amazonaws.com<br>qldb-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | qldb.us-east-1.amazonaws.com<br>qldb-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | qldb.us-west-2.amazonaws.com<br>qldb-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | qldb.ap-northeast-2.amazonaws.com                                 | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | qldb.ap-southeast-1.amazonaws.com                                 | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | qldb.ap-southeast-2.amazonaws.com                                 | HTTPS          |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | qldb.ap-northeast-1.amazonaws.com                                 | HTTPS          |  |
| Europe (Frankfurt)       | eu-central-1   | qldb.eu-central-1.amazonaws.com                                   | HTTPS          |  |
| Europe (Ireland)         | eu-west-1      | qldb.eu-west-1.amazonaws.com                                      | HTTPS          |  |
| Europe (London)          | eu-west-2      | qldb.eu-west-2.amazonaws.com                                      | HTTPS          |  |

### QLDB transactional data plane

| Region Name           | Region    | Endpoint  | Protocol       |  |
|-----------------------|-----------|---|----------------|--|
| US East (Ohio)        | us-east-2 | session.qldb.us-east-2.amazonaws.com<br>session.qldb-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia) | us-east-1 | session.qldb.us-east-1.amazonaws.com<br>session.qldb-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US West (Oregon)         | us-west-2      | session.qldb.us-west-2.amazonaws.com<br>session.qldb-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | session.qldb.ap-northeast-2.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | session.qldb.ap-southeast-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | session.qldb.ap-southeast-2.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | session.qldb.ap-northeast-1.amazonaws.com   | HTTPS          |  |
| Europe (Frankfurt)       | eu-central-1   | session.qldb.eu-central-1.amazonaws.com   | HTTPS          |  |
| Europe (Ireland)         | eu-west-1      | session.qldb.eu-west-1.amazonaws.com  | HTTPS          |  |
| Europe (London)          | eu-west-2      | session.qldb.eu-west-2.amazonaws.com  | HTTPS          |  |

## Service quotas

| Name                    | Default | Adjustable |
|-------------------------|---------|------------|
| Ledgers                 | 5       | Yes        |
| QLDB exports per ledger | 2       | Yes        |
| QLDB streams per ledger | 5       | Yes        |

For more information, see [Quotas in Amazon QLDB](#) in the *Amazon QLDB Developer Guide*.

## Amazon QuickSight endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

### QuickSight

| Region Name               | Region         | Endpoint                                | Protocol |  |
|---------------------------|----------------|---|----------|--|
| US East (Ohio)            | us-east-2      | quicksight.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)     | us-east-1      | quicksight.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)          | us-west-2      | quicksight.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai)     | ap-south-1     | quicksight.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Seoul)      | ap-northeast-2 | quicksight.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | quicksight.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | quicksight.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | quicksight.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)          | ca-central-1   | quicksight.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)        | eu-central-1   | quicksight.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)          | eu-west-1      | quicksight.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)           | eu-west-2      | quicksight.eu-west-2.amazonaws.com      | HTTPS    |  |
| South America (São Paulo) | sa-east-1      | quicksight.sa-east-1.amazonaws.com      | HTTPS    |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | quicksight.us-gov-west-1.amazonaws.com  | HTTPS    |  |

## QuickSight Websites

| Region Name              | Region         | Endpoint  |
|--------------------------|----------------|---|
| US East (Ohio)           | us-east-2      | <a href="https://us-east-2.quicksight.amazonaws.com">https://us-east-2.quicksight.amazonaws.com</a>             |
| US East (N. Virginia)    | us-east-1      | <a href="https://us-east-1.quicksight.amazonaws.com">https://us-east-1.quicksight.amazonaws.com</a>             |
| US West (Oregon)         | us-west-2      | <a href="https://us-west-2.quicksight.aws.amazon.com">https://us-west-2.quicksight.aws.amazon.com</a>           |
| Asia Pacific (Singapore) | ap-southeast-1 | <a href="https://ap-southeast-1.quicksight.aws.amazon.com">https://ap-southeast-1.quicksight.aws.amazon.com</a> |
| Asia Pacific (Sydney)    | ap-southeast-2 | <a href="https://ap-southeast-2.quicksight.aws.amazon.com">https://ap-southeast-2.quicksight.aws.amazon.com</a> |
| Asia Pacific (Tokyo)     | ap-northeast-1 | <a href="https://ap-northeast-1.quicksight.aws.amazon.com">https://ap-northeast-1.quicksight.aws.amazon.com</a> |
| Europe (Frankfurt)       | eu-central-1   | <a href="https://eu-central-1.quicksight.aws.amazon.com">https://eu-central-1.quicksight.aws.amazon.com</a>     |
| Europe (Ireland)         | eu-west-1      | <a href="https://eu-west-1.quicksight.aws.amazon.com">https://eu-west-1.quicksight.aws.amazon.com</a>           |
| Europe (London)          | eu-west-2      | <a href="https://eu-west-2.quicksight.aws.amazon.com">https://eu-west-2.quicksight.aws.amazon.com</a>           |

## Service quotas

| Name   | Default        | Adjustable |
|--|----------------|------------|
| API_CREATE-INGESTION: Calls per 24 hour period from Enterprise edition | 32             | No         |
| API_CREATE-INGESTION: Calls per 24 hour period from Standard edition   | 8              | No         |
| Calculated field expression length                                     | 250,000        | No         |
| Custom action name length  | 256            | No         |
| Custom actions per visual  | 10             | No         |
| Data Prep: Fields per dataset  | 2,000          | No         |
| Display items per sheet control  | 10,000         | No         |
| Email aliases per group for email reports                              | 5,000          | No         |
| Maximum number of characters per specified Control values              | 200,000        | No         |
| Query timeout for visuals  | 120<br>Seconds | No         |
| The maximum amount of time to wait for a dataset preview               | 45<br>Seconds  | No         |
| URL action hyperlink length  | 2,048          | No         |

# AWS Resource Access Manager endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | ram.us-east-2.amazonaws.com<br>ram-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | ram.us-east-1.amazonaws.com<br>ram-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | ram.us-west-1.amazonaws.com<br>ram-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | ram.us-west-2.amazonaws.com<br>ram-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Africa (Cape Town)       | af-south-1     | ram.af-south-1.amazonaws.com                                    | HTTPS          |  |
| Asia Pacific (Hong Kong) | ap-east-1      | ram.ap-east-1.amazonaws.com                                     | HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | ram.ap-south-1.amazonaws.com                                    | HTTPS          |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | ram.ap-northeast-3.amazonaws.com                                | HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | ram.ap-northeast-2.amazonaws.com                                | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | ram.ap-southeast-1.amazonaws.com                                | HTTPS          |  |

| Region Name               | Region         | Endpoint  | Protocol       |  |
|---------------------------|----------------|---|----------------|--|
| Asia Pacific (Sydney)     | ap-southeast-2 | ram.ap-southeast-2.amazonaws.com                                      | HTTPS          |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | ram.ap-northeast-1.amazonaws.com                                      | HTTPS          |  |
| Canada (Central)          | ca-central-1   | ram.ca-central-1.amazonaws.com<br>ram-fips.ca-central-1.amazonaws.com | HTTPS<br>HTTPS |  |
| Europe (Frankfurt)        | eu-central-1   | ram.eu-central-1.amazonaws.com  | HTTPS          |  |
| Europe (Ireland)          | eu-west-1      | ram.eu-west-1.amazonaws.com   | HTTPS          |  |
| Europe (London)           | eu-west-2      | ram.eu-west-2.amazonaws.com   | HTTPS          |  |
| Europe (Milan)            | eu-south-1     | ram.eu-south-1.amazonaws.com  | HTTPS          |  |
| Europe (Paris)            | eu-west-3      | ram.eu-west-3.amazonaws.com   | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1     | ram.eu-north-1.amazonaws.com  | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1     | ram.me-south-1.amazonaws.com  | HTTPS          |  |
| South America (São Paulo) | sa-east-1      | ram.sa-east-1.amazonaws.com   | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | ram.us-gov-east-1.amazonaws.com<br>ram.us-gov-east-1.amazonaws.com    | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | ram.us-gov-west-1.amazonaws.com<br>ram.us-gov-west-1.amazonaws.com    | HTTPS<br>HTTPS |  |

## Service quotas

| Name                          | Default | Adjustable |
|-------------------------------|---------|------------|
| Number of pending invitations | 20      | Yes        |
| Number of resource shares     | 5,000   | Yes        |

| Name                       | Default | Adjustable |
|----------------------------|---------|------------|
| Number of shared resources | 5,000   | Yes        |

## Amazon Redshift endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

### Redshift API

| Region Name              | Region         | Endpoint  | Protocol       |
|--------------------------|----------------|---|----------------|
| US East (Ohio)           | us-east-2      | redshift.us-east-2.amazonaws.com<br>redshift-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |
| US East (N. Virginia)    | us-east-1      | redshift.us-east-1.amazonaws.com<br>redshift-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |
| US West (N. California)  | us-west-1      | redshift.us-west-1.amazonaws.com<br>redshift-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |
| US West (Oregon)         | us-west-2      | redshift.us-west-2.amazonaws.com<br>redshift-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |
| Africa (Cape Town)       | af-south-1     | redshift.af-south-1.amazonaws.com   | HTTPS          |
| Asia Pacific (Hong Kong) | ap-east-1      | redshift.ap-east-1.amazonaws.com  | HTTPS          |
| Asia Pacific (Mumbai)    | ap-south-1     | redshift.ap-south-1.amazonaws.com   | HTTPS          |
| Asia Pacific (Osaka)     | ap-northeast-3 | redshift.ap-northeast-3.amazonaws.com                                     | HTTPS          |
| Asia Pacific (Seoul)     | ap-northeast-2 | redshift.ap-northeast-2.amazonaws.com                                     | HTTPS          |

| Region Name               | Region         | Endpoint  | Protocol       |  |
|---------------------------|----------------|---|----------------|--|
| Asia Pacific (Singapore)  | ap-southeast-1 | redshift.ap-southeast-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | redshift.ap-southeast-2.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | redshift.ap-northeast-1.amazonaws.com   | HTTPS          |  |
| Canada (Central)          | ca-central-1   | redshift.ca-central-1.amazonaws.com<br>redshift-fips.ca-central-1.amazonaws.com | HTTPS<br>HTTPS |  |
| Europe (Frankfurt)        | eu-central-1   | redshift.eu-central-1.amazonaws.com   | HTTPS          |  |
| Europe (Ireland)          | eu-west-1      | redshift.eu-west-1.amazonaws.com  | HTTPS          |  |
| Europe (London)           | eu-west-2      | redshift.eu-west-2.amazonaws.com  | HTTPS          |  |
| Europe (Milan)            | eu-south-1     | redshift.eu-south-1.amazonaws.com   | HTTPS          |  |
| Europe (Paris)            | eu-west-3      | redshift.eu-west-3.amazonaws.com  | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1     | redshift.eu-north-1.amazonaws.com   | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1     | redshift.me-south-1.amazonaws.com   | HTTPS          |  |
| South America (São Paulo) | sa-east-1      | redshift.sa-east-1.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | redshift.us-gov-east-1.amazonaws.com<br>redshift.us-gov-east-1.amazonaws.com    | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | redshift.us-gov-west-1.amazonaws.com<br>redshift.us-gov-west-1.amazonaws.com    | HTTPS<br>HTTPS |  |

#### Redshift Data API

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                            | <b>Protocol</b> |
|--------------------------|----------------|--|-----------------|
| US East (Ohio)           | us-east-2      | redshift-data.us-east-2.amazonaws.com      | HTTPS           |
| US East (N. Virginia)    | us-east-1      | redshift-data.us-east-1.amazonaws.com      | HTTPS           |
| US West (N. California)  | us-west-1      | redshift-data.us-west-1.amazonaws.com      | HTTPS           |
| US West (Oregon)         | us-west-2      | redshift-data.us-west-2.amazonaws.com      | HTTPS           |
| Africa (Cape Town)       | af-south-1     | redshift-data.af-south-1.amazonaws.com     | HTTPS           |
| Asia Pacific (Hong Kong) | ap-east-1      | redshift-data.ap-east-1.amazonaws.com      | HTTPS           |
| Asia Pacific (Mumbai)    | ap-south-1     | redshift-data.ap-south-1.amazonaws.com     | HTTPS           |
| Asia Pacific (Osaka)     | ap-northeast-3 | redshift-data.ap-northeast-3.amazonaws.com | HTTPS           |
| Asia Pacific (Seoul)     | ap-northeast-2 | redshift-data.ap-northeast-2.amazonaws.com | HTTPS           |
| Asia Pacific (Singapore) | ap-southeast-1 | redshift-data.ap-southeast-1.amazonaws.com | HTTPS           |
| Asia Pacific (Sydney)    | ap-southeast-2 | redshift-data.ap-southeast-2.amazonaws.com | HTTPS           |
| Asia Pacific (Tokyo)     | ap-northeast-1 | redshift-data.ap-northeast-1.amazonaws.com | HTTPS           |
| Canada (Central)         | ca-central-1   | redshift-data.ca-central-1.amazonaws.com   | HTTPS           |
| Europe (Frankfurt)       | eu-central-1   | redshift-data.eu-central-1.amazonaws.com   | HTTPS           |
| Europe (Ireland)         | eu-west-1      | redshift-data.eu-west-1.amazonaws.com      | HTTPS           |

| Region Name               | Region        | Endpoint                                  | Protocol |  |
|---------------------------|---------------|---|----------|--|
| Europe (London)           | eu-west-2     | redshift-data.eu-west-2.amazonaws.com     | HTTPS    |  |
| Europe (Milan)            | eu-south-1    | redshift-data.eu-south-1.amazonaws.com    | HTTPS    |  |
| Europe (Paris)            | eu-west-3     | redshift-data.eu-west-3.amazonaws.com     | HTTPS    |  |
| Europe (Stockholm)        | eu-north-1    | redshift-data.eu-north-1.amazonaws.com    | HTTPS    |  |
| Middle East (Bahrain)     | me-south-1    | redshift-data.me-south-1.amazonaws.com    | HTTPS    |  |
| South America (São Paulo) | sa-east-1     | redshift-data.sa-east-1.amazonaws.com     | HTTPS    |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | redshift-data.us-gov-east-1.amazonaws.com | HTTPS    |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | redshift-data.us-gov-west-1.amazonaws.com | HTTPS    |  |

## Service quotas

For information, see [Quotas and limits in Amazon Redshift](#) in the *Amazon Redshift Cluster Management Guide*.

## Amazon Rekognition endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service Endpoints

| Region Name    | Region    | Endpoint  | Protocol       |  |
|----------------|-----------|---|----------------|--|
| US East (Ohio) | us-east-2 | rekognition.us-east-2.amazonaws.com<br>rekognition-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| US East (N. Virginia)    | us-east-1      | rekognition.us-east-1.amazonaws.com<br>rekognition-fips.us-east-1.amazonaws.com         | HTTPS<br>HTTPS  |  |
| US West (N. California)  | us-west-1      | rekognition.us-west-1.amazonaws.com<br>rekognition-fips.us-west-1.amazonaws.com         | HTTPS<br>HTTPS  |  |
| US West (Oregon)         | us-west-2      | rekognition.us-west-2.amazonaws.com<br>rekognition-fips.us-west-2.amazonaws.com         | HTTPS<br>HTTPS  |  |
| Asia Pacific (Mumbai)    | ap-south-1     | rekognition.ap-south-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | rekognition.ap-northeast-2.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | rekognition.ap-southeast-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | rekognition.ap-southeast-2.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | rekognition.ap-northeast-1.amazonaws.com  | HTTPS           |  |
| Canada (Central)         | ca-central-1   | rekognition.ca-central-1.amazonaws.com<br>rekognition-fips.ca-central-1.amazonaws.com   | HTTPS<br>HTTPS  |  |
| Europe (Frankfurt)       | eu-central-1   | rekognition.eu-central-1.amazonaws.com  | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | rekognition.eu-west-1.amazonaws.com   | HTTPS           |  |
| Europe (London)          | eu-west-2      | rekognition.eu-west-2.amazonaws.com   | HTTPS           |  |
| AWS GovCloud (US-West)   | us-gov-west-1  | rekognition.us-gov-west-1.amazonaws.com<br>rekognition-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |

The following are differences for certain Amazon Rekognition features and AWS Regions.

## Amazon Rekognition Video streaming API

The Amazon Rekognition Video streaming API is available in the following Regions only.

- US East (N. Virginia)

- US West (Oregon)
- Asia Pacific (Tokyo)
- Europe (Frankfurt)
- Europe (Ireland)

## Amazon Rekognition Custom Labels

Amazon Rekognition Custom Labels is available in the following Regions only.

- US East (N. Virginia)
- US East (Ohio)
- US West (Oregon)
- Europe (Ireland)
- Europe (London)
- Europe (Frankfurt)
- Asia Pacific (Mumbai)
- Asia Pacific (Singapore)
- Asia Pacific (Sydney)
- Asia Pacific (Tokyo)
- Asia Pacific (Seoul)

## Canada (Central) Region

The Canada (Central) Region supports the following operations only.

- [CompareFaces](#)
- [CreateCollection](#)
- [DeleteCollection](#)
- [DeleteFaces](#)
- [DescribeCollection](#)
- [DetectFaces](#)
- [IndexFaces](#)
- [ListCollections](#)
- [ListFaces](#)
- [SearchFaces](#)
- [SearchFacesByImage](#)

## Service Quotas

The quotas listed on this page are defaults. You can request a quota increase for Amazon Rekognition using the AWS Support Center. To request a quota increase for a Amazon Rekognition Transactions Per Second (TPS) limit, follow the instructions at [Default Quotas in Amazon Rekognition](#).

### Note

These limits may be different in different Regions. Making a case to change a limit affects the API operation you request, in the Region you request it. Other API operations and Regions are not affected.

| Resource   | Default  |
|--|--|
| Transactions per second per account for individual Amazon Rekognition Image data plane operations: <ul style="list-style-type: none"> <li>• <a href="#">CompareFaces</a></li> <li>• <a href="#">DetectFaces</a></li> <li>• <a href="#">DetectLabels</a></li> <li>• <a href="#">DetectModerationLabels</a></li> <li>• <a href="#">DetectText</a></li> <li>• <a href="#">GetCelebrityInfo</a></li> <li>• <a href="#">IndexFaces</a></li> <li>• <a href="#">ListFaces</a></li> <li>• <a href="#">RecognizeCelebrities</a></li> <li>• <a href="#">SearchFaces</a></li> <li>• <a href="#">SearchFacesByImage</a></li> </ul> | <ul style="list-style-type: none"> <li>• US East (Ohio) Region – 5</li> <li>• US East (N. Virginia) Region – 50</li> <li>• US West (N. California) Region – 5</li> <li>• US West (Oregon) Region – 50</li> <li>• Asia Pacific (Mumbai) Region – 5</li> <li>• Asia Pacific (Seoul) Region – 5</li> <li>• Asia Pacific (Singapore) Region – 5</li> <li>• Asia Pacific (Sydney) Region – 5</li> <li>• Asia Pacific (Tokyo) Region – 5</li> <li>• Canada (Central) – 5 (For supported operations, see <a href="#">Service Endpoints (p. 464)</a>).</li> <li>• Europe (Frankfurt) Region – 5</li> <li>• Europe (Ireland) Region – 50</li> <li>• Europe (London) Region – 5</li> <li>• AWS GovCloud (US-West) – 5</li> </ul> |
| Transactions per second per account for the personal protective equipment data plane operation: <ul style="list-style-type: none"> <li>• <a href="#">DetectProtectiveEquipment</a></li> </ul>  | In each Region that Amazon Rekognition Image supports – 5  |
| Transactions per second per account for individual Amazon Rekognition Image control plane operations: <ul style="list-style-type: none"> <li>• <a href="#">CreateCollection</a></li> <li>• <a href="#">DeleteCollection</a></li> <li>• <a href="#">DeleteFaces</a></li> <li>• <a href="#">DescribeCollection</a></li> <li>• <a href="#">ListCollections</a></li> </ul>   | In each Region that Amazon Rekognition Image supports – 5  |
| Transactions per second per account for individual stored video start operations: <ul style="list-style-type: none"> <li>• <a href="#">StartCelebrityRecognition</a></li> <li>• <a href="#">StartContentModeration</a></li> <li>• <a href="#">StartFaceDetection</a></li> <li>• <a href="#">StartFaceSearch</a></li> <li>• <a href="#">StartLabelDetection</a></li> <li>• <a href="#">StartPersonTracking</a></li> <li>• <a href="#">StartTextDetection</a></li> <li>• <a href="#">StartSegmentDetection</a></li> </ul>  | In each Region that Amazon Rekognition Video supports – 5<br><br>Note that StartCelebrityRecognition is not available in AWS GovCloud.   |
| Transactions per second per account for individual Amazon Rekognition Video stored video get operations:   | <ul style="list-style-type: none"> <li>• US East (Ohio) Region – 5</li> </ul>  |

| <b>Resource</b>  | <b>Default</b>  |
|--|---|
| <ul style="list-style-type: none"> <li>• <a href="#">GetCelebrityRecognition</a></li> <li>• <a href="#">GetContentModeration</a></li> <li>• <a href="#">GetFaceDetection</a></li> <li>• <a href="#">GetFaceSearch</a></li> <li>• <a href="#">GetLabelDetection</a></li> <li>• <a href="#">GetPersonTracking</a></li> <li>• <a href="#">GetTextDetection</a></li> <li>• <a href="#">GetSegmentDetection</a></li> </ul>  | <ul style="list-style-type: none"> <li>• US East (N. Virginia) Region – 20</li> <li>• US West (N. California) Region – 5</li> <li>• US West (Oregon) Region – 20</li> <li>• Asia Pacific (Mumbai) Region – 5</li> <li>• Asia Pacific (Seoul) Region – 5</li> <li>• Asia Pacific (Singapore) Region – 5</li> <li>• Asia Pacific (Sydney) Region – 5</li> <li>• Asia Pacific (Tokyo) Region – 5</li> <li>• Europe (Frankfurt) Region – 5</li> <li>• Europe (Ireland) Region – 20</li> <li>• Europe (London) Region – 5</li> <li>• AWS GovCloud (US-West) – 20 (Note that GetCelebrityRecognition is not available in this Region.)</li> </ul> |
| Maximum number of concurrent stored video jobs per account   | 20  |
| Maximum number of streaming video stream processors per account that can simultaneously exist  | In each Region that Amazon Rekognition Video supports – 10  |
| Transactions per second per account for individual streaming video operations: <ul style="list-style-type: none"> <li>• <a href="#">CreateStreamProcessor</a></li> <li>• <a href="#">DeleteStreamProcessor</a></li> <li>• <a href="#">DescribeStreamProcessor</a></li> <li>• <a href="#">ListStreamProcessors</a></li> <li>• <a href="#">StartStreamProcessor</a></li> <li>• <a href="#">StopStreamProcessor</a></li> </ul>  | In each Region that Amazon Rekognition Video supports – 1   |
| Transactions per second per account for individual Amazon Rekognition Custom Labels control plane operations: <ul style="list-style-type: none"> <li>• <a href="#">CreateProject</a></li> <li>• <a href="#">CreateProjectVersion</a></li> <li>• <a href="#">DeleteProject</a></li> <li>• <a href="#">DeleteProjectVersion</a></li> <li>• <a href="#">DescribeProjects</a></li> <li>• <a href="#">DescribeProjectVersions</a></li> <li>• <a href="#">StartProjectVersion</a></li> <li>• <a href="#">StopProjectVersion</a></li> </ul> | In each Region that Amazon Rekognition Custom Labels supports – 5   |
| Maximum number of Amazon Rekognition Custom Labels projects per account.   | 100   |

| Resource  | Default   |
|---|---|
| Maximum number of Amazon Rekognition Custom Labels models per project.                      | 100   |
| Maximum number of concurrent Amazon Rekognition Custom Labels training jobs per account.    | <ul style="list-style-type: none"> <li>All Regions except Asia Pacific (Sydney) – 2</li> <li>Asia Pacific (Sydney) – 1</li> </ul> |
| Maximum number of concurrently running Amazon Rekognition Custom Labels models per account. | 2   |
| Maximum inference units per started model.  | 5   |
| Maximum number of images per dataset.   | 250,000   |

For more information, see [Amazon Rekognition Quotas](#).

## Amazon Relational Database Service endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

#### Amazon RDS

| Region Name             | Region     | Endpoint  | Protocol       |  |
|-------------------------|------------|---|----------------|--|
| US East (Ohio)          | us-east-2  | rds.us-east-2.amazonaws.com<br>rds-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)   | us-east-1  | rds.us-east-1.amazonaws.com<br>rds-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California) | us-west-1  | rds.us-west-1.amazonaws.com<br>rds-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)        | us-west-2  | rds.us-west-2.amazonaws.com<br>rds-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Africa (Cape Town)      | af-south-1 | rds.af-south-1.amazonaws.com                                    | HTTPS          |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| Asia Pacific (Hong Kong) | ap-east-1      | rds.ap-east-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | rds.ap-south-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | rds.ap-northeast-3.amazonaws.com                                      | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | rds.ap-northeast-2.amazonaws.com                                      | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | rds.ap-southeast-1.amazonaws.com                                      | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | rds.ap-southeast-2.amazonaws.com                                      | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | rds.ap-northeast-1.amazonaws.com                                      | HTTPS           |  |
| Canada (Central)         | ca-central-1   | rds.ca-central-1.amazonaws.com<br>rds-fips.ca-central-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| Europe (Frankfurt)       | eu-central-1   | rds.eu-central-1.amazonaws.com  | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | rds.eu-west-1.amazonaws.com   | HTTPS           |  |
| Europe (London)          | eu-west-2      | rds.eu-west-2.amazonaws.com   | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | rds.eu-south-1.amazonaws.com  | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | rds.eu-west-3.amazonaws.com   | HTTPS           |  |
| Europe (Stockholm)       | eu-north-1     | rds.eu-north-1.amazonaws.com  | HTTPS           |  |
| Middle East (Bahrain)    | me-south-1     | rds.me-south-1.amazonaws.com  | HTTPS           |  |

| <b>Region Name</b>        | <b>Region</b> | <b>Endpoint</b>                 | <b>Protocol</b> |  |
|---------------------------|---------------|---------------------------------|-----------------|--|
| South America (São Paulo) | sa-east-1     | rds.sa-east-1.amazonaws.com     | HTTPS           |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | rds.us-gov-east-1.amazonaws.com | HTTPS           |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | rds.us-gov-west-1.amazonaws.com | HTTPS           |  |

## Amazon RDS Performance Insights

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                 | <b>Protocol</b> |  |
|--------------------------|----------------|---------------------------------|-----------------|--|
| US East (Ohio)           | us-east-2      | pi.us-east-2.amazonaws.com      | HTTPS           |  |
| US East (N. Virginia)    | us-east-1      | pi.us-east-1.amazonaws.com      | HTTPS           |  |
| US West (N. California)  | us-west-1      | pi.us-west-1.amazonaws.com      | HTTPS           |  |
| US West (Oregon)         | us-west-2      | pi.us-west-2.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | pi.ap-east-1.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | pi.ap-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | pi.ap-northeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | pi.ap-southeast-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | pi.ap-southeast-2.amazonaws.com | HTTPS           |  |

| Region Name               | Region         | Endpoint                        | Protocol |  |
|---------------------------|----------------|---------------------------------|----------|--|
| Asia Pacific (Tokyo)      | ap-northeast-1 | pi.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)          | ca-central-1   | pi.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)        | eu-central-1   | pi.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)          | eu-west-1      | pi.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)           | eu-west-2      | pi.eu-west-2.amazonaws.com      | HTTPS    |  |
| Europe (Paris)            | eu-west-3      | pi.eu-west-3.amazonaws.com      | HTTPS    |  |
| Europe (Stockholm)        | eu-north-1     | pi.eu-north-1.amazonaws.com     | HTTPS    |  |
| South America (São Paulo) | sa-east-1      | pi.sa-east-1.amazonaws.com      | HTTPS    |  |

## Service quotas

| Name   | Default          | Adjustable |
|--|------------------|------------|
| Authorizations per DB security group             | 20               | No         |
| Custom engine versions                           | 40               | Yes        |
| DB cluster parameter groups                      | 50               | No         |
| DB clusters                                      | 40               | Yes        |
| DB instances                                     | 40               | Yes        |
| DB subnet groups                                 | 50               | Yes        |
| Data API HTTP request body size                  | 4 Megabytes      | No         |
| Data API maximum concurrent cluster-secret pairs | 30               | No         |
| Data API maximum concurrent requests             | 500              | No         |
| Data API maximum result set size                 | 1 Megabytes      | No         |
| Data API requests per second                     | 1,000 per second | No         |

| Name                               | Default           | Adjustable |
|------------------------------------|-------------------|------------|
| Event subscriptions                | 20                | Yes        |
| IAM roles per DB cluster           | 5                 | Yes        |
| IAM roles per DB instance          | 5                 | Yes        |
| Manual DB cluster snapshots        | 100               | Yes        |
| Manual DB instance snapshots       | 100               | Yes        |
| Option groups                      | 20                | Yes        |
| Parameter groups                   | 50                | Yes        |
| Proxies                            | 20                | Yes        |
| Read replicas per master           | 5                 | Yes        |
| Reserved DB instances              | 40                | Yes        |
| Rules per security group           | 20                | No         |
| Security groups                    | 25                | Yes        |
| Security groups (VPC)              | 5                 | No         |
| Subnets per DB subnet group        | 20                | No         |
| Tags per resource                  | 50                | No         |
| Total storage for all DB instances | 100,000 Gigabytes | Yes        |

## AWS Resource Groups and Tagging endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### AWS Resource Groups

#### Service endpoints

| Region Name    | Region    | Endpoint  | Protocol       |  |
|----------------|-----------|---|----------------|--|
| US East (Ohio) | us-east-2 | resource-groups.us-east-2.amazonaws.com<br>resource-groups-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| US East (N. Virginia)    | us-east-1      | resource-groups.us-east-1.amazonaws.com<br>resource-groups-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| US West (N. California)  | us-west-1      | resource-groups.us-west-1.amazonaws.com<br>resource-groups-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| US West (Oregon)         | us-west-2      | resource-groups.us-west-2.amazonaws.com<br>resource-groups-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS  |  |
| Africa (Cape Town)       | af-south-1     | resource-groups.af-south-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | resource-groups.ap-east-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | resource-groups.ap-south-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | resource-groups.ap-northeast-3.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | resource-groups.ap-northeast-2.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | resource-groups.ap-southeast-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | resource-groups.ap-southeast-2.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | resource-groups.ap-northeast-1.amazonaws.com  | HTTPS           |  |
| Canada (Central)         | ca-central-1   | resource-groups.ca-central-1.amazonaws.com  | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | resource-groups.eu-central-1.amazonaws.com  | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | resource-groups.eu-west-1.amazonaws.com   | HTTPS           |  |
| Europe (London)          | eu-west-2      | resource-groups.eu-west-2.amazonaws.com   | HTTPS           |  |

| Region Name               | Region        | Endpoint   | Protocol       |  |
|---------------------------|---------------|--|----------------|--|
| Europe (Milan)            | eu-south-1    | resource-groups.eu-south-1.amazonaws.com   | HTTPS          |  |
| Europe (Paris)            | eu-west-3     | resource-groups.eu-west-3.amazonaws.com  | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1    | resource-groups.eu-north-1.amazonaws.com   | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1    | resource-groups.me-south-1.amazonaws.com   | HTTPS          |  |
| South America (São Paulo) | sa-east-1     | resource-groups.sa-east-1.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | resource-groups.us-gov-east-1.amazonaws.com<br>resource-groups.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | resource-groups.us-gov-west-1.amazonaws.com<br>resource-groups.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name                        | Default | Adjustable |
|-----------------------------|---------|------------|
| Resource groups per account | 100     | Yes        |

## AWS Resource Groups Tagging API

### Service endpoints

| Region Name             | Region    | Endpoint                        | Protocol |  |
|-------------------------|-----------|---------------------------------|----------|--|
| US East (Ohio)          | us-east-2 | tagging.us-east-2.amazonaws.com | HTTPS    |  |
| US East (N. Virginia)   | us-east-1 | tagging.us-east-1.amazonaws.com | HTTPS    |  |
| US West (N. California) | us-west-1 | tagging.us-west-1.amazonaws.com | HTTPS    |  |
| US West (Oregon)        | us-west-2 | tagging.us-west-2.amazonaws.com | HTTPS    |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                      | <b>Protocol</b> |  |
|--------------------------|----------------|--------------------------------------|-----------------|--|
| Africa (Cape Town)       | af-south-1     | tagging.af-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | tagging.ap-east-1.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | tagging.ap-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | tagging.ap-northeast-3.amazonaws.com | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | tagging.ap-northeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | tagging.ap-southeast-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | tagging.ap-southeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | tagging.ap-northeast-1.amazonaws.com | HTTPS           |  |
| Canada (Central)         | ca-central-1   | tagging.ca-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | tagging.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | tagging.eu-west-1.amazonaws.com      | HTTPS           |  |
| Europe (London)          | eu-west-2      | tagging.eu-west-2.amazonaws.com      | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | tagging.eu-south-1.amazonaws.com     | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | tagging.eu-west-3.amazonaws.com      | HTTPS           |  |
| Europe (Stockholm)       | eu-north-1     | tagging.eu-north-1.amazonaws.com     | HTTPS           |  |
| Middle East (Bahrain)    | me-south-1     | tagging.me-south-1.amazonaws.com     | HTTPS           |  |

| Region Name               | Region        | Endpoint                            | Protocol |  |
|---------------------------|---------------|-------------------------------------|----------|--|
| South America (São Paulo) | sa-east-1     | tagging.sa-east-1.amazonaws.com     | HTTPS    |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | tagging.us-gov-east-1.amazonaws.com | HTTPS    |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | tagging.us-gov-west-1.amazonaws.com | HTTPS    |  |

## AWS RoboMaker endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name              | Region         | Endpoint                               | Protocol |
|--------------------------|----------------|--|----------|
| US East (N. Virginia)    | us-east-1      | robomaker.us-east-1.amazonaws.com      | HTTPS    |
| US East (Ohio)           | us-east-2      | robomaker.us-east-2.amazonaws.com      | HTTPS    |
| US West (Oregon)         | us-west-2      | robomaker.us-west-2.amazonaws.com      | HTTPS    |
| Europe (Ireland)         | eu-west-1      | robomaker.eu-west-1.amazonaws.com      | HTTPS    |
| Europe (Frankfurt)       | eu-central-1   | robomaker.eu-central-1.amazonaws.com   | HTTPS    |
| Asia Pacific (Singapore) | ap-southeast-1 | robomaker.ap-southeast-1.amazonaws.com | HTTPS    |
| Asia Pacific (Tokyo)     | ap-northeast-1 | robomaker.ap-northeast-1.amazonaws.com | HTTPS    |

## Service quotas

| Name                                    | Default        | Adjustable |
|---|----------------|------------|
| Batch timeout                           | 14             | No         |
| Concurrent World Export Jobs            | 3              | Yes        |
| Concurrent World Generation Jobs        | 3              | Yes        |
| Concurrent deployment jobs              | 20             | Yes        |
| Concurrent simulation job batches       | 5              | Yes        |
| Concurrent simulation jobs              | 10             | Yes        |
| Fleets                                  | 20             | Yes        |
| Minimum batch timeout                   | 5              | No         |
| Minimum simulation duration             | 5              | No         |
| Robot applications                      | 40             | Yes        |
| Robots                                  | 100            | Yes        |
| Robots per fleet                        | 100            | Yes        |
| Simulation Job Creation Rate Per Minute | 10             | No         |
| Simulation applications                 | 40             | Yes        |
| Simulation duration                     | 14             | No         |
| Simulation job requests per batch       | 20             | Yes        |
| Source size                             | 5<br>Gigabytes | No         |
| Versions per robot application          | 40             | Yes        |
| Versions per simulation application     | 40             | Yes        |
| World Templates Per Account             | 40             | Yes        |
| Worlds Per Export Job                   | 1              | No         |
| Worlds Per Generation Job               | 50             | No         |

## Amazon Route 53 endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

### Hosted zones, records, health checks, DNS query logs, reusable delegation sets, traffic policies, and cost allocation tags

When you use the **AWS CLI or SDKs** to submit requests, you can either leave the Region and endpoint unspecified, or specify the applicable Region:

- Route 53 in AWS Regions other than the Beijing and Ningxia Regions: specify us-east-1 as the Region.
- Route 53 in the Beijing and Ningxia Regions: specify cn-northwest-1.

When you use the **Route 53 API** to submit requests, use the same Regions as above to sign requests. For more information about signing Route 53 API requests, see [Signature Version 4 signing process \(p. 650\)](#).

| Region Name              | Region         | Endpoint              | Protocol |  |
|--------------------------|----------------|-----------------------|----------|--|
| US East (Ohio)           | us-east-2      | route53.amazonaws.com | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | route53.amazonaws.com | HTTPS    |  |
| US West (N. California)  | us-west-1      | route53.amazonaws.com | HTTPS    |  |
| US West (Oregon)         | us-west-2      | route53.amazonaws.com | HTTPS    |  |
| Africa (Cape Town)       | af-south-1     | route53.amazonaws.com | HTTPS    |  |
| Asia Pacific (Hong Kong) | ap-east-1      | route53.amazonaws.com | HTTPS    |  |
| Asia Pacific (Mumbai)    | ap-south-1     | route53.amazonaws.com | HTTPS    |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | route53.amazonaws.com | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | route53.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | route53.amazonaws.com | HTTPS    |  |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>       | <b>Protocol</b> |  |
|---------------------------|----------------|-----------------------|-----------------|--|
| Asia Pacific (Sydney)     | ap-southeast-2 | route53.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | route53.amazonaws.com | HTTPS           |  |
| Canada (Central)          | ca-central-1   | route53.amazonaws.com | HTTPS           |  |
| Europe (Frankfurt)        | eu-central-1   | route53.amazonaws.com | HTTPS           |  |
| Europe (Ireland)          | eu-west-1      | route53.amazonaws.com | HTTPS           |  |
| Europe (London)           | eu-west-2      | route53.amazonaws.com | HTTPS           |  |
| Europe (Milan)            | eu-south-1     | route53.amazonaws.com | HTTPS           |  |
| Europe (Paris)            | eu-west-3      | route53.amazonaws.com | HTTPS           |  |
| Europe (Stockholm)        | eu-north-1     | route53.amazonaws.com | HTTPS           |  |
| Middle East (Bahrain)     | me-south-1     | route53.amazonaws.com | HTTPS           |  |
| South America (São Paulo) | sa-east-1      | route53.amazonaws.com | HTTPS           |  |

## Requests for domain registration

| <b>Region Name</b>    | <b>Region</b> | <b>Endpoint</b>                        | <b>Protocol</b> |  |
|-----------------------|---------------|--|-----------------|--|
| US East (N. Virginia) | us-east-1     | route53domains.us-east-1.amazonaws.com | HTTPS           |  |

## Requests for Route 53 Resolver

| Region Name              | Region         | Endpoint                                     | Protocol |  |
|--------------------------|----------------|--|----------|--|
| US East (Ohio)           | us-east-2      | route53resolver.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | route53resolver.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (N. California)  | us-west-1      | route53resolver.us-west-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | route53resolver.us-west-2.amazonaws.com      | HTTPS    |  |
| Africa (Cape Town)       | af-south-1     | route53resolver.af-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Hong Kong) | ap-east-1      | route53resolver.ap-east-1.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai)    | ap-south-1     | route53resolver.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | route53resolver.ap-northeast-3.amazonaws.com | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | route53resolver.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | route53resolver.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | route53resolver.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | route53resolver.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)         | ca-central-1   | route53resolver.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)       | eu-central-1   | route53resolver.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)         | eu-west-1      | route53resolver.eu-west-1.amazonaws.com      | HTTPS    |  |

| Region Name               | Region        | Endpoint                                    | Protocol |  |
|---------------------------|---------------|---|----------|--|
| Europe (London)           | eu-west-2     | route53resolver.eu-west-2.amazonaws.com     | HTTPS    |  |
| Europe (Milan)            | eu-south-1    | route53resolver.eu-south-1.amazonaws.com    | HTTPS    |  |
| Europe (Paris)            | eu-west-3     | route53resolver.eu-west-3.amazonaws.com     | HTTPS    |  |
| Europe (Stockholm)        | eu-north-1    | route53resolver.eu-north-1.amazonaws.com    | HTTPS    |  |
| Middle East (Bahrain)     | me-south-1    | route53resolver.me-south-1.amazonaws.com    | HTTPS    |  |
| South America (São Paulo) | sa-east-1     | route53resolver.sa-east-1.amazonaws.com     | HTTPS    |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | route53resolver.us-gov-east-1.amazonaws.com | HTTPS    |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | route53resolver.us-gov-west-1.amazonaws.com | HTTPS    |  |

## Requests for Route 53 auto naming

Amazon Route 53 auto naming has been released as a separate service, AWS Cloud Map. For a list of service endpoints, see [Service endpoints \(p. 93\)](#). For AWS Cloud Map documentation, see [AWS Cloud Map Documentation](#).

## Service quotas

| Name  | Default | Adjustable |
|---|---------|------------|
| Amazon VPCs that you can associate with a private hosted zone                                     | 300     | Yes        |
| Authorizations that let you associate VPCs with a hosted zone that was created by another account | 100     | No         |
| Child health checks that a calculated health check can monitor                                    | 255     | No         |
| Geolocation records that have the same name and type  | 100     | No         |
| Geoproximity records that have the same name and type   | 30      | No         |
| Health checks   | 200     | Yes        |
| Hosted zones  | 500     | Yes        |

| Name   | Default | Adjustable |
|--|---------|------------|
| Hosted zones that can use the same reusable delegation set | 100     | Yes        |
| Key signing keys per hosted zone                           | 2       | No         |
| Multivalue answer records that have the same name and type | 100     | No         |
| Query log configurations per hosted zone                   | 1       | No         |
| Records per hosted zone                                    | 10,000  | Yes        |
| Reusable delegation sets                                   | 100     | Yes        |
| Traffic flow policies                                      | 50      | Yes        |
| Traffic flow policy records                                | 5       | Yes        |
| Traffic flow policy versions per traffic flow policy       | 1,000   | No         |
| Values in a record   | 400     | No         |
| Weighted records that have the same name and type          | 100     | No         |

The following quotas are for Route 53 Resolver.

| Name  | Default | Adjustable |
|---|---------|------------|
| Associations between resolver rules and VPCs per AWS Region | 2,000   | Yes        |
| DNS Firewall rule group associations per VPC                | 5       | No         |
| DNS Firewall rules groups per Region                        | 1,000   | Yes        |
| Domain lists per account                                    | 1,000   | Yes        |
| Domains in a file imported from S3                          | 250,000 | Yes        |
| Domains per account   | 100,000 | Yes        |
| IP addresses per resolver endpoint                          | 6       | Yes        |
| Maximum number of resolver endpoints per AWS Region         | 4       | Yes        |
| Outpost Resolver instance limit                             | 6       | Yes        |
| Resolver rules per AWS Region                               | 1,000   | Yes        |
| Rules in a DNS Firewall rule group                          | 100     | Yes        |
| Target IP addresses per resolver rule                       | 6       | No         |

For more information, see [Route 53 quotas](#) in the *Amazon Route 53 Developer Guide*.

## Amazon SageMaker endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services

offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service Endpoints

The following table provides a list of Region-specific endpoints that SageMaker supports for training and deploying models. This include creating and managing notebook instances, training jobs, model, endpoint configurations, and endpoints.

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | api.sagemaker.us-east-2.amazonaws.com<br>api-fips.sagemaker.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | api.sagemaker.us-east-1.amazonaws.com<br>api-fips.sagemaker.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | api.sagemaker.us-west-1.amazonaws.com<br>api-fips.sagemaker.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | api.sagemaker.us-west-2.amazonaws.com<br>api-fips.sagemaker.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Africa (Cape Town)       | af-south-1     | api.sagemaker.af-south-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Hong Kong) | ap-east-1      | api.sagemaker.ap-east-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | api.sagemaker.ap-south-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | api.sagemaker.ap-northeast-3.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | api.sagemaker.ap-northeast-2.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | api.sagemaker.ap-southeast-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | api.sagemaker.ap-southeast-2.amazonaws.com  | HTTPS          |  |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|---------------------------|----------------|---|-----------------|--|
| Asia Pacific (Tokyo)      | ap-northeast-1 | api.sagemaker.ap-northeast-1.amazonaws.com  | HTTPS           |  |
| Canada (Central)          | ca-central-1   | api.sagemaker.ca-central-1.amazonaws.com  | HTTPS           |  |
| Europe (Frankfurt)        | eu-central-1   | api.sagemaker.eu-central-1.amazonaws.com  | HTTPS           |  |
| Europe (Ireland)          | eu-west-1      | api.sagemaker.eu-west-1.amazonaws.com   | HTTPS           |  |
| Europe (London)           | eu-west-2      | api.sagemaker.eu-west-2.amazonaws.com   | HTTPS           |  |
| Europe (Milan)            | eu-south-1     | api.sagemaker.eu-south-1.amazonaws.com  | HTTPS           |  |
| Europe (Paris)            | eu-west-3      | api.sagemaker.eu-west-3.amazonaws.com   | HTTPS           |  |
| Europe (Stockholm)        | eu-north-1     | api.sagemaker.eu-north-1.amazonaws.com  | HTTPS           |  |
| Middle East (Bahrain)     | me-south-1     | api.sagemaker.me-south-1.amazonaws.com  | HTTPS           |  |
| South America (São Paulo) | sa-east-1      | api.sagemaker.sa-east-1.amazonaws.com   | HTTPS           |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | api.sagemaker.us-gov-west-1.amazonaws.com<br>api-fips.sagemaker.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |

The following table provides a list of Region-specific endpoints that Amazon SageMaker supports for making inference requests against models hosted in SageMaker.

| <b>Region Name</b>    | <b>Region</b> | <b>Endpoint</b>   | <b>Protocol</b> |  |
|-----------------------|---------------|---|-----------------|--|
| US East (Ohio)        | us-east-2     | runtime.sagemaker.us-east-2.amazonaws.com<br>runtime-fips.sagemaker.us-east-2.amazonaws.com | HTTPS<br>HTTPS  |  |
| US East (N. Virginia) | us-east-1     | runtime.sagemaker.us-east-1.amazonaws.com<br>runtime-fips.sagemaker.us-east-1.amazonaws.com | HTTPS<br>HTTPS  |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| US West (N. California)  | us-west-1      | runtime.sagemaker.us-west-1.amazonaws.com<br>runtime-fips.sagemaker.us-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| US West (Oregon)         | us-west-2      | runtime.sagemaker.us-west-2.amazonaws.com<br>runtime-fips.sagemaker.us-west-2.amazonaws.com | HTTPS<br>HTTPS  |  |
| Africa (Cape Town)       | af-south-1     | runtime.sagemaker.af-south-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | runtime.sagemaker.ap-east-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | runtime.sagemaker.ap-south-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | runtime.sagemaker.ap-northeast-3.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | runtime.sagemaker.ap-northeast-2.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | runtime.sagemaker.ap-southeast-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | runtime.sagemaker.ap-southeast-2.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | runtime.sagemaker.ap-northeast-1.amazonaws.com  | HTTPS           |  |
| Canada (Central)         | ca-central-1   | runtime.sagemaker.ca-central-1.amazonaws.com  | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | runtime.sagemaker.eu-central-1.amazonaws.com  | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | runtime.sagemaker.eu-west-1.amazonaws.com   | HTTPS           |  |
| Europe (London)          | eu-west-2      | runtime.sagemaker.eu-west-2.amazonaws.com   | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | runtime.sagemaker.eu-south-1.amazonaws.com  | HTTPS           |  |

| Region Name               | Region        | Endpoint   | Protocol       |  |
|---------------------------|---------------|--|----------------|--|
| Europe (Paris)            | eu-west-3     | runtime.sagemaker.eu-west-3.amazonaws.com  | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1    | runtime.sagemaker.eu-north-1.amazonaws.com   | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1    | runtime.sagemaker.me-south-1.amazonaws.com   | HTTPS          |  |
| South America (São Paulo) | sa-east-1     | runtime.sagemaker.sa-east-1.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | runtime.sagemaker.us-gov-west-1.amazonaws.com<br>runtime.sagemaker.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service Quotas

Depending on your activities and resource usage over time, your SageMaker quotas might be different from the default SageMaker quotas listed in the following tables. The default quotas in this page are based on new accounts. If you encounter error messages that you've exceeded your quota, use [AWS Support](#) to request a service limit increase for SageMaker resources you want to scale up. For instructions on how to request a service limit increase, see [Supported Regions and Quotas](#) in *the Amazon SageMaker Developer Guide*.

### SageMaker Studio

| Resource                      | Default |
|-------------------------------|---------|
| KernelGateway-ml.c5.large     | 0       |
| KernelGateway-ml.c5.xlarge    | 0       |
| KernelGateway-ml.c5.2xlarge   | 0       |
| KernelGateway-ml.c5.4xlarge   | 0       |
| KernelGateway-ml.c5.9xlarge   | 0       |
| KernelGateway-ml.c5.12xlarge  | 0       |
| KernelGateway-ml.c5.18xlarge  | 0       |
| KernelGateway-ml.c5.24xlarge  | 0       |
| KernelGateway-ml.g4dn.xlarge  | 0       |
| KernelGateway-ml.g4dn.2xlarge | 0       |
| KernelGateway-ml.g4dn.4xlarge | 0       |

| <b>Resource</b>                                 | <b>Default</b> |
|---|----------------|
| KernelGateway-ml.g4dn.8xlarge                   | 0              |
| KernelGateway-ml.g4dn.12xlarge                  | 0              |
| KernelGateway-ml.g4dn.16xlarge                  | 0              |
| KernelGateway-ml.m5.large                       | 0              |
| KernelGateway-ml.m5.xlarge                      | 0              |
| KernelGateway-ml.m5.2xlarge                     | 0              |
| KernelGateway-ml.m5.4xlarge                     | 1              |
| KernelGateway-ml.m5.8xlarge                     | 0              |
| KernelGateway-ml.m5.12xlarge                    | 0              |
| KernelGateway-ml.m5.16xlarge                    | 0              |
| KernelGateway-ml.m5.24xlarge                    | 0              |
| KernelGateway-ml.p3.2xlarge                     | 0              |
| KernelGateway-ml.p3.8xlarge                     | 0              |
| KernelGateway-ml.p3.16xlarge                    | 0              |
| KernelGateway-ml.t3.medium                      | 2              |
| KernelGateway-ml.t3.large                       | 0              |
| KernelGateway-ml.t3.xlarge                      | 0              |
| KernelGateway-ml.t3.2xlarge                     | 0              |
| Maximum number of UserProfiles per Domain       | 2              |
| Maximum number of Running Apps per Domain       | 20             |
| Maximum number of custom images per Domain      | 30             |
| Maximum number of custom images per UserProfile | 5              |

### SageMaker Images

| <b>Resource</b>                              | <b>Default</b> |
|--|----------------|
| Number of SageMaker Images                   | 250            |
| Number of image versions per SageMaker image | 1,000          |

### SageMaker Notebooks

| <b>Resource</b>        | <b>Default</b> |
|------------------------|----------------|
| ml.t2.medium instances | 2              |

| <b>Resource</b>           | <b>Default</b> |
|---------------------------|----------------|
| ml.t2.large instances     | 0              |
| ml.t2.xlarge instances    | 0              |
| ml.t2.2xlarge instances   | 0              |
| ml.t3.medium instances    | 2              |
| ml.t3.large instances     | 0              |
| ml.t3.xlarge instances    | 0              |
| ml.t3.2xlarge instances   | 0              |
| ml.m4.xlarge instances    | 0              |
| ml.m4.2xlarge instances   | 0              |
| ml.m4.4xlarge instances   | 0              |
| ml.m4.10xlarge instances  | 0              |
| ml.m4.16xlarge instances  | 0              |
| ml.m5.xlarge instances    | 0              |
| ml.m5.2xlarge instances   | 0              |
| ml.m5.4xlarge instances   | 0              |
| ml.m5.12xlarge instances  | 0              |
| ml.m5.24xlarge instances  | 0              |
| ml.c4.xlarge instances    | 0              |
| ml.c4.2xlarge instances   | 0              |
| ml.c4.4xlarge instances   | 0              |
| ml.c4.8xlarge instances   | 0              |
| ml.c5.xlarge instances    | 0              |
| ml.c5.2xlarge instances   | 0              |
| ml.c5.4xlarge instances   | 0              |
| ml.c5.9xlarge instances   | 0              |
| ml.c5.18xlarge instances  | 0              |
| ml.c5d.xlarge instances   | 0              |
| ml.c5d.2xlarge instances  | 0              |
| ml.c5d.4xlarge instances  | 0              |
| ml.c5d.9xlarge instances  | 0              |
| ml.c5d.18xlarge instances | 0              |

| Resource                              | Default |
|---------------------------------------|---------|
| ml.p2.xlarge instances                | 0       |
| ml.p2.8xlarge instances               | 0       |
| ml.p2.16xlarge instances              | 0       |
| ml.p3.2xlarge instances               | 0       |
| ml.p3.8xlarge instances               | 0       |
| ml.p3.16xlarge instances              | 0       |
| ml.g4dn.xlarge instances              | 2       |
| ml.g4dn.2xlarge instances             | 2       |
| ml.g4dn.4xlarge instances             | 2       |
| ml.g4dn.8xlarge instances             | 2       |
| ml.g4dn.12xlarge instances            | 2       |
| ml.g4dn.16xlarge instances            | 2       |
| ml.eia1.medium instances              | 0       |
| ml.eia1.large instances               | 0       |
| ml.eia1.xlarge instances              | 0       |
| ml.eia2.medium instances              | 0       |
| ml.eia2.large instances               | 0       |
| ml.eia2.xlarge instances              | 0       |
| Number of accelerators                | 0       |
| Number of notebook instances          | 4       |
| EBS volume size in GB for an instance | 102400  |

### SageMaker Ground Truth

| Resource                             | Default |
|--------------------------------------|---------|
| Total labeling jobs                  | 1       |
| Total streaming labeling jobs        | 0       |
| Max dataset objects per labeling job | 10,000  |
| Number of workteams                  | 25      |

### SageMaker Projects

| Resource           | Default |
|--------------------|---------|
| Number of projects | 500     |

### SageMaker Pipelines

| Resource            | Default |
|---------------------|---------|
| Number of pipelines | 500     |

### SageMaker Pipeline Executions

| Resource                      | Default |
|-------------------------------|---------|
| Number of pipeline executions | 20      |

### SageMaker Feature Store

| Resource                                    | Default |
|---|---------|
| Number of feature groups                    | 10      |
| Concurrent feature group creation workflows | 4       |

### SageMaker Processing

| Resource         | Default |
|------------------|---------|
| ml.c4.xlarge     | 4       |
| ml.c4.2xlarge    | 4       |
| ml.c4.4xlarge    | 4       |
| ml.c4.8xlarge    | 4       |
| ml.c5.xlarge     | 4       |
| ml.c5.2xlarge    | 4       |
| ml.c5.4xlarge    | 1       |
| ml.c5.9xlarge    | 1       |
| ml.c5.18xlarge   | 1       |
| ml.g4dn.xlarge   | 0       |
| ml.g4dn.2xlarge  | 0       |
| ml.g4dn.4xlarge  | 0       |
| ml.g4dn.8xlarge  | 0       |
| ml.g4dn.12xlarge | 0       |

| <b>Resource</b>                       | <b>Default</b> |
|---------------------------------------|----------------|
| ml.g4dn.16xlarge                      | 0              |
| ml.m4.xlarge                          | 4              |
| ml.m4.2xlarge                         | 4              |
| ml.m4.4xlarge                         | 2              |
| ml.m4.10xlarge                        | 1              |
| ml.m4.16xlarge                        | 1              |
| ml.m5.large                           | 4              |
| ml.m5.xlarge                          | 4              |
| ml.m5.2xlarge                         | 4              |
| ml.m5.4xlarge                         | 2              |
| ml.m5.12xlarge                        | 0              |
| ml.m5.24xlarge                        | 0              |
| ml.p2.xlarge                          | 0              |
| ml.p2.8xlarge                         | 0              |
| ml.p2.16xlarge                        | 0              |
| ml.p3.2xlarge                         | 0              |
| ml.p3.8xlarge                         | 0              |
| ml.p3.16xlarge                        | 0              |
| ml.r5.large                           | 4              |
| ml.r5.xlarge                          | 4              |
| ml.r5.2xlarge                         | 4              |
| ml.r5.4xlarge                         | 1              |
| ml.r5.8xlarge                         | 1              |
| ml.r5.12xlarge                        | 1              |
| ml.r5.16xlarge                        | 1              |
| ml.r5.24xlarge                        | 0              |
| ml.t3.medium                          | 4              |
| ml.t3.large                           | 4              |
| ml.t3.xlarge                          | 2              |
| ml.t3.2xlarge                         | 0              |
| Longest run time for a processing job | 5 days         |

| <b>Resource</b>                            | <b>Default</b> |
|--|----------------|
| Number of instances across processing jobs | 4              |
| Number of instances per processing job     | 20             |
| Size of EBS volume for an instance         | 1 TB           |

**Note**

In case of SageMaker training, on-demand and spot instance quotas are tracked and modified separately. For example, with the default quotas, you can run up to 20 training jobs with ml.m4.xlarge on-demand instances and up to 20 training jobs with ml.m4.xlarge spot instances simultaneously.

### SageMaker Training

| <b>Resource</b>            | <b>Default</b> |
|----------------------------|----------------|
| ml.c4.xlarge instances     | 4              |
| ml.c4.2xlarge instances    | 4              |
| ml.c4.4xlarge instances    | 4              |
| ml.c4.8xlarge instances    | 4              |
| ml.c5.xlarge instances     | 4              |
| ml.c5.2xlarge instances    | 4              |
| ml.c5.4xlarge instances    | 1              |
| ml.c5.9xlarge instances    | 1              |
| ml.c5.18xlarge instances   | 0              |
| ml.c5n.xlarge instances    | 0              |
| ml.c5n.2xlarge instances   | 0              |
| ml.c5n.4xlarge instances   | 0              |
| ml.c5n.9xlarge instances   | 0              |
| ml.c5n.18xlarge instances  | 0              |
| ml.g4dn.xlarge instances   | 0              |
| ml.g4dn.2xlarge instances  | 0              |
| ml.g4dn.4xlarge instances  | 0              |
| ml.g4dn.8xlarge instances  | 0              |
| ml.g4dn.12xlarge instances | 0              |
| ml.g4dn.16xlarge instances | 0              |
| ml.m4.xlarge instances     | 4              |
| ml.m4.2xlarge instances    | 4              |

| <b>Resource</b>                          | <b>Default</b> |
|--|----------------|
| ml.m4.4xlarge instances                  | 2              |
| ml.m4.10xlarge instances                 | 0              |
| ml.m4.16xlarge instances                 | 0              |
| ml.m5.large instances                    | 4              |
| ml.m5.xlarge instances                   | 4              |
| ml.m5.2xlarge instances                  | 4              |
| ml.m5.4xlarge instances                  | 20             |
| ml.m5.12xlarge instances                 | 0              |
| ml.m5.24xlarge instances                 | 0              |
| ml.p2.xlarge instances                   | 0              |
| ml.p2.8xlarge instances                  | 0              |
| ml.p2.16xlarge instances                 | 0              |
| ml.p3.2xlarge instances                  | 0              |
| ml.p3.8xlarge instances                  | 0              |
| ml.p3.16xlarge instances                 | 0              |
| ml.p3dn.24xlarge instances               | 0              |
| ml.p4d.24xlarge instances                | 0              |
| The longest run time for a training job  | 5 days         |
| Number of instances across training jobs | 4              |
| Number of instances per training job     | 20             |
| Size of EBS volume for an instance       | 1 TB           |

### SageMaker Managed Spot Training

| <b>Resource</b>         | <b>Default</b> |
|-------------------------|----------------|
| ml.c4.xlarge instances  | 4              |
| ml.c4.2xlarge instances | 4              |
| ml.c4.4xlarge instances | 4              |
| ml.c4.8xlarge instances | 4              |
| ml.c5.xlarge instances  | 4              |
| ml.c5.2xlarge instances | 4              |
| ml.c5.4xlarge instances | 1              |

| Resource                   | Default |
|----------------------------|---------|
| ml.c5.9xlarge instances    | 1       |
| ml.c5.18xlarge instances   | 0       |
| ml.c5n.xlarge instances    | 0       |
| ml.c5n.2xlarge instances   | 0       |
| ml.c5n.4xlarge instances   | 0       |
| ml.c5n.9xlarge instances   | 0       |
| ml.c5n.18xlarge instances  | 0       |
| ml.g4dn.xlarge instances   | 0       |
| ml.g4dn.2xlarge instances  | 0       |
| ml.g4dn.4xlarge instances  | 0       |
| ml.g4dn.8xlarge instances  | 0       |
| ml.g4dn.12xlarge instances | 0       |
| ml.g4dn.16xlarge instances | 0       |
| ml.m4.xlarge instances     | 4       |
| ml.m4.2xlarge instances    | 4       |
| ml.m4.4xlarge instances    | 2       |
| ml.m4.10xlarge instances   | 0       |
| ml.m4.16xlarge instances   | 0       |
| ml.m5.large instances      | 4       |
| ml.m5.xlarge instances     | 4       |
| ml.m5.2xlarge instances    | 4       |
| ml.m5.4xlarge instances    | 2       |
| ml.m5.12xlarge instances   | 0       |
| ml.m5.24xlarge instances   | 0       |
| ml.p2.xlarge instances     | 0       |
| ml.p2.8xlarge instances    | 0       |
| ml.p2.16xlarge instances   | 0       |
| ml.p3.2xlarge instances    | 0       |
| ml.p3.8xlarge instances    | 0       |
| ml.p3.16xlarge instances   | 0       |
| ml.p3dn.24xlarge instances | 0       |

| <b>Resource</b>                          | <b>Default</b> |
|--|----------------|
| ml.p4d.24xlarge instances                | 0              |
| Number of instances across training jobs | 4              |
| Number of instances per training job     | 20             |

### SageMaker Autopilot

| <b>Resource</b>                           | <b>Default</b> |
|---|----------------|
| Maximum dataset size in GB                | 5              |
| Maximum number of parallel Autopilot Jobs | 1              |

### SageMaker Automatic Model Hyperparameter Tuning

| <b>Resource</b>  | <b>Default</b> |
|--|----------------|
| Number of concurrent hyperparameter tuning jobs                | 100            |
| Number of parallel training jobs per hyperparameter tuning job | 10             |
| Number of training jobs per hyperparameter tuning job          | 500            |

### SageMaker Experiments (Lineage Tracking / Experiment Tracking)

| <b>Resource</b>  | <b>Default</b> |
|--|----------------|
| Number of trials   | 300            |
| Number of experiments  | 5,000          |
| Number of trial components for Experiments                   | 50             |
| Number of trial associations for Experiment Trial Components | 500            |
| Number of trial components for Experiment Trial Components   | 20,000         |
| Number of actions  | 3,000          |
| Number of artifacts  | 6,000          |
| Number of associations                                       | 6,000          |
| Number of contexts   | 500            |

#### Note

Use [AWS Support](#) to request a service limit increase in order to use an instance with a default quota of 0.

### SageMaker Hosting

| <b>Resource</b>       | <b>Default</b> |
|-----------------------|----------------|
| ml.c4.large instances | 0              |

| <b>Resource</b>            | <b>Default</b> |
|----------------------------|----------------|
| ml.c4.xlarge instances     | 0              |
| ml.c4.2xlarge instances    | 0              |
| ml.c4.4xlarge instances    | 0              |
| ml.c4.8xlarge instances    | 0              |
| ml.c5.large instances      | 0              |
| ml.c5.xlarge instances     | 0              |
| ml.c5.2xlarge instances    | 0              |
| ml.c5.4xlarge instances    | 0              |
| ml.c5.9xlarge instances    | 0              |
| ml.c5.12xlarge instances   | 0              |
| ml.c5.18xlarge instances   | 0              |
| ml.c5.24xlarge instances   | 0              |
| ml.c5d.large instances     | 0              |
| ml.c5d.xlarge instances    | 0              |
| ml.c5d.2xlarge instances   | 0              |
| ml.c5d.4xlarge instances   | 0              |
| ml.c5d.9xlarge instances   | 0              |
| ml.c5d.18xlarge instances  | 0              |
| ml.c5n.large instances     | 0              |
| ml.c5n.xlarge instances    | 0              |
| ml.c5n.2xlarge instances   | 0              |
| ml.c5n.4xlarge instances   | 0              |
| ml.c5n.9xlarge instances   | 0              |
| ml.c5n.18xlarge instances  | 0              |
| ml.g4dn.xlarge instances   | 0              |
| ml.g4dn.2xlarge instances  | 0              |
| ml.g4dn.4xlarge instances  | 0              |
| ml.g4dn.8xlarge instances  | 0              |
| ml.g4dn.12xlarge instances | 0              |
| ml.g4dn.16xlarge instances | 0              |
| ml.m4.xlarge instances     | 2              |

| Resource                   | Default |
|----------------------------|---------|
| ml.m4.2xlarge instances    | 0       |
| ml.m4.4xlarge instances    | 0       |
| ml.m4.10xlarge instances   | 0       |
| ml.m4.16xlarge instances   | 0       |
| ml.m5.large instances      | 2       |
| ml.m5.xlarge instances     | 0       |
| ml.m5.2xlarge instances    | 0       |
| ml.m5.4xlarge instances    | 0       |
| ml.m5.8xlarge instances    | 0       |
| ml.m5.12xlarge instances   | 0       |
| ml.m5.16xlarge instances   | 0       |
| ml.m5.24xlarge instances   | 0       |
| ml.m5d.large instances     | 0       |
| ml.m5d.xlarge instances    | 0       |
| ml.m5d.2xlarge instances   | 0       |
| ml.m5d.4xlarge instances   | 0       |
| ml.m5d.8xlarge instances   | 0       |
| ml.m5d.12xlarge instances  | 0       |
| ml.m5d.16xlarge instances  | 0       |
| ml.m5d.24xlarge instances  | 0       |
| ml.m5dn.large instances    | 0       |
| ml.m5dn.xlarge instances   | 0       |
| ml.m5dn.2xlarge instances  | 0       |
| ml.m5dn.4xlarge instances  | 0       |
| ml.m5dn.8xlarge instances  | 0       |
| ml.m5dn.12xlarge instances | 0       |
| ml.m5dn.16xlarge instances | 0       |
| ml.m5dn.24xlarge instances | 0       |
| ml.m5n.large instances     | 0       |
| ml.m5n.xlarge instances    | 0       |
| ml.m5n.2xlarge instances   | 0       |

| Resource                  | Default |
|---------------------------|---------|
| ml.m5n.4xlarge instances  | 0       |
| ml.m5n.8xlarge instances  | 0       |
| ml.m5n.12xlarge instances | 0       |
| ml.m5n.16xlarge instances | 0       |
| ml.m5n.24xlarge instances | 0       |
| ml.p2.xlarge instances    | 0       |
| ml.p2.8xlarge instances   | 0       |
| ml.p2.16xlarge instances  | 0       |
| ml.p3.2xlarge instances   | 0       |
| ml.p3.8xlarge instances   | 0       |
| ml.p3.16xlarge instances  | 0       |
| ml.r5.large instances     | 0       |
| ml.r5.xlarge instances    | 0       |
| ml.r5.2xlarge instances   | 0       |
| ml.r5.4xlarge instances   | 0       |
| ml.r5.8xlarge instances   | 0       |
| ml.r5.12xlarge instances  | 0       |
| ml.r5.16xlarge instances  | 0       |
| ml.r5.24xlarge instances  | 0       |
| ml.r5d.large instances    | 0       |
| ml.r5d.xlarge instances   | 0       |
| ml.r5d.2xlarge instances  | 0       |
| ml.r5d.4xlarge instances  | 0       |
| ml.r5d.8xlarge instances  | 0       |
| ml.r5d.12xlarge instances | 0       |
| ml.r5d.16xlarge instances | 0       |
| ml.r5d.24xlarge instances | 0       |
| ml.r5dn.large instances   | 0       |
| ml.r5dn.xlarge instances  | 0       |
| ml.r5dn.2xlarge instances | 0       |
| ml.r5dn.4xlarge instances | 0       |

| <b>Resource</b>                              | <b>Default</b> |
|--|----------------|
| ml.r5dn.8xlarge instances                    | 0              |
| ml.r5dn.12xlarge instances                   | 0              |
| ml.r5dn.16xlarge instances                   | 0              |
| ml.r5dn.24xlarge instances                   | 0              |
| ml.r5n.large instances                       | 0              |
| ml.r5n.xlarge instances                      | 0              |
| ml.r5n.2xlarge instances                     | 0              |
| ml.r5n.4xlarge instances                     | 0              |
| ml.r5n.8xlarge instances                     | 0              |
| ml.r5n.12xlarge instances                    | 0              |
| ml.r5n.16xlarge instances                    | 0              |
| ml.r5n.24xlarge instances                    | 0              |
| ml.t2.medium instances                       | 2              |
| ml.t2.large instances                        | 0              |
| ml.t2.xlarge instances                       | 0              |
| ml.t2.2xlarge instances                      | 0              |
| ml.t3.medium instances                       | 2              |
| ml.t3.large instances                        | 0              |
| ml.t3.xlarge instances                       | 0              |
| ml.t3.2xlarge instances                      | 0              |
| Number of instances across endpoints         | 2              |
| Number of instances per endpoint             | 0              |
| Number of accelerators per endpoint          | 4              |
| Total TPS for all endpoints                  | 10,000         |
| Maximum payload size for endpoint invocation | 6 MB           |
| Inference timeout for endpoint invocation    | 60 seconds     |

### SageMaker Batch Transform

| <b>Resource</b>         | <b>Default</b> |
|-------------------------|----------------|
| ml.c4.xlarge instances  | 4              |
| ml.c4.2xlarge instances | 4              |

| Resource                              | Default |
|---------------------------------------|---------|
| ml.c4.4xlarge instances               | 4       |
| ml.c4.8xlarge instances               | 4       |
| ml.c5.xlarge instances                | 4       |
| ml.c5.2xlarge instances               | 4       |
| ml.c5.4xlarge instances               | 1       |
| ml.c5.9xlarge instances               | 1       |
| ml.c5.18xlarge instances              | 1       |
| ml.g4dn.xlarge                        | 0       |
| ml.g4dn.2xlarge                       | 0       |
| ml.g4dn.4xlarge                       | 0       |
| ml.g4dn.8xlarge                       | 0       |
| ml.g4dn.12xlarge                      | 0       |
| ml.g4dn.16xlarge                      | 0       |
| ml.m4.xlarge instances                | 4       |
| ml.m4.2xlarge instances               | 4       |
| ml.m4.4xlarge instances               | 2       |
| ml.m4.10xlarge instances              | 1       |
| ml.m4.16xlarge instances              | 1       |
| ml.m5.large instances                 | 4       |
| ml.m5.xlarge instances                | 4       |
| ml.m5.2xlarge instances               | 4       |
| ml.m5.4xlarge instances               | 2       |
| ml.m5.12xlarge instances              | 0       |
| ml.m5.24xlarge instances              | 0       |
| ml.p2.xlarge instances                | 0       |
| ml.p2.8xlarge instances               | 0       |
| ml.p2.16xlarge instances              | 0       |
| ml.p3.2xlarge instances               | 0       |
| ml.p3.8xlarge instances               | 0       |
| ml.p3.16xlarge instances              | 0       |
| Number of instances per transform job | 4       |

### SageMaker Human Task UI

| Resource                 | Default |
|--------------------------|---------|
| Number of human task UIs | 100     |

## AWS Secrets Manager endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |
|--------------------------|----------------|---|----------------|
| US East (Ohio)           | us-east-2      | secretsmanager.us-east-2.amazonaws.com<br>secretsmanager-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |
| US East (N. Virginia)    | us-east-1      | secretsmanager.us-east-1.amazonaws.com<br>secretsmanager-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |
| US West (N. California)  | us-west-1      | secretsmanager.us-west-1.amazonaws.com<br>secretsmanager-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |
| US West (Oregon)         | us-west-2      | secretsmanager.us-west-2.amazonaws.com<br>secretsmanager-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |
| Africa (Cape Town)       | af-south-1     | secretsmanager.af-south-1.amazonaws.com   | HTTPS          |
| Asia Pacific (Hong Kong) | ap-east-1      | secretsmanager.ap-east-1.amazonaws.com  | HTTPS          |
| Asia Pacific (Mumbai)    | ap-south-1     | secretsmanager.ap-south-1.amazonaws.com   | HTTPS          |
| Asia Pacific (Osaka)     | ap-northeast-3 | secretsmanager.ap-northeast-3.amazonaws.com   | HTTPS          |
| Asia Pacific (Seoul)     | ap-northeast-2 | secretsmanager.ap-northeast-2.amazonaws.com   | HTTPS          |

| Region Name               | Region         | Endpoint  | Protocol       |  |
|---------------------------|----------------|---|----------------|--|
| Asia Pacific (Singapore)  | ap-southeast-1 | secretsmanager.ap-southeast-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | secretsmanager.ap-southeast-2.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | secretsmanager.ap-northeast-1.amazonaws.com   | HTTPS          |  |
| Canada (Central)          | ca-central-1   | secretsmanager.ca-central-1.amazonaws.com   | HTTPS          |  |
| Europe (Frankfurt)        | eu-central-1   | secretsmanager.eu-central-1.amazonaws.com   | HTTPS          |  |
| Europe (Ireland)          | eu-west-1      | secretsmanager.eu-west-1.amazonaws.com  | HTTPS          |  |
| Europe (London)           | eu-west-2      | secretsmanager.eu-west-2.amazonaws.com  | HTTPS          |  |
| Europe (Milan)            | eu-south-1     | secretsmanager.eu-south-1.amazonaws.com   | HTTPS          |  |
| Europe (Paris)            | eu-west-3      | secretsmanager.eu-west-3.amazonaws.com  | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1     | secretsmanager.eu-north-1.amazonaws.com   | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1     | secretsmanager.me-south-1.amazonaws.com   | HTTPS          |  |
| South America (São Paulo) | sa-east-1      | secretsmanager.sa-east-1.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | secretsmanager.us-gov-east-1.amazonaws.com<br>secretsmanager-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | secretsmanager.us-gov-west-1.amazonaws.com<br>secretsmanager-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name   | Default | Adjustable |
|--|---------|------------|
| Rate limit for DescribeSecret/GetSecretValue API requests    | 5,000   | No         |
| Rate limit for ListSecrets/ListSecretVersionIds API requests | 50      | No         |
| Rate limit for TagResource/UntagResource API requests        | 50      | No         |
| Rate limit for miscellaneous Secrets Manager API requests    | 50      | No         |
| Resource-based policy length                                 | 20,480  | No         |
| Secret value length  | 65,536  | No         |
| Secrets per account  | 40,000  | No         |
| Staging labels per all versions of a secret                  | 20      | No         |
| Versions per secret  | 100     | No         |

## AWS Security Hub endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name             | Region     | Endpoint  | Protocol       |  |
|-------------------------|------------|---|----------------|--|
| US East (Ohio)          | us-east-2  | securityhub.us-east-2.amazonaws.com<br>securityhub-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)   | us-east-1  | securityhub.us-east-1.amazonaws.com<br>securityhub-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California) | us-west-1  | securityhub.us-west-1.amazonaws.com<br>securityhub-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)        | us-west-2  | securityhub.us-west-2.amazonaws.com<br>securityhub-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Africa (Cape Town)      | af-south-1 | securityhub.af-south-1.amazonaws.com  | HTTPS          |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                          | <b>Protocol</b> |  |
|--------------------------|----------------|--|-----------------|--|
| Asia Pacific (Hong Kong) | ap-east-1      | securityhub.ap-east-1.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | securityhub.ap-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | securityhub.ap-northeast-3.amazonaws.com | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | securityhub.ap-northeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | securityhub.ap-southeast-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | securityhub.ap-southeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | securityhub.ap-northeast-1.amazonaws.com | HTTPS           |  |
| Canada (Central)         | ca-central-1   | securityhub.ca-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | securityhub.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | securityhub.eu-west-1.amazonaws.com      | HTTPS           |  |
| Europe (London)          | eu-west-2      | securityhub.eu-west-2.amazonaws.com      | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | securityhub.eu-south-1.amazonaws.com     | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | securityhub.eu-west-3.amazonaws.com      | HTTPS           |  |
| Europe (Stockholm)       | eu-north-1     | securityhub.eu-north-1.amazonaws.com     | HTTPS           |  |
| Middle East (Bahrain)    | me-south-1     | securityhub.me-south-1.amazonaws.com     | HTTPS           |  |

| Region Name               | Region        | Endpoint                                     | Protocol |  |
|---------------------------|---------------|--|----------|--|
| South America (São Paulo) | sa-east-1     | securityhub.sa-east-1.amazonaws.com          | HTTPS    |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | securityhub.us-gov-east-1.amazonaws.com      | HTTPS    |  |
|                           |               | securityhub-fips.us-gov-east-1.amazonaws.com | HTTPS    |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | securityhub.us-gov-west-1.amazonaws.com      | HTTPS    |  |
|                           |               | securityhub-fips.us-gov-west-1.amazonaws.com | HTTPS    |  |

## Service quotas

| Name   | Default | Adjustable |
|--|---------|------------|
| Number of Security Hub member accounts         | 5,000   | No         |
| Number of Security Hub outstanding invitations | 1,000   | No         |
| Number of custom actions                       | 50      | No         |
| Number of custom insights                      | 100     | No         |
| Number of insight results                      | 100     | No         |
| Security Hub finding retention time            | 90      | No         |

## AWS Security Token Service endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

By default, the AWS Security Token Service (AWS STS) is available as a global service, and all STS requests go to a single endpoint at <https://sts.amazonaws.com>. AWS recommends using Regional STS endpoints to reduce latency, build in redundancy, and increase session token validity. Most Regional endpoints are active by default, but you must manually enable endpoints for some Regions, such as Asia Pacific (Hong Kong). You can deactivate STS endpoints for any Regions that are enabled by default if you do not intend to use those Regions.

