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# AWS General Reference

## Reference guide

### Version 1.0



## **AWS General Reference: Reference guide**

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## Table of Contents

AWS General Reference .....	1
AWS security credentials .....	2
AWS users .....	2
Tasks that require root user credentials .....	3
AWS credentials .....	3
Console access .....	4
Programmatic access .....	5
Temporary access keys .....	6
AWS account identifiers .....	6
Finding your AWS account ID .....	6
Best practices for managing AWS access keys .....	7
Protect or don't create your root user access key .....	7
Manage access keys for IAM users .....	8
Use IAM roles instead of long-term access keys .....	8
Access the mobile app using AWS access keys .....	9
Learn more .....	10
AWS security audit guidelines .....	10
When you should perform a security audit .....	11
Guidelines for auditing .....	11
Review your AWS account credentials .....	11
Review your IAM users .....	11
Review your IAM groups .....	12
Review your IAM roles .....	12
Review your IAM providers for SAML and OpenID Connect (OIDC) .....	12
Review Your mobile apps .....	12
Review your Amazon EC2 security configuration .....	13
Review AWS policies in other services .....	13
Monitor activity in your AWS account .....	13
Tips for reviewing IAM policies .....	14
Learn more .....	15
Service endpoints and quotas .....	16
Alexa for Business .....	21
Service endpoints .....	21
Service quotas .....	21
AWS Amplify .....	21
Amplify endpoints .....	22
Amplify admin UI endpoints .....	23
Service quotas .....	24
Amazon API Gateway .....	24
Service endpoints .....	24
Service quotas .....	28
AWS App Mesh .....	30
Service endpoints .....	30
Service quotas .....	32
AWS App Runner .....	32
Service endpoints .....	33
Service quotas .....	33
Amazon AppFlow .....	33
Service endpoints .....	34
Service quotas .....	35
Application Auto Scaling .....	36
Service endpoints .....	36
Service quotas .....	38
Application Discovery Service .....	38

Service endpoints .....	39
Service quotas .....	39
Application Migration Service .....	40
Service endpoints .....	40
Service quotas .....	40
Amazon AppStream 2.0 .....	41
Service endpoints .....	41
Service quotas .....	42
AWS AppSync .....	43
Service endpoints .....	43
Service quotas .....	45
Amazon Athena .....	46
Service endpoints .....	46
Service quotas .....	48
Audit Manager .....	48
Service endpoints .....	49
Service quotas .....	49
Amazon A2I .....	50
Service endpoints .....	50
Service quotas .....	51
Amazon Aurora .....	51
Service Endpoints .....	51
Service Quotas .....	55
AWS Auto Scaling .....	55
Service endpoints .....	55
Service quotas .....	57
AWS Backup .....	57
Service endpoints .....	58
Service quotas .....	59
AWS Batch .....	60
Service endpoints .....	60
Service quotas .....	62
Billing and Cost Management .....	62
Service Endpoints .....	63
Service Quotas .....	66
AWS Certificate Manager .....	66
Service endpoints .....	66
Service quotas .....	68
ACM Private CA .....	68
Service endpoints .....	69
Service quotas .....	70
AWS Chatbot .....	71
Service endpoints .....	71
Service quotas .....	73
Amazon Chime .....	73
Service endpoints .....	73
Service quotas .....	73
AWS Cloud9 .....	75
Service endpoints .....	75
Service quotas .....	76
Amazon Cloud Directory .....	76
Service Endpoints .....	77
CloudFormation .....	77
Service endpoints .....	77
StackSets regional support .....	79
Service quotas .....	81
CloudFront .....	82

Service endpoints .....	82
Service quotas .....	82
AWS CloudHSM .....	86
Service endpoints .....	86
Service quotas .....	88
AWS Cloud Map .....	89
Service endpoints .....	89
Service quotas .....	90
Amazon CloudSearch .....	91
Service endpoints .....	91
Service quotas .....	92
CloudShell .....	92
Service endpoints .....	92
Service quotas .....	93
CloudTrail .....	93
Service endpoints .....	93
Service quotas .....	95
CloudWatch .....	96
Service endpoints .....	96
Service quotas .....	98
Amazon CloudWatch Application Insights .....	100
Service Endpoints .....	100
Service Quotas .....	101
CloudWatch Events .....	102
Service endpoints .....	102
Service quotas .....	104
CloudWatch Logs .....	104
Service endpoints .....	104
Service quotas .....	106
Amazon CloudWatch Synthetics .....	108
Service Endpoints .....	108
Service Quotas .....	110
CodeArtifact .....	110
Service endpoints .....	110
Service quotas .....	111
CodeBuild .....	112
Service endpoints .....	112
Service quotas .....	114
AWS CodeCommit .....	114
Service endpoints .....	114
Service quotas .....	116
AWS CodeDeploy .....	116
Service endpoints .....	117
Service quotas .....	118
CodeGuru Profiler .....	119
Service endpoints .....	120
Service quotas .....	120
CodeGuru Reviewer .....	120
Service endpoints .....	121
Service quotas .....	121
CodePipeline .....	121
Service endpoints .....	122
Service quotas .....	123
AWS CodeStar .....	124
Service Endpoints .....	124
AWS CodeStar Notifications .....	125
Amazon Cognito Identity .....	127

---

Service endpoints .....	127
Service quotas .....	129
Amazon Cognito Sync .....	131
Service endpoints .....	131
Service quotas .....	132
Amazon Comprehend .....	133
Service endpoints .....	133
Service quotas .....	134
Amazon Comprehend Medical .....	136
Service endpoints .....	136
Service quotas .....	137
Compute Optimizer .....	138
Service endpoints .....	138
Service quotas .....	139
AWS Config .....	140
Service endpoints .....	140
Service quotas .....	142
Amazon Connect .....	142
Service endpoints .....	142
Service quotas .....	145
AWS Data Exchange .....	149
Service endpoints .....	149
Service quotas .....	150
Amazon Data Lifecycle Manager .....	151
Service endpoints .....	151
Service quotas .....	153
AWS Data Pipeline .....	153
Service endpoints .....	153
Service quotas .....	153
DataSync .....	154
Service endpoints .....	154
Service quotas .....	156
AWS Database Migration Service .....	156
Service endpoints .....	156
Service quotas .....	158
AWS DeepLens .....	159
Service endpoints .....	159
Service quotas .....	159
Detective .....	159
Service Endpoints .....	159
Amazon DevOps Guru .....	161
Service Endpoints .....	161
Service quotas .....	162
Device Farm .....	162
Service endpoints .....	162
Service quotas .....	162
AWS Direct Connect .....	162
Service endpoints .....	163
Service quotas .....	164
AWS Directory Service .....	165
Service endpoints .....	165
Service quotas .....	167
Amazon DocumentDB .....	167
Service endpoints .....	167
Service quotas .....	169
DynamoDB .....	169
Service endpoints .....	169

---

Service quotas .....	174
AWS Elastic Beanstalk .....	175
Service endpoints .....	175
Service quotas .....	179
Amazon EBS .....	179
Service endpoints .....	179
Service quotas .....	183
Amazon EC2 .....	184
Service endpoints .....	184
Service quotas .....	186
Amazon EC2 Auto Scaling .....	190
Service endpoints .....	190
Service quotas .....	192
EC2 Image Builder .....	192
Service endpoints .....	193
Service quotas .....	194
Amazon ECR .....	195
Service endpoints .....	195
Service quotas .....	199
Amazon ECR Public .....	202
Service endpoints .....	202
Service quotas .....	203
Amazon ECS .....	203
Service endpoints .....	203
Service quotas .....	205
AWS Fargate quotas .....	206
Amazon EKS .....	207
Service endpoints .....	207
Service quotas .....	209
Amazon EFS .....	210
Service endpoints .....	210
Service quotas .....	212
Elastic Inference .....	213
Service endpoints .....	213
Service quotas .....	214
Elastic Load Balancing .....	214
Service endpoints .....	214
Service quotas .....	216
Elastic Transcoder .....	217
Service endpoints .....	217
Service quotas .....	218
Amazon ElastiCache .....	218
Service endpoints .....	218
Service quotas .....	220
Amazon ES .....	220
Service endpoints .....	221
Service quotas .....	222
Amazon EMR .....	223
Service endpoints .....	223
Service quotas .....	225
EventBridge .....	226
Service endpoints .....	226
Service quotas .....	228
AWS FIS .....	228
Service endpoints .....	228
Service quotas .....	229
Firewall Manager .....	229

Service endpoints .....	230
Service quotas .....	231
Forecast .....	232
Service endpoints .....	232
Service quotas .....	234
Amazon Fraud Detector .....	235
Service endpoints .....	235
Service quotas .....	236
FreeRTOS .....	236
Service Endpoints .....	236
Service Quotas .....	239
Amazon FSx .....	239
Service endpoints .....	240
Service quotas .....	241
GameLift .....	242
Service endpoints .....	242
Service quotas .....	243
S3 Glacier .....	244
Service endpoints .....	244
Service quotas .....	246
Global Accelerator .....	246
Service endpoints .....	246
Service quotas .....	246
AWS Glue .....	247
Service endpoints .....	247
Service quotas .....	249
AWS Glue DataBrew .....	250
Service endpoints .....	250
Service quotas .....	251
AWS Ground Station .....	252
Service endpoints .....	252
Service quotas .....	253
GuardDuty .....	253
Service endpoints .....	253
Service quotas .....	255
AWS Health .....	255
Service Endpoints .....	255
Amazon HealthLake .....	255
Throttling and quotas for Amazon HealthLake .....	255
.....	256
Amazon Honeycode .....	256
Service Endpoints .....	257
IAM .....	257
Service endpoints .....	257
Service quotas .....	259
IAM Access Analyzer .....	259
Service endpoints .....	259
Service quotas .....	261
AWS Import/Export .....	262
Service Endpoints .....	262
Incident Manager .....	262
Incident Manager endpoints .....	262
Incident Manager service quotas .....	263
Amazon Inspector .....	265
Service endpoints .....	265
Service quotas .....	266
AWS IoT 1-Click .....	267



Service endpoints .....	267
Service quotas .....	268
AWS IoT Analytics .....	268
Service endpoints .....	269
Service quotas .....	269
AWS IoT Core .....	270
Service Endpoints .....	270
Service Quotas .....	277
AWS IoT Device Defender .....	296
Service endpoints .....	297
Service quotas .....	298
AWS IoT Device Management .....	299
Service Endpoints .....	300
Service Quotas .....	306
AWS IoT Events .....	311
Service endpoints .....	311
Service quotas .....	313
AWS IoT Greengrass V1 .....	313
Service Endpoints .....	314
Service Quotas .....	318
AWS IoT Greengrass V2 .....	319
Service Endpoints .....	320
Service Quotas .....	324
AWS IoT SiteWise .....	325
Service endpoints .....	325
Service quotas .....	326
AWS IoT Things Graph .....	327
Service endpoints .....	327
Service quotas .....	327
Amazon IVS .....	330
Service endpoints .....	330
Service quotas .....	330
Amazon Kendra .....	331
Service endpoints .....	331
Service quotas .....	332
Amazon Keyspaces .....	332
Service endpoints .....	332
Service quotas .....	334
AWS KMS .....	335
Service endpoints .....	335
Service quotas .....	337
Kinesis Data Analytics .....	340
Service endpoints .....	340
Service quotas .....	341
Kinesis Data Firehose .....	342
Service endpoints .....	342
Service quotas .....	344
Kinesis Data Streams .....	344
Service endpoints .....	344
Service quotas .....	346
Kinesis Video Streams .....	346
Service endpoints .....	347
Service quotas .....	348
Lake Formation .....	352
Service endpoints .....	352
Service quotas .....	354
Lambda .....	354

Service endpoints .....	354
Service quotas .....	356
AWS Launch Wizard .....	357
Service endpoints .....	193
Service quotas .....	359
Amazon Lex .....	359
V2 service endpoints .....	359
V1 service endpoints .....	360
Service quotas .....	362
License Manager .....	362
Service endpoints .....	363
Service quotas .....	364
Lightsail .....	365
Service endpoints .....	365
Service quotas .....	366
Amazon Location Service .....	367
Service endpoints .....	367
Service quotas .....	368
Lookout for Equipment .....	370
Service endpoints .....	370
Service quotas .....	370
Lookout for Vision .....	371
Service endpoints .....	372
Service quotas .....	372
Macie .....	373
Service endpoints .....	373
Service quotas .....	375
Amazon ML .....	375
Service endpoints .....	375
Service quotas .....	376
Managed Blockchain .....	376
Service endpoints .....	377
Service quotas .....	377
AWS Marketplace .....	377
Service Endpoints .....	378
Amazon Mechanical Turk .....	380
Service Endpoints .....	380
Amazon MSK .....	380
Service Endpoints .....	380
MediaConnect .....	382
Service endpoints .....	382
Service quotas .....	383
MediaConvert .....	384
Service endpoints .....	384
Service quotas .....	385
MediaLive .....	385
Service endpoints .....	385
Service quotas .....	387
MediaPackage .....	387
Service endpoints .....	387
Service quotas .....	389
MediaStore .....	390
Service endpoints .....	390
Service quotas .....	391
MediaTailor .....	392
Service endpoints .....	392
Service quotas .....	392