For more information, see [Activating and Deactivating AWS STS in an AWS Region in the IAM User Guide](#).

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| US East (Ohio)           | us-east-2      | sts.us-east-2.amazonaws.com<br>sts-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS  |  |
| US East (N. Virginia)    | us-east-1      | sts.us-east-1.amazonaws.com<br>sts-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| US West (N. California)  | us-west-1      | sts.us-west-1.amazonaws.com<br>sts-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| US West (Oregon)         | us-west-2      | sts.us-west-2.amazonaws.com<br>sts-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS  |  |
| Africa (Cape Town)       | af-south-1     | sts.af-south-1.amazonaws.com                                    | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | sts.ap-east-1.amazonaws.com                                     | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | sts.ap-south-1.amazonaws.com                                    | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | sts.ap-northeast-3.amazonaws.com                                | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | sts.ap-northeast-2.amazonaws.com                                | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | sts.ap-southeast-1.amazonaws.com                                | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | sts.ap-southeast-2.amazonaws.com                                | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | sts.ap-northeast-1.amazonaws.com                                | HTTPS           |  |
| Canada (Central)         | ca-central-1   | sts.ca-central-1.amazonaws.com                                  | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | sts.eu-central-1.amazonaws.com                                  | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | sts.eu-west-1.amazonaws.com                                     | HTTPS           |  |

| Region Name               | Region        | Endpoint                        | Protocol |  |
|---------------------------|---------------|---------------------------------|----------|--|
| Europe (London)           | eu-west-2     | sts.eu-west-2.amazonaws.com     | HTTPS    |  |
| Europe (Milan)            | eu-south-1    | sts.eu-south-1.amazonaws.com    | HTTPS    |  |
| Europe (Paris)            | eu-west-3     | sts.eu-west-3.amazonaws.com     | HTTPS    |  |
| Europe (Stockholm)        | eu-north-1    | sts.eu-north-1.amazonaws.com    | HTTPS    |  |
| Middle East (Bahrain)     | me-south-1    | sts.me-south-1.amazonaws.com    | HTTPS    |  |
| South America (São Paulo) | sa-east-1     | sts.sa-east-1.amazonaws.com     | HTTPS    |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | sts.us-gov-east-1.amazonaws.com | HTTPS    |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | sts.us-gov-west-1.amazonaws.com | HTTPS    |  |

## AWS Server Migration Service endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name           | Region    | Endpoint  | Protocol       |  |
|-----------------------|-----------|---|----------------|--|
| US East (Ohio)        | us-east-2 | sms.us-east-2.amazonaws.com<br>sms-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia) | us-east-1 | sms.us-east-1.amazonaws.com<br>sms-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| US West (N. California)  | us-west-1      | sms.us-west-1.amazonaws.com<br>sms-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| US West (Oregon)         | us-west-2      | sms.us-west-2.amazonaws.com<br>sms-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS  |  |
| Africa (Cape Town)       | af-south-1     | sms.af-south-1.amazonaws.com                                    | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | sms.ap-east-1.amazonaws.com                                     | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | sms.ap-south-1.amazonaws.com                                    | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | sms.ap-northeast-2.amazonaws.com                                | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | sms.ap-southeast-1.amazonaws.com                                | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | sms.ap-southeast-2.amazonaws.com                                | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | sms.ap-northeast-1.amazonaws.com                                | HTTPS           |  |
| Canada (Central)         | ca-central-1   | sms.ca-central-1.amazonaws.com                                  | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | sms.eu-central-1.amazonaws.com                                  | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | sms.eu-west-1.amazonaws.com                                     | HTTPS           |  |
| Europe (London)          | eu-west-2      | sms.eu-west-2.amazonaws.com                                     | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | sms.eu-south-1.amazonaws.com                                    | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | sms.eu-west-3.amazonaws.com                                     | HTTPS           |  |
| Europe (Stockholm)       | eu-north-1     | sms.eu-north-1.amazonaws.com                                    | HTTPS           |  |

| Region Name               | Region        | Endpoint  | Protocol       |  |
|---------------------------|---------------|---|----------------|--|
| Middle East (Bahrain)     | me-south-1    | sms.me-south-1.amazonaws.com  | HTTPS          |  |
| South America (São Paulo) | sa-east-1     | sms.sa-east-1.amazonaws.com   | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | sms.us-gov-east-1.amazonaws.com<br>sms-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | sms.us-gov-west-1.amazonaws.com<br>sms-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name                                     | Default | Adjustable |
|--|---------|------------|
| Concurrent VM migrations                 | 50      | Yes        |
| Duration of service usage per VM in days | 90      | Yes        |

## Service Quotas endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name             | Region    | Endpoint                              | Protocol |  |
|-------------------------|-----------|---------------------------------------|----------|--|
| US East (Ohio)          | us-east-2 | servicequotas.us-east-2.amazonaws.com | HTTPS    |  |
| US East (N. Virginia)   | us-east-1 | servicequotas.us-east-1.amazonaws.com | HTTPS    |  |
| US West (N. California) | us-west-1 | servicequotas.us-west-1.amazonaws.com | HTTPS    |  |
| US West (Oregon)        | us-west-2 | servicequotas.us-west-2.amazonaws.com | HTTPS    |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                            | <b>Protocol</b> |  |
|--------------------------|----------------|--|-----------------|--|
| Africa (Cape Town)       | af-south-1     | servicequotas.af-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | servicequotas.ap-east-1.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | servicequotas.ap-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | servicequotas.ap-northeast-3.amazonaws.com | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | servicequotas.ap-northeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | servicequotas.ap-southeast-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | servicequotas.ap-southeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | servicequotas.ap-northeast-1.amazonaws.com | HTTPS           |  |
| Canada (Central)         | ca-central-1   | servicequotas.ca-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | servicequotas.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | servicequotas.eu-west-1.amazonaws.com      | HTTPS           |  |
| Europe (London)          | eu-west-2      | servicequotas.eu-west-2.amazonaws.com      | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | servicequotas.eu-south-1.amazonaws.com     | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | servicequotas.eu-west-3.amazonaws.com      | HTTPS           |  |
| Europe (Stockholm)       | eu-north-1     | servicequotas.eu-north-1.amazonaws.com     | HTTPS           |  |
| Middle East (Bahrain)    | me-south-1     | servicequotas.me-south-1.amazonaws.com     | HTTPS           |  |

| <b>Region Name</b>        | <b>Region</b> | <b>Endpoint</b>                           | <b>Protocol</b> |  |
|---------------------------|---------------|---|-----------------|--|
| South America (São Paulo) | sa-east-1     | servicequotas.sa-east-1.amazonaws.com     | HTTPS           |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | servicequotas.us-gov-east-1.amazonaws.com | HTTPS           |  |
|                           |               | servicequotas.us-gov-east-1.amazonaws.com | HTTPS           |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | servicequotas.us-gov-west-1.amazonaws.com | HTTPS           |  |
|                           |               | servicequotas.us-gov-west-1.amazonaws.com | HTTPS           |  |

## Service quotas

| <b>Name</b>   | <b>Default</b> | <b>Adjustable</b> |
|---|----------------|-------------------|
| Active requests per account                                     | 20             | No                |
| Active requests per account per Region                          | 2              | No                |
| Active requests per quota                                       | 1              | No                |
| Max requests per template                                       | 10             | No                |
| Throttle Rate for AssociateServiceQuotaTemplate                 | 1 per second   | No                |
| Throttle rate for DeleteServiceQuotaIncreaseRequestFromTemplate | 2 per second   | No                |
| Throttle rate for DisassociateServiceQuotaTemplate              | 1 per second   | No                |
| Throttle rate for GetAWSDefaultServiceQuota                     | 5 per second   | No                |
| Throttle rate for GetAssociationForServiceQuotaTemplate         | 2 per second   | No                |
| Throttle rate for GetRequestedServiceQuotaChange                | 5 per second   | No                |
| Throttle rate for GetServiceQuota                               | 5 per second   | No                |
| Throttle rate for GetServiceQuotaIncreaseRequestFromTemplate    | 2 per second   | No                |
| Throttle rate for ListAWSDefaultServiceQuotas                   | 10 per second  | No                |
| Throttle rate for ListRequestedServiceQuotaChangeHistory        | 5 per second   | No                |

| Name  | Default       | Adjustable |
|---|---------------|------------|
| Throttle rate for ListRequestedServiceQuotaChangeHistoryByQuota | 5 per second  | No         |
| Throttle rate for ListServiceQuotaIncreaseRequestsInTemplate    | 2 per second  | No         |
| Throttle rate for ListServiceQuotas                             | 10 per second | No         |
| Throttle rate for ListServices                                  | 10 per second | No         |
| Throttle rate for ListTagsForResource                           | 10 per second | No         |
| Throttle rate for PutServiceQuotaIncreaseRequestIntoTemplate    | 1 per second  | No         |
| Throttle rate for RequestServiceQuotaIncrease                   | 3 per second  | No         |
| Throttle rate for TagResource                                   | 10 per second | No         |
| Throttle rate for UntagResource                                 | 10 per second | No         |

## AWS Serverless Application Repository endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name             | Region    | Endpoint                               | Protocol |
|-------------------------|-----------|--|----------|
| US East (Ohio)          | us-east-2 | serverlessrepo.us-east-2.amazonaws.com | HTTPS    |
| US East (N. Virginia)   | us-east-1 | serverlessrepo.us-east-1.amazonaws.com | HTTPS    |
| US West (N. California) | us-west-1 | serverlessrepo.us-west-1.amazonaws.com | HTTPS    |
| US West (Oregon)        | us-west-2 | serverlessrepo.us-west-2.amazonaws.com | HTTPS    |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>  | <b>Protocol</b> |  |
|---------------------------|----------------|--|-----------------|--|
| Asia Pacific (Hong Kong)  | ap-east-1      | serverlessrepo.ap-east-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Mumbai)     | ap-south-1     | serverlessrepo.ap-south-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Seoul)      | ap-northeast-2 | serverlessrepo.ap-northeast-2.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | serverlessrepo.ap-southeast-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | serverlessrepo.ap-southeast-2.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | serverlessrepo.ap-northeast-1.amazonaws.com  | HTTPS           |  |
| Canada (Central)          | ca-central-1   | serverlessrepo.ca-central-1.amazonaws.com  | HTTPS           |  |
| Europe (Frankfurt)        | eu-central-1   | serverlessrepo.eu-central-1.amazonaws.com  | HTTPS           |  |
| Europe (Ireland)          | eu-west-1      | serverlessrepo.eu-west-1.amazonaws.com   | HTTPS           |  |
| Europe (London)           | eu-west-2      | serverlessrepo.eu-west-2.amazonaws.com   | HTTPS           |  |
| Europe (Paris)            | eu-west-3      | serverlessrepo.eu-west-3.amazonaws.com   | HTTPS           |  |
| Europe (Stockholm)        | eu-north-1     | serverlessrepo.eu-north-1.amazonaws.com  | HTTPS           |  |
| Middle East (Bahrain)     | me-south-1     | serverlessrepo.me-south-1.amazonaws.com  | HTTPS           |  |
| South America (São Paulo) | sa-east-1      | serverlessrepo.sa-east-1.amazonaws.com   | HTTPS           |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | serverlessrepo.us-gov-east-1.amazonaws.com<br>serverlessrepo.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS  |  |

| Region Name            | Region        | Endpoint   | Protocol       |  |
|------------------------|---------------|--|----------------|--|
| AWS GovCloud (US-West) | us-gov-west-1 | serverlessrepo.us-gov-west-1.amazonaws.com<br>serverlessrepo.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name                                     | Default     | Adjustable |
|--|-------------|------------|
| Application policy length                | 6,144       | No         |
| Free Amazon S3 storage for code packages | 5 Gigabytes | No         |
| Public applications                      | 100         | Yes        |

For more information, see [AWS Serverless Application Repository Quotas](#) in the *AWS Serverless Application Repository Developer Guide*.

## AWS Service Catalog endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [Amazon service endpoints](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [Amazon service quotas](#).

## Service endpoints

| Region Name             | Region     | Endpoint  | Protocol       |  |
|-------------------------|------------|---|----------------|--|
| US East (Ohio)          | us-east-2  | servicecatalog.us-east-2.amazonaws.com<br>servicecatalog-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)   | us-east-1  | servicecatalog.us-east-1.amazonaws.com<br>servicecatalog-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California) | us-west-1  | servicecatalog.us-west-1.amazonaws.com<br>servicecatalog-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)        | us-west-2  | servicecatalog.us-west-2.amazonaws.com<br>servicecatalog-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Africa (Cape Town)      | af-south-1 | servicecatalog.af-south-1.amazonaws.com   | HTTPS          |  |

| Region Name              | Region         | Endpoint                                    | Protocol |  |
|--------------------------|----------------|---|----------|--|
| Asia Pacific (Hong Kong) | ap-east-1      | servicecatalog.ap-east-1.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai)    | ap-south-1     | servicecatalog.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | servicecatalog.ap-northeast-3.amazonaws.com | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | servicecatalog.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | servicecatalog.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | servicecatalog.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | servicecatalog.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)         | ca-central-1   | servicecatalog.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)       | eu-central-1   | servicecatalog.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)         | eu-west-1      | servicecatalog.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)          | eu-west-2      | servicecatalog.eu-west-2.amazonaws.com      | HTTPS    |  |
| Europe (Milan)           | eu-south-1     | servicecatalog.eu-south-1.amazonaws.com     | HTTPS    |  |
| Europe (Paris)           | eu-west-3      | servicecatalog.eu-west-3.amazonaws.com      | HTTPS    |  |
| Europe (Stockholm)       | eu-north-1     | servicecatalog.eu-north-1.amazonaws.com     | HTTPS    |  |
| Middle East (Bahrain)    | me-south-1     | servicecatalog.me-south-1.amazonaws.com     | HTTPS    |  |

| <b>Region Name</b>        | <b>Region</b> | <b>Endpoint</b>   | <b>Protocol</b> |  |
|---------------------------|---------------|---|-----------------|--|
| South America (São Paulo) | sa-east-1     | servicecatalog.sa-east-1.amazonaws.com  | HTTPS           |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | servicecatalog.us-gov-east-1.amazonaws.com<br>servicecatalog-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | servicecatalog.us-gov-west-1.amazonaws.com<br>servicecatalog-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |

## Service quotas

| <b>Name</b>   | <b>Default</b> | <b>Adjustable</b> |
|---|----------------|-------------------|
| Applications per region                               | 100            | Yes               |
| Attribute groups per application                      | 100            | Yes               |
| Attribute groups per region                           | 100            | Yes               |
| Delegated administrators per organization             | 50             | No                |
| Portfolios per region                                 | 100            | Yes               |
| Product versions per product                          | 100            | Yes               |
| Products per portfolio                                | 150            | Yes               |
| Products per region                                   | 350            | Yes               |
| Resources per application                             | 200            | Yes               |
| Service action associations per provisioning artifact | 25             | No                |
| Service actions per region                            | 200            | No                |
| Shared accounts per portfolio                         | 5,000          | No                |
| TagOptions per resource                               | 25             | No                |
| Tags per portfolio                                    | 20             | No                |
| Tags per product                                      | 20             | No                |
| Tags per provisioned product                          | 50             | No                |
| Users, groups, and roles per portfolio                | 100            | Yes               |
| Users, groups, and roles per product                  | 200            | Yes               |
| Values per TagOption                                  | 25             | No                |

For more information, see [AWS Service Catalog default service quotas](#) in the *AWS Service Catalog Administrator Guide*.

## AWS Shield Advanced endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name              | Region     | Endpoint                            | Protocol |  |
|--------------------------|------------|-------------------------------------|----------|--|
| US East (Ohio)           | us-east-2  | shield.us-east-1.amazonaws.com      | HTTPS    |  |
|                          |            | shield.us-east-1.amazonaws.com      | HTTPS    |  |
|                          |            | shield-fips.us-east-1.amazonaws.com | HTTPS    |  |
| US East (N. Virginia)    | us-east-1  | shield.us-east-1.amazonaws.com      | HTTPS    |  |
|                          |            | shield.us-east-1.amazonaws.com      | HTTPS    |  |
|                          |            | shield-fips.us-east-1.amazonaws.com | HTTPS    |  |
| US West (N. California)  | us-west-1  | shield.us-east-1.amazonaws.com      | HTTPS    |  |
|                          |            | shield.us-east-1.amazonaws.com      | HTTPS    |  |
|                          |            | shield-fips.us-east-1.amazonaws.com | HTTPS    |  |
| US West (Oregon)         | us-west-2  | shield.us-east-1.amazonaws.com      | HTTPS    |  |
|                          |            | shield.us-east-1.amazonaws.com      | HTTPS    |  |
|                          |            | shield-fips.us-east-1.amazonaws.com | HTTPS    |  |
| Africa (Cape Town)       | af-south-1 | shield.us-east-1.amazonaws.com      | HTTPS    |  |
|                          |            | shield.us-east-1.amazonaws.com      | HTTPS    |  |
|                          |            | shield-fips.us-east-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Hong Kong) | ap-east-1  | shield.us-east-1.amazonaws.com      | HTTPS    |  |
|                          |            | shield.us-east-1.amazonaws.com      | HTTPS    |  |
|                          |            | shield-fips.us-east-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Mumbai)    | ap-south-1 | shield.us-east-1.amazonaws.com      | HTTPS    |  |
|                          |            | shield.us-east-1.amazonaws.com      | HTTPS    |  |
|                          |            | shield-fips.us-east-1.amazonaws.com | HTTPS    |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b>         |  |
|--------------------------|----------------|---|-------------------------|--|
| Asia Pacific (Osaka)     | ap-northeast-3 | shield.us-east-1.amazonaws.com<br>shield.us-east-1.amazonaws.com<br>shield-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | shield.us-east-1.amazonaws.com<br>shield.us-east-1.amazonaws.com<br>shield-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |
| Asia Pacific (Singapore) | ap-southeast-1 | shield.us-east-1.amazonaws.com<br>shield.us-east-1.amazonaws.com<br>shield-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | shield.us-east-1.amazonaws.com<br>shield.us-east-1.amazonaws.com<br>shield-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | shield.us-east-1.amazonaws.com<br>shield.us-east-1.amazonaws.com<br>shield-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |
| Canada (Central)         | ca-central-1   | shield.us-east-1.amazonaws.com<br>shield.us-east-1.amazonaws.com<br>shield-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |
| Europe (Frankfurt)       | eu-central-1   | shield.us-east-1.amazonaws.com<br>shield.us-east-1.amazonaws.com<br>shield-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |
| Europe (Ireland)         | eu-west-1      | shield.us-east-1.amazonaws.com<br>shield.us-east-1.amazonaws.com<br>shield-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |
| Europe (London)          | eu-west-2      | shield.us-east-1.amazonaws.com<br>shield.us-east-1.amazonaws.com<br>shield-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |
| Europe (Milan)           | eu-south-1     | shield.us-east-1.amazonaws.com<br>shield.us-east-1.amazonaws.com<br>shield-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |

| Region Name               | Region     | Endpoint  | Protocol                |  |
|---------------------------|------------|---|-------------------------|--|
| Europe (Paris)            | eu-west-3  | shield.us-east-1.amazonaws.com<br>shield.us-east-1.amazonaws.com<br>shield-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |
| Europe (Stockholm)        | eu-north-1 | shield.us-east-1.amazonaws.com<br>shield.us-east-1.amazonaws.com<br>shield-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |
| Middle East (Bahrain)     | me-south-1 | shield.us-east-1.amazonaws.com<br>shield.us-east-1.amazonaws.com<br>shield-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |
| South America (São Paulo) | sa-east-1  | shield.us-east-1.amazonaws.com<br>shield.us-east-1.amazonaws.com<br>shield-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS |  |

## Service quotas

| Name   | Default | Adjustable |
|--|---------|------------|
| AWS Global Accelerator accelerator protections   | 1,000   | Yes        |
| Amazon Route 53 hosted zone protections          | 1,000   | Yes        |
| CloudFront distribution protections              | 1,000   | Yes        |
| Elastic IP address protections                   | 1,000   | Yes        |
| Elastic Load Balancing load balancer protections | 1,000   | Yes        |

## Amazon Simple Email Service endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

### API Endpoints

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| US East (Ohio)           | us-east-2      | email.us-east-2.amazonaws.com                                       | HTTPS           |  |
| US East (N. Virginia)    | us-east-1      | email.us-east-1.amazonaws.com<br>email-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| US West (N. California)  | us-west-1      | email.us-west-1.amazonaws.com                                       | HTTPS           |  |
| US West (Oregon)         | us-west-2      | email.us-west-2.amazonaws.com<br>email-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS  |  |
| Africa (Cape Town)       | af-south-1     | email.af-south-1.amazonaws.com                                      | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | email.ap-south-1.amazonaws.com                                      | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | email.ap-northeast-3.amazonaws.com                                  | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | email.ap-northeast-2.amazonaws.com                                  | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | email.ap-southeast-1.amazonaws.com                                  | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | email.ap-southeast-2.amazonaws.com                                  | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | email.ap-northeast-1.amazonaws.com                                  | HTTPS           |  |
| Canada (Central)         | ca-central-1   | email.ca-central-1.amazonaws.com                                    | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | email.eu-central-1.amazonaws.com                                    | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | email.eu-west-1.amazonaws.com                                       | HTTPS           |  |
| Europe (London)          | eu-west-2      | email.eu-west-2.amazonaws.com                                       | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | email.eu-south-1.amazonaws.com                                      | HTTPS           |  |

| Region Name               | Region        | Endpoint  | Protocol       |  |
|---------------------------|---------------|---|----------------|--|
| Europe (Paris)            | eu-west-3     | email.eu-west-3.amazonaws.com   | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1    | email.eu-north-1.amazonaws.com  | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1    | email.me-south-1.amazonaws.com  | HTTPS          |  |
| South America (São Paulo) | sa-east-1     | email.sa-east-1.amazonaws.com   | HTTPS          |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | email.us-gov-west-1.amazonaws.com<br>email-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

### SMTP Endpoints

**Note**

SMTP endpoints are not currently available in Africa (Cape Town), Europe (Milan), Middle East (Bahrain).

| Region Name             | Region         | Endpoint  | Protocol |  |
|-------------------------|----------------|---|----------|--|
| US East (Ohio)          | us-east-2      | email-smtp.us-east-2.amazonaws.com  | SMTP     |  |
| US East (N. Virginia)   | us-east-1      | email-smtp.us-east-1.amazonaws.com<br>email-smtp-fips.us-east-1.amazonaws.com | SMTP     |  |
| US West (N. California) | us-west-1      | email-smtp.us-west-1.amazonaws.com  | SMTP     |  |
| US West (Oregon)        | us-west-2      | email-smtp.us-west-2.amazonaws.com<br>email-smtp-fips.us-west-2.amazonaws.com | SMTP     |  |
| Asia Pacific (Mumbai)   | ap-south-1     | email-smtp.ap-south-1.amazonaws.com   | SMTP     |  |
| Asia Pacific (Osaka)    | ap-northeast-3 | email-smtp.ap-northeast-3.amazonaws.com                                       | SMTP     |  |
| Asia Pacific (Seoul)    | ap-northeast-2 | email-smtp.ap-northeast-2.amazonaws.com                                       | SMTP     |  |

| Region Name               | Region         | Endpoint  | Protocol |  |
|---------------------------|----------------|---|----------|--|
| Asia Pacific (Singapore)  | ap-southeast-1 | email-smtp.ap-southeast-1.amazonaws.com   | SMTP     |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | email-smtp.ap-southeast-2.amazonaws.com   | SMTP     |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | email-smtp.ap-northeast-1.amazonaws.com   | SMTP     |  |
| Canada (Central)          | ca-central-1   | email-smtp.ca-central-1.amazonaws.com   | SMTP     |  |
| Europe (Frankfurt)        | eu-central-1   | email-smtp.eu-central-1.amazonaws.com   | SMTP     |  |
| Europe (Ireland)          | eu-west-1      | email-smtp.eu-west-1.amazonaws.com  | SMTP     |  |
| Europe (London)           | eu-west-2      | email-smtp.eu-west-2.amazonaws.com  | SMTP     |  |
| Europe (Paris)            | eu-west-3      | email-smtp.eu-west-3.amazonaws.com  | SMTP     |  |
| Europe (Stockholm)        | eu-north-1     | email-smtp.eu-north-1.amazonaws.com   | SMTP     |  |
| South America (São Paulo) | sa-east-1      | email-smtp.sa-east-1.amazonaws.com  | SMTP     |  |
| AWS GovCloud (US)         | us-gov-west-1  | email-smtp.us-gov-west-1.amazonaws.com<br><br>email-smtp-fips.us-gov-west-1.amazonaws.com | SMTP     |  |

### DKIM Domains

| Region Name          | Region         | AWS DKIM domain                   |  |  |
|----------------------|----------------|-----------------------------------|--|--|
| Africa (Cape Town)   | af-south-1     | dkim.af-south-1.amazonses.com     |  |  |
| Asia Pacific (Osaka) | ap-northeast-3 | dkim.ap-northeast-3.amazonses.com |  |  |
| Europe (Milan)       | eu-south-1     | dkim.eu-south-1.amazonses.com     |  |  |
| All other regions    |                | dkim.amazonses.com                |  |  |

### Email Receiving Endpoints

Amazon SES doesn't support email receiving in the following Regions: US East (Ohio), US West (N. California) Asia Pacific (Mumbai), Asia Pacific (Osaka), Asia Pacific (Seoul), Asia Pacific (Singapore), Asia Pacific (Sydney), Asia Pacific (Tokyo), Canada (Central), Europe (Frankfurt), Europe (London), Europe (Paris), Europe (Stockholm), Middle East (Bahrain), South America (São Paulo), and AWS GovCloud (US).

| Region Name           | Region    | Receiving Endpoint                   |  |  |
|-----------------------|-----------|--------------------------------------|--|--|
| US East (N. Virginia) | us-east-1 | inbound-smtp.us-east-1.amazonaws.com |  |  |
| US West (Oregon)      | us-west-2 | inbound-smtp.us-west-2.amazonaws.com |  |  |
| Europe (Ireland)      | eu-west-1 | inbound-smtp.eu-west-1.amazonaws.com |  |  |

## Service quotas

| Name          | Default | Adjustable |
|---------------|---------|------------|
| Sending quota | 200     | Yes        |
| Sending rate  | 1       | Yes        |

For more information, see [Quotas in Amazon SES](#) in the *Amazon Simple Email Service Developer Guide*.

## AWS Signer endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints with Lambda

| Region Name             | Region    | Endpoint                       | Protocol |  |
|-------------------------|-----------|--------------------------------|----------|--|
| US East (Ohio)          | us-east-2 | signer.us-east-2.amazonaws.com | HTTPS    |  |
| US East (N. Virginia)   | us-east-1 | signer.us-east-1.amazonaws.com | HTTPS    |  |
| US West (N. California) | us-west-1 | signer.us-west-1.amazonaws.com | HTTPS    |  |
| US West (Oregon)        | us-west-2 | signer.us-west-2.amazonaws.com | HTTPS    |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                     | <b>Protocol</b> |  |
|--------------------------|----------------|-------------------------------------|-----------------|--|
| Africa (Cape Town)       | af-south-1     | signer.af-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | signer.ap-east-1.amazonaws.com      | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | signer.ap-south-1.amazonaws.com     | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | signer.ap-northeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | signer.ap-southeast-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | signer.ap-southeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | signer.ap-northeast-1.amazonaws.com | HTTPS           |  |
| Canada (Central)         | ca-central-1   | signer.ca-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | signer.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | signer.eu-west-1.amazonaws.com      | HTTPS           |  |
| Europe (London)          | eu-west-2      | signer.eu-west-2.amazonaws.com      | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | signer.eu-south-1.amazonaws.com     | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | signer.eu-west-3.amazonaws.com      | HTTPS           |  |
| Europe (Stockholm)       | eu-north-1     | signer.eu-north-1.amazonaws.com     | HTTPS           |  |
| Middle East (Bahrain)    | me-south-1     | signer.me-south-1.amazonaws.com     | HTTPS           |  |

| Region Name               | Region        | Endpoint                           | Protocol |  |
|---------------------------|---------------|------------------------------------|----------|--|
| South America (São Paulo) | sa-east-1     | signer.sa-east-1.amazonaws.com     | HTTPS    |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | signer.us-gov-east-1.amazonaws.com | HTTPS    |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | signer.us-gov-west-1.amazonaws.com | HTTPS    |  |

## Service endpoints with IoT

| Region Name              | Region         | Endpoint                            | Protocol |
|--------------------------|----------------|-------------------------------------|----------|
| US East (Ohio)           | us-east-2      | signer.us-east-2.amazonaws.com      | HTTPS    |
| US East (N. Virginia)    | us-east-1      | signer.us-east-1.amazonaws.com      | HTTPS    |
| US West (N. California)  | us-west-1      | signer.us-west-1.amazonaws.com      | HTTPS    |
| US West (Oregon)         | us-west-2      | signer.us-west-2.amazonaws.com      | HTTPS    |
| Africa (Cape Town)       | af-south-1     | signer.af-south-1.amazonaws.com     | HTTPS    |
| Asia Pacific (Hong Kong) | ap-east-1      | signer.ap-east-1.amazonaws.com      | HTTPS    |
| Asia Pacific (Mumbai)    | ap-south-1     | signer.ap-south-1.amazonaws.com     | HTTPS    |
| Asia Pacific (Seoul)     | ap-northeast-2 | signer.ap-northeast-2.amazonaws.com | HTTPS    |
| Asia Pacific (Singapore) | ap-southeast-1 | signer.ap-southeast-1.amazonaws.com | HTTPS    |
| Asia Pacific (Sydney)    | ap-southeast-2 | signer.ap-southeast-2.amazonaws.com | HTTPS    |
| Asia Pacific (Tokyo)     | ap-northeast-1 | signer.ap-northeast-1.amazonaws.com | HTTPS    |
| Canada (Central)         | ca-central-1   | signer.ca-central-1.amazonaws.com   | HTTPS    |

| Region Name               | Region         | Endpoint                            | Protocol |
|---------------------------|----------------|-------------------------------------|----------|
| China (Beijing)           | cn-north-1     | acm.cn-north-1.amazonaws.com.cn     | HTTPS    |
| China (Ningxia)           | cn-northwest-1 | acm.cn-northwest-1.amazonaws.com.cn | HTTPS    |
| Europe (Frankfurt)        | eu-central-1   | signer.eu-central-1.amazonaws.com   | HTTPS    |
| Europe (Ireland)          | eu-west-1      | signer.eu-west-1.amazonaws.com      | HTTPS    |
| Europe (London)           | eu-west-2      | signer.eu-west-2.amazonaws.com      | HTTPS    |
| Europe (Milan)            | eu-south-1     | signer.eu-south-1.amazonaws.com     | HTTPS    |
| Europe (Paris)            | eu-west-3      | signer.eu-west-3.amazonaws.com      | HTTPS    |
| Europe (Stockholm)        | eu-north-1     | signer.eu-north-1.amazonaws.com     | HTTPS    |
| Middle East (Bahrain)     | me-south-1     | signer.me-south-1.amazonaws.com     | HTTPS    |
| South America (São Paulo) | sa-east-1      | signer.sa-east-1.amazonaws.com      | HTTPS    |
| AWS GovCloud (US-East)    | us-gov-east-1  | signer.us-gov-east-1.amazonaws.com  | HTTPS    |
| AWS GovCloud (US-West)    | us-gov-west-1  | signer.us-gov-west-1.amazonaws.com  | HTTPS    |

## Service quotas

| Name                                    | Default | Adjustable |
|---|---------|------------|
| API calls per second                    | 25      | No         |
| Rate of AddProfilePermission requests   | 3       | Yes        |
| Rate of CancelSigningProfile requests   | 3       | Yes        |
| Rate of DescribeSigningJob requests     | 6       | Yes        |
| Rate of GetSigningPlatform requests     | 3       | Yes        |
| Rate of GetSigningProfile requests      | 3       | Yes        |
| Rate of ListProfilePermissions requests | 6       | Yes        |
| Rate of ListSigningJobs requests        | 6       | Yes        |

| Name                                     | Default | Adjustable |
|--|---------|------------|
| Rate of ListSigningPlatforms requests    | 6       | Yes        |
| Rate of ListSigningProfiles requests     | 6       | Yes        |
| Rate of ListTagsForResource requests     | 6       | Yes        |
| Rate of PutSigningProfile requests       | 3       | Yes        |
| Rate of RemoveProfilePermission requests | 3       | Yes        |
| Rate of RevokeSignature requests         | 3       | Yes        |
| Rate of RevokeSigningProfile requests    | 3       | Yes        |
| Rate of StartSigningJob requests         | 3       | Yes        |
| Rate of TagResource requests             | 3       | Yes        |
| Rate of UntagResource requests           | 3       | Yes        |

## AWS Sign-In endpoints

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region     | Endpoint                         | Protocol |  |
|--------------------------|------------|----------------------------------|----------|--|
| US East (Ohio)           | us-east-2  | us-east-2.signin.aws.amazon.com  | HTTPS    |  |
| US East (N. Virginia)    | us-east-1  | signin.aws.amazon.com            | HTTPS    |  |
| US West (N. California)  | us-west-1  | us-west-1.signin.aws.amazon.com  | HTTPS    |  |
| US West (Oregon)         | us-west-2  | us-west-2.signin.aws.amazon.com  | HTTPS    |  |
| Africa (Cape Town)       | af-south-1 | af-south-1.signin.aws.amazon.com | HTTPS    |  |
| Asia Pacific (Hong Kong) | ap-east-1  | ap-east-1.signin.aws.amazon.com  | HTTPS    |  |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>                           | <b>Protocol</b> |  |
|---------------------------|----------------|---|-----------------|--|
| Asia Pacific (Mumbai)     | ap-south-1     | ap-south-1.signin.aws.amazon.com          | HTTPS           |  |
| Asia Pacific (Osaka)      | ap-northeast-3 | ap-northeast-3.signin.aws.amazon.com      | HTTPS           |  |
| Asia Pacific (Seoul)      | ap-northeast-2 | ap-northeast-2.signin.aws.amazon.com      | HTTPS           |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | ap-southeast-1.signin.aws.amazon.com      | HTTPS           |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | ap-southeast-2.signin.aws.amazon.com      | HTTPS           |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | ap-northeast-1.signin.aws.amazon.com      | HTTPS           |  |
| Canada (Central)          | ca-central-1   | ca-central-1.signin.aws.amazon.com        | HTTPS           |  |
| Europe (Frankfurt)        | eu-central-1   | eu-central-1.signin.aws.amazon.com        | HTTPS           |  |
| Europe (Ireland)          | eu-west-1      | eu-west-1.signin.aws.amazon.com           | HTTPS           |  |
| Europe (London)           | eu-west-2      | eu-west-2.signin.aws.amazon.com           | HTTPS           |  |
| Europe (Milan)            | eu-south-1     | eu-south-1.signin.aws.amazon.com          | HTTPS           |  |
| Europe (Paris)            | eu-west-3      | eu-west-3.signin.aws.amazon.com           | HTTPS           |  |
| Europe (Stockholm)        | eu-north-1     | eu-north-1.signin.aws.amazon.com          | HTTPS           |  |
| Middle East (Bahrain)     | me-south-1     | me-south-1.signin.aws.amazon.com          | HTTPS           |  |
| South America (São Paulo) | sa-east-1      | sa-east-1.signin.aws.amazon.com           | HTTPS           |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | us-gov-east-1.signin.amazonaws-us-gov.com | HTTPS           |  |

| Region Name            | Region        | Endpoint                    | Protocol |  |
|------------------------|---------------|-----------------------------|----------|--|
| AWS GovCloud (US-West) | us-gov-west-1 | signin.amazonaws-us-gov.com | HTTPS    |  |

## Service quotas

AWS Sign-In has no increasable quotas.

# Amazon Simple Notification Service endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region     | Endpoint                     | Protocol       |  |
|--------------------------|------------|------------------------------|----------------|--|
| US East (Ohio)           | us-east-2  | sns.us-east-2.amazonaws.com  | HTTP and HTTPS |  |
| US East (N. Virginia)    | us-east-1  | sns.us-east-1.amazonaws.com  | HTTP and HTTPS |  |
| US West (N. California)  | us-west-1  | sns.us-west-1.amazonaws.com  | HTTP and HTTPS |  |
| US West (Oregon)         | us-west-2  | sns.us-west-2.amazonaws.com  | HTTP and HTTPS |  |
| Africa (Cape Town)       | af-south-1 | sns.af-south-1.amazonaws.com | HTTP and HTTPS |  |
| Asia Pacific (Hong Kong) | ap-east-1  | sns.ap-east-1.amazonaws.com  | HTTP and HTTPS |  |
| Asia Pacific (Mumbai)    | ap-south-1 | sns.ap-south-1.amazonaws.com | HTTP and HTTPS |  |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>                  | <b>Protocol</b> |  |
|---------------------------|----------------|----------------------------------|-----------------|--|
| Asia Pacific (Osaka)      | ap-northeast-3 | sns.ap-northeast-3.amazonaws.com | HTTP and HTTPS  |  |
| Asia Pacific (Seoul)      | ap-northeast-2 | sns.ap-northeast-2.amazonaws.com | HTTP and HTTPS  |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | sns.ap-southeast-1.amazonaws.com | HTTP and HTTPS  |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | sns.ap-southeast-2.amazonaws.com | HTTP and HTTPS  |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | sns.ap-northeast-1.amazonaws.com | HTTP and HTTPS  |  |
| Canada (Central)          | ca-central-1   | sns.ca-central-1.amazonaws.com   | HTTP and HTTPS  |  |
| Europe (Frankfurt)        | eu-central-1   | sns.eu-central-1.amazonaws.com   | HTTP and HTTPS  |  |
| Europe (Ireland)          | eu-west-1      | sns.eu-west-1.amazonaws.com      | HTTP and HTTPS  |  |
| Europe (London)           | eu-west-2      | sns.eu-west-2.amazonaws.com      | HTTP and HTTPS  |  |
| Europe (Milan)            | eu-south-1     | sns.eu-south-1.amazonaws.com     | HTTP and HTTPS  |  |
| Europe (Paris)            | eu-west-3      | sns.eu-west-3.amazonaws.com      | HTTP and HTTPS  |  |
| Europe (Stockholm)        | eu-north-1     | sns.eu-north-1.amazonaws.com     | HTTP and HTTPS  |  |
| Middle East (Bahrain)     | me-south-1     | sns.me-south-1.amazonaws.com     | HTTP and HTTPS  |  |
| South America (São Paulo) | sa-east-1      | sns.sa-east-1.amazonaws.com      | HTTP and HTTPS  |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | sns.us-gov-east-1.amazonaws.com  | HTTP and HTTPS  |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | sns.us-gov-west-1.amazonaws.com  | HTTP and HTTPS  |  |

## FIFO topics

FIFO topics are supported in all Regions except the following:

- Asia Pacific (Osaka)
- AWS GovCloud (US-East)
- AWS GovCloud (US-West)

## Service quotas

The following quotas determine how many Amazon SNS resources you can create in your AWS account, and they determine the rate at which you can issue Amazon SNS API requests.

### Amazon SNS resource

To request an increase, submit an [SNS Quota Increase case](#).

| Resource                                     | Default   |
|--|---|
| Topics                                       | <ul style="list-style-type: none"><li>• Standard: 100,000 per account</li><li>• FIFO: 1,000 per account</li></ul>   |
| Subscriptions                                | <ul style="list-style-type: none"><li>• Standard: 12,500,000 per topic</li></ul> <p>For Kinesis Data Firehose delivery streams, 5 per topic, per subscription owner</p> <ul style="list-style-type: none"><li>• FIFO: 100 per topic</li></ul> |
| Pending subscriptions                        | 5,000 per account   |
| Account spend threshold for SMS              | 1.00 USD per account  |
| Delivery rate for promotional SMS messages   | 20 messages per second  |
| Delivery rate for transactional SMS messages | 20 messages per second  |
| Delivery rate for email messages             | 10 messages per second  |
| Subscription filter policies                 | 200 per account   |

### Amazon SNS API throttling

The following quotas throttle the rate at which you can issue Amazon SNS API requests.

#### Hard

The following quotas cannot be increased.

| API                          | Transactions per second |
|------------------------------|-------------------------|
| CheckIfPhoneNumberIsOptedOut | 50                      |

| API                                | Transactions per second |
|------------------------------------|-------------------------|
| CreateSMSSandboxPhoneNumber        | 1                       |
| DeleteSMSSandboxPhoneNumber        | 1                       |
| GetSMSAttributes                   | 20                      |
| GetSMSSandboxAccountStatus         | 10                      |
| ListEndpointsByPlatformApplication | 30                      |
| ListOriginationNumbers             | 1                       |
| ListPhoneNumbersOptedOut           | 10                      |
| ListSMSSandboxPhoneNumbers         | 1                       |
| ListTopics                         | 30                      |
| ListPlatformApplications           | 15                      |
| ListSubscriptions                  | 30                      |
| ListSubscriptionsByTopic           | 30                      |
| OptInPhoneNumber                   | 20                      |
| SetSMSAttributes                   | 1                       |
| Subscribe                          | 100                     |
| Unsubscribe                        | 100                     |
| VerifySMSSandboxPhoneNumber        | 1                       |

## Soft

The following quotas vary by AWS Region.

### Publish API throttling

| API     | AWS Regions                    | Standard topics                | FIFO topics  |
|---------|--------------------------------|--------------------------------|--|
| Publish | US East (N. Virginia) Region   | 30,000 transactions per second | 300 transactions per second or 10 MB per second, per topic, whichever comes first  |
|         | US West (Oregon) Region        | 9,000 transactions per second  |  |
|         | Europe (Ireland) Region        |                                |  |
|         | US East (Ohio) Region          | 1,500 transactions per second  | For cross region delivery cases, FIFO topics support 100 transactions per second or 3 MB per second, whichever comes first |
|         | US West (N. California) Region |                                |  |
|         | Asia Pacific (Mumbai) Region   |                                |  |

| API | AWS Regions   | Standard topics             | FIFO topics |
|-----|---|-----------------------------|-------------|
|     | Asia Pacific (Seoul) Region<br>Asia Pacific (Singapore) Region<br>Asia Pacific (Sydney) Region<br>Asia Pacific (Tokyo) Region<br>Europe (Frankfurt) Region  |                             |             |
|     | Africa (Cape Town) Region<br>Asia Pacific (Hong Kong) Region<br>Asia Pacific (Osaka) Region<br>Canada (Central) Region<br>China (Beijing) Region<br>China (Ningxia) Region<br>Europe (London) Region<br>Europe (Milan) Region<br>Europe (Paris) Region<br>Europe (Stockholm) Region<br>Middle East (Bahrain) Region<br>South America (São Paulo) Region | 300 transactions per second |             |

### Other API throttling

| APIs                      | AWS Regions                    | Transactions per second |
|---------------------------|--------------------------------|-------------------------|
| ConfirmSubscription       | US East (N. Virginia) Region   | 3,000                   |
| CreatePlatformApplication | US West (Oregon) Region        | 900                     |
| CreatePlatformEndpoint    | Europe (Ireland) Region        |                         |
| CreateTopic               | US East (Ohio) Region          | 150                     |
| DeleteEndpoint            | US West (N. California) Region |                         |

| APIs                             | AWS Regions                      | Transactions per second |
|----------------------------------|----------------------------------|-------------------------|
| DeletePlatformApplication        | Asia Pacific (Mumbai) Region     |                         |
| DeleteTopic                      | Asia Pacific (Seoul) Region      |                         |
| GetEndpointAttributes            | Asia Pacific (Singapore) Region  |                         |
| GetPlatformApplicationAttributes | Asia Pacific (Sydney) Region     |                         |
| GetSubscriptionAttributes        | Asia Pacific (Tokyo) Region      |                         |
| GetTopicAttributes               | Europe (Frankfurt) Region        |                         |
| SetEndpointAttributes            | Africa (Cape Town) Region        | 30                      |
| SetPlatformApplicationAttributes | Asia Pacific (Hong Kong) Region  |                         |
| SetSubscriptionAttributes        | Asia Pacific (Osaka) Region      |                         |
| SetTopicAttributes               | Canada (Central) Region          |                         |
|                                  | China (Beijing) Region           |                         |
|                                  | China (Ningxia) Region           |                         |
|                                  | Europe (London) Region           |                         |
|                                  | Europe (Milan) Region            |                         |
|                                  | Europe (Paris) Region            |                         |
|                                  | Europe (Stockholm) Region        |                         |
|                                  | Middle East (Bahrain) Region     |                         |
|                                  | South America (São Paulo) Region |                         |

## Amazon Simple Queue Service endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

### Amazon SQS

| Region Name              | Region         | Endpoint   | Protocol                |  |
|--------------------------|----------------|--|-------------------------|--|
| US East (Ohio)           | us-east-2      | sqs.us-east-2.amazonaws.com<br>sqsfips.us-east-2.amazonaws.com | HTTP and HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | sqs.us-east-1.amazonaws.com<br>sqsfips.us-east-1.amazonaws.com | HTTP and HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | sqs.us-west-1.amazonaws.com<br>sqsfips.us-west-1.amazonaws.com | HTTP and HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | sqs.us-west-2.amazonaws.com<br>sqsfips.us-west-2.amazonaws.com | HTTP and HTTPS<br>HTTPS |  |
| Africa (Cape Town)       | af-south-1     | sqs.af-south-1.amazonaws.com                                   | HTTP and HTTPS          |  |
| Asia Pacific (Hong Kong) | ap-east-1      | sqs.ap-east-1.amazonaws.com                                    | HTTP and HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | sqs.ap-south-1.amazonaws.com                                   | HTTP and HTTPS          |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | sqs.ap-northeast-3.amazonaws.com                               | HTTP and HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | sqs.ap-northeast-2.amazonaws.com                               | HTTP and HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | sqs.ap-southeast-1.amazonaws.com                               | HTTP and HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | sqs.ap-southeast-2.amazonaws.com                               | HTTP and HTTPS          |  |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>  | <b>Protocol</b>         |  |
|---------------------------|----------------|--|-------------------------|--|
| Asia Pacific (Tokyo)      | ap-northeast-1 | sqs.ap-northeast-1.amazonaws.com                                   | HTTP and HTTPS          |  |
| Canada (Central)          | ca-central-1   | sqs.ca-central-1.amazonaws.com                                     | HTTP and HTTPS          |  |
| Europe (Frankfurt)        | eu-central-1   | sqs.eu-central-1.amazonaws.com                                     | HTTP and HTTPS          |  |
| Europe (Ireland)          | eu-west-1      | sqs.eu-west-1.amazonaws.com  | HTTP and HTTPS          |  |
| Europe (London)           | eu-west-2      | sqs.eu-west-2.amazonaws.com  | HTTP and HTTPS          |  |
| Europe (Milan)            | eu-south-1     | sqs.eu-south-1.amazonaws.com                                       | HTTP and HTTPS          |  |
| Europe (Paris)            | eu-west-3      | sqs.eu-west-3.amazonaws.com  | HTTP and HTTPS          |  |
| Europe (Stockholm)        | eu-north-1     | sqs.eu-north-1.amazonaws.com                                       | HTTP and HTTPS          |  |
| Middle East (Bahrain)     | me-south-1     | sqs.me-south-1.amazonaws.com                                       | HTTP and HTTPS          |  |
| South America (São Paulo) | sa-east-1      | sqs.sa-east-1.amazonaws.com  | HTTP and HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | sqs.us-gov-east-1.amazonaws.com<br>sqs.us-gov-east-1.amazonaws.com | HTTP and HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | sqs.us-gov-west-1.amazonaws.com<br>sqs.us-gov-west-1.amazonaws.com | HTTP and HTTPS<br>HTTPS |  |

## Legacy endpoints

If you use the AWS CLI or SDK for Python, you can use the following legacy endpoints.

| <b>Region Name</b>    | <b>Region</b> | <b>Endpoint</b>               | <b>Protocol</b> |
|-----------------------|---------------|-------------------------------|-----------------|
| US East (Ohio)        | us-east-2     | us-east-2.queue.amazonaws.com | HTTP and HTTPS  |
| US East (N. Virginia) | us-east-1     | queue.amazonaws.com           | HTTP and HTTPS  |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>                    | <b>Protocol</b> |
|---------------------------|----------------|------------------------------------|-----------------|
| US West (N. California)   | us-west-1      | us-west-1.queue.amazonaws.com      | HTTP and HTTPS  |
| US West (Oregon)          | us-west-2      | us-west-2.queue.amazonaws.com      | HTTP and HTTPS  |
| Africa (Cape Town)        | af-south-1     | af-south-1.queue.amazonaws.com     | HTTP            |
| Asia Pacific (Mumbai)     | ap-south-1     | ap-south-1.queue.amazonaws.com     | HTTP and HTTPS  |
| Asia Pacific (Osaka)      | ap-northeast-3 | ap-northeast-3.queue.amazonaws.com | HTTP and HTTPS  |
| Asia Pacific (Seoul)      | ap-northeast-2 | ap-northeast-2.queue.amazonaws.com | HTTP and HTTPS  |
| Asia Pacific (Singapore)  | ap-southeast-1 | ap-southeast-1.queue.amazonaws.com | HTTP and HTTPS  |
| Asia Pacific (Sydney)     | ap-southeast-2 | ap-southeast-2.queue.amazonaws.com | HTTP and HTTPS  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | ap-northeast-1.queue.amazonaws.com | HTTP and HTTPS  |
| Canada (Central)          | ca-central-1   | ca-central-1.queue.amazonaws.com   | HTTP and HTTPS  |
| China (Beijing)           | cn-north-1     | cn-north-1.queue.amazonaws.com     | HTTP and HTTPS  |
| China (Ningxia)           | cn-northwest-1 | cn-northwest-1.queue.amazonaws.com | HTTP and HTTPS  |
| Europe (Frankfurt)        | eu-central-1   | eu-central-1.queue.amazonaws.com   | HTTP and HTTPS  |
| Europe (Ireland)          | eu-west-1      | eu-west-1.queue.amazonaws.com      | HTTP and HTTPS  |
| Europe (London)           | eu-west-2      | eu-west-2.queue.amazonaws.com      | HTTP and HTTPS  |
| Europe (Paris)            | eu-west-3      | eu-west-3.queue.amazonaws.com      | HTTP and HTTPS  |
| Europe (Stockholm)        | eu-north-1     | eu-north-1.queue.amazonaws.com     | HTTP and HTTPS  |
| South America (São Paulo) | sa-east-1      | sa-east-1.queue.amazonaws.com      | HTTP and HTTPS  |

## Service quotas

| Name   | Default         | Adjustable |
|--|-----------------|------------|
| Actions per Queue Policy                     | 7               | No         |
| Attributes per Message                       | 10              | No         |
| Batched Message ID Length                    | 80              | No         |
| Batched Message Throughput for FIFO Queues   | 3,000           | Yes        |
| Conditions per Queue Policy                  | 10              | No         |
| In-Flight Messages per FIFO Queue            | 20,000          | No         |
| In-Flight Messages per Standard Queue        | 120,000         | No         |
| Message Invisibility Period                  | 0 Seconds       | No         |
| Message Retention Time                       | 345,600 Seconds | No         |
| Message Size                                 | 256 Kilobytes   | No         |
| Message Size in S3 Bucket                    | 2 Gigabytes     | No         |
| Messages per Batch                           | 10              | No         |
| Principals per Queue Policy                  | 50              | No         |
| Queue Delivery Delay                         | 15              | No         |
| Queue Name Length                            | 80              | No         |
| Queue Policy Size                            | 8,192 Bytes     | No         |
| Statements per Queue Policy                  | 20              | No         |
| Tags per Queue                               | 50              | No         |
| UTF-8 Queue Tag Key Length                   | 128             | No         |
| UTF-8 Queue Tag Value Length                 | 256             | No         |
| Unbatched Message Throughput for FIFO Queues | 300             | No         |

For more information, see [Amazon SQS quotas](#) in the *Amazon Simple Queue Service Developer Guide* and the "Limits and Restrictions" section of the [Amazon SQS FAQs](#).

# Amazon Simple Storage Service endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

### Amazon S3 endpoints

When you use the REST API to send requests to the endpoints shown in the table below, you can use the virtual-hosted style and path-style methods. For more information, see [Virtual Hosting of Buckets](#).

| Region Name    | Region    | Endpoint  | Location Constraint | Protocol       | Signature Version(s) Support |
|----------------|-----------|---|---------------------|----------------|------------------------------|
| US East (Ohio) | us-east-2 | <p><b>Standard endpoints:</b></p> <ul style="list-style-type: none"><li>• s3.us-east-2.amazonaws.com</li><li>• s3-fips.us-east-2.amazonaws.com</li><li>• s3.dualstack.us-east-2.amazonaws.com**</li><li>• s3-fips.dualstack.us-east-2.amazonaws.com**</li><li>• <i>account-id</i>.s3-control.us-east-2.amazonaws.com</li><li>• <i>account-id</i>.s3-control-fips.us-east-2.amazonaws.com</li><li>• <i>account-id</i>.s3-control.dualstack.us-east-2.amazonaws.com**</li><li>• <i>account-id</i>.s3-control-fips.dualstack.us-east-2.amazonaws.com**</li></ul> <p><b>Amazon S3 Access Points endpoints (HTTPS only):</b></p> <ul style="list-style-type: none"><li>• s3-accesspoint.us-east-2.amazonaws.com</li><li>• s3-accesspoint-fips.us-east-2.amazonaws.com</li><li>• s3-accesspoint.dualstack.us-east-2.amazonaws.com**</li></ul> | us-east-2           | HTTP and HTTPS | Versions 4 only              |

| Region Name           | Region    | Endpoint  | Location Constraint | Protocol       | Signature Version(s) Support |
|-----------------------|-----------|---|---------------------|----------------|------------------------------|
|                       |           | <ul style="list-style-type: none"> <li>s3-accesspoint-fips.dualstack.us-east-2.amazonaws.com**</li> </ul>   |                     |                |                              |
| US East (N. Virginia) | us-east-1 | <p><b>Standard endpoints:</b></p> <ul style="list-style-type: none"> <li>s3.us-east-1.amazonaws.com</li> <li>s3-fips.us-east-1.amazonaws.com</li> <li>s3.amazonaws.com</li> <li>s3.dualstack.us-east-1.amazonaws.com**</li> <li>s3-fips.dualstack.us-east-1.amazonaws.com**</li> <li><i>account-id</i>.s3-control.us-east-1.amazonaws.com</li> <li><i>account-id</i>.s3-control-fips.us-east-1.amazonaws.com</li> <li><i>account-id</i>.s3-control.dualstack.us-east-1.amazonaws.com**</li> <li><i>account-id</i>.s3-control-fips.dualstack.us-east-1.amazonaws.com**</li> </ul> <p><b>Amazon S3 Access Points endpoints (HTTPS only):</b></p> <ul style="list-style-type: none"> <li>s3-accesspoint.us-east-1.amazonaws.com</li> <li>s3-accesspoint-fips.us-east-1.amazonaws.com</li> <li>s3-accesspoint.dualstack.us-east-1.amazonaws.com**</li> <li>s3-accesspoint-fips.dualstack.us-east-1.amazonaws.com**</li> </ul> | us-east-1           | HTTP and HTTPS | Versions 2 and 4             |

| Region Name             | Region    | Endpoint  | Location Constraint | Protocol       | Signature Version(s) Support |
|-------------------------|-----------|---|---------------------|----------------|------------------------------|
| US West (N. California) | us-west-1 | <p><b>Standard endpoints:</b></p> <ul style="list-style-type: none"> <li>• s3.us-west-1.amazonaws.com</li> <li>• s3-fips.us-west-1.amazonaws.com</li> <li>• s3.dualstack.us-west-1.amazonaws.com**</li> <li>• s3-fips.dualstack.us-west-1.amazonaws.com**</li> <li>• <i>account-id</i>.s3-control.us-west-1.amazonaws.com</li> <li>• <i>account-id</i>.s3-control-fips.us-west-1.amazonaws.com</li> <li>• <i>account-id</i>.s3-control.dualstack.us-west-1.amazonaws.com**</li> <li>• <i>account-id</i>.s3-control-fips.dualstack.us-west-1.amazonaws.com**</li> </ul> <p><b>Amazon S3 Access Points endpoints (HTTPS only):</b></p> <ul style="list-style-type: none"> <li>• s3-accesspoint.us-west-1.amazonaws.com</li> <li>• s3-accesspoint-fips.us-west-1.amazonaws.com</li> <li>• s3-accesspoint.dualstack.us-west-1.amazonaws.com**</li> <li>• s3-accesspoint-fips.dualstack.us-west-1.amazonaws.com**</li> </ul> | us-west-1           | HTTP and HTTPS | Versions 2 and 4             |

| Region Name      | Region    | Endpoint  | Location Constraint | Protocol       | Signature Version(s) Support |
|------------------|-----------|---|---------------------|----------------|------------------------------|
| US West (Oregon) | us-west-2 | <p><b>Standard endpoints:</b></p> <ul style="list-style-type: none"> <li>• s3.us-west-2.amazonaws.com</li> <li>• s3-fips.us-west-2.amazonaws.com</li> <li>• s3.dualstack.us-west-2.amazonaws.com**</li> <li>• s3-fips.dualstack.us-west-2.amazonaws.com**</li> <li>• <i>account-id</i>.s3-control.us-west-2.amazonaws.com</li> <li>• <i>account-id</i>.s3-control-fips.us-west-2.amazonaws.com</li> <li>• <i>account-id</i>.s3-control.dualstack.us-west-2.amazonaws.com**</li> <li>• <i>account-id</i>.s3-control-fips.dualstack.us-west-2.amazonaws.com**</li> </ul> <p><b>Amazon S3 Access Points endpoints (HTTPS only):</b></p> <ul style="list-style-type: none"> <li>• s3-accesspoint.us-west-2.amazonaws.com</li> <li>• s3-accesspoint-fips.us-west-2.amazonaws.com</li> <li>• s3-accesspoint.dualstack.us-west-2.amazonaws.com**</li> <li>• s3-accesspoint-fips.dualstack.us-west-2.amazonaws.com**</li> </ul> | us-west-2           | HTTP and HTTPS | Versions 2 and 4             |

| Region Name                 | Region     | Endpoint  | Location Constraint | Protocol       | Signature Version(s) Support |
|-----------------------------|------------|---|---------------------|----------------|------------------------------|
| Africa (Cape Town)          | af-south-1 | <p><b>Standard endpoints:</b></p> <ul style="list-style-type: none"> <li>• s3.af-south-1.amazonaws.com</li> <li>• s3.dualstack.af-south-1.amazonaws.com**</li> <li>• <i>account-id</i>.s3-control.af-south-1.amazonaws.com</li> <li>• <i>account-id</i>.s3-control.dualstack.af-south-1.amazonaws.com**</li> </ul> <p><b>Amazon S3 Access Points endpoints (HTTPS only):</b></p> <ul style="list-style-type: none"> <li>• s3-accesspoint.af-south-1.amazonaws.com</li> <li>• s3-accesspoint.dualstack.af-south-1.amazonaws.com**</li> </ul> | af-south-1          | HTTP and HTTPS | Version 4 only               |
| Asia Pacific (Hong Kong)*** | ap-east-1  | <p><b>Standard endpoints:</b></p> <ul style="list-style-type: none"> <li>• s3.ap-east-1.amazonaws.com</li> <li>• s3.dualstack.ap-east-1.amazonaws.com**</li> <li>• <i>account-id</i>.s3-control.ap-east-1.amazonaws.com</li> <li>• <i>account-id</i>.s3-control.dualstack.ap-east-1.amazonaws.com**</li> </ul> <p><b>Amazon S3 Access Points endpoints (HTTPS only):</b></p> <ul style="list-style-type: none"> <li>• s3-accesspoint.ap-east-1.amazonaws.com</li> <li>• s3-accesspoint.dualstack.ap-east-1.amazonaws.com**</li> </ul>       | ap-east-1           | HTTP and HTTPS | Version 4 only               |

| Region Name           | Region         | Endpoint  | Location Constraint | Protocol       | Signature Version(s) Support |
|-----------------------|----------------|---|---------------------|----------------|------------------------------|
| Asia Pacific (Mumbai) | ap-south-1     | <p><b>Standard endpoints:</b></p> <ul style="list-style-type: none"> <li>• s3.ap-south-1.amazonaws.com</li> <li>• s3.dualstack.ap-south-1.amazonaws.com**</li> <li>• <i>account-id</i>.s3-control.ap-south-1.amazonaws.com</li> <li>• <i>account-id</i>.s3-control.dualstack.ap-south-1.amazonaws.com**</li> </ul> <p><b>Amazon S3 Access Points endpoints (HTTPS only):</b></p> <ul style="list-style-type: none"> <li>• s3-accesspoint.ap-south-1.amazonaws.com</li> <li>• s3-accesspoint.dualstack.ap-south-1.amazonaws.com**</li> </ul>                         | ap-south-1          | HTTP and HTTPS | Version 4 only               |
| Asia Pacific (Osaka)  | ap-northeast-3 | <p><b>Standard endpoints:</b></p> <ul style="list-style-type: none"> <li>• s3.ap-northeast-3.amazonaws.com</li> <li>• s3.dualstack.ap-northeast-3.amazonaws.com**</li> <li>• <i>account-id</i>.s3-control.ap-northeast-3.amazonaws.com</li> <li>• <i>account-id</i>.s3-control.dualstack.ap-northeast-3.amazonaws.com**</li> </ul> <p><b>Amazon S3 Access Points endpoints (HTTPS only):</b></p> <ul style="list-style-type: none"> <li>• s3-accesspoint.ap-northeast-3.amazonaws.com</li> <li>• s3-accesspoint.dualstack.ap-northeast-3.amazonaws.com**</li> </ul> | ap-northeast-3      | HTTP and HTTPS | Version 4 only               |

| Region Name              | Region         | Endpoint  | Location Constraint | Protocol       | Signature Version(s) Support |
|--------------------------|----------------|---|---------------------|----------------|------------------------------|
| Asia Pacific (Seoul)     | ap-northeast-2 | <p><b>Standard endpoints:</b></p> <ul style="list-style-type: none"> <li>• s3.ap-northeast-2.amazonaws.com</li> <li>• s3.dualstack.ap-northeast-2.amazonaws.com**</li> <li>• <i>account-id</i>.s3-control.ap-northeast-2.amazonaws.com</li> <li>• <i>account-id</i>.s3-control.dualstack.ap-northeast-2.amazonaws.com**</li> </ul> <p><b>Amazon S3 Access Points endpoints (HTTPS only):</b></p> <ul style="list-style-type: none"> <li>• s3-accesspoint.ap-northeast-2.amazonaws.com</li> <li>• s3-accesspoint.dualstack.ap-northeast-2.amazonaws.com**</li> </ul> | ap-northeast-2      | HTTP and HTTPS | Version 4 only               |
| Asia Pacific (Singapore) | ap-southeast-1 | <p><b>Standard endpoints:</b></p> <ul style="list-style-type: none"> <li>• s3.ap-southeast-1.amazonaws.com</li> <li>• s3.dualstack.ap-southeast-1.amazonaws.com**</li> <li>• <i>account-id</i>.s3-control.ap-southeast-1.amazonaws.com</li> <li>• <i>account-id</i>.s3-control.dualstack.ap-southeast-1.amazonaws.com**</li> </ul> <p><b>Amazon S3 Access Points endpoints (HTTPS only):</b></p> <ul style="list-style-type: none"> <li>• s3-accesspoint.ap-southeast-1.amazonaws.com</li> <li>• s3-accesspoint.ap-southeast-1.amazonaws.com**</li> </ul>           | ap-southeast-1      | HTTP and HTTPS | Versions 2 and 4             |

| Region Name           | Region         | Endpoint  | Location Constraint | Protocol       | Signature Version(s) Support |
|-----------------------|----------------|---|---------------------|----------------|------------------------------|
| Asia Pacific (Sydney) | ap-southeast-2 | <p><b>Standard endpoints:</b></p> <ul style="list-style-type: none"> <li>• s3.ap-southeast-2.amazonaws.com</li> <li>• s3.dualstack.ap-southeast-2.amazonaws.com**</li> <li>• <i>account-id</i>.s3-control.ap-southeast-2.amazonaws.com</li> <li>• <i>account-id</i>.s3-control.dualstack.ap-southeast-2.amazonaws.com**</li> </ul> <p><b>Amazon S3 Access Points endpoints (HTTPS only):</b></p> <ul style="list-style-type: none"> <li>• s3-accesspoint.ap-southeast-2.amazonaws.com</li> <li>• s3-accesspoint.dualstack.ap-southeast-2.amazonaws.com**</li> </ul> | ap-southeast-2      | HTTP and HTTPS | Versions 2 and 4             |
| Asia Pacific (Tokyo)  | ap-northeast-1 | <p><b>Standard endpoints:</b></p> <ul style="list-style-type: none"> <li>• s3.ap-northeast-1.amazonaws.com</li> <li>• s3.dualstack.ap-northeast-1.amazonaws.com**</li> <li>• <i>account-id</i>.s3-control.ap-northeast-1.amazonaws.com</li> <li>• <i>account-id</i>.s3-control.dualstack.ap-northeast-1.amazonaws.com**</li> </ul> <p><b>Amazon S3 Access Points endpoints (HTTPS only):</b></p> <ul style="list-style-type: none"> <li>• s3-accesspoint.ap-northeast-1.amazonaws.com</li> <li>• s3-accesspoint.dualstack.ap-northeast-1.amazonaws.com**</li> </ul> | ap-northeast-1      | HTTP and HTTPS | Versions 2 and 4             |

| Region Name      | Region       | Endpoint  | Location Constraint | Protocol       | Signature Version(s) Support |
|------------------|--------------|---|---------------------|----------------|------------------------------|
| Canada (Central) | ca-central-1 | <p><b>Standard endpoints:</b></p> <ul style="list-style-type: none"> <li>• s3.ca-central-1.amazonaws.com</li> <li>• s3-fips.ca-central-1.amazonaws.com</li> <li>• s3.dualstack.ca-central-1.amazonaws.com**</li> <li>• s3-fips.dualstack.ca-central-1.amazonaws.com**</li> <li>• <i>account-id</i>.s3-control.ca-central-1.amazonaws.com</li> <li>• <i>account-id</i>.s3-control-fips.ca-central-1.amazonaws.com</li> <li>• <i>account-id</i>.s3-control.dualstack.ca-central-1.amazonaws.com**</li> <li>• <i>account-id</i>.s3-control-fips.dualstack.ca-central-1.amazonaws.com**</li> </ul> <p><b>Amazon S3 Access Points endpoints (HTTPS only):</b></p> <ul style="list-style-type: none"> <li>• s3-accesspoint.ca-central-1.amazonaws.com</li> <li>• s3-accesspoint-fips.ca-central-1.amazonaws.com</li> <li>• s3-accesspoint.dualstack.ca-central-1.amazonaws.com**</li> <li>• s3-accesspoint-fips.dualstack.ca-central-1.amazonaws.com**</li> </ul> | ca-central-1        | HTTP and HTTPS | Version 4 only               |

| Region Name     | Region         | Endpoint  | Location Constraint | Protocol       | Signature Version(s) Support |
|-----------------|----------------|---|---------------------|----------------|------------------------------|
| China (Beijing) | cn-north-1     | <p>Valid endpoint name for this Region:</p> <ul style="list-style-type: none"> <li>• s3.cn-north-1.amazonaws.com.cn</li> <li>• s3.dualstack.cn-north-1.amazonaws.com.cn</li> <li>• <i>account-id</i>.s3-control.cn-north-1.amazonaws.com.cn</li> <li>• <i>account-id</i>.s3-control.dualstack.cn-north-1.amazonaws.com.cn</li> </ul> <p><b>Amazon S3 Access Points endpoints (HTTPS only):</b></p> <ul style="list-style-type: none"> <li>• s3-accesspoint.cn-north-1.amazonaws.com</li> <li>• s3-accesspoint.dualstack.cn-north-1.amazonaws.com</li> </ul>                         | cn-north-1          | HTTP and HTTPS | Version 4 only               |
| China (Ningxia) | cn-northwest-1 | <p>Valid endpoint name for this Region:</p> <ul style="list-style-type: none"> <li>• s3.cn-northwest-1.amazonaws.com.cn</li> <li>• s3.dualstack.cn-northwest-1.amazonaws.com.cn</li> <li>• <i>account-id</i>.s3-control.cn-northwest-1.amazonaws.com.cn</li> <li>• <i>account-id</i>.s3-control.dualstack.cn-northwest-1.amazonaws.com.cn</li> </ul> <p><b>Amazon S3 Access Points endpoints (HTTPS only):</b></p> <ul style="list-style-type: none"> <li>• s3-accesspoint.cn-northwest-1.amazonaws.com</li> <li>• s3-accesspoint.dualstack.cn-northwest-1.amazonaws.com</li> </ul> | cn-northwest-1      | HTTP and HTTPS | Version 4 only               |

| Region Name        | Region       | Endpoint  | Location Constraint | Protocol       | Signature Version(s) Support |
|--------------------|--------------|---|---------------------|----------------|------------------------------|
| Europe (Frankfurt) | eu-central-1 | <p><b>Standard endpoints:</b></p> <ul style="list-style-type: none"> <li>• s3.eu-central-1.amazonaws.com</li> <li>• s3.dualstack.eu-central-1.amazonaws.com**</li> <li>• <i>account-id</i>.s3-control.eu-central-1.amazonaws.com</li> <li>• <i>account-id</i>.s3-control.dualstack.eu-central-1.amazonaws.com**</li> </ul> <p><b>Amazon S3 Access Points endpoints (HTTPS only):</b></p> <ul style="list-style-type: none"> <li>• s3-accesspoint.eu-central-1.amazonaws.com</li> <li>• s3-accesspoint.dualstack.eu-central-1.amazonaws.com**</li> </ul> | eu-central-1        | HTTP and HTTPS | Version 4 only               |
| Europe (Ireland)   | eu-west-1    | <p><b>Standard endpoints:</b></p> <ul style="list-style-type: none"> <li>• s3.eu-west-1.amazonaws.com</li> <li>• s3.dualstack.eu-west-1.amazonaws.com**</li> <li>• <i>account-id</i>.s3-control.eu-west-1.amazonaws.com</li> <li>• <i>account-id</i>.s3-control.dualstack.eu-west-1.amazonaws.com**</li> </ul> <p><b>Amazon S3 Access Points endpoints (HTTPS only):</b></p> <ul style="list-style-type: none"> <li>• s3-accesspoint.eu-west-1.amazonaws.com</li> <li>• s3-accesspoint.dualstack.eu-west-1.amazonaws.com**</li> </ul>                   | EU or eu-west-1     | HTTP and HTTPS | Versions 2 and 4             |

| Region Name     | Region     | Endpoint  | Location Constraint | Protocol       | Signature Version(s) Support |
|-----------------|------------|---|---------------------|----------------|------------------------------|
| Europe (London) | eu-west-2  | <p><b>Standard endpoints:</b></p> <ul style="list-style-type: none"> <li>• s3.eu-west-2.amazonaws.com</li> <li>• s3.dualstack.eu-west-2.amazonaws.com**</li> <li>• <i>account-id</i>.s3-control.eu-west-2.amazonaws.com</li> <li>• <i>account-id</i>.s3-control.dualstack.eu-west-2.amazonaws.com**</li> </ul> <p><b>Amazon S3 Access Points endpoints (HTTPS only):</b></p> <ul style="list-style-type: none"> <li>• s3-accesspoint.eu-west-2.amazonaws.com</li> <li>• s3-accesspoint.dualstack.eu-west-2.amazonaws.com**</li> </ul>       | eu-west-2           | HTTP and HTTPS | Version 4 only               |
| Europe (Milan)  | eu-south-1 | <p><b>Standard endpoints:</b></p> <ul style="list-style-type: none"> <li>• s3.eu-south-1.amazonaws.com</li> <li>• s3.dualstack.eu-south-1.amazonaws.com**</li> <li>• <i>account-id</i>.s3-control.eu-south-1.amazonaws.com</li> <li>• <i>account-id</i>.s3-control.dualstack.eu-south-1.amazonaws.com**</li> </ul> <p><b>Amazon S3 Access Points endpoints (HTTPS only):</b></p> <ul style="list-style-type: none"> <li>• s3-accesspoint.eu-south-1.amazonaws.com</li> <li>• s3-accesspoint.dualstack.eu-south-1.amazonaws.com**</li> </ul> | eu-south-1          | HTTP and HTTPS | Version 4 only               |

| Region Name        | Region     | Endpoint  | Location Constraint | Protocol       | Signature Version(s) Support |
|--------------------|------------|---|---------------------|----------------|------------------------------|
| Europe (Paris)     | eu-west-3  | <p><b>Standard endpoints:</b></p> <ul style="list-style-type: none"> <li>• s3.eu-west-3.amazonaws.com</li> <li>• s3.dualstack.eu-west-3.amazonaws.com</li> <li>• <i>account-id</i>.s3-control.eu-west-3.amazonaws.com</li> <li>• <i>account-id</i>.s3-control.dualstack.eu-west-3.amazonaws.com**</li> </ul> <p><b>Amazon S3 Access Points endpoints (HTTPS only):</b></p> <ul style="list-style-type: none"> <li>• s3-accesspoint.eu-west-3.amazonaws.com</li> <li>• s3-accesspoint.dualstack.eu-west-3.amazonaws.com**</li> </ul>       | eu-west-3           | HTTP and HTTPS | Version 4 only               |
| Europe (Stockholm) | eu-north-1 | <p><b>Standard endpoints:</b></p> <ul style="list-style-type: none"> <li>• s3.eu-north-1.amazonaws.com</li> <li>• s3.dualstack.eu-north-1.amazonaws.com</li> <li>• <i>account-id</i>.s3-control.eu-north-1.amazonaws.com</li> <li>• <i>account-id</i>.s3-control.dualstack.eu-north-1.amazonaws.com**</li> </ul> <p><b>Amazon S3 Access Points endpoints (HTTPS only):</b></p> <ul style="list-style-type: none"> <li>• s3-accesspoint.eu-north-1.amazonaws.com</li> <li>• s3-accesspoint.dualstack.eu-north-1.amazonaws.com**</li> </ul> | eu-north-1          | HTTP and HTTPS | Version 4 only               |

| Region Name               | Region     | Endpoint  | Location Constraint | Protocol       | Signature Version(s) Support |
|---------------------------|------------|---|---------------------|----------------|------------------------------|
| South America (São Paulo) | sa-east-1  | <p><b>Standard endpoints:</b></p> <ul style="list-style-type: none"> <li>• s3.sa-east-1.amazonaws.com</li> <li>• s3.dualstack.sa-east-1.amazonaws.com**</li> <li>• <i>account-id</i>.s3-control.sa-east-1.amazonaws.com</li> <li>• <i>account-id</i>.s3-control.dualstack.sa-east-1.amazonaws.com**</li> </ul> <p><b>Amazon S3 Access Points endpoints (HTTPS only):</b></p> <ul style="list-style-type: none"> <li>• s3-accesspoint.sa-east-1.amazonaws.com</li> <li>• s3-accesspoint.dualstack.sa-east-1.amazonaws.com**</li> </ul>       | sa-east-1           | HTTP and HTTPS | Versions 2 and 4             |
| Middle East (Bahrain)     | me-south-1 | <p><b>Standard endpoints:</b></p> <ul style="list-style-type: none"> <li>• s3.me-south-1.amazonaws.com</li> <li>• s3.dualstack.me-south-1.amazonaws.com**</li> <li>• <i>account-id</i>.s3-control.me-south-1.amazonaws.com</li> <li>• <i>account-id</i>.s3-control.dualstack.me-south-1.amazonaws.com**</li> </ul> <p><b>Amazon S3 Access Points endpoints (HTTPS only):</b></p> <ul style="list-style-type: none"> <li>• s3-accesspoint.me-south-1.amazonaws.com</li> <li>• s3-accesspoint.dualstack.me-south-1.amazonaws.com**</li> </ul> | me-south-1          | HTTP and HTTPS | Versions 4 only              |

| Region Name            | Region        | Endpoint  | Location Constraint | Protocol       | Signature Version(s) Support |
|------------------------|---------------|---|---------------------|----------------|------------------------------|
| AWS GovCloud (US-East) | us-gov-east-1 | <p><b>Standard endpoints:</b></p> <ul style="list-style-type: none"> <li>• s3.us-gov-east-1.amazonaws.com</li> <li>• s3-fips.us-gov-east-1.amazonaws.com</li> <li>• s3.dualstack.us-gov-east-1.amazonaws.com**</li> <li>• s3-fips.dualstack.us-gov-east-1.amazonaws.com**</li> <li>• <i>account-id</i>.s3-control.us-gov-east-1.amazonaws.com</li> <li>• <i>account-id</i>.s3-control-fips.us-gov-east-1.amazonaws.com</li> <li>• <i>account-id</i>.s3-control.dualstack.us-gov-east-1.amazonaws.com**</li> <li>• <i>account-id</i>.s3-control-fips.dualstack.us-gov-east-1.amazonaws.com**</li> </ul> <p><b>Amazon S3 Access Points endpoints (HTTPS only):</b></p> <ul style="list-style-type: none"> <li>• s3-accesspoint.us-gov-east-1.amazonaws.com</li> <li>• s3-accesspoint-fips.us-gov-east-1.amazonaws.com</li> <li>• s3-accesspoint.dualstack.us-gov-east-1.amazonaws.com**</li> <li>• s3-accesspoint-fips.dualstack.us-gov-east-1.amazonaws.com**</li> </ul> | us-gov-east-1       | HTTP and HTTPS |                              |

| Region Name            | Region        | Endpoint  | Location Constraint | Protocol       | Signature Version(s) Support |
|------------------------|---------------|---|---------------------|----------------|------------------------------|
| AWS GovCloud (US-West) | us-gov-west-1 | <p><b>Standard endpoints:</b></p> <ul style="list-style-type: none"> <li>• s3.us-gov-west-1.amazonaws.com</li> <li>• s3-fips.us-gov-west-1.amazonaws.com</li> <li>• s3.dualstack.us-gov-west-1.amazonaws.com**</li> <li>• s3-fips.dualstack.us-gov-west-1.amazonaws.com**</li> <li>• <i>account-id</i>.s3-control.us-gov-west-1.amazonaws.com</li> <li>• <i>account-id</i>.s3-control-fips.us-gov-west-1.amazonaws.com</li> <li>• <i>account-id</i>.s3-control.dualstack.us-gov-west-1.amazonaws.com**</li> <li>• <i>account-id</i>.s3-control-fips.dualstack.us-gov-west-1.amazonaws.com**</li> </ul> <p><b>Amazon S3 Access Points endpoints (HTTPS only):</b></p> <ul style="list-style-type: none"> <li>• s3-accesspoint.us-gov-west-1.amazonaws.com</li> <li>• s3-accesspoint-fips.us-gov-west-1.amazonaws.com</li> <li>• s3-accesspoint.dualstack.us-gov-west-1.amazonaws.com**</li> <li>• s3-accesspoint-fips.dualstack.us-gov-west-1.amazonaws.com**</li> </ul> | us-gov-west-1       | HTTP and HTTPS |                              |

\*\*Amazon S3 dual-stack endpoints support requests to S3 buckets over IPv6 and IPv4. For more information, see [Using Dual-Stack Endpoints](#).

\*\*\*You must enable this Region before you can use it.

When using the preceding endpoints the following additional considerations apply:

- The s3-control endpoints are used with Amazon S3 account-level operations
- The s3-accesspoint endpoints are used only to make requests through Amazon S3 Access Points. For more information, see [Working with Amazon S3 Access Points](#).
- Amazon S3 renamed the US Standard Region to the US East (N. Virginia) Region to be consistent with AWS Regional naming conventions. There is no change to the endpoint, and you do not need to make any changes to your application.

- If you use a Region other than the US East (N. Virginia) endpoint to create a bucket, you must set the LocationConstraint bucket parameter to the same Region. Both the AWS SDK for Java and AWS SDK for .NET use an enumeration for setting location constraints (Region for Java, S3Region for .NET). For more information, see [PUT Bucket](#) in the *Amazon Simple Storage Service API Reference*.

## Amazon S3 website endpoints

When you configure your bucket as a website, the website is available using the following Region-specific website endpoints. Note that the website endpoints are different than the REST API endpoints listed in the preceding table. For more information about hosting websites on Amazon S3, see [Hosting Websites on Amazon S3](#) in the *Amazon Simple Storage Service User Guide*. You need the hosted zone IDs when using the Amazon Route 53 API to add an alias record to your hosted zone.

### Note

Amazon S3 website endpoints do not support HTTPS or Amazon S3 Access Points. If you want to use HTTPS, you can use Amazon CloudFront to serve a static website hosted on Amazon S3. For more information, see [Configuring a static website using a custom domain registered with Route 53](#) and [Improving the performance of your website using CloudFront](#) in the *Amazon S3 User Guide*.

| Region Name              | Website Endpoint                        | Route 53 Hosted Zone ID |
|--------------------------|---|-------------------------|
| US East (Ohio)           | s3-website.us-east-2.amazonaws.com      | Z2O1EMRO9K5GLX          |
| US East (N. Virginia)    | s3-website-us-east-1.amazonaws.com      | Z3AQBSTGFYJSTF          |
| US West (N. California)  | s3-website-us-west-1.amazonaws.com      | Z2F56UZL2M1ACD          |
| US West (Oregon)         | s3-website-us-west-2.amazonaws.com      | Z3BJ6K6RIION7M          |
| Africa (Cape Town)       | s3-website.af-south-1.amazonaws.com     | Z83WF9RJE8B12           |
| Asia Pacific (Hong Kong) | s3-website.ap-east-1.amazonaws.com      | ZNB98KWMFR0R6           |
| Asia Pacific (Mumbai)    | s3-website.ap-south-1.amazonaws.com     | Z11RGJOFQNVJUP          |
| Asia Pacific (Osaka)     | s3-website.ap-northeast-3.amazonaws.com | Z2YQB5RD63NC85          |
| Asia Pacific (Seoul)     | s3-website.ap-northeast-2.amazonaws.com | Z3W03O7B5YMIYP          |
| Asia Pacific (Singapore) | s3-website-ap-southeast-1.amazonaws.com | Z3O0J2DXBE1FTB          |
| Asia Pacific (Sydney)    | s3-website-ap-southeast-2.amazonaws.com | Z1WCIGYICN2BYD          |
| Asia Pacific (Tokyo)     | s3-website-ap-northeast-1.amazonaws.com | Z2M4EHUR26P7ZW          |
| Canada (Central)         | s3-website.ca-central-1.amazonaws.com   | Z1QDH18159H29           |

| Region Name               | Website Endpoint                           | Route 53 Hosted Zone ID |
|---------------------------|--|-------------------------|
| China (Ningxia)           | s3-website.cn-northwest-1.amazonaws.com.cn | Z282HJ1KT0DH03          |
| Europe (Frankfurt)        | s3-website.eu-central-1.amazonaws.com      | Z21DNDUVLTQW6Q          |
| Europe (Ireland)          | s3-website-eu-west-1.amazonaws.com         | Z1BKCTXD74EZPE          |
| Europe (London)           | s3-website.eu-west-2.amazonaws.com         | Z3GKZC51ZF0DB4          |
| Europe (Milan)            | s3-website.eu-south-1.amazonaws.com        | Z30OZKI7KPW7MI          |
| Europe (Paris)            | s3-website.eu-west-3.amazonaws.com         | Z3R1K369G5AVDG          |
| Europe (Stockholm)        | s3-website.eu-north-1.amazonaws.com        | Z3BAZG2TWCNX0D          |
| Middle East(Bahrain)      | s3-website.me-south-1.amazonaws.com        | Z1MPMWCPA7YB62          |
| South America (São Paulo) | s3-website-sa-east-1.amazonaws.com         | Z7KQH4QJS55SO           |
| AWS GovCloud (US-East)    | s3-website.us-gov-east-1.amazonaws.com     | Z2NIFVYYW2VKV1          |
| AWS GovCloud (US-West)    | s3-website-us-gov-west-1.amazonaws.com     | Z31GFT0UA1I2HV          |

## Service quotas

### Amazon S3

| Name                | Default      | Adjustable |
|---------------------|--------------|------------|
| Access Points       | 1,000        | Yes        |
| Bucket policy       | 20 Kilobytes | No         |
| Bucket tags         | 50           | No         |
| Buckets             | 100          | Yes        |
| CRR rules           | 1,000        | No         |
| Event notifications | 100          | No         |
| Lifecycle rules     | 1,000        | No         |
| Maximum part size   | 5 Gigabytes  | No         |
| Minimum part size   | 5 Megabytes  | No         |

| Name   | Default               | Adjustable |
|--|-----------------------|------------|
| Multi-Region Access Point Regions              | 20                    | No         |
| Multi-Region Access Points                     | 100                   | No         |
| Object size                                    | 5 Terabytes           | No         |
| Object size (Console upload)                   | 160 Gigabytes         | No         |
| Object tags                                    | 10                    | No         |
| Parts  | 10,000                | No         |
| Replication transfer rate                      | 1 Gigabits per second | Yes        |
| S3 Glacier: Number of random restore requests. | 35                    | No         |
| S3 Glacier: Provisioned capacity units         | 2                     | No         |

## Amazon S3 on Outposts

| Name          | Default | Adjustable |
|---------------|---------|------------|
| Access Points | 10      | No         |
| Buckets       | 100     | No         |

# Amazon Simple Workflow Service endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name           | Region    | Endpoint                         | Protocol |
|-----------------------|-----------|----------------------------------|----------|
| US East (Ohio)        | us-east-2 | swf.us-east-2.amazonaws.com      | HTTPS    |
|                       |           | swf-fips.us-east-2.amazonaws.com | HTTPS    |
| US East (N. Virginia) | us-east-1 | swf.us-east-1.amazonaws.com      | HTTPS    |
|                       |           | swf-fips.us-east-1.amazonaws.com | HTTPS    |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| US West (N. California)  | us-west-1      | swf.us-west-1.amazonaws.com<br>swf-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| US West (Oregon)         | us-west-2      | swf.us-west-2.amazonaws.com<br>swf-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS  |  |
| Africa (Cape Town)       | af-south-1     | swf.af-south-1.amazonaws.com                                    | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | swf.ap-east-1.amazonaws.com                                     | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | swf.ap-south-1.amazonaws.com                                    | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | swf.ap-northeast-3.amazonaws.com                                | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | swf.ap-northeast-2.amazonaws.com                                | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | swf.ap-southeast-1.amazonaws.com                                | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | swf.ap-southeast-2.amazonaws.com                                | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | swf.ap-northeast-1.amazonaws.com                                | HTTPS           |  |
| Canada (Central)         | ca-central-1   | swf.ca-central-1.amazonaws.com                                  | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | swf.eu-central-1.amazonaws.com                                  | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | swf.eu-west-1.amazonaws.com                                     | HTTPS           |  |
| Europe (London)          | eu-west-2      | swf.eu-west-2.amazonaws.com                                     | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | swf.eu-south-1.amazonaws.com                                    | HTTPS           |  |

| <b>Region Name</b>        | <b>Region</b> | <b>Endpoint</b>  | <b>Protocol</b> |  |
|---------------------------|---------------|--|-----------------|--|
| Europe (Paris)            | eu-west-3     | swf.eu-west-3.amazonaws.com  | HTTPS           |  |
| Europe (Stockholm)        | eu-north-1    | swf.eu-north-1.amazonaws.com                                       | HTTPS           |  |
| Middle East (Bahrain)     | me-south-1    | swf.me-south-1.amazonaws.com                                       | HTTPS           |  |
| South America (São Paulo) | sa-east-1     | swf.sa-east-1.amazonaws.com  | HTTPS           |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | swf.us-gov-east-1.amazonaws.com<br>swf.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | swf.us-gov-west-1.amazonaws.com<br>swf.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |

## Service quotas

| <b>Name</b>  | <b>Default</b> | <b>Adjustable</b> |
|--|----------------|-------------------|
| CountClosedWorkflowExecutions throttle burst limit in transaction per second | 1,000          | Yes               |
| CountClosedWorkflowExecutions throttle limit in transaction per second       | 1              | Yes               |
| CountOpenWorkflowExecutions throttle burst limit in transaction per second   | 1,000          | Yes               |
| CountOpenWorkflowExecutions throttle limit in transaction per second         | 1              | Yes               |
| CountPendingActivityTasks throttle burst limit in transaction per second     | 100            | Yes               |
| CountPendingActivityTasks throttle limit in transaction per second           | 1              | Yes               |
| CountPendingDecisionTasks throttle burst limit in transaction per second     | 100            | Yes               |
| CountPendingDecisionTasks throttle limit in transaction per second           | 1              | Yes               |
| DeprecateActivityType throttle burst limit in transaction per second         | 100            | Yes               |
| DeprecateActivityType throttle limit in transaction per second               | 1              | Yes               |
| DeprecateDomain throttle burst limit in transaction per second               | 50             | Yes               |
| DeprecateDomain throttle limit in transaction per second                     | 1              | Yes               |
| DeprecateWorkflowType throttle burst limit in transaction per second         | 100            | Yes               |

| Name  | Default | Adjustable |
|---|---------|------------|
| DeprecateWorkflowType throttle limit in transaction per second              | 1       | Yes        |
| DescribeActivityType throttle burst limit in transaction per second         | 1,000   | Yes        |
| DescribeActivityType throttle limit in transaction per second               | 1       | Yes        |
| DescribeDomain throttle burst limit in transaction per second               | 100     | Yes        |
| DescribeDomain throttle limit in transaction per second                     | 1       | Yes        |
| DescribeWorkflowExecution throttle burst limit in transaction per second    | 1,000   | Yes        |
| DescribeWorkflowExecution throttle limit in transaction per second          | 1       | Yes        |
| DescribeWorkflowType throttle burst limit in transaction per second         | 1,000   | Yes        |
| DescribeWorkflowType throttle limit in transaction per second               | 1       | Yes        |
| Events in Workflow execution history  | 25,000  | No         |
| GetWorkflowExecutionHistory throttle burst limit in transaction per second  | 1,000   | Yes        |
| GetWorkflowExecutionHistory throttle limit in transaction per second        | 5       | Yes        |
| Input / result data size  | 32,768  | No         |
| ListActivityTypes throttle burst limit in transaction per second            | 100     | Yes        |
| ListActivityTypes throttle limit in transaction per second                  | 1       | Yes        |
| ListClosedWorkflowExecutions throttle burst limit in transaction per second | 100     | Yes        |
| ListClosedWorkflowExecutions throttle limit in transaction per second       | 1       | Yes        |
| ListDomains throttle burst limit in transaction per second                  | 50      | Yes        |
| ListDomains throttle limit in transaction per second                        | 1       | Yes        |
| ListOpenWorkflowExecutions throttle burst limit in transaction per second   | 100     | Yes        |
| ListOpenWorkflowExecutions throttle limit in transaction per second         | 1       | Yes        |
| ListWorkflowTypes throttle burst limit in transaction per second            | 100     | Yes        |
| ListWorkflowTypes throttle limit in transaction per second                  | 1       | Yes        |
| Maximum workflow and activity types per domain                              | 10,000  | Yes        |
| Open activity tasks per workflow execution                                  | 1,000   | No         |
| Open child workflow executions  | 1,000   | No         |
| Open timers per workflow execution  | 1,000   | No         |
| Open workflow executions per domain   | 100,000 | Yes        |
| PollForActivityTask throttle burst limit in transaction per second          | 1,000   | Yes        |
| PollForActivityTask throttle limit in transaction per second                | 100     | Yes        |
| PollForDecisionTask throttle burst limit in transaction per second          | 1,000   | Yes        |

| Name  | Default     | Adjustable |
|---|-------------|------------|
| PollForDecisionTask throttle limit in transaction per second                          | 142         | Yes        |
| Pollers per task list   | 1,000       | No         |
| RecordActivityTaskHeartbeat throttle burst limit in transaction per second            | 1,000       | Yes        |
| RecordActivityTaskHeartbeat throttle limit in transaction per second                  | 1           | Yes        |
| RegisterActivityType throttle burst limit in transaction per second                   | 100         | Yes        |
| RegisterActivityType throttle limit in transaction per second                         | 1           | Yes        |
| RegisterDomain throttle burst limit in transaction per second                         | 50          | Yes        |
| RegisterDomain throttle limit in transaction per second                               | 1           | Yes        |
| RegisterWorkflowType throttle burst limit in transaction per second                   | 100         | Yes        |
| RegisterWorkflowType throttle limit in transaction per second                         | 1           | Yes        |
| Registered domains  | 100         | Yes        |
| Request size  | 1 Megabytes | No         |
| RequestCancelExternalWorkflowExecution throttle burst limit in transaction per second | 100         | Yes        |
| RequestCancelExternalWorkflowExecution throttle limit in transaction per second       | 10          | Yes        |
| RequestCancelWorkflowExecution throttle burst limit in transaction per second         | 1,000       | Yes        |
| RequestCancelWorkflowExecution throttle limit in transaction per second               | 5           | Yes        |
| RespondActivityTaskCanceled throttle burst limit in transaction per second            | 1,000       | Yes        |
| RespondActivityTaskCanceled throttle limit in transaction per second                  | 100         | Yes        |
| RespondActivityTaskCompleted throttle burst limit in transaction per second           | 1,000       | Yes        |
| RespondActivityTaskCompleted throttle limit in transaction per second                 | 100         | Yes        |
| RespondActivityTaskFailed throttle burst limit in transaction per second              | 1,000       | Yes        |
| RespondActivityTaskFailed throttle limit in transaction per second                    | 10          | Yes        |
| RespondDecisionTaskCompleted throttle burst limit in transaction per second           | 1,000       | Yes        |
| RespondDecisionTaskCompleted throttle limit in transaction per second                 | 142         | Yes        |
| SWF task in queue in year   | 1           | No         |
| ScheduleActivityTask throttle burst limit in transaction per second                   | 500         | Yes        |
| ScheduleActivityTask throttle limit in transaction per second                         | 100         | Yes        |
| SignalExternalWorkflowExecution throttle burst limit in transaction per second        | 500         | Yes        |

| Name   | Default | Adjustable |
|--|---------|------------|
| SignalExternalWorkflowExecution throttle limit in transaction per second   | 10      | Yes        |
| SignalWorkflowExecution throttle burst limit in transaction per second     | 1,000   | Yes        |
| SignalWorkflowExecution throttle limit in transaction per second           | 5       | Yes        |
| StartChildWorkflowExecution throttle burst limit in transaction per second | 500     | Yes        |
| StartChildWorkflowExecution throttle limit in transaction per second       | 2       | Yes        |
| StartTimer throttle burst limit in transaction per second                  | 1,000   | Yes        |
| StartTimer throttle limit in transaction per second                        | 142     | Yes        |
| StartWorkflowExecution throttle burst limit in transaction per second      | 1,000   | Yes        |
| StartWorkflowExecution throttle limit in transaction per second            | 25      | Yes        |
| Task execution time in year  | 1       | No         |
| TerminateWorkflowExecution throttle burst limit in transaction per second  | 1,000   | Yes        |
| TerminateWorkflowExecution throttle limit in transaction per second        | 10      | Yes        |
| Workflow execution idle time limit in years                                | 1       | Yes        |
| Workflow execution time in years   | 1       | No         |
| Workflow retention time in days  | 90      | Yes        |

For more information, see [Amazon SWF Quotas](#) in the *Amazon Simple Workflow Service Developer Guide*.

## Amazon SimpleDB endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service Endpoints

| Region Name             | Region    | Endpoint                    | Protocol       |  |
|-------------------------|-----------|-----------------------------|----------------|--|
| US East (N. Virginia)   | us-east-1 | sdb.amazonaws.com           | HTTP and HTTPS |  |
| US West (N. California) | us-west-1 | sdb.us-west-1.amazonaws.com | HTTP and HTTPS |  |
| US West (Oregon)        | us-west-2 | sdb.us-west-2.amazonaws.com | HTTP and HTTPS |  |

| Region Name               | Region         | Endpoint                         | Protocol       |  |
|---------------------------|----------------|----------------------------------|----------------|--|
| Asia Pacific (Singapore)  | ap-southeast-1 | sdb.ap-southeast-1.amazonaws.com | HTTP and HTTPS |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | sdb.ap-southeast-2.amazonaws.com | HTTP and HTTPS |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | sdb.ap-northeast-1.amazonaws.com | HTTP and HTTPS |  |
| Europe (Ireland)          | eu-west-1      | sdb.eu-west-1.amazonaws.com      | HTTP and HTTPS |  |
| South America (São Paulo) | sa-east-1      | sdb.sa-east-1.amazonaws.com      | HTTP and HTTPS |  |

## Service Quotas

| Resource | Default |
|----------|---------|
| Domains  | 250     |

For more information, see [Amazon SimpleDB Quotas](#) in the *Amazon SimpleDB Developer Guide*.

## AWS Single Sign-On endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

#### AWS SSO

| Region Name           | Region    | Endpoint                    | Protocol |  |
|-----------------------|-----------|-----------------------------|----------|--|
| US East (Ohio)        | us-east-2 | sso.us-east-2.amazonaws.com | HTTPS    |  |
| US East (N. Virginia) | us-east-1 | sso.us-east-1.amazonaws.com | HTTPS    |  |

| Region Name               | Region         | Endpoint                         | Protocol |  |
|---------------------------|----------------|----------------------------------|----------|--|
| US West (Oregon)          | us-west-2      | sso.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai)     | ap-south-1     | sso.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Seoul)      | ap-northeast-2 | sso.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | sso.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | sso.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | sso.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)          | ca-central-1   | sso.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)        | eu-central-1   | sso.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)          | eu-west-1      | sso.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)           | eu-west-2      | sso.eu-west-2.amazonaws.com      | HTTPS    |  |
| Europe (Paris)            | eu-west-3      | sso.eu-west-3.amazonaws.com      | HTTPS    |  |
| Europe (Stockholm)        | eu-north-1     | sso.eu-north-1.amazonaws.com     | HTTPS    |  |
| South America (São Paulo) | sa-east-1      | sso.sa-east-1.amazonaws.com      | HTTPS    |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | sso.us-gov-west-1.amazonaws.com  | HTTPS    |  |

## Identity Store

| Region Name              | Region         | Endpoint                                   | Protocol |  |
|--------------------------|----------------|--|----------|--|
| US East (Ohio)           | us-east-2      | identitystore.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | identitystore.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | identitystore.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai)    | ap-south-1     | identitystore.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | identitystore.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | identitystore.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | identitystore.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | identitystore.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)         | ca-central-1   | identitystore.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)       | eu-central-1   | identitystore.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)         | eu-west-1      | identitystore.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)          | eu-west-2      | identitystore.eu-west-2.amazonaws.com      | HTTPS    |  |
| Europe (Stockholm)       | eu-north-1     | identitystore.eu-north-1.amazonaws.com     | HTTPS    |  |
| AWS GovCloud (US-West)   | us-gov-west-1  | identitystore.us-gov-west-1.amazonaws.com  | HTTPS    |  |
|                          |                | identitystore.us-gov-west-1.amazonaws.com  | HTTPS    |  |

## Service quotas

| Name  | Default     | Adjustable |
|---|-------------|------------|
| File size of service provider SAML certificates (in PEM format)                 | 2 Kilobytes | No         |
| Number of groups supported in AWS SSO   | 10,000      | No         |
| Number of permission sets allowed in AWS SSO                                    | 500         | Yes        |
| Number of permission sets allowed per AWS account                               | 50          | Yes        |
| Number of unique directory groups that can be assigned                          | 2,500       | Yes        |
| Number of unique groups that can be used to evaluate the permissions for a user | 500         | No         |
| Number of users supported in AWS SSO  | 50,000      | No         |
| Total number of AWS accounts or applications that can be configured             | 500         | Yes        |

For more information, see [AWS Single Sign-On quotas](#) in the *AWS Single Sign-On User Guide*.

## AWS Snow Family endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

AWS Snow Family devices are available in the following AWS Regions.

| Region Name             | Region    | Endpoint  | Protocol |
|-------------------------|-----------|---|----------|
| US East (Ohio)          | us-east-2 | snowball.us-east-2.amazonaws.com<br>snowball-fips.us-east-2.amazonaws.com | HTTPS    |
| US East (N. Virginia)   | us-east-1 | snowball.us-east-1.amazonaws.com<br>snowball-fips.us-east-1.amazonaws.com | HTTPS    |
| US West (N. California) | us-west-1 | snowball.us-west-1.amazonaws.com<br>snowball-fips.us-west-1.amazonaws.com | HTTPS    |
| US West (Oregon)        | us-west-2 | snowball.us-west-2.amazonaws.com<br>snowball-fips.us-west-2.amazonaws.com | HTTPS    |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| Africa (Cape Town)       | af-south-1     | snowball.af-south-1.amazonaws.com   |                 |  |
| Asia Pacific (Hong Kong) | ap-east-1      | snowball.ap-east-1.amazonaws.com  |                 |  |
| Asia Pacific (Mumbai)    | ap-south-1     | snowball.ap-south-1.amazonaws.com<br>snowball-fips.ap-south-1.amazonaws.com         | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | snowball.ap-northeast-3.amazonaws.com<br>snowball-fips.ap-northeast-3.amazonaws.com | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | snowball.ap-northeast-2.amazonaws.com<br>snowball-fips.ap-northeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | snowball.ap-southeast-1.amazonaws.com<br>snowball-fips.ap-southeast-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | snowball.ap-southeast-2.amazonaws.com<br>snowball-fips.ap-southeast-2.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | snowball.ap-northeast-1.amazonaws.com<br>snowball-fips.ap-northeast-1.amazonaws.com | HTTPS           |  |
| Canada (Central)         | ca-central-1   | snowball.ca-central-1.amazonaws.com<br>snowball-fips.ca-central-1.amazonaws.com     | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | snowball.eu-central-1.amazonaws.com<br>snowball-fips.eu-central-1.amazonaws.com     | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | snowball.eu-west-1.amazonaws.com<br>snowball-fips.eu-west-1.amazonaws.com           | HTTPS           |  |
| Europe (London)          | eu-west-2      | snowball.eu-west-2.amazonaws.com<br>snowball-fips.eu-west-2.amazonaws.com           | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | snowball.eu-south-1.amazonaws.com   |                 |  |
| Europe (Paris)           | eu-west-3      | snowball.eu-west-3.amazonaws.com<br>snowball-fips.eu-west-3.amazonaws.com           | HTTPS           |  |

| Region Name               | Region        | Endpoint  | Protocol |  |
|---------------------------|---------------|---|----------|--|
| Europe (Stockholm)        | eu-north-1    | snowball.eu-north-1.amazonaws.com   |          |  |
| South America (São Paulo) | sa-east-1     | snowball.sa-east-1.amazonaws.com<br>snowball-fips.sa-east-1.amazonaws.com         | HTTPS    |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | snowball.us-gov-east-1.amazonaws.com<br>snowball-fips.us-gov-east-1.amazonaws.com | HTTPS    |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | snowball.us-gov-west-1.amazonaws.com<br>snowball-fips.us-gov-west-1.amazonaws.com | HTTPS    |  |

**AWS Snowcone is available only in the following AWS Regions:**

- US East (N. Virginia)
- US West (Oregon)
- Europe (Ireland)
- Europe (Frankfurt)
- Asia Pacific (Sydney)
- Canada (Central)
- Asia Pacific (Singapore)
- Asia Pacific (Tokyo)

## Service quotas

| Name                  | Default | Adjustable |
|-----------------------|---------|------------|
| Snowball Edge devices | 1       | Yes        |
| Snowcone devices      | 1       | Yes        |

## AWS Step Functions endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint                                 | Protocol |  |
|--------------------------|----------------|--|----------|--|
| US East (Ohio)           | us-east-2      | states.us-east-2.amazonaws.com           | HTTPS    |  |
|                          |                | sync-states-fips.us-east-2.amazonaws.com | HTTPS    |  |
|                          |                | states-fips.us-east-2.amazonaws.com      | HTTPS    |  |
|                          |                | sync-states.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | states.us-east-1.amazonaws.com           | HTTPS    |  |
|                          |                | sync-states-fips.us-east-1.amazonaws.com | HTTPS    |  |
|                          |                | states-fips.us-east-1.amazonaws.com      | HTTPS    |  |
|                          |                | sync-states.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (N. California)  | us-west-1      | states.us-west-1.amazonaws.com           | HTTPS    |  |
|                          |                | sync-states-fips.us-west-1.amazonaws.com | HTTPS    |  |
|                          |                | states-fips.us-west-1.amazonaws.com      | HTTPS    |  |
|                          |                | sync-states.us-west-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | states.us-west-2.amazonaws.com           | HTTPS    |  |
|                          |                | sync-states-fips.us-west-2.amazonaws.com | HTTPS    |  |
|                          |                | states-fips.us-west-2.amazonaws.com      | HTTPS    |  |
|                          |                | sync-states.us-west-2.amazonaws.com      | HTTPS    |  |
| Africa (Cape Town)       | af-south-1     | states.af-south-1.amazonaws.com          | HTTPS    |  |
|                          |                | sync-states.af-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Hong Kong) | ap-east-1      | states.ap-east-1.amazonaws.com           | HTTPS    |  |
|                          |                | sync-states.ap-east-1.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai)    | ap-south-1     | states.ap-south-1.amazonaws.com          | HTTPS    |  |
|                          |                | sync-states.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | states.ap-northeast-3.amazonaws.com      | HTTPS    |  |
|                          |                | sync-states.ap-northeast-3.amazonaws.com | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | states.ap-northeast-2.amazonaws.com      | HTTPS    |  |
|                          |                | sync-states.ap-northeast-2.amazonaws.com | HTTPS    |  |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>  | <b>Protocol</b>                  |  |
|---------------------------|----------------|--|----------------------------------|--|
| Asia Pacific (Singapore)  | ap-southeast-1 | states.ap-southeast-1.amazonaws.com<br>sync-states.ap-southeast-1.amazonaws.com  | HTTPS<br>HTTPS                   |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | states.ap-southeast-2.amazonaws.com<br>sync-states.ap-southeast-2.amazonaws.com  | HTTPS<br>HTTPS                   |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | states.ap-northeast-1.amazonaws.com<br>sync-states.ap-northeast-1.amazonaws.com  | HTTPS<br>HTTPS                   |  |
| Canada (Central)          | ca-central-1   | states.ca-central-1.amazonaws.com<br>sync-states.ca-central-1.amazonaws.com  | HTTPS<br>HTTPS                   |  |
| Europe (Frankfurt)        | eu-central-1   | states.eu-central-1.amazonaws.com<br>sync-states.eu-central-1.amazonaws.com  | HTTPS<br>HTTPS                   |  |
| Europe (Ireland)          | eu-west-1      | states.eu-west-1.amazonaws.com<br>sync-states.eu-west-1.amazonaws.com  | HTTPS<br>HTTPS                   |  |
| Europe (London)           | eu-west-2      | states.eu-west-2.amazonaws.com<br>sync-states.eu-west-2.amazonaws.com  | HTTPS<br>HTTPS                   |  |
| Europe (Milan)            | eu-south-1     | states.eu-south-1.amazonaws.com<br>sync-states.eu-south-1.amazonaws.com  | HTTPS<br>HTTPS                   |  |
| Europe (Paris)            | eu-west-3      | states.eu-west-3.amazonaws.com<br>sync-states.eu-west-3.amazonaws.com  | HTTPS<br>HTTPS                   |  |
| Europe (Stockholm)        | eu-north-1     | states.eu-north-1.amazonaws.com<br>sync-states.eu-north-1.amazonaws.com  | HTTPS<br>HTTPS                   |  |
| Middle East (Bahrain)     | me-south-1     | states.me-south-1.amazonaws.com<br>sync-states.me-south-1.amazonaws.com  | HTTPS<br>HTTPS                   |  |
| South America (São Paulo) | sa-east-1      | states.sa-east-1.amazonaws.com<br>sync-states.sa-east-1.amazonaws.com  | HTTPS<br>HTTPS                   |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | states.us-gov-east-1.amazonaws.com<br>sync-states-fips.us-gov-east-1.amazonaws.com<br>states-fips.us-gov-east-1.amazonaws.com<br>sync-states.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS<br>HTTPS<br>HTTPS |  |

| Region Name            | Region        | Endpoint                                | Protocol |  |
|------------------------|---------------|---|----------|--|
| AWS GovCloud (US-West) | us-gov-west-1 | states.us-gov-west-1.amazonaws.com      | HTTPS    |  |
|                        |               | sync-states.us-gov-west-1.amazonaws.com | HTTPS    |  |
|                        |               | states.us-gov-west-1.amazonaws.com      | HTTPS    |  |
|                        |               | sync-states.us-gov-west-1.amazonaws.com | HTTPS    |  |

## Service quotas

| Name   | Default | Adjustable |
|--|---------|------------|
| Activity pollers per ARN   | 1,000   | No         |
| CreateActivity throttle token bucket size                              | 100     | Yes        |
| CreateActivity throttle token refill rate per second                   | 1       | Yes        |
| CreateStateMachine throttle token bucket size                          | 100     | Yes        |
| CreateStateMachine throttle token refill rate per second               | 1       | Yes        |
| DeleteActivity throttle token bucket size                              | 100     | Yes        |
| DeleteActivity throttle token refill rate per second                   | 1       | Yes        |
| DeleteStateMachine throttle token bucket size                          | 100     | Yes        |
| DeleteStateMachine throttle token refill rate per second               | 1       | Yes        |
| DescribeActivity throttle token bucket size                            | 200     | Yes        |
| DescribeActivity throttle token refill rate per second                 | 1       | Yes        |
| DescribeExecution throttle token bucket size                           | 300     | Yes        |
| DescribeExecution throttle token refill rate per second                | 15      | Yes        |
| DescribeStateMachine throttle token bucket size                        | 200     | Yes        |
| DescribeStateMachine throttle token refill rate per second             | 20      | Yes        |
| DescribeStateMachineForExecution throttle token bucket size            | 200     | Yes        |
| DescribeStateMachineForExecution throttle token refill rate per second | 1       | Yes        |
| Events in execution history size                                       | 25,000  | No         |
| Execution history retention time in days                               | 90      | No         |
| Execution idle time in years   | 1       | No         |
| Execution time in years  | 1       | No         |
| Executions displayed in Step Functions console                         | 1,000   | No         |
| GetActivityTask throttle token bucket size                             | 3,000   | Yes        |

| Name  | Default       | Adjustable |
|---|---------------|------------|
| GetActivityTask throttle token refill rate per second     | 500           | Yes        |
| GetExecutionHistory throttle token bucket size            | 400           | Yes        |
| GetExecutionHistory throttle token refill rate per second | 20            | Yes        |
| Input or result data size in task state or execution      | 262,144 Bytes | No         |
| ListActivities throttle token bucket size                 | 100           | Yes        |
| ListActivities throttle token refill rate per second      | 10            | Yes        |
| ListExecutions throttle token bucket size                 | 200           | Yes        |
| ListExecutions throttle token refill rate per second      | 5             | Yes        |
| ListStateMachines throttle token bucket size              | 100           | Yes        |
| ListStateMachines throttle token refill rate per second   | 5             | Yes        |
| ListTagsForResource throttle token bucket size            | 100           | Yes        |
| ListTagsForResource throttle token refill rate per second | 1             | Yes        |
| Open executions   | 1,000,000     | Yes        |
| Registered activities                                     | 10,000        | Yes        |
| Registered state machines                                 | 10,000        | Yes        |
| Resource name length                                      | 80            | No         |
| SendTaskFailure throttle token bucket size                | 3,000         | Yes        |
| SendTaskFailure throttle token refill rate per second     | 500           | Yes        |
| SendTaskHeartbeat throttle token bucket size              | 3,000         | Yes        |
| SendTaskHeartbeat throttle token refill rate per second   | 500           | Yes        |
| SendTaskSuccess throttle token bucket size                | 3,000         | Yes        |
| SendTaskSuccess throttle token refill rate per second     | 500           | Yes        |
| Size per API request                                      | 1 Megabytes   | No         |
| StartExecution throttle token bucket size                 | 1,300         | Yes        |
| StartExecution throttle token refill rate per second      | 300           | Yes        |
| StateTransition throttle token bucket size                | 5,000         | Yes        |
| StateTransition throttle token refill rate per second     | 1,500         | Yes        |
| Step Functions task in queue in year                      | 1             | No         |
| StopExecution throttle token bucket size                  | 1,000         | Yes        |
| StopExecution throttle token refill rate per second       | 200           | Yes        |

| Name   | Default | Adjustable |
|--|---------|------------|
| TagResource throttle token bucket size                   | 200     | Yes        |
| TagResource throttle token refill rate per second        | 1       | Yes        |
| Task execution time in year                              | 1       | No         |
| UntagResource throttle token bucket size                 | 200     | Yes        |
| UntagResource throttle token refill rate per second      | 1       | Yes        |
| UpdateStateMachine throttle token bucket size            | 100     | Yes        |
| UpdateStateMachine throttle token refill rate per second | 1       | No         |

For more information, see [Quotas](#) in the *AWS Step Functions Developer Guide*.

## AWS Storage Gateway endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

#### Storage Gateway

| Region Name             | Region     | Endpoint  | Protocol       |  |
|-------------------------|------------|---|----------------|--|
| US East (Ohio)          | us-east-2  | storagegateway.us-east-2.amazonaws.com<br>storagegateway-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)   | us-east-1  | storagegateway.us-east-1.amazonaws.com<br>storagegateway-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California) | us-west-1  | storagegateway.us-west-1.amazonaws.com<br>storagegateway-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)        | us-west-2  | storagegateway.us-west-2.amazonaws.com<br>storagegateway-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Africa (Cape Town)      | af-south-1 | storagegateway.af-south-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific            | ap-east-1  | storagegateway.ap-east-1.amazonaws.com  | HTTPS          |  |

| Region Name               | Region         | Endpoint  | Protocol       |  |
|---------------------------|----------------|---|----------------|--|
| (Hong Kong)               |                |   |                |  |
| Asia Pacific (Mumbai)     | ap-south-1     | storagegateway.ap-south-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Osaka)      | ap-northeast-3 | storagegateway.ap-northeast-3.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Seoul)      | ap-northeast-2 | storagegateway.ap-northeast-2.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | storagegateway.ap-southeast-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | storagegateway.ap-southeast-2.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | storagegateway.ap-northeast-1.amazonaws.com   | HTTPS          |  |
| Canada (Central)          | ca-central-1   | storagegateway.ca-central-1.amazonaws.com<br>storagegateway-fips.ca-central-1.amazonaws.com | HTTPS<br>HTTPS |  |
| Europe (Frankfurt)        | eu-central-1   | storagegateway.eu-central-1.amazonaws.com   | HTTPS          |  |
| Europe (Ireland)          | eu-west-1      | storagegateway.eu-west-1.amazonaws.com  | HTTPS          |  |
| Europe (London)           | eu-west-2      | storagegateway.eu-west-2.amazonaws.com  | HTTPS          |  |
| Europe (Milan)            | eu-south-1     | storagegateway.eu-south-1.amazonaws.com   | HTTPS          |  |
| Europe (Paris)            | eu-west-3      | storagegateway.eu-west-3.amazonaws.com  | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1     | storagegateway.eu-north-1.amazonaws.com   | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1     | storagegateway.me-south-1.amazonaws.com   | HTTPS          |  |
| South America (São Paulo) | sa-east-1      | storagegateway.sa-east-1.amazonaws.com  | HTTPS          |  |

| Region Name            | Region        | Endpoint  | Protocol       |  |
|------------------------|---------------|---|----------------|--|
| AWS GovCloud (US-East) | us-gov-east-1 | storagegateway.us-gov-east-1.amazonaws.com<br>storagegateway-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West) | us-gov-west-1 | storagegateway.us-gov-west-1.amazonaws.com<br>storagegateway-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

For AWS Regions that the hardware appliance is supported in, see [Storage Gateway hardware appliance regions \(p. 576\)](#).

## Storage Gateway hardware appliance regions

The Storage Gateway hardware appliance is available for shipping worldwide where it is legally allowed and permitted for exporting by the US government.

Storage Gateway hardware appliance is supported in the following AWS Regions.

- US East (Ohio)
- US East (N. Virginia)
- US West (N. California)
- US West (Oregon)
- Asia Pacific (Mumbai)
- Asia Pacific (Seoul)
- Asia Pacific (Singapore)
- Asia Pacific (Sydney)
- Asia Pacific (Tokyo)
- Canada (Central)
- Europe (Frankfurt)
- Europe (Ireland)
- Europe (London)
- Europe (Paris)
- Europe (Stockholm)
- South America (São Paulo)

## Service quotas

| Name   | Default | Adjustable |
|--|---------|------------|
| Cached volume gateway Cache Maximum in TiB         | 16      | No         |
| Cached volume gateway Cache Minimum in GiB         | 150     | No         |
| Cached volume gateway Upload Buffer Maximum in TiB | 2       | No         |

| Name   | Default     | Adjustable |
|--|-------------|------------|
| Cached volume gateway Upload Buffer Minimum in GiB   | 150         | No         |
| Cached volume size in TiB                            | 32          | No         |
| Cached volumes per gateway                           | 32          | No         |
| File gateway Cache Maximum in TiB                    | 16          | No         |
| File gateway Cache Minimum in GiB                    | 150         | No         |
| File shares per S3 bucket                            | 1           | No         |
| File shares per gateway                              | 10          | No         |
| File size  | 5 Terabytes | No         |
| Max size of a virtual tape in TiB                    | 2.5         | No         |
| Max virtual tapes in a VTL                           | 1,500       | No         |
| Minimum size of a virtual tape in GiB                | 100         | No         |
| Path length  | 1,024 Bytes | No         |
| Size of all cached volumes per gateway in TiB        | 1,024       | No         |
| Size of all stored volumes per gateway in TiB        | 512         | No         |
| Stored volume gateway Upload Buffer Maximum in TiB   | 2           | No         |
| Stored volume gateway Upload Buffer Minimum in GiB   | 150         | No         |
| Stored volume size in TiB                            | 16          | No         |
| Stored volumes per gateway                           | 32          | No         |
| Tape gateway Cache Maximum in TiB                    | 16          | No         |
| Tape gateway Cache Minimum in GiB                    | 150         | No         |
| Tape gateway Upload Buffer Maximum in TiB            | 2           | No         |
| Tape gateway Upload Buffer Minimum in GiB            | 150         | No         |
| Total size of tapes in a virtual tape library in PiB | 1           | No         |

For more information, see [Storage Gateway quotas](#) in the *AWS Storage Gateway User Guide*.

## Amazon Sumerian endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#).

Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint                              | Protocol |  |
|--------------------------|----------------|---------------------------------------|----------|--|
| US East (Ohio)           | us-east-2      | sumerian.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | sumerian.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (N. California)  | us-west-1      | sumerian.us-west-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | sumerian.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai)    | ap-south-1     | sumerian.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | sumerian.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | sumerian.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | sumerian.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | sumerian.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)         | ca-central-1   | sumerian.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)       | eu-central-1   | sumerian.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)         | eu-west-1      | sumerian.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)          | eu-west-2      | sumerian.eu-west-2.amazonaws.com      | HTTPS    |  |
| Europe (Paris)           | eu-west-3      | sumerian.eu-west-3.amazonaws.com      | HTTPS    |  |
| Europe (Stockholm)       | eu-north-1     | sumerian.eu-north-1.amazonaws.com     | HTTPS    |  |
| South America            | sa-east-1      | sumerian.sa-east-1.amazonaws.com      | HTTPS    |  |

| Region Name | Region | Endpoint | Protocol |  |
|-------------|--------|----------|----------|--|
| (São Paulo) |        |          |          |  |

## Service quotas

| Name              | Default       | Adjustable |
|-------------------|---------------|------------|
| Model file size   | 50 Megabytes  | No         |
| Projects          | 1,000         | No         |
| Scenes            | 10,000        | No         |
| Script file size  | 1 Megabytes   | No         |
| Sound file size   | 10 Megabytes  | No         |
| Texture file size | 20 Megabytes  | No         |
| ZIP file size     | 200 Megabytes | No         |

## AWS Support endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name             | Region    | Endpoint                        | Protocol |  |
|-------------------------|-----------|---------------------------------|----------|--|
| US East (Ohio)          | us-east-2 | support.us-east-1.amazonaws.com | HTTPS    |  |
| US East (N. Virginia)   | us-east-1 | support.us-east-1.amazonaws.com | HTTPS    |  |
| US West (N. California) | us-west-1 | support.us-east-1.amazonaws.com | HTTPS    |  |
| US West (Oregon)        | us-west-2 | support.us-east-1.amazonaws.com | HTTPS    |  |

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>                 | <b>Protocol</b> |  |
|--------------------------|----------------|---------------------------------|-----------------|--|
| Africa (Cape Town)       | af-south-1     | support.us-east-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Hong Kong) | ap-east-1      | support.us-east-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Mumbai)    | ap-south-1     | support.us-east-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | support.us-east-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | support.us-east-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Singapore) | ap-southeast-1 | support.us-east-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | support.us-east-1.amazonaws.com | HTTPS           |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | support.us-east-1.amazonaws.com | HTTPS           |  |
| Canada (Central)         | ca-central-1   | support.us-east-1.amazonaws.com | HTTPS           |  |
| Europe (Frankfurt)       | eu-central-1   | support.us-east-1.amazonaws.com | HTTPS           |  |
| Europe (Ireland)         | eu-west-1      | support.us-east-1.amazonaws.com | HTTPS           |  |
| Europe (London)          | eu-west-2      | support.us-east-1.amazonaws.com | HTTPS           |  |
| Europe (Milan)           | eu-south-1     | support.us-east-1.amazonaws.com | HTTPS           |  |
| Europe (Paris)           | eu-west-3      | support.us-east-1.amazonaws.com | HTTPS           |  |
| Europe (Stockholm)       | eu-north-1     | support.us-east-1.amazonaws.com | HTTPS           |  |
| Middle East (Bahrain)    | me-south-1     | support.us-east-1.amazonaws.com | HTTPS           |  |

| Region Name               | Region        | Endpoint   | Protocol       |  |
|---------------------------|---------------|--|----------------|--|
| South America (São Paulo) | sa-east-1     | support.us-east-1.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | support.us-gov-west-1.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | support.us-gov-west-1.amazonaws.com<br>support.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name  | Default | Adjustable |
|---|---------|------------|
| AWS Support API operations                      | 5       | No         |
| AWS Trusted Advisor API operations              | 100     | No         |
| Number of AWS Support cases that you can create | 10      | No         |

For more information, see the [AWS Support User Guide](#).

## AWS Systems Manager endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name             | Region    | Endpoint  | Protocol       |  |
|-------------------------|-----------|---|----------------|--|
| US East (Ohio)          | us-east-2 | ssm.us-east-2.amazonaws.com<br>ssm-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |  |
| US East (N. Virginia)   | us-east-1 | ssm.us-east-1.amazonaws.com<br>ssm-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (N. California) | us-west-1 | ssm.us-west-1.amazonaws.com<br>ssm-fips.us-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US West (Oregon)         | us-west-2      | ssm.us-west-2.amazonaws.com<br>ssm-fips.us-west-2.amazonaws.com       | HTTPS<br>HTTPS |  |
| Africa (Cape Town)       | af-south-1     | ssm.af-south-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Hong Kong) | ap-east-1      | ssm.ap-east-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | ssm.ap-south-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | ssm.ap-northeast-3.amazonaws.com                                      | HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | ssm.ap-northeast-2.amazonaws.com                                      | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | ssm.ap-southeast-1.amazonaws.com                                      | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | ssm.ap-southeast-2.amazonaws.com                                      | HTTPS          |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | ssm.ap-northeast-1.amazonaws.com                                      | HTTPS          |  |
| Canada (Central)         | ca-central-1   | ssm.ca-central-1.amazonaws.com<br>ssm-fips.ca-central-1.amazonaws.com | HTTPS<br>HTTPS |  |
| Europe (Frankfurt)       | eu-central-1   | ssm.eu-central-1.amazonaws.com  | HTTPS          |  |
| Europe (Ireland)         | eu-west-1      | ssm.eu-west-1.amazonaws.com   | HTTPS          |  |
| Europe (London)          | eu-west-2      | ssm.eu-west-2.amazonaws.com   | HTTPS          |  |
| Europe (Milan)           | eu-south-1     | ssm.eu-south-1.amazonaws.com  | HTTPS          |  |
| Europe (Paris)           | eu-west-3      | ssm.eu-west-3.amazonaws.com   | HTTPS          |  |

| Region Name               | Region        | Endpoint   | Protocol       |  |
|---------------------------|---------------|--|----------------|--|
| Europe (Stockholm)        | eu-north-1    | ssm.eu-north-1.amazonaws.com                                       | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1    | ssm.me-south-1.amazonaws.com                                       | HTTPS          |  |
| South America (São Paulo) | sa-east-1     | ssm.sa-east-1.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | ssm.us-gov-east-1.amazonaws.com<br>ssm.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | ssm.us-gov-west-1.amazonaws.com<br>ssm.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

AWS Systems Manager Distributor is available in all commercial Regions except the China (Beijing) Region and the China (Ningxia) Region. Distributor is not available in the [AWS GovCloud \(US-West\) Endpoints](#).

In addition to the `ssm.*` endpoints, your managed instances must also allow HTTPS (port 443) outbound traffic to the following endpoints. For more information, see [Reference: ec2messages, ssmmessages, and Other API Calls](#) in the *AWS Systems Manager User Guide*.

- `ec2messages.*`
- `ssmmessages.*`

## Service quotas

| Capability    | Resource   | Default   |
|---------------|--|---|
| AWS AppConfig | Maximum number of applications                             | 100   |
| AWS AppConfig | Maximum number of deployment strategies                    | 20  |
| AWS AppConfig | Maximum number of environments per application             | 20  |
| AWS AppConfig | Maximum number of configuration profiles per application   | 100   |
| AWS AppConfig | Storage limit for AWS AppConfig hosted configuration store | 1 GB  |
| AWS AppConfig | Configuration size limit                                   | AWS AppConfig hosted configuration store: 1 MB<br>Amazon S3: 1 MB |

| Capability          | Resource   | Default  |
|---------------------|--|--|
| AWS AppConfig       | Maximum throughput (transactions per second)                     | 1000 TPS (applies to GetConfiguration)   |
| Application Manager | Maximum number of applications in Application Manager            | 100<br><br>When you add an application in Application Manager, Systems Manager automatically creates a resource group to organize all of the resources for that application. The maximum number of applications is based on the underlying quota for AWS Resource Groups.  |
| Application Manager | Maximum number of AWS resources you can assign to an application | For applications based on AWS CloudFormation stacks: 200<br><br>For applications based on AWS Resource Groups: Unlimited   |
| Automation          | Concurrently running automations                                 | 100<br><br>Each AWS account can run 100 automations simultaneously. This includes child automations (automations that are started by another automation), and rate control automations. If you attempt to run more automations than this, Systems Manager adds the additional automations to a queue and displays a status of Pending. |
| Automation          | Automation queue   | 1000<br><br>If you attempt to run more automations than the concurrent automation limit, subsequent automations are added to a queue. Each AWS account can queue 1,000 automations. When an automation completes (or reaches a terminal state), the first automation in the queue is started.  |

| Capability | Resource   | Default   |
|------------|--|---|
| Automation | Concurrently running rate control automations                          | 25<br><br>Each AWS account can run 25 rate control automations simultaneously. If you attempt to run more rate control automations than the concurrent rate control automation limit, Systems Manager adds the subsequent rate control automations to a queue and displays a status of Pending.   |
| Automation | Rate control automation queue  | 1000<br><br>If you attempt to run more automations than the concurrent rate control automation limit, subsequent automations are added to a queue. Each AWS account can queue 1,000 rate control automations. When an automation completes (or reaches a terminal state), the first automation in the queue is started.   |
| Automation | Number of levels of nested automation                                  | 5<br><br>A parent-level Automation runbook can start a child-level Automation runbook. This represents one level of nested automation. The child-level Automation runbook can start another Automation runbook, resulting in two levels of nested automation. This can continue up to a maximum of five (5) levels below the top-level parent Automation runbook. |
| Automation | Number of days an automation execution history is stored in the system | 30  |
| Automation | Additional automation executions that can be queued                    | 1,000   |

| Capability  | Resource   | Default   |
|-------------|--|---|
| Automation  | Maximum duration an automation execution can run when running in the context of a user | 12 hours<br><br>If you expect an automation to run longer than 12 hours, then you must run the automation by using a service role (or assume role). |
| Automation  | <code>executeScript</code> action run time   | 10 minutes<br><br>Each <code>executeScript</code> action can run up to a maximum duration of 10 minutes.  |
| Automation  | <code>executeScript</code> action maximum output                                       | Up to 100KB.  |
| Automation  | <code>invokeLambdaFunction</code> action run time                                      | 5 minutes<br><br>Each <code>invokeLambdaFunction</code> action can run up to a maximum duration of five (5) minutes.                                |
| Automation  | <code>invokeLambdaFunction</code> action maximum output                                | Up to 200KB.  |
| Automation  | Number of Automation runbook attachments   | 5<br><br>Each runbook can have up to five (5) attachments.  |
| Automation  | Automation runbook attachment size   | 256 MB<br><br>Each attachment can be up to 256 MB.  |
| Compliance  | Maximum size of any single AWS:ComplianceItem object                                   | 800 KB  |
| Distributor | Maximum number of attachments in a Distributor package                                 | 20  |
| Distributor | Maximum size per attachment in a Distributor package                                   | 1 GB  |
| Distributor | Maximum number of files in a Distributor package                                       | 1000  |
| Distributor | Maximum number of Distributor packages per AWS account, per Region                     | 500   |
| Distributor | Maximum number of package versions per Distributor package                             | 25  |
| Distributor | Maximum package size in Distributor  | 20 GB   |

| Capability  | Resource   | Default  |
|-------------|--|--|
| Distributor | Maximum package manifest size in Distributor                       | 64 KB  |
| Explorer    | Maximum number of resource data syncs (per AWS account per Region) | 5  |
| Inventory   | Maximum number of resource data syncs (per AWS account per Region) | 5  |
| Inventory   | Inventory data collected per instance per call                     | 1 MB<br><br>This maximum adequately supports most inventory collection scenarios. When this quota is reached, no new inventory data is collected for the instance. Inventory data previously collected is stored until the expiration. |
| Inventory   | Inventory data collected per instance per day                      | 5 MB<br><br>When this quota is reached, no new inventory data is collected for the instance. Inventory data previously collected is stored until the expiration.   |
| Inventory   | Custom inventory types   | 20<br><br>You can add up to 20 custom inventory types.   |
| Inventory   | Custom inventory type size   | 200 KB<br><br>This is the maximum size of the type, not the inventory collected.   |
| Inventory   | Custom inventory type attributes                                   | 50<br><br>This is the maximum number of attributes within the custom inventory type.   |

| Capability          | Resource   | Default   |
|---------------------|--|---|
| Inventory           | Inventory data expiration                            | 30 days<br><br>If you terminate an instance, inventory data for that instance is deleted immediately. For running instances, inventory data older than 30 days is deleted. If you need to store inventory data longer than 30 days, you can use AWS Config to record history or periodically query and upload the data to an Amazon S3 bucket. For more information, see, <a href="#">Recording Amazon EC2 managed instance inventory</a> in the <a href="#">AWS Config Developer Guide</a> . |
| Maintenance Windows | Maintenance windows per AWS account                  | 50  |
| Maintenance Windows | Tasks per maintenance window                         | 20  |
| Maintenance Windows | Targets per maintenance window                       | 100   |
| Maintenance Windows | Instance IDs per target                              | 50  |
| Maintenance Windows | Targets per task                                     | 10  |
| Maintenance Windows | Concurrent executions of a single maintenance window | 1   |
| Maintenance Windows | Concurrent executions of maintenance windows         | 5   |
| Maintenance Windows | Execution history retention                          | 30 days   |

| Capability                             | Resource   | Default  |
|--|--|--|
| Managed Instances - Hybrid Environment | Total number of registered on-premises servers and virtual machines (VMs) in a hybrid environment            | Standard instances: 1,000 (per account per Region)<br><br>Advanced instances:<br>Advanced instances are available on a pay-per-use basis. Advanced instances also enable you to connect to your hybrid machines by using AWS Systems Manager Session Manager. For more information about activating on-premises instances for use in your hybrid environment, see <a href="#">Create a Managed-Instance Activation</a> in the <a href="#">AWS Systems Manager User Guide</a> . For more information about enabling advanced instances, see <a href="#">Using the Advanced-Instances Tier</a> . |
| OpsCenter                              | Total number of OpsItems allowed per AWS account per Region (including Open and Resolved OpsItems)           | 500,000  |
| OpsCenter                              | Maximum number of OpsItems per AWS account per month   | 10,000   |
| OpsCenter                              | Maximum operational data value size  | 20 KB  |
| OpsCenter                              | Maximum number of associated Automation runbooks per OpsItem   | 10   |
| OpsCenter                              | Maximum number of Automation runbook executions stored in operational data under a single associated runbook | 10   |
| OpsCenter                              | Maximum number of related resources you can specify per OpsItem  | 100  |
| OpsCenter                              | Maximum number of related OpsItems you can specify per OpsItem   | 10   |
| OpsCenter                              | Maximum length of a deduplication string   | 64 characters  |
| OpsCenter                              | Duration before an OpsItem is automatically archived by the system (regardless of status)                    | 36 months  |

| Capability      | Resource  | Default  |
|-----------------|---|--|
| Parameter Store | Total number of parameters allowed (per AWS account and Region) | Standard parameters: 10,000<br><br>Advanced parameters: 100,000<br><br>For more information about advanced parameters, see <a href="#">About Systems Manager Advanced Parameters</a> in the <i>AWS Systems Manager User Guide</i> .  |
| Parameter Store | Max size for parameter value                                    | Standard parameter: 4 KB<br><br>Advanced parameter: 8 KB   |
| Parameter Store | Max number of parameter policies per advanced parameter         | 10   |
| Parameter Store | Max throughput (transactions per second)                        | Default throughput: 40 (Shared by the following API actions: <code>GetParameter</code> , <code>GetParameters</code> , <code>GetParametersByPath</code> )<br><br>Higher throughput: 100 ( <code>GetParametersByPath</code> )<br><br>Higher throughput: 3000 (Shared by the following API actions: <code>GetParameter</code> and <code>GetParameters</code> )<br><br>For more information about Parameter Store throughput, see <a href="#">Increasing Parameter Store Throughput</a> in the <i>AWS Systems Manager User Guide</i> . |
| Parameter Store | Max history for a parameter                                     | 100 past values  |
| Patch Manager   | Patch baselines per AWS account                                 | 50   |
| Patch Manager   | Patch groups per patch baseline                                 | 25   |
| Patch Manager   | Operation history retention                                     | Most recent 150 operations   |

| Capability      | Resource                                     | Default   |
|-----------------|--|---|
| Run Command     | Execution history retention                  | 30 days<br><br>The history of each command is available for up to 30 days. In addition, you can store a copy of all log files in Amazon Simple Storage Service or have an audit trail of all API calls in AWS CloudTrail. |
| Session Manager | Maximum idle time before session termination | Default: 20 minutes<br><br>Configurable to between 1 and 60 minutes.  |
| SSM Documents   | Total documents                              | 500<br><br>Each AWS account can create a maximum of 500 documents per Region.   |
| SSM Documents   | Document versions                            | 1000<br><br>A single SSM document can have a maximum of 1,000 versions.   |
| SSM Documents   | Privately shared Systems Manager document    | 1000<br><br>A single Systems Manager document can be shared with a maximum of 1000 AWS accounts.  |
| SSM Documents   | Publicly shared Systems Manager document     | 5<br><br>Each AWS account can publicly share a maximum of five documents.   |
| State Manager   | Concurrent State Manager associations        | 2,000<br><br>Each AWS account Account can have 2,000 associations per Region at one time.   |
| State Manager   | State Manager association versions           | 1,000<br><br>You can create a maximum of 1,000 versions of a State Manager association.   |

# Amazon Textract endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint                                 | Protocol |  |
|--------------------------|----------------|--|----------|--|
| US East (Ohio)           | us-east-2      | textract.us-east-2.amazonaws.com         | HTTPS    |  |
|                          |                | textract-fips.us-east-2.amazonaws.com    | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | textract.us-east-1.amazonaws.com         | HTTPS    |  |
|                          |                | textract-fips.us-east-1.amazonaws.com    | HTTPS    |  |
| US West (N. California)  | us-west-1      | textract.us-west-1.amazonaws.com         | HTTPS    |  |
|                          |                | textract-fips.us-west-1.amazonaws.com    | HTTPS    |  |
| US West (Oregon)         | us-west-2      | textract.us-west-2.amazonaws.com         | HTTPS    |  |
|                          |                | textract-fips.us-west-2.amazonaws.com    | HTTPS    |  |
| Asia Pacific (Mumbai)    | ap-south-1     | textract.ap-south-1.amazonaws.com        | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | textract.ap-northeast-2.amazonaws.com    | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | textract.ap-southeast-1.amazonaws.com    | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | textract.ap-southeast-2.amazonaws.com    | HTTPS    |  |
| Canada (Central)         | ca-central-1   | textract.ca-central-1.amazonaws.com      | HTTPS    |  |
|                          |                | textract-fips.ca-central-1.amazonaws.com | HTTPS    |  |
| Europe (Frankfurt)       | eu-central-1   | textract.eu-central-1.amazonaws.com      | HTTPS    |  |
| Europe (Ireland)         | eu-west-1      | textract.eu-west-1.amazonaws.com         | HTTPS    |  |
| Europe (London)          | eu-west-2      | textract.eu-west-2.amazonaws.com         | HTTPS    |  |

| Region Name            | Region        | Endpoint  | Protocol       |  |
|------------------------|---------------|---|----------------|--|
| Europe (Paris)         | eu-west-3     | textract.eu-west-3.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-East) | us-gov-east-1 | textract.us-gov-east-1.amazonaws.com<br>textract-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West) | us-gov-west-1 | textract.us-gov-west-1.amazonaws.com<br>textract-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Resource   | Default   |
|--|---|
| <p>Transactions per second per account for synchronous operations:</p> <ul style="list-style-type: none"> <li>• <a href="#">AnalyzeDocument</a></li> <li>• <a href="#">DetectDocumentText</a></li> <li>• <a href="#">AnalyzeExpense</a></li> </ul> | <p>For AnalyzeDocument:</p> <p>US East (N. Virginia) Region – 10</p> <p>US West (Oregon) Region – 10</p> <p>All other Regions that Amazon Textract supports – 1</p> <p>For DetectDocumentText:</p> <p>US East (N. Virginia) Region – 10</p> <p>US West (Oregon) Region – 10</p> <p>All other Regions that Amazon Textract supports – 1</p> <p>For AnalyzeExpense:</p> <p>US East (N. Virginia) Region – 5</p> <p>US West (Oregon) Region – 5</p> <p>All other Regions that Amazon Textract supports – 1</p> |
| <p>Transactions per second per account for all start (asynchronous) operations:</p> <ul style="list-style-type: none"> <li>• <a href="#">StartDocumentAnalysis</a></li> <li>• <a href="#">StartDocumentTextDetection</a></li> </ul>                | <p>For StartDocumentAnalysis Text:</p> <p>US East (N. Virginia) Region – 10</p> <p>US West (Oregon) Region – 10</p> <p>All other Regions Amazon Textract supports – 2</p> <p>For StartDocumentTextDetection:</p> <p>US East (N. Virginia) Region – 10</p>   |

| Resource   | Default   |
|--|---|
|  | US West (Oregon) Region - 10<br>All other Regions that Amazon Textract supports – 1   |
| Transactions per second per account for all get (asynchronous) operations:<br><ul style="list-style-type: none"><li>• <a href="#">GetDocumentAnalysis</a></li><li>• <a href="#">GetDocumentTextDetection</a></li></ul> | For GetDocumentAnalysis:<br>US East (N. Virginia) Region – 10<br>US West (Oregon) Region - 10<br>All other Regions that Amazon Textract supports – 5<br><br>For GetDocumentTextDetection:<br>US East (N. Virginia) Region – 10<br>US West (Oregon) Region - 10<br>All other Regions that Amazon Textract supports – 5 |
| Maximum number of asynchronous jobs per account that can simultaneously exist  | US East (N. Virginia) Region – 600<br>US West (Oregon) Region - 600<br>All other Regions that Amazon Textract supports – 100  |

For more information, see [Amazon Textract Quotas](#) in the *Amazon Textract Developer Guide*.

## Amazon Timestream endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

Use the following endpoints to acquire the endpoints for the write API.

| Region Name           | Region    | Endpoint  | Protocol |  |
|-----------------------|-----------|---|----------|--|
| US East (Ohio)        | us-east-2 | ingest.timestream.us-east-2.amazonaws.com<br>ingest.timestream-fips.us-east-2.amazonaws.com | HTTPS    |  |
| US East (N. Virginia) | us-east-1 | ingest.timestream.us-east-1.amazonaws.com   | HTTPS    |  |

| <b>Region Name</b> | <b>Region</b> | <b>Endpoint</b>                                | <b>Protocol</b> |  |
|--------------------|---------------|--|-----------------|--|
|                    |               | ingest.timestream-fips.us-east-1.amazonaws.com | HTTPS           |  |
| US West (Oregon)   | us-west-2     | ingest.timestream.us-west-2.amazonaws.com      | HTTPS           |  |
|                    |               | ingest.timestream-fips.us-west-2.amazonaws.com | HTTPS           |  |
| Europe (Frankfurt) | eu-central-1  | ingest.timestream.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)   | eu-west-1     | ingest.timestream.eu-west-1.amazonaws.com      | HTTPS           |  |

Use the following endpoints to acquire the endpoints for the query API.

| <b>Region Name</b>    | <b>Region</b> | <b>Endpoint</b>                               | <b>Protocol</b> |  |
|-----------------------|---------------|---|-----------------|--|
| US East (Ohio)        | us-east-2     | query.timestream.us-east-2.amazonaws.com      | HTTPS           |  |
|                       |               | query.timestream-fips.us-east-2.amazonaws.com | HTTPS           |  |
| US East (N. Virginia) | us-east-1     | query.timestream.us-east-1.amazonaws.com      | HTTPS           |  |
|                       |               | query.timestream-fips.us-east-1.amazonaws.com | HTTPS           |  |
| US West (Oregon)      | us-west-2     | query.timestream.us-west-2.amazonaws.com      | HTTPS           |  |
|                       |               | query.timestream-fips.us-west-2.amazonaws.com | HTTPS           |  |
| Europe (Frankfurt)    | eu-central-1  | query.timestream.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)      | eu-west-1     | query.timestream.eu-west-1.amazonaws.com      | HTTPS           |  |

For more information, see [Using the API](#) in the *Amazon Timestream Developer Guide*.

## Service quotas

| <b>Name</b>   | <b>Default</b> | <b>Adjustable</b> |
|---|----------------|-------------------|
| Data size for query result                          | 5 Gigabytes    | No                |
| Database name length                                | 64 Bytes       | No                |
| Databases per account                               | 500            | No                |
| Dimension name dimension value pair size per series | 2 Kilobytes    | No                |
| Dimension name length                               | 256 Bytes      | No                |
| Dimensions per table                                | 128            | No                |

| Name  | Default       | Adjustable |
|---|---------------|------------|
| Execution duration for queries in hours             | 1             | No         |
| Future ingestion period in minutes                  | 15            | No         |
| Maximum retention period for magnetic store in days | 73,000        | No         |
| Maximum retention period for memory store in hours  | 8,766         | No         |
| Measure name length                                 | 256 Bytes     | No         |
| Measures per table                                  | 1,024         | No         |
| Metadata size for query result                      | 100 Kilobytes | No         |
| Minimum retention period for magnetic store in days | 1             | No         |
| Minimum retention period for memory store in hours  | 1             | No         |
| QueryString length in KiB                           | 256           | No         |
| Records per WriteRecords API request                | 100           | No         |
| Table name length                                   | 64 Bytes      | No         |
| Tables per account                                  | 50,000        | No         |
| Throttle rate for CRUD APIs                         | 1             | No         |

For more information, see [Quotas](#) in the *Amazon Timestream Developer Guide*.