---

Migration Hub .....	393
Service endpoints .....	393
Service quotas .....	393
Amazon MQ .....	394
Service endpoints .....	394
Service quotas .....	395
Neptune .....	396
Service endpoints .....	396
Service quotas .....	398
Network Firewall .....	398
Service endpoints .....	399
Service quotas .....	400
Network Manager .....	400
Service endpoints .....	400
Service quotas .....	401
AWS OpsWorks .....	401
Service endpoints .....	401
Service quotas .....	403
Organizations .....	404
Service endpoints .....	404
Service quotas .....	406
AWS Outposts .....	407
Service endpoints .....	407
Amazon Personalize .....	409
Service endpoints .....	409
Service quotas .....	411
Amazon Pinpoint .....	414
Service endpoints .....	414
Service quotas .....	416
Amazon Polly .....	420
Service endpoints .....	420
Service quotas .....	421
AWS Proton .....	422
Service endpoints .....	422
Service quotas .....	423
QLDB .....	423
Service endpoints .....	423
Service quotas .....	424
Amazon QuickSight .....	425
Service endpoints .....	425
Service quotas .....	426
AWS RAM .....	427
Service endpoints .....	427
Service quotas .....	429
Amazon Redshift .....	429
Service endpoints .....	429
Service quotas .....	432
Amazon Rekognition .....	433
Service Endpoints .....	433
Service Quotas .....	435
Amazon RDS .....	437
Service endpoints .....	437
Service quotas .....	441
Resource Groups .....	442
Service endpoints .....	442
Service quotas .....	445
AWS RoboMaker .....	445

Service endpoints .....	446
Service quotas .....	446
Route 53 .....	447
Service endpoints .....	447
Service quotas .....	451
SageMaker .....	452
Service Endpoints .....	452
Service Quotas .....	456
Secrets Manager .....	470
Service endpoints .....	470
Service quotas .....	472
Security Hub .....	472
Service endpoints .....	473
Service quotas .....	474
AWS STS .....	475
Service endpoints .....	475
AWS SMS .....	477
Service endpoints .....	477
Service quotas .....	478
Service Quotas .....	479
Service endpoints .....	479
Service quotas .....	480
AWS Serverless Application Repository .....	482
Service endpoints .....	482
Service quotas .....	483
AWS Service Catalog .....	484
Service endpoints .....	484
Service quotas .....	485
Shield Advanced .....	486
Service endpoints .....	486
Service quotas .....	489
Amazon SES .....	489
Service endpoints .....	489
Service quotas .....	492
AWS Signer .....	493
Service endpoints with Lambda .....	493
Service endpoints with IoT .....	494
Service quotas .....	496
Amazon SNS .....	496
Service endpoints .....	497
Service quotas .....	498
Amazon SQS .....	502
Service endpoints .....	502
Service quotas .....	505
Amazon S3 .....	506
Service endpoints .....	506
Service quotas .....	524
Amazon SWF .....	525
Service endpoints .....	525
Service quotas .....	527
Amazon SimpleDB .....	530
Service Endpoints .....	530
Service Quotas .....	531
AWS SSO .....	531
Service endpoints .....	531
Service quotas .....	533
Snow Family .....	533

Service endpoints .....	534
Service quotas .....	536
Step Functions .....	536
Service endpoints .....	536
Service quotas .....	538
AWS Storage Gateway .....	540
Service endpoints .....	540
Service quotas .....	542
Sumerian .....	543
Service endpoints .....	544
Service quotas .....	545
AWS Support .....	545
Service endpoints .....	545
Service quotas .....	547
AWS Systems Manager .....	547
Service endpoints .....	547
Service quotas .....	549
Amazon Textract .....	557
Service endpoints .....	558
Service quotas .....	559
Timestream .....	559
Service endpoints .....	559
Service quotas .....	560
Amazon Transcribe .....	561
Service endpoints .....	561
Service quotas .....	564
Amazon Transcribe Medical .....	565
Service Endpoints .....	566
Service Quotas .....	566
Transfer Family .....	567
Service endpoints .....	567
Service quotas .....	569
Amazon Translate .....	569
Service endpoints .....	569
Service quotas .....	571
Amazon VPC .....	571
Service endpoints .....	571
Service quotas .....	573
AWS WAF .....	574
Service endpoints .....	574
Service quotas .....	576
AWS WAF Classic .....	577
Service endpoints .....	577
Service quotas .....	581
AWS Well-Architected Tool .....	582
Service endpoints .....	582
Service quotas .....	583
Amazon WorkDocs .....	583
Service Endpoints .....	583
Amazon WorkLink .....	584
Service Endpoints .....	584
Amazon WorkMail .....	584
Service Endpoints .....	585
Service Quotas .....	586
WorkSpaces .....	586
Service endpoints .....	586
Service quotas .....	587

X-Ray .....	588
Service endpoints .....	588
Service quotas .....	590
AWS resources .....	592
AWS service endpoints .....	592
Regional endpoints .....	592
View the service endpoints .....	593
FIPS endpoints .....	594
Learn more .....	594
Managing AWS Regions .....	594
Enabling a Region .....	595
Disabling a Region .....	595
Describing your Regions using the AWS CLI .....	596
AWS service quotas .....	596
Tagging AWS resources .....	597
Best practices .....	597
Tagging categories .....	597
Tag naming limits and requirements .....	598
Common tagging strategies .....	599
Tagging governance .....	600
Learn more .....	600
Amazon Resource Names (ARNs) .....	600
ARN format .....	600
Paths in ARNs .....	601
AWS IP address ranges .....	603
Download .....	603
Syntax .....	603
Filtering the JSON file .....	605
Windows .....	605
Linux .....	606
Implementing egress control .....	607
Windows PowerShell .....	608
jq .....	608
Python .....	608
AWS IP address ranges notifications .....	609
Release notes .....	610
AWS APIs .....	612
API retries .....	612
Signing AWS API requests .....	614
When to sign requests .....	614
Why requests are signed .....	614
Signing requests .....	615
Signature versions .....	615
Signature Version 4 signing process .....	615
Signature Version 2 signing process .....	643
AWS SDK support for Amazon S3 client-side encryption .....	650
AWS SDK features for Amazon S3 client-side encryption .....	651
Amazon S3 encryption client cryptographic algorithms .....	651
Document conventions .....	653
AWS glossary .....	655

# 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 \(p. 592\)](#)
- [AWS IP address ranges \(p. 603\)](#)
- [AWS APIs \(p. 612\)](#)
- [Document conventions \(p. 653\)](#)
- [AWS glossary \(p. 655\)](#)

# 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, choose **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, choose **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 79a59df900b949e55d96a1e698fbacedfd6e09d98eac8f8d5218e7cd47ef2be, 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 \(p. 592\)](#). 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 \(p. 596\)](#).

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

- [Alexa for Business endpoints and quotas \(p. 21\)](#)
- [AWS Amplify \(p. 21\)](#)
- [Amazon API Gateway endpoints and quotas \(p. 24\)](#)
- [AWS App Mesh endpoints and quotas \(p. 30\)](#)
- [AWS App Runner endpoints and quotas \(p. 32\)](#)
- [Amazon AppFlow endpoints and quotas \(p. 33\)](#)
- [Application Auto Scaling endpoints and quotas \(p. 36\)](#)
- [AWS Application Discovery Service endpoints and quotas \(p. 38\)](#)
- [AWS Application Migration Service endpoints and quotas \(p. 40\)](#)
- [Amazon AppStream 2.0 endpoints and quotas \(p. 41\)](#)
- [AWS AppSync endpoints and quotas \(p. 43\)](#)
- [Amazon Athena endpoints and quotas \(p. 46\)](#)
- [AWS Audit Manager endpoints and quotas \(p. 48\)](#)
- [Amazon Augmented AI endpoints and quotas \(p. 50\)](#)
- [Amazon Aurora endpoints and quotas \(p. 51\)](#)
- [AWS Auto Scaling endpoints and quotas \(p. 55\)](#)
- [AWS Backup endpoints and quotas \(p. 57\)](#)
- [AWS Batch endpoints and quotas \(p. 60\)](#)
- [AWS Billing and Cost Management endpoints and quotas \(p. 62\)](#)
- [AWS Certificate Manager endpoints and quotas \(p. 66\)](#)
- [AWS Certificate Manager Private Certificate Authority endpoints and quotas \(p. 68\)](#)
- [AWS Chatbot endpoints and quotas \(p. 71\)](#)
- [Amazon Chime endpoints and quotas \(p. 73\)](#)
- [AWS Cloud9; endpoints and quotas \(p. 75\)](#)
- [Amazon Cloud Directory endpoints and quotas \(p. 76\)](#)
- [AWS CloudFormation endpoints and quotas \(p. 77\)](#)
- [Amazon CloudFront endpoints and quotas \(p. 82\)](#)
- [AWS CloudHSM endpoints and quotas \(p. 86\)](#)
- [AWS Cloud Map endpoints and quotas \(p. 89\)](#)

- [Amazon CloudSearch endpoints and quotas \(p. 91\)](#)
- [AWS CloudShell endpoints and quotas \(p. 92\)](#)
- [AWS CloudTrail endpoints and quotas \(p. 93\)](#)
- [Amazon CloudWatch endpoints and quotas \(p. 96\)](#)
- [Amazon CloudWatch Application Insights endpoints and quotas \(p. 100\)](#)
- [Amazon CloudWatch Events endpoints and quotas \(p. 102\)](#)
- [Amazon CloudWatch Logs endpoints and quotas \(p. 104\)](#)
- [Amazon CloudWatch Synthetics endpoints and quotas \(p. 108\)](#)
- [AWS CodeArtifact endpoints and quotas \(p. 110\)](#)
- [AWS CodeBuild endpoints and quotas \(p. 112\)](#)
- [AWS CodeCommit endpoints and quotas \(p. 114\)](#)
- [AWS CodeDeploy endpoints and quotas \(p. 116\)](#)
- [Amazon CodeGuru Profiler endpoints and quotas \(p. 119\)](#)
- [Amazon CodeGuru Reviewer endpoints and quotas \(p. 120\)](#)
- [AWS CodePipeline endpoints and quotas \(p. 121\)](#)
- [AWS CodeStar endpoints and quotas \(p. 124\)](#)
- [AWS CodeStar Notifications \(p. 125\)](#)
- [Amazon Cognito Identity endpoints and quotas \(p. 127\)](#)
- [Amazon Cognito Sync endpoints and quotas \(p. 131\)](#)
- [Amazon Comprehend endpoints and quotas \(p. 133\)](#)
- [Amazon Comprehend Medical \(p. 136\)](#)
- [AWS Compute Optimizer endpoints and quotas \(p. 138\)](#)
- [AWS Config and AWS Config Rules endpoints and quotas \(p. 140\)](#)
- [Amazon Connect endpoints and quotas \(p. 142\)](#)
- [AWS Data Exchange endpoints and quotas \(p. 149\)](#)
- [Amazon Data Lifecycle Manager endpoints and quotas \(p. 151\)](#)
- [AWS Data Pipeline endpoints and quotas \(p. 153\)](#)
- [AWS DataSync endpoints and quotas \(p. 154\)](#)
- [AWS Database Migration Service endpoints and quotas \(p. 156\)](#)
- [AWS DeepLens endpoints and quotas \(p. 159\)](#)
- [Amazon Detective endpoints and quotas \(p. 159\)](#)
- [Amazon DevOps Guru endpoints and quotas \(p. 161\)](#)
- [AWS Device Farm endpoints and quotas \(p. 162\)](#)
- [AWS Direct Connect endpoints and quotas \(p. 162\)](#)
- [AWS Directory Service endpoints and quotas \(p. 165\)](#)
- [Amazon DocumentDB endpoints and quotas \(p. 167\)](#)
- [Amazon DynamoDB endpoints and quotas \(p. 169\)](#)
- [AWS Elastic Beanstalk endpoints and quotas \(p. 175\)](#)
- [Amazon Elastic Block Store endpoints and quotas \(p. 179\)](#)
- [Amazon Elastic Compute Cloud endpoints and quotas \(p. 184\)](#)
- [Amazon EC2 Auto Scaling endpoints and quotas \(p. 190\)](#)
- [EC2 Image Builder endpoints and quotas \(p. 192\)](#)
- [Amazon ECR endpoints and quotas \(p. 195\)](#)