## Amazon Transcribe endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

#### Amazon Transcribe

| Region Name           | Region    | Endpoint                                | Protocol |  |
|-----------------------|-----------|---|----------|--|
| US East (Ohio)        | us-east-2 | transcribe.us-east-2.amazonaws.com      | HTTPS    |  |
|                       |           | fips.transcribe.us-east-2.amazonaws.com | HTTPS    |  |
| US East (N. Virginia) | us-east-1 | transcribe.us-east-1.amazonaws.com      | HTTPS    |  |
|                       |           | fips.transcribe.us-east-1.amazonaws.com | HTTPS    |  |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|---------------------------|----------------|---|-----------------|--|
| US West (N. California)   | us-west-1      | transcribe.us-west-1.amazonaws.com<br>fips.transcribe.us-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| US West (Oregon)          | us-west-2      | transcribe.us-west-2.amazonaws.com<br>fips.transcribe.us-west-2.amazonaws.com | HTTPS<br>HTTPS  |  |
| Asia Pacific (Hong Kong)  | ap-east-1      | transcribe.ap-east-1.amazonaws.com  | HTTPS           |  |
| Asia Pacific (Mumbai)     | ap-south-1     | transcribe.ap-south-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Seoul)      | ap-northeast-2 | transcribe.ap-northeast-2.amazonaws.com                                       | HTTPS           |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | transcribe.ap-southeast-1.amazonaws.com                                       | HTTPS           |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | transcribe.ap-southeast-2.amazonaws.com                                       | HTTPS           |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | transcribe.ap-northeast-1.amazonaws.com                                       | HTTPS           |  |
| Canada (Central)          | ca-central-1   | transcribe.ca-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Frankfurt)        | eu-central-1   | transcribe.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)          | eu-west-1      | transcribe.eu-west-1.amazonaws.com  | HTTPS           |  |
| Europe (London)           | eu-west-2      | transcribe.eu-west-2.amazonaws.com  | HTTPS           |  |
| Europe (Paris)            | eu-west-3      | transcribe.eu-west-3.amazonaws.com  | HTTPS           |  |
| Middle East (Bahrain)     | me-south-1     | transcribe.me-south-1.amazonaws.com   | HTTPS           |  |
| South America (São Paulo) | sa-east-1      | transcribe.sa-east-1.amazonaws.com  | HTTPS           |  |

| Region Name            | Region        | Endpoint  | Protocol       |  |
|------------------------|---------------|---|----------------|--|
| AWS GovCloud (US-East) | us-gov-east-1 | transcribe.us-gov-east-1.amazonaws.com<br>fips.transcribe.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West) | us-gov-west-1 | transcribe.us-gov-west-1.amazonaws.com<br>fips.transcribe.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Amazon Transcribe Streaming

| Region Name           | Region         | Endpoint  | Protocol       |  |
|-----------------------|----------------|---|----------------|--|
| US East (Ohio)        | us-east-2      | transcribestreaming.us-east-2.amazonaws.com<br>transcribestreaming-fips.us-east-2.amazonaws.com       | HTTPS<br>HTTPS |  |
| US East (N. Virginia) | us-east-1      | transcribestreaming.us-east-1.amazonaws.com<br>transcribestreaming-fips.us-east-1.amazonaws.com       | HTTPS<br>HTTPS |  |
| US West (Oregon)      | us-west-2      | transcribestreaming.us-west-2.amazonaws.com<br>transcribestreaming-fips.us-west-2.amazonaws.com       | HTTPS<br>HTTPS |  |
| Asia Pacific (Seoul)  | ap-northeast-2 | transcribestreaming.ap-northeast-2.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Sydney) | ap-southeast-2 | transcribestreaming.ap-southeast-2.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Tokyo)  | ap-northeast-1 | transcribestreaming.ap-northeast-1.amazonaws.com  | HTTPS          |  |
| Canada (Central)      | ca-central-1   | transcribestreaming.ca-central-1.amazonaws.com<br>transcribestreaming-fips.ca-central-1.amazonaws.com | HTTPS<br>HTTPS |  |
| Europe (Frankfurt)    | eu-central-1   | transcribestreaming.eu-central-1.amazonaws.com  | HTTPS          |  |
| Europe (Ireland)      | eu-west-1      | transcribestreaming.eu-west-1.amazonaws.com   | HTTPS          |  |
| Europe (London)       | eu-west-2      | transcribestreaming.eu-west-2.amazonaws.com   | HTTPS          |  |

| Region Name               | Region    | Endpoint                                    | Protocol |  |
|---------------------------|-----------|---|----------|--|
| South America (São Paulo) | sa-east-1 | transcribestreaming.sa-east-1.amazonaws.com | HTTPS    |  |

## Amazon Transcribe Medical

| Region Name              | Region         | Endpoint  | Protocol |  |
|--------------------------|----------------|---|----------|--|
| US East (Ohio)           | us-east-2      | transcribe-medical.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | transcribe-medical.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (N. California)  | us-west-1      | transcribe-medical.us-west-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | transcribe-medical.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Hong Kong) | ap-east-1      | transcribe-medical.ap-east-1.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai)    | ap-south-1     | transcribe-medical.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | transcribe-medical.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | transcribe-medical.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | transcribe-medical.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | transcribe-medical.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)         | ca-central-1   | transcribe-medical.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)       | eu-central-1   | transcribe-medical.eu-central-1.amazonaws.com   | HTTPS    |  |

| <b>Region Name</b>        | <b>Region</b> | <b>Endpoint</b>                             | <b>Protocol</b> |  |
|---------------------------|---------------|---|-----------------|--|
| Europe (Ireland)          | eu-west-1     | transcribe-medical.eu-west-1.amazonaws.com  | HTTPS           |  |
| Europe (London)           | eu-west-2     | transcribe-medical.eu-west-2.amazonaws.com  | HTTPS           |  |
| Europe (Paris)            | eu-west-3     | transcribe-medical.eu-west-3.amazonaws.com  | HTTPS           |  |
| Middle East (Bahrain)     | me-south-1    | transcribe-medical.me-south-1.amazonaws.com | HTTPS           |  |
| South America (São Paulo) | sa-east-1     | transcribe-medical.sa-east-1.amazonaws.com  | HTTPS           |  |

## Service quotas

| <b>Name</b>  | <b>Default</b> | <b>Adjustable</b> |
|--|----------------|-------------------|
| Job queue bandwidth ratio  | 0.9            | Yes               |
| Maximum audio file length  | 14,400 Seconds | No                |
| Maximum audio file length (Medical)                                | 14,400 Seconds | No                |
| Maximum audio file length for call analytics batch jobs            | 14,400 Seconds | No                |
| Maximum audio file size  | 2 Gigabytes    | No                |
| Maximum audio file size (Medical)                                  | 2 Gigabytes    | No                |
| Maximum audio file size for call analytics batch jobs              | 500 Megabytes  | No                |
| Maximum length of a custom vocabulary phrase                       | 256            | No                |
| Maximum number of categories for call analytics batch jobs         | 200            | Yes               |
| Maximum number of rules per category for call analytics batch jobs | 20             | Yes               |
| Maximum number of vocabulary filters                               | 100            | No                |
| Maximum size of a custom vocabulary                                | 50 Kilobytes   | No                |
| Maximum size of a vocabulary filter                                | 50 Kilobytes   | No                |

| Name  | Default             | Adjustable |
|---|---------------------|------------|
| Minimum audio file duration   | 500<br>Milliseconds | No         |
| Minimum audio file duration (Medical)                                       | 500<br>Milliseconds | No         |
| Minimum audio file duration for call analytics batch jobs                   | 500<br>Milliseconds | No         |
| Number of StartMedicalStreamTranscription Websocket requests                | 25                  | Yes        |
| Number of StartStreamTranscription Websocket requests                       | 25                  | Yes        |
| Number of channels for channel identification                               | 2                   | Yes        |
| Number of channels for channel identification (Medical)                     | 2                   | No         |
| Number of channels for channel identification for call analytics batch jobs | 2                   | Yes        |
| Number of concurrent HTTP/2 streams for streaming transcription.            | 25                  | Yes        |
| Number of concurrent batch transcription jobs                               | 250                 | Yes        |
| Number of concurrent call analytics batch jobs                              | 100                 | Yes        |
| Number of concurrent medical batch transcription jobs                       | 250                 | Yes        |
| Number of concurrently training custom language models                      | 3                   | Yes        |
| Number of days that job records are retained                                | 90                  | No         |
| Number of days that job records are retained (Medical)                      | 90                  | No         |
| Number of days that job records are retained for call analytics batch jobs  | 90                  | No         |
| Number of pending medical vocabularies                                      | 10                  | Yes        |
| Number of pending vocabularies  | 10                  | Yes        |
| Total number of custom language models per account                          | 10                  | Yes        |
| Total number of medical vocabularies per account                            | 100                 | Yes        |
| Total number of vocabularies per account                                    | 100                 | Yes        |
| Transactions per second, CreateCallAnalyticsCategory operation              | 10                  | Yes        |
| Transactions per second, CreateVocabulary operation                         | 10                  | Yes        |
| Transactions per second, DeleteCallAnalyticsCategory operation              | 5                   | Yes        |
| Transactions per second, DeleteCallAnalyticsJob operation                   | 5                   | Yes        |
| Transactions per second, DeleteMedicalTranscriptionJob operation            | 5                   | Yes        |
| Transactions per second, DeleteMedicalVocabulary operation                  | 5                   | Yes        |
| Transactions per second, DeleteTranscriptionJob operation                   | 5                   | Yes        |
| Transactions per second, DeleteVocabulary operation                         | 5                   | Yes        |

| Name   | Default | Adjustable |
|--|---------|------------|
| Transactions per second, GetCallAnalyticsCategory operation        | 20      | Yes        |
| Transactions per second, GetCallAnalyticsJob operation             | 20      | Yes        |
| Transactions per second, GetMedicalTranscriptionJob operation      | 30      | Yes        |
| Transactions per second, GetMedicalVocabulary operation            | 20      | Yes        |
| Transactions per second, GetTranscriptionJob operation             | 30      | Yes        |
| Transactions per second, GetVocabulary operation                   | 20      | Yes        |
| Transactions per second, ListCallAnalyticsCategories operation     | 5       | Yes        |
| Transactions per second, ListCallAnalyticsJobs operation           | 5       | Yes        |
| Transactions per second, ListMedicalTranscriptionJobs operation    | 5       | Yes        |
| Transactions per second, ListMedicalVocabularies operation         | 5       | Yes        |
| Transactions per second, ListTranscriptionJobs operation           | 5       | Yes        |
| Transactions per second, ListVocabularies operation                | 5       | Yes        |
| Transactions per second, StartCallAnalyticsJob operation           | 10      | Yes        |
| Transactions per second, StartMedicalStreamTranscription operation | 25      | Yes        |
| Transactions per second, StartMedicalTranscriptionJob operation    | 25      | Yes        |
| Transactions per second, StartStreamTranscription operation        | 25      | Yes        |
| Transactions per second, StartTranscriptionJob operation           | 25      | Yes        |
| Transactions per second, UpdateCallAnalyticsCategory operation     | 10      | Yes        |
| Transactions per second, UpdateMedicalVocabulary operation         | 10      | Yes        |
| Transactions per second, UpdateVocabulary operation                | 10      | Yes        |

For more information, see [Guidelines and quotas](#) in the *Amazon Transcribe Developer Guide*.

## AWS Transfer Family endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | transfer.us-east-2.amazonaws.com<br>transfer-fips.us-east-2.amazonaws.com       | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | transfer.us-east-1.amazonaws.com<br>transfer-fips.us-east-1.amazonaws.com       | HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | transfer.us-west-1.amazonaws.com<br>transfer-fips.us-west-1.amazonaws.com       | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | transfer.us-west-2.amazonaws.com<br>transfer-fips.us-west-2.amazonaws.com       | HTTPS<br>HTTPS |  |
| Africa (Cape Town)       | af-south-1     | transfer.af-south-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Hong Kong) | ap-east-1      | transfer.ap-east-1.amazonaws.com  | HTTPS          |  |
| Asia Pacific (Mumbai)    | ap-south-1     | transfer.ap-south-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | transfer.ap-northeast-2.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Singapore) | ap-southeast-1 | transfer.ap-southeast-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | transfer.ap-southeast-2.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | transfer.ap-northeast-1.amazonaws.com   | HTTPS          |  |
| Canada (Central)         | ca-central-1   | transfer.ca-central-1.amazonaws.com<br>transfer-fips.ca-central-1.amazonaws.com | HTTPS<br>HTTPS |  |
| Europe (Frankfurt)       | eu-central-1   | transfer.eu-central-1.amazonaws.com   | HTTPS          |  |
| Europe (Ireland)         | eu-west-1      | transfer.eu-west-1.amazonaws.com  | HTTPS          |  |

| Region Name               | Region        | Endpoint  | Protocol       |  |
|---------------------------|---------------|---|----------------|--|
| Europe (London)           | eu-west-2     | transfer.eu-west-2.amazonaws.com  | HTTPS          |  |
| Europe (Milan)            | eu-south-1    | transfer.eu-south-1.amazonaws.com   | HTTPS          |  |
| Europe (Paris)            | eu-west-3     | transfer.eu-west-3.amazonaws.com  | HTTPS          |  |
| Europe (Stockholm)        | eu-north-1    | transfer.eu-north-1.amazonaws.com   | HTTPS          |  |
| Middle East (Bahrain)     | me-south-1    | transfer.me-south-1.amazonaws.com   | HTTPS          |  |
| South America (São Paulo) | sa-east-1     | transfer.sa-east-1.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | transfer.us-gov-east-1.amazonaws.com<br>transfer-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | transfer.us-gov-west-1.amazonaws.com<br>transfer-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name  | Default       | Adjustable |
|---|---------------|------------|
| Concurrent sessions per server                        | 10,000        | No         |
| File size   | 5 Terabytes   | No         |
| Idle connection timeout                               | 1,800 Seconds | No         |
| Maximum number of AD Groups for access                | 20            | Yes        |
| Maximum number of new executions per workflow         | 100           | No         |
| New executions refill rate per workflow per second    | 1             | No         |
| Number of Service Managed users                       | 10,000        | Yes        |
| Number of authentication requests per user per second | 2             | No         |
| SSH keys per Service Managed user                     | 50            | Yes        |
| Servers per account                                   | 50            | Yes        |

| Name                             | Default | Adjustable |
|----------------------------------|---------|------------|
| VPC_ENDPOINT servers per account | 10      | No         |
| Workflows per account            | 10      | Yes        |

## Amazon Translate endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |
|--------------------------|----------------|---|----------------|
| US East (Ohio)           | us-east-2      | translate.us-east-2.amazonaws.com<br>translate-fips.us-east-2.amazonaws.com | HTTPS<br>HTTPS |
| US East (N. Virginia)    | us-east-1      | translate.us-east-1.amazonaws.com<br>translate-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |
| US West (N. California)  | us-west-1      | translate.us-west-1.amazonaws.com   | HTTPS          |
| US West (Oregon)         | us-west-2      | translate.us-west-2.amazonaws.com<br>translate-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |
| Asia Pacific (Hong Kong) | ap-east-1      | translate.ap-east-1.amazonaws.com   | HTTPS          |
| Asia Pacific (Mumbai)    | ap-south-1     | translate.ap-south-1.amazonaws.com  | HTTPS          |
| Asia Pacific (Seoul)     | ap-northeast-2 | translate.ap-northeast-2.amazonaws.com                                      | HTTPS          |
| Asia Pacific (Singapore) | ap-southeast-1 | translate.ap-southeast-1.amazonaws.com                                      | HTTPS          |
| Asia Pacific (Sydney)    | ap-southeast-2 | translate.ap-southeast-2.amazonaws.com                                      | HTTPS          |

| Region Name            | Region         | Endpoint  | Protocol       |  |
|------------------------|----------------|---|----------------|--|
| Asia Pacific (Tokyo)   | ap-northeast-1 | translate.ap-northeast-1.amazonaws.com  | HTTPS          |  |
| Canada (Central)       | ca-central-1   | translate.ca-central-1.amazonaws.com  | HTTPS          |  |
| Europe (Frankfurt)     | eu-central-1   | translate.eu-central-1.amazonaws.com  | HTTPS          |  |
| Europe (Ireland)       | eu-west-1      | translate.eu-west-1.amazonaws.com   | HTTPS          |  |
| Europe (London)        | eu-west-2      | translate.eu-west-2.amazonaws.com   | HTTPS          |  |
| Europe (Paris)         | eu-west-3      | translate.eu-west-3.amazonaws.com   | HTTPS          |  |
| Europe (Stockholm)     | eu-north-1     | translate.eu-north-1.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-West) | us-gov-west-1  | translate.us-gov-west-1.amazonaws.com<br>translate-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Name                              | Default | Adjustable |
|-----------------------------------|---------|------------|
| Concurrent batch translation jobs | 10      | Yes        |
| Custom terminology files          | 100     | Yes        |
| Parallel data resources           | 1,000   | Yes        |

For more information, see [Guidelines and Quotas](#) in the *Amazon Translate Developer Guide*.

## Amazon Virtual Private Cloud endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint                         | Protocol |  |
|--------------------------|----------------|----------------------------------|----------|--|
| US East (Ohio)           | us-east-2      | ec2.us-east-2.amazonaws.com      | HTTPS    |  |
| US East (N. Virginia)    | us-east-1      | ec2.us-east-1.amazonaws.com      | HTTPS    |  |
| US West (N. California)  | us-west-1      | ec2.us-west-1.amazonaws.com      | HTTPS    |  |
| US West (Oregon)         | us-west-2      | ec2.us-west-2.amazonaws.com      | HTTPS    |  |
| Africa (Cape Town)       | af-south-1     | ec2.af-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Hong Kong) | ap-east-1      | ec2.ap-east-1.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai)    | ap-south-1     | ec2.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | ec2.ap-northeast-3.amazonaws.com | HTTPS    |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | ec2.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore) | ap-southeast-1 | ec2.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | ec2.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | ec2.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)         | ca-central-1   | ec2.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)       | eu-central-1   | ec2.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)         | eu-west-1      | ec2.eu-west-1.amazonaws.com      | HTTPS    |  |

| Region Name               | Region        | Endpoint                        | Protocol |  |
|---------------------------|---------------|---------------------------------|----------|--|
| Europe (London)           | eu-west-2     | ec2.eu-west-2.amazonaws.com     | HTTPS    |  |
| Europe (Milan)            | eu-south-1    | ec2.eu-south-1.amazonaws.com    | HTTPS    |  |
| Europe (Paris)            | eu-west-3     | ec2.eu-west-3.amazonaws.com     | HTTPS    |  |
| Europe (Stockholm)        | eu-north-1    | ec2.eu-north-1.amazonaws.com    | HTTPS    |  |
| Middle East (Bahrain)     | me-south-1    | ec2.me-south-1.amazonaws.com    | HTTPS    |  |
| South America (São Paulo) | sa-east-1     | ec2.sa-east-1.amazonaws.com     | HTTPS    |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | ec2.us-gov-east-1.amazonaws.com | HTTPS    |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | ec2.us-gov-west-1.amazonaws.com | HTTPS    |  |

If you specify the general endpoint (ec2.amazonaws.com), Amazon VPC directs your request to the us-east-1 endpoint.

## Service quotas

| Name   | Default | Adjustable |
|--|---------|------------|
| Active VPC peering connections per VPC       | 50      | Yes        |
| Characters per VPC endpoint policy           | 20,480  | No         |
| Egress-only internet gateways per Region     | 5       | Yes        |
| Gateway VPC endpoints per Region             | 20      | Yes        |
| IPv4 CIDR blocks per VPC                     | 5       | Yes        |
| IPv6 CIDR blocks per VPC                     | 1       | No         |
| Inbound or outbound rules per security group | 60      | Yes        |
| Interface VPC endpoints per VPC              | 50      | Yes        |
| Internet gateways per Region                 | 5       | Yes        |
| NAT gateways per Availability Zone           | 5       | Yes        |

| Name  | Default | Adjustable |
|---|---------|------------|
| Network ACLs per VPC                        | 200     | Yes        |
| Network interfaces per Region               | 5,000   | Yes        |
| Outstanding VPC peering connection requests | 25      | Yes        |
| Participant accounts per VPC                | 100     | Yes        |
| Route tables per VPC                        | 200     | Yes        |
| Routes per route table                      | 50      | Yes        |
| Rules per network ACL                       | 20      | Yes        |
| Security groups per network interface       | 5       | Yes        |
| Subnets per VPC                             | 200     | Yes        |
| Subnets that can be shared with an account  | 100     | Yes        |
| VPC peering connection request expiry hours | 168     | No         |
| VPC security groups per Region              | 2,500   | Yes        |
| VPCs per Region                             | 5       | Yes        |

The following quotas are for VPC Reachability Analyzer.

| Name                                      | Default | Adjustable |
|---|---------|------------|
| Reachability Analyzer Analyses            | 1,000   | Yes        |
| Reachability Analyzer Paths               | 100     | Yes        |
| Reachability Analyzer concurrent Analyses | 6       | Yes        |

For more information, see the following:

- [Amazon VPC quotas](#)
- [Transit gateway quotas](#)
- [Transit Gateway Network manager quotas](#)
- [Traffic Mirroring quotas](#)
- [VPC Reachability Analyzer quotas](#)
- [AWS Client VPN quotas](#)
- [Site-to-Site VPN quotas](#)

## AWS WAF endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

**Note**

This page provides information related to the latest version of AWS WAF, released in November 2019. The names of the entities that you use to access AWS WAF, like endpoints and namespaces, all have the versioning information added, like v2 or v2, to distinguish from the prior version.

## Service endpoints

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (Ohio)           | us-east-2      | wafv2.us-east-2.amazonaws.com<br>wafv2-fips.us-east-2.amazonaws.com           | HTTPS<br>HTTPS |  |
| US East (N. Virginia)    | us-east-1      | wafv2.us-east-1.amazonaws.com<br>wafv2-fips.us-east-1.amazonaws.com           | HTTPS<br>HTTPS |  |
| US West (N. California)  | us-west-1      | wafv2.us-west-1.amazonaws.com<br>wafv2-fips.us-west-1.amazonaws.com           | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | wafv2.us-west-2.amazonaws.com<br>wafv2-fips.us-west-2.amazonaws.com           | HTTPS<br>HTTPS |  |
| Africa (Cape Town)       | af-south-1     | wafv2.af-south-1.amazonaws.com<br>wafv2-fips.af-south-1.amazonaws.com         | HTTPS<br>HTTPS |  |
| Asia Pacific (Hong Kong) | ap-east-1      | wafv2.ap-east-1.amazonaws.com<br>wafv2-fips.ap-east-1.amazonaws.com           | HTTPS<br>HTTPS |  |
| Asia Pacific (Mumbai)    | ap-south-1     | wafv2.ap-south-1.amazonaws.com<br>wafv2-fips.ap-south-1.amazonaws.com         | HTTPS<br>HTTPS |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | wafv2.ap-northeast-3.amazonaws.com<br>wafv2-fips.ap-northeast-3.amazonaws.com | HTTPS<br>HTTPS |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | wafv2.ap-northeast-2.amazonaws.com<br>wafv2-fips.ap-northeast-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Asia Pacific (Singapore) | ap-southeast-1 | wafv2.ap-southeast-1.amazonaws.com<br>wafv2-fips.ap-southeast-1.amazonaws.com | HTTPS<br>HTTPS |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | wafv2.ap-southeast-2.amazonaws.com<br>wafv2-fips.ap-southeast-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | wafv2.ap-northeast-1.amazonaws.com<br>wafv2-fips.ap-northeast-1.amazonaws.com | HTTPS<br>HTTPS |  |

| <b>Region Name</b>        | <b>Region</b> | <b>Endpoint</b>   | <b>Protocol</b> |  |
|---------------------------|---------------|---|-----------------|--|
| Canada (Central)          | ca-central-1  | wafv2.ca-central-1.amazonaws.com<br>wafv2-fips.ca-central-1.amazonaws.com   | HTTPS<br>HTTPS  |  |
| Europe (Frankfurt)        | eu-central-1  | wafv2.eu-central-1.amazonaws.com<br>wafv2-fips.eu-central-1.amazonaws.com   | HTTPS<br>HTTPS  |  |
| Europe (Ireland)          | eu-west-1     | wafv2.eu-west-1.amazonaws.com<br>wafv2-fips.eu-west-1.amazonaws.com         | HTTPS<br>HTTPS  |  |
| Europe (London)           | eu-west-2     | wafv2.eu-west-2.amazonaws.com<br>wafv2-fips.eu-west-2.amazonaws.com         | HTTPS<br>HTTPS  |  |
| Europe (Milan)            | eu-south-1    | wafv2.eu-south-1.amazonaws.com<br>wafv2-fips.eu-south-1.amazonaws.com       | HTTPS<br>HTTPS  |  |
| Europe (Paris)            | eu-west-3     | wafv2.eu-west-3.amazonaws.com<br>wafv2-fips.eu-west-3.amazonaws.com         | HTTPS<br>HTTPS  |  |
| Europe (Stockholm)        | eu-north-1    | wafv2.eu-north-1.amazonaws.com<br>wafv2-fips.eu-north-1.amazonaws.com       | HTTPS<br>HTTPS  |  |
| Middle East (Bahrain)     | me-south-1    | wafv2.me-south-1.amazonaws.com<br>wafv2-fips.me-south-1.amazonaws.com       | HTTPS<br>HTTPS  |  |
| South America (São Paulo) | sa-east-1     | wafv2.sa-east-1.amazonaws.com<br>wafv2-fips.sa-east-1.amazonaws.com         | HTTPS<br>HTTPS  |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | wafv2.us-gov-east-1.amazonaws.com<br>wafv2-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | wafv2.us-gov-west-1.amazonaws.com<br>wafv2-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |

## Service quotas

| <b>Name</b>   | <b>Default</b> | <b>Adjustable</b> |
|---|----------------|-------------------|
| Maximum IP sets per account in WAF for CloudFront                 | 100            | No                |
| Maximum IP sets per account in WAF for regional                   | 100            | No                |
| Maximum number of IP addresses in an IP set in WAF for CloudFront | 10,000         | No                |

| Name  | Default | Adjustable |
|---|---------|------------|
| Maximum number of IP addresses in an IP set in WAF for regional                           | 10,000  | No         |
| Maximum number of bytes in a string match (byte match) string in WAF for CloudFront       | 200     | No         |
| Maximum number of bytes in a string match (byte match) string in WAF for regional         | 200     | No         |
| Maximum number of characters allowed in a regex pattern per account in WAF for Cloudfront | 200     | No         |
| Maximum number of characters allowed in a regex pattern per account in WAF for regional   | 200     | No         |
| Maximum number of log destination configs per web ACL in WAF for Cloudfront               | 1       | No         |
| Maximum number of log destination configs per web ACL in WAF for regional                 | 1       | No         |
| Maximum number of patterns in a regex pattern set per account in WAF for Cloudfront       | 10      | No         |
| Maximum number of patterns in a regex pattern set per account in WAF for regional         | 10      | No         |
| Maximum number of rate-based statements per web ACL in WAF for Cloudfront                 | 10      | Yes        |
| Maximum number of rate-based statements per web ACL in WAF for Cloudfront                 | 10      | Yes        |
| Maximum number of referenced statements per rule group or web ACL in WAF for Cloudfront   | 50      | No         |
| Maximum number of referenced statements per rule group or web ACL in WAF for regional     | 50      | No         |
| Maximum number of web ACL capacity units in a rule group in WAF for CloudFront            | 1,500   | Yes        |
| Maximum number of web ACL capacity units in a rule group in WAF for regional              | 1,500   | Yes        |
| Maximum number of web ACL capacity units in a web ACL in WAF for CloudFront               | 1,500   | Yes        |
| Maximum number of web ACL capacity units in a web ACL in WAF for regional                 | 1,500   | Yes        |
| Maximum regex pattern sets per account in WAF for CloudFront                              | 10      | No         |
| Maximum regex pattern sets per account in WAF for regional                                | 10      | No         |
| Maximum rule groups per account in WAF for CloudFront                                     | 100     | Yes        |
| Maximum rule groups per account in WAF for regional                                       | 100     | Yes        |
| Maximum web ACLs per account in WAF for CloudFront  | 100     | Yes        |

| Name   | Default | Adjustable |
|--|---------|------------|
| Maximum web ACLs per account in WAF for regional | 100     | Yes        |

For more information, see [AWS WAF quotas](#) in the *AWS WAF Developer Guide*.

## AWS WAF Classic endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Note

This page provides information related to **AWS WAF Classic**. If you created AWS WAF resources, like rules and web ACLs, in AWS WAF prior to November 2019, and you have not migrated your web ACLs over yet, you must use AWS WAF Classic to access those resources. Otherwise, do not use this version.

For information related to the latest version of AWS WAF, see [AWS WAF endpoints and quotas \(p. 609\)](#).

## Service endpoints

| Region Name              | Region     | Endpoint               | Protocol |
|--------------------------|------------|------------------------|----------|
| US East (Ohio)           | us-east-2  | waf.amazonaws.com      | HTTPS    |
|                          |            | waf-fips.amazonaws.com | HTTPS    |
| US East (N. Virginia)    | us-east-1  | waf.amazonaws.com      | HTTPS    |
|                          |            | waf-fips.amazonaws.com | HTTPS    |
| US West (N. California)  | us-west-1  | waf.amazonaws.com      | HTTPS    |
|                          |            | waf-fips.amazonaws.com | HTTPS    |
| US West (Oregon)         | us-west-2  | waf.amazonaws.com      | HTTPS    |
|                          |            | waf-fips.amazonaws.com | HTTPS    |
| Africa (Cape Town)       | af-south-1 | waf.amazonaws.com      | HTTPS    |
|                          |            | waf-fips.amazonaws.com | HTTPS    |
| Asia Pacific (Hong Kong) | ap-east-1  | waf.amazonaws.com      | HTTPS    |
|                          |            | waf-fips.amazonaws.com | HTTPS    |
| Asia Pacific (Mumbai)    | ap-south-1 | waf.amazonaws.com      | HTTPS    |
|                          |            | waf-fips.amazonaws.com | HTTPS    |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>                             | <b>Protocol</b> |  |
|---------------------------|----------------|---|-----------------|--|
| Asia Pacific (Seoul)      | ap-northeast-2 | waf.amazonaws.com<br>waf-fips.amazonaws.com | HTTPS<br>HTTPS  |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | waf.amazonaws.com<br>waf-fips.amazonaws.com | HTTPS<br>HTTPS  |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | waf.amazonaws.com<br>waf-fips.amazonaws.com | HTTPS<br>HTTPS  |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | waf.amazonaws.com<br>waf-fips.amazonaws.com | HTTPS<br>HTTPS  |  |
| Canada (Central)          | ca-central-1   | waf.amazonaws.com<br>waf-fips.amazonaws.com | HTTPS<br>HTTPS  |  |
| Europe (Frankfurt)        | eu-central-1   | waf.amazonaws.com<br>waf-fips.amazonaws.com | HTTPS<br>HTTPS  |  |
| Europe (Ireland)          | eu-west-1      | waf.amazonaws.com<br>waf-fips.amazonaws.com | HTTPS<br>HTTPS  |  |
| Europe (London)           | eu-west-2      | waf.amazonaws.com<br>waf-fips.amazonaws.com | HTTPS<br>HTTPS  |  |
| Europe (Milan)            | eu-south-1     | waf.amazonaws.com<br>waf-fips.amazonaws.com | HTTPS<br>HTTPS  |  |
| Europe (Paris)            | eu-west-3      | waf.amazonaws.com<br>waf-fips.amazonaws.com | HTTPS<br>HTTPS  |  |
| Europe (Stockholm)        | eu-north-1     | waf.amazonaws.com<br>waf-fips.amazonaws.com | HTTPS<br>HTTPS  |  |
| Middle East (Bahrain)     | me-south-1     | waf.amazonaws.com<br>waf-fips.amazonaws.com | HTTPS<br>HTTPS  |  |
| South America (São Paulo) | sa-east-1      | waf.amazonaws.com<br>waf-fips.amazonaws.com | HTTPS<br>HTTPS  |  |

AWS WAF Classic for Application Load Balancers and API Gateway APIs has the following endpoints:

| <b>Region Name</b>       | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|--------------------------|----------------|---|-----------------|--|
| US East (Ohio)           | us-east-2      | waf-regional.us-east-2.amazonaws.com<br>waf-regional-fips.us-east-2.amazonaws.com           | HTTPS<br>HTTPS  |  |
| US East (N. Virginia)    | us-east-1      | waf-regional.us-east-1.amazonaws.com<br>waf-regional-fips.us-east-1.amazonaws.com           | HTTPS<br>HTTPS  |  |
| US West (N. California)  | us-west-1      | waf-regional.us-west-1.amazonaws.com<br>waf-regional-fips.us-west-1.amazonaws.com           | HTTPS<br>HTTPS  |  |
| US West (Oregon)         | us-west-2      | waf-regional.us-west-2.amazonaws.com<br>waf-regional-fips.us-west-2.amazonaws.com           | HTTPS<br>HTTPS  |  |
| Africa (Cape Town)       | af-south-1     | waf-regional.af-south-1.amazonaws.com<br>waf-regional-fips.af-south-1.amazonaws.com         | HTTPS<br>HTTPS  |  |
| Asia Pacific (Hong Kong) | ap-east-1      | waf-regional.ap-east-1.amazonaws.com<br>waf-regional-fips.ap-east-1.amazonaws.com           | HTTPS<br>HTTPS  |  |
| Asia Pacific (Mumbai)    | ap-south-1     | waf-regional.ap-south-1.amazonaws.com<br>waf-regional-fips.ap-south-1.amazonaws.com         | HTTPS<br>HTTPS  |  |
| Asia Pacific (Osaka)     | ap-northeast-3 | waf-regional.ap-northeast-3.amazonaws.com<br>waf-regional-fips.ap-northeast-3.amazonaws.com | HTTPS<br>HTTPS  |  |
| Asia Pacific (Seoul)     | ap-northeast-2 | waf-regional.ap-northeast-2.amazonaws.com<br>waf-regional-fips.ap-northeast-2.amazonaws.com | HTTPS<br>HTTPS  |  |
| Asia Pacific (Singapore) | ap-southeast-1 | waf-regional.ap-southeast-1.amazonaws.com<br>waf-regional-fips.ap-southeast-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | waf-regional.ap-southeast-2.amazonaws.com<br>waf-regional-fips.ap-southeast-2.amazonaws.com | HTTPS<br>HTTPS  |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | waf-regional.ap-northeast-1.amazonaws.com<br>waf-regional-fips.ap-northeast-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| Canada (Central)         | ca-central-1   | waf-regional.ca-central-1.amazonaws.com<br>waf-regional-fips.ca-central-1.amazonaws.com     | HTTPS<br>HTTPS  |  |
| Europe (Frankfurt)       | eu-central-1   | waf-regional.eu-central-1.amazonaws.com<br>waf-regional-fips.eu-central-1.amazonaws.com     | HTTPS<br>HTTPS  |  |

| <b>Region Name</b>        | <b>Region</b> | <b>Endpoint</b>   | <b>Protocol</b> |  |
|---------------------------|---------------|---|-----------------|--|
| Europe (Ireland)          | eu-west-1     | waf-regional.eu-west-1.amazonaws.com<br>waf-regional-fips.eu-west-1.amazonaws.com         | HTTPS<br>HTTPS  |  |
| Europe (London)           | eu-west-2     | waf-regional.eu-west-2.amazonaws.com<br>waf-regional-fips.eu-west-2.amazonaws.com         | HTTPS<br>HTTPS  |  |
| Europe (Milan)            | eu-south-1    | waf-regional.eu-south-1.amazonaws.com<br>waf-regional-fips.eu-south-1.amazonaws.com       | HTTPS<br>HTTPS  |  |
| Europe (Paris)            | eu-west-3     | waf-regional.eu-west-3.amazonaws.com<br>waf-regional-fips.eu-west-3.amazonaws.com         | HTTPS<br>HTTPS  |  |
| Europe (Stockholm)        | eu-north-1    | waf-regional.eu-north-1.amazonaws.com<br>waf-regional-fips.eu-north-1.amazonaws.com       | HTTPS<br>HTTPS  |  |
| Middle East (Bahrain)     | me-south-1    | waf-regional.me-south-1.amazonaws.com<br>waf-regional-fips.me-south-1.amazonaws.com       | HTTPS<br>HTTPS  |  |
| South America (São Paulo) | sa-east-1     | waf-regional.sa-east-1.amazonaws.com<br>waf-regional-fips.sa-east-1.amazonaws.com         | HTTPS<br>HTTPS  |  |
| AWS GovCloud (US-East)    | us-gov-east-1 | waf-regional.us-gov-east-1.amazonaws.com<br>waf-regional-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| AWS GovCloud (US-West)    | us-gov-west-1 | waf-regional.us-gov-west-1.amazonaws.com<br>waf-regional-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |

## Service quotas

| <b>Name</b>                                      | <b>Default</b> | <b>Adjustable</b> |
|--|----------------|-------------------|
| Conditions per rule                              | 10             | No                |
| Filters per SQL injection match condition        | 10             | No                |
| Filters per cross-site scripting match condition | 10             | No                |
| Filters per size constraint condition            | 10             | No                |
| Filters per string match condition               | 10             | No                |
| GeoMatchSets                                     | 50             | No                |
| HTTP header name length                          | 40             | No                |

| Name   | Default | Adjustable |
|--|---------|------------|
| IP address ranges per IP set match condition   | 10,000  | No         |
| IP addresses blocked per rate-based rule       | 10,000  | No         |
| Locations per GeoMatchSet                      | 50      | No         |
| Logging destination configurations per web ACL | 1       | No         |
| Pattern sets per regex match condition         | 1       | No         |
| Patterns per pattern set                       | 10      | No         |
| Rate of requests                               | 10,000  | Yes        |
| Rate-based rule rate                           | 2,000   | No         |
| Rate-based rules                               | 5       | Yes        |
| Regex pattern length                           | 70      | No         |
| Regex pattern sets                             | 5       | No         |
| Rules  | 100     | Yes        |
| Rules per web ACL                              | 10      | No         |
| Search length                                  | 50      | No         |
| Web ACLs                                       | 50      | Yes        |

For more information, see [AWS WAF Classic quotas](#) in the *AWS WAF Developer Guide*.

## AWS Well-Architected Tool endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service endpoints

| Region Name             | Region    | Endpoint                                | Protocol |  |
|-------------------------|-----------|---|----------|--|
| US East (Ohio)          | us-east-2 | wellarchitected.us-east-2.amazonaws.com | HTTPS    |  |
| US East (N. Virginia)   | us-east-1 | wellarchitected.us-east-1.amazonaws.com | HTTPS    |  |
| US West (N. California) | us-west-1 | wellarchitected.us-west-1.amazonaws.com | HTTPS    |  |

| Region Name               | Region         | Endpoint                                     | Protocol |  |
|---------------------------|----------------|--|----------|--|
| US West (Oregon)          | us-west-2      | wellarchitected.us-west-2.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Hong Kong)  | ap-east-1      | wellarchitected.ap-east-1.amazonaws.com      | HTTPS    |  |
| Asia Pacific (Mumbai)     | ap-south-1     | wellarchitected.ap-south-1.amazonaws.com     | HTTPS    |  |
| Asia Pacific (Seoul)      | ap-northeast-2 | wellarchitected.ap-northeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | wellarchitected.ap-southeast-1.amazonaws.com | HTTPS    |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | wellarchitected.ap-southeast-2.amazonaws.com | HTTPS    |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | wellarchitected.ap-northeast-1.amazonaws.com | HTTPS    |  |
| Canada (Central)          | ca-central-1   | wellarchitected.ca-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Frankfurt)        | eu-central-1   | wellarchitected.eu-central-1.amazonaws.com   | HTTPS    |  |
| Europe (Ireland)          | eu-west-1      | wellarchitected.eu-west-1.amazonaws.com      | HTTPS    |  |
| Europe (London)           | eu-west-2      | wellarchitected.eu-west-2.amazonaws.com      | HTTPS    |  |
| Europe (Paris)            | eu-west-3      | wellarchitected.eu-west-3.amazonaws.com      | HTTPS    |  |
| Europe (Stockholm)        | eu-north-1     | wellarchitected.eu-north-1.amazonaws.com     | HTTPS    |  |
| Middle East (Bahrain)     | me-south-1     | wellarchitected.me-south-1.amazonaws.com     | HTTPS    |  |
| South America (São Paulo) | sa-east-1      | wellarchitected.sa-east-1.amazonaws.com      | HTTPS    |  |

## Service quotas

| Resource  | Default |
|---|---------|
| AWS accounts and IAM users that a workload can be shared with | 20      |

## Amazon WorkDocs endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

### Service Endpoints

| Region Name              | Region         | Endpoint  | Protocol       |  |
|--------------------------|----------------|---|----------------|--|
| US East (N. Virginia)    | us-east-1      | workdocs.us-east-1.amazonaws.com<br>workdocs-fips.us-east-1.amazonaws.com | HTTPS<br>HTTPS |  |
| US West (Oregon)         | us-west-2      | workdocs.us-west-2.amazonaws.com<br>workdocs-fips.us-west-2.amazonaws.com | HTTPS<br>HTTPS |  |
| Asia Pacific (Singapore) | ap-southeast-1 | workdocs.ap-southeast-1.amazonaws.com                                     | HTTPS          |  |
| Asia Pacific (Sydney)    | ap-southeast-2 | workdocs.ap-southeast-2.amazonaws.com                                     | HTTPS          |  |
| Asia Pacific (Tokyo)     | ap-northeast-1 | workdocs.ap-northeast-1.amazonaws.com                                     | HTTPS          |  |
| Europe (Ireland)         | eu-west-1      | workdocs.eu-west-1.amazonaws.com  | HTTPS          |  |

## Amazon WorkLink endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service Endpoints

| Region Name           | Region    | Endpoint                         | Protocol |
|-----------------------|-----------|----------------------------------|----------|
| US East (N. Virginia) | us-east-1 | worklink.us-east-1.amazonaws.com | HTTPS    |
| US East (Ohio)        | us-east-2 | worklink.us-east-2.amazonaws.com | HTTPS    |
| US West (Oregon)      | us-west-2 | worklink.us-west-2.amazonaws.com | HTTPS    |
| Europe (Ireland)      | eu-west-1 | worklink.eu-west-1.amazonaws.com | HTTPS    |

## Amazon WorkMail endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service Endpoints

| Region Name           | Region    | Service                 | Endpoint  |
|-----------------------|-----------|-------------------------|---|
| US East (N. Virginia) | us-east-1 | Amazon WorkMail SDK     | <a href="https://workmail.us-east-1.amazonaws.com">https://workmail.us-east-1.amazonaws.com</a>               |
| US East (N. Virginia) | us-east-1 | Autodiscover            | <a href="autodiscover-service.mail.us-east-1.awsapps.com">autodiscover-service.mail.us-east-1.awsapps.com</a> |
| US East (N. Virginia) | us-east-1 | Exchange Web Service    | <a href="ews.mail.us-east-1.awsapps.com">ews.mail.us-east-1.awsapps.com</a>                                   |
| US East (N. Virginia) | us-east-1 | Exchange Active Sync    | <a href="mobile.mail.us-east-1.awsapps.com">mobile.mail.us-east-1.awsapps.com</a>                             |
| US East (N. Virginia) | us-east-1 | MAPI Proxy              | <a href="outlook.mail.us-east-1.awsapps.com">outlook.mail.us-east-1.awsapps.com</a>                           |
| US East (N. Virginia) | us-east-1 | IMAPS                   | <a href="imap.mail.us-east-1.awsapps.com">imap.mail.us-east-1.awsapps.com</a>                                 |
| US East (N. Virginia) | us-east-1 | SMTP via TLS (port 465) | <a href="smtp.mail.us-east-1.awsapps.com">smtp.mail.us-east-1.awsapps.com</a>                                 |
| US West (Oregon)      | us-west-2 | Amazon WorkMail SDK     | <a href="https://workmail.us-west-2.amazonaws.com">https://workmail.us-west-2.amazonaws.com</a>               |
| US West (Oregon)      | us-west-2 | Autodiscover            | <a href="autodiscover-service.mail.us-west-2.awsapps.com">autodiscover-service.mail.us-west-2.awsapps.com</a> |
| US West (Oregon)      | us-west-2 | Exchange Web Service    | <a href="ews.mail.us-west-2.awsapps.com">ews.mail.us-west-2.awsapps.com</a>                                   |

| Region Name      | Region    | Service                 | Endpoint  |
|------------------|-----------|-------------------------|---|
| US West (Oregon) | us-west-2 | Exchange Active Sync    | mobile.mail.us-west-2.awsapps.com   |
| US West (Oregon) | us-west-2 | MAPI Proxy              | outlook.mail.us-west-2.awsapps.com  |
| US West (Oregon) | us-west-2 | IMAPS                   | imap.mail.us-west-2.awsapps.com   |
| US West (Oregon) | us-west-2 | SMTP via TLS (port 465) | smtp.mail.us-west-2.awsapps.com   |
| Europe (Ireland) | eu-west-1 | Amazon WorkMail SDK     | <a href="https://workmail.eu-west-1.amazonaws.com">https://workmail.eu-west-1.amazonaws.com</a> |
| Europe (Ireland) | eu-west-1 | Autodiscover            | autodiscover-service.mail.eu-west-1.awsapps.com   |
| Europe (Ireland) | eu-west-1 | Exchange Web Service    | ews.mail.eu-west-1.awsapps.com  |
| Europe (Ireland) | eu-west-1 | Exchange Active Sync    | mobile.mail.eu-west-1.awsapps.com   |
| Europe (Ireland) | eu-west-1 | MAPI Proxy              | outlook.mail.eu-west-1.awsapps.com  |
| Europe (Ireland) | eu-west-1 | IMAPS                   | imap.mail.eu-west-1.awsapps.com   |
| Europe (Ireland) | eu-west-1 | SMTP via TLS (port 465) | smtp.mail.eu-west-1.awsapps.com   |

## Service Quotas

For more information, see [Amazon WorkMail Quotas](#).

## WorkSpaces endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name           | Region    | Endpoint                                | Protocol |  |
|-----------------------|-----------|---|----------|--|
| US East (N. Virginia) | us-east-1 | workspaces.us-east-1.amazonaws.com      | HTTPS    |  |
|                       |           | workspaces-fips.us-east-1.amazonaws.com | HTTPS    |  |
| US West (Oregon)      | us-west-2 | workspaces.us-west-2.amazonaws.com      | HTTPS    |  |
|                       |           | workspaces-fips.us-west-2.amazonaws.com | HTTPS    |  |

| Region Name               | Region         | Endpoint  | Protocol       |  |
|---------------------------|----------------|---|----------------|--|
| Asia Pacific (Mumbai)     | ap-south-1     | workspaces.ap-south-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Seoul)      | ap-northeast-2 | workspaces.ap-northeast-2.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | workspaces.ap-southeast-1.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | workspaces.ap-southeast-2.amazonaws.com   | HTTPS          |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | workspaces.ap-northeast-1.amazonaws.com   | HTTPS          |  |
| Canada (Central)          | ca-central-1   | workspaces.ca-central-1.amazonaws.com   | HTTPS          |  |
| Europe (Frankfurt)        | eu-central-1   | workspaces.eu-central-1.amazonaws.com   | HTTPS          |  |
| Europe (Ireland)          | eu-west-1      | workspaces.eu-west-1.amazonaws.com  | HTTPS          |  |
| Europe (London)           | eu-west-2      | workspaces.eu-west-2.amazonaws.com  | HTTPS          |  |
| South America (São Paulo) | sa-east-1      | workspaces.sa-east-1.amazonaws.com  | HTTPS          |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | workspaces.us-gov-west-1.amazonaws.com<br>workspaces-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS |  |

## Service quotas

| Resource            | Default | Description  | Adjustable |
|---------------------|---------|--|------------|
| WorkSpaces          | 1       | The maximum number of WorkSpaces in this account in the current Region.          | Yes        |
| Graphics WorkSpaces | 0       | The maximum number of Graphics WorkSpaces in this account in the current Region. | Yes        |

| Resource                               | Default | Description  | Adjustable |
|--|---------|--|------------|
| GraphicsPro WorkSpaces                 | 0       | The maximum number of GraphicsPro WorkSpaces in this account in the current Region.  | Yes        |
| Images                                 | 40      | The maximum number of images in this account in the current Region.  | Yes        |
| Bundles                                | 50      | The maximum number of bundles in this account in the current Region. This quota applies only to custom bundles, not to public bundles. | No         |
| Connection aliases                     | 20      | The maximum number of connection aliases in this account in the current Region.  | No         |
| Directories                            | 50      | The maximum number of directories that can be registered for use with Amazon WorkSpaces in this account in the current Region.         | No         |
| IP access control groups               | 100     | The maximum number of IP access control groups in this account in the current Region.  | No         |
| Rules per IP access control group      | 10      | The maximum number of rules per IP access control group in this account in the current Region.   | No         |
| IP access control groups per directory | 25      | The maximum number of IP access control groups per directory in this account in the current Region.                                    | No         |

The following quotas are for Amazon WorkSpaces Application Manager. For more information, see [Amazon WorkSpaces Application Manager quotas](#) in the *Amazon WAM Administration Guide*.

| Name                             | Default | Adjustable |
|----------------------------------|---------|------------|
| Application assignments per user | 50      | Yes        |

| Name  | Default       | Adjustable |
|---|---------------|------------|
| Application size                                    | 5 Gigabytes   | No         |
| Total package size without storage fees             | 100 Gigabytes | No         |
| User/WorkSpace or group assignments per application | 200           | Yes        |

## AWS X-Ray endpoints and quotas

The following are the service endpoints and service quotas for this service. To connect programmatically to an AWS service, you use an endpoint. In addition to the standard AWS endpoints, some AWS services offer FIPS endpoints in selected Regions. For more information, see [AWS service endpoints \(p. 627\)](#). Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For more information, see [AWS service quotas \(p. 631\)](#).

## Service endpoints

| Region Name              | Region         | Endpoint                          | Protocol |
|--------------------------|----------------|-----------------------------------|----------|
| US East (Ohio)           | us-east-2      | xray.us-east-2.amazonaws.com      | HTTPS    |
|                          |                | xray-fips.us-east-2.amazonaws.com | HTTPS    |
| US East (N. Virginia)    | us-east-1      | xray.us-east-1.amazonaws.com      | HTTPS    |
|                          |                | xray-fips.us-east-1.amazonaws.com | HTTPS    |
| US West (N. California)  | us-west-1      | xray.us-west-1.amazonaws.com      | HTTPS    |
|                          |                | xray-fips.us-west-1.amazonaws.com | HTTPS    |
| US West (Oregon)         | us-west-2      | xray.us-west-2.amazonaws.com      | HTTPS    |
|                          |                | xray-fips.us-west-2.amazonaws.com | HTTPS    |
| Africa (Cape Town)       | af-south-1     | xray.af-south-1.amazonaws.com     | HTTPS    |
| Asia Pacific (Hong Kong) | ap-east-1      | xray.ap-east-1.amazonaws.com      | HTTPS    |
| Asia Pacific (Mumbai)    | ap-south-1     | xray.ap-south-1.amazonaws.com     | HTTPS    |
| Asia Pacific (Osaka)     | ap-northeast-3 | xray.ap-northeast-3.amazonaws.com | HTTPS    |

| <b>Region Name</b>        | <b>Region</b>  | <b>Endpoint</b>   | <b>Protocol</b> |  |
|---------------------------|----------------|---|-----------------|--|
| Asia Pacific (Seoul)      | ap-northeast-2 | xray.ap-northeast-2.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Singapore)  | ap-southeast-1 | xray.ap-southeast-1.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Sydney)     | ap-southeast-2 | xray.ap-southeast-2.amazonaws.com   | HTTPS           |  |
| Asia Pacific (Tokyo)      | ap-northeast-1 | xray.ap-northeast-1.amazonaws.com   | HTTPS           |  |
| Canada (Central)          | ca-central-1   | xray.ca-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Frankfurt)        | eu-central-1   | xray.eu-central-1.amazonaws.com   | HTTPS           |  |
| Europe (Ireland)          | eu-west-1      | xray.eu-west-1.amazonaws.com  | HTTPS           |  |
| Europe (London)           | eu-west-2      | xray.eu-west-2.amazonaws.com  | HTTPS           |  |
| Europe (Milan)            | eu-south-1     | xray.eu-south-1.amazonaws.com   | HTTPS           |  |
| Europe (Paris)            | eu-west-3      | xray.eu-west-3.amazonaws.com  | HTTPS           |  |
| Europe (Stockholm)        | eu-north-1     | xray.eu-north-1.amazonaws.com   | HTTPS           |  |
| Middle East (Bahrain)     | me-south-1     | xray.me-south-1.amazonaws.com   | HTTPS           |  |
| South America (São Paulo) | sa-east-1      | xray.sa-east-1.amazonaws.com  | HTTPS           |  |
| AWS GovCloud (US-East)    | us-gov-east-1  | xray.us-gov-east-1.amazonaws.com<br>xray-fips.us-gov-east-1.amazonaws.com | HTTPS<br>HTTPS  |  |
| AWS GovCloud (US-West)    | us-gov-west-1  | xray.us-gov-west-1.amazonaws.com<br>xray-fips.us-gov-west-1.amazonaws.com | HTTPS<br>HTTPS  |  |

## Service quotas

| Name                                      | Default       | Adjustable |
|---|---------------|------------|
| Custom sampling rules per region          | 25            | No         |
| Groups in an account                      | 25            | No         |
| Indexed annotations per trace             | 50            | No         |
| Segment document size                     | 64 Kilobytes  | No         |
| Tags per custom sampling rule             | 50            | Yes        |
| Tags per group                            | 50            | Yes        |
| Trace and service graph retention in days | 30            | No         |
| Trace data modification period in days    | 7             | No         |
| Trace document size (dynamic upper limit) | 500 Kilobytes | No         |
| Trace document size (lower limit)         | 100 Kilobytes | No         |

# AWS resources

The following pages provide information that helps you work with AWS resources.

## Contents

- [AWS service endpoints \(p. 627\)](#)
- [Managing AWS Regions \(p. 629\)](#)
- [AWS service quotas \(p. 631\)](#)
- [Tagging AWS resources \(p. 632\)](#)
- [Amazon Resource Names \(ARNs\) \(p. 636\)](#)

## AWS service endpoints

To connect programmatically to an AWS service, you use an endpoint. An *endpoint* is the URL of the entry point for an AWS web service. The AWS SDKs and the AWS Command Line Interface (AWS CLI) automatically use the default endpoint for each service in an AWS Region. But you can specify an alternate endpoint for your API requests.

If a service supports Regions, the resources in each Region are independent of similar resources in other Regions. For example, you can create an Amazon EC2 instance or an Amazon SQS queue in one Region. When you do, the instance or queue is independent of instances or queues in all other Regions.

## Contents

- [Regional endpoints \(p. 627\)](#)
- [View the service endpoints \(p. 628\)](#)
- [FIPS endpoints \(p. 629\)](#)
- [Learn more \(p. 629\)](#)

## Regional endpoints

Most Amazon Web Services offer a Regional endpoint that you can use to make your requests. The general syntax of a Regional endpoint is as follows.

```
protocol://service-code.region-code.amazonaws.com
```

For example, `https://dynamodb.us-west-2.amazonaws.com` is the endpoint for the Amazon DynamoDB service in the US West (Oregon) Region.

The following table lists the name and code of each Region.

| Region Name             | Code       |
|-------------------------|------------|
| US East (Ohio)          | us-east-2  |
| US East (N. Virginia)   | us-east-1  |
| US West (N. California) | us-west-1  |
| US West (Oregon)        | us-west-2  |
| Africa (Cape Town)      | af-south-1 |

| Region Name               | Code           |
|---------------------------|----------------|
| Asia Pacific (Hong Kong)  | ap-east-1      |
| Asia Pacific (Mumbai)     | ap-south-1     |
| Asia Pacific (Osaka)      | ap-northeast-3 |
| Asia Pacific (Seoul)      | ap-northeast-2 |
| Asia Pacific (Singapore)  | ap-southeast-1 |
| Asia Pacific (Sydney)     | ap-southeast-2 |
| Asia Pacific (Tokyo)      | ap-northeast-1 |
| Canada (Central)          | ca-central-1   |
| China (Beijing)           | cn-north-1     |
| China (Ningxia)           | cn-northwest-1 |
| Europe (Frankfurt)        | eu-central-1   |
| Europe (Ireland)          | eu-west-1      |
| Europe (London)           | eu-west-2      |
| Europe (Milan)            | eu-south-1     |
| Europe (Paris)            | eu-west-3      |
| Europe (Stockholm)        | eu-north-1     |
| Middle East (Bahrain)     | me-south-1     |
| South America (São Paulo) | sa-east-1      |

Some services, such as IAM, do not support Regions. The endpoints for these services do not include a Region. Other services, such as Amazon EC2, support Regions but let you specify an endpoint that does not include a Region, such as <https://ec2.amazonaws.com>. When you use an endpoint with no Region, AWS routes the Amazon EC2 request to US East (N. Virginia) (us-east-1), which is the default Region for API calls.

## View the service endpoints

You can view the AWS service endpoints using the following options:

- Open [Service endpoints and quotas \(p. 16\)](#), search for the service name, and click the link to open the page for that service. To view the supported endpoints for all AWS services in the documentation without switching pages, view the information in the [Service Endpoints and Quotas](#) page in the PDF instead.
- To programmatically check for service availability using the SDK for Java, see [Checking for Service Availability in an AWS Region](#) in the [AWS SDK for Java Developer Guide](#).
- To programmatically view Region and service information using Systems Manager, see [Calling AWS Service, Region, and Endpoint Public Parameters](#) in the [AWS Systems Manager User Guide](#). For information about how to use public parameters, see [Query for AWS Regions, Endpoints, and More Using AWS Systems Manager Parameter Store](#).
- To see the supported AWS services in each Region (without endpoints), see the [Region Table](#).

## FIPS endpoints

Some AWS services offer FIPS endpoints in selected Regions. Unlike standard AWS endpoints, FIPS endpoints use a TLS software library that complies with Federal Information Processing Standard (FIPS) 140-2. These endpoints might be required by enterprises that interact with the United States government. For more information, see [Federal Information Processing Standard \(FIPS\) 140-2](#) on the AWS Compliance site.

To use a FIPS endpoint with an AWS operation, use the mechanism provided by the AWS SDK or tool to specify a custom endpoint. For example, the AWS Command Line Interface provides the `--endpoint-url` option. The following example uses the FIPS endpoint for the US West (Oregon) Region with an operation for AWS Key Management Service (AWS KMS).

```
aws kms create-key --endpoint-url https://kms-fips.us-west-2.amazonaws.com
```

### Minimum TLS version for FIPS endpoints

With FIPS endpoints, the minimum requirement is TLS 1.2. AWS revoked the ability to use TLS 1.0 and TLS 1.1 on all FIPS endpoints in all Regions as of March 31, 2021. For information about how to determine whether your applications were impacted by this change, see [this AWS Security Blog post from May 3, 2021](#).

### Learn more

You can find endpoint information from the following sources:

- To learn about enabling Regions that are disabled by default, see [Managing AWS Regions \(p. 629\)](#).
- For information about the AWS services and endpoints available in the China Regions, see [China \(Beijing\) Region Endpoints](#) and [China \(Ningxia\) Region Endpoints](#).
- For information about the AWS services and endpoints available in AWS GovCloud (US), see [Service Endpoints](#) in the [AWS GovCloud \(US\) User Guide](#).

## Managing AWS Regions

An *AWS Region* is a collection of AWS resources in a geographic area. Each AWS Region is isolated and independent of the other Regions. Regions provide fault tolerance, stability, and resilience, and can also reduce latency. They enable you to create redundant resources that remain available and unaffected by a Regional outage. For a list of Region names and codes, see [this table \(p. 627\)](#).

The resources that you create in one Region do not exist in any other Region unless you explicitly use a replication feature offered by an AWS service. For example, Amazon S3 and Amazon EC2 support cross-Region replication. Some services, such as AWS Identity and Access Management (IAM), do not have Regional resources.

You can use [policy conditions](#) to control access to AWS services in an AWS Region. For a table of AWS services supported in each Region (without endpoints), see the [Region Table](#).

Regions introduced before March 20, 2019 are enabled by default. You can begin creating and managing resources in these Regions immediately. You cannot enable or disable a Region that is enabled by default.

### Enabling a Region

If a Region is disabled by default, you must enable it before you can create and manage resources. The following Regions are disabled by default:

- Africa (Cape Town)
- Asia Pacific (Hong Kong)
- Europe (Milan)
- Middle East (Bahrain)

When you enable a Region, AWS performs actions to prepare your account in that Region, such as distributing your IAM resources to the Region. This process takes a few minutes for most accounts, but this can take several hours. You cannot use the Region until this process is complete.

### Requirements

To enable a Region that is disabled by default, you must have permission to enable Regions. To view an example IAM policy, see [Allow enabling and disabling AWS Regions](#) in the *IAM User Guide*.

### To enable a Region

1. Sign in to the AWS Management Console.
2. In the upper right corner of the console, choose your account name or number and then choose **My Account**.
3. In the **AWS Regions** section, next to the name of the Region that you want to enable, choose **Enable**.
4. In the dialog box, review the informational text and choose **Enable Region**.
5. Wait until the Region is ready to use.

## Disabling a Region

You cannot disable a Region that is enabled by default. If you enabled one of the following Regions, then you can disable it as needed:

- Africa (Cape Town)
- Asia Pacific (Hong Kong)
- Europe (Milan)
- Middle East (Bahrain)

After you disable a Region, the resources in this Region become unavailable based on [eventual consistency](#). However, they are not deleted.

### Requirements

- To disable a Region, you must have permission to disable Regions. To view an example IAM policy, see [Allow enabling and disabling AWS Regions](#) in the *IAM User Guide*.
- Before you disable a Region, we recommend that you remove all resources from that Region. After you disable a Region, you can no longer view or manage resources in the Region from that account through the AWS Management console or AWS APIs with IAM principals. However, resources in that Region can continue to incur charges. For more information, see [Enabling and disabling Regions](#) in the *AWS Billing and Cost Management User Guide*.

### To disable a Region

1. Sign in to the AWS Management Console.
2. In the upper right corner of the console, choose your account name or number and then choose **My Account**.

3. In the **AWS Regions** section, next to the name of the Region that you want to disable, choose **Disable**.
4. In the dialog box, review the informational text and choose **Disable Region**.

## Describing your Regions using the AWS CLI

Use the [describe-regions](#) command to describe the Regions available for your account, whether they are enabled or disabled.

```
aws ec2 describe-regions --all-regions
```

If the Region is enabled by default, the output includes the following:

```
"OptInStatus": "opt-in-not-required"
```

If the Region is not enabled, the output includes the following:

```
"OptInStatus": "not-opted-in"
```

After an opt-in Region is enabled, the output includes the following:

```
"OptInStatus": "opted-in"
```

## AWS service quotas

Your AWS account has default quotas, formerly referred to as limits, for each AWS service. Unless otherwise noted, each quota is Region-specific. You can request increases for some quotas, and other quotas cannot be increased.

Service Quotas is an AWS service that helps you manage your quotas for many AWS services, from one location. Along with looking up the quota values, you can also request a quota increase from the Service Quotas console.

AWS Support might approve, deny, or partially approve your requests.

### To view service quotas

You can view service quotas using the following options:

- Open the [Service endpoints and quotas \(p. 16\)](#) page in the documentation, search for the service name, and click the link to go to the page for that service. To view the service quotas for all AWS services in the documentation without switching pages, view the information in the [Service Endpoints and Quotas](#) page in the PDF instead.
- Open the [Service Quotas console](#). In the navigation pane, choose **AWS services** and select a service.
- Use the [list-service-quotas](#) and [list-aws-default-service-quotas](#) AWS CLI commands.

### To request a quota increase

You can request a quota increase using Service Quotas and AWS Support Center. If a service is not yet available in Service Quotas, use AWS Support Center instead. Increases are not granted immediately. It might take a couple of days for your increase to become effective.

- **(Recommended)** Open the [Service Quotas console](#). In the navigation pane, choose **AWS services**. Select a service, select a quota, and follow the directions to request a quota increase. For more information, see [Requesting a Quota Increase](#) in the *Service Quotas User Guide*.
- Use the `request-service-quota-increase` AWS CLI command.
- Open the [AWS Support Center](#) page, sign in if necessary, and choose **Create case**. Choose **Service limit increase**. Complete and submit the form.

## Tagging AWS resources

You can assign metadata to your AWS resources in the form of *tags*. Each tag is a label consisting of a user-defined key and value. Tags can help you manage, identify, organize, search for, and filter resources. You can create tags to categorize resources by purpose, owner, environment, or other criteria.

### Important

Do not add personally identifiable information (PII) or other confidential or sensitive information in tags. Tags are accessible to many AWS services, including billing. Tags are not intended to be used for private or sensitive data.

This topic describes commonly used tagging categories and strategies to help you implement a consistent and effective tagging strategy. The following sections assume basic knowledge of AWS resources, tagging, detailed billing, and AWS Identity and Access Management (IAM).

Each tag has two parts:

- A *tag key* (for example, `CostCenter`, `Environment`, or `Project`). Tag keys are case sensitive.
- A *tag value* (for example, `111122223333` or `Production`). Like tag keys, tag values are case sensitive.

You can use tags to categorize resources by purpose, owner, environment, or other criteria. For more information, see [AWS Tagging Strategies](#).

You can add, change, or remove tags one resource at a time from each resource's service console, service API, or the AWS CLI.

## Best practices

As you create a tagging strategy for AWS resources, follow best practices:

- Do not store personally identifiable information (PII) or other confidential or sensitive information in tags.
- Use a standardized, case-sensitive format for tags, and apply it consistently across all resource types.
- Consider tag guidelines that support multiple purposes, like managing resource access control, cost tracking, automation, and organization.
- Use automated tools to help manage resource tags. [AWS Resource Groups](#) and the [Resource Groups Tagging API](#) enable programmatic control of tags, making it easier to automatically manage, search, and filter tags and resources.
- Use too many tags rather than too few tags.
- Remember that it is easy to change tags to accommodate changing business requirements, but consider the consequences of future changes. For example, changing access control tags means you must also update the policies that reference those tags and control access to your resources.
- You can automatically enforce the tagging standards that your organization chooses to adopt by creating and deploying tag policies using AWS Organizations. Tag policies let you specify tagging rules that define valid key names and the values that are valid for each key. You can choose to only monitor, giving you an opportunity to evaluate and clean up your existing tags. Once your tags are

in compliance with your chosen standards, you can then turn on enforcement in the tag policies to prevent non-compliant tags from being created. For more information, see [Tag policies](#) in the *AWS Organizations User Guide*.

For a more detailed explanation of many of these best practices, see [Tagging Best Practices: Implement an Effective AWS Resource Tagging Strategy](#).

## Tagging categories

Companies that are most effective in their use of tags typically create business-relevant tag groupings to organize their resources along technical, business, and security dimensions. Companies that use automated processes to manage their infrastructure also include additional, automation-specific tags.

| Technical Tags   | Tags for Automation   | Business Tags  | Security Tags   |
|--|---|--|---|
| <ul style="list-style-type: none"><li><b>Name</b> – Identify individual resources</li><li><b>Application ID</b> – Identify resources that are related to a specific application</li><li><b>Application Role</b> – Describe the function of a particular resource (such as web server, message broker, database)</li><li><b>Cluster</b> – Identify resource farms that share a common configuration and perform a specific function for an application</li><li><b>Environment</b> – Distinguish between development, test, and production resources</li><li><b>Version</b> – Help distinguish between versions of resources or applications</li></ul> | <ul style="list-style-type: none"><li><b>Date/Time</b> – Identify the date or time a resource should be started, stopped, deleted, or rotated</li><li><b>Opt in/Opt out</b> – Indicate whether a resource should be included in an automated activity such as starting, stopping, or resizing instances</li><li><b>Security</b> – Determine requirements, such as encryption or enabling of Amazon VPC flow logs; identify route tables or security groups that need extra scrutiny</li></ul> | <ul style="list-style-type: none"><li><b>Project</b> – Identify projects that the resource supports</li><li><b>Owner</b> – Identify who is responsible for the resource</li><li><b>Cost Center/Business Unit</b> – Identify the cost center or business unit associated with a resource, typically for cost allocation and tracking</li><li><b>Customer</b> – Identify a specific client that a particular group of resources serves</li></ul> | <ul style="list-style-type: none"><li><b>Confidentiality</b> – An identifier for the specific data confidentiality level a resource supports</li><li><b>Compliance</b> – An identifier for workloads that must adhere to specific compliance requirements</li></ul> |

## Tag naming limits and requirements

The following basic naming and usage requirements apply to tags:

- Each resource can have a maximum of 50 user created tags.

### Note

System created tags that begin with `aws:` are reserved for AWS use, and do not count against this limit. You can't edit or delete a tag that begins with the `aws:` prefix.

- For each resource, each tag key must be unique, and each tag key can have only one value.
- The tag key must be a minimum of 1 and a maximum of 128 Unicode characters in UTF-8.
- The tag value must be a minimum of 0 and a maximum of 256 Unicode characters in UTF-8.

**Note**

Some services don't permit tags with an empty value (length of 0).

- Allowed characters can vary by AWS service. For information about what characters you can use to tag resources in a particular AWS service, see its documentation. In general, allowed characters in tags are letters, numbers, spaces representable in UTF-8, and the following characters: \_ . : / = + - @ .
- Tag keys and values are case sensitive. As a best practice, decide on a strategy for capitalizing tags, and consistently implement that strategy across all resource types. For example, decide whether to use Costcenter, costcenter, or CostCenter, and use the same convention for all tags. Avoid using similar tags with inconsistent case treatment.

## Common tagging strategies

This section describes common tagging strategies to help identify and manage AWS resources.

### Tags for resource organization

Tags are a good way to organize AWS resources in the AWS Management Console. You can configure tags to be displayed with resources, and can search and filter by tag. With the AWS Resource Groups service, you can create groups of AWS resources based on one or more tags or portions of tags. You can also create groups based on their occurrence in an AWS CloudFormation stack. Using Resource Groups and Tag Editor, you can consolidate and view data for applications that consist of multiple services, resources, and Regions in one place.

### Tags for cost allocation

AWS Cost Explorer and detailed billing reports let you break down AWS costs by tag. Typically, you use business tags such as *cost center/business unit*, *customer*, or *project* to associate AWS costs with traditional cost-allocation dimensions. But a cost allocation report can include any tag. This lets you associate costs with technical or security dimensions, such as specific applications, environments, or compliance programs. The following is an example of a partial cost allocation report.

| Total Cost | user:Owner | user:Stack | user:Cost Center | user:Application |
|------------|------------|------------|------------------|------------------|
| 0.95       | DbAdmin    | Test       | 80432            | Widget2          |
| 0.01       | DbAdmin    | Test       | 80432            | Widget2          |
| 3.84       | DbAdmin    | Prod       | 80432            | Widget2          |
| 6.00       | DbAdmin    | Test       | 78925            | Widget1          |
| 234.63     | SysEng     | Prod       | 78925            | Widget1          |
| 0.73       | DbAdmin    | Test       | 78925            | Widget1          |
| 0.00       | DbAdmin    | Prod       | 80432            | Portal           |
| 2.47       | DbAdmin    | Prod       | 78925            | Portal           |

For some services, you can use an AWS-generated `createdBy` tag for cost allocation purposes, to help account for resources that might otherwise go uncategorized. The `createdBy` tag is available only for supported AWS services and resources. Its value contains data associated with specific API or console events. For more information, see [AWS-Generated Cost Allocation Tags](#) in the *AWS Billing and Cost Management User Guide*.

## Tags for automation

Resource or service-specific tags are often used to filter resources during automation activities. Automation tags are used to opt in or opt out of automated tasks or to identify specific versions of resources to archive, update, or delete. For example, you can run automated start or stop scripts that turn off development environments during nonbusiness hours to reduce costs. In this scenario, Amazon Elastic Compute Cloud (Amazon EC2) instance tags are a simple way to identify instances to opt out of this action. For scripts that find and delete stale, out-of-date, or rolling Amazon EBS snapshots, snapshot tags can add an extra dimension of search criteria.

## Tags for access control

IAM policies support tag-based conditions, letting you constrain IAM permissions based on specific tags or tag values. For example, IAM user or role permissions can include conditions to limit EC2 API calls to specific environments (such as development, test, or production) based on their tags. The same strategy can be used to limit API calls to specific Amazon Virtual Private Cloud (Amazon VPC) networks. Support for tag-based, resource-level IAM permissions is service specific. When you use tag-based conditions for access control, be sure to define and restrict who can modify the tags. For more information about using tags to control API access to AWS resources, see [AWS services that work with IAM](#) in the *IAM User Guide*.

## Tagging governance

An effective tagging strategy uses standardized tags and applies them consistently and programmatically across AWS resources. You can use both reactive and proactive approaches for governing tags in your AWS environment.

- **Reactive governance** is for finding resources that are not properly tagged using tools such as the Resource Groups Tagging API, AWS Config Rules, and custom scripts. To find resources manually, you can use Tag Editor and detailed billing reports.
- **Proactive governance** uses tools such as AWS CloudFormation, AWS Service Catalog, tag policies in AWS Organizations, or IAM resource-level permissions to ensure standardized tags are consistently applied at resource creation.

For example, you can use the AWS CloudFormation `Resource Tags` property to apply tags to resource types. In AWS Service Catalog, you can add portfolio and product tags that are combined and applied to a product automatically when it is launched. More rigorous forms of proactive governance include automated tasks. For example, you can use the Resource Groups Tagging API to search an AWS environment's tags, or run scripts to quarantine or delete improperly tagged resources.

## Learn more

This page provides general information on tagging AWS resources. For more information about tagging resources in a particular AWS service, see its documentation. The following are also good sources of information about tagging:

- For a list of services that support tagging, see the [Resource Groups Tagging API Reference](#).
- For information about Tag Editor, see [Working with Tag Editor](#) in the *AWS Resource Groups User Guide*.
- For information about using tags to control access to AWS resources, see [Control Access Using IAM Tags](#) in the *IAM User Guide*.

# Amazon Resource Names (ARNs)

Amazon Resource Names (ARNs) uniquely identify AWS resources. We require an ARN when you need to specify a resource unambiguously across all of AWS, such as in IAM policies, Amazon Relational Database Service (Amazon RDS) tags, and API calls.

The [Service Authorization Reference](#) lists the ARNs that you can use in IAM policies.

## ARN format

The following are the general formats for ARNs. The specific formats depend on the resource. To use an ARN, replace the *italicized* text with the resource-specific information. Be aware that the ARNs for some resources omit the Region, the account ID, or both the Region and the account ID.

```
arn:partition:service:region:account-id:resource-id
arn:partition:service:region:account-id:resource-type/resource-id
arn:partition:service:region:account-id:resource-type:resource-id
```

### *partition*

The partition in which the resource is located. A *partition* is a group of AWS Regions. Each AWS account is scoped to one partition.

The following are the supported partitions:

- aws - AWS Regions
- aws-cn - China Regions
- aws-us-gov - AWS GovCloud (US) Regions

### *service*

The service namespace that identifies the AWS product. For example, s3 for Amazon S3. To find a service namespace, open the [Service Authorization Reference](#), open the page for the service, and find the phrase "service prefix" in the first sentence. For example, the following text appears in the first sentence on the page for Amazon S3:

```
(service prefix: s3)
```

### *region*

The Region code. For example, us-east-2 for US East (Ohio). For the list of Region codes, see [Regional endpoints \(p. 627\)](#).

### *account-id*

The ID of the AWS account that owns the resource, without the hyphens. For example, 123456789012.

### *resource-id*

The resource identifier. This part of the ARN can be the name or ID of the resource or a [resource path \(p. 637\)](#). For example, user/Bob for an IAM user or instance/i-1234567890abcdef0 for an EC2 instance. Some resource identifiers include a parent resource (sub-resource-type/parent-resource/sub-resource) or a qualifier such as a version (resource-type:resource-name:qualifier).

## Paths in ARNs

Resource ARNs can include a path. For example, in Amazon S3, the resource identifier is an object name that can include slashes (/) to form a path. Similarly, IAM user names and group names can include paths.

Paths can include a wildcard character, namely an asterisk (\*). For example, if you are writing an IAM policy, you can specify all IAM users that have the path product\_1234 using a wildcard as follows:

```
arn:aws:iam::123456789012:user/Development/product_1234/*
```

Similarly, you can specify user/\* to mean all users or group/\* to mean all groups, as in the following examples:

```
"Resource":"arn:aws:iam::123456789012:user/*"  
"Resource":"arn:aws:iam::123456789012:group/*"
```

The following example shows ARNs for an Amazon S3 bucket in which the resource name includes a path:

```
arn:aws:s3:::my_corporate_bucket/*  
arn:aws:s3:::my_corporate_bucket/Development/*
```

### Incorrect wildcard usage

You cannot use a wildcard in the portion of the ARN that specifies the resource type, such as the term user in an IAM ARN. For example, the following is not allowed.

```
arn:aws:iam::123456789012:u*    <== not allowed
```

# AWS IP address ranges

Amazon Web Services (AWS) publishes its current IP address ranges in JSON format. To view the current ranges, download the .json file. To maintain history, save successive versions of the .json file on your system. To determine whether there have been changes since the last time that you saved the file, check the publication time in the current file and compare it to the publication time in the last file that you saved.

## Contents

- [Download \(p. 638\)](#)
- [Syntax \(p. 638\)](#)
- [Filtering the JSON file \(p. 640\)](#)
- [Implementing egress control \(p. 642\)](#)
- [AWS IP address ranges notifications \(p. 644\)](#)
- [Release notes \(p. 645\)](#)

## Download

Download [ip-ranges.json](#).

If you access this file programmatically, it is your responsibility to ensure that the application downloads the file only after successfully verifying the TLS certificate presented by the server.

## Syntax

The syntax of ip-ranges.json is as follows.

```
{  
    "syncToken": "0123456789",  
    "createDate": "yyyy-mm-dd-hh-mm-ss",  
    "prefixes": [  
        {  
            "ip_prefix": "cidr",  
            "region": "region",  
            "network_border_group": "network_border_group",  
            "service": "subset"  
        }  
    ],  
    "ipv6_prefixes": [  
        {  
            "ipv6_prefix": "cidr",  
            "region": "region",  
            "network_border_group": "network_border_group",  
            "service": "subset"  
        }  
    ]  
}
```

### syncToken

The publication time, in Unix epoch time format.

Type: String

Example: "syncToken": "1416435608"

**createDate**

The publication date and time, in UTC YY-MM-DD-hh-mm-ss format.

Type: String

Example: "createDate": "2014-11-19-23-29-02"

**prefixes**

The IP prefixes for the IPv4 address ranges.

Type: Array

**ipv6\_prefixes**

The IP prefixes for the IPv6 address ranges.

Type: Array

**ip\_prefix**

The public IPv4 address range, in CIDR notation. Note that AWS may advertise a prefix in more specific ranges. For example, prefix 96.127.0.0/17 in the file may be advertised as 96.127.0.0/21, 96.127.8.0/21, 96.127.32.0/19, and 96.127.64.0/18.

Type: String

Example: "ip\_prefix": "198.51.100.2/24"

**ipv6\_prefix**

The public IPv6 address range, in CIDR notation. Note that AWS may advertise a prefix in more specific ranges.

Type: String

Example: "ipv6\_prefix": "2001:db8:1234::/64"

**network\_border\_group**

The name of the network border group, which is a unique set of Availability Zones or Local Zones from where AWS advertises IP addresses.

Type: String

Example: "network\_border\_group": "us-west-2-lax-1"

**region**

The AWS Region or GLOBAL for edge locations. The CLOUDFRONT and ROUTE53 ranges are GLOBAL.

Type: String

Valid values: ap-east-1 | ap-northeast-1 | ap-northeast-2 | ap-northeast-3 | ap-south-1 | ap-southeast-1 | ap-southeast-2 | ca-central-1 | cn-north-1 | cn-northwest-1 | eu-central-1 | eu-north-1 | eu-west-1 | eu-west-2 | eu-west-3 | sa-east-1 | us-east-1 | us-east-2 | us-gov-east-1 | us-gov-west-1 | us-west-1 | us-west-2 | GLOBAL

Example: "region": "us-east-1"

### service

The subset of IP address ranges. The addresses listed for API\_GATEWAY are egress only. Specify AMAZON to get all IP address ranges (meaning that every subset is also in the AMAZON subset). However, some IP address ranges are only in the AMAZON subset (meaning that they are not also available in another subset).

Type: String

Valid values: AMAZON | AMAZON\_APPFLOW | AMAZON\_CONNECT | API\_GATEWAY | CHIME\_MEETINGS | CHIME\_VOICECONNECTOR | CLOUD9 | CLOUDFRONT | CODEBUILD | DYNAMODB | EBS | EC2 | EC2\_INSTANCE\_CONNECT | GLOBALACCELERATOR | KINESIS\_VIDEO\_STREAMS | ROUTE53 | ROUTE53\_HEALTHCHECKS | ROUTE53\_HEALTHCHECKS\_PUBLISHING | ROUTE53\_RESOLVER | S3 | WORKSPACES\_GATEWAYS

Example: "service": "AMAZON"

## Filtering the JSON file

You can download a command line tool to help you filter the information to just what you are looking for.

### Windows

The [AWS Tools for Windows PowerShell](#) includes a cmdlet, Get-AWSPublicIpAddressRange, to parse this JSON file. The following examples demonstrate its use. For more information, see [Querying the Public IP Address Ranges for AWS](#) and [Get-AWSPublicIpAddressRange](#).

#### Example 1. Get the creation date

```
PS C:\> Get-AWSPublicIpAddressRange -OutputPublicationDate
Wednesday, August 22, 2018 9:22:35 PM
```

#### Example 2. Get the information for a specific Region

```
PS C:\> Get-AWSPublicIpAddressRange -Region us-east-1
IpPrefix          Region      NetworkBorderGroup        Service
-----          -----      -----          -----
23.20.0.0/14    us-east-1    us-east-1          AMAZON
50.16.0.0/15    us-east-1    us-east-1          AMAZON
50.19.0.0/16    us-east-1    us-east-1          AMAZON
...
...
```

#### Example 3. Get all IP addresses

```
PS C:\> (Get-AWSPublicIpAddressRange).IpPrefix
23.20.0.0/14
27.0.0.0/22
43.250.192.0/24
...
2406:da00:ff00::/64
2600:1fff:6000::/40
2a01:578:3::/64
2600:9000::/28
```

#### Example 4. Get all IPv4 addresses

```
PS C:\> Get-AWSPublicIpAddressRange | where {$_['IpAddressFormat -eq "Ipv4"} | select IpPrefix

IpPrefix
-----
23.20.0.0/14
27.0.0.0/22
43.250.192.0/24
...
```

#### Example 5. Get all IPv6 addresses

```
PS C:\> Get-AWSPublicIpAddressRange | where {$_['IpAddressFormat -eq "Ipv6"} | select IpPrefix

IpPrefix
-----
2a05:d07c:2000::/40
2a05:d000:8000::/40
2406:dafe:2000::/40
...
```

#### Example 6. Get all IP addresses for a specific service

```
PS C:\> Get-AWSPublicIpAddressRange -ServiceKey CODEBUILD | select IpPrefix

IpPrefix
-----
52.47.73.72/29
13.55.255.216/29
52.15.247.208/29
...
```

## Linux

The following example commands use [the jq tool](#) to parse a local copy of the JSON file.

#### Example 1. Get the creation date

```
$ jq .createDate < ip-ranges.json

"2016-02-18-17-22-15"
```

#### Example 2. Get the information for a specific Region

```
$ jq '.prefixes[] | select(.region=="us-east-1")' < ip-ranges.json

{
  "ip_prefix": "23.20.0.0/14",
  "region": "us-east-1",
  "network_border_group": "us-east-1",
  "service": "AMAZON"
},
{
  "ip_prefix": "50.16.0.0/15",
  "region": "us-east-1",
  "network_border_group": "us-east-1",
```

```
    "service": "AMAZON"
},
{
  "ip_prefix": "50.19.0.0/16",
  "region": "us-east-1",
  "network_border_group": "us-east-1",
  "service": "AMAZON"
},
...
```

### Example 3. Get all IPv4 addresses

```
$ jq -r '.prefixes | .[].ip_prefix' < ip-ranges.json

23.20.0.0/14
27.0.0.0/22
43.250.192.0/24
...
```

### Example 4. Get all IPv6 addresses

```
$ jq -r '.ipv6_prefixes | .[].ipv6_prefix' < ip-ranges.json

2a05:d07c:2000::/40
2a05:d000:8000::/40
2406:dafe:2000::/40
...
```

### Example 5. Get all IPv4 addresses for a specific service

```
$ jq -r '.prefixes[] | select(.service=="CODEBUILD") | .ip_prefix' < ip-ranges.json

52.47.73.72/29
13.55.255.216/29
52.15.247.208/29
...
```

### Example 6. Get all IPv4 addresses for a specific service in a specific Region

```
$ jq -r '.prefixes[] | select(.region=="us-east-1") | select(.service=="CODEBUILD")
| .ip_prefix' < ip-ranges.json

34.228.4.208/28
```

### Example 7. Get information for a certain network border group

```
$ jq -r '.prefixes[] | select(.region=="us-west-2") | select(.network_border_group=="us-
west-2-lax-1") | .ip_prefix' < ip-ranges.json

us-west-2-lax-1
```

## Implementing egress control

To allow an instance to access only AWS services, create a security group with rules that allow outbound traffic to the CIDR blocks in the AMAZON list, minus the CIDR blocks that are also in the EC2 list. IP addresses in the EC2 list can be assigned to EC2 instances.

## Windows PowerShell

The following PowerShell example shows you how to get the IP addresses that are in the AMAZON list but not the EC2 list. Copy the script and save it in a file named `Select_address.ps1`.

```
$amazon_addresses = Get-AWSPublicIpAddressRange -ServiceKey amazon
$ec2_addresses = Get-AWSPublicIpAddressRange -ServiceKey ec2

ForEach ($address in $amazon_addresses)
{
    if( $ec2_addresses.IpPrefix -notcontains $address.IpPrefix)
    {
        ($address).IpPrefix
    }
}
```

You can run this script as follows:

```
PS C:\> .\Select_address.ps1
13.32.0.0/15
13.35.0.0/16
13.248.0.0/20
13.248.16.0/21
13.248.24.0/22
13.248.28.0/22
27.0.0.0/22
43.250.192.0/24
43.250.193.0/24
...
```

## jq

The following example shows you how to get the IP addresses that are in the AMAZON list but not the EC2 list, for all Regions:

```
jq -r '[.prefixes[] | select(.service=="AMAZON").ip_prefix] - [.prefixes[] |
select(.service=="EC2").ip_prefix] | .[]' < ip-ranges.json

52.94.22.0/24
52.94.17.0/24
52.95.154.0/23
52.95.212.0/22
54.239.0.240/28
54.239.54.0/23
52.119.224.0/21
...
```

The following example shows you how to filter the results to one Region:

```
jq -r '[.prefixes[] | select(.region=="us-east-1" and .service=="AMAZON").ip_prefix] -
[.prefixes[] | select(.region=="us-east-1" and .service=="EC2").ip_prefix] | .[]' < ip-
ranges.json
```

## Python

The following python script shows you how to get the IP addresses that are in the AMAZON list but not the EC2 list. Copy the script and save it in a file named `get_ips.py`.

```
#!/usr/bin/env python
import requests

ip_ranges = requests.get('https://ip-ranges.amazonaws.com/ip-ranges.json').json()
[prefixes]
amazon_ips = [item['ip_prefix'] for item in ip_ranges if item["service"] == "AMAZON"]
ec2_ips = [item['ip_prefix'] for item in ip_ranges if item["service"] == "EC2"]

amazon_ips_less_ec2=[]

for ip in amazon_ips:
    if ip not in ec2_ips:
        amazon_ips_less_ec2.append(ip)

for ip in amazon_ips_less_ec2: print(str(ip))
```

You can run this script as follows:

```
$ python ./get_ips.py
13.32.0.0/15
13.35.0.0/16
13.248.0.0/20
13.248.16.0/21
13.248.24.0/22
13.248.28.0/22
27.0.0.0/22
43.250.192.0/24
43.250.193.0/24
...
```

## AWS IP address ranges notifications

Whenever there is a change to the AWS IP address ranges, we send notifications to subscribers of the AmazonIpSpaceChanged topic. The payload contains information in the following format:

```
{
  "create-time": "yyyy-mm-ddThh:mm:ss+00:00",
  "synctoken": "0123456789",
  "md5": "6a45316e8bc9463c9e926d5d37836d33",
  "url": "https://ip-ranges.amazonaws.com/ip-ranges.json"
}
```

### **create-time**

The creation date and time.

Notifications could be delivered out of order. Therefore, we recommend that you check the timestamps to ensure the correct order.

### **synctoken**

The publication time, in Unix epoch time format.

### **md5**

The cryptographic hash value of the ip-ranges.json file. You can use this value to check whether the downloaded file is corrupted.

### **url**

The location of the ip-ranges.json file.

If you want to be notified whenever there is a change to the AWS IP address ranges, you can subscribe as follows to receive notifications using Amazon SNS.

### To subscribe to AWS IP address range notifications

1. Open the Amazon SNS console at <https://console.aws.amazon.com/sns/v3/home>.
2. In the navigation bar, change the Region to **US East (N. Virginia)**, if necessary. You must select this Region because the SNS notifications that you are subscribing to were created in this Region.
3. In the navigation pane, choose **Subscriptions**.
4. Choose **Create subscription**.
5. In the **Create subscription** dialog box, do the following:
  - a. For **Topic ARN**, copy the following Amazon Resource Name (ARN):

```
arn:aws:sns:us-east-1:806199016981:AmazonIpSpaceChanged
```
  - b. For **Protocol**, choose the protocol to use (for example, **Email**).
  - c. For **Endpoint**, type the endpoint to receive the notification (for example, your email address).
  - d. Choose **Create subscription**.
6. You'll be contacted on the endpoint that you specified and asked to confirm your subscription. For example, if you specified an email address, you'll receive an email message with the subject line **AWS Notification – Subscription Confirmation**. Follow the directions to confirm your subscription.

Notifications are subject to the availability of the endpoint. Therefore, you might want to check the JSON file periodically to ensure that you've got the latest ranges. For more information about Amazon SNS reliability, see <https://aws.amazon.com/sns/faqs/#Reliability>.

If you no longer want to receive these notifications, use the following procedure to unsubscribe.

### To unsubscribe from AWS IP address ranges notifications

1. Open the Amazon SNS console at <https://console.aws.amazon.com/sns/v3/home>.
2. In the navigation pane, choose **Subscriptions**.
3. Select the check box for the subscription.
4. Choose **Actions, Delete subscriptions**.
5. When prompted for confirmation, choose **Delete**.

For more information about Amazon SNS, see the [Amazon Simple Notification Service Developer Guide](#).

## Release notes

The following table describes updates to the AWS IP address ranges. We also add new Region codes with each Region launch.

| Description                              | Release date  |
|--|---------------|
| Added the ROUTE53_RESOLVER service code. | June 24, 2021 |
| Added the EBS service code.              | May 12, 2021  |

| Description  | Release date       |
|--|--------------------|
| Added the KINESIS_VIDEO_STREAMS service code.                    | November 19, 2020  |
| Added the CHIME_MEETINGS and CHIME_VOICECONNECTOR service codes. | June 19, 2020      |
| Added the AMAZON_APPFLOW service code.                           | June 9, 2020       |
| Add support for the network border group.                        | April 7, 2020      |
| Added the WORKSPACES_GATEWAYS service code.                      | March 30, 2020     |
| Added the ROUTE53_HEALTHCHECK_PUBLISHING service code.           | January 30, 2020   |
| Added the API_GATEWAY service code.                              | September 26, 2019 |
| Added the EC2_INSTANCE_CONNECT service code.                     | June 26, 2019      |
| Added the DYNAMODB service code.                                 | April 25, 2019     |
| Added the GLOBALACCELERATOR service code.                        | December 20, 2018  |
| Added the AMAZON_CONNECT service code.                           | June 20, 2018      |
| Added the CLOUD9 service code.                                   | June 20, 2018      |
| Added the CODEBUILD service code.                                | April 19, 2018     |
| Added the S3 service code.                                       | February 28, 2017  |
| Added support for IPv6 address ranges.                           | August 22, 2016    |
| Initial release  | November 19, 2014  |

# AWS APIs

The following pages provide information that is useful when using an AWS API.

## Contents

- [Error retries and exponential backoff in AWS \(p. 647\)](#)
- [Signing AWS API requests \(p. 649\)](#)
- [AWS SDK support for Amazon S3 client-side encryption \(p. 685\)](#)

## Error retries and exponential backoff in AWS

Numerous components on a network, such as DNS servers, switches, load balancers, and others can generate errors anywhere in the life of a given request. The usual technique for dealing with these error responses in a networked environment is to implement retries in the client application. This technique increases the reliability of the application and reduces operational costs for the developer.

Each AWS SDK implements automatic retry logic. The AWS SDK for Java automatically retries requests, and you can configure the retry settings using the `ClientConfiguration` class. For example, you might want to turn off the retry logic for a web page that makes a request with minimal latency and no retries. Use the `ClientConfiguration` class and provide a `maxErrorRetry` value of 0 to turn off the retries.

If you're not using an AWS SDK, you should retry original requests that receive server (5xx) or throttling errors. However, client errors (4xx) indicate that you need to revise the request to correct the problem before trying again.

In addition to simple retries, each AWS SDK implements exponential backoff algorithm for better flow control. The idea behind exponential backoff is to use progressively longer waits between retries for consecutive error responses. You should implement a maximum delay interval, as well as a maximum number of retries. The maximum delay interval and maximum number of retries are not necessarily fixed values, and should be set based on the operation being performed, as well as other local factors, such as network latency.

Most exponential backoff algorithms use jitter (randomized delay) to prevent successive collisions. Because you aren't trying to avoid such collisions in these cases, you don't need to use this random number. However, if you use concurrent clients, jitter can help your requests succeed faster. For more information, see the blog post for [Exponential Backoff and Jitter](#).

The following pseudo code shows one way to poll for a status using an incremental delay.

```
Do some asynchronous operation.

retries = 0

DO
    wait for (2^retries * 100) milliseconds

    status = Get the result of the asynchronous operation.

    IF status = SUCCESS
        retry = false
    ELSE IF status = NOT_READY
        retry = true
    ELSE IF status = THROTTLED
        retry = true
    ELSE
```

```
    Some other error occurred, so stop calling the API.  
    retry = false  
END IF  
  
retries = retries + 1  
  
WHILE (retry AND (retries < MAX_RETRIES))
```

The following code demonstrates how to implement this incremental delay in Java.

```
public enum Results {  
    SUCCESS,  
    NOT_READY,  
    THROTTLED,  
    SERVER_ERROR  
}  
  
/*  
 * Performs an asynchronous operation, then polls for the result of the  
 * operation using an incremental delay.  
 */  
public static void doOperationAndWaitForResult() {  
    // Do some asynchronous operation.  
    long token = asyncOperation();  
  
    int retries = 0;  
    boolean retry = false;  
  
    do {  
        long waitTime = Math.min(getWaitTimeExp(retries), MAX_WAIT_INTERVAL);  
        System.out.print(waitTime + "\n");  
  
        try {  
            // Wait for the result.  
            Thread.sleep(waitTime);  
  
            // Get the result of the asynchronous operation.  
            Results result = getAsyncOperationResult(token);  
  
            if (Results.SUCCESS == result) {  
                retry = false;  
            } else if (Results.NOT_READY == result) {  
                retry = true;  
            } else if (Results.THROTTLED == result) {  
                retry = true;  
            } else if (Results.SERVER_ERROR == result) {  
                retry = true;  
            } else {  
                // Some other error occurred, so stop calling the API.  
                retry = false;  
            }  
  
        } catch (IllegalArgumentException | InterruptedException e) {  
            System.out.println("Error sleeping thread: " + e.getMessage());  
        } catch (IOException e) {  
            System.out.println("Error retrieving result: " + e.getMessage());  
        } catch (Exception e) {  
            System.out.println("Error: " + e.getMessage());  
        }  
    } while (retry && (retries++ < MAX_RETRIES));  
}  
  
/*  
 * Returns the next wait interval, in milliseconds, using an exponential  
 * backoff algorithm.  
 */
```

```
/*
public static long getWaitTimeExp(int retryCount) {
    if (0 == retryCount) {
        return 0;
    }

    long waitTime = ((long) Math.pow(2, retryCount) * 100L);

    return waitTime;
}
```

## Signing AWS API requests

### Important

The [AWS SDKs](#), [AWS Command Line Interface \(AWS CLI\)](#), and other AWS tools sign API requests for you using the access key that you specify when you configure the tool. **When you use these tools, you don't need to learn how to sign API requests. The following documentation explains how to sign API requests, but is only useful if you're writing your own code to send and sign AWS API requests.** We recommend that you use the AWS SDKs or other AWS tools to send API requests, instead of writing your own code.

When you send API requests to AWS, you sign the requests so that AWS can identify who sent them. You sign requests with your AWS access key, which consists of an access key ID and secret access key. Some requests don't need to be signed, including anonymous requests to Amazon Simple Storage Service (Amazon S3) and some API operations in AWS Security Token Service (AWS STS) such as [AssumeRoleWithWebIdentity](#).

## When to sign requests

When you write custom code to send API requests to AWS, you need to include code to sign the requests. You might do this for the following reasons:

- You are working with a programming language for which there is no AWS SDK.
- You want complete control over how a request is sent to AWS.

You *don't* need to sign requests when you use the AWS CLI or one of the AWS SDKs. These tools calculate the signature for you, and also manage the connection details, handle request retries, and provide error handling. In most cases, they also contain sample code, tutorials, and other resources to help you get started writing applications that interact with AWS.

## Why requests are signed

The signing process helps secure requests in the following ways:

- **Verify the identity of the requester**

Signing makes sure that the request has been sent by someone with a valid access key. For more information, see [Understanding and getting your AWS credentials \(p. 3\)](#).

- **Protect data in transit**

To prevent tampering with a request while it's in transit, some of the request elements are used to calculate a hash (digest) of the request, and the resulting hash value is included as part of the request. When an AWS service receives the request, it uses the same information to calculate a hash and matches it against the hash value in your request. If the values don't match, AWS denies the request.

- **Protect against potential replay attacks**

In most cases, a request must reach AWS within five minutes of the time stamp in the request. Otherwise, AWS denies the request.

## Signing requests

To sign a request, you first calculate a hash (digest) of the request. Then you use the hash value, some other information from the request, and your secret access key to calculate another hash known as the *signature*. Then you add the signature to the request in one of the following ways:

- Using the `HTTP Authorization` header.
- Adding a query string value to the request. Because the signature is part of the URL in this case, this type of URL is called a *presigned URL*.

## Signature versions

AWS supports Signature Version 4 (SigV4) and Signature Version 2 (SigV2). All AWS services in all AWS Regions support SigV4, except Amazon SimpleDB which requires SigV2. The [AWS SDKs](#), including the [AWS CLI](#), automatically use SigV4 for all services that support it. If you manually sign API requests, you should do the same.

AWS is rolling out an extension to SigV4 called *Signature Version 4A (SigV4A)*. This extension enables signatures that are valid in more than one AWS Region. This is required for signing multi-Region API requests, for example with [Amazon S3 Multi-Region Access Points](#). The AWS SDKs and AWS CLI support SigV4A and use it automatically when it's needed.

### Note

To use SigV4A with temporary security credentials—for example, when using IAM roles—make sure that you request the temporary credentials from a regional endpoint in AWS Security Token Service (AWS STS). Don't use the global endpoint for AWS STS (`sts.amazonaws.com`), because by default temporary credentials from the global endpoint don't work with SigV4A. You can use any of the [regional endpoints for AWS STS](#).

## Signature Version 4 signing process

### Important

The [AWS SDKs](#), [AWS Command Line Interface \(AWS CLI\)](#), and other AWS tools sign API requests for you using the access key that you specify when you configure the tool. **When you use these tools, you don't need to learn how to sign API requests. The following documentation explains how to sign API requests, but is only useful if you're writing your own code to send and sign AWS API requests.** We recommend that you use the AWS SDKs or other AWS tools to send API requests, instead of writing your own code.

Signature Version 4 (SigV4) is the process to add authentication information to AWS API requests sent by HTTP. For security, most requests to AWS must be signed with an access key. The access key consists of an access key ID and secret access key, which are commonly referred to as your security credentials. For details on how to obtain credentials for your account, see [Understanding and getting your AWS credentials \(p. 3\)](#).

### How Signature Version 4 works

1. Create a canonical request.
2. Use the canonical request and additional metadata to create a string for signing.
3. Derive a signing key from your AWS secret access key. Then use the signing key, and the string from the previous step, to create a signature.

4. Add the resulting signature to the HTTP request in a header or as a query string parameter.

When an AWS service receives the request, it performs the same steps that you did to calculate the signature you sent in your request. AWS then compares its calculated signature to the one you sent with the request. If the signatures match, the request is processed. If the signatures don't match, the request is denied.

For more information, see the following resources:

- To get started with the signing process, see [Signing AWS requests with Signature Version 4 \(p. 653\)](#).
- For sample signed requests, see [Examples of the complete Signature Version 4 signing process \(Python\) \(p. 668\)](#).
- If you have questions about Signature Version 4, post your question in the [AWS Identity and Access Management forum](#).

## Changes in Signature Version 4

Signature Version 4 is the current AWS signing protocol. It includes several changes from the previous Signature Version 2:

- To sign your message, you use a *signing key* that is derived from your secret access key rather than using the secret access key itself. For more information about deriving keys, see [Task 3: Calculate the signature for AWS Signature Version 4 \(p. 661\)](#).
- You derive your signing key from the *credential scope*, which means that you don't need to include the key itself in the request. Credential scope is represented by a slash-separated string of dimensions in the following order:
  1. Date information as an eight-digit string representing the year (YYYY), month (MM), and day (DD) of the request (for example, 20150830). For more information about handling dates, see [Handling dates in Signature Version 4 \(p. 665\)](#).
  2. Region information as a lowercase alphanumeric string. Use the Region name that is part of the service's endpoint. For services with a globally unique endpoint such as IAM, use us-east-1.
  3. Service name information as a lowercase alphanumeric string (for example, iam). Use the service name that is part of the service's endpoint. For example, the IAM endpoint is https://iam.amazonaws.com, so you use the string iam as part of the Credential parameter.
  4. A special termination string: aws4\_request.
- You use the credential scope in each signing task:
  - If you add signing information to the query string, include the credential scope as part of the x-Amz-Credential parameter when you create the canonical request in [Task 1: Create a canonical request for Signature Version 4 \(p. 655\)](#).
  - You must include the credential scope as part of your string to sign in [Task 2: Create a string to sign for Signature Version 4 \(p. 660\)](#).
  - Finally, you use the date, Region, and service name components of the credential scope to derive your signing key in [Task 3: Calculate the signature for AWS Signature Version 4 \(p. 661\)](#).

## Elements of an AWS Signature Version 4 request

Each HTTP/HTTPS request that uses version 4 signing must contain these elements.

- Endpoint Specification
- Action
- Required and Optional Parameters

- Date
- Authentication Parameters

## Endpoint specification

This is specified as the `Host` header in HTTP/1.1 requests. This header specifies the DNS name of the computer to which you send the request, like `dynamodb.us-east-1.amazonaws.com`.

You must include the `Host` header with HTTP/1.1 requests. For HTTP/2 requests, you can use the `:authority` header or the `Host` header. Use only the `:authority` header for compliance with the HTTP/2 specification. Not all services support HTTP/2 requests, so check the service documentation for details.

The endpoint usually contains the service name and Region, both of which you must use as part of the `Credential` authentication parameter. For example, the Amazon DynamoDB endpoint for the `eu-west-1` Region is `dynamodb.eu-west-1.amazonaws.com`. If you don't specify a Region, a web service uses the default Region, `us-east-1`. If you use a service like IAM that uses a globally unique endpoint, use the default Region (`us-east-1`), as part of the `Credential` authentication parameter (described later in this topic).

For a complete list of endpoints supported by AWS, see [Regions and Endpoints](#).

## Action

This element specifies the action that you want a web service to perform, such as the DynamoDB `CreateTable` action or the Amazon EC2 `DescribeInstances` action. The specified action determines the parameters used in the request. For query APIs, the action is an API name. For non-query APIs (such as RESTful APIs), see the service documentation for the appropriate actions.

## Required and optional parameters

This element specifies the parameters to the request action. Each action in a web service has a set of required and optional parameters that define an API call. The API version is usually a required parameter. See the service documentation for the details of required and optional parameters.

## Date

This is the date and time at which you make the request. Including the date in the request helps prevent third parties from intercepting your request and resubmitting it later. The date is specified using the ISO8601 Basic format via the `x-amz-date` header in the `YYYYMMDD 'T' HHMMSS 'Z'` format.

## Authentication parameters

Each request that you send must include the following set of parameters that AWS uses to ensure the validity and authenticity of the request.

- *Algorithm*. The hash algorithm that you're using as part of the signing process. For example, if you use SHA-256 to create hashes, use the value `AWS4-HMAC-SHA256`.
- *Credential scope*. A string separated by slashes ("/") that is formed by concatenating your access key ID and your credential scope components. Credential scope includes the date in `YYYYMMDD` format, the AWS Region, the service name, and a special termination string (`aws4_request`). For example, the following string represents the `Credential` parameter for an IAM request in the `us-east-1` Region.

`AKIAIOSFODNN7EXAMPLE/20111015/us-east-1/iam/aws4_request`

### Important

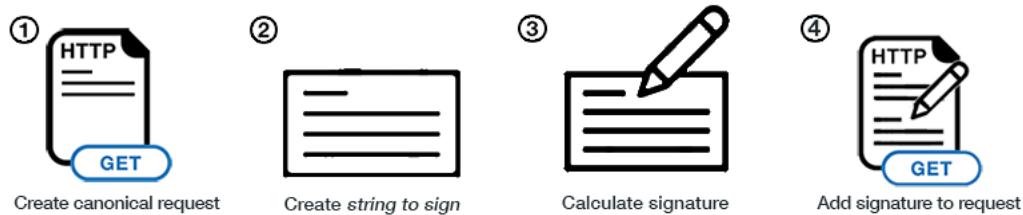
You must use lowercase characters for the Region, service name, and special termination string.

- *SignedHeaders* A list delimited by semicolons (";") of HTTP/HTTPS headers to include in the signature.
- *Signature* A hexadecimal-encoded string that represents the output of the signature operation described in [Task 3: Calculate the signature for AWS Signature Version 4 \(p. 661\)](#). You must calculate the signature using the algorithm that you specified in the Algorithm parameter.

To view sample signed requests, see [Examples of the complete Signature Version 4 signing process \(Python\) \(p. 668\)](#).

## Signing AWS requests with Signature Version 4

This section explains how to create a signature and add it to an HTTP request to AWS.



### Summary of signing steps

To create a signed request, complete the following:

- [Task 1: Create a canonical request for Signature Version 4 \(p. 655\)](#)

Arrange the contents of your request (host, action, headers, etc.) into a standard (*canonical*) format. The canonical request is one of the inputs used to create a string to sign.

- [Task 2: Create a string to sign for Signature Version 4 \(p. 660\)](#)

Create a *string to sign* with the canonical request and extra information such as the algorithm, request date, credential scope, and the digest (hash) of the canonical request.

- [Task 3: Calculate the signature for AWS Signature Version 4 \(p. 661\)](#)

Derive a signing key by performing a succession of keyed hash operations (HMAC operations) on the request date, Region, and service, with your AWS secret access key as the key for the initial hashing operation. After you derive the signing key, you then calculate the signature by performing a keyed hash operation on the string to sign. Use the derived signing key as the hash key for this operation.

- [Task 4: Add the signature to the HTTP request \(p. 663\)](#)

After you calculate the signature, add it to an HTTP header or to the query string of the request.

#### Important

The AWS SDKs handle the signature calculation process for you, so you do not have to manually complete the signing process. For more information, see [Tools for Amazon Web Services](#).

#### Additional resources

The following resources illustrate aspects of the signing process:

- [Examples of how to derive a signing key for Signature Version 4 \(p. 665\)](#). This page shows how to derive a signing key using Java, C#, Python, Ruby, and JavaScript.
- [Examples of the complete Signature Version 4 signing process \(Python\) \(p. 668\)](#). This set of programs in Python provide complete examples of the signing process. The examples show signing with a `POST` request, with a `GET` request that has signing information in a request header, and with a `GET` request that has signing information in the query string.

## What signing looks like in a request

The following example shows what an HTTPS request might look like as it is sent from your client to AWS, without any signing information.

```
GET https://iam.amazonaws.com/?Action=ListUsers&Version=2010-05-08 HTTP/1.1
Content-Type: application/x-www-form-urlencoded; charset=utf-8
Host: iam.amazonaws.com
X-Amz-Date: 20150830T123600Z
```

After you complete the signing tasks, you add the authentication information to the request. You can add the authentication information in two ways:

### Authorization header

You can add the authentication information to the request with an **Authorization** header. Although the HTTP header is named **Authorization**, the signing information is actually used for authentication to establish who the request came from.

The **Authorization** header includes the following information:

- Algorithm you used for signing (AWS4-HMAC-SHA256)
- Credential scope (with your access key ID)
- List of signed headers
- Calculated signature. The signature is based on your request information, and you use your AWS secret access key to produce the signature. The signature confirms your identity to AWS.

The following example shows what the preceding request might look like after you've created the signing information and added it to the request in the **Authorization** header.

Note that in the actual request, the **Authorization** header would appear as a continuous line of text. The version below has been formatted for readability.

```
GET https://iam.amazonaws.com/?Action=ListUsers&Version=2010-05-08 HTTP/1.1
Authorization: AWS4-HMAC-SHA256
Credential=AKIDEXAMPLE/20150830/us-east-1/iam/aws4_request,
SignedHeaders=content-type;host;x-amz-date,
Signature=5d672d79c15b13162d9279b0855cfba6789a8edb4c82c400e06b5924a6f2b5d7
content-type: application/x-www-form-urlencoded; charset=utf-8
host: iam.amazonaws.com
x-amz-date: 20150830T123600Z
```

### Query string

As an alternative to adding authentication information with an HTTP request header, you can include it in the query string. The query string contains everything that is part of the request, including the name and parameters for the action, the date, and the authentication information.

The following example shows how you might construct a GET request with the action and authentication information in the query string.

(In the actual request, the query string would appear as a continuous line of text. The version below has been formatted with line breaks for readability.)

```
GET https://iam.amazonaws.com?Action=ListUsers&Version=2010-05-08
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIDEXAMPLE%2F20150830%2Fus-east-1%2Fiam%2Faws4_request
&X-Amz-Date=20150830T123600Z
&X-Amz-Expires=60
```

```
&X-Amz-SignedHeaders=content-type%3Bhost
&X-Amz-Signature=37ac2f4fde00b0ac9bd9eadeb459b1bbe224158d66e7ae5fcadb70b2d181d02 HTTP/1.1
content-type: application/x-www-form-urlencoded; charset=utf-8
host: iam.amazonaws.com
```

## GET and POST requests in the Query API

The query API that many AWS services support lets you make requests using either HTTP GET or POST. (In the query API, you can use GET even if you're making requests that change state; that is, the query API is not inherently RESTful.) Because GET requests pass parameters on the query string, they are limited to the maximum length of a URL. If a request includes a large payload (for example, you might upload a large IAM policy or send many parameters in JSON format for a DynamoDB request), you generally use a POST request.

The signing process is the same for both types of requests.

### Task 1: Create a canonical request for Signature Version 4

To begin the signing process, create a string that includes information from your request in a standardized (canonical) format. This ensures that when AWS receives the request, it can calculate the same signature that you calculated.

Follow the steps here to create a canonical version of the request. Otherwise, your version and the version calculated by AWS won't match, and the request will be denied.

The following example shows the pseudocode to create a canonical request.

#### Example Canonical request pseudocode

```
CanonicalRequest =
    HTTPRequestMethod + '\n' +
    CanonicalURI + '\n' +
    CanonicalQueryString + '\n' +
    CanonicalHeaders + '\n' +
    SignedHeaders + '\n' +
    HexEncode(Hash(RequestPayload))
```

In this pseudocode, Hash represents a function that produces a message digest, typically SHA-256. (Later in the process, you specify which hashing algorithm you're using.) HexEncode represents a function that returns the base-16 encoding of the digest in lowercase characters. For example, HexEncode( "m" ) returns the value `6d` rather than `6D`. Each input byte must be represented as exactly two hexadecimal characters.

Signature Version 4 does not require that you use a particular character encoding to encode the canonical request. However, some AWS services might require a specific encoding. For more information, consult the documentation for that service.

The following examples show how to construct the canonical form of a request to IAM. The original request might look like this as it is sent from the client to AWS, except that this example does not include the signing information yet.

#### Example Request

```
GET https://iam.amazonaws.com/?Action>ListUsers&Version=2010-05-08 HTTP/1.1
Host: iam.amazonaws.com
Content-Type: application/x-www-form-urlencoded; charset=utf-8
X-Amz-Date: 20150830T123600Z
```

The preceding example request is a GET request (method) that makes a `ListUsers` API (action) call to AWS Identity and Access Management (host). This action takes the `Version` parameter.

To create a canonical request, concatenate the following components from each step into a single string:

1. Start with the HTTP request method (GET, PUT, POST, etc.), followed by a newline character.

#### Example Request method

```
GET
```

2. Add the canonical URI parameter, followed by a newline character. The canonical URI is the URI-encoded version of the absolute path component of the URI, which is everything in the URI from the HTTP host to the question mark character ("?") that begins the query string parameters (if any).

Normalize URI paths according to [RFC 3986](#). Remove redundant and relative path components. Each path segment must be URI-encoded **twice** (except for Amazon S3 which only gets URI-encoded once).

#### Example Canonical URI with encoding

```
/documents%2520and%2520settings/
```

##### Note

In exception to this, you do not normalize URI paths for requests to Amazon S3. For example, if you have a bucket with an object named my-object//example//photo.user, use that path. Normalizing the path to my-object/example/photo.user will cause the request to fail. For more information, see [Task 1: Create a Canonical Request](#) in the *Amazon Simple Storage Service API Reference*.

If the absolute path is empty, use a forward slash (/). In the example IAM request, nothing follows the host in the URI, so the absolute path is empty.

#### Example Canonical URI

```
/
```

3. Add the canonical query string, followed by a newline character. If the request does not include a query string, use an empty string (essentially, a blank line). The example request has the following query string.

#### Example Canonical query string

```
Action=ListUsers&Version=2010-05-08
```

To construct the canonical query string, complete the following steps:

- a. Sort the parameter names by character code point in ascending order. Parameters with duplicate names should be sorted by value. For example, a parameter name that begins with the uppercase letter F precedes a parameter name that begins with a lowercase letter b.
- b. URI-encode each parameter name and value according to the following rules:
  - Do not URI-encode any of the unreserved characters that [RFC 3986](#) defines: A-Z, a-z, 0-9, hyphen (-), underscore (\_), period ( . ), and tilde ( ~ ).
  - Percent-encode all other characters with %XY, where X and Y are hexadecimal characters (0-9 and uppercase A-F). For example, the space character must be encoded as %20 (not using '+', as some encoding schemes do) and extended UTF-8 characters must be in the form %XY%ZA

- Double-encode any equals (=) characters in parameter values.
- c. Build the canonical query string by starting with the first parameter name in the sorted list.
- d. For each parameter, append the URI-encoded parameter name, followed by the equals sign character (=), followed by the URI-encoded parameter value. Use an empty string for parameters that have no value.
- e. Append the ampersand character (&) after each parameter value, except for the last value in the list.

One option for the query API is to put all request parameters in the query string. For example, you can do this for Amazon S3 to create a presigned URL. In that case, the canonical query string must include not only parameters for the request, but also the parameters used as part of the signing process—the hashing algorithm, credential scope, date, and signed headers parameters.

The following example shows a query string that includes authentication information. The example is formatted with line breaks for readability, but the canonical query string must be one continuous line of text in your code.

### Example Authentication parameters in a query string

```
Action>ListUsers&
Version=2010-05-08&
X-Amz-Algorithm=AWS4-HMAC-SHA256&
X-Amz-Credential=AKIDEXAMPLE%2F20150830%2Fus-east-1%2Fiam%2Faws4_request&
X-Amz-Date=20150830T123600Z&
X-Amz-SignedHeaders=content-type%3Bhost%3Bx-amz-date
```

For more information about authentication parameters, see [Task 2: Create a string to sign for Signature Version 4 \(p. 660\)](#).

#### Note

You can use temporary security credentials provided by the AWS Security Token Service (AWS STS) to sign a request. The process is the same as using long-term credentials, but when you add signing information to the query string you must add an additional query parameter for the security token. The parameter name is X-Amz-Security-Token, and the parameter's value is the URI-encoded session token (the string you received from AWS STS when you obtained temporary security credentials).

For some services, you must include the X-Amz-Security-Token query parameter in the canonical (signed) query string. For other services, you add the X-Amz-Security-Token parameter at the end, after you calculate the signature. For details, see the API reference documentation for that service.

4. Add the canonical headers, followed by a newline character. The canonical headers consist of a list of all the HTTP headers that you are including with the signed request.

For HTTP/1.1 requests, you must include the host header at a minimum. Standard headers like content-type are optional. For HTTP/2 requests, you must include the :authority header instead of the host header. Different services might require other headers.

### Example Canonical headers

```
content-type:application/x-www-form-urlencoded; charset=utf-8\nhost:iam.amazonaws.com\nx-amz-date:20150830T123600Z\n
```

To create the canonical headers list, convert all header names to lowercase and remove leading spaces and trailing spaces. Convert sequential spaces in the header value to a single space.

The following pseudocode describes how to construct the canonical list of headers:

```
CanonicalHeaders =
CanonicalHeadersEntry0 + CanonicalHeadersEntry1 + ... + CanonicalHeadersEntryN
CanonicalHeadersEntry =
Lowercase(HeaderName) + ':' + Trimall(HeaderValue) + '\n'
```

Lowercase represents a function that converts all characters to lowercase. The Trimall function removes excess white space before and after values, and converts sequential spaces to a single space.

Build the canonical headers list by sorting the (lowercase) headers by character code and then iterating through the header names. Construct each header according to the following rules:

- Append the lowercase header name followed by a colon.
- Append a comma-separated list of values for that header. Do not sort the values in headers that have multiple values.
- Append a new line ('\n').

The following examples compare a more complex set of headers with their canonical form:

### Example Original headers

```
Host:iam.amazonaws.com\n
Content-Type:application/x-www-form-urlencoded; charset=utf-8\n
My-header1: a b c \n
X-Amz-Date:20150830T123600Z\n
My-Header2: "a b c" \n
```

### Example Canonical form

```
content-type:application/x-www-form-urlencoded; charset=utf-8\n
host:iam.amazonaws.com\n
my-header1:a b c\n
my-header2:"a b c"\n
x-amz-date:20150830T123600Z\n
```

#### Note

Each header is followed by a newline character, meaning the complete list ends with a newline character.

In the canonical form, the following changes were made:

- The header names were converted to lowercase characters.
- The headers were sorted by character code.
- Leading and trailing spaces were removed from the my-header1 and my-header2 values.
- Sequential spaces in a b c were converted to a single space for the my-header1 and my-header2 values.

#### Note

You can use temporary security credentials provided by the AWS Security Token Service (AWS STS) to sign a request. The process is the same as using long-term credentials, but when you include signing information in the Authorization header you must add an

additional HTTP header for the security token. The header name is `X-Amz-Security-Token`, and the header's value is the session token (the string you received from AWS STS when you obtained temporary security credentials).

5. Add the signed headers, followed by a newline character. This value is the list of headers that you included in the canonical headers. By adding this list of headers, you tell AWS which headers in the request are part of the signing process and which ones AWS can ignore (for example, any additional headers added by a proxy) for purposes of validating the request.

For HTTP/1.1 requests, the `host` header must be included as a signed header. For HTTP/2 requests that include the `:authority` header instead of the `host` header, you must include the `:authority` header as a signed header. If you include a date or `x-amz-date` header, you must also include that header in the list of signed headers.

To create the signed headers list, convert all header names to lowercase, sort them by character code, and use a semicolon to separate the header names. The following pseudocode describes how to construct a list of signed headers. `Lowercase` represents a function that converts all characters to lowercase.

```
SignedHeaders =  
Lowercase(HeaderName0) + ';' + Lowercase(HeaderName1) + ";" + ... +  
Lowercase(HeaderNameN)
```

Build the signed headers list by iterating through the collection of header names, sorted by lowercase character code. For each header name except the last, append a semicolon (';') to the header name to separate it from the following header name.

### Example Signed headers

```
content-type;host;x-amz-date\n
```

6. Use a hash (digest) function like SHA256 to create a hashed value from the payload in the body of the HTTP or HTTPS request. Signature Version 4 does not require that you use a particular character encoding to encode text in the payload. However, some AWS services might require a specific encoding. For more information, consult the documentation for that service.

### Example Structure of payload

```
HashedPayload = Lowercase(HexEncode(Hash(requestPayload)))
```

When you create the string to sign, you specify the signing algorithm that you used to hash the payload. For example, if you used SHA256, you will specify AWS4-HMAC-SHA256 as the signing algorithm. The hashed payload must be represented as a lowercase hexadecimal string.

If the payload is empty, use an empty string as the input to the hash function. In the IAM example, the payload is empty.

### Example Hashed payload (empty string)

```
e3b0c44298fc1c149afbf4c8996fb92427ae41e4649b934ca495991b7852b855
```

7. To construct the finished canonical request, combine all the components from each step as a single string. As noted, each component ends with a newline character. If you follow the canonical request pseudocode explained earlier, the resulting canonical request is shown in the following example.

### Example Canonical request

```
GET
/
Action=ListUsers&Version=2010-05-08
Content-Type:application/x-www-form-urlencoded; charset=utf-8
Host:iam.amazonaws.com
x-amz-date:20150830T123600Z

Content-Type;Host;x-amz-date
e3b0c44298fc1c149afbf4c8996fb92427ae41e4649b934ca495991b7852b855
```

8. Create a digest (hash) of the canonical request with the same algorithm that you used to hash the payload.

**Note**

Signature Version 4 does not require that you use a particular character encoding to encode the canonical request before calculating the digest. However, some AWS services might require a specific encoding. For more information, consult the documentation for that service.

The hashed canonical request must be represented as a string of lowercase hexadecimal characters. The following example shows the result of using SHA-256 to hash the example canonical request.

### Example Hashed canonical request

```
f536975d06c0309214f805bb90ccff089219ecd68b2577fefef23edd43b7e1a59
```

You include the hashed canonical request as part of the string to sign in [Task 2: Create a string to sign for Signature Version 4 \(p. 660\)](#).

## Task 2: Create a string to sign for Signature Version 4

The *string to sign* includes meta information about your request and about the canonical request that you created in [Task 1: Create a canonical request for Signature Version 4 \(p. 655\)](#). You will use the string to sign and a derived signing key that you create later as inputs to calculate the request signature in [Task 3: Calculate the signature for AWS Signature Version 4 \(p. 661\)](#).

To create the string to sign, concatenate the algorithm, date and time, credential scope, and digest of the canonical request, as shown in the following pseudocode:

#### Structure of string to sign

```
StringToSign =
    Algorithm + \n +
    RequestDateTime + \n +
    CredentialScope + \n +
    HashedCanonicalRequest
```

The following example shows how to construct the string to sign with the same request from [Task 1: Create A Canonical Request \(p. 655\)](#).

### Example HTTPS request

```
GET https://iam.amazonaws.com/?Action=ListUsers&Version=2010-05-08 HTTP/1.1
Host: iam.amazonaws.com
Content-Type: application/x-www-form-urlencoded; charset=utf-8
```

```
X-Amz-Date: 20150830T123600Z
```

### To create the string to sign

1. Start with the algorithm designation, followed by a newline character. This value is the hashing algorithm that you use to calculate the digests in the canonical request. For SHA256, AWS4-HMAC-SHA256 is the algorithm.

```
AWS4-HMAC-SHA256\n
```

2. Append the request date value, followed by a newline character. The date is specified with ISO8601 basic format in the x-amz-date header in the format YYYYMMDD'T'HHMMSS'Z'. This value must match the value you used in any previous steps.

```
20150830T123600Z\n
```

3. Append the credential scope value, followed by a newline character. This value is a string that includes the date, the Region you are targeting, the service you are requesting, and a termination string ("aws4\_request") in lowercase characters. The Region and service name strings must be UTF-8 encoded.

```
20150830/us-east-1/iam/aws4_request\n
```

- The date must be in the YYYYMMDD format. Note that the date does not include a time value.
- Verify that the Region you specify is the Region that you are sending the request to.

4. Append the hash of the canonical request that you created in [Task 1: Create a canonical request for Signature Version 4 \(p. 655\)](#). This value is not followed by a newline character. The hashed canonical request must be lowercase base-16 encoded, as defined by [Section 8 of RFC 4648](#).

```
f536975d06c0309214f805bb90ccff089219ecd68b2577fefef23edd43b7e1a59
```

The following string to sign is a request to IAM on August 30, 2015.

### Example string to sign

```
AWS4-HMAC-SHA256
20150830T123600Z
20150830/us-east-1/iam/aws4_request
f536975d06c0309214f805bb90ccff089219ecd68b2577fefef23edd43b7e1a59
```

## Task 3: Calculate the signature for AWS Signature Version 4

Before you calculate a signature, you derive a signing key from your AWS secret access key. Because the derived signing key is specific to the date, service, and Region, it offers a greater degree of protection. You don't just use your secret access key to sign the request. You then use the signing key and the string to sign that you created in [Task 2: Create a string to sign for Signature Version 4 \(p. 660\)](#) as the inputs to a keyed hash function. The hex-encoded result from the keyed hash function is the signature.

Signature Version 4 does not require that you use a particular character encoding to encode the string to sign. However, some AWS services might require a specific encoding. For more information, consult the documentation for that service.

## To calculate a signature

- Derive your signing key. To do this, use your secret access key to create a series of hash-based message authentication codes (HMACs). This is shown in the following pseudocode, where `HMAC(key, data)` represents an HMAC-SHA256 function that returns output in binary format. The result of each hash function becomes input for the next one.

### Pseudocode for deriving a signing key

```
kSecret = your secret access key
kDate = HMAC("AWS4" + kSecret, Date)
kRegion = HMAC(kDate, Region)
kService = HMAC(kRegion, Service)
kSigning = HMAC(kService, "aws4_request")
```

Note that the date used in the hashing process is in the format YYYYMMDD (for example, 20150830), and does not include the time.

Make sure you specify the HMAC parameters in the correct order for the programming language you are using. This example shows the key as the first parameter and the data (message) as the second parameter, but the function that you use might specify the key and data in a different order.

Use the digest (binary format) for the key derivation. Most languages have functions to compute either a binary format hash, commonly called a digest, or a hex-encoded hash, called a hexdigest. The key derivation requires that you use a binary-formatted digest.

The following example show the inputs to derive a signing key and the resulting output, where `kSecret = wJalrXUtnFEMI/K7MDENG+bPxRfiCYEXAMPLEKEY`.

The example uses the same parameters from the request in Task 1 and Task 2 (a request to IAM in the us-east-1 Region on August 30, 2015).

### Example inputs

```
HMAC(HMAC(HMAC(HMAC("AWS4" + kSecret, "20150830"), "us-east-1"), "iam"), "aws4_request")
```

The following example shows the derived signing key that results from this sequence of HMAC hash operations. This shows the hexadecimal representation of each byte in the binary signing key.

### Example signing key

```
c4afb1cc5771d871763a393e44b703571b55cc28424d1a5e86da6ed3c154a4b9
```

For more information about how to derive a signing key in different programming languages, see [Examples of how to derive a signing key for Signature Version 4 \(p. 665\)](#).

- Calculate the signature. To do this, use the signing key that you derived and the string to sign as inputs to the keyed hash function. After you calculate the signature, convert the binary value to a hexadecimal representation.

The following pseudocode shows how to calculate the signature.

```
signature = HexEncode(HMAC(derived signing key, string to sign))
```

### Note

Make sure you specify the HMAC parameters in the correct order for the programming language you are using. This example shows the key as the first parameter and the data as the second parameter.

(message) as the second parameter, but the function that you use might specify the key and data in a different order.

The following example shows the resulting signature if you use the same signing key and the string to sign from Task 2:

#### Example signature

```
5d672d79c15b13162d9279b0855cfba6789a8edb4c82c400e06b5924a6f2b5d7
```

### Task 4: Add the signature to the HTTP request

After you calculate the signature, add it to the request. You can add the signature to a request in one of two ways:

- An HTTP header named `Authorization`
- The query string

You cannot pass signing information in both the `Authorization` header and the query string.

#### Note

You can use temporary security credentials provided by the AWS Security Token Service (AWS STS) to sign a request. The process is the same as using long-term credentials, but requires an additional HTTP header or query string parameter for the security token. The name of the header or query string parameter is `X-Amz-Security-Token`, and the value is the session token (the string you received from AWS STS when you obtained temporary security credentials).

When you add the `X-Amz-Security-Token` parameter to the query string, some services require that you include this parameter in the canonical (signed) request. For other services, you add this parameter at the end, after you calculate the signature. For details, see the API reference documentation for that service.

#### Adding signing information to the authorization header

You can include signing information by adding it to an HTTP header named `Authorization`. The contents of the header are created after you calculate the signature as described in the preceding steps, so the `Authorization` header is not included in the list of signed headers. Although the header is named `Authorization`, the signing information is actually used for authentication.

The following pseudocode shows the construction of the `Authorization` header.

```
Authorization: algorithm Credential=access key ID/credential scope,
SignedHeaders=SignedHeaders, Signature=signature
```

The following example shows a finished `Authorization` header.

Note that in the actual request, the authorization header would appear as a continuous line of text. The version below has been formatted for readability.

```
Authorization: AWS4-HMAC-SHA256
Credential=AKIDEXAMPLE/20150830/us-east-1/iam/aws4_request,
SignedHeaders=content-type;host;x-amz-date,
Signature=5d672d79c15b13162d9279b0855cfba6789a8edb4c82c400e06b5924a6f2b5d7
```

Note the following:

- There is no comma between the algorithm and `Credential`. However, the `SignedHeaders` and `Signature` are separated from the preceding values with a comma.
- The `Credential` value starts with the access key ID, which is followed by a forward slash (/), which is followed by the credential scope that you calculated in [Task 2: Create a string to sign for Signature Version 4 \(p. 660\)](#). The secret access key is used to derive the signing key for the signature, but is not included in the signing information sent in the request.

## Adding signing information to the Query string

You can make requests and pass all request values in the query string, including signing information. This is sometimes referred to as a *presigned URL*, because it produces a single URL with everything required in order to make a successful call to AWS. It's commonly used in Amazon S3. For more information, see [Authenticating Requests by Using Query Parameters \(AWS Signature Version 4\)](#) in the *Amazon Simple Storage Service API Reference*.

### Important

If you make a request in which all parameters are included in the query string, the resulting URL represents an AWS action that is already authenticated. Therefore, treat the resulting URL with as much caution as you would treat your actual credentials. We recommend you specify a short expiration time for the request with the `X-Amz-Expires` parameter.

When you use this approach, all the query string values (except the signature) are included in the canonical query string that is part of the canonical query that you construct in [the first part of the signing process \(p. 655\)](#).

The following pseudocode shows the construction of a query string that contains all request parameters.

```
queryString = Action=action
queryString += &X-Amz-Algorithm=algorithm
queryString += &X-Amz-Credential= urlencode(access_key_ID + '/' + credential_scope)
queryString += &X-Amz-Date=date
queryString += &X-Amz-Expires=timeout interval
queryString += &X-Amz-SignedHeaders=signed_headers
```

After the signature is calculated (which uses the other query string values as part of the calculation), you add the signature to the query string as the `X-Amz-Signature` parameter:

```
queryString += &X-Amz-Signature=signature
```

The following example shows what a request might look like when all the request parameters and the signing information are included in query string parameters.

Note that in the actual request, the authorization header would appear as a continuous line of text. The version below has been formatted for readability.

```
https://iam.amazonaws.com?Action=ListUsers&Version=2010-05-08
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIDEXAMPLE%2F20150830%2Fus-east-1%2Fiam%2Faws4_request
&X-Amz-Date=20150830T123600Z
&X-Amz-Expires=60
&X-Amz-SignedHeaders=content-type%3Bhost
&X-Amz-Signature=37ac2f4fde00b0ac9bd9eadeb459b1bbe224158d66e7ae5fcadb70b2d181d02
```

Note the following:

- For the signature calculation, query string parameters must be sorted in code point order from low to high, and their values must be URI-encoded. See the step about creating a canonical query string in [Task 1: Create a canonical request for Signature Version 4 \(p. 655\)](#).

- Set the timeout interval (`x-Amz-Expires`) to the minimal viable time for the operation you're requesting.

## Handling dates in Signature Version 4

The date that you use as part of your credential scope must match the date of your request. You can include the date as part of your request in several ways. You can use a date header, an `x-amz-date` header or include `x-amz-date` as a query parameter. For example requests, see [Examples of the complete Signature Version 4 signing process \(Python\) \(p. 668\)](#).

The time stamp must be in UTC and in the following ISO 8601 format: `YYYYMMDD'T'HHMMSS'Z`. For example, `20150830T123600Z` is a valid time stamp. Do not include milliseconds in the time stamp.

AWS first checks the `x-amz-date` header or parameter for a time stamp. If AWS can't find a value for `x-amz-date`, it looks for the date header. AWS then checks the credential scope for an eight-digit string representing the year (YYYY), month (MM), and day (DD) of the request. For example, if the `x-amz-date` header value is `20111015T080000Z` and the date component of the credential scope is `20111015`, AWS allows the authentication process to proceed.

If the dates don't match, AWS rejects the request, even if the time stamp is only seconds away from the date in the credential scope. For example, AWS will reject a request that has an `x-amz-date` header value of `20151014T235959Z` and a credential scope that has the date `20151015`.

## Examples of how to derive a signing key for Signature Version 4

This page shows examples in several programming languages for how to derive a signing key for Signature Version 4. The examples on this page show only how to derive a signing key, which is just one part of signing AWS requests. For examples that show the complete process, see [Examples of the complete Signature Version 4 signing process \(Python\) \(p. 668\)](#).

### Important

If you are using one of the [AWS SDKs](#) (including the SDK for Java, .NET, Python, Ruby, or JavaScript), you do not have to manually perform the steps of deriving a signing key and adding authentication information to a request. The SDKs perform this work for you. You need to manually sign requests only if you are directly making HTTP or HTTPS requests.

### Examples

- [Deriving a signing key using Java \(p. 665\)](#)
- [Deriving a signing key using .NET \(C#\) \(p. 666\)](#)
- [Deriving a signing key using Python \(p. 666\)](#)
- [Deriving a signing key using Ruby \(p. 666\)](#)
- [Deriving a signing key using JavaScript \(Node.js\) \(p. 666\)](#)
- [Deriving a signing key using other languages \(p. 667\)](#)
- [Common coding errors \(p. 667\)](#)

### Deriving a signing key using Java

```
static byte[] HmacSHA256(String data, byte[] key) throws Exception {
    String algorithm="HmacSHA256";
    Mac mac = Mac.getInstance(algorithm);
    mac.init(new SecretKeySpec(key, algorithm));
    return mac.doFinal(data.getBytes("UTF-8"));
}

static byte[] getSignatureKey(String key, String dateStamp, String regionName, String
    serviceName) throws Exception {
```

```
byte[] kSecret = ("AWS4" + key).getBytes("UTF-8");
byte[] kDate = HmacSHA256(dateStamp, kSecret);
byte[] kRegion = HmacSHA256(regionName, kDate);
byte[] kService = HmacSHA256(serviceName, kRegion);
byte[] kSigning = HmacSHA256("aws4_request", kService);
return kSigning;
}
```

## Deriving a signing key using .NET (C#)

```
static byte[] HmacSHA256(String data, byte[] key)
{
    String algorithm = "HmacSHA256";
    KeyedHashAlgorithm kha = KeyedHashAlgorithm.Create(algorithm);
    kha.Key = key;

    return kha.ComputeHash(Encoding.UTF8.GetBytes(data));
}

static byte[] getSignatureKey(String key, String dateStamp, String regionName, String
    serviceName)
{
    byte[] kSecret = Encoding.UTF8.GetBytes(("AWS4" + key).ToCharArray());
    byte[] kDate = HmacSHA256(dateStamp, kSecret);
    byte[] kRegion = HmacSHA256(regionName, kDate);
    byte[] kService = HmacSHA256(serviceName, kRegion);
    byte[] kSigning = HmacSHA256("aws4_request", kService);

    return kSigning;
}
```

## Deriving a signing key using Python

```
def sign(key, msg):
    return hmac.new(key, msg.encode("utf-8"), hashlib.sha256).digest()

def getSignatureKey(key, dateStamp, regionName, serviceName):
    kDate = sign(("AWS4" + key).encode("utf-8"), dateStamp)
    kRegion = sign(kDate, regionName)
    kService = sign(kRegion, serviceName)
    kSigning = sign(kService, "aws4_request")
    return kSigning
```

## Deriving a signing key using Ruby

```
def getSignatureKey key, dateStamp, regionName, serviceName
  kDate = OpenSSL::HMAC.digest('sha256', "AWS4" + key, dateStamp)
  kRegion = OpenSSL::HMAC.digest('sha256', kDate, regionName)
  kService = OpenSSL::HMAC.digest('sha256', kRegion, serviceName)
  kSigning = OpenSSL::HMAC.digest('sha256', kService, "aws4_request")

  kSigning
end
```

## Deriving a signing key using JavaScript (Node.js)

The following example uses the crypto-js library. For more information, see <https://www.npmjs.com/package/crypto-js> and <https://code.google.com/archive/p/crypto-js/>.

```
var crypto = require("crypto-js");
```

```
function getSignatureKey(key, dateStamp, regionName, serviceName) {  
    var kDate = crypto.HmacSHA256(dateStamp, "AWS4" + key);  
    var kRegion = crypto.HmacSHA256(regionName, kDate);  
    var kService = crypto.HmacSHA256(serviceName, kRegion);  
    var kSigning = crypto.HmacSHA256("aws4_request", kService);  
    return kSigning;  
}
```

## Deriving a signing key using other languages

If you need to implement this logic in a different programming language, we recommend testing the intermediary steps of the key derivation algorithm against the values in this section. The following example in Ruby prints the results using the `hexEncode` function after each step in the algorithm.

```
def hexEncode bindata  
    result=""  
    data=bindata.unpack( "C*" )  
    data.each {|b| result+= "%02x" % b}  
    result  
end
```

Given the following test input:

```
key = 'wJalrXUtnFEMI/K7MDENG+bPxRfiCYEXAMPLEKEY'  
dateStamp = '20120215'  
regionName = 'us-east-1'  
serviceName = 'iam'
```

Your program should generate the following values for the values in `getSignatureKey`. Note that these are hex-encoded representations of the binary data; the key itself and the intermediate values should be in binary format.

```
kSecret =  
'41575334774a616c725855746e46454d492f4b374d44454e472b62507852666943594558414d504c454b4559'  
kDate = '969fbb94feb542b71ede6f87fe4d5fa29c789342b0f407474670f0c2489e0a0d'  
kRegion = '69daa0209cd9c5ff5c8ced464a696fd4252e981430b10e3d3fd8e2f197d7a70c'  
kService = 'f72cfdf46f26bc4643f06a11eabb6c0ba18780c19a8da0c31ace671265e3c87fa'  
kSigning = 'f4780e2d9f65fa895f9c67b32ce1baf0b0d8a43505a000a1a9e090d414db404d'
```

## Common coding errors

To simplify your task, avoid the following common coding errors.

### Tip

Examine the HTTP request that you're sending to AWS with a tool that shows you what your raw HTTP requests look like. This can help you spot issues that aren't evident from your code.

- Don't include an extra newline character, or forget one where it's required.
- Don't format the date incorrectly in the credential scope, such as using a time stamp instead of YYYYMMDD format.
- Make sure the headers in the canonical headers and the signed headers are the same.
- Don't inadvertently swap the key and the data (message) when calculating intermediary keys. The result of the previous step's computation is the key, not the data. Check the documentation for your cryptographic primitives carefully to ensure that you place the parameters in the proper order.
- Don't forget to add the string "AWS4" in front of the key for the first step. If you implement the key derivation using a `for` loop or iterator, don't forget to special-case the first iteration so that it includes the "AWS4" string.

For more information about possible errors, see [Troubleshooting AWS Signature Version 4 errors \(p. 675\)](#).

## Examples of the complete Signature Version 4 signing process (Python)

This section shows example programs written in Python that illustrate how to work with Signature Version 4 in AWS. We deliberately wrote these example programs to be simple (to use few Python-specific features) to make it easier to understand the overall process of signing AWS requests.

### Note

If you are using one of the [AWS SDKs](#) (including the SDK for C++, SDK for Go, SDK for Java, AWS SDK for JavaScript, AWS SDK for .NET, SDK for PHP, SDK for Python (Boto3), or SDK for Ruby), you do not have to manually perform the steps of deriving a signing key and adding authentication information to a request. The SDKs perform this work for you. You need to manually sign requests only if you are directly making HTTP or HTTPS requests.

In order to work with these example programs, you need the following:

- Python 2.x installed on your computer, which you can get from the [Python site](#). These programs were tested using Python 2.7 and 3.6.
- The [Python requests library](#), which is used in the example script to make web requests. A convenient way to install Python packages is to use pip, which gets packages from the Python package index site. You can then install requests by running `pip install requests` at the command line.
- An access key (access key ID and secret access key) in environment variables named `AWS_ACCESS_KEY_ID` and `AWS_SECRET_ACCESS_KEY`. Alternatively, you can keep these values in a credentials file and read them from that file. As a best practice, we recommend that you do **not** embed credentials in code. For more information, see [Best Practices for Managing AWS Access Keys](#) in the [Amazon Web Services General Reference](#).

The following examples use UTF-8 to encode the canonical request and string to sign, but Signature Version 4 does not require that you use a particular character encoding. However, some AWS services might require a specific encoding. For more information, consult the documentation for that service.

### Examples

- [Using GET with an authorization header \(Python\) \(p. 668\)](#)
- [Using POST \(Python\) \(p. 671\)](#)
- [Using GET with authentication information in the Query string \(Python\) \(p. 673\)](#)

### Using GET with an authorization header (Python)

The following example shows how to make a request using the Amazon EC2 query API without [SDK for Python \(Boto3\)](#). The request makes a GET request and passes authentication information to AWS using the Authorization header.

```
# Copyright 2010-2019 Amazon.com, Inc. or its affiliates. All Rights Reserved.  
#  
# This file is licensed under the Apache License, Version 2.0 (the "License").  
# You may not use this file except in compliance with the License. A copy of the  
# License is located at  
#  
# http://aws.amazon.com/apache2.0/  
#  
# This file is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS  
# OF ANY KIND, either express or implied. See the License for the specific  
# language governing permissions and limitations under the License.
```

```
#  
# ABOUT THIS PYTHON SAMPLE: This sample is part of the AWS General Reference  
# Signing AWS API Requests top available at  
# https://docs.aws.amazon.com/general/latest/gr/sigv4-signed-request-examples.html  
#  
# AWS Version 4 signing example  
  
# EC2 API (DescribeRegions)  
  
# See: http://docs.aws.amazon.com/general/latest/gr/sigv4_signing.html  
# This version makes a GET request and passes the signature  
# in the Authorization header.  
import sys, os, base64, datetime, hashlib, hmac  
import requests # pip install requests  
  
# ***** REQUEST VALUES *****  
method = 'GET'  
service = 'ec2'  
host = 'ec2.amazonaws.com'  
region = 'us-east-1'  
endpoint = 'https://ec2.amazonaws.com'  
request_parameters = 'Action=DescribeRegions&Version=2013-10-15'  
  
# Key derivation functions. See:  
# http://docs.aws.amazon.com/general/latest/gr/signature-v4-examples.html#signature-v4-  
examples-python  
def sign(key, msg):  
    return hmac.new(key, msg.encode('utf-8'), hashlib.sha256).digest()  
  
def getSignatureKey(key, dateStamp, regionName, serviceName):  
    kDate = sign(('AWS4' + key).encode('utf-8'), dateStamp)  
    kRegion = sign(kDate, regionName)  
    kService = sign(kRegion, serviceName)  
    kSigning = sign(kService, 'aws4_request')  
    return kSigning  
  
# Read AWS access key from env. variables or configuration file. Best practice is NOT  
# to embed credentials in code.  
access_key = os.environ.get('AWS_ACCESS_KEY_ID')  
secret_key = os.environ.get('AWS_SECRET_ACCESS_KEY')  
if access_key is None or secret_key is None:  
    print('No access key is available.')  
    sys.exit()  
  
# Create a date for headers and the credential string  
t = datetime.datetime.utcnow()  
amzdate = t.strftime('%Y%m%dT%H%M%SZ')  
datestamp = t.strftime('%Y%m%d') # Date w/o time, used in credential scope  
  
# ***** TASK 1: CREATE A CANONICAL REQUEST *****  
# http://docs.aws.amazon.com/general/latest/gr/sigv4-create-canonical-request.html  
  
# Step 1 is to define the verb (GET, POST, etc.)--already done.  
  
# Step 2: Create canonical URI--the part of the URI from domain to query  
# string (use '/' if no path)  
canonical_uri = '/'  
  
# Step 3: Create the canonical query string. In this example (a GET request),  
# request parameters are in the query string. Query string values must  
# be URL-encoded (space=%20). The parameters must be sorted by name.  
# For this example, the query string is pre-formatted in the request_parameters variable.  
canonical_querystring = request_parameters
```

```
# Step 4: Create the canonical headers and signed headers. Header names
# must be trimmed and lowercase, and sorted in code point order from
# low to high. Note that there is a trailing '\n'.
canonical_headers = 'host:' + host + '\n' + 'x-amz-date:' + amzdate + '\n'

# Step 5: Create the list of signed headers. This lists the headers
# in the canonical_headers list, delimited with ";" and in alpha order.
# Note: The request can include any headers; canonical_headers and
# signed_headers lists those that you want to be included in the
# hash of the request. "Host" and "x-amz-date" are always required.
signed_headers = 'host;x-amz-date'

# Step 6: Create payload hash (hash of the request body content). For GET
# requests, the payload is an empty string ("").
payload_hash = hashlib.sha256('').encode('utf-8')).hexdigest()

# Step 7: Combine elements to create canonical request
canonical_request = method + '\n' + canonical_uri + '\n' + canonical_querystring + '\n' +
canonical_headers + '\n' + signed_headers + '\n' + payload_hash

# ***** TASK 2: CREATE THE STRING TO SIGN*****
# Match the algorithm to the hashing algorithm you use, either SHA-1 or
# SHA-256 (recommended)
algorithm = 'AWS4-HMAC-SHA256'
credential_scope = datestamp + '/' + region + '/' + service + '/' + 'aws4_request'
string_to_sign = algorithm + '\n' + amzdate + '\n' + credential_scope + '\n' +
hashlib.sha256(canonical_request.encode('utf-8')).hexdigest()

# ***** TASK 3: CALCULATE THE SIGNATURE *****
# Create the signing key using the function defined above.
signing_key = getSignatureKey(secret_key, datestamp, region, service)

# Sign the string_to_sign using the signing_key
signature = hmac.new(signing_key, (string_to_sign).encode('utf-8'),
hashlib.sha256).hexdigest()

# ***** TASK 4: ADD SIGNING INFORMATION TO THE REQUEST *****
# The signing information can be either in a query string value or in
# a header named Authorization. This code shows how to use a header.
# Create authorization header and add to request headers
authorization_header = algorithm + ' ' + 'Credential=' + access_key + ' / '
credential_scope + ', ' + 'SignedHeaders=' + signed_headers + ', ' + 'Signature=' +
signature

# The request can include any headers, but MUST include "host", "x-amz-date",
# and (for this scenario) "Authorization". "host" and "x-amz-date" must
# be included in the canonical_headers and signed_headers, as noted
# earlier. Order here is not significant.
# Python note: The 'host' header is added automatically by the Python 'requests' library.
headers = {'x-amz-date':amzdate, 'Authorization':authorization_header}

# ***** SEND THE REQUEST *****
request_url = endpoint + '?' + canonical_querystring

print('\nBEGIN REQUEST'+ '='*50)
print('Request URL = ' + request_url)
r = requests.get(request_url, headers=headers)

print('\nRESPONSE'+ '='*50)
print('Response code: %d\n' % r.status_code)
print(r.text)
```

## Using POST (Python)

The following example shows how to make a request using the Amazon DynamoDB query API without [SDK for Python \(Boto3\)](#). The request makes a POST request and passes values to AWS in the body of the request. Authentication information is passed using the Authorization request header.

```
# Copyright 2010-2019 Amazon.com, Inc. or its affiliates. All Rights Reserved.
#
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# You may not use this file except in compliance with the License. A copy of the
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#
# http://aws.amazon.com/apache2.0/
#
# This file is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS
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# language governing permissions and limitations under the License.

# AWS Version 4 signing example

# DynamoDB API (CreateTable)

# See: http://docs.aws.amazon.com/general/latest/gr/sigv4_signing.html
# This version makes a POST request and passes request parameters
# in the body (payload) of the request. Auth information is passed in
# an Authorization header.
import sys, os, base64, datetime, hashlib, hmac
import requests # pip install requests

# ***** REQUEST VALUES *****
method = 'POST'
service = 'dynamodb'
host = 'dynamodb.us-west-2.amazonaws.com'
region = 'us-west-2'
endpoint = 'https://dynamodb.us-west-2.amazonaws.com/'
# POST requests use a content type header. For DynamoDB,
# the content is JSON.
content_type = 'application/x-amz-json-1.0'
# DynamoDB requires an x-amz-target header that has this format:
#   DynamoDB_<API version>.<operationName>
amz_target = 'DynamoDB_20120810.CreateTable'

# Request parameters for CreateTable--passed in a JSON block.
request_parameters = '{'
request_parameters += '"KeySchema": [{"KeyType": "HASH", "AttributeName": "Id"}],'
request_parameters += '"TableName": "TestTable", "AttributeDefinitions": [{"AttributeName": "Id", "AttributeType": "S"}}],'
request_parameters += '"ProvisionedThroughput": {"WriteCapacityUnits": 5, "ReadCapacityUnits": 5}'
request_parameters += '}'

# Key derivation functions. See:
# http://docs.aws.amazon.com/general/latest/gr/signature-v4-examples.html#signature-v4-examples-python
def sign(key, msg):
    return hmac.new(key, msg.encode("utf-8"), hashlib.sha256).digest()

def getSignatureKey(key, date_stamp, regionName, serviceName):
    kDate = sign(('AWS4' + key).encode('utf-8'), date_stamp)
    kRegion = sign(kDate, regionName)
    kService = sign(kRegion, serviceName)
    kSigning = sign(kService, 'aws4_request')
```

```
    return kSigning

# Read AWS access key from env. variables or configuration file. Best practice is NOT
# to embed credentials in code.
access_key = os.environ.get('AWS_ACCESS_KEY_ID')
secret_key = os.environ.get('AWS_SECRET_ACCESS_KEY')
if access_key is None or secret_key is None:
    print('No access key is available.')
    sys.exit()

# Create a date for headers and the credential string
t = datetime.datetime.utcnow()
amz_date = t.strftime('%Y%m%dT%H%M%SZ')
date_stamp = t.strftime('%Y%m%d') # Date w/o time, used in credential scope

# ***** TASK 1: CREATE A CANONICAL REQUEST *****
# http://docs.aws.amazon.com/general/latest/gr/sigv4-create-canonical-request.html

# Step 1 is to define the verb (GET, POST, etc.)--already done.

# Step 2: Create canonical URI--the part of the URI from domain to query
# string (use '/' if no path)
canonical_uri = '/'

## Step 3: Create the canonical query string. In this example, request
# parameters are passed in the body of the request and the query string
# is blank.
canonical_querystring = ''

# Step 4: Create the canonical headers. Header names must be trimmed
# and lowercase, and sorted in code point order from low to high.
# Note that there is a trailing \n.
canonical_headers = 'content-type:' + content_type + '\n' + 'host:' + host + '\n' + 'x-amz-
date:' + amz_date + '\n' + 'x-amz-target:' + amz_target + '\n'

# Step 5: Create the list of signed headers. This lists the headers
# in the canonical_headers list, delimited with ";" and in alpha order.
# Note: The request can include any headers; canonical_headers and
# signed_headers include those that you want to be included in the
# hash of the request. "Host" and "x-amz-date" are always required.
# For DynamoDB, content-type and x-amz-target are also required.
signed_headers = 'content-type;host;x-amz-date;x-amz-target'

# Step 6: Create payload hash. In this example, the payload (body of
# the request) contains the request parameters.
payload_hash = hashlib.sha256(request_parameters.encode('utf-8')).hexdigest()

# Step 7: Combine elements to create canonical request
canonical_request = method + '\n' + canonical_uri + '\n' + canonical_querystring + '\n' +
canonical_headers + '\n' + signed_headers + '\n' + payload_hash

# ***** TASK 2: CREATE THE STRING TO SIGN*****
# Match the algorithm to the hashing algorithm you use, either SHA-1 or
# SHA-256 (recommended)
algorithm = 'AWS4-HMAC-SHA256'
credential_scope = date_stamp + '/' + region + '/' + service + '/' + 'aws4_request'
string_to_sign = algorithm + '\n' + amz_date + '\n' + credential_scope + '\n' +
hashlib.sha256(canonical_request.encode('utf-8')).hexdigest()

# ***** TASK 3: CALCULATE THE SIGNATURE *****
# Create the signing key using the function defined above.
signing_key = getSignatureKey(secret_key, date_stamp, region, service)

# Sign the string_to_sign using the signing_key
```

```
signature = hmac.new(signing_key, (string_to_sign).encode('utf-8'),  
hashlib.sha256).hexdigest()  
  
# ***** TASK 4: ADD SIGNING INFORMATION TO THE REQUEST *****  
# Put the signature information in a header named Authorization.  
authorization_header = algorithm + ' ' + 'Credential=' + access_key + '/' +  
credential_scope + ', ' + 'SignedHeaders=' + signed_headers + ', ' + 'Signature=' +  
signature  
  
# For DynamoDB, the request can include any headers, but MUST include "host", "x-amz-date",  
# "x-amz-target", "content-type", and "Authorization". Except for the authorization  
# header, the headers must be included in the canonical_headers and signed_headers values,  
as  
# noted earlier. Order here is not significant.  
# # Python note: The 'host' header is added automatically by the Python 'requests' library.  
headers = {'Content-Type':content_type,  
          'X-Amz-Date':amz_date,  
          'X-Amz-Target':amz_target,  
          'Authorization':authorization_header}  
  
# ***** SEND THE REQUEST *****  
print('\nBEGIN REQUEST'+ '='*50)  
print('Request URL = ' + endpoint)  
  
r = requests.post(endpoint, data=request_parameters, headers=headers)  
  
print('\nRESPONSE'+ '='*50)  
print('Response code: %d\n' % r.status_code)  
print(r.text)
```

## Using GET with authentication information in the Query string (Python)

The following example shows how to make a request using the IAM query API without [SDK for Python \(Boto3\)](#). The request makes a GET request and passes parameters and signing information using the query string.

```
# Copyright 2010-2019 Amazon.com, Inc. or its affiliates. All Rights Reserved.  
#  
# This file is licensed under the Apache License, Version 2.0 (the "License").  
# You may not use this file except in compliance with the License. A copy of the  
# License is located at  
#  
# http://aws.amazon.com/apache2.0/  
#  
# This file is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS  
# OF ANY KIND, either express or implied. See the License for the specific  
# language governing permissions and limitations under the License.  
#  
# ABOUT THIS PYTHON SAMPLE: This sample is part of the AWS General Reference  
# Signing AWS API Requests top available at  
# https://docs.aws.amazon.com/general/latest/gr/sigv4-signed-request-examples.html  
#  
# AWS Version 4 signing example  
  
# IAM API (CreateUser)  
  
# See: http://docs.aws.amazon.com/general/latest/gr/sigv4_signing.html  
# This version makes a GET request and passes request parameters
```

```
# and authorization information in the query string
import sys, os, base64, datetime, hashlib, hmac, urllib
import requests # pip install requests

# ***** REQUEST VALUES *****
method = 'GET'
service = 'iam'
host = 'iam.amazonaws.com'
region = 'us-east-1'
endpoint = 'https://iam.amazonaws.com'

# Key derivation functions. See:
# http://docs.aws.amazon.com/general/latest/gr/signature-v4-examples.html#signature-v4-
examples-python
def sign(key, msg):
    return hmac.new(key, msg.encode('utf-8'), hashlib.sha256).digest()

def getSignatureKey(key, dateStamp, regionName, serviceName):
    kDate = sign(('AWS4' + key).encode('utf-8'), dateStamp)
    kRegion = sign(kDate, regionName)
    kService = sign(kRegion, serviceName)
    kSigning = sign(kService, 'aws4_request')
    return kSigning

# Read AWS access key from env. variables or configuration file. Best practice is NOT
# to embed credentials in code.
access_key = os.environ.get('AWS_ACCESS_KEY_ID')
secret_key = os.environ.get('AWS_SECRET_ACCESS_KEY')
if access_key is None or secret_key is None:
    print('No access key is available.')
    sys.exit()

# Create a date for headers and the credential string
t = datetime.datetime.utcnow()
amz_date = t.strftime('%Y%m%dT%H%M%SZ') # Format date as YYYYMMDD'T'HHMMSS'Z'
datestamp = t.strftime('%Y%m%d') # Date w/o time, used in credential scope

# ***** TASK 1: CREATE A CANONICAL REQUEST *****
# http://docs.aws.amazon.com/general/latest/gr/sigv4-create-canonical-request.html

# Because almost all information is being passed in the query string,
# the order of these steps is slightly different than examples that
# use an authorization header.

# Step 1: Define the verb (GET, POST, etc.)--already done.

# Step 2: Create canonical URI--the part of the URI from domain to query
# string (use '/' if no path)
canonical_uri = '/'

# Step 3: Create the canonical headers and signed headers. Header names
# must be trimmed and lowercase, and sorted in code point order from
# low to high. Note trailing \n in canonical_headers.
# signed_headers is the list of headers that are being included
# as part of the signing process. For requests that use query strings,
# only "host" is included in the signed headers.
canonical_headers = 'host:' + host + '\n'
signed_headers = 'host'

# Match the algorithm to the hashing algorithm you use, either SHA-1 or
# SHA-256 (recommended)
algorithm = 'AWS4-HMAC-SHA256'
credential_scope = datestamp + '/' + region + '/' + service + '/' + 'aws4_request'

# Step 4: Create the canonical query string. In this example, request
```

```
# parameters are in the query string. Query string values must
# be URL-encoded (space=%20). The parameters must be sorted by name.
# use urllib.parse.quote_plus() if using Python 3
canonical_querystring = 'Action/CreateUser&UserName>NewUser&Version=2010-05-08'
canonical_querystring += '&X-Amz-Algorithm=AWS4-HMAC-SHA256'
canonical_querystring += '&X-Amz-Credential=' + urllib.quote_plus(access_key + '/' +
    credential_scope)
canonical_querystring += '&X-Amz-Date=' + amz_date
canonical_querystring += '&X-Amz-Expires=30'
canonical_querystring += '&X-Amz-SignedHeaders=' + signed_headers

# Step 5: Create payload hash. For GET requests, the payload is an
# empty string ("").
payload_hash = hashlib.sha256('').encode('utf-8')).hexdigest()

# Step 6: Combine elements to create canonical request
canonical_request = method + '\n' + canonical_uri + '\n' + canonical_querystring + '\n' +
    canonical_headers + '\n' + signed_headers + '\n' + payload_hash

# ***** TASK 2: CREATE THE STRING TO SIGN*****
string_to_sign = algorithm + '\n' + amz_date + '\n' + credential_scope + '\n' +
    hashlib.sha256(canonical_request.encode('utf-8')).hexdigest()

# ***** TASK 3: CALCULATE THE SIGNATURE *****
# Create the signing key
signing_key = getSignatureKey(secret_key, datestamp, region, service)

# Sign the string_to_sign using the signing_key
signature = hmac.new(signing_key, (string_to_sign).encode("utf-8"),
    hashlib.sha256).hexdigest()

# ***** TASK 4: ADD SIGNING INFORMATION TO THE REQUEST *****
# The auth information can be either in a query string
# value or in a header named Authorization. This code shows how to put
# everything into a query string.
canonical_querystring += '&X-Amz-Signature=' + signature

# ***** SEND THE REQUEST *****
# The 'host' header is added automatically by the Python 'request' lib. But it
# must exist as a header in the request.
request_url = endpoint + "?" + canonical_querystring

print('\nBEGIN REQUEST'+ '='*50)
print('Request URL = ' + request_url)
r = requests.get(request_url)

print('\nRESPONSE'+ '='*50)
print('Response code: %d\n' % r.status_code)
print(r.text)
```

## Troubleshooting AWS Signature Version 4 errors

When you develop code that implements Signature Version 4, you might receive errors from AWS products that you test against. The errors typically come from an error in the canonicalization of the request, the incorrect derivation or use of the signing key, or a validation failure of signature-specific parameters sent along with the request.