- [Amazon ECR Public endpoints and quotas \(p. 202\)](#)
- [Amazon ECS endpoints and quotas \(p. 203\)](#)
- [Amazon Elastic Kubernetes Service endpoints and quotas \(p. 207\)](#)
- [Amazon Elastic File System endpoints and quotas \(p. 210\)](#)
- [Amazon Elastic Inference endpoints and quotas \(p. 213\)](#)
- [Elastic Load Balancing endpoints and quotas \(p. 214\)](#)
- [Amazon Elastic Transcoder endpoints and quotas \(p. 217\)](#)
- [Amazon ElastiCache endpoints and quotas \(p. 218\)](#)
- [Amazon Elasticsearch Service endpoints and quotas \(p. 220\)](#)
- [Amazon EMR endpoints and quotas \(p. 223\)](#)
- [Amazon EventBridge endpoints and quotas \(p. 226\)](#)
- [AWS Fault Injection Simulator endpoints and quotas \(p. 228\)](#)
- [AWS Firewall Manager endpoints and quotas \(p. 229\)](#)
- [Amazon Forecast endpoints and quotas \(p. 232\)](#)
- [Amazon Fraud Detector endpoints and quotas \(p. 235\)](#)
- [FreeRTOS endpoints and quotas \(p. 236\)](#)
- [Amazon FSx endpoints and quotas \(p. 239\)](#)
- [Amazon GameLift endpoints and quotas \(p. 242\)](#)
- [Amazon S3 Glacier endpoints and quotas \(p. 244\)](#)
- [AWS Global Accelerator \(p. 246\)](#)
- [AWS Glue endpoints and quotas \(p. 247\)](#)
- [AWS Glue DataBrew endpoints and quotas \(p. 250\)](#)
- [AWS Ground Station endpoints and quotas \(p. 252\)](#)
- [Amazon GuardDuty endpoints and quotas \(p. 253\)](#)
- [AWS Health endpoints and quotas \(p. 255\)](#)
- [Quotas for Amazon HealthLake \(p. 255\)](#)
- [Amazon Honeycode \(p. 256\)](#)
- [AWS Identity and Access Management endpoints and quotas \(p. 257\)](#)
- [IAM Access Analyzer endpoints and quotas \(p. 259\)](#)
- [AWS Import/Export endpoints and quotas \(p. 262\)](#)
- [AWS Systems Manager Incident Manager endpoints and quotas \(p. 262\)](#)
- [Amazon Inspector \(p. 265\)](#)
- [AWS IoT 1-Click endpoints and quotas \(p. 267\)](#)
- [AWS IoT Analytics endpoints and quotas \(p. 268\)](#)
- [AWS IoT Core endpoints and quotas \(p. 270\)](#)
- [AWS IoT Device Defender endpoints and quotas \(p. 296\)](#)
- [AWS IoT Device Management endpoints and quotas \(p. 299\)](#)
- [AWS IoT Events endpoints and quotas \(p. 311\)](#)
- [AWS IoT Greengrass V1 endpoints and quotas \(p. 313\)](#)
- [AWS IoT Greengrass V2 endpoints and quotas \(p. 319\)](#)
- [AWS IoT SiteWise endpoints and quotas \(p. 325\)](#)
- [AWS IoT Things Graph endpoints and quotas \(p. 327\)](#)
- [Amazon Interactive Video Service \(p. 330\)](#)



- [Amazon Kendra endpoints and quotas \(p. 331\)](#)
- [Amazon Keyspaces \(for Apache Cassandra\) endpoints and quotas \(p. 332\)](#)
- [AWS Key Management Service endpoints and quotas \(p. 335\)](#)
- [Amazon Kinesis Data Analytics endpoints and quotas \(p. 340\)](#)
- [Amazon Kinesis Data Firehose endpoints and quotas \(p. 342\)](#)
- [Amazon Kinesis Data Streams endpoints and quotas \(p. 344\)](#)
- [Amazon Kinesis Video Streams endpoints and quotas \(p. 346\)](#)
- [AWS Lake Formation endpoints and quotas \(p. 352\)](#)
- [AWS Lambda endpoints and quotas \(p. 354\)](#)
- [AWS Launch Wizard endpoints and quotas \(p. 357\)](#)
- [Amazon Lex endpoints and quotas \(p. 359\)](#)
- [AWS License Manager endpoints and quotas \(p. 362\)](#)
- [Amazon Lightsail endpoints and quotas \(p. 365\)](#)
- [Amazon Location Service endpoints and quotas \(p. 367\)](#)
- [Amazon Lookout for Equipment endpoints and quotas \(p. 370\)](#)
- [Amazon Lookout for Vision endpoints and quotas \(p. 371\)](#)
- [Amazon Macie endpoints and quotas \(p. 373\)](#)
- [Amazon Machine Learning endpoints and quotas \(p. 375\)](#)
- [Amazon Managed Blockchain endpoints and quotas \(p. 376\)](#)
- [AWS Marketplace endpoints and quotas \(p. 377\)](#)
- [Amazon Mechanical Turk endpoints and quotas \(p. 380\)](#)
- [Amazon Managed Streaming for Apache Kafka endpoints and quotas \(p. 380\)](#)
- [AWS Elemental MediaConnect endpoints and quotas \(p. 382\)](#)
- [AWS Elemental MediaConvert endpoints and quotas \(p. 384\)](#)
- [AWS Elemental MediaLive endpoints and quotas \(p. 385\)](#)
- [AWS Elemental MediaPackage endpoints and quotas \(p. 387\)](#)
- [AWS Elemental MediaStore endpoints and quotas \(p. 390\)](#)
- [AWS Elemental MediaTailor endpoints and quotas \(p. 392\)](#)
- [AWS Migration Hub endpoints and quotas \(p. 393\)](#)
- [Amazon MQ endpoints and quotas \(p. 394\)](#)
- [Amazon Neptune endpoints and quotas \(p. 396\)](#)
- [AWS Network Firewall endpoints and quotas \(p. 398\)](#)
- [Transit Gateway Network Manager \(p. 400\)](#)
- [AWS OpsWorks endpoints and quotas \(p. 401\)](#)
- [AWS Organizations endpoints and quotas \(p. 404\)](#)
- [AWS Outposts endpoints and quotas \(p. 407\)](#)
- [Amazon Personalize endpoints and quotas \(p. 409\)](#)
- [Amazon Pinpoint endpoints and quotas \(p. 414\)](#)
- [Amazon Polly endpoints and quotas \(p. 420\)](#)
- [AWS Proton \(p. 422\)](#)
- [Amazon QLDB endpoints and quotas \(p. 423\)](#)
- [Amazon QuickSight endpoints and quotas \(p. 425\)](#)
- [AWS Resource Access Manager endpoints and quotas \(p. 427\)](#)

- [Amazon Redshift endpoints and quotas \(p. 429\)](#)
- [Amazon Rekognition endpoints and quotas \(p. 433\)](#)
- [Amazon Relational Database Service endpoints and quotas \(p. 437\)](#)
- [AWS Resource Groups endpoints and quotas \(p. 442\)](#)
- [AWS RoboMaker endpoints and quotas \(p. 445\)](#)
- [Amazon Route 53 endpoints and quotas \(p. 447\)](#)
- [Amazon SageMaker endpoints and quotas \(p. 452\)](#)
- [AWS Secrets Manager endpoints and quotas \(p. 470\)](#)
- [AWS Security Hub endpoints and quotas \(p. 472\)](#)
- [AWS Security Token Service endpoints and quotas \(p. 475\)](#)
- [AWS Server Migration Service endpoints and quotas \(p. 477\)](#)
- [Service Quotas endpoints and quotas \(p. 479\)](#)
- [AWS Serverless Application Repository endpoints and quotas \(p. 482\)](#)
- [AWS Service Catalog endpoints and quotas \(p. 484\)](#)
- [AWS Shield Advanced endpoints and quotas \(p. 486\)](#)
- [Amazon Simple Email Service endpoints and quotas \(p. 489\)](#)
- [AWS Signer endpoints and quotas \(p. 493\)](#)
- [Amazon Simple Notification Service endpoints and quotas \(p. 496\)](#)
- [Amazon Simple Queue Service endpoints and quotas \(p. 502\)](#)
- [Amazon Simple Storage Service endpoints and quotas \(p. 506\)](#)
- [Amazon Simple Workflow Service endpoints and quotas \(p. 525\)](#)
- [Amazon SimpleDB endpoints and quotas \(p. 530\)](#)
- [AWS Single Sign-On endpoints and quotas \(p. 531\)](#)
- [AWS Snow Family endpoints and quotas \(p. 533\)](#)
- [AWS Step Functions endpoints and quotas \(p. 536\)](#)
- [AWS Storage Gateway endpoints and quotas \(p. 540\)](#)
- [Amazon Sumerian endpoints and quotas \(p. 543\)](#)
- [AWS Support endpoints and quotas \(p. 545\)](#)
- [AWS Systems Manager endpoints and quotas \(p. 547\)](#)
- [Amazon Textract endpoints and quotas \(p. 557\)](#)
- [Amazon Timestream endpoints and quotas \(p. 559\)](#)
- [Amazon Transcribe endpoints and quotas \(p. 561\)](#)
- [Amazon Transcribe Medical endpoints and quotas \(p. 565\)](#)
- [AWS Transfer Family endpoints and quotas \(p. 567\)](#)
- [Amazon Translate endpoints and quotas \(p. 569\)](#)
- [Amazon Virtual Private Cloud endpoints and quotas \(p. 571\)](#)
- [AWS WAF endpoints and quotas \(p. 574\)](#)
- [AWS WAF Classic endpoints and quotas \(p. 577\)](#)
- [AWS Well-Architected Tool endpoints and quotas \(p. 582\)](#)
- [Amazon WorkDocs endpoints and quotas \(p. 583\)](#)
- [Amazon WorkLink endpoints and quotas \(p. 584\)](#)
- [Amazon WorkMail endpoints and quotas \(p. 584\)](#)
- [WorkSpaces endpoints and quotas \(p. 586\)](#)

- [AWS X-Ray endpoints and quotas \(p. 588\)](#)

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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
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 \(p. 592\)](#). 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 \(p. 596\)](#).

## 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	
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	

Region Name	Region	Endpoint	Protocol	
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 (Oregon)	us-west-2	amplifybackend.us-west-2.amazonaws.com	HTTPS	
Asia Pacific (Mumbai)	ap-south-1	amplifybackend.ap-south-1.amazonaws.com	HTTPS	
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	

Region Name	Region	Endpoint	Protocol	
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	

## Service quotas

Name	Default	Adjustable
Apps	25	Yes
Branches per app	50	Yes
Build artifact size	5 Gigabytes	No
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	HTTPS	
		apigateway-fips.us-east-2.amazonaws.com	HTTPS	
US East (N. Virginia)	us-east-1	apigateway.us-east-1.amazonaws.com	HTTPS	
		apigateway-fips.us-east-1.amazonaws.com	HTTPS	
US West (N. California)	us-west-1	apigateway.us-west-1.amazonaws.com	HTTPS	
		apigateway-fips.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	apigateway.us-west-2.amazonaws.com	HTTPS	
		apigateway-fips.us-west-2.amazonaws.com	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	

Region Name	Region	Endpoint	Protocol	
Canada (Central)	ca-central-1	apigateway.ca-central-1.amazonaws.com	HTTPS	
		apigateway-fips.ca-central-1.amazonaws.com	HTTPS	
China (Beijing)	cn-north-1	apigateway.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	apigateway.cn-northwest-1.amazonaws.com.cn	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	
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	HTTPS	
		apigateway-fips.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	apigateway.us-gov-west-1.amazonaws.com	HTTPS	
		apigateway-fips.us-gov-west-1.amazonaws.com	HTTPS	

## Amazon API Gateway data plane

Region Name	Region	Endpoint	Protocol	Route 53 Hosted Zone ID	
US East (Ohio)	us-east-2	execute-api.us-east-2.amazonaws.com	HTTPS	ZOJJZC49E0EPZ	



AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	Route 53 Hosted Zone ID
US East (N. Virginia)	us-east-1	execute-api.us-east-1.amazonaws.com	HTTPS	Z1UJRXOUMOOOFQ8
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
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	Z1YSHQZHG15GKL
Canada (Central)	ca-central-1	execute-api.ca-central-1.amazonaws.com	HTTPS	Z19DQILCV0OWEC
China (Beijing)	cn-north-1	execute-api.cn-north-1.amazonaws.com.cn	HTTPS	Z3N456W6CBMXJZ
China (Ningxia)	cn-northwest-1	execute-api.cn-northwest-1.amazonaws.com.cn	HTTPS	Z1HSIYANU8ZW46
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

Region Name	Region	Endpoint	Protocol	Route 53 Hosted Zone ID
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	Z20ZBPC0SS8806
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	Z3SE9ATJYCRCZJ
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

AWS General Reference Reference guide  
Service quotas

Name	Default	Adjustable
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
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

Name	Default	Adjustable
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	
US West (N. California)	us-west-1	appmesh.us-west-1.amazonaws.com	HTTPS	
		appmesh-envoy-management.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	appmesh.us-west-2.amazonaws.com	HTTPS	
		appmesh-envoy-management.us-west-2.amazonaws.com	HTTPS	
Africa (Cape Town)	af-south-1	appmesh.af-south-1.amazonaws.com	HTTPS	
		appmesh-envoy-management.af-south-1.amazonaws.com	HTTPS	
Asia Pacific (Hong Kong)	ap-east-1	appmesh.ap-east-1.amazonaws.com	HTTPS	
		appmesh-envoy-management.ap-east-1.amazonaws.com	HTTPS	

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
Asia Pacific (Mumbai)	ap-south-1	appmesh.ap-south-1.amazonaws.com	HTTPS	
		appmesh-envoy-management.ap-south-1.amazonaws.com	HTTPS	
Asia Pacific (Seoul)	ap-northeast-2	appmesh.ap-northeast-2.amazonaws.com	HTTPS	
		appmesh-envoy-management.ap-northeast-2.amazonaws.com	HTTPS	
Asia Pacific (Singapore)	ap-southeast-1	appmesh.ap-southeast-1.amazonaws.com	HTTPS	
		appmesh-envoy-management.ap-southeast-1.amazonaws.com	HTTPS	
Asia Pacific (Sydney)	ap-southeast-2	appmesh.ap-southeast-2.amazonaws.com	HTTPS	
		appmesh-envoy-management.ap-southeast-2.amazonaws.com	HTTPS	
Asia Pacific (Tokyo)	ap-northeast-1	appmesh.ap-northeast-1.amazonaws.com	HTTPS	
		appmesh-envoy-management.ap-northeast-1.amazonaws.com	HTTPS	
Canada (Central)	ca-central-1	appmesh.ca-central-1.amazonaws.com	HTTPS	
		appmesh-envoy-management.ca-central-1.amazonaws.com	HTTPS	
Europe (Frankfurt)	eu-central-1	appmesh.eu-central-1.amazonaws.com	HTTPS	
		appmesh-envoy-management.eu-central-1.amazonaws.com	HTTPS	
Europe (Ireland)	eu-west-1	appmesh.eu-west-1.amazonaws.com	HTTPS	
		appmesh-envoy-management.eu-west-1.amazonaws.com	HTTPS	
Europe (London)	eu-west-2	appmesh.eu-west-2.amazonaws.com	HTTPS	
		appmesh-envoy-management.eu-west-2.amazonaws.com	HTTPS	
Europe (Milan)	eu-south-1	appmesh.eu-south-1.amazonaws.com	HTTPS	
		appmesh-envoy-management.eu-south-1.amazonaws.com	HTTPS	
Europe (Paris)	eu-west-3	appmesh.eu-west-3.amazonaws.com	HTTPS	
		appmesh-envoy-management.eu-west-3.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol	
Europe (Stockholm)	eu-north-1	appmesh.eu-north-1.amazonaws.com	HTTPS	
		appmesh-envoy-management.eu-north-1.amazonaws.com	HTTPS	
Middle East (Bahrain)	me-south-1	appmesh.me-south-1.amazonaws.com	HTTPS	
		appmesh-envoy-management.me-south-1.amazonaws.com	HTTPS	
South America (São Paulo)	sa-east-1	appmesh.sa-east-1.amazonaws.com	HTTPS	
		appmesh-envoy-management.sa-east-1.amazonaws.com	HTTPS	

## Service quotas

Name	Default	Adjustable
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
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 \(p. 592\)](#). 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 \(p. 596\)](#).

## Service endpoints

### App Runner

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

Resource	Default
Services	10
Connections	10
Auto scaling configurations—names	10
Auto scaling configurations—revisions per name	50

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

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	
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	
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

Name	Default	Adjustable
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
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

Name	Default	Adjustable
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	
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	

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
China (Beijing)	cn-north-1	application-autoscaling.cn-north-1.amazonaws.com.cn	HTTP and HTTPS	
China (Ningxia)	cn-northwest-1	application-autoscaling.cn-northwest-1.amazonaws.com.cn	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	
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	

Region Name	Region	Endpoint	Protocol	
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	500	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 \(p. 592\)](#). 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 \(p. 596\)](#).

## 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	5,000	Yes
Inactive agents heartbeating but not collecting data	10,000	No
Servers per application	400	No
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 \(p. 592\)](#). 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 \(p. 596\)](#).

## 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 (Oregon)	us-west-2	mgn.us-west-2.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	
Europe (Frankfurt)	eu-central-1	mgn.eu-central-1.amazonaws.com	HTTPS	
Europe (Ireland)	eu-west-1	mgn.eu-west-1.amazonaws.com	HTTPS	
Europe (Stockholm)	eu-north-1	mgn.eu-north-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

Name	Default	Adjustable
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

Region Name	Region	Endpoint	Protocol	
US East (N. Virginia)	us-east-1	appstream2.us-east-1.amazonaws.com	HTTPS	
		appstream2-fips.us-east-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	appstream2.us-west-2.amazonaws.com	HTTPS	
		appstream2-fips.us-west-2.amazonaws.com	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	

Region Name	Region	Endpoint	Protocol	
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	
AWS GovCloud (US-West)	us-gov-west-1	appstream2.us-gov-west-1.amazonaws.com	HTTPS	
		appstream2-fips.us-gov-west-1.amazonaws.com	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> <li>stream.graphics-design.2xlarge: 10</li> <li>stream.graphics.g4dn.xlarge: 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> </ul>



Resource	Default
	<ul style="list-style-type: none"> <li>stream.graphics.g4dn.xlarge: 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
Asia Pacific (Mumbai)	ap-south-1	appsync.ap-south-1.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	
China (Beijing)	cn-north-1	appsync.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	appsync.cn-northwest-1.amazonaws.com.cn	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	
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

Resource	Description	Default
API keys per API	The maximum number of API keys per GraphQL API	50
APIs per region	The maximum number of APIs per region per account	25 <a href="#">You can request a quota increase.</a>
Authentication providers per API	The maximum number of authentication providers per API	50
Schema document size	The maximum size of the schema document	1 MB
Functions per pipeline resolver	The maximum number of functions per pipeline resolver	10
Throttle rate per GraphQL API	The maximum number of GraphQL queries per API per second	1,000 <a href="#">You can request a quota increase.</a>

Resource	Description	Default
GraphQL request execution timeout	The maximum GraphQL request execution time for queries, mutations, and subscriptions	30 seconds
Evaluated resolver template size	The maximum size of the evaluated resolver template	5 MB
Request mapping template size	The maximum request mapping template size	64 KB
Response mapping template size	The maximum response mapping template size	64 KB
Iterations in a <code>foreach</code> loop in mapping templates	The maximum number of iterations in a <code>#foreach...#end</code> loop in mapping templates	1000
Resolvers executed in a single request	The maximum number of resolvers that can be executed in a single request	10,000
Subscription payload size	The maximum size of the message received from subscriptions (WebSockets)	240 KB
Subscription payload size	The maximum size of the message received from subscriptions (MQTT over WebSockets)	128 KB
Number of caching keys	The maximum number of caching keys	10  You can <a href="#">request a quota increase</a> .

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
US West (N. California)	us-west-1	athena.us-west-1.amazonaws.com	HTTPS	
		athena-fips.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	athena.us-west-2.amazonaws.com	HTTPS	
		athena-fips.us-west-2.amazonaws.com	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 (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	
China (Beijing)	cn-north-1	athena.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	athena.cn-northwest-1.amazonaws.com.cn	HTTPS	
Europe (Frankfurt)	eu-central-1	athena.eu-central-1.amazonaws.com	HTTPS	
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	

Region Name	Region	Endpoint	Protocol	
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	HTTPS	
		athena-fips.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	athena.us-gov-west-1.amazonaws.com	HTTPS	
		athena-fips.us-gov-west-1.amazonaws.com	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	20	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 \(p. 592\)](#). 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 \(p. 596\)](#).

## 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 (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	
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	
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 Human loops are considered <i>in-flight</i> when their status is <code>InProgress</code> or <code>Stopping</code> .
<i>In-flight</i> human loops per flow definition (Amazon Mechanical Turk work team)	1,000 Human loops are considered <i>in-flight</i> when their status is <code>InProgress</code> or <code>Stopping</code> .

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	
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	

AWS General Reference Reference guide  
Service Endpoints

Region Name	Region	Endpoint	Protocol	
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	
China (Beijing)	cn-north-1	rds.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	rds.cn-northwest-1.amazonaws.com.cn	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	

Region Name	Region	Endpoint	Protocol	
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

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	
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	

AWS General Reference Reference guide  
Service Endpoints

Region Name	Region	Endpoint	Protocol	
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	
China (Beijing)	cn-north-1	rds.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	rds.cn-northwest-1.amazonaws.com.cn	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

Resource	Default Quota
Authorizations per DB security group	20
Burst balance (for instances <1 TiB)	3000 IOPS
Cross-region snapshot copy requests	5
Data API maximum result set size	1 MB
Data API requests per second	1000
DB clusters	40
DB cluster parameter groups	50
DB instances	40
DB subnet groups	50
Event subscriptions	20
AWS Identity and Access Management (IAM) roles per DB cluster	5
IAM roles per DB instance	5
Manual cluster snapshots	100
Parameter groups	50
Proxies	20
Reserved DB instances	40
Rules per virtual private cloud (VPC) security group	50 inbound, 50 outbound
Subnets per subnet group	20
Tags per resource	50
VPC security groups	5

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

## 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 (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	
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	
China (Beijing)	cn-north-1	autoscaling-plans.cn-north-1.amazonaws.com.cn	HTTP and HTTPS	
China (Ningxia)	cn-northwest-1	autoscaling-plans.cn-northwest-1.amazonaws.com.cn	HTTP and HTTPS	
Europe (Frankfurt)	eu-central-1	autoscaling-plans.eu-central-1.amazonaws.com	HTTP and HTTPS	

Region Name	Region	Endpoint	Protocol	
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 \(p. 592\)](#). 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 \(p. 596\)](#).

## Service endpoints

Region Name	Region	Endpoint	Protocol	
US East (Ohio)	us-east-2	backup.us-east-2.amazonaws.com	HTTPS	
		backup-fips.us-east-2.amazonaws.com	HTTPS	
US East (N. Virginia)	us-east-1	backup.us-east-1.amazonaws.com	HTTPS	
		backup-fips.us-east-1.amazonaws.com	HTTPS	
US West (N. California)	us-west-1	backup.us-west-1.amazonaws.com	HTTPS	
		backup-fips.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	backup.us-west-2.amazonaws.com	HTTPS	
		backup-fips.us-west-2.amazonaws.com	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	
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	
China (Beijing)	cn-north-1	backup.cn-north-1.amazonaws.com.cn	HTTPS	



Region Name	Region	Endpoint	Protocol	
China (Ningxia)	cn-northwest-1	backup.cn-northwest-1.amazonaws.com.cn	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	HTTPS	
		backup-fips.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	backup.us-gov-west-1.amazonaws.com	HTTPS	
		backup-fips.us-gov-west-1.amazonaws.com	HTTPS	

## Service quotas

Name	Default	Adjustable
Backup plans	100	Yes
Backup vaults	100	Yes
Recovery points per backup vault	1,000,000	Yes
Resource assignments per backup plan	100	No
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
		fips.batch.us-west-2.amazonaws.com	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	
China (Beijing)	cn-north-1	batch.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	batch.cn-northwest-1.amazonaws.com.cn	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	
Europe (Milan)	eu-south-1	batch.eu-south-1.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol	
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	HTTPS	
		batch.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	batch.us-gov-west-1.amazonaws.com	HTTPS	
		batch.us-gov-west-1.amazonaws.com	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	20	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 \(p. 592\)](#).

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 \(p. 596\)](#).

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	
China (Ningxia)	cn-northwest-1	ce.cn-northwest-1.amazonaws.com.cn	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	
China (Ningxia)	cn-northwest-1	cur.cn-northwest-1.amazonaws.com.cn	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	

Region Name	Region	Endpoint	Protocol	
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	
China (Beijing)	cn-north-1	budgets.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	budgets.cn-northwest-1.amazonaws.com.cn	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

Region Name	Region	Endpoint	Protocol	
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](#).

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	



AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
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 acm-fips.ca-central-1.amazonaws.com	HTTPS HTTPS	
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	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	

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

## Service quotas

Name	Default	Adjustable
ACM certificates	1,000	Yes
ACM certificates created in last 365 days	2,000	Yes
Domain names per ACM certificate	10	Yes
Imported certificates	1,000	Yes
Imported certificates in last 365 days	2,000	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 \(p. 592\)](#). 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 \(p. 596\)](#).

## Service endpoints

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

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

## Service quotas

Name	Default	Adjustable
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

Name	Default	Adjustable
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
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
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	

Region Name	Region	Endpoint	Protocol	
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

Amazon Chime has a single endpoint that supports 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	16	Yes
Amazon Chime SIP media applications per account	30	Yes

Name	Default	Adjustable
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
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



## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	
US West (Oregon)	us-west-2	cloud9.us-west-2.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 (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	

Region Name	Region	Endpoint	Protocol	
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	
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 \(p. 592\)](#). 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 \(p. 596\)](#).