### Errors

- [Troubleshooting canonicalization errors \(p. 676\)](#)
- [Troubleshooting credential scope errors \(p. 676\)](#)
- [Troubleshooting key signing errors \(p. 678\)](#)

## Troubleshooting canonicalization errors

Consider the following request:

```
https://iam.amazonaws.com/?MaxItems=100
&Action=ListGroupsForUser
&UserName=Test
&Version=2010-05-08
&X-Amz-Date=20120223T063000Z
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20120223/us-east-1/iam/aws4_request
&X-Amz-SignedHeaders=host
&X-Amz-Signature=<calculated value>
```

If you incorrectly calculate the canonical request or the string to sign, the signature verification step performed by the service fails. The following example is a typical error response, which includes the canonical string and the string to sign as computed by the service. You can troubleshoot your calculation error by comparing the returned strings with the canonical string and your calculated string to sign.

```
<ErrorResponse xmlns="https://iam.amazonaws.com/doc/2010-05-08/">
<Error>
  <Type>Sender</Type>
  <Code>SignatureDoesNotMatch</Code>
  <Message>The request signature we calculated does not match the signature you provided.
Check your AWS Secret Access Key and signing method. Consult the service documentation for
details.

The canonical string for this request should have been 'GET /
Action=ListGroupsForUser&MaxItems=100&UserName=Test&Version=2010-05-08&X-Amz-
Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential
=AKIAIOSFODNN7EXAMPLE%2F20120223%2Fus-east-1%2Fiam%2Faws4_request&X-Amz-
Date=20120223T063000Z&X-Amz-SignedHeaders=host
host:iam.amazonaws.com

host
<hashed-value>

The String-to-Sign should have been
'AWS4-HMAC-SHA256
20120223T063000Z
20120223/us-east-1/iam/aws4_request
<hashed-value>
</Message>
</Error>
<RequestId>4ced6e96-5de8-11e1-aa78-a56908bdf8eb</RequestId>
</ErrorResponse>
```

## Troubleshooting credential scope errors

AWS products validate credentials for proper scope; the credential parameter must specify the correct service, Region, and date. For example, the following credential references the Amazon RDS service:

```
Credential=AKIAIOSFODNN7EXAMPLE/20120224/us-east-1/rds/aws4_request
```

If you use the same credentials to submit a request to IAM, you'll receive the following error response:

```
<ErrorResponse xmlns="https://iam.amazonaws.com/doc/2010-05-08/">
<Error>
  <Type>Sender</Type>
  <Code>SignatureDoesNotMatch</Code>
  <Message>Credential should be scoped to correct service: 'iam'. </Message>
</Error>
<RequestId>aa0da9de-5f2b-11e1-a2c0-c1dc98b6c575</RequestId>
```

The credential must also specify the correct Region. For example, the following credential for an IAM request incorrectly specifies the US West (N. California) Region.

```
Credential=AKIAIOSFODNN7EXAMPLE/20120224/us-west-1/iam/aws4_request
```

If you use the credential to submit a request to IAM, which accepts only the `us-east-1` Region specification, you'll receive the following response:

```
comma-separated<ErrorResponse xmlns="https://iam.amazonaws.com/doc/2010-05-08/">
<Error>
  <Type>Sender</Type>
  <Code>SignatureDoesNotMatch</Code>
  <Message>Credential should be scoped to a valid Region, not 'us-west-1'. </Message>
</Error>
<RequestId>8e229682-5f27-11e1-88f2-4b1b00f424ae</RequestId>
</ErrorResponse>
```

You'll receive the same type of invalid Region response from AWS products that are available in multiple Regions if you submit requests to a Region that differs from the Region specified in your credential scope.

The credential must also specify the correct Region for the service and action in your request.

The date that you use as part of the credential must match the date value in the `x-amz-date` header. For example, the following `x-amz-date` header value does not match the date value used in the `Credential` parameter that follows it.

```
x-amz-date:"20120224T213559Z"
Credential=AKIAIOSFODNN7EXAMPLE/20120225/us-east-1/iam/aws4_request
```

If you use this pairing of `x-amz-date` header and credential, you'll receive the following error response:

```
<ErrorResponse xmlns="https://iam.amazonaws.com/doc/2010-05-08/">
<Error>
  <Type>Sender</Type>
  <Code>SignatureDoesNotMatch</Code>
  <Message>Date in Credential scope does not match YYYYMMDD from ISO-8601 version of date
from HTTP: '20120225' != '20120224', from '20120 224T213559Z'.</Message>
</Error>
<RequestId>9d6ddd2b-5f2f-11e1-b901-a702cd369eb8</RequestId>
</ErrorResponse>
```

An expired signature can also generate an error response. For example, the following error response was generated due to an expired signature.

```
<ErrorResponse xmlns="https://iam.amazonaws.com/doc/2010-05-08/">
<Error>
  <Type>Sender</Type>
  <Code>SignatureDoesNotMatch</Code>
```

```
<Message>Signature expired: 20120306T074514Z is now earlier than 20120306T074556Z  
(20120306T080056Z - 15 min.)</Message>  
</Error>  
<RequestId>fcc88440-5dec-11e1-b901-a702cd369eb8</RequestId>  
</ErrorResponse>
```

## Troubleshooting key signing errors

Errors that are caused by an incorrect derivation of the signing key or improper use of cryptography are more difficult to troubleshoot. The error response will tell you that the signature does not match. If you verified that the canonical string and the string to sign are correct, the cause of the signature mismatch is most likely one of the two following issues:

- The secret access key does not match the access key ID that you specified in the `Credential` parameter.
- There is a problem with your key derivation code.

To check whether the secret key matches the access key ID, you can use your secret key and access key ID with a known working implementation. One way is to use one of the AWS SDKs to write a program that makes a simple request to AWS using the access key ID and secret access key that you want to use.

To check whether your key derivation code is correct, you can compare it to our example derivation code. For more information, see [Examples of how to derive a signing key for Signature Version 4 \(p. 665\)](#).

## Service-specific reference for Signature Version 4

To learn more about making and signing HTTP requests in the context of specific AWS services, see the documentation for the following services:

- [Amazon API Gateway](#)
- [Amazon CloudSearch](#)
- [Amazon CloudWatch](#)
- [AWS Data Pipeline](#)
- [Amazon Elastic Compute Cloud \(Amazon EC2\)](#)
- [Amazon Elastic Transcoder](#)
- [Amazon S3 Glacier](#)
- [Amazon Mobile Analytics](#)
- [Amazon Relational Database Service \(Amazon RDS\)](#)
- [Amazon Simple Email Service \(Amazon SES\)](#)
- [Amazon Simple Queue Service \(Amazon SQS\)](#)
- [Amazon Simple Storage Service \(Amazon S3\)](#)
- [Amazon Simple Workflow Service \(Amazon SWF\)](#)
- [AWS WAF](#)

## Signature Version 2 signing process

### Important

The [AWS SDKs](#), [AWS Command Line Interface \(AWS CLI\)](#), and other AWS tools sign API requests for you using the access key that you specify when you configure the tool. **When you use these tools, you don't need to learn how to sign API requests. The following documentation explains how to sign API requests, but is only useful if you're writing your own code to send**

**and sign AWS API requests.** We recommend that you use the AWS SDKs or other AWS tools to send API requests, instead of writing your own code.  
If you must write your own code to sign AWS API requests, use [Signature Version 4 \(SigV4\) \(p. 650\)](#).

## Supported Regions and services

You can use Signature Version 2 to sign API requests for some AWS services in some AWS Regions. Otherwise, you must use Signature Version 4 to sign API requests.

### Regions that support Signature Version 2

- US East (N. Virginia) Region
- US West (N. California) Region
- US West (Oregon) Region
- Europe (Ireland) Region
- Asia Pacific (Tokyo) Region
- Asia Pacific (Singapore) Region
- Asia Pacific (Sydney) Region
- South America (São Paulo) Region

### Services that support Signature Version 2

- Amazon EC2 Auto Scaling
- AWS CloudFormation
- Amazon CloudWatch
- AWS Elastic Beanstalk
- Amazon Elastic Compute Cloud (Amazon EC2)
- Elastic Load Balancing
- Amazon EMR
- Amazon ElastiCache
- AWS Identity and Access Management (IAM)
- AWS Import/Export
- Amazon Relational Database Service (Amazon RDS)
- Amazon Simple Notification Service (Amazon SNS)
- Amazon Simple Queue Service (Amazon SQS)
- Amazon SimpleDB

### Services deprecating Signature Version 2

- Amazon Simple Storage Service (Amazon S3) - [Amazon S3 Update - SigV2 Deprecation](#)
- Amazon Simple Email Service (Amazon SES)

## Components of a query request for Signature Version 2

AWS requires that each HTTP or HTTPS Query request formatted for Signature Version 2 contains the following:

## Endpoint

Also known as the host part of an HTTP request. This is the DNS name of the computer where you send the Query request. This is different for each AWS Region.

## Action

The action you want a web service to perform. This value determines the parameters used in the request.

## AWSAccessKeyId

A value distributed by AWS when you sign up for an AWS account.

## SignatureMethod

The hash-based protocol used to calculate the signature. This can be either HMAC-SHA1 or HMAC-SHA256 for Signature Version 2.

## SignatureVersion

The version of the AWS signature protocol.

## Timestamp

The time at which you make the request. Include this in the Query request to help prevent third parties from intercepting your request.

## Required and optional parameters

Each action has a set of required and optional parameters that define the API call.

## Signature

The calculated value that ensures the signature is valid and has not been tampered.

The following is an example Amazon EMR Query request formatted as an HTTPS GET request.

- The endpoint, `elasticmapreduce.amazonaws.com`, is the default endpoint and maps to the Region `us-east-1`.
- The action is `DescribeJobFlows`, which requests information about one or more job flows.

## Note

In the actual Query request, there are no spaces or newline characters. The request is a continuous line of text. The version below is formatted for human readability.

```
https://elasticmapreduce.amazonaws.com?  
&AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE  
&Action=DescribeJobFlows  
&SignatureMethod=HmacSHA256  
&SignatureVersion=2  
&Timestamp=2011-10-03T15%3A19%3A30  
&Version=2009-03-31  
&Signature=calculated value
```

## How to generate a signature for a Query request

Web service requests are sent across the Internet and are vulnerable to tampering. To check that the request has not been altered, AWS calculates the signature to determine if any of the parameters or parameter values were changed en route. AWS requires a signature as part of every request.

Be sure to URI encode the request. For example, blank spaces in your request should be encoded as `%20`. Although an unencoded space is normally allowed by the HTTP protocol specification, unencoded

characters create an invalid signature in your Query request. Do *not* encode spaces as a plus sign (+) as this will cause errors.

The following topics describe the steps needed to calculate a signature using AWS Signature Version 2.

## Task 1: Format the Query request

Before you can sign the Query request, format the request in a standardized (canonical) format. This is needed because the different ways to format a Query request will result in different HMAC signatures. Format the request in a canonical format before signing. This ensures your application and AWS will calculate the same signature for a request.

To create the string to sign, you concatenate the Query request components. The following example generates the string to sign for the following call to the Amazon EMR API.

```
https://elasticmapreduce.amazonaws.com?  
Action=DescribeJobFlows  
&Version=2009-03-31  
&AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE  
&SignatureVersion=2  
&SignatureMethod=HmacSHA256  
&Timestamp=2011-10-03T15:19:30
```

### Note

In the preceding request, the last four parameters (AWSAccessKeyId through Timestamp) are called authentication parameters. They're required in every Signature Version 2 request. AWS uses them to identify who is sending the request and whether to grant the requested access.

### To create the string to sign

1. Start with the request method (either GET or POST), followed by a newline character. For human readability, the newline character is represented as \n.

```
GET\n
```

2. Add the HTTP host header (endpoint) in lowercase, followed by a newline character. The port information is omitted if it is the standard port for the protocol (port 80 for HTTP and port 443 for HTTPS), but included if it is a nonstandard port.

```
elasticmapreduce.amazonaws.com\n
```

3. Add the URL-encoded version of each path segment of the URI, which is everything between the HTTP host header to the question mark character (?) that begins the query string parameters, followed by a newline character. Don't encode the forward slash (/) that delimits each path segment.

In this example, if the absolute path is empty, use a forward slash (/).

```
/\n
```

4. a. Add the query string components, as UTF-8 characters which are URL encoded (hexadecimal characters must be uppercase). You do not encode the initial question mark character (?) in the request. For more information, see [RFC 3986](#).  
b. Sort the query string components by byte order. Byte ordering is case sensitive. AWS sorts these components based on the raw bytes.

For example, this is the original order for the query string components.

```
Action=DescribeJobFlows
Version=2009-03-31
AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE
SignatureVersion=2
SignatureMethod=HmacSHA256
Timestamp=2011-10-03T15%3A19%3A30
```

The query string components would be reorganized as the following:

```
AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE
Action=DescribeJobFlows
SignatureMethod=HmacSHA256
SignatureVersion=2
Timestamp=2011-10-03T15%3A19%3A30
Version=2009-03-31
```

- c. Separate parameter names from their values with the equal sign character (=), even if the value is empty. Separate parameter and value pairs with the ampersand character (&). Concatenate the parameters and their values to make one long string with no spaces. Spaces within a parameter value are allowed, but must be URL encoded as %20. In the concatenated string, period characters (.) are not escaped. RFC 3986 considers the period character an unreserved character, so it is not URL encoded.

**Note**

RFC 3986 does not specify what happens with ASCII control characters, extended UTF-8 characters, and other characters reserved by RFC 1738. Since any values may be passed into a string value, these other characters should be percent encoded as %XY where X and Y are uppercase hex characters. Extended UTF-8 characters take the form %XY%ZA... (this handles multibytes).

The following example shows the query string components, with the parameters concatenated with the ampersand character (&), and sorted by byte order.

```
AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Action=DescribeJobFlows&SignatureMethod=HmacSHA256&SignatureVer
```

5. To construct the finished canonical request, combine all the components from each step. As shown, each component ends with a newline character.

```
GET\n
elasticmapreduce.amazonaws.com\n
/\n
AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Action=DescribeJobFlows&SignatureMethod=HmacSHA256&SignatureVer
```

## Task 2: Calculate the signature

After you've created the canonical string as described in [Task 1: Format the Query request \(p. 681\)](#), calculate the signature by creating a hash-based message authentication code (HMAC) that uses either the HMAC-SHA1 or HMAC-SHA256 protocols. The HMAC-SHA256 is preferred.

In this example, the signature is calculated with the following canonical string and secret key as inputs to a keyed hash function:

- Canonical query string:

```
GET\n
```

```
elasticmapreduce.amazonaws.com\n\nAWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Action=DescribeJobFlows&SignatureMethod=HmacSHA256&SignatureVersion=2&Timestamp=2010-01-25T15%3A03%3A07-07%3A00&Version=2009-04-15&Signature=wJalrXUtnFEMI/K7MDENG/bPxRfiCYEXAMPLEKEY
```

- Sample secret key:

```
wJalrXUtnFEMI/K7MDENG/bPxRfiCYEXAMPLEKEY
```

The resulting signature must be base-64 encoded.

```
i91nKc4PWAt0JJIdXwz9HxZCJDdiy6cf%2FMj6vPxyYIs%3D
```

Add the resulting value to the query request as a `Signature` parameter. When you add this parameter to the request, you must URI encode it just like any other parameter. You can use the signed request in an HTTP or HTTPS call.

```
https://elasticmapreduce.amazonaws.com?\nAWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Action=DescribeJobFlows&SignatureMethod=HmacSHA256&SignatureVersion=2&Timestamp=2010-01-25T15%3A03%3A07-07%3A00&Version=2009-04-15&Signature=wJalrXUtnFEMI/K7MDENG/bPxRfiCYEXAMPLEKEY
```

**Note**

You can use temporary security credentials provided by AWS Security Token Service (AWS STS) to sign a request. The process is the same as using long-term credentials, but requests require an additional parameter for the security token.

The following request uses a temporary access key ID and the `SecurityToken` parameter.

**Example Example request with temporary security credentials**

```
https://sdb.amazonaws.com/\n?Action=GetAttributes\n&AWSAccessKeyId=access-key-from-AWS Security Token Service\n&DomainName=MyDomain\n&ItemName=MyItem\n&SignatureVersion=2\n&SignatureMethod=HmacSHA256\n&Timestamp=2010-01-25T15%3A03%3A07-07%3A00\n&Version=2009-04-15\n&Signature=signature-calculated-using-the-temporary-access-key\n&SecurityToken=session-token
```

For more information, see the following resources:

- The [Amazon EMR Developer Guide](#) has information about Amazon EMR API calls.
- The API documentation for each service has information about requirements and specific parameters for an action.
- The AWS SDKs offer functions to generate Query request signatures. To see an example using the AWS SDK for Java, see [Using the Java SDK to sign a Query request \(p. 684\)](#).

## Troubleshooting request signatures

This section describes some error codes you might see when you are initially developing code to generate the signature to sign Query requests.

## SignatureDoesNotMatch signing error in a web service

The following error response is returned when a web service attempts to validate the request signature by recalculating the signature value and generates a value that does not match the signature you appended to the request. This can occur because the request was altered between the time you sent it and the time it reached a web service endpoint (which is what the signature is designed to detect) or because the signature was calculated improperly. A common cause of the following error message is not properly creating the string to sign, such as forgetting to URL-encode characters such as the colon (:) and the forward slash (/) in Amazon S3 bucket names.

```
<ErrorResponse xmlns="http://elasticmapreduce.amazonaws.com/doc/2009-03-31">
<Error>
  <Type>Sender</Type>
  <Code>SignatureDoesNotMatch</Code>
  <Message>The request signature we calculated does not match the signature you provided.
    Check your AWS Secret Access Key and signing method.
    Consult the service documentation for details.</Message>
</Error>
<RequestId>7589637b-e4b0-11e0-95d9-639f87241c66</RequestId>
</ErrorResponse>
```

## IncompleteSignature signing error in a web service

The following error indicates that signature is missing information or has been improperly formed.

```
<ErrorResponse xmlns="http://elasticmapreduce.amazonaws.com/doc/2009-03-31">
<Error>
  <Type>Sender</Type>
  <Code>IncompleteSignature</Code>
  <Message>Request must contain a signature that conforms to AWS standards</Message>
</Error>
<RequestId>7146d0dd-e48e-11e0-a276-bd10ea0cbb74</RequestId>
</ErrorResponse>
```

## Using the Java SDK to sign a Query request

The following example uses the `amazon.webservices.common` package of the AWS SDK for Java to generate an AWS Signature Version 2 Query request signature. To do so, it creates an RFC 2104-compliant HMAC signature. For more information about HMAC, see [HMAC: Keyed-Hashing for Message Authentication](#).

### Note

Java is used as an example implementation. You can use the programming language of your choice to implement the HMAC algorithm to sign Query requests.

```
import java.security.SignatureException;
import javax.crypto.Mac;
import javax.crypto.spec.SecretKeySpec;
import com.amazonaws.util.*;

/**
 * This class defines common routines for generating
 * authentication signatures for AWS Platform requests.
 */
public class Signature {
    private static final String HMAC_SHA256_ALGORITHM = "HmacSHA256";
```

```
/**  
 * Computes RFC 2104-compliant HMAC signature.  
 * @param data  
 * The signed data.  
 * @param key  
 * The signing key.  
 * @return  
 * The Base64-encoded RFC 2104-compliant HMAC signature.  
 * @throws  
 * java.security.SignatureException when signature generation fails  
 */  
public static String calculateRFC2104HMAC(String data, String key)  
throws java.security.SignatureException  
{  
    String result;  
    try {  
  
        // Get an hmac_sha256 key from the raw key bytes.  
        SecretKeySpec signingKey = new SecretKeySpec(key.getBytes("UTF-8"),  
HMAC_SHA256_ALGORITHM);  
  
        // Get an hmac_sha256 Mac instance and initialize with the signing key.  
        Mac mac = Mac.getInstance(HMAC_SHA256_ALGORITHM);  
        mac.init(signingKey);  
  
        // Compute the hmac on input data bytes.  
        byte[] rawHmac = mac.doFinal(data.getBytes("UTF-8"));  
  
        // Base64-encode the hmac by using the utility in the SDK  
        result = BinaryUtils.toBase64(rawHmac);  
  
    } catch (Exception e) {  
        throw new SignatureException("Failed to generate HMAC : " + e.getMessage());  
    }  
    return result;  
}  
}
```

## AWS SDK support for Amazon S3 client-side encryption

The following tables list the cryptographic algorithms and features that are supported by the language-specific AWS SDKs. For information about how to use the features for a particular SDK, see the developer guide for that SDK.

If you are new to cryptography, see [Cryptography Basics](#) in the *AWS Key Management Service Developer Guide* to get familiar with terms and concepts.

### Note

The [AWS Encryption SDK](#) is an encryption library that is separate from the language-specific SDKs. You can use this encryption library to more easily implement encryption best practices in Amazon S3. Unlike the Amazon S3 encryption clients in the language-specific AWS SDKs, the AWS Encryption SDK is not tied to Amazon S3 and can be used to encrypt or decrypt data to be stored anywhere.

The AWS Encryption SDK and the Amazon S3 encryption clients are not compatible because they produce ciphertexts with different data formats. For more information about the AWS Encryption SDK, see the [AWS Encryption SDK Developer Guide](#).

## AWS SDK features for Amazon S3 client-side encryption

To use the Amazon S3 client-side encryption feature to encrypt data before uploading to Amazon S3, you must provide a master key to the Amazon S3 encryption client. You can provide a client-side master key or use the AWS Key Management Service (AWS KMS)-managed master keys feature. The AWS KMS-managed master keys feature provides an easy way to create and manage keys that are used to encrypt data. For more information about these features, choose the links provided in the **Feature** column.

For details about how to use the features for a particular SDK, see the SDK's developer guide.

In the following table, each column indicates whether the AWS Command Line Interface or SDK for a specific language supports the features used in client-side encryption.

| Feature                          | Java | .NET | Ruby v2 | AWS CLI | Boto3 | PHP v3 | JavaScript | Go  | C++ |
|----------------------------------|------|------|---------|---------|-------|--------|------------|-----|-----|
| Amazon S3 client-side encryption | Yes  | Yes  | Yes     | No      | No    | Yes    | No         | Yes | Yes |
| AWS KMS-managed master keys      | Yes  | Yes  | Yes     | No      | No    | Yes    | No         | Yes | Yes |

For information about the v2 Amazon S3 encryption clients that support client-side encryption, see our blog post about [Updates to the Amazon S3 Encryption Client](#).

For more details about the *legacy v1* Amazon S3 encryption client, see the following blog posts.

- [Client-Side Data Encryption for Amazon S3 Using the AWS SDK for Java](#)
- [Client Side Data Encryption with AWS SDK for .NET and Amazon S3](#)
- [Using Client-Side Encryption for Amazon S3 in the AWS SDK for Ruby](#)
- [Using the AWS SDK for Go Encryption Client](#)
- [Amazon S3 Encryption Client Now Available for C++ Developers](#)

## Amazon S3 encryption client cryptographic algorithms

The following table lists the algorithms that each language-specific AWS SDK supports for encrypting keys and data when using the Amazon S3 encryption client.

| Algorithm | Java | .NET | Ruby v2 | AWS CLI | Boto3 | PHP v3 | JavaScript | Go | C++ |
|-----------|------|------|---------|---------|-------|--------|------------|----|-----|
| Key Wrap: | Yes  | Yes  | Yes     | No      | No    | No     | No         | No | No  |

| Algorithm                   | Java       | .NET       | Ruby v2    | AWS CLI | Boto3      | PHP v3 | JavaScript | Go         | C++        |
|-----------------------------|------------|------------|------------|---------|------------|--------|------------|------------|------------|
| RSA-OAEP-SHA1               |            |            |            |         |            |        |            |            |            |
| Key Wrap: AES/GCM           | Yes        | Yes        | Yes        | No      | No         | No     | No         | No         | Yes        |
| Key Wrap: KMS +context      | Yes        | Yes        | Yes        | No      | No         | Yes    | No         | Yes        | Yes        |
| Key Wrap: AES/ECB           | Deprecated | Deprecated | Deprecated | No      | No         | No     | No         | No         | No         |
| Key Wrap: AESWrap           | Deprecated | Deprecated | Deprecated | No      | No         | No     | No         | No         | Deprecated |
| Key Wrap: RSA               | Deprecated | No         | Deprecated | No      | No         | No     | No         | No         | No         |
| Key Wrap: KMS               | Deprecated | Deprecated | Deprecated | No      | Deprecated | No     | Deprecated | Deprecated | Deprecated |
| Content Encryption: AES/GCM | Yes        | Yes        | Yes        | No      | No         | Yes    | No         | Yes        | Yes        |
| Content Encryption: AES/CBC | Deprecated | No         | Deprecated | No      | No         | No     | Deprecated | Deprecated | Deprecated |

For more information about *authenticated* and *encryption-only* modes, see the [Amazon S3 Client-Side Authenticated Encryption](#) blog post.

# Document conventions

The following are the common typographical conventions for AWS technical publications.

**Inline code (for example, commands, operations, parameters, constants, XML elements, and regular expressions)**

Formatting: Text in a monospace font

Example: `java -version`

**Example blocks (for example, sample code and scripts)**

Formatting: Text in a monospace font inside a shaded block

Example:

```
# ls -l /var/www/html/index.html
-rw-rw-r-- 1 root root 1872 Jun 21 09:33 /var/www/html/index.html
# date
Wed Jun 21 09:33:42 EDT 2006
```

**Mutually exclusive options**

Formatting: Text separated by vertical bars

Example: `(start | stride | edge)`

**Optional parameters**

Formatting: Text enclosed in square brackets

Example: `[-n, -quiet]`

**Definitions**

Formatting: Text in italics

Example: *Amazon Machine Image (AMI)*

**Technical publications**

Formatting: Text in italics

Example: *Amazon Simple Storage Service User Guide*

**Elements in the user interface**

Formatting: Text in bold

Example: Choose **File, Properties**.

**User input (text that a user types)**

Formatting: Text in a monospace font

Example: For the name, type **my-new-resource**.

**Placeholder text for a required value**

Formatting: Text in *italics*

Example:

```
aws ec2 register-image --image-location my-s3-bucket/image.manifest.xml
```

# AWS glossary

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[Numbers and symbols \(p. 690\)](#) | [A \(p. 690\)](#) | [B \(p. 707\)](#) | [C \(p. 708\)](#) | [D \(p. 713\)](#) | [E \(p. 716\)](#) | [F \(p. 719\)](#) | [G \(p. 720\)](#) | [H \(p. 720\)](#) | [I \(p. 721\)](#) | [J \(p. 724\)](#) | [K \(p. 724\)](#) | [L \(p. 725\)](#) | [M \(p. 726\)](#) | [N \(p. 728\)](#) | [O \(p. 730\)](#) | [P \(p. 731\)](#) | [Q \(p. 734\)](#) | [R \(p. 734\)](#) | [S \(p. 738\)](#) | [T \(p. 744\)](#) | [U \(p. 746\)](#) | [V \(p. 746\)](#) | [W \(p. 748\)](#) | [X, Y, Z \(p. 748\)](#)

## Numbers and symbols

---

**100-continue** A method that gives a client the ability to see whether a server can accept a request before actually sending it. For large PUT requests, this method can save both time and bandwidth charges.

## A

---

[Numbers and symbols \(p. 690\)](#) | [A \(p. 690\)](#) | [B \(p. 707\)](#) | [C \(p. 708\)](#) | [D \(p. 713\)](#) | [E \(p. 716\)](#) | [F \(p. 719\)](#) | [G \(p. 720\)](#) | [H \(p. 720\)](#) | [I \(p. 721\)](#) | [J \(p. 724\)](#) | [K \(p. 724\)](#) | [L \(p. 725\)](#) | [M \(p. 726\)](#) | [N \(p. 728\)](#) | [O \(p. 730\)](#) | [P \(p. 731\)](#) | [Q \(p. 734\)](#) | [R \(p. 734\)](#) | [S \(p. 738\)](#) | [T \(p. 744\)](#) | [U \(p. 746\)](#) | [V \(p. 746\)](#) | [W \(p. 748\)](#) | [X, Y, Z \(p. 748\)](#)

**AAD** See [additional authenticated data](#).

**Access Analyzer** A feature of [AWS Identity and Access Management \(IAM\) \(p. 703\)](#) that helps you identify the resources in your organization and accounts, such as Amazon S3 buckets or IAM roles that are shared with an external entity.  
See Also <https://aws.amazon.com/about-aws/whats-new/2019/12/introducing-aws-identity-and-access-management-access-analyzer/>.

**access control list (ACL)** A document that defines who can access a particular [bucket \(p. 708\)](#) or object. Each [bucket \(p. 708\)](#) and object in [Amazon S3 \(p. 697\)](#) has an ACL. The document defines what each type of user can do, such as write and read permissions.

**access identifiers** See [credentials](#).

**access key** The combination of an [access key ID \(p. 690\)](#) (for example, AKIAIOSFODNN7EXAMPLE) and a [secret access key \(p. 739\)](#) (for example, wJalrXUtnFEMI/K7MDENG/bPxRfiCYEXAMPLEKEY). You use access keys to sign API requests that you make to AWS.

**access key ID** A unique identifier that's associated with a [secret access key \(p. 739\)](#); the access key ID and secret access key are used together to sign programmatic AWS requests cryptographically.

|                               |  |
|-------------------------------|--|
| access key rotation           | A method to increase security by changing the AWS access key ID. You can use this method to retire an old key at your discretion.  |
| access policy language        | A language for writing documents (specifically, <a href="#">policies (p. 732)</a> ) that specify who can access a particular AWS <a href="#">resource (p. 736)</a> and under what conditions.  |
| account                       | A formal relationship with AWS that's associated with all of the following: <ul style="list-style-type: none"><li>• The owner email address and password</li><li>• The control of resources created under its umbrella</li><li>• Payment for the AWS activity related to those resources</li></ul>   |
|                               | The AWS account has permission to do anything and everything with all the AWS account resources. This is in contrast to a <a href="#">user (p. 746)</a> , which is an entity contained within the account.   |
| account activity              | A webpage showing your month-to-date AWS usage and costs. The account activity page is located at <a href="https://aws.amazon.com/account-activity/">https://aws.amazon.com/account-activity/</a> .  |
| ACL                           | See <a href="#">access control list (ACL)</a> .  |
| ACM                           | See <a href="#">the section called "AWS Certificate Manager"</a> .   |
| ACM PCA                       | See <a href="#">the section called "ACM Private CA"</a> .  |
| ACM Private CA                | See <a href="#">the section called "ACM Private CA"</a> .  |
| action                        | An API function. Also called <i>operation</i> or <i>call</i> . The activity the <a href="#">principal (p. 733)</a> has permission to perform. The action is B in the statement "A has permission to do B to C where D applies." For example, Jane sends a request to <a href="#">Amazon SQS (p. 697)</a> with Action=ReceiveMessage.<br><br><b>Amazon CloudWatch (p. 692):</b> The response initiated by the change in an alarm's state (for example, from OK to ALARM). The state change might be caused by a metric reaching the alarm threshold, or by a SetAlarmState request. Each alarm can have one or more actions assigned to each state. Actions are performed once each time the alarm changes to a state that has an action assigned, such as an <a href="#">Amazon Simple Notification Service (p. 697)</a> notification, the running of an <a href="#">Amazon EC2 Auto Scaling (p. 693)</a> policy <a href="#">(p. 732)</a> , or an <a href="#">Amazon EC2 (p. 693)</a> instance <a href="#">(p. 722)</a> stop/terminate action. |
| active trusted key groups     | A list showing each of the <a href="#">trusted key groups (p. 745)</a> , and the IDs of the public keys in each key group, that are active for a distribution in Amazon CloudFront. CloudFront can use the public keys in these key groups to verify the signatures of <a href="#">CloudFront signed URLs</a> and <a href="#">signed cookies</a> .   |
| active trusted signers        | See <a href="#">active trusted key groups (p. 691)</a> .   |
| additional authenticated data | Information that's checked for integrity but not encrypted, such as headers or other contextual metadata.  |
| administrative suspension     | <a href="#">Amazon EC2 Auto Scaling (p. 693)</a> might suspend processes for <a href="#">Auto Scaling group (p. 700)</a> that repeatedly fail to launch instances. Auto Scaling groups that most commonly experience administrative suspension have zero running instances, have been trying to launch instances for more than 24 hours, and have not succeeded in that time.  |
| alarm                         | An item that watches a single metric over a specified time period and starts an <a href="#">Amazon SNS (p. 697)</a> topic <a href="#">(p. 745)</a> or an <a href="#">Amazon EC2 Auto Scaling (p. 693)</a>  |

|   |   |
|---|---|
|   | <p>policy (p. 732) if the value of the metric crosses a threshold value over a predetermined number of time periods.</p>  |
| allow                                       | <p>One of two possible outcomes (the other is <a href="#">deny (p. 714)</a>) when an <a href="#">IAM (p. 703)</a> access policy (p. 732) is evaluated. When a user makes a request to AWS, AWS evaluates the request based on all permissions that apply to the user and then returns either allow or deny.</p>   |
| Amazon API Gateway                          | <p>A fully managed service that makes it easy for developers to create, publish, maintain, monitor, and secure APIs at any scale.<br/>See Also <a href="https://aws.amazon.com/api-gateway/">https://aws.amazon.com/api-gateway/</a>.</p>   |
| Amazon AppStream 2.0                        | <p>A fully managed, secure service for streaming desktop applications to users without rewriting those applications.<br/>See Also <a href="https://aws.amazon.com/appstream/">https://aws.amazon.com/appstream/</a>.</p>  |
| Amazon Athena                               | <p>An interactive query service that makes it easy to analyze data in Amazon S3 using ANSI SQL. Athena is serverless, so there's no infrastructure to manage. Athena scales automatically and is simple to use, so you can start analyzing your datasets within seconds.<br/>See Also <a href="https://aws.amazon.com/athena/">https://aws.amazon.com/athena/</a>.</p>  |
| Amazon Aurora                               | <p>A fully managed MySQL-compatible relational database engine that combines the speed and availability of commercial databases with the simplicity and cost-effectiveness of open-source databases.<br/>See Also <a href="https://aws.amazon.com/rds/aurora/">https://aws.amazon.com/rds/aurora/</a>.</p>  |
| Amazon Chime                                | <p>A secure, real-time, unified communications service that transforms meetings by making them more efficient and easier to conduct.<br/>See Also <a href="https://aws.amazon.com/chime/">https://aws.amazon.com/chime/</a>.</p>  |
| Amazon Cloud Directory<br>(Cloud Directory) | <p>A service that provides a highly scalable directory store for your application's multihierarchical data.<br/>See Also <a href="https://aws.amazon.com/cloud-directory/">https://aws.amazon.com/cloud-directory/</a>.</p>   |
| Amazon CloudFront                           | <p>An AWS content delivery service that helps you improve the performance, reliability, and availability of your websites and applications.<br/>See Also <a href="https://aws.amazon.com/cloudfront">https://aws.amazon.com/cloudfront</a>.</p>   |
| Amazon CloudSearch                          | <p>A fully managed service in the AWS Cloud that makes it easy to set up, manage, and scale a search solution for your website or application.</p>  |
| Amazon CloudWatch                           | <p>A web service that you can use to monitor and manage various metrics, and configure alarm actions based on data from those metrics.<br/>See Also <a href="https://aws.amazon.com/cloudwatch">https://aws.amazon.com/cloudwatch</a>.</p>  |
| Amazon CloudWatch Events                    | <p>A web service that you can use to deliver a timely stream of system events that describe changes in AWS <a href="#">resource (p. 736)</a>s to <a href="#">AWS Lambda (p. 704)</a> functions, streams in <a href="#">Amazon Kinesis Data Streams (p. 695)</a>, <a href="#">Amazon Simple Notification Service (p. 697)</a> topics, or built-in targets.<br/>See Also <a href="https://aws.amazon.com/cloudwatch">https://aws.amazon.com/cloudwatch</a>.</p> |
| Amazon CloudWatch Logs                      | <p>A web service for monitoring and troubleshooting your systems and applications from your existing system, application, and custom log files. You can send your existing log files to CloudWatch Logs and monitor these logs in near-real time.<br/>See Also <a href="https://aws.amazon.com/cloudwatch">https://aws.amazon.com/cloudwatch</a>.</p>   |
| Amazon Cognito                              | <p>A web service that makes it easy to save mobile user data, such as app preferences or game state, in the AWS Cloud without writing any backend</p>   |

|  |  |
|--|--|
|  | code or managing any infrastructure. Amazon Cognito offers mobile identity management and data synchronization across devices.<br>See Also <a href="https://aws.amazon.com/cognito/">https://aws.amazon.com/cognito/</a> .   |
| Amazon Comprehend                              | A natural language processing (NLP) service that uses machine learning to find insights and relationships in text.<br>See Also <a href="https://aws.amazon.com/comprehend/">https://aws.amazon.com/comprehend/</a> .   |
| Amazon Comprehend Medical                      | A HIPAA-eligible natural language processing (NLP) service that uses machine learning to extract health data from medical text.<br>See Also <a href="https://aws.amazon.com/comprehend/medical/">https://aws.amazon.com/comprehend/medical/</a> .  |
| Amazon Connect                                 | A service solution that offers easy, self-service configuration and provides dynamic, personal, and natural customer engagement at any scale.<br>See Also <a href="https://aws.amazon.com/connect/">https://aws.amazon.com/connect/</a> .  |
| Amazon Corretto                                | A no-cost, multiplatform, production-ready distribution of the Open Java Development Kit (OpenJDK).<br>See Also <a href="https://aws.amazon.com/corretto/">https://aws.amazon.com/corretto/</a> .  |
| Amazon Detective                               | A service that collects log data from your AWS resources to analyze and identify the root cause of security findings or suspicious activities. The Detective behavior graph provides visualizations to help you to determine the nature and extent of possible security issues and conduct an efficient investigation.<br>See Also <a href="https://aws.amazon.com/detective/">https://aws.amazon.com/detective/</a> . |
| Amazon DocumentDB (with MongoDB compatibility) | A managed database service that you can use to set up, operate, and scale MongoDB-compatible databases in the cloud.<br>See Also <a href="https://aws.amazon.com/documentdb/">https://aws.amazon.com/documentdb/</a> .   |
| Amazon DynamoDB                                | A fully managed NoSQL database service that provides fast and predictable performance with seamless scalability.<br>See Also <a href="https://aws.amazon.com/dynamodb/">https://aws.amazon.com/dynamodb/</a> .   |
| Amazon DynamoDB Encryption Client              | A software library that helps you protect your table data before you send it to <a href="#">Amazon DynamoDB (p. 693)</a> .   |
| Amazon DynamoDB Storage Backend for Titan      | A storage backend for the Titan graph database implemented on top of Amazon DynamoDB. Titan is a scalable graph database optimized for storing and querying graphs.<br>See Also <a href="https://aws.amazon.com/dynamodb/">https://aws.amazon.com/dynamodb/</a> .  |
| Amazon DynamoDB Streams                        | An AWS service that captures a time-ordered sequence of item-level modifications in any Amazon DynamoDB table, and stores this information in a log for up to 24 hours. Applications can access this log and view the data items as they appeared before and after they were modified, in near real time.<br>See Also <a href="https://aws.amazon.com/dynamodb/">https://aws.amazon.com/dynamodb/</a> .                |
| Amazon EBS-backed AMI                          | A type of <a href="#">Amazon Machine Image (AMI) (p. 696)</a> whose <a href="#">instance (p. 722)</a> s use an <a href="#">Amazon EBS (p. 694)</a> volume ( <a href="#">p. 747</a> ) as their root device. Compare this with instances launched from <a href="#">instance store-backed AMI (p. 723)</a> s, which use the <a href="#">instance store (p. 723)</a> as the root device.                                   |
| Amazon EC2                                     | A web service for launching and managing Linux/UNIX and Windows Server <a href="#">instance (p. 722)</a> s in Amazon's data centers.<br>See Also <a href="#">Amazon Elastic Compute Cloud (Amazon EC2)</a> , <a href="https://aws.amazon.com/ec2">https://aws.amazon.com/ec2</a> .   |
| Amazon EC2 Auto Scaling                        | A web service designed to launch or terminate <a href="#">instance (p. 722)</a> s automatically based on user-defined <a href="#">policies (p. 732)</a> , schedules, and <a href="#">health check (p. 721)</a> s.  |

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|  | See Also <a href="https://aws.amazon.com/ec2/autoscaling">https://aws.amazon.com/ec2/autoscaling</a> .  |
| Amazon Elastic Block Store (Amazon EBS)        | A service that provides block level storage <a href="#">volume (p. 747)</a> s for use with <a href="#">EC2 instance (p. 716)</a> s.<br>See Also <a href="https://aws.amazon.com/ebs">https://aws.amazon.com/ebs</a> .   |
| Amazon Elastic Compute Cloud (Amazon EC2)      | A web service for launching and managing Linux/UNIX and Windows Server <a href="#">instance (p. 722)</a> s in Amazon's data centers.<br>See Also <a href="https://aws.amazon.com/ec2">https://aws.amazon.com/ec2</a> .  |
| Amazon Elastic Container Registry (Amazon ECR) | A fully managed Docker container registry that makes it easy for developers to store, manage, and deploy Docker container images. Amazon ECR is integrated with <a href="#">Amazon Elastic Container Service (Amazon ECS) (p. 694)</a> and <a href="#">AWS Identity and Access Management (IAM) (p. 703)</a> .<br>See Also <a href="https://aws.amazon.com/ecr">https://aws.amazon.com/ecr</a> .                                  |
| Amazon Elastic Container Service (Amazon ECS)  | A highly scalable, fast, <a href="#">container (p. 711)</a> management service that makes it easy to run, stop, and manage Docker containers on a <a href="#">cluster (p. 710)</a> of <a href="#">EC2 instance (p. 716)</a> s.<br>See Also <a href="https://aws.amazon.com/ecs/">https://aws.amazon.com/ecs/</a> .  |
| Amazon Elastic File System (Amazon EFS)        | A file storage service for <a href="#">EC2 (p. 693) instance (p. 722)</a> s. Amazon EFS is easy to use and provides a simple interface with which you can create and configure file systems. Amazon EFS storage capacity grows and shrinks automatically as you add and remove files.<br>See Also <a href="https://aws.amazon.com/efs/">https://aws.amazon.com/efs/</a> .   |
| Amazon Elastic Kubernetes Service (Amazon EKS) | A managed service that simplifies running Kubernetes on AWS without your needing to stand up or maintain your own Kubernetes control plane.<br>See Also <a href="https://aws.amazon.com/eks/">https://aws.amazon.com/eks/</a> .   |
| Amazon Elastic Transcoder                      | A cloud-based media transcoding service. Elastic Transcoder is a highly scalable tool for converting (or <i>transcoding</i> ) media files from their source format into versions that play on devices such as smartphones, tablets, and PCs.<br>See Also <a href="https://aws.amazon.com/elastictranscoder/">https://aws.amazon.com/elastictranscoder/</a> .  |
| Amazon ElastiCache                             | A web service that simplifies deploying, operating, and scaling an in-memory cache in the cloud. The service improves the performance of web applications by providing information retrieval from fast, managed, in-memory caches, instead of relying entirely on slower disk-based databases.<br>See Also <a href="https://aws.amazon.com/elasticache/">https://aws.amazon.com/elasticache/</a> .                                |
| Amazon OpenSearch Service (OpenSearch Service) | An AWS managed service for deploying, operating, and scaling OpenSearch, an open-source search and analytics engine, in the AWS Cloud. Amazon OpenSearch Service (OpenSearch Service) also offers security options, high availability, data durability, and direct access to the OpenSearch API.<br>See Also <a href="https://aws.amazon.com/elasticsearch-service">https://aws.amazon.com/elasticsearch-service</a> .            |
| Amazon EMR                                     | A web service that makes it easy to process large amounts of data efficiently. Amazon EMR uses <a href="#">Hadoop (p. 721)</a> processing combined with several AWS products to do such tasks as web indexing, data mining, log file analysis, machine learning, scientific simulation, and data warehousing.<br>See Also <a href="https://aws.amazon.com/elasticmapreduce">https://aws.amazon.com/elasticmapreduce</a> .         |
| Amazon EventBridge                             | A serverless event bus service that you can use to connect your applications with data from a variety of sources and routes that data to targets such as AWS Lambda. You can set up routing rules to determine where to send your data to build application architectures that react in real time to all of your data sources.<br>See Also <a href="https://aws.amazon.com/eventbridge">https://aws.amazon.com/eventbridge/</a> . |

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| Amazon Forecast              | A fully managed service that uses statistical and machine learning algorithms to produce highly accurate time-series forecasts.<br>See Also <a href="https://aws.amazon.com/forecast/">https://aws.amazon.com/forecast/</a> .  |
| Amazon GameLift              | A managed service for deploying, operating, and scaling session-based multiplayer games.<br>See Also <a href="https://aws.amazon.com/gamelift/">https://aws.amazon.com/gamelift/</a> .   |
| Amazon GuardDuty             | A continuous security monitoring service. Amazon GuardDuty can help to identify unexpected and potentially unauthorized or malicious activity in your AWS environment.<br>See Also <a href="https://aws.amazon.com/guardduty/">https://aws.amazon.com/guardduty/</a> .   |
| Amazon Inspector             | An automated security assessment service that helps improve the security and compliance of applications deployed on AWS. Amazon Inspector automatically assesses applications for vulnerabilities or deviations from best practices. After performing an assessment, Amazon Inspector produces a detailed report with prioritized steps for remediation.<br>See Also <a href="https://aws.amazon.com/inspector/">https://aws.amazon.com/inspector/</a> .   |
| Amazon Kinesis               | A platform for streaming data on AWS. Kinesis offers services that simplify the loading and analysis of streaming data.<br>See Also <a href="https://aws.amazon.com/kinesis/">https://aws.amazon.com/kinesis/</a> .  |
| Amazon Kinesis Data Firehose | A fully managed service for loading streaming data into AWS. Kinesis Data Firehose can capture and automatically load streaming data into <a href="#">Amazon S3 (p. 697)</a> and <a href="#">Amazon Redshift (p. 697)</a> , enabling near real-time analytics with existing business intelligence tools and dashboards. Kinesis Data Firehose automatically scales to match the throughput of your data and requires no ongoing administration. It can also batch, compress, and encrypt the data before loading it.<br>See Also <a href="https://aws.amazon.com/kinesis/firehose/">https://aws.amazon.com/kinesis/firehose/</a> . |
| Amazon Kinesis Data Streams  | A web service for building custom applications that process or analyze streaming data for specialized needs. Amazon Kinesis Data Streams can continuously capture and store terabytes of data per hour from hundreds of thousands of sources.<br>See Also <a href="https://aws.amazon.com/kinesis/streams/">https://aws.amazon.com/kinesis/streams/</a> .  |
| Amazon Lightsail             | Lightsail is designed to be the easiest way to launch and manage a virtual private server with AWS. Lightsail offers bundled plans that include everything you need to deploy a virtual private server, for a low monthly rate.<br>See Also <a href="https://aws.amazon.com/lightsail/">https://aws.amazon.com/lightsail/</a> .  |
| Amazon Lookout for Equipment | A machine learning service that uses data from sensors mounted on factory equipment to detect abnormal behavior so you can take action before machine failures occur.<br>See Also <a href="https://aws.amazon.com/lookout-for-equipment/">https://aws.amazon.com/lookout-for-equipment/</a> .  |
| Amazon Lookout for Vision    | A machine learning service that uses computer vision (CV) to find defects in industrial products. Amazon Lookout for Vision can identify missing components in an industrial product, damage to vehicles or structures, irregularities in production lines, and even minuscule defects in silicon wafers—or any other physical item where quality is important.<br>See Also <a href="https://aws.amazon.com/lookout-for-vision/">https://aws.amazon.com/lookout-for-vision/</a> .  |
| Amazon Lumberyard            | A cross-platform, 3D game engine for creating high-quality games. You can connect games to the compute and storage of the AWS Cloud and engage fans on Twitch.<br>See Also <a href="https://aws.amazon.com/lumberyard/">https://aws.amazon.com/lumberyard/</a> .   |

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| Amazon Machine Image (AMI)                 | An encrypted machine image stored in <a href="#">Amazon Elastic Block Store (Amazon EBS) (p. 694)</a> or <a href="#">Amazon Simple Storage Service (p. 697)</a> . AMIs function similar to a template of a computer's root drive. They contain the operating system and can also include software and layers of your application, such as database servers, middleware, and web servers.                        |
| Amazon Machine Learning                    | A cloud-based service that creates machine learning (ML) models by finding patterns in your data, and uses these models to process new data and generate predictions.<br>See Also <a href="http://aws.amazon.com/machine-learning/">http://aws.amazon.com/machine-learning/</a> .   |
| Amazon Macie                               | A security service that uses machine learning to automatically discover, classify, and protect sensitive data in AWS.<br>See Also <a href="http://aws.amazon.com/macie/">http://aws.amazon.com/macie/</a> .   |
| Amazon Managed Blockchain                  | A fully managed service for creating and managing scalable blockchain networks using popular open source frameworks.<br>See Also <a href="http://aws.amazon.com/managed-blockchain/">http://aws.amazon.com/managed-blockchain/</a> .  |
| Amazon ML                                  | See <a href="#">Amazon Machine Learning</a> .   |
| Amazon Mobile Analytics (Mobile Analytics) | A service for collecting, visualizing, understanding, and extracting mobile app usage data at scale.<br>See Also <a href="https://aws.amazon.com/mobileanalytics">https://aws.amazon.com/mobileanalytics</a> .  |
| Amazon Monitron                            | An end-to-end system that uses machine learning (ML) to detect abnormal behavior in industrial machinery. Use Amazon Monitron to implement predictive maintenance and reduce unplanned downtime.<br>See Also <a href="https://aws.amazon.com/monitron/">https://aws.amazon.com/monitron/</a> .  |
| Amazon MQ                                  | A managed message broker service for Apache ActiveMQ that makes it easy to set up and operate message brokers in the cloud.<br>See Also <a href="https://aws.amazon.com/amazon-mq/">https://aws.amazon.com/amazon-mq/</a> .   |
| Amazon Neptune                             | A managed graph database service that you can use to build and run applications that work with highly connected datasets. Neptune supports the popular graph query languages Apache TinkerPop Gremlin and W3C's SPARQL, enabling you to build queries that efficiently navigate highly connected datasets.<br>See Also <a href="https://aws.amazon.com/neptune/">https://aws.amazon.com/neptune/</a> .          |
| Amazon Personalize                         | An artificial intelligence service for creating individualized product and content recommendations.<br>See Also <a href="https://aws.amazon.com/personalize/">https://aws.amazon.com/personalize/</a> .   |
| Amazon Polly                               | A text-to-speech (TTS) service that turns text into natural-sounding human speech. Amazon Polly provides dozens of lifelike voices across a broad set of languages so that you can build speech-enabled applications that work in many different countries.<br>See Also <a href="https://aws.amazon.com/polly/">https://aws.amazon.com/polly/</a> .   |
| Amazon QuickSight                          | A fast, cloud-powered business analytics service that makes it easy to build visualizations, perform analysis, and quickly get business insights from your data.<br>See Also <a href="https://aws.amazon.com/quicksight/">https://aws.amazon.com/quicksight/</a> .  |
| Amazon Rekognition                         | A machine learning service that identifies objects, people, text, scenes, and activities, including inappropriate content, in either image or video files. With Amazon Rekognition Custom Labels, you can create a customized ML model that detects objects and scenes specific to your business in images.<br>See Also <a href="https://aws.amazon.com/rekognition/">https://aws.amazon.com/rekognition/</a> . |

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| Amazon Redshift                                 | A fully managed, petabyte-scale data warehouse service in the cloud. With Amazon Redshift, you can analyze your data using your existing business intelligence tools.<br>See Also <a href="https://aws.amazon.com/redshift/">https://aws.amazon.com/redshift/</a> .  |
| Amazon Relational Database Service (Amazon RDS) | A web service that makes it easier to set up, operate, and scale a relational database in the cloud. It provides cost-efficient, resizable capacity for an industry-standard relational database and manages common database administration tasks.<br>See Also <a href="https://aws.amazon.com/rds">https://aws.amazon.com/rds</a> .   |
| Amazon Resource Name (ARN)                      | A standardized way to refer to an AWS <a href="#">resource (p. 736)</a> (for example, arn:aws:iam::123456789012:user/division_abc/subdivision_xyz/Bob).  |
| Amazon Route 53                                 | A web service you can use to create a new DNS service or to migrate your existing DNS service to the cloud.<br>See Also <a href="https://aws.amazon.com/route53">https://aws.amazon.com/route53</a> .  |
| Amazon S3                                       | Storage for the internet. You can use it to store and retrieve any amount of data at any time, from anywhere on the web.<br>See Also <a href="#">Amazon Simple Storage Service (Amazon S3)</a> , <a href="https://aws.amazon.com/s3">https://aws.amazon.com/s3</a> .   |
| Amazon S3-Backed AMI                            | See <a href="#">instance store-backed AMI</a> .  |
| Amazon S3 Glacier                               | A secure, durable, and low-cost storage service for data archiving and long-term backup. You can reliably store large or small amounts of data for significantly less than on-premises solutions. S3 Glacier is optimized for infrequently accessed data, where a retrieval time of several hours is suitable.<br>See Also <a href="https://aws.amazon.com/glacier/">https://aws.amazon.com/glacier/</a> . |
| AWS Security Hub                                | A service that provides a comprehensive view of the security state of your AWS resources. Security Hub collects security data from AWS accounts and services and helps you analyze your security trends to identify and prioritize the security issues across your AWS environment.<br>See Also <a href="https://aws.amazon.com/security-hub/">https://aws.amazon.com/security-hub/</a> .                  |
| Amazon Silk                                     | A next-generation web browser available only on Fire OS tablets and phones. Built on a split architecture that divides processing between the client and the AWS Cloud, Amazon Silk is designed to create a faster, more responsive mobile browsing experience.  |
| Amazon Simple Email Service (Amazon SES)        | An easy-to-use, cost-effective email solution for applications.<br>See Also <a href="https://aws.amazon.com/ses">https://aws.amazon.com/ses</a> .  |
| Amazon Simple Notification Service (Amazon SNS) | A web service that applications, users, and devices can use to instantly send and receive notifications from the cloud.<br>See Also <a href="https://aws.amazon.com/sns">https://aws.amazon.com/sns</a> .  |
| Amazon Simple Queue Service (Amazon SQS)        | Reliable and scalable hosted queues for storing messages as they travel between computers.<br>See Also <a href="https://aws.amazon.com/sqs">https://aws.amazon.com/sqs</a> .   |
| Amazon Simple Storage Service (Amazon S3)       | Storage for the internet. You can use it to store and retrieve any amount of data at any time, from anywhere on the web.<br>See Also <a href="https://aws.amazon.com/s3">https://aws.amazon.com/s3</a> .   |
| Amazon Simple Workflow Service (Amazon SWF)     | A fully managed service that helps developers build, run, and scale background jobs that have parallel or sequential steps. Amazon SWF functions similar to a state tracker and task coordinator in the AWS Cloud.   |

See Also <https://aws.amazon.com/swf/>.

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| Amazon Sumerian                                    | A set of tools for creating and running high-quality 3D, augmented reality (AR), and virtual reality (VR) applications on the web.<br>See Also <a href="https://aws.amazon.com/sumerian/">https://aws.amazon.com/sumerian/</a> .  |
| Amazon Textract                                    | A service that automatically extracts text and data from scanned documents. Amazon Textract goes beyond simple optical character recognition (OCR) to also identify the contents of fields in forms and information stored in tables.<br>See Also <a href="https://aws.amazon.com/textract/">https://aws.amazon.com/textract/</a> .   |
| Amazon Transcribe                                  | A machine learning service that uses automatic speech recognition (ASR) to quickly and accurately convert speech to text.<br>See Also <a href="https://aws.amazon.com/transcribe/">https://aws.amazon.com/transcribe/</a> .   |
| Amazon Transcribe Medical                          | An automatic speech recognition (ASR) service for adding medical speech-to-text capabilities to voice-enabled clinical documentation applications.<br>See Also <a href="https://aws.amazon.com/transcribe/medical/">https://aws.amazon.com/transcribe/medical/</a> .  |
| Amazon Translate                                   | A neural machine translation service that delivers fast, high-quality, and affordable language translation.<br>See Also <a href="https://aws.amazon.com/translate/">https://aws.amazon.com/translate/</a> .   |
| Amazon Virtual Private Cloud (Amazon VPC)          | A web service for provisioning a logically isolated section of the AWS Cloud virtual network that you define. You control your virtual networking environment, including selection of your own IP address range, creation of <a href="#">subnet (p. 743)</a> s, and configuration of <a href="#">route table (p. 737)</a> s and network gateways.<br>See Also <a href="https://aws.amazon.com/vpc">https://aws.amazon.com/vpc</a> . |
| Amazon VPC   | See <a href="#">Amazon Virtual Private Cloud (Amazon VPC)</a> .   |
| Amazon Web Services (AWS)                          | An infrastructure web services platform in the cloud for companies of all sizes.<br>See Also <a href="https://aws.amazon.com/what-is-cloud-computing/">https://aws.amazon.com/what-is-cloud-computing/</a> .  |
| Amazon WorkDocs                                    | A managed, secure enterprise document storage and sharing service with administrative controls and feedback capabilities.<br>See Also <a href="https://aws.amazon.com/workdocs/">https://aws.amazon.com/workdocs/</a> .   |
| Amazon WorkLink                                    | A cloud-based service that provides secure access to internal websites and web apps from mobile devices.<br>See Also <a href="https://aws.amazon.com/worklink/">https://aws.amazon.com/worklink/</a> .  |
| Amazon WorkMail                                    | A managed, secure business email and calendar service with support for existing desktop and mobile email clients.<br>See Also <a href="https://aws.amazon.com/workmail/">https://aws.amazon.com/workmail/</a> .   |
| Amazon WorkSpaces                                  | A managed, secure desktop computing service for provisioning cloud-based desktops and providing users access to documents, applications, and <a href="#">resource (p. 736)</a> s from supported devices.<br>See Also <a href="https://aws.amazon.com/workspaces/">https://aws.amazon.com/workspaces/</a> .  |
| Amazon WorkSpaces Application Manager (Amazon WAM) | A web service for deploying and managing applications for WorkSpaces. Amazon WAM accelerates software deployment, upgrades, patching, and retirement by packaging Windows desktop applications into virtualized application containers.<br>See Also <a href="https://aws.amazon.com/workspaces/applicationmanager">https://aws.amazon.com/workspaces/applicationmanager</a> .   |
| AMI  | See <a href="#">Amazon Machine Image (AMI)</a> .  |
| analysis scheme                                    | <a href="#">Amazon CloudSearch (p. 692)</a> : Language-specific text analysis options that are applied to a text field to control stemming and configure stopwords and synonyms.  |

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| application                    | <p><a href="#">AWS Elastic Beanstalk (p. 702)</a>: A logical collection of components, including environments, versions, and environment configurations. An application is conceptually similar to a folder.</p>   |
|                                | <p><a href="#">AWS CodeDeploy (p. 701)</a>: A name that uniquely identifies the application to be deployed. AWS CodeDeploy uses this name to ensure the correct combination of revision, deployment configuration, and deployment group are referenced during a deployment.</p>  |
| Application Auto Scaling       | <p>A web service that you can use to configure automatic scaling for AWS resources beyond Amazon EC2, such as Amazon ECS services, Amazon EMR clusters, and DynamoDB tables.</p> <p>See Also <a href="https://aws.amazon.com/autoscaling/">https://aws.amazon.com/autoscaling/</a>.</p>  |
| Application Billing            | <p>The location where your customers manage the Amazon DevPay products they've purchased. The web address is <a href="http://www.amazon.com/dp-applications">http://www.amazon.com/dp-applications</a>.</p>  |
| application revision           | <p><a href="#">AWS CodeDeploy (p. 701)</a>: An archive file containing source content—such as source code, webpages, executable files, and deployment scripts—along with an <a href="#">application specification file (p. 699)</a>. Revisions are stored in <a href="#">Amazon S3 (p. 697)</a> bucket (p. 708)s or <a href="#">GitHub (p. 720)</a> repositories. For Amazon S3, a revision is uniquely identified by its Amazon S3 object key and its ETag, version, or both. For GitHub, a revision is uniquely identified by its commit ID.</p> |
| application specification file | <p><a href="#">AWS CodeDeploy (p. 701)</a>: A YAML-formatted file used to map the source files in an application revision to destinations on the instance. The file is also used to specify custom permissions for deployed files and specify scripts to be run on each instance at various stages of the deployment process.</p>  |
| application version            | <p><a href="#">AWS Elastic Beanstalk (p. 702)</a>: A specific, labeled iteration of an application that represents a functionally consistent set of deployable application code. A version points to an <a href="#">Amazon S3 (p. 697)</a> object (a JAVA WAR file) that contains the application code.</p>  |
| AppSpec file                   | <p>See <a href="#">application specification file</a>.</p>   |
| ARN                            | <p>See <a href="#">Amazon Resource Name (ARN)</a>.</p>   |
| artifact                       | <p><a href="#">AWS CodePipeline (p. 701)</a>: A copy of the files or changes that will be worked upon by the pipeline.</p>   |
| asymmetric encryption          | <p><a href="#">Encryption (p. 717)</a> that uses both a public key and a private key.</p>  |
| asynchronous bounce            | <p>A type of <a href="#">bounce (p. 708)</a> that occurs when a <a href="#">receiver (p. 735)</a> initially accepts an email message for delivery and then subsequently fails to deliver it.</p>   |
| atomic counter                 | <p>DynamoDB: A method of incrementing or decrementing the value of an existing attribute without interfering with other write requests.</p>  |
| attribute                      | <p>A fundamental data element, something that doesn't need to be broken down any further. In DynamoDB, attributes are similar in many ways to fields or columns in other database systems.</p>   |
|                                | <p>Amazon Machine Learning: A unique, named property within an observation in a dataset. In tabular data, such as spreadsheets or comma-separated values (.csv) files, the column headings represent the attributes, and the rows contain values for each attribute.</p>   |
| AUC                            | <p>Area Under a Curve. An industry-standard metric to evaluate the quality of a binary classification machine learning model. AUC measures the ability of the</p>  |

model to predict a higher score for positive examples, those that are “correct,” than for negative examples, those that are “incorrect.” The AUC metric returns a decimal value from 0 to 1. AUC values near 1 indicate an ML model that’s highly accurate.