## 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	
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
US East (N. Virginia)	us-east-1	cloudformation.us-east-1.amazonaws.com	HTTPS	
		cloudformation-fips.us-east-1.amazonaws.com	HTTPS	
US West (N. California)	us-west-1	cloudformation.us-west-1.amazonaws.com	HTTPS	
		cloudformation-fips.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	cloudformation.us-west-2.amazonaws.com	HTTPS	
		cloudformation-fips.us-west-2.amazonaws.com	HTTPS	
Africa (Cape Town)	af-south-1	cloudformation.af-south-1.amazonaws.com	HTTPS	
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	
China (Beijing)	cn-north-1	cloudformation.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	cloudformation.cn-northwest-1.amazonaws.com.cn	HTTPS	
Europe (Frankfurt)	eu-central-1	cloudformation.eu-central-1.amazonaws.com	HTTPS	

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

## StackSets regional support

StackSets are 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	

Region Name	Region	Endpoint	Protocol	
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	
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	
China (Beijing)	cn-north-1	stacksets.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	stacksets.cn-northwest-1.amazonaws.com.cn	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	

Region Name	Region	Endpoint	Protocol	
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

Name	Default	Adjustable
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	200	Yes
Stack instance operations per administrator account	3,500	No
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

Region Name	Region	Endpoint	Protocol	Amazon Route 53 Hosted Zone ID*
US East (N. Virginia) Region	us-east-1	cloudfront.amazonaws.com	HTTPS	Z2FDTNDATAQYW2
		cloudfront-fips.amazonaws.com	HTTPS	

### Service quotas

Name	Default	Adjustable
Alternate domain names (CNAMEs) per distribution	100	Yes



AWS General Reference Reference guide  
Service quotas

Name	Default	Adjustable
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
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

AWS General Reference Reference guide  
Service quotas

Name	Default	Adjustable
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
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

Name	Default	Adjustable
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
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	
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 (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	

Region Name	Region	Endpoint	Protocol	
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	
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

Region Name	Region	Endpoint	Protocol	
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	

Region Name	Region	Endpoint	Protocol	
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	
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 \(p. 592\)](#).

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 \(p. 596\)](#).

### Service endpoints

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

Region Name	Region	Endpoint	Protocol	
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	HTTPS	
		servicediscovery-fips.ca-central-1.amazonaws.com	HTTPS	
China (Beijing)	cn-north-1	servicediscovery.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	servicediscovery.cn-northwest-1.amazonaws.com.cn	HTTPS	
Europe (Frankfurt)	eu-central-1	servicediscovery.eu-central-1.amazonaws.com	HTTPS	
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	

## Service quotas

Name	Default	Adjustable
Custom attributes per instance	30	No



Name	Default	Adjustable
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	

Region Name	Region	Endpoint	Protocol	
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	

Region Name	Region	Endpoint	Protocol	
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	
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
US West (N. California)	us-west-1	cloudtrail.us-west-1.amazonaws.com	HTTPS	
		cloudtrail-fips.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	cloudtrail.us-west-2.amazonaws.com	HTTPS	
		cloudtrail-fips.us-west-2.amazonaws.com	HTTPS	
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	
China (Beijing)	cn-north-1	cloudtrail.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	cloudtrail.cn-northwest-1.amazonaws.com.cn	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	

Region Name	Region	Endpoint	Protocol	
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	
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	HTTPS	
		cloudtrail.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	cloudtrail.us-gov-west-1.amazonaws.com	HTTPS	
		cloudtrail.us-gov-west-1.amazonaws.com	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
Canada (Central)	ca-central-1	monitoring.ca-central-1.amazonaws.com	HTTP and HTTPS	
China (Beijing)	cn-north-1	monitoring.cn-north-1.amazonaws.com.cn	HTTP and HTTPS	
China (Ningxia)	cn-northwest-1	monitoring.cn-northwest-1.amazonaws.com.cn	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 monitoring.us-gov-east-1.amazonaws.com	HTTP and HTTPS HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	monitoring.us-gov-west-1.amazonaws.com monitoring.us-gov-west-1.amazonaws.com	HTTP and HTTPS HTTPS	

## Service quotas

Name	Default	Adjustable
Actions per CloudWatch alarm, per state	5	No
Canary limit	20	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
Metrics per dashboard	2,500	No
Metrics per dashboard widget	500	No
Minimum frequency	60,000 Milliseconds	No
Number of Contributor Insights rules	100	Yes
Number of alarms	5,000	Yes
Payload size for PutMetricData requests	40	No
Rate of DeleteAlarms requests	3 per second	No
Rate of DeleteDashboards requests	10 per second	Yes
Rate of DeleteInsightRules requests	1	No
Rate of DeleteMetricStream requests	10 per second	Yes
Rate of DescribeAlarmHistory requests	3 per second	No
Rate of DescribeAlarms requests	9 per second	Yes
Rate of DescribeAlarmsForMetric requests	3 per second	No
Rate of DescribeInsightRules requests	1	No
Rate of DisableAlarmActions requests	3 per second	No
Rate of DisableInsightRules requests	1	No
Rate of EnableAlarmActions requests	3 per second	No
Rate of EnableInsightRules requests	1	No



AWS General Reference Reference guide  
Service quotas

Name	Default	Adjustable
Rate of GetDashboard requests	10 per second	Yes
Rate of GetInsightRuleReport requests	20	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
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	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

Name	Default	Adjustable
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	

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

## Service Quotas

Resource	Default quota
API requests	All API actions are throttled to 5 TPS

Resource	Default quota
Applications	10 per account
Log Streams	5 per resource
Observations per problem	20 per dashboard 40 per DescribeProblemObservations action
Metrics	30 per resource
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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

Region Name	Region	Endpoint	Protocol	
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	
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	
China (Beijing)	cn-north-1	events.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	events.cn-northwest-1.amazonaws.com.cn	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	

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

## Service quotas

Name	Default	Adjustable
Api destinations	3,000	Yes
Connections	3,000	Yes
Invocations throttle limit in transactions per second	1,100	Yes
Number of rules	300	Yes
PutEvents throttle limit in transactions per second	600	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
US West (N. California)	us-west-1	logs.us-west-1.amazonaws.com	HTTPS	
		logs-fips.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	logs.us-west-2.amazonaws.com	HTTPS	
		logs-fips.us-west-2.amazonaws.com	HTTPS	
Africa (Cape Town)	af-south-1	logs.af-south-1.amazonaws.com	HTTPS	
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	
China (Beijing)	cn-north-1	logs.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	logs.cn-northwest-1.amazonaws.com.cn	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	

Region Name	Region	Endpoint	Protocol	
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	
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	HTTPS	
		logs.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	logs.us-gov-west-1.amazonaws.com	HTTPS	
		logs.us-gov-west-1.amazonaws.com	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
CreateAuditBucket throttle limit in transactions per second	1	No
CreateExportTask throttle limit in transactions per second	5	No
CreateInventoryBucket throttle limit in transactions per second	1	No
CreateLogGroup throttle limit in transactions per second	5	Yes
CreateLogStream throttle limit in transactions per second	50	Yes
CreateLogsBucket throttle limit in transactions per second	1	No



AWS General Reference Reference guide  
Service quotas

Name	Default	Adjustable
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
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
GetLogProperties throttle limit in transactions per second	1,000	No
GetQueryResults throttle limit in transactions per second	5	No
ListLogGroups throttle limit in transactions per second	10	No
ListLogObjects throttle limit in transactions per second	50	No
ListTagsLogGroup throttle limit in transactions per second	5	No
Log groups	1,000,000	Yes
MeterQuery throttle limit in transactions per second	5	No
Metrics filters per log group	100	No
PutDefaultLogSettings throttle limit in transactions per second	3	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	800	Yes
PutLogEventsBatch throttle limit in transactions per second	150	No
PutMetricFilter throttle limit in transactions per second	5	No

Name	Default	Adjustable
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	

AWS General Reference Reference guide  
Service Endpoints

Region Name	Region	Endpoint	Protocol	
Asia Pacific (Mumbai)	ap-south-1	synthetics.ap-south-1.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	
China (Beijing)	cn-north-1	synthetics.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	synthetics.cn-northwest-1.amazonaws.com.cn	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	
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	

Region Name	Region	Endpoint	Protocol	
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.  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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	

Region Name	Region	Endpoint	Protocol	
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
Authentication token maximum requests	300	No
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	10	No
GetPackageVersionAsset maximum requests per second	20	No
ListPackageVersionAssets maximum requests per second	20	No
ListPackageVersions maximum requests per second	20	No

Name	Default	Adjustable
ListPackages maximum requests per second	20	No
Repositories per domain maximum	1,000	No
Repository maximum read requests from multiple AWS accounts per second	300	No
Repository maximum read requests from one AWS account per second	300	No
Repository maximum write requests from multiple AWS accounts per second	30	No
Repository maximum write requests from one AWS account per second	30	No
Requests without authentication token per IP address maximum	150	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	
US West (Oregon)	us-west-2	codebuild.us-west-2.amazonaws.com	HTTPS	
		codebuild-fips.us-west-2.amazonaws.com	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	

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
Asia Pacific (Mumbai)	ap-south-1	codebuild.ap-south-1.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	
China (Beijing)	cn-north-1	codebuild.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	codebuild.cn-northwest-1.amazonaws.com.cn	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	
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	

Region Name	Region	Endpoint	Protocol	
AWS GovCloud (US-East)	us-gov-east-1	codebuild.us-gov-east-1.amazonaws.com	HTTPS	
		codebuild-fips.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	codebuild.us-gov-west-1.amazonaws.com	HTTPS	
		codebuild-fips.us-gov-west-1.amazonaws.com	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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



AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
US East (N. Virginia)	us-east-1	codecommit.us-east-1.amazonaws.com	HTTPS	
		codecommit-fips.us-east-1.amazonaws.com	HTTPS	
US West (N. California)	us-west-1	codecommit.us-west-1.amazonaws.com	HTTPS	
		codecommit-fips.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	codecommit.us-west-2.amazonaws.com	HTTPS	
		codecommit-fips.us-west-2.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	HTTPS	
		codecommit-fips.ca-central-1.amazonaws.com	HTTPS	
China (Beijing)	cn-north-1	codecommit.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	codecommit.cn-northwest-1.amazonaws.com.cn	HTTPS	
Europe (Frankfurt)	eu-central-1	codecommit.eu-central-1.amazonaws.com	HTTPS	
Europe (Ireland)	eu-west-1	codecommit.eu-west-1.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol	
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	HTTPS	
		codecommit-fips.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	codecommit.us-gov-west-1.amazonaws.com	HTTPS	
		codecommit-fips.us-gov-west-1.amazonaws.com	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 \(p. 592\)](#). 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 \(p. 596\)](#).

## Service endpoints

Region Name	Region	Endpoint	Protocol	
US East (Ohio)	us-east-2	codedeploy.us-east-2.amazonaws.com	HTTPS	
		codedeploy-fips.us-east-2.amazonaws.com	HTTPS	
US East (N. Virginia)	us-east-1	codedeploy.us-east-1.amazonaws.com	HTTPS	
		codedeploy-fips.us-east-1.amazonaws.com	HTTPS	
US West (N. California)	us-west-1	codedeploy.us-west-1.amazonaws.com	HTTPS	
		codedeploy-fips.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	codedeploy.us-west-2.amazonaws.com	HTTPS	
		codedeploy-fips.us-west-2.amazonaws.com	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	
China (Beijing)	cn-north-1	codedeploy.cn-north-1.amazonaws.com.cn	HTTPS	

Region Name	Region	Endpoint	Protocol	
China (Ningxia)	cn-northwest-1	codedeploy.cn-northwest-1.amazonaws.com.cn	HTTPS	
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	HTTPS	
		codedeploy-fips.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	codedeploy.us-gov-west-1.amazonaws.com	HTTPS	
		codedeploy-fips.us-gov-west-1.amazonaws.com	HTTPS	

## Service quotas

Name	Default	Adjustable
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

Name	Default	Adjustable
EC2/On-Premises blue/green deployment run in hours	109	No
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	1,000	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	1,000	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 \(p. 592\)](#).

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 \(p. 596\)](#).

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

## Service endpoints

Region Name	Region	Endpoint	Protocol	
US East (Ohio)	us-east-2	codepipeline.us-east-2.amazonaws.com	HTTPS	
		codepipeline-fips.us-east-2.amazonaws.com	HTTPS	
US East (N. Virginia)	us-east-1	codepipeline.us-east-1.amazonaws.com	HTTPS	
		codepipeline-fips.us-east-1.amazonaws.com	HTTPS	
US West (N. California)	us-west-1	codepipeline.us-west-1.amazonaws.com	HTTPS	
		codepipeline-fips.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	codepipeline.us-west-2.amazonaws.com	HTTPS	
		codepipeline-fips.us-west-2.amazonaws.com	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	HTTPS	
		codepipeline-fips.ca-central-1.amazonaws.com	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	HTTPS	
		codepipeline-fips.us-gov-west-1.amazonaws.com	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	Yes
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	60	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	

Region Name	Region	Endpoint	Protocol	
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

Region Name	Region	Endpoint	Protocol	
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	

AWS General Reference Reference guide  
AWS CodeStar Notifications

Region Name	Region	Endpoint	Protocol	
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

#### Amazon Cognito User Pools

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

## Amazon Cognito Identity Pools

Region Name	Region	Endpoint	Protocol	
US East (Ohio)	us-east-2	cognito-identity.us-east-2.amazonaws.com	HTTPS	
		cognito-identity-fips.us-east-2.amazonaws.com	HTTPS	
US East (N. Virginia)	us-east-1	cognito-identity.us-east-1.amazonaws.com	HTTPS	
		cognito-identity-fips.us-east-1.amazonaws.com	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	HTTPS	
		cognito-identity-fips.us-west-2.amazonaws.com	HTTPS	
Asia Pacific (Mumbai)	ap-south-1	cognito-identity.ap-south-1.amazonaws.com	HTTPS	
Asia Pacific (Seoul)	ap-northeast-2	cognito-identity.ap-northeast-2.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol	
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	
China (Beijing)	cn-north-1	cognito-identity.cn-north-1.amazonaws.com.cn	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	
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	HTTPS	
		cognito-identity-fips.us-gov-west-1.amazonaws.com	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

AWS General Reference Reference guide  
Service quotas

Name	Default	Adjustable
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
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



Name	Default	Adjustable
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	

Region Name	Region	Endpoint	Protocol	
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
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

Region Name	Region	Endpoint	Protocol	
US East (Ohio)	us-east-2	comprehend.us-east-2.amazonaws.com	HTTPS	
		comprehend-fips.us-east-2.amazonaws.com	HTTPS	
US East (N. Virginia)	us-east-1	comprehend.us-east-1.amazonaws.com	HTTPS	
		comprehend-fips.us-east-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	comprehend.us-west-2.amazonaws.com	HTTPS	
		comprehend-fips.us-west-2.amazonaws.com	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	
Europe (Ireland)	eu-west-1	comprehend.eu-west-1.amazonaws.com	HTTPS	
Europe (London)	eu-west-2	comprehend.eu-west-2.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol	
AWS GovCloud (US-West)	us-gov-west-1	comprehend.us-gov-west-1.amazonaws.com	HTTPS	
		comprehend-fips.us-gov-west-1.amazonaws.com	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
DetectKeyPhrases max active jobs	10	No
DetectKeyPhrases throttle limit in transaction per second	20	Yes
DetectSentiment max active jobs	10	No

AWS General Reference Reference guide  
Service quotas

Name	Default	Adjustable
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
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

Name	Default	Adjustable
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

Region Name	Region	Endpoint	Protocol	
US East (Ohio)	us-east-2	comprehendmedical.us-east-2.amazonaws.com	HTTPS	
		comprehendmedical-fips.us-east-2.amazonaws.com	HTTPS	
US East (N. Virginia)	us-east-1	comprehendmedical.us-east-1.amazonaws.com	HTTPS	
		comprehendmedical-fips.us-east-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	comprehendmedical.us-west-2.amazonaws.com	HTTPS	
		comprehendmedical-fips.us-west-2.amazonaws.com	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	
AWS GovCloud (US-West)	us-gov-west-1	comprehendmedical.us-gov-west-1.amazonaws.com	HTTPS	
		comprehendmedical-fips.us-gov-west-1.amazonaws.com	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
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

Name	Default	Adjustable
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 ListICD10CMInferenceJobs 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 StartICD10CMInferenceJob 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 StopICD10CMInferenceJob 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	
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	



Region Name	Region	Endpoint	Protocol	
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	
China (Beijing)	cn-north-1	compute-optimizer.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	compute-optimizer.cn-northwest-1.amazonaws.com.cn	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
China (Beijing)	cn-north-1	config.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	config.cn-northwest-1.amazonaws.com.cn	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	HTTPS	
		config.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	config.us-gov-west-1.amazonaws.com	HTTPS	
		config.us-gov-west-1.amazonaws.com	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

Region Name	Region	Endpoint	Protocol	
US East (N. Virginia)	us-east-1	connect.us-east-1.amazonaws.com	HTTPS	
		connect-fips.us-east-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	connect.us-west-2.amazonaws.com	HTTPS	
		connect-fips.us-west-2.amazonaws.com	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	HTTPS	
		connect.us-gov-west-1.amazonaws.com	HTTPS	

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	

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	HTTPS	
		participant.connect-fips.us-east-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	participant.connect.us-west-2.amazonaws.com	HTTPS	
		participant.connect-fips.us-west-2.amazonaws.com	HTTPS	
Asia Pacific (Singapore)	ap-southeast-1	participant.connect.ap-southeast-1.amazonaws.com	HTTPS	
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	

Region Name	Region	Endpoint	Protocol
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	HTTPS
		participant.connect.us-gov-west-1.amazonaws.com	HTTPS

The Amazon Connect Customer Profiles Service has the following endpoints.

Region Name	Region	Endpoint	Protocol	
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	
Europe (Frankfurt)	eu-central-1	profile.eu-central-1.amazonaws.com	HTTPS	
Europe (London)	eu-west-2	profile.eu-west-2.amazonaws.com	HTTPS	

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	

Region Name	Region	Endpoint	Protocol	
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
Contact flows per instance	100	Yes
Hours of operation per instance	100	Yes
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

AWS General Reference Reference guide  
Service quotas

Name	Default	Adjustable
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
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



AWS General Reference Reference guide  
Service quotas

Name	Default	Adjustable
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
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

AWS General Reference Reference guide  
Service quotas

Name	Default	Adjustable
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
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

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	5,120 Kilobytes	Yes
Object and profile maximum size	250 Kilobytes	No
Object types per domain	100	Yes
Objects per profile	100	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	

Region Name	Region	Endpoint	Protocol	
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
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
Private offers per account	25	Yes
Products per account	50	Yes
Products per data set	100	Yes

Name	Default	Adjustable
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

Region Name	Region	Endpoint	Protocol	
US East (Ohio)	us-east-2	d1m.us-east-2.amazonaws.com	HTTPS	
US East (N. Virginia)	us-east-1	d1m.us-east-1.amazonaws.com	HTTPS	
US West (N. California)	us-west-1	d1m.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	d1m.us-west-2.amazonaws.com	HTTPS	
Africa (Cape Town)	af-south-1	d1m.af-south-1.amazonaws.com	HTTPS	
Asia Pacific (Hong Kong)	ap-east-1	d1m.ap-east-1.amazonaws.com	HTTPS	
Asia Pacific (Mumbai)	ap-south-1	d1m.ap-south-1.amazonaws.com	HTTPS	
Asia Pacific (Osaka)	ap-northeast-3	d1m.ap-northeast-3.amazonaws.com	HTTPS	

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
Asia Pacific (Seoul)	ap-northeast-2	d1m.ap-northeast-2.amazonaws.com	HTTPS	
Asia Pacific (Singapore)	ap-southeast-1	d1m.ap-southeast-1.amazonaws.com	HTTPS	
Asia Pacific (Sydney)	ap-southeast-2	d1m.ap-southeast-2.amazonaws.com	HTTPS	
Asia Pacific (Tokyo)	ap-northeast-1	d1m.ap-northeast-1.amazonaws.com	HTTPS	
Canada (Central)	ca-central-1	d1m.ca-central-1.amazonaws.com	HTTPS	
China (Beijing)	cn-north-1	d1m.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	d1m.cn-northwest-1.amazonaws.com.cn	HTTPS	
Europe (Frankfurt)	eu-central-1	d1m.eu-central-1.amazonaws.com	HTTPS	
Europe (Ireland)	eu-west-1	d1m.eu-west-1.amazonaws.com	HTTPS	
Europe (London)	eu-west-2	d1m.eu-west-2.amazonaws.com	HTTPS	
Europe (Milan)	eu-south-1	d1m.eu-south-1.amazonaws.com	HTTPS	
Europe (Paris)	eu-west-3	d1m.eu-west-3.amazonaws.com	HTTPS	
Europe (Stockholm)	eu-north-1	d1m.eu-north-1.amazonaws.com	HTTPS	
Middle East (Bahrain)	me-south-1	d1m.me-south-1.amazonaws.com	HTTPS	
South America (São Paulo)	sa-east-1	d1m.sa-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-East)	us-gov-east-1	d1m.us-gov-east-1.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol	
AWS GovCloud (US-West)	us-gov-west-1	d1m.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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	
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

Name	Default	Adjustable
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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



AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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 (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 datasync-fips.ca-central-1.amazonaws.com	HTTPS HTTPS	
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	

Region Name	Region	Endpoint	Protocol	
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	HTTPS	
		datasync-fips.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	datasync.us-gov-west-1.amazonaws.com	HTTPS	
		datasync-fips.us-gov-west-1.amazonaws.com	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
US West (N. California)	us-west-1	dms.us-west-1.amazonaws.com	HTTPS	
		dms-fips.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	dms.us-west-2.amazonaws.com	HTTPS	
		dms-fips.us-west-2.amazonaws.com	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	
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	
China (Beijing)	cn-north-1	dms.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	dms.cn-northwest-1.amazonaws.com.cn	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	

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

## Service quotas

Name	Default	Adjustable
Certificate count	100	Yes
Endpoint count	1,000	Yes
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	

AWS General Reference Reference guide  
Service Endpoints

Region Name	Region	Endpoint	Protocol	
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	
US West (Oregon)	us-west-2	api.detective.us-west-2.amazonaws.com	HTTPS	
		api.detective-fips.us-west-2.amazonaws.com	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	

Region Name	Region	Endpoint	Protocol	
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	
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	HTTPS	
		api.detective-fips.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	api.detective.us-gov-west-1.amazonaws.com	HTTPS	
		api.detective-fips.us-gov-west-1.amazonaws.com	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service Endpoints

Region Name	Region	Endpoint	Protocol
Europe (Ireland)	eu-west-1	devops-guru.eu-west-1.amazonaws.com	HTTPS
US West (Oregon)	us-west-2	devops-guru.us-west-2.amazonaws.com	HTTPS
US East (N. Virginia)	us-east-1	devops-guru.us-east-1.amazonaws.com	HTTPS
US East (Ohio)	us-east-2	devops-guru.us-east-2.amazonaws.com	HTTPS
Asia Pacific (Tokyo)	ap-northeast-1	devops-guru.ap-northeast-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	200

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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	Yes
Concurrency for remote access on metered devices	2	Yes
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 \(p. 592\)](#).



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 \(p. 596\)](#).

## Service endpoints

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

Region Name	Region	Endpoint	Protocol	
China (Beijing)	cn-north-1	directconnect.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	directconnect.cn-northwest-1.amazonaws.com.cn	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	HTTPS	
		directconnect.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	directconnect.us-gov-west-1.amazonaws.com	HTTPS	
		directconnect.us-gov-west-1.amazonaws.com	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
Number of prefixes per AWS transit Gateway from AWS to on-premises on a transit virtual interface	20	No

Name	Default	Adjustable
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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 ds-fips.ca-central-1.amazonaws.com	HTTPS HTTPS	
China (Beijing)	cn-north-1	ds.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	ds.cn-northwest-1.amazonaws.com.cn	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	
AWS GovCloud (US-East)	us-gov-east-1	ds.us-gov-east-1.amazonaws.com ds-fips.us-gov-east-1.amazonaws.com	HTTPS HTTPS	

Region Name	Region	Endpoint	Protocol	
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	10	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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 (Oregon)	us-west-2	rds.us-west-2.amazonaws.com	HTTP and HTTPS	

Region Name	Region	Endpoint	Protocol	
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	
China (Ningxia)	cn-northwest-1	rds.cn-northwest-1.amazonaws.com.cn	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

#### DynamoDB

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
			HTTPS	
US West (Oregon)	us-west-2	dynamodb.us-west-2.amazonaws.com dynamodb-fips.us-west-2.amazonaws.com	HTTP and HTTPS 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 dynamodb-fips.ca-central-1.amazonaws.com	HTTP and HTTPS HTTPS	
China (Beijing)	cn-north-1	dynamodb.cn-north-1.amazonaws.com.cn	HTTP and HTTPS	
China (Ningxia)	cn-northwest-1	dynamodb.cn-northwest-1.amazonaws.com.cn	HTTP and 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	



Region Name	Region	Endpoint	Protocol	
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	
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 dynamodb.us-gov-east-1.amazonaws.com	HTTP and HTTPS HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	dynamodb.us-gov-west-1.amazonaws.com dynamodb.us-gov-west-1.amazonaws.com	HTTP and HTTPS HTTPS	

## DynamoDB Accelerator (DAX)

Region Name	Region	Endpoint	Protocol	
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	

Region Name	Region	Endpoint	Protocol	
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	
Asia Pacific (Tokyo)	ap-northeast-1	dax.ap-northeast-1.amazonaws.com	HTTP and HTTPS	
China (Ningxia)	cn-northwest-1	dax.cn-northwest-1.amazonaws.com.cn	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