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| Aurora  | See <a href="#">the section called “Amazon Aurora”</a> .   |
| authenticated encryption  | <a href="#">Encryption (p. 717)</a> that provides confidentiality, data integrity, and authenticity assurances of the encrypted data.  |
| authentication  | The process of proving your identity to a system.  |
| Auto Scaling group  | A representation of multiple <a href="#">EC2 instance (p. 716)</a> s that share similar characteristics, and that are treated as a logical grouping for the purposes of instance scaling and management.   |
| Availability Zone   | A distinct location within a <a href="#">Region (p. 735)</a> that’s insulated from failures in other Availability Zones, and provides inexpensive, low-latency network connectivity to other Availability Zones in the same Region.  |
| AWS   | See <a href="#">Amazon Web Services (AWS)</a> .  |
| AWS Application Discovery Service                               | A web service that helps you plan to migrate to AWS by identifying IT assets in a data center—including servers, virtual machines, applications, application dependencies, and network infrastructure.<br>See Also <a href="https://aws.amazon.com/about-aws/whats-new/2016/04/aws-application-discovery-service/">https://aws.amazon.com/about-aws/whats-new/2016/04/aws-application-discovery-service/</a> .   |
| AWS AppSync   | An enterprise level, fully managed GraphQL service with real-time data synchronization and offline programming features.<br>See Also <a href="https://aws.amazon.com/appsync/">https://aws.amazon.com/appsync/</a> .   |
| AWS Auto Scaling  | A fully managed service that you can use to quickly discover the scalable AWS resources that are part of your application and configure dynamic scaling.<br>See Also <a href="https://aws.amazon.com/autoscaling/">https://aws.amazon.com/autoscaling/</a> .   |
| AWS Backup  | A managed backup service that you can use to centralize and automate the backup of data across AWS services in the cloud and on premises.<br>See Also <a href="https://aws.amazon.com/backup/">https://aws.amazon.com/backup/</a> .  |
| AWS Billing and Cost Management                                 | The AWS Cloud computing model where you pay for services on demand and use as much or as little as you need. While <a href="#">resource (p. 736)</a> s are active under your account, you pay for the cost of allocating those resources. You also pay for any incidental usage associated with those resources, such as data transfer or allocated storage.<br>See Also <a href="https://aws.amazon.com/billing/new-user-faqs/">https://aws.amazon.com/billing/new-user-faqs/</a> . |
| AWS Blockchain Templates  | A service for creating and deploying open-source blockchain frameworks on AWS, such as Ethereum and Hyperledger Fabric.<br>See Also <a href="https://aws.amazon.com/blockchain/templates/">https://aws.amazon.com/blockchain/templates/</a> .  |
| AWS Certificate Manager (ACM)                                   | A web service for provisioning, managing, and deploying Secure Sockets Layer/ <a href="#">Transport Layer Security (p. 745)</a> (SSL/TLS) certificates for use with AWS services.<br>See Also <a href="https://aws.amazon.com/certificate-manager/">https://aws.amazon.com/certificate-manager/</a> .  |
| AWS Certificate Manager Private Certificate Authority (ACM PCA) | A hosted private certificate authority service for issuing and revoking private digital <a href="#">certificate (p. 709)</a> s.  |

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|                                      | See Also <a href="https://aws.amazon.com/certificate-manager/private-certificate-authority/">https://aws.amazon.com/certificate-manager/private-certificate-authority/</a> .   |
| AWS Cloud Development Kit (CDK)      | An open-source software development framework for defining your cloud infrastructure in code and provisioning it through AWS CloudFormation.<br>See Also <a href="https://aws.amazon.com/cdk/">https://aws.amazon.com/cdk/</a> .   |
| AWS Cloud Map                        | A service that you use to create and maintain a map of the backend services and resources that your applications depend on. With AWS Cloud Map, you can name and discover your AWS Cloud resources.<br>See Also <a href="https://aws.amazon.com/cloud-map">https://aws.amazon.com/cloud-map</a> .  |
| AWS Cloud9                           | A cloud-based integrated development environment (IDE) that you use to write, run, and debug code.<br>See Also <a href="https://aws.amazon.com/cloud9/">https://aws.amazon.com/cloud9/</a> .   |
| AWS CloudFormation                   | A service for writing or changing templates that create and delete related AWS <a href="#">resource (p. 736)</a> s together as a unit.<br>See Also <a href="https://aws.amazon.com/cloudformation">https://aws.amazon.com/cloudformation</a> .   |
| AWS CloudHSM                         | A web service that helps you meet corporate, contractual, and regulatory compliance requirements for data security by using dedicated hardware security module (HSM) appliances within the AWS Cloud.<br>See Also <a href="https://aws.amazon.com/cloudhsm/">https://aws.amazon.com/cloudhsm/</a> .  |
| AWS CloudTrail                       | A web service that records AWS API calls for your account and delivers log files to you. The recorded information includes the identity of the API caller, the time of the API call, the source IP address of the API caller, the request parameters, and the response elements returned by the AWS service.<br>See Also <a href="https://aws.amazon.com/cloudtrail/">https://aws.amazon.com/cloudtrail/</a> . |
| AWS CodeBuild                        | A fully managed continuous integration service that compiles source code, runs tests, and produces software packages that are ready to deploy.<br>See Also <a href="https://aws.amazon.com/codebuild">https://aws.amazon.com/codebuild</a> .   |
| AWS CodeCommit                       | A fully managed source control service that makes it easy for companies to host secure and highly scalable private Git repositories.<br>See Also <a href="https://aws.amazon.com/codecommit">https://aws.amazon.com/codecommit</a> .   |
| AWS CodeDeploy                       | A service that automates code deployments to any instance, including <a href="#">EC2 instance (p. 716)</a> s and <a href="#">instance (p. 722)</a> s running on-premises.<br>See Also <a href="https://aws.amazon.com/codedeploy">https://aws.amazon.com/codedeploy</a> .  |
| AWS CodeDeploy agent                 | A software package that, when installed and configured on an instance, enables that instance to be used in CodeDeploy deployments.   |
| AWS CodePipeline                     | A continuous delivery service for fast and reliable application updates.<br>See Also <a href="https://aws.amazon.com/codepipeline">https://aws.amazon.com/codepipeline</a> .   |
| AWS Command Line Interface (AWS CLI) | A unified downloadable and configurable tool for managing AWS services. Control multiple AWS services from the command line and automate them through scripts.<br>See Also <a href="https://aws.amazon.com/cli/">https://aws.amazon.com/cli/</a> .   |
| AWS Config                           | A fully managed service that provides an AWS <a href="#">resource (p. 736)</a> inventory, configuration history, and configuration change notifications for better security and governance. You can create rules that automatically check the configuration of AWS resources that AWS Config records.<br>See Also <a href="https://aws.amazon.com/config/">https://aws.amazon.com/config/</a> .                |

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| AWS Database Migration Service | A web service that can help you migrate data to and from many widely used commercial and open-source databases.<br>See Also <a href="https://aws.amazon.com/dms">https://aws.amazon.com/dms</a> .  |
| AWS Data Pipeline              | A web service for processing and moving data between different AWS compute and storage services, as well as on-premises data sources, at specified intervals.<br>See Also <a href="https://aws.amazon.com/datapipeline">https://aws.amazon.com/datapipeline</a> .  |
| AWS Device Farm (Device Farm)  | An app testing service that allows developers to test Android, iOS, and Fire OS devices on real, physical phones and tablets that are hosted by AWS.<br>See Also <a href="https://aws.amazon.com/device-farm">https://aws.amazon.com/device-farm</a> .   |
| AWS Direct Connect             | A web service that simplifies establishing a dedicated network connection from your premises to AWS. Using AWS Direct Connect, you can establish private connectivity between AWS and your data center, office, or colocation environment.<br>See Also <a href="https://aws.amazon.com/directconnect">https://aws.amazon.com/directconnect</a> . |
| AWS Directory Service          | A managed service for connecting your AWS <a href="#">resource (p. 736)</a> s to an existing on-premises Microsoft Active Directory or to set up and operate a new, standalone directory in the AWS Cloud.<br>See Also <a href="https://aws.amazon.com/directoryservice">https://aws.amazon.com/directoryservice</a> .                           |
| AWS Elastic Beanstalk          | A web service for deploying and managing applications in the AWS Cloud without worrying about the infrastructure that runs those applications.<br>See Also <a href="https://aws.amazon.com/elasticbeanstalk">https://aws.amazon.com/elasticbeanstalk</a> .   |
| AWS Elemental MediaConnect     | A service that broadcasters and other premium video providers can reliably use to ingest live video into the AWS Cloud and distribute it to multiple destinations inside or outside the AWS Cloud.<br>See Also <a href="https://aws.amazon.com/mediaconnect">https://aws.amazon.com/mediaconnect</a> .   |
| AWS Elemental MediaConvert     | A file-based video conversion service that transforms media into formats required for traditional broadcast and for internet streaming to multi-screen devices.<br>See Also <a href="https://aws.amazon.com/mediaconvert">https://aws.amazon.com/mediaconvert</a> .  |
| AWS Elemental MediaLive        | A video service that you can use to create live outputs for broadcast and streaming delivery.<br>See Also <a href="https://aws.amazon.com/medialive">https://aws.amazon.com/medialive</a> .  |
| AWS Elemental MediaPackage     | A just-in-time packaging and origination service that you can use to format highly secure and reliable live outputs for a variety of devices.<br>See Also <a href="https://aws.amazon.com/mediapackage">https://aws.amazon.com/mediapackage</a> .  |
| AWS Elemental MediaStore       | A storage service optimized for media that provides the performance, consistency, and low latency required to deliver live and on-demand video content at scale.<br>See Also <a href="https://aws.amazon.com/mediastore">https://aws.amazon.com/mediastore</a> .   |
| AWS Elemental MediaTailor      | A video service that you can use to serve targeted ads to viewers while maintaining broadcast quality in over-the-top (OTT) video applications.<br>See Also <a href="https://aws.amazon.com/mediatailor">https://aws.amazon.com/mediatailor</a> .  |
| AWS Encryption SDK             | A client-side encryption library designed to make it easy for everyone to encrypt and decrypt data using industry standards and best practices.<br>See Also <a href="https://aws.amazon.com/blogs/security/tag/aws-encryption-sdk/">https://aws.amazon.com/blogs/security/tag/aws-encryption-sdk/</a> .  |
| AWS Firewall Manager           | A service that you use with AWS WAF to simplify your AWS WAF administration and maintenance tasks across multiple accounts and resources. With AWS Firewall Manager, you set up your firewall rules only once. The service automatically   |

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|  | <p>applies your rules across your accounts and resources, even as you add new resources.</p> <p>See Also <a href="https://aws.amazon.com/firewall-manager">https://aws.amazon.com/firewall-manager</a>.</p>  |
| AWS Global Accelerator                   | <p>A network layer service that you use to create accelerators that direct traffic to optimal endpoints over the AWS global network. This improves the availability and performance of your internet applications that are used by a global audience.</p> <p>See Also <a href="https://aws.amazon.com/global-accelerator">https://aws.amazon.com/global-accelerator</a>.</p>   |
| AWS Glue                                 | <p>A fully managed <a href="#">extract, transform, and load (ETL) (p. 719)</a> service that you can use to catalog data and load it for analytics. With AWS Glue, you can discover your data, develop scripts to transform sources into targets, and schedule and run ETL jobs in a serverless environment.</p> <p>See Also <a href="https://aws.amazon.com/glue">https://aws.amazon.com/glue</a>.</p>   |
| AWS GovCloud (US)                        | <p>An isolated AWS Region designed to host sensitive workloads in the cloud, ensuring that this work meets the US government's regulatory and compliance requirements. The AWS GovCloud (US) Region adheres to United States International Traffic in Arms Regulations (ITAR), Federal Risk and Authorization Management Program (FedRAMP) requirements, Department of Defense (DOD) Cloud Security Requirements Guide (SRG) Levels 2 and 4, and Criminal Justice Information Services (CJIS) Security Policy requirements.</p> <p>See Also <a href="https://aws.amazon.com/govcloud-us/">https://aws.amazon.com/govcloud-us/</a>.</p> |
| AWS Identity and Access Management (IAM) | <p>A web service that <a href="#">Amazon Web Services (AWS) (p. 698)</a> customers can use to manage users and user permissions within AWS.</p> <p>See Also <a href="https://aws.amazon.com/iam">https://aws.amazon.com/iam</a>.</p>   |
| AWS Import/Export                        | <p>A service for transferring large amounts of data between AWS and portable storage devices.</p> <p>See Also <a href="https://aws.amazon.com/importexport">https://aws.amazon.com/importexport</a>.</p>   |
| AWS IoT Core                             | <p>A managed cloud platform that lets connected devices easily and securely interact with cloud applications and other devices.</p> <p>See Also <a href="https://aws.amazon.com/iot">https://aws.amazon.com/iot</a>.</p>   |
| AWS IoT 1-Click                          | <p>A service that simple devices can use to launch AWS Lambda functions.</p> <p>See Also <a href="https://aws.amazon.com/iot-1-click">https://aws.amazon.com/iot-1-click</a>.</p>  |
| AWS IoT Analytics                        | <p>A fully managed service used to run sophisticated analytics on massive volumes of IoT data.</p> <p>See Also <a href="https://aws.amazon.com/iot-analytics">https://aws.amazon.com/iot-analytics</a>.</p>  |
| AWS IoT Device Defender                  | <p>An AWS IoT security service that you can use to audit the configuration of your devices, monitor your connected devices to detect abnormal behavior, and to mitigate security risks.</p> <p>See Also <a href="https://aws.amazon.com/iot-device-defender">https://aws.amazon.com/iot-device-defender</a>.</p>   |
| AWS IoT Device Management                | <p>A service used to securely onboard, organize, monitor, and remotely manage IoT devices at scale.</p> <p>See Also <a href="https://aws.amazon.com/iot-device-management">https://aws.amazon.com/iot-device-management</a>.</p>   |
| AWS IoT Events                           | <p>A fully managed AWS IoT service that makes it easy to detect and respond to events from IoT sensors and applications.</p> <p>See Also <a href="https://aws.amazon.com/iot-events">https://aws.amazon.com/iot-events</a>.</p>  |
| AWS IoT Greengrass                       | <p>Software that you can use to run local compute, messaging, data caching, sync, and ML inference capabilities for connected devices in a secure way.</p> <p>See Also <a href="https://aws.amazon.com/greengrass">https://aws.amazon.com/greengrass</a>.</p>  |

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| AWS IoT SiteWise                     | A managed service that you can use to collect, organize, and analyze data from industrial equipment at scale.<br>See Also <a href="https://aws.amazon.com/iot-sitewise">https://aws.amazon.com/iot-sitewise</a> .  |
| AWS IoT Things Graph                 | A service that makes it easy to visually connect different devices and web services to build IoT applications.<br>See Also <a href="https://aws.amazon.com/iot-things-graph">https://aws.amazon.com/iot-things-graph</a> .   |
| AWS Key Management Service (AWS KMS) | A managed service that simplifies the creation and control of <a href="#">encryption (p. 717)</a> keys that are used to encrypt data.<br>See Also <a href="https://aws.amazon.com/kms">https://aws.amazon.com/kms</a> .  |
| AWS Lambda                           | A web service that you can use to run code without provisioning or managing servers. You can run code for virtually any type of application or backend service with zero administration. You can set up your code to automatically start from other AWS services or call it directly from any web or mobile app.<br>See Also <a href="https://aws.amazon.com/lambda/">https://aws.amazon.com/lambda/</a> .   |
| AWS managed key                      | One type of <a href="#">customer master key (CMK) (p. 712)</a> in <a href="#">AWS Key Management Service (AWS KMS) (p. 704)</a> .  |
| AWS managed policy                   | An <a href="#">IAM (p. 703) managed policy (p. 726)</a> that's created and managed by AWS.   |
| AWS Management Console               | A graphical interface to manage compute, storage, and other cloud <a href="#">resource (p. 736)</a> s.<br>See Also <a href="https://aws.amazon.com/console">https://aws.amazon.com/console</a> .   |
| AWS Management Portal for vCenter    | A web service for managing your AWS <a href="#">resource (p. 736)</a> s using VMware vCenter. You install the portal as a vCenter plugin within your existing vCenter environment. Once installed, you can migrate VMware VMs to <a href="#">Amazon EC2 (p. 693)</a> and manage AWS resources from within vCenter.<br>See Also <a href="https://aws.amazon.com/ec2/vcenter-portal/">https://aws.amazon.com/ec2/vcenter-portal/</a> .   |
| AWS Marketplace                      | A web portal where qualified partners market and sell their software to AWS customers. AWS Marketplace is an online software store that helps customers find, buy, and immediately start using the software and services that run on AWS.<br>See Also <a href="https://aws.amazon.com/partners/aws-marketplace/">https://aws.amazon.com/partners/aws-marketplace/</a> .  |
| AWS Mobile Hub (Mobile Hub)          | An integrated console for building, testing, and monitoring mobile apps.<br>See Also <a href="https://aws.amazon.com/mobile">https://aws.amazon.com/mobile</a> .   |
| AWS Mobile SDK                       | A software development kit whose libraries, code examples, and documentation help you build high quality mobile apps for the iOS, Android, Fire OS, Unity, and Xamarin platforms.<br>See Also <a href="https://aws.amazon.com/mobile/sdk">https://aws.amazon.com/mobile/sdk</a> .  |
| AWS OpsWorks                         | A configuration management service that helps you use Chef to configure and operate groups of instances and applications. You can define the application's architecture and the specification of each component including package installation, software configuration, and <a href="#">resource (p. 736)</a> s such as storage. You can automate tasks based on time, load, lifecycle events, and more.<br>See Also <a href="https://aws.amazon.com/opsworks/">https://aws.amazon.com/opsworks/</a> . |
| AWS Organizations                    | An account management service that you can use to consolidate multiple AWS accounts into an organization that you create and centrally manage.<br>See Also <a href="https://aws.amazon.com/organizations/">https://aws.amazon.com/organizations/</a> .   |
| AWS Resource Access Manager          | A service that you can use to share your resources with any AWS account or organization in AWS Organizations.  |

See Also <https://aws.amazon.com/ram/>.

AWS ParallelCluster

An AWS supported open source cluster management tool that helps you to deploy and manage high performance computing (HPC) clusters in the AWS Cloud.

AWS SDK for C++

A software development kit for that provides C++ APIs for many AWS services including [Amazon S3 \(p. 697\)](#), [Amazon EC2 \(p. 693\)](#), [Amazon DynamoDB \(p. 693\)](#), and more. The single, downloadable package includes the AWS C++ library, code examples, and documentation.

See Also <https://aws.amazon.com/sdk-for-cpp/>.

AWS SDK for Go

A software development kit for integrating your Go application with the full suite of AWS services.

See Also <https://aws.amazon.com/sdk-for-go/>.

AWS SDK for Java

A software development kit that provides Java API operations for many AWS services including [Amazon S3 \(p. 697\)](#), [Amazon EC2 \(p. 693\)](#), [Amazon DynamoDB \(p. 693\)](#), and more. The single, downloadable package includes the AWS Java library, code examples, and documentation.

See Also <https://aws.amazon.com/sdk-for-java/>.

AWS SDK for JavaScript in the Browser

A software development kit for accessing AWS services from JavaScript code running in the browser. Authenticate users through Facebook, Google, or Login with Amazon using web identity federation. Store application data in [Amazon DynamoDB \(p. 693\)](#), and save user files to [Amazon S3 \(p. 697\)](#).

See Also <https://docs.aws.amazon.com/sdk-for-javascript/v2/developer-guide/>.

AWS SDK for JavaScript in Node.js

A software development kit for accessing AWS services from JavaScript in Node.js. The SDK provides JavaScript objects for AWS services, including [Amazon S3 \(p. 697\)](#), [Amazon EC2 \(p. 693\)](#), [Amazon DynamoDB \(p. 693\)](#), and [Amazon Simple Workflow Service \(Amazon SWF\) \(p. 697\)](#). The single, downloadable package includes the AWS JavaScript library and documentation.

See Also <https://docs.aws.amazon.com/sdk-for-javascript/v2/developer-guide/>.

AWS SDK for .NET

A software development kit that provides .NET API operations for AWS services including [Amazon S3 \(p. 697\)](#), [Amazon EC2 \(p. 693\)](#), [IAM \(p. 703\)](#), and more. You can download the SDK as multiple service-specific packages on NuGet.

See Also <https://aws.amazon.com/sdk-for-net/>.

AWS SDK for PHP

A software development kit and open-source PHP library for integrating your PHP application with AWS services such as [Amazon S3 \(p. 697\)](#), [Amazon S3 Glacier \(p. 697\)](#), and [Amazon DynamoDB \(p. 693\)](#).

See Also <https://aws.amazon.com/sdk-for-php/>.

AWS SDK for Python (Boto)

A software development kit for using Python to access AWS services such as [Amazon EC2 \(p. 693\)](#), [Amazon EMR \(p. 694\)](#), [Amazon EC2 Auto Scaling \(p. 693\)](#), [Amazon Kinesis \(p. 695\)](#), or [AWS Lambda \(p. 704\)](#).

See Also <http://boto.readthedocs.org/en/latest/>.

AWS SDK for Ruby

A software development kit for accessing AWS services from Ruby. The SDK provides Ruby classes for many AWS services including [Amazon S3 \(p. 697\)](#), [Amazon EC2 \(p. 693\)](#), [Amazon DynamoDB \(p. 693\)](#), and more. The single, downloadable package includes the AWS Ruby Library and documentation.

See Also <https://aws.amazon.com/sdk-for-ruby/>.

AWS Secrets Manager

A service for securely encrypting, storing, and rotating credentials for databases and other services.

See Also <https://aws.amazon.com/secrets-manager/>.

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| AWS Security Token Service (AWS STS) | A web service for requesting temporary, limited-privilege credentials for <a href="#">AWS Identity and Access Management (IAM) (p. 703)</a> users or for users that you authenticate ( <a href="#">federated users (p. 719)</a> ).<br>See Also <a href="https://aws.amazon.com/iam/">https://aws.amazon.com/iam/</a> .   |
| AWS Service Catalog                  | A web service that helps organizations create and manage catalogs of IT services that are approved for use on AWS. These IT services can include everything from virtual machine images, servers, software, and databases to complete multitier application architectures.<br>See Also <a href="https://aws.amazon.com/servicecatalog/">https://aws.amazon.com/servicecatalog/</a> .   |
| AWS Shield                           | A service that helps to protect your resources—such as Amazon EC2 instances, Elastic Load Balancing load balancers, Amazon CloudFront distributions, and Route 53 hosted zones—against DDoS attacks. AWS Shield is automatically included at no extra cost beyond what you already pay for AWS WAF and your other AWS services. For added protection against DDoS attacks, AWS offers AWS Shield Advanced.<br>See Also <a href="https://aws.amazon.com/shield/">https://aws.amazon.com/shield/</a> . |
| AWS Single Sign-On                   | A cloud-based service that simplifies managing SSO access to AWS accounts and business applications. You can control SSO access and user permissions across all your AWS accounts in AWS Organizations.<br>See Also <a href="https://aws.amazon.com/single-sign-on/">https://aws.amazon.com/single-sign-on/</a> .  |
| AWS Step Functions                   | A web service that coordinates the components of distributed applications as a series of steps in a visual workflow.<br>See Also <a href="https://aws.amazon.com/step-functions/">https://aws.amazon.com/step-functions/</a> .   |
| AWS Snowball                         | A petabyte-scale data transport solution that uses devices designed to be secure to transfer large amounts of data into and out of the AWS Cloud.<br>See Also <a href="https://aws.amazon.com/snowball/">https://aws.amazon.com/snowball/</a> .  |
| Storage Gateway                      | A web service that connects an on-premises software appliance with cloud-based storage. Storage Gateway provides seamless and secure integration between an organization's on-premises IT environment and AWS storage infrastructure.<br>See Also <a href="https://aws.amazon.com/storagegateway/">https://aws.amazon.com/storagegateway/</a> .  |
| AWS Toolkit for Eclipse              | An open-source plugin for the Eclipse Java integrated development environment (IDE) that makes it easier to develop, debug, and deploy Java applications using Amazon Web Services.<br>See Also <a href="https://aws.amazon.com/eclipse/">https://aws.amazon.com/eclipse/</a> .  |
| AWS Toolkit for JetBrains            | An open-source plugin for the integrated development environments (IDEs) from JetBrains that makes it easier to develop, debug, and deploy serverless applications using Amazon Web Services.<br>See Also <a href="https://aws.amazon.com/intellij/">https://aws.amazon.com/intellij/</a> , <a href="https://aws.amazon.com/pycharm/">https://aws.amazon.com/pycharm/</a> .  |
| AWS Toolkit for Visual Studio        | An extension for Visual Studio that helps in developing, debugging, and deploying .NET applications using Amazon Web Services.<br>See Also <a href="https://aws.amazon.com/visualstudio/">https://aws.amazon.com/visualstudio/</a> .   |
| AWS Toolkit for Visual Studio Code   | An open-source plugin for the Visual Studio Code (VS Code) editor that makes it easier to develop, debug, and deploy applications using Amazon Web Services.<br>See Also <a href="https://aws.amazon.com/visualstudiocode/">https://aws.amazon.com/visualstudiocode/</a> .   |
| AWS Tools for PowerShell             | A set of PowerShell cmdlets to help developers and administrators manage their AWS services from the PowerShell scripting environment.<br>See Also <a href="https://aws.amazon.com/powershell/">https://aws.amazon.com/powershell/</a> .   |

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| AWS Toolkit for Microsoft Azure DevOps | Provides tasks you can use in build and release definitions in VSTS to interact with AWS services.<br>See Also <a href="https://aws.amazon.com/vsts/">https://aws.amazon.com/vsts/</a> .   |
| AWS Trusted Advisor                    | A web service that inspects your AWS environment and makes recommendations for saving money, improving system availability and performance, and helping to close security gaps.<br>See Also <a href="https://aws.amazon.com/premiumsupport/trustedadvisor/">https://aws.amazon.com/premiumsupport/trustedadvisor/</a> .  |
| AWS VPN CloudHub                       | Enables secure communication between branch offices using a simple hub-and-spoke model, with or without a <a href="#">VPC (p. 747)</a> .   |
| AWS WAF                                | A web application firewall service that controls access to content by allowing or blocking web requests based on criteria that you specify. For example, you can filter access based on the header values or the IP addresses that the requests originate from. AWS WAF helps protect web applications from common web exploits that could affect application availability, compromise security, or consume excessive resources.<br>See Also <a href="https://aws.amazon.com/waf/">https://aws.amazon.com/waf/</a> . |
| AWS X-Ray                              | A web service that collects data about requests that your application serves. X-Ray provides tools that you can use to view, filter, and gain insights into that data to identify issues and opportunities for optimization.<br>See Also <a href="https://aws.amazon.com/xray/">https://aws.amazon.com/xray/</a> .   |

## B

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| <a href="#">Numbers and symbols (p. 690)</a>   <a href="#">A (p. 690)</a>   <a href="#">B (p. 707)</a>   <a href="#">C (p. 708)</a>   <a href="#">D (p. 713)</a>   <a href="#">E (p. 716)</a>   <a href="#">F (p. 719)</a>   <a href="#">G (p. 720)</a>   <a href="#">H (p. 720)</a>   <a href="#">I (p. 721)</a>   <a href="#">J (p. 724)</a>   <a href="#">K (p. 724)</a>   <a href="#">L (p. 725)</a>   <a href="#">M (p. 726)</a>   <a href="#">N (p. 728)</a>   <a href="#">O (p. 730)</a>   <a href="#">P (p. 731)</a>   <a href="#">Q (p. 734)</a>   <a href="#">R (p. 734)</a>   <a href="#">S (p. 738)</a>   <a href="#">T (p. 744)</a>   <a href="#">U (p. 746)</a>   <a href="#">V (p. 746)</a>   <a href="#">W (p. 748)</a>   <a href="#">X, Y, Z (p. 748)</a> |  |
| basic monitoring   | Monitoring of AWS provided metrics derived at a 5-minute frequency.  |
| batch  | See <a href="#">document batch</a> .   |
| BGP ASN  | Border Gateway Protocol Autonomous System Number. A unique identifier for a network, for use in BGP routing. <a href="#">Amazon EC2 (p. 693)</a> supports all 2-byte ASN numbers in the range of 1 – 65335, with the exception of 7224, which is reserved.   |
| batch prediction   | Amazon Machine Learning: An operation that processes multiple input data observations at one time (asynchronously). Unlike real-time predictions, batch predictions aren't available until all predictions have been processed.<br>See Also <a href="#">real-time predictions</a> .  |
| billing  | See <a href="#">the section called "Billing and Cost Management"</a> .   |
| binary attribute   | Amazon Machine Learning: An attribute for which one of two possible values is possible. Valid positive values are 1, y, yes, t, and true answers. Valid negative values are 0, n, no, f, and false. Amazon Machine Learning outputs 1 for positive values and 0 for negative values.<br>See Also <a href="#">attribute</a> .   |
| binary classification model  | Amazon Machine Learning: A machine learning model that predicts the answer to questions where the answer can be expressed as a binary variable. For example, questions with answers of "1" or "0", "yes" or "no", "will click" or "will not click" are questions that have binary answers. The result for a binary classification model is always either a "1" (for a "true" or affirmative answers) or a "0" (for a "false" or negative answers). |

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| block  | A dataset. <a href="#">Amazon EMR (p. 694)</a> breaks large amounts of data into subsets. Each subset is called a data block. Amazon EMR assigns an ID to each block and uses a hash table to keep track of block processing.  |
| block device                                     | A storage device that supports reading and (optionally) writing data in fixed-size blocks, sectors, or clusters.   |
| block device mapping                             | A mapping structure for every <a href="#">AMI (p. 696)</a> and <a href="#">instance (p. 722)</a> that specifies the block devices attached to the instance.  |
| blue/green deployment                            | CodeDeploy: A deployment method where the instances in a deployment group (the original environment) are replaced by a different set of instances (the replacement environment).   |
| bootstrap action                                 | A user-specified default or custom action that runs a script or an application on all nodes of a job flow before <a href="#">Hadoop (p. 721)</a> starts.   |
| Border Gateway Protocol Autonomous System Number | See <a href="#">BGP ASN</a> .  |
| bounce   | A failed email delivery attempt.   |
| breach   | <a href="#">Amazon EC2 Auto Scaling (p. 693)</a> : The condition where a user-set threshold (upper or lower boundary) is passed. If the duration of the breach is significant, as set by a breach duration parameter, it can possibly start a <a href="#">scaling activity (p. 738)</a> .  |
| bucket   | <a href="#">Amazon Simple Storage Service (Amazon S3) (p. 697)</a> : A container for stored objects. Every object is contained in a bucket. For example, if the object named photos/puppy.jpg is stored in the <a href="#">DOC-EXAMPLE-BUCKET</a> bucket, then authorized users can access the object with the URL <a href="https://s3-bucket-endpoint/DOC-EXAMPLE-BUCKET/photos/puppy.jpg">https://s3-bucket-endpoint/DOC-EXAMPLE-BUCKET/photos/puppy.jpg</a> . |
| bucket owner                                     | The person or organization that owns a <a href="#">bucket (p. 708)</a> in <a href="#">Amazon S3 (p. 697)</a> . In the same way that Amazon is the only owner of the domain name Amazon.com, only one person or organization can own a bucket.  |
| bundling   | A commonly used term for creating an <a href="#">Amazon Machine Image (AMI) (p. 696)</a> . It specifically refers to creating <a href="#">instance store-backed AMI (p. 723)</a> s.  |

## C

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| cache cluster            | A logical cache distributed over multiple <a href="#">cache node (p. 708)</a> s. A cache cluster can be set up with a specific number of cache nodes.  |
| cache cluster identifier | Customer-supplied identifier for the cache cluster that must be unique for that customer in an <a href="#">AWS Region (p. 735)</a> .   |
| cache engine version     | The version of the Memcached service that's running on the cache node.   |
| cache node               | A fixed-size chunk of secure, network-attached RAM. Each cache node runs an instance of the Memcached service, and has its own DNS name and port. Multiple types of cache nodes are supported, each with varying amounts of associated memory. |

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| cache node type             | An <a href="#">EC2 instance (p. 716)</a> type used to run the cache node.  |
| cache parameter group       | A container for cache engine parameter values that can be applied to one or more cache clusters.   |
| cache security group        | A group maintained by ElastiCache that combines inbound authorizations to cache nodes for hosts belonging to <a href="#">Amazon EC2 (p. 693) security group (p. 739)</a> s specified through the console or the API or command line tools.   |
| campaign                    | <a href="#">Amazon Personalize (p. 696)</a> : A deployed solution version (trained model) with provisioned dedicated transaction capacity for creating real-time recommendations for your application users. After you create a campaign, you use the <code>getRecommendations</code> or <code>getPersonalizedRanking</code> personalization operations to get recommendations.<br>See Also <a href="#">recommendations</a> , <a href="#">solution version</a> . |
| canned access policy        | A standard access control policy that you can apply to a <a href="#">bucket (p. 708)</a> or object. Options include: private, public-read, public-read-write, and authenticated-read.  |
| canonicalization            | The process of converting data into a standard format that a service such as <a href="#">Amazon S3 (p. 697)</a> can recognize.   |
| capacity                    | The amount of available compute size at a given time. Each <a href="#">Auto Scaling group (p. 700)</a> is defined with a minimum and maximum compute size. A <a href="#">scaling activity (p. 738)</a> increases or decreases the capacity within the defined minimum and maximum values.  |
| Cartesian product processor | A processor that calculates a Cartesian product. Also known as a <i>Cartesian data processor</i> .   |
| Cartesian product           | A mathematical operation that returns a product from multiple sets.  |
| CDN                         | See <a href="#">content delivery network (CDN)</a> .   |
| certificate                 | A credential that some AWS products use to authenticate <a href="#">AWS accounts (p. 691)</a> and users. Also known as an <a href="#">X.509 certificate (p. 748)</a> . The certificate is paired with a private key.   |
| chargeable resources        | Features or services whose use incurs fees. Although some AWS products are free, others include charges. For example, in an <a href="#">AWS CloudFormation (p. 701) stack (p. 742)</a> , <a href="#">AWS resource (p. 736)</a> s that have been created incur charges. The amount charged depends on the usage load. Use the Amazon Web Services Simple Monthly Calculator to estimate your cost prior to creating instances, stacks, or other resources.        |
| CIDR block                  | Classless Inter-Domain Routing. An internet protocol address allocation and route aggregation methodology.<br>See Also <a href="#">Classless Inter-Domain Routing in Wikipedia</a> .   |
| ciphertext                  | Information that has been <a href="#">encrypted (p. 717)</a> , as opposed to <a href="#">plaintext (p. 732)</a> , which is information that has not.   |
| ClassicLink                 | A feature for linking an EC2-Classic <a href="#">instance (p. 722)</a> to a <a href="#">VPC (p. 747)</a> , allowing your EC2-Classic instance to communicate with VPC instances using private IP addresses.<br>See Also <a href="#">link to VPC</a> , <a href="#">unlink from VPC</a> .  |
| classification              | In machine learning, a type of problem that seeks to place (classify) a data sample into a single category or “class.” Often, classification problems are modeled to choose one category (class) out of two. These are binary classification problems.   |

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|                              | Problems with more than two available categories (classes) are called "multiclass classification" problems.<br>See Also <a href="#">binary classification model</a> , <a href="#">multiclass classification model</a> .  |
| CLI                          | See <a href="#">AWS Command Line Interface (AWS CLI)</a> .   |
| Cloud Directory              | See <a href="#">the section called "Amazon Cloud Directory"</a> .  |
| cloud service provider (CSP) | A company that provides subscribers with access to internet-hosted computing, storage, and software services.  |
| CloudHub                     | See <a href="#">AWS VPN CloudHub</a> .   |
| cluster                      | A logical grouping of <a href="#">container instance (p. 711)</a> s that you can place <a href="#">task (p. 744)</a> s on.<br><br><b>Amazon OpenSearch Service (OpenSearch Service) (p. 694):</b> A logical grouping of one or more data nodes, optional dedicated master nodes, and storage required to run Amazon OpenSearch Service (OpenSearch Service) and operate your OpenSearch Service domain.<br>See Also <a href="#">data node</a> , <a href="#">dedicated master node</a> , <a href="#">node</a> .   |
| cluster compute instance     | A type of <a href="#">instance (p. 722)</a> that provides a great amount of CPU power coupled with increased networking performance, making it well suited for High Performance Compute (HPC) applications and other demanding network-bound applications.   |
| cluster placement group      | A logical <a href="#">cluster compute instance (p. 710)</a> grouping to provide lower latency and high-bandwidth connectivity between the <a href="#">instance (p. 722)</a> s.   |
| cluster status               | <b>Amazon OpenSearch Service (OpenSearch Service) (p. 694):</b> An indicator of the health of a cluster. A status can be green, yellow, or red. At the shard level, green means that all shards are allocated to nodes in a cluster, yellow means that the primary shard is allocated but the replica shards aren't, and red means that the primary and replica shards of at least one index aren't allocated. The shard status determines the index status, and the index status determines the cluster status. |
| CMK                          | See <a href="#">customer master key (CMK)</a> .  |
| CNAME                        | Canonical Name Record. A type of <a href="#">resource record (p. 737)</a> in the Domain Name System (DNS) that specifies that the domain name is an alias of another, canonical domain name. Specifically, it's an entry in a DNS table that you can use to alias one fully qualified domain name to another.  |
| Code Signing for AWS IoT     | A service for signing code that you create for any IoT device that's supported by Amazon Web Services (AWS).   |
| complaint                    | The event where a <a href="#">recipient (p. 735)</a> who doesn't want to receive an email message chooses "Mark as Spam" within the email client, and the <a href="#">internet service provider (ISP) (p. 723)</a> sends a notification to <a href="#">Amazon SES (p. 697)</a> .   |
| compound query               | <b>Amazon CloudSearch (p. 692):</b> A search request that specifies multiple search criteria using the Amazon CloudSearch structured search syntax.  |
| condition                    | <b>IAM (p. 703):</b> Any restriction or detail about a permission. The condition is <i>D</i> in the statement "A has permission to do B to C where D applies."   |
|                              | <b>AWS WAF (p. 707):</b> A set of attributes that AWS WAF searches for in web requests to AWS <a href="#">resource (p. 736)</a> s such as <a href="#">Amazon CloudFront (p. 692)</a> distributions. Conditions can include values such as the IP addresses that web requests originate from or values in request headers. Based on the specified   |

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|                                | conditions, you can configure AWS WAF to allow or block web requests to AWS resources.  |
| conditional parameter          | See <a href="#">mapping</a> .   |
| configuration API              | <a href="#">Amazon CloudSearch (p. 692)</a> : The API call that you use to create, configure, and manage search domains.  |
| configuration template         | A series of key-value pairs that define parameters for various AWS products so that <a href="#">AWS Elastic Beanstalk (p. 702)</a> can provision them for an environment.   |
| consistency model              | The method a service uses to achieve high availability. For example, it could involve replicating data across multiple servers in a data center.<br>See Also <a href="#">eventual consistency</a> .   |
| console                        | See <a href="#">AWS Management Console</a> .  |
| consolidated billing           | A feature of the AWS Organizations service for consolidating payment for multiple AWS accounts. You create an organization that contains your AWS accounts, and you use the management account of your organization to pay for all member accounts. You can see a combined view of AWS costs that are incurred by all accounts in your organization, and you can get detailed cost reports for individual accounts.   |
| container                      | A Linux container that was created from a Docker image as part of a <a href="#">task (p. 744)</a> .   |
| container definition           | Specifies which <a href="#">Docker image (p. 715)</a> to use for a <a href="#">container (p. 711)</a> , how much CPU and memory the container is allocated, and more options. The container definition is included as part of a <a href="#">task definition (p. 744)</a> .  |
| container instance             | An <a href="#">EC2 instance (p. 716)</a> that's running the <a href="#">Amazon Elastic Container Service (Amazon ECS) (p. 694)</a> agent and has been registered into a <a href="#">cluster (p. 710)</a> . Amazon ECS <a href="#">task (p. 744)</a> s are placed on active container instances.   |
| container registry             | Stores, manages, and deploys <a href="#">Docker image (p. 715)</a> s.   |
| content delivery network (CDN) | A web service that speeds up distribution of your static and dynamic web content—such as .html, .css, .js, media files, and image files—to your users by using a worldwide network of data centers. When a user requests your content, the request is routed to the data center that provides the lowest latency (time delay). If the content is already in the location with the lowest latency, the CDN delivers it immediately. If not, the CDN retrieves it from an origin that you specify (for example, a web server or an Amazon S3 bucket). With some CDNs, you can help secure your content by configuring an HTTPS connection between users and data centers, and between data centers and your origin. Amazon CloudFront is an example of a CDN. |
| contextual metadata            | <a href="#">Amazon Personalize (p. 696)</a> : Interactions data that you collect about a user's browsing context (such as device used or location) when an event (such as a click) occurs. Contextual metadata can improve recommendation relevance for new and existing users.<br>See Also <a href="#">Interactions dataset</a> , <a href="#">event</a> .  |
| continuous delivery            | A software development practice where code changes are automatically built, tested, and prepared for a release to production.<br>See Also <a href="https://aws.amazon.com/devops/continuous-delivery/">https://aws.amazon.com/devops/continuous-delivery/</a> .   |
| continuous integration         | A software development practice where developers regularly merge code changes into a central repository, after which automated builds and tests are run.<br>See Also <a href="https://aws.amazon.com/devops/continuous-integration/">https://aws.amazon.com/devops/continuous-integration/</a> .  |

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| cooldown period           | Amount of time that <a href="#">Amazon EC2 Auto Scaling (p. 693)</a> doesn't allow the desired size of the <a href="#">Auto Scaling group (p. 700)</a> to be changed by any other notification from an <a href="#">Amazon CloudWatch (p. 692)</a> alarm (p. 691).  |
| core node                 | An <a href="#">EC2 instance (p. 716)</a> that runs <a href="#">Hadoop (p. 721)</a> map and reduce tasks and stores data using the Hadoop Distributed File System (HDFS). Core nodes are managed by the <a href="#">master node (p. 727)</a> , which assigns Hadoop tasks to nodes and monitors their status. The EC2 instances you assign as core nodes are capacity that must be allotted for the entire job flow run. Because core nodes store data, you can't remove them from a job flow. However, you can add more core nodes to a running job flow.<br><br>Core nodes run both the DataNodes and TaskTracker Hadoop daemons.   |
| corpus                    | <a href="#">Amazon CloudSearch (p. 692)</a> : A collection of data that you want to search.  |
| coverage                  | <a href="#">Amazon Personalize (p. 696)</a> : An evaluation metric that tells you the proportion of unique items that Amazon Personalize might recommend using your model out of the total number of unique items in Interactions and Items datasets. To make sure Amazon Personalize recommends more of your items, use a model with a higher coverage score. Recipes that feature item exploration, such as user-personalization, have higher coverage than those that don't, such as popularity-count.<br>See Also <a href="#">metrics</a> , <a href="#">Items dataset</a> , <a href="#">Interactions dataset</a> , <a href="#">item exploration</a> , <a href="#">user-personalization recipe</a> , <a href="#">popularity-count recipe</a> .      |
| credential helper         | <a href="#">AWS CodeCommit (p. 701)</a> : A program that stores credentials for repositories and supplies them to Git when making connections to those repositories. The <a href="#">AWS CLI (p. 701)</a> includes a credential helper that you can use with Git when connecting to CodeCommit repositories.   |
| credentials               | Also called <i>access credentials</i> or <i>security credentials</i> . In authentication and authorization, a system uses credentials to identify who is making a call and whether to allow the requested access. In AWS, these credentials are typically the <a href="#">access key ID (p. 690)</a> and the <a href="#">secret access key (p. 739)</a> .  |
| cross-account access      | The process of permitting limited, controlled use of <a href="#">resource (p. 736)</a> s in one <a href="#">AWS account (p. 691)</a> by a user in another AWS account. For example, in <a href="#">AWS CodeCommit (p. 701)</a> and <a href="#">AWS CodeDeploy (p. 701)</a> you can configure cross-account access so that a user in AWS account A can access a CodeCommit repository created by account B. Or a pipeline in <a href="#">AWS CodePipeline (p. 701)</a> created by account A can use CodeDeploy resources created by account B. In <a href="#">IAM (p. 703)</a> you use a <a href="#">role (p. 737)</a> to <a href="#">delegate (p. 714)</a> temporary access to a <a href="#">user (p. 746)</a> in one account to resources in another. |
| cross-Region replication  | A solution for replicating data across different <a href="#">AWS Regions (p. 735)</a> , in near-real time.   |
| customer gateway          | A router or software application on your side of a VPN tunnel that's managed by <a href="#">Amazon VPC (p. 698)</a> . The internal interfaces of the customer gateway are attached to one or more devices in your home network. The external interface is attached to the <a href="#">virtual private gateway (VGW) (p. 747)</a> across the VPN tunnel.  |
| customer managed policy   | An <a href="#">IAM (p. 703)</a> managed policy (p. 726) that you create and manage in your <a href="#">AWS account (p. 691)</a> .  |
| customer master key (CMK) | The fundamental <a href="#">resource (p. 736)</a> that <a href="#">AWS Key Management Service (AWS KMS) (p. 704)</a> manages. CMKs can be either customer managed keys or AWS managed keys. Use CMKs inside AWS KMS to <a href="#">encrypt (p. 717)</a> or <a href="#">decrypt</a> up to 4   |

kilobytes of data directly or to encrypt generated data keys, which are then used to encrypt or decrypt larger amounts of data outside of the service.

## D

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| dashboard        | See <a href="#">service health dashboard</a> .   |
| data consistency | A concept that describes when data is written or updated successfully and all copies of the data are updated in all <a href="#">AWS Regions (p. 735)</a> . However, it takes time for the data to propagate to all storage locations. To support varied application requirements, <a href="#">Amazon DynamoDB (p. 693)</a> supports both eventually consistent and strongly consistent reads.<br>See Also <a href="#">eventual consistency</a> , <a href="#">eventually consistent read</a> , <a href="#">strongly consistent read</a> .   |
| data node        | <a href="#">Amazon OpenSearch Service (OpenSearch Service) (p. 694)</a> : An OpenSearch instance that holds data and responds to data upload requests.<br>See Also <a href="#">dedicated master node</a> , <a href="#">node</a> .  |
| data schema      | See <a href="#">schema</a> .   |
| data source      | The database, file, or repository that provides information required by an application or database. For example, in <a href="#">AWS OpsWorks (p. 704)</a> , valid data sources include an <a href="#">instance (p. 722)</a> for a stack's MySQL layer or a stack's <a href="#">Amazon RDS (p. 697)</a> service layer. In <a href="#">Amazon Redshift (p. 697)</a> , valid data sources include text files in an <a href="#">Amazon S3 (p. 697)</a> bucket (p. 708), in an <a href="#">Amazon EMR (p. 694)</a> cluster, or on a remote host that a cluster can access through an SSH connection.<br>See Also <a href="#">datasource</a> . |
| database engine  | The database software and version running on the <a href="#">DB instance (p. 714)</a> .  |
| database name    | The name of a database hosted in a <a href="#">DB instance (p. 714)</a> . A DB instance can host multiple databases, but databases hosted by the same DB instance must each have a unique name within that instance.   |
| dataset          | <a href="#">Amazon Personalize (p. 696)</a> : A container for the data used by Amazon Personalize. There are three types of Amazon Personalize datasets: Users, Items, and Interactions.<br>See Also <a href="#">Interactions dataset</a> , <a href="#">Users dataset</a> , <a href="#">Items dataset</a> .  |
| dataset group    | <a href="#">Amazon Personalize (p. 696)</a> : A container for Amazon Personalize components, including datasets, event trackers, solutions, filters, campaigns, and batch inference jobs. A dataset group organizes your resources into independent collections, so resources from one dataset group can't influence resources in any other dataset group.<br>See Also <a href="#">dataset</a> , <a href="#">event tracker</a> , <a href="#">solution</a> , <a href="#">campaign</a> .   |
| datasource       | <a href="#">Amazon Machine Learning (p. 696)</a> : An object that contains metadata about the input data. Amazon ML reads the input data, computes descriptive statistics on its attributes, and stores the statistics—along with a schema and other information—as part of the datasource object. Amazon ML uses datasources to train and evaluate a machine learning model and generate batch predictions.<br>See Also <a href="#">data source</a> .   |

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| DB compute class            | The size of the database compute platform used to run the instance.  |
| DB instance                 | An isolated database environment running in the cloud. A DB instance can contain multiple user-created databases.  |
| DB instance identifier      | User-supplied identifier for the DB instance. The identifier must be unique for that user in an <a href="#">AWS Region (p. 735)</a> .  |
| DB parameter group          | A container for database engine parameter values that apply to one or more <a href="#">DB instance (p. 714)</a> s.   |
| DB security group           | A method that controls access to the <a href="#">DB instance (p. 714)</a> . By default, network access is turned off to DB instances. After inbound traffic is configured for a <a href="#">security group (p. 739)</a> , the same rules apply to all DB instances associated with that group.   |
| DB snapshot                 | A user-initiated point backup of a <a href="#">DB instance (p. 714)</a> .  |
| Dedicated Host              | A physical server with <a href="#">EC2 instance (p. 716)</a> capacity fully dedicated to a user.   |
| Dedicated Instance          | An <a href="#">instance (p. 722)</a> that's physically isolated at the host hardware level and launched within a <a href="#">VPC (p. 747)</a> .  |
| dedicated master node       | <a href="#">Amazon OpenSearch Service (OpenSearch Service) (p. 694)</a> : An OpenSearch instance that performs cluster management tasks, but doesn't hold data or respond to data upload requests. Amazon OpenSearch Service (OpenSearch Service) uses dedicated master nodes to increase cluster stability.<br>See Also <a href="#">data node</a> , <a href="#">node</a> .                          |
| Dedicated Reserved Instance | An option that you purchase to guarantee that sufficient capacity will be available to launch <a href="#">Dedicated Instance (p. 714)</a> s into a <a href="#">VPC (p. 747)</a> .  |
| delegation                  | Within a single <a href="#">AWS account (p. 691)</a> : Giving AWS user (p. 746)s access to resource (p. 736)s in your AWS account.<br><br>Between two AWS accounts: Setting up a trust between the account that owns the resource (the trusting account), and the account that contains the users that need to access the resource (the trusted account).<br>See Also <a href="#">trust policy</a> . |
| delete marker               | An object with a key and version ID, but without content. <a href="#">Amazon S3 (p. 697)</a> inserts delete markers automatically into versioned <a href="#">bucket (p. 708)</a> s when an object is deleted.  |
| deliverability              | The likelihood that an email message will arrive at its intended destination.  |
| deliveries                  | The number of email messages, sent through <a href="#">Amazon SES (p. 697)</a> , that were accepted by an <a href="#">internet service provider (ISP) (p. 723)</a> for delivery to recipient (p. 735)s over a period of time.  |
| deny                        | The result of a <a href="#">policy (p. 732)</a> statement that includes deny as the effect, so that a specific action or actions are expressly forbidden for a user, group, or role. Explicit deny take precedence over explicit allow (p. 692).   |
| deployment configuration    | <a href="#">AWS CodeDeploy (p. 701)</a> : A set of deployment rules and success and failure conditions used by the service during a deployment.  |
| deployment group            | <a href="#">AWS CodeDeploy (p. 701)</a> : A set of individually tagged <a href="#">instance (p. 722)</a> s, <a href="#">EC2 instance (p. 716)</a> s in <a href="#">Auto Scaling group (p. 700)</a> s, or both.   |
| detailed monitoring         | Monitoring of AWS provided metrics derived at a 1-minute frequency.  |

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| Description property      | A property added to parameters, <a href="#">resource (p. 736)</a> s, resource properties, mappings, and outputs to help you to document <a href="#">AWS CloudFormation (p. 701)</a> template elements.  |
| dimension                 | A name-value pair (for example, InstanceType=m1.small, or EngineName=mysql), that contains additional information to identify a metric.   |
| discussion forums         | A place where AWS users can post technical questions and feedback to help accelerate their development efforts and to engage with the AWS community. For more information, see the <a href="#">Amazon Web Services Discussion Forums</a> .  |
| distribution              | A link between an origin server (such as an <a href="#">Amazon S3 (p. 697)</a> <a href="#">bucket (p. 708)</a> ) and a domain name, which <a href="#">CloudFront (p. 692)</a> automatically assigns. Through this link, CloudFront identifies the object you have stored in your <a href="#">origin server (p. 730)</a> .   |
| DKIM                      | DomainKeys Identified Mail. A standard that email senders use to sign their messages. ISPs use those signatures to verify that messages are legitimate. For more information, see <a href="https://tools.ietf.org/html/rfc6376">https://tools.ietf.org/html/rfc6376</a> .   |
| DNS                       | See <a href="#">Domain Name System</a> .  |
| Docker image              | A layered file system template that's the basis of a Docker <a href="#">container (p. 711)</a> . Docker images can comprise specific operating systems or applications.   |
| document                  | <a href="#">Amazon CloudSearch (p. 692)</a> : An item that can be returned as a search result. Each document has a collection of fields that contain the data that can be searched or returned. The value of a field can be either a string or a number. Each document must have a unique ID and at least one field.  |
| document batch            | <a href="#">Amazon CloudSearch (p. 692)</a> : A collection of add and delete document operations. You use the document service API to submit batches to update the data in your search domain.  |
| document service API      | <a href="#">Amazon CloudSearch (p. 692)</a> : The API call that you use to submit document batches to update the data in a search domain.   |
| document service endpoint | <a href="#">Amazon CloudSearch (p. 692)</a> : The URL that you connect to when sending document updates to an Amazon CloudSearch domain. Each search domain has a unique document service endpoint that remains the same for the life of the domain.  |
| domain                    | <a href="#">Amazon OpenSearch Service (OpenSearch Service) (p. 694)</a> : The hardware, software, and data exposed by Amazon OpenSearch Service (OpenSearch Service) endpoints. An OpenSearch Service domain is a service wrapper around an OpenSearch cluster. An OpenSearch Service domain encapsulates the engine instances that process OpenSearch Service requests, the indexed data that you want to search, snapshots of the domain, access policies, and metadata. See Also <a href="#">cluster</a> , <a href="#">Elasticsearch</a> . |
| Domain Name System        | A service that routes internet traffic to websites by translating friendly domain names (for example, www.example.com) into the numeric IP addresses, such as 192.0.2.1 that computers use to connect to each other.  |
| Donation button           | An HTML-coded button to provide an easy and secure way for US-based, IRS-certified 501(c)3 nonprofit organizations to solicit donations.  |
| DynamoDB stream           | An ordered flow of information about changes to items in an <a href="#">Amazon DynamoDB (p. 693)</a> table. When you enable a stream on a table, DynamoDB captures information about every modification to data items in the table.   |

See Also [Amazon DynamoDB Streams](#).

## E

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|---------------------------|--|
| EBS                       | See <a href="#">Amazon Elastic Block Store (Amazon EBS)</a> .  |
| EC2                       | See <a href="#">Amazon EC2</a> .   |
| EC2 compute unit (ECU)    | An AWS standard for compute CPU and memory. You can use this measure to evaluate the CPU capacity of different <a href="#">EC2 instance (p. 716)</a> types.  |
| EC2 instance              | A <a href="#">compute instance (p. 722)</a> in the <a href="#">Amazon EC2 (p. 693)</a> service. Other AWS services use the term <i>EC2 instance</i> to distinguish these instances from other types of instances they support.   |
| ECR                       | See <a href="#">the section called “Amazon ECR”</a> .  |
| ECS                       | See <a href="#">Amazon Elastic Container Service (Amazon ECS)</a> .  |
| edge location             | A data center that an AWS service uses to perform service-specific operations. For example, <a href="#">CloudFront (p. 692)</a> uses edge locations to cache copies of your content, so the content is closer to your users and can be delivered faster regardless of their location. <a href="#">Route 53 (p. 697)</a> uses edge locations to speed up the response to public DNS queries.  |
| EFS                       | See <a href="#">Amazon Elastic File System (Amazon EFS)</a> .  |
| Elastic                   | A company that provides open-source solutions—including OpenSearch, Logstash, Kibana, and Beats—that are designed to take data from any source and search, analyze, and visualize it in real time.   |
|                           | Amazon OpenSearch Service (OpenSearch Service) is an AWS managed service for deploying, operating, and scaling OpenSearch in the AWS Cloud.<br>See Also <a href="#">Amazon OpenSearch Service (OpenSearch Service)</a> , <a href="#">Elasticsearch</a> .   |
| Elastic Block Store       | See <a href="#">Amazon Elastic Block Store (Amazon EBS)</a> .  |
| Elastic IP address        | A fixed (static) IP address that you have allocated in <a href="#">Amazon EC2 (p. 693)</a> or <a href="#">Amazon VPC (p. 698)</a> and then attached to an <a href="#">instance (p. 722)</a> . Elastic IP addresses are associated with your account, not a specific instance. They are <i>elastic</i> because you can easily allocate, attach, detach, and free them as your needs change. Unlike traditional static IP addresses, Elastic IP addresses allow you to mask instance or <a href="#">Availability Zone (p. 700)</a> failures by rapidly remapping your public IP addresses to another instance. |
| Elastic Load Balancing    | A web service that improves an application's availability by distributing incoming traffic between two or more <a href="#">EC2 instance (p. 716)</a> s.<br>See Also <a href="https://aws.amazon.com/elasticloadbalancing">https://aws.amazon.com/elasticloadbalancing</a> .  |
| elastic network interface | An additional network interface that can be attached to an <a href="#">instance (p. 722)</a> . Elastic network interfaces include a primary private IP address, one or more secondary private IP addresses, an Elastic IP Address (optional), a MAC address, membership in specified <a href="#">security group (p. 739)</a> s, a description, and a source/destination check flag. You can create an elastic network interface, attach it to an instance, detach it from an instance, and attach it to another instance.  |

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|---------------------------|--|
| Elasticsearch             | An open-source, real-time distributed search and analytics engine used for full-text search, structured search, and analytics. OpenSearch was developed by the Elastic company.  |
|                           | Amazon OpenSearch Service (OpenSearch Service) is an AWS managed service for deploying, operating, and scaling OpenSearch in the AWS Cloud.<br>See Also <a href="#">Amazon OpenSearch Service (OpenSearch Service)</a> , <a href="#">Elastic</a> .   |
| EMR                       | See <a href="#">Amazon EMR</a> .   |
| encrypt                   | To use a mathematical algorithm to make data unintelligible to unauthorized user (p. 746)s. Encryption also gives authorized users a method (such as a key or password) to convert the altered data back to its original state.  |
| encryption context        | A set of key-value pairs that contains additional information associated with <a href="#">AWS Key Management Service (AWS KMS)</a> (p. 704)—encrypted information.   |
| endpoint                  | A URL that identifies a host and port as the entry point for a web service. Every web service request contains an endpoint. Most AWS products provide endpoints for a Region to enable faster connectivity.<br><br><a href="#">Amazon ElastiCache</a> (p. 694): The DNS name of a cache node (p. 708).<br><a href="#">Amazon RDS</a> (p. 697): The DNS name of a DB instance (p. 714).<br><a href="#">AWS CloudFormation</a> (p. 701): The DNS name or IP address of the server that receives an HTTP request.   |
| endpoint port             | <a href="#">Amazon ElastiCache</a> (p. 694): The port number used by a cache node (p. 708).<br><br><a href="#">Amazon RDS</a> (p. 697): The port number used by a DB instance (p. 714).  |
| envelope encryption       | The use of a master key and a data key to algorithmically protect data. The master key is used to encrypt and decrypt the data key and the data key is used to encrypt and decrypt the data itself.  |
| environment               | <a href="#">AWS Elastic Beanstalk</a> (p. 702): A specific running instance of an application (p. 699). The application has a CNAME and includes an application version and a customizable configuration (which is inherited from the default container type).<br><br><a href="#">AWS CodeDeploy</a> (p. 701): Instances in a deployment group in a blue/green deployment. At the start of a blue/green deployment, the deployment group is made up of instances in the original environment. At the end of the deployment, the deployment group is made up of instances in the replacement environment. |
| environment configuration | A collection of parameters and settings that define how an environment and its associated resources behave.  |
| ephemeral store           | See <a href="#">instance store</a> .   |
| epoch                     | The date from which time is measured. For most Unix environments, the epoch is January 1, 1970.  |
| ETL                       | See <a href="#">extract, transform, and load (ETL)</a> .   |
| evaluation                | Amazon Machine Learning: The process of measuring the predictive performance of a machine learning (ML) model.<br><br>Also a machine learning object that stores the details and result of an ML model evaluation.   |

|                            |   |
|----------------------------|---|
| evaluation datasource      | The data that Amazon Machine Learning uses to evaluate the predictive accuracy of a machine learning model.   |
| event                      | <a href="#">Amazon Personalize (p. 696)</a> : A user activity—such as a click, a purchase, or a video viewing—that you record and upload to an Amazon Personalize Interactions dataset. You record events individually in real time or record and upload events in bulk.<br>See Also <a href="#">dataset</a> , <a href="#">Interactions dataset</a> .   |
| event tracker              | <a href="#">Amazon Personalize (p. 696)</a> : Specifies a destination dataset group for event data that you record in real time. When you record events in real time, you provide the ID of the event tracker so that Amazon Personalize knows where to add the data.<br>See Also <a href="#">dataset group</a> , <a href="#">event</a> .   |
| eventual consistency       | The method that AWS services use to achieve high availability, which involves replicating data across multiple servers in Amazon's data centers. When data is written or updated and Success is returned, all copies of the data are updated. However, it takes time for the data to propagate to all storage locations. The data will eventually be consistent, but an immediate read might not show the change. Consistency is usually reached within seconds.<br>See Also <a href="#">data consistency</a> , <a href="#">eventually consistent read</a> , <a href="#">strongly consistent read</a> . |
| eventually consistent read | A read process that returns data from only one Region and might not show the most recent write information. However, if you repeat your read request after a short time, the response should eventually return the latest data.<br>See Also <a href="#">data consistency</a> , <a href="#">eventual consistency</a> , <a href="#">strongly consistent read</a> .  |
| eviction                   | The deletion by <a href="#">CloudFront (p. 692)</a> of an object from an <a href="#">edge location (p. 716)</a> before its expiration time. If an object in an edge location isn't frequently requested, CloudFront might evict the object (remove the object before its expiration date) to make room for objects that are more popular.   |
| exabyte (EiB)              | A contraction of exa binary byte, an exabyte is $2^{60}$ or 1,152,921,504,606,846,976 bytes. An exabyte (EB) is $10^{18}$ or 1,000,000,000,000,000 bytes. 1,024 EiB is a <a href="#">zebibyte (ZiB) (p. 748)</a> .  |
| expiration                 | For <a href="#">CloudFront (p. 692)</a> caching, the time when CloudFront stops responding to user requests with an object. If you don't use headers or <a href="#">CloudFront distribution (p. 715)</a> settings to specify how long you want objects to stay in an <a href="#">edge location (p. 716)</a> , the objects expire after 24 hours. The next time a user requests an object that has expired, CloudFront forwards the request to the <a href="#">origin (p. 730)</a> .   |
| explicit impressions       | <a href="#">Amazon Personalize (p. 696)</a> : A list of items that you manually add to an Amazon Personalize Interactions dataset to influence future recommendations. Unlike <i>implicit impressions</i> , where Amazon Personalize automatically derives the impressions data, you choose what to include in explicit impressions.<br>See Also <a href="#">recommendations</a> , <a href="#">Interactions dataset</a> , <a href="#">impressions data</a> , <a href="#">implicit impressions</a> .   |
| explicit launch permission | An <a href="#">Amazon Machine Image (AMI) (p. 696)</a> launch permission granted to a specific <a href="#">AWS account (p. 691)</a> .   |
| exponential backoff        | A strategy that incrementally increases the wait between retry attempts in order to reduce the load on the system and increase the likelihood that repeated requests will succeed. For example, client applications might wait up to 400 milliseconds before attempting the first retry, up to 1600 milliseconds before the second, and up to 6400 milliseconds (6.4 seconds) before the third.   |

|                                    |   |
|------------------------------------|---|
| expression                         | <a href="#">Amazon CloudSearch (p. 692)</a> : A numeric expression that you can use to control how search hits are sorted. You can construct Amazon CloudSearch expressions using numeric fields, other rank expressions, a document's default relevance score, and standard numeric operators and functions. When you use the <code>sort</code> option to specify an expression in a search request, the expression is evaluated for each search hit and the hits are listed according to their expression values.             |
| extract, transform, and load (ETL) | A process that's used to integrate data from multiple sources. Data is collected from sources (extract), converted to an appropriate format (transform), and written to a target data store (load) for purposes of analysis and querying.<br><br>ETL tools combine these three functions to consolidate and move data from one environment to another. <a href="#">AWS Glue (p. 703)</a> is a fully managed ETL service for discovering and organizing data, transforming it, and making it available for search and analytics. |

## F

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|                                     |   |
|-------------------------------------|---|
| facet                               | <a href="#">Amazon CloudSearch (p. 692)</a> : An index field that represents a category that you want to use to refine and filter search results.   |
| facet enabled                       | <a href="#">Amazon CloudSearch (p. 692)</a> : An index field option that enables facet information to be calculated for the field.  |
| FBL                                 | See <a href="#">feedback loop (FBL)</a> .   |
| feature transformation              | Amazon Machine Learning: The machine learning process of constructing more predictive input representations or "features" from the raw input variables to optimize a machine learning model's ability to learn and generalize. Also known as <i>data transformation</i> or <i>feature engineering</i> .   |
| federated identity management (FIM) | Allows individuals to sign in to different networks or services, using the same group or personal credentials to access data across all networks. With identity federation in AWS, external identities (federated users) are granted secure access to <a href="#">resource (p. 736)</a> s in an <a href="#">AWS account (p. 691)</a> without having to create IAM <a href="#">user (p. 746)</a> s. These external identities can come from a corporate identity store (such as LDAP or Windows Active Directory) or from a third party (such as Login with Amazon, Facebook, or Google). AWS federation also supports SAML 2.0. |
| federated user                      | See <a href="#">federated identity management (FIM)</a> .   |
| federation                          | See <a href="#">federated identity management (FIM)</a> .   |
| feedback loop (FBL)                 | The mechanism by which a mailbox provider (for example, an <a href="#">internet service provider (ISP) (p. 723)</a> ) forwards a <a href="#">recipient (p. 735)</a> 's <a href="#">complaint (p. 710)</a> back to the <a href="#">sender (p. 739)</a> .   |
| field weight                        | The relative importance of a text field in a search index. Field weights control how much matches in particular text fields affect a document's relevance score.  |
| filter                              | A criterion that you specify to limit the results when you list or describe your <a href="#">Amazon EC2 (p. 693)</a> resource (p. 736)s.  |

|                |   |
|----------------|---|
| filter query   | A way to filter search results without affecting how the results are scored and sorted. Specified with the <a href="#">Amazon CloudSearch (p. 692)</a> <code>fq</code> parameter. |
| FIM            | See <a href="#">federated identity management (FIM)</a> .   |
| Firehose       | See <a href="#">Amazon Kinesis Data Firehose</a> .  |
| format version | See <a href="#">template format version</a> .   |
| forums         | See <a href="#">discussion forums</a> .   |
| function       | See <a href="#">intrinsic function</a> .  |
| fuzzy search   | A simple search query that uses approximate string matching (fuzzy matching) to correct for typographical errors and misspellings.  |

## G

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|                        |  |
|------------------------|--|
| geospatial search      | A search query that uses locations specified as a latitude and longitude to determine matches and sort the results.  |
| gibibyte (GiB)         | A contraction of giga binary byte, a gibibyte is $2^{30}$ or 1,073,741,824 bytes. A gigabyte (GB) is $10^9$ or 1,000,000,000 bytes. 1,024 GiB is a <a href="#">tebibyte (TiB) (p. 744)</a> .   |
| GitHub                 | A web-based repository that uses Git for version control.  |
| global secondary index | An index with a partition key and a sort key that can be different from those on the table. A global secondary index is considered global because queries on the index can span all of the data in a table, across all partitions.<br>See Also <a href="#">local secondary index</a> .   |
| grant                  | <a href="#">AWS Key Management Service (AWS KMS) (p. 704)</a> : A mechanism for giving AWS principal (p. 733)s long-term permissions to use customer master key (CMK) (p. 712)s.   |
| grant token            | A type of identifier that allows the permissions in a <a href="#">grant (p. 720)</a> to take effect immediately.   |
| ground truth           | The observations used in the machine learning (ML) model training process that include the correct value for the target attribute. To train an ML model to predict house sales prices, the input observations would typically include prices of previous house sales in the area. The sale prices of these houses constitute the ground truth. |
| group                  | A collection of <a href="#">IAM (p. 703)</a> user (p. 746)s. You can use IAM groups to simplify specifying and managing permissions for multiple users.  |

## H

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|                    |   |
|--------------------|---|
| Hadoop             | Software that enables distributed processing for big data by using clusters and simple programming models. For more information, see <a href="http://hadoop.apache.org">http://hadoop.apache.org</a> .  |
| hard bounce        | A persistent email delivery failure such as "mailbox does not exist."   |
| hardware VPN       | A hardware-based IPsec VPN connection over the internet.  |
| health check       | A system call to check on the health status of each instance in an <a href="#">Amazon EC2 Auto Scaling (p. 693)</a> group.  |
| high-quality email | Email that recipients find valuable and want to receive. Value means different things to different recipients and can come in such forms as offers, order confirmations, receipts, or newsletters.  |
| highlights         | <a href="#">Amazon CloudSearch (p. 692)</a> : Excerpts returned with search results that show where the search terms appear within the text of the matching documents.  |
| highlight enabled  | <a href="#">Amazon CloudSearch (p. 692)</a> : An index field option that enables matches within the field to be highlighted.  |
| hit                | A document that matches the criteria specified in a search request. Also referred to as a <i>search result</i> .  |
| HMAC               | Hash-based Message Authentication Code. A specific construction for calculating a message authentication code (MAC) involving a cryptographic hash function in combination with a secret key. You can use it to verify both the data integrity and the authenticity of a message at the same time. AWS calculates the HMAC using a standard, cryptographic hash algorithm, such as SHA-256. |
| hosted zone        | A collection of <a href="#">resource record (p. 737)</a> sets that <a href="#">Amazon Route 53 (p. 697)</a> hosts. Similar to a traditional DNS zone file, a hosted zone represents a collection of records that are managed together under a single domain name.   |
| HRNN               | <a href="#">Amazon Personalize (p. 696)</a> : A hierarchical recurrent neural network machine learning algorithm that models changes in user behavior and predicts the items that a user might interact with in personal recommendation applications.   |
| HTTP-Query         | See <a href="#">Query</a> .   |
| HVM virtualization | Hardware Virtual Machine virtualization. Allows the guest VM to run as though it's on a native hardware platform, except that it still uses paravirtual (PV) network and storage drivers for improved performance.<br>See Also <a href="#">PV virtualization</a> .  |

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|                      |  |
|----------------------|--|
| IAM                  | See <a href="#">AWS Identity and Access Management (IAM)</a> . |
| IAM group            | See <a href="#">group</a> .                                    |
| IAM policy simulator | See <a href="#">policy simulator</a> .                         |
| IAM role             | See <a href="#">role</a> .                                     |

|                                |   |
|--------------------------------|---|
| IAM user                       | See <a href="#">user</a> .  |
| Identity and Access Management | See <a href="#">AWS Identity and Access Management (IAM)</a> .  |
| identity provider (IdP)        | An <a href="#">IAM (p. 703)</a> entity that holds metadata about external identity providers.   |
| IdP                            | See <a href="#">identity provider (IdP)</a> .   |
| image                          | See <a href="#">Amazon Machine Image (AMI)</a> .  |
| import/export station          | A machine that uploads or downloads your data to or from <a href="#">Amazon S3 (p. 697)</a> .   |
| import log                     | A report that contains details about how <a href="#">AWS Import/Export (p. 703)</a> processed your data.  |
| implicit impressions           | <a href="#">Amazon Personalize (p. 696)</a> : The recommendations that your application shows a user. Unlike <i>explicit impressions</i> , where you manually record each impression, Amazon Personalize automatically derives implicit impressions from your recommendation data.<br>See Also <a href="#">recommendations</a> , <a href="#">impressions data</a> , <a href="#">explicit impressions</a> .  |
| impressions data               | <a href="#">Amazon Personalize (p. 696)</a> : The list of items that you presented to a user when they interacted with a particular item such as by clicking it, watching it, or purchasing it. Amazon Personalize uses impressions data to calculate the relevance of new items for a user based on how frequently users have selected or ignored the same item.<br>See Also <a href="#">explicit impressions</a> , <a href="#">implicit impressions</a> . |
| in-place deployment            | CodeDeploy: A deployment method where the application on each instance in the deployment group is stopped, the latest application revision is installed, and the new version of the application is started and validated. You can choose to use a load balancer so each instance is deregistered during its deployment and then restored to service after the deployment is complete.   |
| index                          | See <a href="#">search index</a> .  |
| index field                    | A name-value pair that's included in an <a href="#">Amazon CloudSearch (p. 692)</a> domain's index. An index field can contain text or numeric data, dates, or a location.  |
| indexing options               | Configuration settings that define an <a href="#">Amazon CloudSearch (p. 692)</a> domain's index fields, how document data is mapped to those index fields, and how the index fields can be used.   |
| inline policy                  | An <a href="#">IAM (p. 703)</a> <a href="#">policy (p. 732)</a> that's embedded in a single IAM <a href="#">user (p. 746)</a> , <a href="#">group (p. 720)</a> , or <a href="#">role (p. 737)</a> .   |
| input data                     | Amazon Machine Learning: The observations that you provide to Amazon Machine Learning to train and evaluate a machine learning model and generate predictions.  |
| instance                       | A copy of an <a href="#">Amazon Machine Image (AMI) (p. 696)</a> running as a virtual server in the AWS Cloud.  |
| instance family                | A general <a href="#">instance type (p. 723)</a> grouping using either storage or CPU capacity.   |
| instance group                 | A <a href="#">Hadoop (p. 721)</a> cluster contains one master instance group that contains one <a href="#">master node (p. 727)</a> , a core instance group containing one or more <a href="#">core node (p. 712)</a> and an optional <a href="#">task node (p. 744)</a> instance group, which can contain any number of task nodes.  |

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|---------------------------------|--|
| instance profile                | A container that passes <a href="#">IAM (p. 703)</a> role ( <a href="#">p. 737</a> ) information to an <a href="#">EC2 instance (p. 716)</a> at launch.  |
| instance store                  | Disk storage that's physically attached to the host computer for an <a href="#">EC2 instance (p. 716)</a> , and therefore has the same lifespan as the instance. When the instance is terminated, you lose any data in the instance store.   |
| instance store-backed AMI       | A type of <a href="#">Amazon Machine Image (AMI) (p. 696)</a> whose <a href="#">instance (p. 722)</a> s use an <a href="#">instance store (p. 723)</a> volume ( <a href="#">p. 747</a> ) as the root device. Compare this with instances launched from <a href="#">Amazon EBS (p. 694)</a> -backed AMIs, which use an Amazon EBS volume as the root device.  |
| instance type                   | A specification that defines the memory, CPU, storage capacity, and usage cost for an <a href="#">instance (p. 722)</a> . Some instance types are designed for standard applications, whereas others are designed for CPU-intensive, memory-intensive applications, and so on.   |
| Interactions dataset            | <a href="#">Amazon Personalize (p. 696)</a> : A container for historical and real-time data collected from interactions between users and items (called events). Interactions data can include impressions data and contextual metadata.<br>See Also <a href="#">dataset</a> , <a href="#">event</a> , <a href="#">impressions data</a> , <a href="#">contextual metadata</a> .  |
| internet gateway                | Connects a network to the internet. You can route traffic for IP addresses outside your <a href="#">VPC (p. 747)</a> to the internet gateway.  |
| internet service provider (ISP) | A company that provides subscribers with access to the internet. Many ISPs are also <a href="#">mailbox provider (p. 726)</a> s. Mailbox providers are sometimes referred to as ISPs, even if they only provide mailbox services.  |
| intrinsic function              | A special action in a <a href="#">AWS CloudFormation (p. 701)</a> template that assigns values to properties not available until runtime. These functions follow the format <code>Fn::Attribute</code> , such as <code>Fn::GetAtt</code> . Arguments for intrinsic functions can be parameters, pseudo parameters, or the output of other intrinsic functions.   |
| IP address                      | A numerical address (for example, 192.0.2.44) that networked devices use to communicate with one another using the Internet Protocol (IP). All <a href="#">EC2 instance (p. 716)</a> s are assigned two IP addresses at launch, which are directly mapped to each other through network address translation ( <a href="#">NAT (p. 728)</a> ): a private IP address (following RFC 1918) and a public IP address. Instances launched in a <a href="#">VPC (p. 698)</a> are assigned only a private IP address. Instances launched in your default VPC are assigned both a private IP address and a public IP address. |
| IP match condition              | <a href="#">AWS WAF (p. 707)</a> : An attribute that specifies the IP addresses or IP address ranges that web requests originate from. Based on the specified IP addresses, you can configure AWS WAF to allow or block web requests to AWS resource ( <a href="#">p. 736</a> )s such as <a href="#">Amazon CloudFront (p. 692)</a> distributions.   |
| ISP                             | See <a href="#">internet service provider (ISP)</a> .  |
| issuer                          | The person who writes a <a href="#">policy (p. 732)</a> to grant permissions to a <a href="#">resource (p. 736)</a> . The issuer (by definition) is always the resource owner. AWS doesn't permit <a href="#">Amazon SQS (p. 697)</a> users to create policies for resources they don't own. If John is the resource owner, AWS authenticates John's identity when he submits the policy he's written to grant permissions for that resource.  |
| item                            | A group of attributes that's uniquely identifiable among all of the other items. Items in <a href="#">Amazon DynamoDB (p. 693)</a> are similar in many ways to rows, records, or tuples in other database systems.   |

item exploration **Amazon Personalize (p. 696)**: The process that Amazon Personalize uses to test different item recommendations, including recommendations of new items with no or very little interaction data, and learn how users respond. You configure item exploration at the campaign level for solution versions created with the user-personalization recipe.

See Also [recommendations](#), [campaign](#), [solution version](#), [user-personalization recipe](#).

item-to-item similarities (SIMS) recipe **Amazon Personalize (p. 696)**: A RELATED\_ITEMS recipe that uses the data from an Interactions dataset to make recommendations for items that are similar to a specified item. The SIMS recipe calculates similarity based on the way users interact with items instead of matching item metadata, such as price or age. See Also [recipe](#), [RELATED\\_ITEMS recipes](#), [Interactions dataset](#).

Items dataset **Amazon Personalize (p. 696)**: A container for metadata about items, such as price, genre, or availability. See Also [dataset](#).

## J

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job flow **Amazon EMR (p. 694)**: One or more [step \(p. 742\)](#)s that specify all of the functions to be performed on the data.

job ID A five-character, alphanumeric string that uniquely identifies an [AWS Import/Export \(p. 703\)](#) storage device in your shipment. AWS issues the job ID in response to a `CREATE_JOB` email command.

job prefix An optional string that you can add to the beginning of an [AWS Import/Export \(p. 703\)](#) log file name to prevent collisions with objects of the same name. See Also [key prefix](#).

JSON JavaScript Object Notation. A lightweight data interchange format. For information about JSON, see <http://www.json.org/>.

junk folder The location where email messages that various filters determine to be of lesser value are collected so that they don't arrive in the [recipient \(p. 735\)](#)'s inbox but are still accessible to the recipient. This is also referred to as a [spam \(p. 741\)](#) or bulk folder.

## K

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Numbers and symbols (p. 690) | A (p. 690) | B (p. 707) | C (p. 708) | D (p. 713) | E (p. 716) | F (p. 719) | G (p. 720) | H (p. 720) | I (p. 721) | J (p. 724) | K (p. 724) | L (p. 725) | M (p. 726) | N (p. 728) | O (p. 730) | P (p. 731) | Q (p. 734) | R (p. 734) | S (p. 738) | T (p. 744) | U (p. 746) | V (p. 746) | W (p. 748) | X, Y, Z (p. 748)

key A credential that identifies an [AWS account \(p. 691\)](#) or [user \(p. 746\)](#) to AWS (such as the AWS [secret access key \(p. 739\)](#)).

**Amazon Simple Storage Service (Amazon S3) (p. 697), Amazon EMR (p. 694):** The unique identifier for an object in a [bucket \(p. 708\)](#). Every object in a bucket

has exactly one key. Because a bucket and key together uniquely identify each object, you can think of Amazon S3 as a basic data map between the *bucket + key*, and the object itself. You can uniquely address every object in Amazon S3 through the combination of the web service endpoint, bucket name, and key, as in this example: <http://doc.s3.amazonaws.com/2006-03-01/AmazonS3.wsdl>, where doc is the name of the bucket, and 2006-03-01/AmazonS3.wsdl is the key.

**AWS Import/Export (p. 703)**: The name of an object in Amazon S3. It's a sequence of Unicode characters whose UTF-8 encoding can't exceed 1024 bytes. If a key (for example, logPrefix + import-log-JOBID) is longer than 1024 bytes, [AWS Elastic Beanstalk \(p. 702\)](#) returns an `InvalidManifestField` error.

**IAM (p. 703)**: In a [policy \(p. 732\)](#), a specific characteristic that's the basis for restricting access (such as the current time or the IP address of the requester).