Region Name	Region	Endpoint	Protocol	
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	

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
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	
China (Beijing)	cn-north-1	streams.dynamodb.cn-north-1.amazonaws.com.cn	HTTP and HTTPS	
China (Ningxia)	cn-northwest-1	streams.dynamodb.cn-northwest-1.amazonaws.com.cn	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	

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

Name	Default	Adjustable
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	HTTPS	Z14LCN19Q5QHIC
		elasticbeanstalk-fips.us-east-2.amazonaws.com	HTTPS	
US East (N. Virginia)	us-east-1	elasticbeanstalk.us-east-1.amazonaws.com	HTTPS	Z117KPS5GTRQ2G
		elasticbeanstalk-fips.us-east-1.amazonaws.com	HTTPS	
US West (N. California)	us-west-1	elasticbeanstalk.us-west-1.amazonaws.com	HTTPS	Z1LQECGX5PH1X
		elasticbeanstalk-fips.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	elasticbeanstalk.us-west-2.amazonaws.com	HTTPS	Z38NKT9BP95V3O
		elasticbeanstalk-fips.us-west-2.amazonaws.com	HTTPS	
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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	Route 53 Hosted Zone ID
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
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
China (Beijing)	cn-north-1	elasticbeanstalk.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	elasticbeanstalk.cn-northwest-1.amazonaws.com.cn	HTTPS	
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

Region Name	Region	Endpoint	Protocol	Route 53 Hosted Zone ID
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 elasticbeanstalk.us-gov-east-1.amazonaws.com	HTTPS HTTPS	Z35TSARG0EJ4VU
AWS GovCloud (US-West)	us-gov-west-1	elasticbeanstalk.us-gov-west-1.amazonaws.com elasticbeanstalk.us-gov-west-1.amazonaws.com	HTTPS HTTPS	Z4KAURWC4UUUG

## Elastic Beanstalk Health Service

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
China (Beijing)	cn-north-1	elasticbeanstalk-health.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	elasticbeanstalk-health.cn-northwest-1.amazonaws.com.cn	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	
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

#### 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	

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
China (Beijing)	cn-north-1	ec2.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	ec2.cn-northwest-1.amazonaws.com.cn	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	
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	

Region Name	Region	Endpoint	Protocol	
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 API endpoints to directly read the data on your EBS snapshots, and identify the difference between two snapshots. For more information, see [Access the contents of an EBS snapshot](#) in the *Amazon Elastic Compute Cloud User Guide*.

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

AWS General Reference Reference guide  
Service endpoints

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

Region Name	Region	Endpoint	Protocol	
AWS GovCloud (US-West)	us-gov-west-1	ebs.us-gov-west-1.amazonaws.com	HTTPS	

## 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
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	100,000	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

Name	Default	Adjustable
Snapshots per Region	100,000	Yes
StartSnapshot requests per account	10 per second	No
Storage for Cold HDD (sc1) volumes	300	Yes
Storage for General Purpose SSD (gp2) volumes	300	Yes
Storage for General Purpose SSD (gp3) volumes	300	Yes
Storage for Magnetic (standard) volumes	300	Yes
Storage for Provisioned IOPS SSD (io1) volumes	300	Yes
Storage for Provisioned IOPS SSD (io2) volumes	20	Yes
Storage for Throughput Optimized HDD (st1) volumes	300	Yes
Storage modifications for Cold HDD (sc1) volumes	100	Yes
Storage modifications for General Purpose SSD (gp2) volumes	100	Yes
Storage modifications for General Purpose SSD (gp3) volumes	100	Yes
Storage modifications for Magnetic (standard) volumes	100	Yes
Storage modifications for Provisioned IOPS SSD (io1) volumes	100	Yes
Storage modifications for Provisioned IOPS SSD (io2) volumes	20	Yes
Storage modifications for Throughput Optimized HDD (st1) volumes	100	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

Region Name	Region	Endpoint	Protocol
US East (Ohio)	us-east-2	ec2.us-east-2.amazonaws.com	HTTP and HTTPS
		ec2-fips.us-east-2.amazonaws.com	HTTPS
		api.ec2.us-east-2.aws	HTTPS

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
US East (N. Virginia)	us-east-1	ec2.us-east-1.amazonaws.com ec2-fips.us-east-1.amazonaws.com api.ec2.us-east-1.aws	HTTP and HTTPS HTTPS HTTPS	
US West (N. California)	us-west-1	ec2.us-west-1.amazonaws.com ec2-fips.us-west-1.amazonaws.com	HTTP and HTTPS HTTPS	
US West (Oregon)	us-west-2	ec2.us-west-2.amazonaws.com ec2-fips.us-west-2.amazonaws.com api.ec2.us-west-2.aws	HTTP and HTTPS HTTPS HTTPS	
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 api.ec2.ap-south-1.aws	HTTP and HTTPS 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 ec2-fips.ca-central-1.amazonaws.com	HTTP and HTTPS HTTPS	

Region Name	Region	Endpoint	Protocol	
China (Beijing)	cn-north-1	ec2.cn-north-1.amazonaws.com.cn	HTTP and HTTPS	
China (Ningxia)	cn-northwest-1	ec2.cn-northwest-1.amazonaws.com.cn	HTTP and 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 api.ec2.eu-west-1.aws	HTTP and HTTPS 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	
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 api.ec2.sa-east-1.aws	HTTP and HTTPS HTTPS	
AWS GovCloud (US-East)	us-gov-east-1	ec2.us-gov-east-1.amazonaws.com ec2.us-gov-east-1.amazonaws.com	HTTPS HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	ec2.us-gov-west-1.amazonaws.com ec2.us-gov-west-1.amazonaws.com	HTTPS HTTPS	

## Service quotas

Name	Default	Adjustable
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



AWS General Reference Reference guide  
Service quotas

Name	Default	Adjustable
All Standard (A, C, D, H, I, M, R, T, Z) Spot Instance Requests	0	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
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

AWS General Reference Reference guide  
Service quotas

Name	Default	Adjustable
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
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 mac1 Hosts	0	Yes
Running Dedicated p2 Hosts	0	Yes
Running Dedicated p3 Hosts	0	Yes

AWS General Reference Reference guide  
Service quotas

Name	Default	Adjustable
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
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 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

Name	Default	Adjustable
VPC Attachment Bandwidth	50 Gigabits per second	No
VPN connections per VGW	10	Yes
VPN connections per region	50	Yes
Virtual private gateways per region	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
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	
China (Beijing)	cn-north-1	autoscaling.cn-north-1.amazonaws.com.cn	HTTP and HTTPS	
China (Ningxia)	cn-northwest-1	autoscaling.cn-northwest-1.amazonaws.com.cn	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	

Region Name	Region	Endpoint	Protocol	
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 \(p. 592\)](#). 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 \(p. 596\)](#).

## 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	
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	
China (Beijing)	cn-north-1	imagebuilder.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	imagebuilder.cn-northwest-1.amazonaws.com.cn	HTTPS	

Region Name	Region	Endpoint	Protocol	
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	
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 size	64 Kilobytes	Yes
Components	1,000	Yes
Components per image recipe	20	No
Concurrent AMI copies	50	Yes
Concurrent builds	100	Yes
Container recipes	1,000	Yes
Distribution configurations	1,000	Yes



Name	Default	Adjustable
Docker template size	64 Kilobytes	Yes
Image pipelines	75	Yes
Image recipes	1,000	Yes
Infrastructure configurations	1,000	Yes
Launch templates	5	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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 \(p. 594\)](#).

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
		dkr.ecr-fips.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	ecr.us-west-2.amazonaws.com	HTTPS	
		api.ecr.us-west-2.amazonaws.com	HTTPS	
		ecr-fips.us-west-2.amazonaws.com	HTTPS	
		dkr.ecr-fips.us-west-2.amazonaws.com	HTTPS	
Africa (Cape Town)	af-south-1	ecr.af-south-1.amazonaws.com	HTTPS	
		api.ecr.af-south-1.amazonaws.com	HTTPS	
Asia Pacific (Hong Kong)	ap-east-1	ecr.ap-east-1.amazonaws.com	HTTPS	
		api.ecr.ap-east-1.amazonaws.com	HTTPS	
Asia Pacific (Mumbai)	ap-south-1	ecr.ap-south-1.amazonaws.com api.ecr.ap-south-1.amazonaws.com	HTTPS HTTPS	
Asia Pacific (Osaka)	ap-northeast-3	ecr.ap-northeast-3.amazonaws.com	HTTPS	
		api.ecr.ap-northeast-3.amazonaws.com	HTTPS	
Asia Pacific (Seoul)	ap-northeast-2	ecr.ap-northeast-2.amazonaws.com	HTTPS	
		api.ecr.ap-northeast-2.amazonaws.com	HTTPS	
Asia Pacific (Singapore)	ap-southeast-1	ecr.ap-southeast-1.amazonaws.com	HTTPS	
		api.ecr.ap-southeast-1.amazonaws.com	HTTPS	
Asia Pacific (Sydney)	ap-southeast-2	ecr.ap-southeast-2.amazonaws.com	HTTPS	
		api.ecr.ap-southeast-2.amazonaws.com	HTTPS	
Asia Pacific (Tokyo)	ap-northeast-1	ecr.ap-northeast-1.amazonaws.com	HTTPS	
		api.ecr.ap-northeast-1.amazonaws.com	HTTPS	
Canada (Central)	ca-central-1	ecr.ca-central-1.amazonaws.com	HTTPS	
		api.ecr.ca-central-1.amazonaws.com	HTTPS	
China (Beijing)	cn-north-1	ecr.cn-north-1.amazonaws.com.cn	HTTPS	
		api.ecr.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	ecr.cn-northwest-1.amazonaws.com.cn	HTTPS	
		api.ecr.cn-northwest-1.amazonaws.com.cn	HTTPS	
Europe (Frankfurt)	eu-central-1	ecr.eu-central-1.amazonaws.com	HTTPS	
		api.ecr.eu-central-1.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol	
Europe (Ireland)	eu-west-1	ecr.eu-west-1.amazonaws.com	HTTPS	
		api.ecr.eu-west-1.amazonaws.com	HTTPS	
Europe (London)	eu-west-2	ecr.eu-west-2.amazonaws.com	HTTPS	
		api.ecr.eu-west-2.amazonaws.com	HTTPS	
Europe (Milan)	eu-south-1	ecr.eu-south-1.amazonaws.com	HTTPS	
		api.ecr.eu-south-1.amazonaws.com	HTTPS	
Europe (Paris)	eu-west-3	ecr.eu-west-3.amazonaws.com	HTTPS	
		api.ecr.eu-west-3.amazonaws.com	HTTPS	
Europe (Stockholm)	eu-north-1	ecr.eu-north-1.amazonaws.com	HTTPS	
		api.ecr.eu-north-1.amazonaws.com	HTTPS	
Middle East (Bahrain)	me-south-1	ecr.me-south-1.amazonaws.com	HTTPS	
		api.ecr.me-south-1.amazonaws.com	HTTPS	
South America (São Paulo)	sa-east-1	ecr.sa-east-1.amazonaws.com	HTTPS	
		api.ecr.sa-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-East)	us-gov-east-1	ecr.us-gov-east-1.amazonaws.com	HTTPS	
		api.ecr.us-gov-east-1.amazonaws.com	HTTPS	
		ecr-fips.us-gov-east-1.amazonaws.com	HTTPS	
		dkr.ecr-fips.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	ecr.us-gov-west-1.amazonaws.com	HTTPS	
		api.ecr.us-gov-west-1.amazonaws.com	HTTPS	
		ecr-fips.us-gov-west-1.amazonaws.com	HTTPS	
		dkr.ecr-fips.us-gov-west-1.amazonaws.com	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 \(p. 594\)](#).