**Tagging resources**: A general [tag \(p. 744\)](#) label that acts like a category for more specific tag values. For example, you might have [EC2 instance \(p. 716\)](#) with the tag key of *Owner* and the tag value of *Jan*. You can tag an AWS [resource \(p. 736\)](#) with up to 10 key-value pairs. Not all AWS resources can be tagged.

|                |   |
|----------------|---|
| key pair       | A set of security credentials that you use to prove your identity electronically. A key pair consists of a private key and a public key.  |
| key prefix     | A logical grouping of the objects in a <a href="#">bucket (p. 708)</a> . The prefix value is similar to a directory name that you can use to store similar data under the same directory in a bucket. |
| kibibyte (KiB) | A contraction of kilo binary byte, a kibibyte is $2^{10}$ or 1,024 bytes. A kilobyte (KB) is $10^3$ or 1,000 bytes. 1,024 KiB is a <a href="#">mebibyte (MiB) (p. 727)</a> .                          |
| KMS            | See <a href="#">AWS Key Management Service (AWS KMS)</a> .  |

## L

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[Numbers and symbols \(p. 690\)](#) | [A \(p. 690\)](#) | [B \(p. 707\)](#) | [C \(p. 708\)](#) | [D \(p. 713\)](#) | [E \(p. 716\)](#) | [F \(p. 719\)](#) | [G \(p. 720\)](#) | [H \(p. 720\)](#) | [I \(p. 721\)](#) | [J \(p. 724\)](#) | [K \(p. 724\)](#) | [L \(p. 725\)](#) | [M \(p. 726\)](#) | [N \(p. 728\)](#) | [O \(p. 730\)](#) | [P \(p. 731\)](#) | [Q \(p. 734\)](#) | [R \(p. 734\)](#) | [S \(p. 738\)](#) | [T \(p. 744\)](#) | [U \(p. 746\)](#) | [V \(p. 746\)](#) | [W \(p. 748\)](#) | X, Y, Z (p. 748)

|                      |  |
|----------------------|--|
| labeled data         | In machine learning, data for which you already know the target or "correct" answer.   |
| launch configuration | A set of descriptive parameters used to create new <a href="#">EC2 instance (p. 716)</a> s in an <a href="#">Amazon EC2 Auto Scaling (p. 693)</a> activity.  |
|                      | A template that an <a href="#">Auto Scaling group (p. 700)</a> uses to launch new EC2 instances. The launch configuration contains information such as the <a href="#">Amazon Machine Image (AMI) (p. 696)</a> ID, the instance type, key pairs, <a href="#">security group (p. 739)</a> s, and block device mappings, among other configuration settings. |
| launch permission    | An <a href="#">Amazon Machine Image (AMI) (p. 696)</a> attribute that allows users to launch an AMI.   |
| lifecycle            | The lifecycle state of the <a href="#">EC2 instance (p. 716)</a> contained in an <a href="#">Auto Scaling group (p. 700)</a> . EC2 instances progress through several states over their lifespan; these include <i>Pending</i> , <i>InService</i> , <i>Terminating</i> and <i>Terminated</i> .   |

|                       |   |
|-----------------------|---|
| lifecycle action      | An action that can be paused by Auto Scaling, such as launching or terminating an EC2 instance.   |
| lifecycle hook        | A feature for pausing Auto Scaling after it launches or terminates an EC2 instance so that you can perform a custom action while the instance isn't in service.   |
| link to VPC           | The process of linking (or attaching) an EC2-Classic <a href="#">instance (p. 722)</a> to a ClassicLink-enabled <a href="#">VPC (p. 747)</a> .<br>See Also <a href="#">ClassicLink, unlink from VPC</a> .   |
| load balancer         | A DNS name combined with a set of ports, which together provide a destination for all requests intended for your application. A load balancer can distribute traffic to multiple application instances across every <a href="#">Availability Zone (p. 700)</a> within a <a href="#">Region (p. 735)</a> . Load balancers can span multiple Availability Zones within an AWS Region into which an <a href="#">Amazon EC2 (p. 693)</a> instance was launched. But load balancers can't span multiple Regions. |
| local secondary index | An index that has the same partition key as the table, but a different sort key. A local secondary index is local in the sense that every partition of a local secondary index is scoped to a table partition that has the same partition key value.<br>See Also <a href="#">local secondary index</a> .  |
| logical name          | A case-sensitive unique string within an <a href="#">AWS CloudFormation (p. 701)</a> template that identifies a <a href="#">resource (p. 736)</a> , <a href="#">mapping (p. 727)</a> , parameter, or output. In an AWS CloudFormation template, each parameter, <a href="#">resource (p. 736)</a> , property, mapping, and output must be declared with a unique logical name. You use the logical name when dereferencing these items using the <code>Ref</code> function.                                 |

## M

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[Numbers and symbols \(p. 690\)](#) | [A \(p. 690\)](#) | [B \(p. 707\)](#) | [C \(p. 708\)](#) | [D \(p. 713\)](#) | [E \(p. 716\)](#) | [F \(p. 719\)](#) | [G \(p. 720\)](#) | [H \(p. 720\)](#) | [I \(p. 721\)](#) | [J \(p. 724\)](#) | [K \(p. 724\)](#) | [L \(p. 725\)](#) | [M \(p. 726\)](#) | [N \(p. 728\)](#) | [O \(p. 730\)](#) | [P \(p. 731\)](#) | [Q \(p. 734\)](#) | [R \(p. 734\)](#) | [S \(p. 738\)](#) | [T \(p. 744\)](#) | [U \(p. 746\)](#) | [V \(p. 746\)](#) | [W \(p. 748\)](#) | X, Y, Z (p. 748)

|                           |  |
|---------------------------|--|
| Mail Transfer Agent (MTA) | Software that transports email messages from one computer to another by using a client-server architecture.  |
| mailbox provider          | An organization that provides email mailbox hosting services. Mailbox providers are sometimes referred to as <a href="#">internet service provider (ISP) (p. 723)</a> s, even if they only provide mailbox services.   |
| mailbox simulator         | A set of email addresses that you can use to test an <a href="#">Amazon SES (p. 697)</a> -based email-sending application without sending messages to actual recipients. Each email address represents a specific scenario (such as a bounce or complaint) and generates a typical response that's specific to the scenario.   |
| main route table          | The default <a href="#">route table (p. 737)</a> that any new <a href="#">VPC (p. 747)</a> <a href="#">subnet (p. 743)</a> uses for routing. You can associate a subnet with a different route table of your choice. You can also change which route table is the main route table.  |
| managed policy            | A standalone <a href="#">IAM (p. 703)</a> <a href="#">policy (p. 732)</a> that you can attach to multiple <a href="#">user (p. 746)</a> s, <a href="#">group (p. 720)</a> s, and <a href="#">role (p. 737)</a> s in your <a href="#">IAM account (p. 691)</a> . Managed policies can either be AWS managed policies (which are created and managed by AWS) or customer managed policies (which you create and manage in your AWS account). |
| manifest                  | When sending a <i>create job</i> request for an import or export operation, you describe your job in a text file called a manifest. The manifest file is a YAML-formatted  |

|                            |  |
|----------------------------|--|
|                            | file that specifies how to transfer data between your storage device and the AWS Cloud.  |
| manifest file              | Amazon Machine Learning: The file used for describing batch predictions. The manifest file relates each input data file with its associated batch prediction results. It's stored in the Amazon S3 output location.  |
| mapping                    | A way to add conditional parameter values to an <a href="#">AWS CloudFormation (p. 701)</a> template. You specify mappings in the template's optional Mappings section and retrieve the desired value using the <code>FN::FindInMap</code> function.   |
| marker                     | See <a href="#">pagination token</a> .   |
| master node                | A process running on an <a href="#">Amazon Machine Image (AMI) (p. 696)</a> that keeps track of the work its core and task nodes complete.   |
| maximum price              | The maximum price you will pay to launch one or more <a href="#">Spot Instance (p. 741)</a> s. If your maximum price exceeds the current <a href="#">Spot price (p. 741)</a> and your restrictions are met, <a href="#">Amazon EC2 (p. 693)</a> launches instances on your behalf.   |
| maximum send rate          | The maximum number of email messages that you can send per second using <a href="#">Amazon SES (p. 697)</a> .  |
| mean reciprocal rank at 25 | <a href="#">Amazon Personalize (p. 696)</a> : An evaluation metric that assesses the relevance of a model's highest ranked recommendation. Amazon Personalize calculates this metric using the average accuracy of the model when ranking the most relevant recommendation out of the top 25 recommendations over all requests for recommendations.<br>See Also <a href="#">metrics</a> , <a href="#">recommendations</a> .  |
| mebibyte (MiB)             | A contraction of mega binary byte, a mebibyte is $2^{20}$ or 1,048,576 bytes. A megabyte (MB) is $10^6$ or 1,000,000 bytes. 1,024 MiB is a <a href="#">gibibyte (GiB) (p. 720)</a> .   |
| member resources           | See <a href="#">resource</a> .   |
| message ID                 | <a href="#">Amazon Simple Email Service (Amazon SES) (p. 697)</a> : A unique identifier that's assigned to every email message that's sent.  |
|                            | <a href="#">Amazon Simple Queue Service (Amazon SQS) (p. 697)</a> : The identifier returned when you send a message to a queue.  |
| metadata                   | Information about other data or objects. In <a href="#">Amazon Simple Storage Service (Amazon S3) (p. 697)</a> and <a href="#">Amazon EMR (p. 694)</a> metadata takes the form of name-value pairs that describe the object. These include default metadata such as the date last modified and standard HTTP metadata (for example, Content-Type). Users can also specify custom metadata at the time they store an object. In <a href="#">Amazon EC2 (p. 693)</a> metadata includes data about an <a href="#">EC2 instance (p. 716)</a> that the instance can retrieve to determine things about itself, such as the instance type or the IP address. |
| metric                     | An element of time-series data defined by a unique combination of exactly one <a href="#">namespace (p. 728)</a> , exactly one metric name, and between zero and ten dimensions. Metrics and the statistics derived from them are the basis of <a href="#">Amazon CloudWatch (p. 692)</a> .  |
| metrics                    | <a href="#">Amazon Personalize (p. 696)</a> : Evaluation data that Amazon Personalize generates when you train a model. You use metrics to evaluate the performance of the model, view the effects of modifying a solution's configuration, and compare results between solutions that use the same training data but were created with different recipes.   |

See Also [solution](#), [recipe](#).

|  |  |
|--|--|
| metric name                                  | The primary identifier of a metric, used in combination with a <a href="#">namespace (p. 728)</a> and optional dimensions.   |
| MFA  | See <a href="#">multi-factor authentication (MFA)</a> .  |
| micro instance                               | A type of <a href="#">EC2 instance (p. 716)</a> that's more economical to use if you have occasional bursts of high CPU activity.  |
| MIME   | See <a href="#">Multipurpose Internet Mail Extensions (MIME)</a> .   |
| ML model                                     | In machine learning (ML), a mathematical model that generates predictions by finding patterns in data. Amazon Machine Learning supports three types of ML models: binary classification, multiclass classification, and regression. Also known as a <i>predictive model</i> .<br>See Also <a href="#">binary classification model</a> , <a href="#">multiclass classification model</a> , <a href="#">regression model</a> .   |
| MTA  | See <a href="#">Mail Transfer Agent (MTA)</a> .  |
| Multi-AZ deployment                          | A primary <a href="#">DB instance (p. 714)</a> that has a synchronous standby replica in a different <a href="#">Availability Zone (p. 700)</a> . The primary DB instance is synchronously replicated across Availability Zones to the standby replica.  |
| multiclass classification model              | A machine learning model that predicts values that belong to a limited, pre-defined set of permissible values. For example, "Is this product a book, movie, or clothing?"  |
| multi-factor authentication (MFA)            | An optional <a href="#">AWS account (p. 691)</a> security feature. Once you enable AWS MFA, you must provide a six-digit, single-use code in addition to your sign-in credentials whenever you access secure AWS webpages or the <a href="#">AWS Management Console (p. 704)</a> . You get this single-use code from an authentication device that you keep in your physical possession.<br>See Also <a href="https://aws.amazon.com/mfa/">https://aws.amazon.com/mfa/</a> . |
| multi-valued attribute                       | An attribute with more than one value.   |
| multipart upload                             | A feature that you can use to upload a single object as a set of parts.  |
| Multipurpose Internet Mail Extensions (MIME) | An internet standard that extends the email protocol to include non-ASCII text and nontext elements, such as attachments.  |
| Multitool                                    | A cascading application that provides a simple command-line interface for managing large datasets.   |

## N

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[Numbers and symbols \(p. 690\)](#) | [A \(p. 690\)](#) | [B \(p. 707\)](#) | [C \(p. 708\)](#) | [D \(p. 713\)](#) | [E \(p. 716\)](#) | [F \(p. 719\)](#) | [G \(p. 720\)](#) | [H \(p. 720\)](#) | [I \(p. 721\)](#) | [J \(p. 724\)](#) | [K \(p. 724\)](#) | [L \(p. 725\)](#) | [M \(p. 726\)](#) | [N \(p. 728\)](#) | [O \(p. 730\)](#) | [P \(p. 731\)](#) | [Q \(p. 734\)](#) | [R \(p. 734\)](#) | [S \(p. 738\)](#) | [T \(p. 744\)](#) | [U \(p. 746\)](#) | [V \(p. 746\)](#) | [W \(p. 748\)](#) | X, Y, Z ([p. 748](#))

|           |  |
|-----------|--|
| namespace | An abstract container that provides context for the items (names, or technical terms, or words) it holds, and allows disambiguation of homonym items residing in different namespaces. |
| NAT       | Network address translation. A strategy of mapping one or more IP addresses to another while data packets are in transit across a traffic routing device. This                         |

|   |  |
|---|--|
|   | <p>is commonly used to restrict internet communication to private instances while allowing outgoing traffic.</p> <p>See Also <a href="#">Network Address Translation and Protocol Translation</a>, <a href="#">NAT gateway</a>, <a href="#">NAT instance</a>.</p>  |
| NAT gateway   | <p>A <a href="#">NAT (p. 728)</a> device, managed by AWS, that performs network address translation in a private <a href="#">subnet (p. 743)</a>, to secure inbound internet traffic. A NAT gateway uses both NAT and port address translation.</p> <p>See Also <a href="#">NAT instance</a>.</p>  |
| NAT instance  | <p>A <a href="#">NAT (p. 728)</a> device, configured by a user, that performs network address translation in a <a href="#">VPC (p. 747)</a> public <a href="#">subnet (p. 743)</a> to secure inbound internet traffic.</p> <p>See Also <a href="#">NAT gateway</a>.</p>  |
| network ACL   | <p>An optional layer of security that acts as a firewall for controlling traffic in and out of a <a href="#">subnet (p. 743)</a>. You can associate multiple subnets with a single <a href="#">network ACL (p. 690)</a>, but a subnet can be associated with only one network ACL at a time.</p>   |
| Network Address Translation and Protocol Translation        | <p>(<a href="#">NAT (p. 728)</a>-PT) An internet protocol standard defined in RFC 2766.</p> <p>See Also <a href="#">NAT instance</a>, <a href="#">NAT gateway</a>.</p>   |
| n-gram processor  | <p>A processor that performs n-gram transformations.</p> <p>See Also <a href="#">n-gram transformation</a>.</p>  |
| n-gram transformation                                       | <p>Amazon Machine Learning: A transformation that aids in text string analysis. An n-gram transformation takes a text variable as input and outputs strings by sliding a window of size <math>n</math> words, where <math>n</math> is specified by the user, over the text, and outputting every string of words of size <math>n</math> and all smaller sizes. For example, specifying the n-gram transformation with window size =2 returns all the two-word combinations and all of the single words.</p>  |
| NICE Desktop Cloud Visualization                            | <p>A remote visualization technology for securely connecting users to graphic-intensive 3D applications hosted on a remote, high-performance server.</p>   |
| node  | <p><a href="#">Amazon OpenSearch Service (OpenSearch Service) (p. 694)</a>: An OpenSearch instance. A node can be either a data instance or a dedicated master instance.</p> <p>See Also <a href="#">dedicated master node</a>.</p>  |
| NoEcho  | <p>A property of <a href="#">AWS CloudFormation (p. 701)</a> parameters that prevent the otherwise default reporting of names and values of a template parameter. Declaring the NoEcho property causes the parameter value to be masked with asterisks in the report by the <code>cfn-describe-stacks</code> command.</p>  |
| normalized discounted cumulative gain (NCDG) at K (5/10/25) | <p><a href="#">Amazon Personalize (p. 696)</a>: An evaluation metric that tells you about the relevance of your model's highly ranked recommendations, where K is a sample size of 5, 10, or 25 recommendations. Amazon Personalize calculates this by assigning weight to recommendations based on their position in a ranked list, where each recommendation is discounted (given a lower weight) by a factor dependent on its position. The normalized discounted cumulative gain at K assumes that recommendations that are lower on a list are less relevant than recommendations higher on the list.</p> <p>See Also <a href="#">metrics</a>, <a href="#">recommendations</a>.</p> |
| NoSQL   | <p>Nonrelational database systems that are highly available, scalable, and optimized for high performance. Instead of the relational model, NoSQL databases (for example, <a href="#">Amazon DynamoDB (p. 693)</a>) use alternate models for data management, such as key-value pairs or document storage.</p>   |

|                  |   |
|------------------|---|
| null object      | A null object is one whose version ID is null. <a href="#">Amazon S3 (p. 697)</a> adds a null object to a <a href="#">bucket (p. 708)</a> when <a href="#">versioning (p. 747)</a> for that bucket is suspended. It's possible to have only one null object for each key in a bucket. |
| number of passes | The number of times that you allow Amazon Machine Learning to use the same data records to train a machine learning model.  |

## O

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|                        |  |
|------------------------|--|
| object                 | <a href="#">Amazon Simple Storage Service (Amazon S3) (p. 697)</a> : The fundamental entity type stored in Amazon S3. Objects consist of object data and metadata. The data portion is opaque to Amazon S3.  |
|                        | <a href="#">Amazon CloudFront (p. 692)</a> : Any entity that can be served either over HTTP or a version of RTMP.  |
| observation            | Amazon Machine Learning: A single instance of data that Amazon Machine Learning (Amazon ML) uses to either train a machine learning model how to predict or to generate a prediction. Each row in an Amazon ML input data file is an observation.  |
| On-Demand Instance     | An <a href="#">Amazon EC2 (p. 693)</a> pricing option that charges you for compute capacity by the hour or second (minimum of 60 seconds) with no long-term commitment.  |
| operation              | An API function. Also called an <i>action</i> .  |
| optimistic locking     | A strategy to ensure that an item that you want to update has not been modified by others before you perform the update. For <a href="#">Amazon DynamoDB (p. 693)</a> , optimistic locking support is provided by the AWS SDKs.  |
| organization           | <a href="#">AWS Organizations (p. 704)</a> : An entity that you create to consolidate and manage your AWS accounts. An organization has one management account along with zero or more member accounts.  |
| organizational unit    | <a href="#">AWS Organizations (p. 704)</a> : A container for accounts within a <a href="#">root (p. 737)</a> of an organization. An organizational unit (OU) can contain other OUs.  |
| origin access identity | Also called OAI. When using <a href="#">Amazon CloudFront (p. 692)</a> to serve content with an <a href="#">Amazon S3 (p. 697)</a> <a href="#">bucket (p. 708)</a> as the origin, a virtual identity that you use to require users to access your content through CloudFront URLs instead of Amazon S3 URLs. Usually used with CloudFront <a href="#">private content (p. 733)</a> .                 |
| origin server          | The <a href="#">Amazon S3 (p. 697)</a> <a href="#">bucket (p. 708)</a> or custom origin containing the definitive original version of the content you deliver through <a href="#">CloudFront (p. 692)</a> .  |
| original environment   | The instances in a deployment group at the start of an CodeDeploy blue/green deployment.   |
| OSB transformation     | Orthogonal sparse bigram transformation. In machine learning, a transformation that aids in text string analysis and that's an alternative to the n-gram transformation. OSB transformations are generated by sliding the window of size $n$ words over the text, and outputting every pair of words that includes the first word in the window.<br>See Also <a href="#">n-gram transformation</a> . |

|                    |  |
|--------------------|--|
| OU                 | See <a href="#">organizational unit</a> .  |
| output location    | Amazon Machine Learning: An Amazon S3 location where the results of a batch prediction are stored.   |
| <h2>P</h2> <hr/>   |  |
|                    | <a href="#">Numbers and symbols (p. 690)</a>   <a href="#">A (p. 690)</a>   <a href="#">B (p. 707)</a>   <a href="#">C (p. 708)</a>   <a href="#">D (p. 713)</a>   <a href="#">E (p. 716)</a>   <a href="#">F (p. 719)</a>   <a href="#">G (p. 720)</a>   <a href="#">H (p. 720)</a>   <a href="#">I (p. 721)</a>   <a href="#">J (p. 724)</a>   <a href="#">K (p. 724)</a>   <a href="#">L (p. 725)</a>   <a href="#">M (p. 726)</a>   <a href="#">N (p. 728)</a>   <a href="#">O (p. 730)</a>   <a href="#">P (p. 731)</a>   <a href="#">Q (p. 734)</a>   <a href="#">R (p. 734)</a>   <a href="#">S (p. 738)</a>   <a href="#">T (p. 744)</a>   <a href="#">U (p. 746)</a>   <a href="#">V (p. 746)</a>   <a href="#">W (p. 748)</a>   X, Y, Z (p. 748)   |
| pagination         | The process of responding to an API request by returning a large list of records in small separate parts. Pagination can occur in the following situations: <ul style="list-style-type: none"><li>• The client sets the maximum number of returned records to a value below the total number of records.</li><li>• The service has a default maximum number of returned records that's lower than the total number of records.</li></ul> <p>When an API response is paginated, the service sends a subset of the large list of records and a pagination token that indicates that more records are available. The client includes this pagination token in a subsequent API request, and the service responds with the next subset of records. This continues until the service responds with a subset of records and no pagination token, indicating that all records have been sent.</p> |
| pagination token   | A marker that indicates that an API response contains a subset of a larger list of records. The client can return this marker in a subsequent API request to retrieve the next subset of records until the service responds with a subset of records and no pagination token, indicating that all records have been sent.<br>See Also <a href="#">pagination</a> .   |
| paid AMI           | An <a href="#">Amazon Machine Image (AMI) (p. 696)</a> that you sell to other <a href="#">Amazon EC2 (p. 693)</a> users on <a href="#">AWS Marketplace (p. 704)</a> .  |
| paravirtualization | See <a href="#">PV virtualization</a> .  |
| part               | A contiguous portion of the object's data in a multipart upload request.   |
| partition key      | A simple primary key, composed of one attribute (also known as a <i>hash attribute</i> ).<br>See Also <a href="#">partition key</a> , <a href="#">sort key</a> .   |
| PAT                | Port address translation.  |
| pebibyte (PiB)     | A contraction of peta binary byte, a pebibyte is $2^{50}$ or 1,125,899,906,842,624 bytes. A petabyte (PB) is $10^{15}$ or 1,000,000,000,000,000 bytes. 1,024 PiB is an <a href="#">exbibyte (EiB) (p. 718)</a> .   |
| period             | See <a href="#">sampling period</a> .  |
| permission         | A statement within a <a href="#">policy (p. 732)</a> that allows or denies access to a particular <a href="#">resource (p. 736)</a> . You can state any permission in the following way: "A has permission to do B to C." For example, Jane (A) has permission to read messages (B) from John's <a href="#">Amazon SQS (p. 697)</a> queue (C). Whenever Jane sends a request to Amazon SQS to use John's queue, the service checks to see if she has permission. It further checks to see if the request satisfies the conditions John set forth in the permission.  |

|                              |   |
|------------------------------|---|
| persistent storage           | A data storage solution where the data remains intact until it's deleted. Options within <a href="#">AWS</a> (p. 698) include: <a href="#">Amazon S3</a> (p. 697), <a href="#">Amazon RDS</a> (p. 697), <a href="#">Amazon DynamoDB</a> (p. 693), and other services.   |
| PERSONALIZED_RANKING recipes | <a href="#">Amazon Personalize</a> (p. 696): Recipes that provide item recommendations in ranked order based on the predicted interest for a user.<br>See Also <a href="#">recipe</a> , <a href="#">recommendations</a> , <a href="#">personalized-ranking recipe</a> , <a href="#">popularity-count recipe</a> .   |
| personalized-ranking recipe  | <a href="#">Amazon Personalize</a> (p. 696): A PERSONALIZED_RANKING recipe that ranks a collection of items that you provide based on the predicted interest level for a specific user. Use the personalized-ranking recipe to create curated lists of items or ordered search results that are personalized for a specific user.<br>See Also <a href="#">recipe</a> , <a href="#">PERSONALIZED_RANKING recipes</a> .   |
| physical name                | A unique label that <a href="#">AWS CloudFormation</a> (p. 701) assigns to each <a href="#">resource</a> (p. 736) when creating a <a href="#">stack</a> (p. 742). Some AWS CloudFormation commands accept the physical name as a value with the <code>--physical-name</code> parameter.   |
| pipeline                     | <a href="#">AWS CodePipeline</a> (p. 701): A workflow construct that defines the way software changes go through a release process.   |
| plaintext                    | Information that has not been <a href="#">encrypted</a> (p. 717), as opposed to <a href="#">ciphertext</a> (p. 709).  |
| policy                       | <a href="#">IAM</a> (p. 703): A document defining permissions that apply to a user, group, or role; the permissions in turn determine what users can do in AWS. A policy typically <a href="#">allow</a> (p. 692)s access to specific actions, and can optionally grant that the actions are allowed for specific <a href="#">resource</a> (p. 736)s, such as <a href="#">EC2 instance</a> (p. 716)s or <a href="#">Amazon S3</a> (p. 697) <a href="#">bucket</a> (p. 708)s. Policies can also explicitly <a href="#">deny</a> (p. 714) access. |
|                              | <a href="#">Amazon EC2 Auto Scaling</a> (p. 693): An object that stores the information needed to launch or terminate instances for an Auto Scaling group. Running the policy causes instances to be launched or terminated. You can configure an <a href="#">alarm</a> (p. 691) to invoke an Auto Scaling policy.  |
| policy generator             | A tool in the <a href="#">IAM</a> (p. 703) <a href="#">AWS Management Console</a> (p. 704) that helps you build a <a href="#">policy</a> (p. 732) by selecting elements from lists of available options.  |
| policy simulator             | A tool in the <a href="#">IAM</a> (p. 703) <a href="#">AWS Management Console</a> (p. 704) that helps you test and troubleshoot <a href="#">policies</a> (p. 732) so you can see their effects in real-world scenarios.   |
| policy validator             | A tool in the <a href="#">IAM</a> (p. 703) <a href="#">AWS Management Console</a> (p. 704) that examines your existing IAM access control <a href="#">policies</a> (p. 732) to ensure that they comply with the IAM policy grammar.   |
| popularity-count recipe      | <a href="#">Amazon Personalize</a> (p. 696): A USER_PERSONALIZATION recipe that recommends the items that have had the most interactions with unique users.<br>See Also <a href="#">recipe</a> , <a href="#">USER_PERSONALIZATION recipes</a> .   |
| precision at K (5/10/25)     | <a href="#">Amazon Personalize</a> (p. 696): An evaluation metric that tells you how relevant your model's recommendations are based on a sample size of K (5, 10, or 25) recommendations. Amazon Personalize calculates this metric based on the number of relevant recommendations out of the top K recommendations, divided by K, where K is 5, 10, or 25.<br>See Also <a href="#">metrics</a> , <a href="#">recommendations</a> .   |

|                    |  |
|--------------------|--|
| prefix             | See <a href="#">job prefix</a> .   |
| Premium Support    | A one-on-one, fast-response support channel that AWS customers can subscribe to for support for AWS infrastructure services.<br>See Also <a href="https://aws.amazon.com/premiumsupport/">https://aws.amazon.com/premiumsupport/</a> .   |
| presigned URL      | A web address that uses <a href="#">query string authentication (p. 734)</a> .   |
| primary key        | One or two attributes that uniquely identify each item in a <a href="#">Amazon DynamoDB (p. 693)</a> table, so that no two items can have the same key.<br>See Also <a href="#">partition key</a> , <a href="#">sort key</a> .   |
| primary shard      | See <a href="#">shard</a> .  |
| principal          | The <a href="#">user (p. 746)</a> , service, or <a href="#">account (p. 691)</a> that receives permissions that are defined in a <a href="#">policy (p. 732)</a> . The principal is A in the statement "A has permission to do B to C."  |
| private content    | When using <a href="#">Amazon CloudFront (p. 692)</a> to serve content with an <a href="#">Amazon S3 (p. 697)</a> bucket (p. 708) as the origin, a method of controlling access to your content by requiring users to use signed URLs. Signed URLs can restrict user access based on the current date and time, the IP addresses that the requests originate from, or both.  |
| private IP address | A private numerical address (for example, 192.0.2.44) that networked devices use to communicate with one another using the Internet Protocol (IP). All <a href="#">EC2 instance (p. 716)</a> s are assigned two IP addresses at launch, which are directly mapped to each other through network address translation ( <a href="#">NAT (p. 728)</a> ): a private address (following RFC 1918) and a public address. <i>Exception:</i> Instances launched in <a href="#">Amazon VPC (p. 698)</a> are assigned only a private IP address. |
| private subnet     | A <a href="#">VPC (p. 747)</a> subnet (p. 743) whose instances can't be reached from the internet.   |
| product code       | An identifier provided by AWS when you submit a product to <a href="#">AWS Marketplace (p. 704)</a> .  |
| properties         | See <a href="#">resource property</a> .  |
| property rule      | A <a href="#">JSON (p. 724)</a> -compliant markup standard for declaring properties, mappings, and output values in an <a href="#">AWS CloudFormation (p. 701)</a> template.   |
| Provisioned IOPS   | A storage option designed to deliver fast, predictable, and consistent I/O performance. When you specify an IOPS rate while creating a DB instance, <a href="#">Amazon RDS (p. 697)</a> provisions that IOPS rate for the lifetime of the DB instance.   |
| pseudo parameter   | A predefined setting (for example, <code>AWS : StackName</code> ) that can be used in <a href="#">AWS CloudFormation (p. 701)</a> templates without having to declare them. You can use pseudo parameters anywhere you can use a regular parameter.  |
| public AMI         | An <a href="#">Amazon Machine Image (AMI) (p. 696)</a> that all <a href="#">AWS accounts (p. 691)</a> have permission to launch.   |
| public dataset     | A large collection of public information that can be seamlessly integrated into applications that are based in the AWS Cloud. Amazon stores public datasets at no charge to the community and, similar to other AWS services, users pay only for the compute and storage they use for their own applications. These datasets currently include data from the Human Genome Project, the US Census, Wikipedia, and other sources.  |

See Also <https://aws.amazon.com/publicdatasets>.

public IP address

A public numerical address (for example, 192.0.2.44) that networked devices use to communicate with one another using the Internet Protocol (IP). [EC2 instance \(p. 716\)](#)s are assigned two IP addresses at launch, which are directly mapped to each other through Network Address Translation ([NAT \(p. 728\)](#)): a private address (following RFC 1918) and a public address. *Exception:* Instances launched in [Amazon VPC \(p. 698\)](#) are assigned only a private IP address.

public subnet

A [subnet \(p. 743\)](#) whose instances can be reached from the internet.

PV virtualization

Paravirtual virtualization. Allows guest VMs to run on host systems that don't have special support extensions for full hardware and CPU virtualization. Because PV guests run a modified operating system that doesn't use hardware emulation, they can't provide hardware-related features, such as enhanced networking or GPU support.

See Also [HVM virtualization](#).

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## Q

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quartile binning transformation

Amazon Machine Learning: A process that takes two inputs, a numerical variable and a parameter called a bin number, and outputs a categorical variable. Quartile binning transformations discover non-linearity in a variable's distribution by enabling the machine learning model to learn separate importance values for parts of the numeric variable's distribution.

Query

A type of web service that generally uses only the GET or POST HTTP method and a query string with parameters in the URL.  
See Also [REST](#).

query string authentication

An AWS feature that you can use to place the authentication information in the HTTP request query string instead of in the Authorization header, which provides URL-based access to objects in a [bucket \(p. 708\)](#).

queue

A sequence of messages or jobs that are held in temporary storage awaiting transmission or processing.

queue URL

A web address that uniquely identifies a queue.

quota

The maximum value for your resources, actions, and items in your AWS account

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## R

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range GET

A request that specifies a byte range of data to get for a download. If an object is large, you can break up a download into smaller units by sending multiple range GET requests that each specify a different byte range to GET.

|                       |  |
|-----------------------|--|
| raw email             | A type of <i>sendmail</i> request with which you can specify the email headers and MIME types.   |
| RDS                   | See <a href="#">Amazon Relational Database Service (Amazon RDS)</a> .  |
| read replica          | <b>Amazon RDS (p. 697)</b> : An active copy of another DB instance. Any updates to the data on the source DB instance are replicated to the read replica DB instance using the built-in replication feature of MySQL 5.1.  |
| real-time predictions | Amazon Machine Learning: Synchronously generated predictions for individual data observations.<br>See Also <a href="#">batch prediction</a> .  |
| recipe                | <b>Amazon Personalize (p. 696)</b> : An Amazon Personalize algorithm that's preconfigured to predict the items that a user will interact with (for USER_PERSONALIZATION recipes), or calculate items that are similar to specific items that a user has shown interest in (for RELATED_ITEMS recipes), or rank a collection of items that you provide based on the predicted interest for a specific user (for PERSONALIZED_RANKING recipes).<br>See Also <a href="#">USER_PERSONALIZATION recipes</a> , <a href="#">RELATED_ITEMS recipes</a> , <a href="#">PERSONALIZED_RANKING recipes</a> .                      |
| recommendations       | <b>Amazon Personalize (p. 696)</b> : A list of items that Amazon Personalize predicts that a user will interact with. Depending on the Amazon Personalize recipe used, recommendations can be either a list of items (with USER_PERSONALIZATION recipes and RELATED_ITEMS recipes), or a ranking of a collection of items you provided (with PERSONALIZED_RANKING recipes).<br>See Also <a href="#">recipe</a> , <a href="#">campaign</a> , <a href="#">solution version</a> , <a href="#">USER_PERSONALIZATION recipes</a> , <a href="#">RELATED_ITEMS recipes</a> , <a href="#">PERSONALIZED_RANKING recipes</a> . |
| receipt handle        | <b>Amazon SQS (p. 697)</b> : An identifier that you get when you receive a message from the queue. This identifier is required to delete a message from the queue or when changing a message's visibility timeout.   |
| receiver              | The entity that consists of the network systems, software, and policies that manage email delivery for a <a href="#">recipient (p. 735)</a> .  |
| recipient             | <b>Amazon Simple Email Service (Amazon SES) (p. 697)</b> : The person or entity receiving an email message. For example, a person named in the "To" field of a message.  |
| Redis                 | A fast, open-source, in-memory key-value data structure store. Redis comes with a set of versatile in-memory data structures with which you can easily create a variety of custom applications.  |
| reference             | A means of inserting a property from one AWS <a href="#">resource (p. 736)</a> into another. For example, you could insert an <a href="#">Amazon EC2 (p. 693)</a> <a href="#">security group (p. 739)</a> property into an <a href="#">Amazon RDS (p. 697)</a> resource.   |
| Region                | A named set of AWS <a href="#">resource (p. 736)</a> s in the same geographical area. A Region comprises at least two <a href="#">Availability Zone (p. 700)</a> s.  |
| regression model      | Amazon Machine Learning: Preformatted instructions for common data transformations that fine-tune machine learning model performance.  |
| regression model      | A type of machine learning model that predicts a numeric value, such as the exact purchase price of a house.   |
| regularization        | A machine learning (ML) parameter that you can tune to obtain higher-quality ML models. Regularization helps prevent ML models from memorizing training  |

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|                                 | <p>data examples instead of learning how to generalize the patterns it sees (called overfitting). When training data is overfitted, the ML model performs well on the training data, but doesn't perform well on the evaluation data or on new data.</p>  |
| RELATED_ITEMS recipes           | <p><a href="#">Amazon Personalize (p. 696)</a> Recipes that recommend items that are similar to a specified item, such as the item-to-item (SIMS) recipe.<br/>See Also <a href="#">recipe</a>, <a href="#">item-to-item similarities (SIMS) recipe</a>.</p>   |
| replacement environment         | <p>The instances in a deployment group after the CodeDeploy blue/green deployment.</p>  |
| replica shard                   | <p>See <a href="#">shard</a>.</p>   |
| reply path                      | <p>The email address that an email reply is sent to. This is different from the <a href="#">return path (p. 737)</a>.</p>   |
| representational state transfer | <p>See <a href="#">REST</a>.</p>  |
| reputation                      | <ol style="list-style-type: none"><li>1. An <a href="#">Amazon SES (p. 697)</a> metric, based on factors that might include <a href="#">bounce (p. 708)</a>s, <a href="#">complaint (p. 710)</a>s, and other metrics, regarding whether or not a customer is sending high-quality email.</li><li>2. A measure of confidence, as judged by an <a href="#">internet service provider (ISP) (p. 723)</a> or other entity that an IP address that they are receiving email from isn't the source of <a href="#">spam (p. 741)</a>.</li></ol>                              |
| requester                       | <p>The person (or application) that sends a request to AWS to perform a specific action. When AWS receives a request, it first evaluates the requester's permissions to determine whether the requester is allowed to perform the request action (if applicable, for the requested <a href="#">resource (p. 736)</a>).</p>  |
| Requester Pays                  | <p>An <a href="#">Amazon S3 (p. 697)</a> feature that allows a <a href="#">bucket owner (p. 708)</a> to specify that anyone who requests access to objects in a particular <a href="#">bucket (p. 708)</a> must pay the data transfer and request costs.</p>  |
| reservation                     | <p>A collection of <a href="#">EC2 instance (p. 716)</a>s started as part of the same launch request. Not to be confused with a <a href="#">Reserved Instance (p. 736)</a>.</p>   |
| Reserved Instance               | <p>A pricing option for <a href="#">EC2 instance (p. 716)</a>s that discounts the <a href="#">on-demand (p. 730)</a> usage charge for instances that meet the specified parameters. Customers pay for the entire term of the instance, regardless of how they use it.</p>   |
| Reserved Instance Marketplace   | <p>An online exchange that matches sellers who have reserved capacity that they no longer need with buyers who are looking to purchase additional capacity. <a href="#">Reserved Instance (p. 736)</a>s that you purchase from third-party sellers have less than a full standard term remaining and can be sold at different upfront prices. The usage or reoccurring fees remain the same as the fees set when the Reserved Instances were originally purchased. Full standard terms for Reserved Instances available from AWS run for one year or three years.</p> |
| resource                        | <p>An entity that users can work with in AWS, such as an <a href="#">EC2 instance (p. 716)</a>, an <a href="#">Amazon DynamoDB (p. 693)</a> table, an <a href="#">Amazon S3 (p. 697)</a> bucket (p. 708), an <a href="#">IAM (p. 703)</a> user, or an <a href="#">AWS OpsWorks (p. 704)</a> stack (p. 742).</p>   |
| resource property               | <p>A value required when including an AWS <a href="#">resource (p. 736)</a> in an <a href="#">AWS CloudFormation (p. 701)</a> <a href="#">stack (p. 742)</a>. Each resource can have one or more properties associated with it. For example, an <code>AWS::EC2::Instance</code> resource might have a <code>UserData</code> property. In an AWS CloudFormation template, resources must declare a properties section, even if the resource has no properties.</p>   |

|                     |   |
|---------------------|---|
| resource record     | Also called <i>resource record set</i> . The fundamental information elements in the Domain Name System (DNS).<br>See Also Domain Name System in Wikipedia.   |
| REST                | Representational state transfer. A simple stateless architecture that generally runs over HTTPS/TLS. REST emphasizes that resources have unique and hierarchical identifiers (URIs), are represented by common media types (such as HTML, XML, or <a href="#">JSON (p. 724)</a> ), and that operations on the resources are either predefined or discoverable within the media type. In practice, this generally results in a limited number of operations.<br>See Also <a href="#">Query</a> , <a href="#">WSDL</a> , <a href="#">SOAP</a> .                         |
| RESTful web service | Also known as RESTful API. A web service that follows <a href="#">REST (p. 737)</a> architectural constraints. The API operations must use HTTP methods explicitly; expose hierarchical URIs; and transfer either XML, <a href="#">JSON (p. 724)</a> , or both.   |
| return enabled      | <a href="#">Amazon CloudSearch (p. 692)</a> : An index field option that enables the field's values to be returned in the search results.   |
| return path         | The email address that bounced email is returned to. The return path is specified in the header of the original email. This is different from the <a href="#">reply path (p. 736)</a> .   |
| revision            | <a href="#">AWS CodePipeline (p. 701)</a> : A change made to a source that's configured in a source action, such as a pushed commit to a <a href="#">GitHub (p. 720)</a> repository or an update to a file in a versioned <a href="#">Amazon S3 (p. 697)</a> bucket (p. 708).   |
| role                | A tool for giving temporary access to AWS <a href="#">resource (p. 736)</a> s in your <a href="#">AWS account (p. 691)</a> .  |
| rollback            | A return to a previous state that follows the failure to create an object, such as <a href="#">AWS CloudFormation (p. 701) stack (p. 742)</a> . All <a href="#">resource (p. 736)</a> s associated with the failure are deleted during the rollback. For AWS CloudFormation, you can override this behavior using the --disable-rollback option on the command line.  |
| root                | <a href="#">AWS Organizations (p. 704)</a> : A parent container for the accounts in your organization. If you apply a <a href="#">service control policy (p. 739)</a> to the root, it applies to every <a href="#">organizational unit (p. 730)</a> and account in the organization.  |
| root credentials    | Authentication information associated with the <a href="#">AWS account (p. 691)</a> owner.  |
| root device volume  | A <a href="#">volume (p. 747)</a> that contains the image used to boot the <a href="#">instance (p. 722)</a> (also known as a <i>root device</i> ). If you launched the instance from an <a href="#">AMI (p. 696)</a> backed by <a href="#">instance store (p. 723)</a> , this is an instance store <a href="#">volume (p. 747)</a> created from a template stored in <a href="#">Amazon S3 (p. 697)</a> . If you launched the instance from an AMI backed by <a href="#">Amazon EBS (p. 694)</a> , this is an Amazon EBS volume created from an Amazon EBS snapshot. |
| route table         | A set of routing rules that controls the traffic leaving any <a href="#">subnet (p. 743)</a> that's associated with the route table. You can associate multiple subnets with a single route table, but a subnet can be associated with only one route table at a time.  |
| row identifier      | Amazon Machine Learning: An attribute in the input data that you can include in the evaluation or prediction output to make it easier to associate a prediction with an observation.  |
| rule                | <a href="#">AWS WAF (p. 707)</a> : A set of conditions that AWS WAF searches for in web requests to AWS <a href="#">resource (p. 736)</a> s such as <a href="#">Amazon CloudFront (p. 692)</a> distributions. You add rules to a <a href="#">web ACL (p. 748)</a> , and then specify whether you want to allow or block web requests based on each rule.  |

# S

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|                             |   |
|-----------------------------|---|
| S3                          | See <a href="#">Amazon Simple Storage Service (Amazon S3)</a> .   |
| sampling period             | A defined duration of time, such as one minute, which <a href="#">Amazon CloudWatch (p. 692)</a> computes a <a href="#">statistic (p. 742)</a> over.  |
| sandbox                     | A testing location where you can test the functionality of your application without affecting production, incurring charges, or purchasing products.<br><br><a href="#">Amazon SES (p. 697)</a> : An environment that's designed for developers to test and evaluate the service. In the sandbox, you have full access to the Amazon SES API, but you can only send messages to verified email addresses and the mailbox simulator. To get out of the sandbox, you need to apply for production access. Accounts in the sandbox also have lower <a href="#">sending limits (p. 739)</a> than production accounts. |
| scale in                    | To remove EC2 instances from an <a href="#">Auto Scaling group (p. 700)</a> .   |
| scale out                   | To add EC2 instances to an <a href="#">Auto Scaling group (p. 700)</a> .  |
| scaling policy              | A description of how Auto Scaling should automatically scale an <a href="#">Auto Scaling group (p. 700)</a> in response to changing demand.<br>See Also <a href="#">scale in</a> , <a href="#">scale out</a> .  |
| scaling activity            | A process that changes the size, configuration, or makeup of an <a href="#">Auto Scaling group (p. 700)</a> by launching or terminating instances.  |
| scheduler                   | The method used for placing <a href="#">task (p. 744)</a> s on <a href="#">container instance (p. 711)</a> s.   |
| schema                      | Amazon Machine Learning: The information needed to interpret the input data for a machine learning model, including attribute names and their assigned data types, and the names of special attributes.   |
| score cut-off value         | Amazon Machine Learning: A binary classification model outputs a score that ranges from 0 to 1. To decide whether an observation should be classified as 1 or 0, you pick a classification threshold, or cut-off, and Amazon ML compares the score against it. Observations with scores higher than the cut-off are predicted as target equals 1, and scores lower than the cut-off are predicted as target equals 0.   |
| SCP                         | See <a href="#">service control policy</a> .  |
| search API                  | <a href="#">Amazon CloudSearch (p. 692)</a> : The API that you use to submit search requests to a <a href="#">search domain (p. 738)</a> .  |
| search domain               | <a href="#">Amazon CloudSearch (p. 692)</a> : Encapsulates your searchable data and the search instances that handle your search requests. You typically set up a separate Amazon CloudSearch domain for each different collection of data that you want to search.   |
| search domain configuration | <a href="#">Amazon CloudSearch (p. 692)</a> : A domain's indexing options, <a href="#">analysis scheme (p. 698)</a> s, <a href="#">expression (p. 719)</a> s, <a href="#">suggester (p. 743)</a> s, access policies, and scaling and availability options.  |

|                              |  |
|------------------------------|--|
| search enabled               | <a href="#">Amazon CloudSearch (p. 692)</a> : An index field option that enables the field data to be searched.  |
| search endpoint              | <a href="#">Amazon CloudSearch (p. 692)</a> : The URL that you connect to when sending search requests to a search domain. Each Amazon CloudSearch domain has a unique search endpoint that remains the same for the life of the domain.   |
| search index                 | <a href="#">Amazon CloudSearch (p. 692)</a> : A representation of your searchable data that facilitates fast and accurate data retrieval.  |
| search instance              | <a href="#">Amazon CloudSearch (p. 692)</a> : A compute resource (p. 736) that indexes your data and processes search requests. An Amazon CloudSearch domain has one or more search instances, each with a finite amount of RAM and CPU resources. As your data volume grows, more search instances or larger search instances are deployed to contain your indexed data. When necessary, your index is automatically partitioned across multiple search instances. As your request volume or complexity increases, each search partition is automatically replicated to provide additional processing capacity. |
| search request               | <a href="#">Amazon CloudSearch (p. 692)</a> : A request that's sent to an Amazon CloudSearch domain's search endpoint to retrieve documents from the index that match particular search criteria.  |
| search result                | <a href="#">Amazon CloudSearch (p. 692)</a> : A document that matches a search request. Also referred to as a <i>search hit</i> .  |
| secret access key            | A key that's used in conjunction with the <a href="#">access key ID (p. 690)</a> to cryptographically sign programmatic AWS requests. Signing a request identifies the sender and prevents the request from being altered. You can generate secret access keys for your <a href="#">AWS account (p. 691)</a> , individual IAM user (p. 746)s, and temporary sessions.  |
| security group               | A named set of allowed inbound network connections for an instance. (Security groups in <a href="#">Amazon VPC (p. 698)</a> also include support for outbound connections.) Each security group consists of a list of protocols, ports, and IP address ranges. A security group can apply to multiple instances, and multiple groups can regulate a single instance.   |
| sender                       | The person or entity sending an email message.   |
| Sender ID                    | A Microsoft-controlled version of <a href="#">SPF (p. 741)</a> . An email authentication and anti-spoofing system. For more information about Sender ID, see <a href="#">Sender ID</a> in Wikipedia.   |
| sending limits               | The <a href="#">sending quota (p. 739)</a> and <a href="#">maximum send rate (p. 727)</a> that are associated with every <a href="#">Amazon SES (p. 697)</a> account.  |
| sending quota                | The maximum number of email messages that you can send using <a href="#">Amazon SES (p. 697)</a> in a 24-hour period.  |
| server-side encryption (SSE) | The <a href="#">encrypting (p. 717)</a> of data at the server level. <a href="#">Amazon S3 (p. 697)</a> supports three modes of server-side encryption: SSE-S3, where Amazon S3 manages the keys; SSE-C, where the customer manages the keys; and SSE-KMS, where <a href="#">AWS Key Management Service (AWS KMS) (p. 704)</a> manages keys.   |
| service control policy       | <a href="#">AWS Organizations (p. 704)</a> : A policy-based control that specifies the services and actions that users and roles can use in the accounts that the service control policy (SCP) affects.  |
| service endpoint             | See <a href="#">endpoint</a> .   |

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| service health dashboard      | A webpage showing up-to-the-minute information about AWS service availability. The dashboard is located at <a href="http://status.aws.amazon.com/">http://status.aws.amazon.com/</a> .   |
| Service Quotas                | A service for viewing and managing your quotas easily and at scale as your AWS workloads grow. Quotas, also referred to as limits, are the maximum number of resources that you can create in an AWS account.  |
| service role                  | An <a href="#">IAM (p. 703)</a> <a href="#">role (p. 737)</a> that grants permissions to an AWS service so it can access AWS <a href="#">resource (p. 736)</a> s. The policies that you attach to the service role determine which AWS resources the service can access and what it can do with those resources.   |
| SES                           | See <a href="#">Amazon Simple Email Service (Amazon SES)</a> .   |
| session                       | The period when the temporary security credentials provided by <a href="#">AWS Security Token Service (AWS STS) (p. 706)</a> allow access to your AWS account.   |
| SHA                           | Secure Hash Algorithm. SHA1 is an earlier version of the algorithm, which AWS has replaced with SHA256.  |
| shard                         | <a href="#">Amazon OpenSearch Service (OpenSearch Service) (p. 694)</a> : A partition of data in an index. You can split an index into multiple shards, which can include primary shards (original shards) and replica shards (copies of the primary shards). Replica shards provide failover, which means that a replica shard is promoted to a primary shard if a cluster node that contains a primary shard fails. Replica shards also can handle requests. |
| shared AMI                    | An <a href="#">Amazon Machine Image (AMI) (p. 696)</a> that a developer builds and makes available for others to use.  |
| shutdown action               | <a href="#">Amazon EMR (p. 694)</a> : A predefined bootstrap action that launches a script that runs a series of commands in parallel before terminating the job flow.   |
| signature                     | Refers to a <i>digital signature</i> , which is a mathematical way to confirm the authenticity of a digital message. AWS uses signatures to authenticate the requests you send to our web services. For more information, to <a href="https://aws.amazon.com/security">https://aws.amazon.com/security</a> .   |
| SIGNATURE file                | <a href="#">AWS Import/Export (p. 703)</a> : A file you copy to the root directory of your storage device. The file contains a job ID, manifest file, and a signature.   |
| Signature Version 4           | Protocol for authenticating inbound API requests to AWS services in all AWS Regions.   |
| Simple Mail Transfer Protocol | See <a href="#">SMTP</a> .   |
| Simple Object Access Protocol | See <a href="#">SOAP</a> .   |
| Simple Storage Service        | See <a href="#">Amazon Simple Storage Service (Amazon S3)</a> .  |
| SIMS recipe                   | See <a href="#">item-to-item similarities (SIMS) recipe</a> .  |
| Single Sign-On                | See <a href="#">AWS Single Sign-On</a> .   |
| Single-AZ DB instance         | A standard (non-Multi-AZ) <a href="#">DB instance (p. 714)</a> that's deployed in one <a href="#">Availability Zone (p. 700)</a> , without a standby replica in another Availability Zone. See Also <a href="#">Multi-AZ deployment</a> .  |
| sloppy phrase search          | A search for a phrase that specifies how close the terms must be to one another to be considered a match.  |

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| SMTP                          | Simple Mail Transfer Protocol. The standard that's used to exchange email messages between internet hosts for the purpose of routing and delivery.  |
| snapshot                      | <a href="#">Amazon Elastic Block Store (Amazon EBS) (p. 694)</a> : A backup of your volume (p. 747)s that's stored in <a href="#">Amazon S3 (p. 697)</a> . You can use these snapshots as the starting point for new Amazon EBS volumes or to protect your data for long-term durability.<br>See Also <a href="#">DB snapshot</a> .   |
| SNS                           | See <a href="#">Amazon Simple Notification Service (Amazon SNS)</a> .   |
| SOAP                          | Simple Object Access Protocol. An XML-based protocol that you can use to exchange information over a particular protocol (for example, HTTP or SMTP) between applications.<br>See Also <a href="#">REST</a> , <a href="#">WSDL</a> .  |
| soft bounce                   | A temporary email delivery failure such as one resulting from a full mailbox.   |
| software VPN                  | A software appliance-based VPN connection over the internet.  |
| solution                      | <a href="#">Amazon Personalize (p. 696)</a> : The recipe, customized parameters, and trained models (solution versions) that can be used to generate recommendations.<br>See Also <a href="#">recipe</a> , <a href="#">solution version</a> , <a href="#">recommendations</a> .   |
| solution version              | <a href="#">Amazon Personalize (p. 696)</a> : A trained model that you create as part of a solution in Amazon Personalize. You deploy a solution version in a campaign to generate recommendations.<br>See Also <a href="#">solution</a> , <a href="#">campaign</a> , <a href="#">recommendations</a> .   |
| sort enabled                  | <a href="#">Amazon CloudSearch (p. 692)</a> : An index field option that enables a field to be used to sort the search results.   |
| sort key                      | An attribute used to sort the order of partition keys in a composite primary key (also known as a <i>range attribute</i> ).<br>See Also <a href="#">partition key</a> , <a href="#">primary key</a> .   |
| source/destination checking   | A security measure to verify that an <a href="#">EC2 instance (p. 716)</a> is the origin of all traffic that it sends and the ultimate destination of all traffic that it receives; that is, that the instance isn't relaying traffic. Source/destination checking is turned on by default. For instances that function as gateways, such as <a href="#">VPC (p. 747)</a> <a href="#">NAT (p. 728)</a> instances, source/destination checking must be disabled. |
| spam                          | Unsolicited bulk email.   |
| spamtrap                      | An email address that's set up by an anti-spam (p. 741) entity, not for correspondence, but to monitor unsolicited email. This is also called a <i>honeypot</i> .   |
| SPF                           | Sender Policy Framework. A standard for authenticating email.   |
| Spot Instance                 | A type of <a href="#">EC2 instance (p. 716)</a> that you can bid on to take advantage of unused <a href="#">Amazon EC2 (p. 693)</a> capacity.   |
| Spot price                    | The price for a <a href="#">Spot Instance (p. 741)</a> at any given time. If your maximum price exceeds the current price and your restrictions are met, <a href="#">Amazon EC2 (p. 693)</a> launches instances on your behalf.   |
| SQL injection match condition | <a href="#">AWS WAF (p. 707)</a> : An attribute that specifies the part of web requests (such as a header or a query string) that AWS WAF inspects for malicious SQL code. Based on the specified conditions, you can configure AWS WAF to allow or block web   |

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|                | requests to an AWS resource (p. 736), such as an <a href="#">Amazon CloudFront (p. 692)</a> distribution.   |
| SQS            | See <a href="#">Amazon Simple Queue Service (Amazon SQS)</a> .  |
| SSE            | See <a href="#">server-side encryption (SSE)</a> .  |
| SSL            | Secure Sockets Layer<br>See Also <a href="#">Transport Layer Security (TLS)</a> .   |
| SSO            | See <a href="#">AWS Single Sign-On</a> .  |
| stack          | <a href="#">AWS CloudFormation (p. 701)</a> : A collection of AWS resources that you create and delete as a single unit.<br><br><a href="#">AWS OpsWorks (p. 704)</a> : A set of instances that you manage collectively, typically because they have a common purpose such as serving PHP applications. A stack serves as a container and handles tasks that apply to the group of instances as a whole, such as managing applications and cookbooks. |
| station        | <a href="#">AWS CodePipeline (p. 701)</a> : A portion of a pipeline workflow where one or more actions are performed.   |
| station        | A place at an AWS facility where your AWS Import/Export data is transferred on to, or off of, your storage device.  |
| statistic      | One of five functions of the values submitted for a given <a href="#">sampling period (p. 738)</a> . These functions are Maximum, Minimum, Sum, Average, and SampleCount.   |
| stem           | The common root or substring shared by a set of related words.  |
| stemming       | The process of mapping related words to a common stem. This enables matching on variants of a word. For example, a search for "horse" could return matches for horses, horseback, and horsing, as well as horse. <a href="#">Amazon CloudSearch (p. 692)</a> supports both dictionary based and algorithmic stemming.   |
| step           | <a href="#">Amazon EMR (p. 694)</a> : A single function applied to the data in a <a href="#">job flow (p. 724)</a> . The sum of all steps comprises a job flow.   |
| step type      | <a href="#">Amazon EMR (p. 694)</a> : The type of work done in a step. There are a limited number of step types, such as moving data from <a href="#">Amazon S3 (p. 697)</a> to <a href="#">Amazon EC2 (p. 693)</a> or from Amazon EC2 to Amazon S3.  |
| sticky session | A feature of the <a href="#">Elastic Load Balancing (p. 716)</a> load balancer that binds a user's session to a specific application instance so that all requests coming from the user during the session are sent to the same application instance. By contrast, a load balancer defaults to route each request independently to the application instance with the smallest load.   |
| stopping       | The process of filtering stop words from an index or search request.  |
| stopword       | A word that isn't indexed and is automatically filtered out of search requests because it's either insignificant or so common that including it would result in too many matches to be useful. Stopwords are language specific.   |
| streaming      | <a href="#">Amazon EMR (p. 694)</a> : A utility that comes with <a href="#">Hadoop (p. 721)</a> that you can use to develop MapReduce executables in languages other than Java.<br><br><a href="#">Amazon CloudFront (p. 692)</a> : The ability to use a media file in real time—as it's transmitted in a steady stream from a server.  |

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| streaming distribution   | A special kind of <a href="#">distribution (p. 715)</a> that serves streamed media files using a Real Time Messaging Protocol (RTMP) connection.  |
| Streams                  | See <a href="#">Amazon Kinesis Data Streams</a> .   |
| string-to-sign           | Before you calculate an <a href="#">HMAC (p. 721)</a> signature, you first assemble the required components in a canonical order. The preencrypted string is the string-to-sign.  |
| string match condition   | <a href="#">AWS WAF (p. 707)</a> : An attribute that specifies the strings that AWS WAF searches for in a web request, such as a value in a header or a query string. Based on the specified strings, you can configure AWS WAF to allow or block web requests to an AWS <a href="#">resource (p. 736)</a> , such as a <a href="#">CloudFront (p. 692)</a> distribution.                |
| strongly consistent read | A read process that returns a response with the most up-to-date data, reflecting the updates from all prior write operations that were successful—regardless of the Region.<br>See Also <a href="#">data consistency</a> , <a href="#">eventual consistency</a> , <a href="#">eventually consistent read</a> .  |
| structured query         | Search criteria specified using the <a href="#">Amazon CloudSearch (p. 692)</a> structured query language. You use the structured query language to construct compound queries that use advanced search options and combine multiple search criteria using Boolean operators.   |
| STS                      | See <a href="#">AWS Security Token Service (AWS STS)</a> .  |
| subnet                   | A segment of the IP address range of a <a href="#">VPC (p. 747)</a> that an <a href="#">EC2 instance (p. 716)</a> can be attached to. You can create subnets to group instances according to security and operational needs.  |
| Subscription button      | An HTML-coded button that provides an easy way to charge customers a recurring fee.   |
| suggerster               | <a href="#">Amazon CloudSearch (p. 692)</a> : Specifies an index field for getting autocomplete suggestions and options that can enable fuzzy matches and control how suggestions are sorted.   |
| suggestions              | Documents that contain a match for the partial search string in the field designated by the <a href="#">suggerster (p. 743)</a> . <a href="#">Amazon CloudSearch (p. 692)</a> suggestions include the document IDs and field values for each matching document. To be a match, the string must match the contents of the field starting from the beginning of the field.                |
| supported AMI            | An <a href="#">Amazon Machine Image (AMI) (p. 696)</a> similar to a <a href="#">paid AMI (p. 731)</a> , except that the owner charges for additional software or a service that customers use with their own AMIs.  |
| SWF                      | See <a href="#">Amazon Simple Workflow Service (Amazon SWF)</a> .   |
| symmetric encryption     | <a href="#">Encryption (p. 717)</a> that uses a private key only.<br>See Also <a href="#">asymmetric encryption</a> .   |
| synchronous bounce       | A type of <a href="#">bounce (p. 708)</a> that occurs while the email servers of the <a href="#">sender (p. 739)</a> and <a href="#">receiver (p. 735)</a> are actively communicating.  |
| synonym                  | A word that's the same or nearly the same as an indexed word and that should produce the same results when specified in a search request. For example, a search for "Rocky Four" or "Rocky 4" should return the fourth <i>Rocky</i> movie. This can be done by designating that <code>four</code> and <code>4</code> are synonyms for <code>IV</code> . Synonyms are language specific. |

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| table                   | A collection of data. Similar to other database systems, DynamoDB stores data in tables.  |
| tag                     | Metadata that you can define and assign to AWS <a href="#">resource (p. 736)</a> s, such as an <a href="#">EC2 instance (p. 716)</a> . Not all AWS resources can be tagged.   |
| tagging                 | Tagging resources: Applying a <a href="#">tag (p. 744)</a> to an AWS <a href="#">resource (p. 736)</a> .  |
|                         | <a href="#">Amazon SES (p. 697)</a> : Also called <i>labeling</i> . A way to format <a href="#">return path (p. 737)</a> email addresses so that you can specify a different return path for each recipient of a message. You can use tagging to support <a href="#">VERP (p. 747)</a> . For example, if Andrew manages a mailing list, he can use the return paths andrew+recipient1@example.net and andrew+recipient2@example.net so that he can determine which email bounced.   |
| target attribute        | Amazon Machine Learning (Amazon ML ): The attribute in the input data that contains the “correct” answers. Amazon ML uses the target attribute to learn how to make predictions on new data. For example, if you were building a model for predicting the sale price of a house, the target attribute would be “target sale price in USD.”  |
| target revision         | <a href="#">AWS CodeDeploy (p. 701)</a> : The most recent version of the application revision that has been uploaded to the repository and will be deployed to the instances in a deployment group. In other words, the application revision currently targeted for deployment. This is also the revision that will be pulled for automatic deployments.  |
| task                    | An instantiation of a <a href="#">task definition (p. 744)</a> that's running on a <a href="#">container instance (p. 711)</a> .  |
| task definition         | The blueprint for your task. Specifies the name of the <a href="#">task (p. 744)</a> , revisions, <a href="#">container definition (p. 711)</a> s, and <a href="#">volume (p. 747)</a> information.   |
| task node               | An <a href="#">EC2 instance (p. 716)</a> that runs <a href="#">Hadoop (p. 721)</a> map and reduce tasks, but doesn't store data. Task nodes are managed by the <a href="#">master node (p. 727)</a> , which assigns Hadoop tasks to nodes and monitors their status. While a job flow is running you can increase and decrease the number of task nodes. Because they don't store data and can be added and removed from a job flow, you can use task nodes to manage the EC2 instance capacity your job flow uses, increasing capacity to handle peak loads and decreasing it later. |
|                         | Task nodes only run a TaskTracker Hadoop daemon.  |
| tebibyte (TiB)          | A contraction of tera binary byte, a tebibyte is $2^{40}$ or 1,099,511,627,776 bytes. A terabyte (TB) is $10^{12}$ or 1,000,000,000,000 bytes. 1,024 TiB is a <a href="#">pebibyte (PiB) (p. 731)</a> .   |
| template format version | The version of an <a href="#">AWS CloudFormation (p. 701)</a> template design that determines the available features. If you omit the <code>AWSTemplateFormatVersion</code> section from your template, AWS CloudFormation assumes the most recent format version.  |

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| template validation            | The process of confirming the use of <a href="#">JSON (p. 724)</a> code in an <a href="#">AWS CloudFormation (p. 701)</a> template. You can validate any AWS CloudFormation template using the <code>cfn-validate-template</code> command.   |
| temporary security credentials | Authentication information that's provided by <a href="#">AWS STS (p. 706)</a> when you call an STS API action. Includes an <a href="#">access key ID (p. 690)</a> , a <a href="#">secret access key (p. 739)</a> , a <a href="#">session (p. 740)</a> token, and an expiration time.  |
| throttling                     | The automatic restricting or slowing down of a process based on one or more limits. Examples: <a href="#">Amazon Kinesis Data Streams (p. 695)</a> throttles operations if an application (or group of applications operating on the same stream) attempts to get data from a shard at a rate faster than the shard limit. <a href="#">Amazon API Gateway (p. 692)</a> uses throttling to limit the steady-state request rates for a single account. <a href="#">Amazon SES (p. 697)</a> uses throttling to reject attempts to send email that exceeds the <a href="#">sending limits (p. 739)</a> . |
| time-series data               | Data provided as part of a metric. The time value is assumed to be when the value occurred. A metric is the fundamental concept for <a href="#">Amazon CloudWatch (p. 692)</a> and represents a time-ordered set of data points. You publish metric data points into CloudWatch and later retrieve statistics about those data points as a time-series ordered dataset.  |
| timestamp                      | A date/time string in ISO 8601 format.   |
| TLS                            | See <a href="#">Transport Layer Security (TLS)</a> .   |
| tokenization                   | The process of splitting a stream of text into separate tokens on detectable boundaries such as white space and hyphens.   |
| topic                          | A communication channel to send messages and subscribe to notifications. It provides an access point for publishers and subscribers to communicate with each other.  |
| Traffic Mirroring              | An Amazon VPC feature that you can use to copy network traffic from an elastic network interface of Amazon EC2 instances, and then send it to out-of-band security and monitoring appliances for content inspection, threat monitoring, and troubleshooting.<br>See Also <a href="https://aws.amazon.com/vpc/">https://aws.amazon.com/vpc/</a> .   |
| training datasource            | A datasource that contains the data that Amazon Machine Learning uses to train the machine learning model to make predictions.   |
| transition                     | <a href="#">AWS CodePipeline (p. 701)</a> : The act of a revision in a pipeline continuing from one stage to the next in a workflow.   |
| Transport Layer Security (TLS) | A cryptographic protocol that provides security for communication over the internet. Its predecessor is Secure Sockets Layer (SSL).  |
| trust policy                   | An <a href="#">IAM (p. 703)</a> policy (p. 732) that's an inherent part of an IAM role (p. 737). The trust policy specifies which principals are allowed to use the role.  |
| trusted key groups             | Amazon CloudFront key groups whose public keys CloudFront can use to verify the signatures of <a href="#">CloudFront signed URLs</a> and <a href="#">signed cookies</a> .  |
| trusted signers                | See <a href="#">trusted key groups (p. 745)</a> .  |
| tuning                         | Selecting the number and type of <a href="#">AMIs (p. 696)</a> to run a <a href="#">Hadoop (p. 721)</a> job flow most efficiently.   |
| tunnel                         | A route for transmission of private network traffic that uses the internet to connect nodes in the private network. The tunnel uses encryption and secure  |

protocols such as PPTP to prevent the traffic from being intercepted as it passes through public routing nodes.

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| unbounded                    | The number of potential occurrences isn't limited by a set number. This value is often used when defining a data type that's a list (for example, <code>maxOccurs="unbounded"</code> ), in <a href="#">WSDL (p. 748)</a> .  |
| unit                         | Standard measurement for the values submitted to <a href="#">Amazon CloudWatch (p. 692)</a> as metric data. Units include seconds, percent, bytes, bits, count, bytes/second, bits/second, count/second, and none.  |
| unlink from VPC              | The process of unlinking (or detaching) an EC2-Classic <a href="#">instance (p. 722)</a> from a ClassicLink-enabled <a href="#">VPC (p. 747)</a> .<br>See Also <a href="#">ClassicLink</a> , <a href="#">link to VPC</a> .  |
| usage report                 | An AWS record that details your usage of a particular AWS service. You can generate and download usage reports from <a href="https://aws.amazon.com/usage-reports/">https://aws.amazon.com/usage-reports/</a> .   |
| user                         | A person or application under an <a href="#">account (p. 691)</a> that needs to make API calls to AWS products. Each user has a unique name within the AWS account, and a set of security credentials not shared with other users. These credentials are separate from the security credentials for the AWS account. Each user is associated with one and only one AWS account.   |
| Users dataset                | <a href="#">Amazon Personalize (p. 696)</a> : A container for metadata about your users, such as age, gender, or loyalty membership.<br>See Also <a href="#">dataset</a> .  |
| user-personalization recipe  | <a href="#">Amazon Personalize (p. 696)</a> : An HRNN-based USER_PERSONALIZATION recipe that predicts the items that a user will interact with. The user-personalization recipe can use item exploration and impressions data to generate recommendations for new items.<br>See Also <a href="#">HRNN</a> , <a href="#">recipe</a> , <a href="#">USER_PERSONALIZATION recipes</a> , <a href="#">item exploration</a> , <a href="#">impressions data</a> , <a href="#">recommendations</a> . |
| USER_PERSONALIZATION recipes | <a href="#">Amazon Personalize (p. 696)</a> : Recipes used to build a recommendation system that predicts the items that a user will interact with based on data provided in Interactions, Items, and Users datasets.<br>See Also <a href="#">recipe</a> , <a href="#">user-personalization recipe</a> , <a href="#">popularity-count recipe</a> , <a href="#">HRNN</a> .   |

## V

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|            |   |
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| validation | See <a href="#">template validation</a> . |
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|-------------------------------|--|
| value                         | Instances of <a href="#">attributes (p. 699)</a> for an item, such as cells in a spreadsheet. An attribute might have multiple values.   |
|                               | Tagging resources: A specific <a href="#">tag (p. 744)</a> label that acts as a descriptor within a tag category (key). For example, you might have <a href="#">EC2 instance (p. 716)</a> with the tag key of <i>Owner</i> and the tag value of <i>Jan</i> . You can tag an AWS <a href="#">resource (p. 736)</a> with up to 10 key-value pairs. Not all AWS resources can be tagged.  |
| Variable Envelope Return Path | See <a href="#">VERP</a> .   |
| verification                  | The process of confirming that you own an email address or a domain so that you can send email from or to it.  |
| VERP                          | Variable Envelope Return Path. A way that email-sending applications can match <a href="#">bounce (p. 708)</a> d email with the undeliverable address that caused the bounce by using a different <a href="#">return path (p. 737)</a> for each recipient. VERP is typically used for mailing lists. With VERP, the recipient's email address is embedded in the address of the return path, which is where bounced email is returned. This makes it possible to automate the processing of bounced email without having to open the bounce messages, which might vary in content. |
| versioning                    | Every object in <a href="#">Amazon S3 (p. 697)</a> has a key and a version ID. Objects with the same key, but different version IDs can be stored in the same <a href="#">bucket (p. 708)</a> . Versioning is enabled at the bucket layer using PUT Bucket versioning.   |
| VGW                           | See <a href="#">virtual private gateway (VGW)</a> .  |
| virtualization                | Allows multiple guest virtual machines (VM) to run on a host operating system. Guest VMs can run on one or more levels above the host hardware, depending on the type of virtualization.<br>See Also <a href="#">PV virtualization</a> , <a href="#">HVM virtualization</a> .  |
| virtual private cloud         | See <a href="#">VPC</a> .  |
| virtual private gateway (VGW) | The Amazon side of a <a href="#">VPN connection (p. 748)</a> that maintains connectivity. The internal interfaces of the virtual private gateway connect to your <a href="#">VPC (p. 747)</a> through the VPN attachment. The external interfaces connect to the VPN connection, which leads to the <a href="#">customer gateway (p. 712)</a> .  |
| visibility timeout            | The period of time that a message is invisible to the rest of your application after an application component gets it from the queue. During the visibility timeout, the component that received the message usually processes it, and then deletes it from the queue. This prevents multiple components from processing the same message.   |
| VM Import/Export              | A service for importing virtual machine (VM) images from your existing virtualization environment to Amazon EC2 and then exporting them back.<br>See Also <a href="https://aws.amazon.com/ec2/vm-import">https://aws.amazon.com/ec2/vm-import</a> .  |
| volume                        | A fixed amount of storage on an <a href="#">instance (p. 722)</a> . You can share volume data between more than one <a href="#">container (p. 711)</a> and persist the data on the <a href="#">container instance (p. 711)</a> when the containers are no longer running.  |
| VPC                           | Virtual private cloud. An elastic network populated by infrastructure, platform, and application services that share common security and interconnection.  |
| VPC endpoint                  | A feature that you can use to create a private connection between your <a href="#">VPC (p. 747)</a> and another AWS service without requiring access over the  |

internet, through a [NAT](#) (p. 728) instance, a [VPN connection](#) (p. 748), or [AWS Direct Connect](#) (p. 702).

**VPG**

See [virtual private gateway \(VGW\)](#).

**VPN CloudHub**

See [AWS VPN CloudHub](#).

**VPN connection**

[Amazon Web Services \(AWS\)](#) (p. 698): The IPsec connection between a [VPC](#) (p. 747) and some other network, such as a corporate data center, home network, or colocation facility.

**W**

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[Numbers and symbols](#) (p. 690) | [A](#) (p. 690) | [B](#) (p. 707) | [C](#) (p. 708) | [D](#) (p. 713) | [E](#) (p. 716) | [F](#) (p. 719) | [G](#) (p. 720) | [H](#) (p. 720) | [I](#) (p. 721) | [J](#) (p. 724) | [K](#) (p. 724) | [L](#) (p. 725) | [M](#) (p. 726) | [N](#) (p. 728) | [O](#) (p. 730) | [P](#) (p. 731) | [Q](#) (p. 734) | [R](#) (p. 734) | [S](#) (p. 738) | [T](#) (p. 744) | [U](#) (p. 746) | [V](#) (p. 746) | [W](#) (p. 748) | [X, Y, Z](#) (p. 748)

**WAM**

See [Amazon WorkSpaces Application Manager \(Amazon WAM\)](#).

**web access control list (web ACL)**

[AWS WAF](#) (p. 707): A set of rules that defines the conditions that AWS WAF searches for in web requests to an AWS [resource](#) (p. 736), such as a [Amazon CloudFront](#) (p. 692) distribution. A web access control list (web ACL) specifies whether to allow, block, or count the requests.

**Web Services Description Language**

See [WSDL](#).

**WSDL**

Web Services Description Language. A language used to describe the actions that a web service can perform, along with the syntax of action requests and responses.

See Also [REST](#), [SOAP](#).

**X, Y, Z**

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**X.509 certificate**

A digital document that uses the X.509 public key infrastructure (PKI) standard to verify that a public key belongs to the entity described in the [certificate](#) (p. 709).

**yobibyte (YiB)**

A contraction of yotta binary byte, a yobibyte is  $2^{80}$  or 1,208,925,819,614,629,174,706,176 bytes. A yottabyte (YB) is  $10^{24}$  or 1,000,000,000,000,000,000,000 bytes.

**zebibyte (ZiB)**

A contraction of zetta binary byte, a zebibyte is  $2^{70}$  or 1,180,591,620,717,411,303,424 bytes. A zettabyte (ZB) is  $10^{21}$  or 1,000,000,000,000,000,000 bytes. 1,024 ZiB is a [yobibyte \(YiB\)](#) (p. 748).

**zone awareness**

[Amazon OpenSearch Service \(OpenSearch Service\)](#) (p. 694): A configuration that distributes nodes in a cluster across two [Availability Zone](#) (p. 700)s in the same Region. Zone awareness helps to prevent data loss and minimizes downtime in the event of node and data center failure. If you enable zone awareness, you must have an even number of data instances in the instance count, and you also must use the Amazon OpenSearch Service Configuration API to replicate your data for your OpenSearch cluster.