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol
US East (Ohio)	us-east-2	<i>&lt;registry-id&gt;</i> .dkr.ecr.us-east-2.amazonaws.com <i>&lt;registry-id&gt;</i> .dkr.ecr-fips.us-east-2.amazonaws.com	HTTPS
US East (N. Virginia)	us-east-1	<i>&lt;registry-id&gt;</i> .dkr.ecr.us-east-1.amazonaws.com <i>&lt;registry-id&gt;</i> .dkr.ecr-fips.us-east-1.amazonaws.com	HTTPS
US West (N. California)	us-west-1	<i>&lt;registry-id&gt;</i> .dkr.ecr.us-west-1.amazonaws.com <i>&lt;registry-id&gt;</i> .dkr.ecr-fips.us-west-1.amazonaws.com	HTTPS
US West (Oregon)	us-west-2	<i>&lt;registry-id&gt;</i> .dkr.ecr.us-west-2.amazonaws.com <i>&lt;registry-id&gt;</i> .dkr.ecr-fips.us-west-2.amazonaws.com	HTTPS
Asia Pacific (Hong Kong)	ap-east-1	<i>&lt;registry-id&gt;</i> .dkr.ecr.ap-east-1.amazonaws.com	HTTPS
Asia Pacific (Mumbai)	ap-south-1	<i>&lt;registry-id&gt;</i> .dkr.ecr.ap-south-1.amazonaws.com	HTTPS
Asia Pacific (Seoul)	ap-northeast-2	<i>&lt;registry-id&gt;</i> .dkr.ecr.ap-northeast-2.amazonaws.com	HTTPS
Asia Pacific (Singapore)	ap-southeast-1	<i>&lt;registry-id&gt;</i> .dkr.ecr.ap-southeast-1.amazonaws.com	HTTPS
Asia Pacific (Sydney)	ap-southeast-2	<i>&lt;registry-id&gt;</i> .dkr.ecr.ap-southeast-2.amazonaws.com	HTTPS
Asia Pacific (Tokyo)	ap-northeast-1	<i>&lt;registry-id&gt;</i> .dkr.ecr.ap-northeast-1.amazonaws.com	HTTPS
Canada (Central)	ca-central-1	<i>&lt;registry-id&gt;</i> .dkr.ecr.ca-central-1.amazonaws.com	HTTPS
China (Beijing)	cn-north-1	<i>&lt;registry-id&gt;</i> .dkr.ecr.cn-north-1.amazonaws.com.cn	HTTPS
China (Ningxia)	cn-northwest-1	<i>&lt;registry-id&gt;</i> .dkr.ecr.cn-northwest-1.amazonaws.com.cn	HTTPS
Europe (Frankfurt)	eu-central-1	<i>&lt;registry-id&gt;</i> .dkr.ecr.eu-central-1.amazonaws.com	HTTPS
Europe (Ireland)	eu-west-1	<i>&lt;registry-id&gt;</i> .dkr.ecr.eu-west-1.amazonaws.com	HTTPS
Europe (London)	eu-west-2	<i>&lt;registry-id&gt;</i> .dkr.ecr.eu-west-2.amazonaws.com	HTTPS
Europe (Paris)	eu-west-3	<i>&lt;registry-id&gt;</i> .dkr.ecr.eu-west-3.amazonaws.com	HTTPS
Europe (Stockholm)	eu-north-1	<i>&lt;registry-id&gt;</i> .dkr.ecr.eu-north-1.amazonaws.com	HTTPS

Region Name	Region	Endpoint	Protocol
Middle East (Bahrain)	me-south-1	<registry-id>.dkr.ecr.me-south-1.amazonaws.com	HTTPS
South America (São Paulo)	sa-east-1	<registry-id>.dkr.ecr.sa-east-1.amazonaws.com	HTTPS
AWS GovCloud (US-East)	us-gov-east-1	<registry-id>.dkr.ecr.us-gov-east-1.amazonaws.com <registry-id>.dkr.ecr-fips.us-gov-east-1.amazonaws.com	HTTPS
AWS GovCloud (US-West)	us-gov-west-1	<registry-id>.dkr.ecr.us-gov-west-1.amazonaws.com <registry-id>.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.  When an image is pushed to a repository, each image layer is checked to verify if it has been uploaded	200

Amazon ECR action	API operation	Description	Default quota value
		before. If it has been uploaded, then the image layer is skipped.	
	Rate of InitiateLayerUpload requests	<p>The rate of InitiateLayerUpload API requests that you can make per second, per Region.</p> <p>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.</p>	10
	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

Amazon ECR action	API operation	Description	Default quota value
	Rate of PutImage requests	The rate of PutImage API requests that you can make per second, per Region.  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.	10
Image pull	Rate of BatchGetImage requests	The rate of BatchGetImage API requests that you can make per second, per Region.  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.  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

Service quota	Description	Quota value
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 multipart uploads for image push operations.	10
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 day.	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	HTTPS	
		api.ecr-public.us-east-1.amazonaws.com	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 \(p. 592\)](#). 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 \(p. 596\)](#).

## Service endpoints

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
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	
China (Beijing)	cn-north-1	ecs.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	ecs.cn-northwest-1.amazonaws.com.cn	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	

Region Name	Region	Endpoint	Protocol	
AWS GovCloud (US-East)	us-gov-east-1	ecs.us-gov-east-1.amazonaws.com	HTTPS	
		ecs-fips.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	ecs.us-gov-west-1.amazonaws.com	HTTPS	
		ecs-fips.us-gov-west-1.amazonaws.com	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 account in the current Region.	10,000	Yes
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).  <b>Note</b> Services configured to use service discovery have a limit of 1,000 tasks per service. This is due to a Route 53 service quota.	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	10	No

Service quota	Description	Default quota value	Adjustable
	instances specified in a <code>StartTask</code> API action.		
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
Task definition max containers	The maximum number of containers definitions within a task definition.	10	No
Subnets specified in an <code>awsvpcConfiguration</code>	The maximum number of subnets specified within an <code>awsvpcConfiguration</code> .	16	No
Security groups specified in an <code>awsvpcConfiguration</code>	The maximum number of security groups specified within an <code>awsvpcConfiguration</code> .	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.	500	Yes
Fargate Spot resource count	The maximum number of Amazon ECS tasks running concurrently on Fargate Spot in this account in the current Region.	500	Yes

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
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	
China (Beijing)	cn-north-1	eks.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	eks.cn-northwest-1.amazonaws.com.cn	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	

Region Name	Region	Endpoint	Protocol	
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	HTTPS	
		eks.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	eks.us-gov-west-1.amazonaws.com	HTTPS	
		eks.us-gov-west-1.amazonaws.com	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
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.	500	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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



AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
Asia Pacific (Sydney)	ap-southeast-2	elasticfilesystem.ap-southeast-2.amazonaws.com	HTTPS	
		elasticfilesystem-fips.ap-southeast-2.amazonaws.com	HTTPS	
Asia Pacific (Tokyo)	ap-northeast-1	elasticfilesystem.ap-northeast-1.amazonaws.com	HTTPS	
		elasticfilesystem-fips.ap-northeast-1.amazonaws.com	HTTPS	
Canada (Central)	ca-central-1	elasticfilesystem.ca-central-1.amazonaws.com	HTTPS	
		elasticfilesystem-fips.ca-central-1.amazonaws.com	HTTPS	
China (Beijing)	cn-north-1	elasticfilesystem.cn-north-1.amazonaws.com.cn	HTTPS	
		elasticfilesystem-fips.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	elasticfilesystem.cn-northwest-1.amazonaws.com.cn	HTTPS	
		elasticfilesystem-fips.cn-northwest-1.amazonaws.com.cn	HTTPS	
Europe (Frankfurt)	eu-central-1	elasticfilesystem.eu-central-1.amazonaws.com	HTTPS	
		elasticfilesystem-fips.eu-central-1.amazonaws.com	HTTPS	
Europe (Ireland)	eu-west-1	elasticfilesystem.eu-west-1.amazonaws.com	HTTPS	
		elasticfilesystem-fips.eu-west-1.amazonaws.com	HTTPS	
Europe (London)	eu-west-2	elasticfilesystem.eu-west-2.amazonaws.com	HTTPS	
		elasticfilesystem-fips.eu-west-2.amazonaws.com	HTTPS	
Europe (Milan)	eu-south-1	elasticfilesystem.eu-south-1.amazonaws.com	HTTPS	
		elasticfilesystem-fips.eu-south-1.amazonaws.com	HTTPS	
Europe (Paris)	eu-west-3	elasticfilesystem.eu-west-3.amazonaws.com	HTTPS	
		elasticfilesystem-fips.eu-west-3.amazonaws.com	HTTPS	
Europe (Stockholm)	eu-north-1	elasticfilesystem.eu-north-1.amazonaws.com	HTTPS	
		elasticfilesystem-fips.eu-north-1.amazonaws.com	HTTPS	
Middle East (Bahrain)	me-south-1	elasticfilesystem.me-south-1.amazonaws.com	HTTPS	
		elasticfilesystem-fips.me-south-1.amazonaws.com	HTTPS	

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

## Service quotas

Name	Default	Adjustable
Active users per NFS client	128	No
Bursting throughput	1,024 Megabytes per second	No
Directory depth	1,000	No
EFS file locks	512	No
File hard links	177	No
File size	52,673,613,185,872 Bytes	No
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

Name	Default	Adjustable
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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  elasticloadbalancing-fips.us-east-2.amazonaws.com	Z3AADJGX6KTTL2	ZLMOA37VPKANP
US East (N. Virginia)	us-east-1	elasticloadbalancing.us-east-1.amazonaws.com  elasticloadbalancing-fips.us-east-1.amazonaws.com	Z35SXDOTRQ7X7K	Z26RNL4JYFTOTI
US West (N. California)	us-west-1	elasticloadbalancing.us-west-1.amazonaws.com  elasticloadbalancing-fips.us-west-1.amazonaws.com	Z368ELLRRE2KJ0	Z24FKFUX50B4VW
US West (Oregon)	us-west-2	elasticloadbalancing.us-west-2.amazonaws.com  elasticloadbalancing-fips.us-west-2.amazonaws.com	Z1H1FL5HABSF5	Z18D5FSROUN65G
Africa (Cape Town)	af-south-1	elasticloadbalancing.af-south-1.amazonaws.com	Z268VQBMOI5EKX	Z203XCE67M25HM

Region Name	Region	Endpoint	Route 53 Hosted Zone ID (Application Load Balancers, Classic Load Balancers)	Route 53 Hosted Zone ID (Network Load Balancers)
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
China (Ningxia)	cn-northwest-1	elasticloadbalancing.cn-northwest-1.amazonaws.com.cn	ZM7IZAI0VVDZF	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	Z3QSRYP46NYYV
South America (São Paulo)	sa-east-1	elasticloadbalancing.sa-east-1.amazonaws.com	Z2P70J7HTTTPLU	ZTK26PT1VY4CU

Region Name	Region	Endpoint	Route 53 Hosted Zone ID (Application Load Balancers, Classic Load Balancers)	Route 53 Hosted Zone ID (Network Load Balancers)
AWS GovCloud (US-East)	us-gov-east-1	elasticloadbalancing.us-gov-east-1.amazonaws.com	Z166TLBEW007G0	Z1ZSMQQ6Q24QQ8
AWS GovCloud (US-West)	us-gov-west-1	elasticloadbalancing.us-gov-west-1.amazonaws.com	Z33AYJ8TM3BH4J	ZMG1MZ2THAWF1

## Service quotas

Name	Default	Adjustable
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
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
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
Target ID Registrations per Application Load Balancer	100	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

Name	Default	Adjustable
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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

Name	Default	Adjustable
Burst size of Create Job requests	100	Yes
Burst size of Read Job requests	50	Yes
Concurrent jobs per pipeline	12	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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



AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
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	
China (Beijing)	cn-north-1	elasticache.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	elasticache.cn-northwest-1.amazonaws.com.cn	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	

Region Name	Region	Endpoint	Protocol	
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	HTTPS	
		elasticache.us-gov-west-1.amazonaws.com	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
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 Elasticsearch 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 \(p. 592\)](#). 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 \(p. 596\)](#).

## 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	
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	
China (Beijing)	cn-north-1	es.cn-north-1.amazonaws.com.cn	HTTPS	

Region Name	Region	Endpoint	Protocol	
China (Ningxia)	cn-northwest-1	es.cn-northwest-1.amazonaws.com.cn	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	HTTPS	
		es-fips.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	es.us-gov-west-1.amazonaws.com	HTTPS	
		es-fips.us-gov-west-1.amazonaws.com	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 Elasticsearch Service quotas](#).

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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

Region Name	Region	Endpoint	Protocol	
Asia Pacific (Tokyo)	ap-northeast-1	elasticmapreduce.ap-northeast-1.amazonaws.com	HTTPS	
Canada (Central)	ca-central-1	elasticmapreduce.ca-central-1.amazonaws.com elasticmapreduce-fips.ca-central-1.amazonaws.com	HTTPS HTTPS	
China (Beijing)	cn-north-1	elasticmapreduce.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	elasticmapreduce.cn-northwest-1.amazonaws.com.cn	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	
AWS GovCloud (US-East)	us-gov-east-1	elasticmapreduce.us-gov-east-1.amazonaws.com elasticmapreduce.us-gov-east-1.amazonaws.com	HTTPS HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	elasticmapreduce.us-gov-west-1.amazonaws.com elasticmapreduce.us-gov-west-1.amazonaws.com	HTTPS 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

Resource	Default
Clusters per AWS account	500
Instances per cluster	Amazon EC2 quotas for On-Demand, Spot, and Reserved Instances apply. For more information, see <a href="#">Service Quotas for Amazon EC2 (p. 184)</a> .
Amazon EBS volumes per core node	25
Amazon EMR notebooks per cluster	Dependent on master node instance type. For more information, see <a href="#">Notebook Limits Per Cluster</a> in the <i>Amazon EMR Management Guide</i> .

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*. You can request an increase to API throttling quotas for your AWS account.

API Action	Bucket Maximum Capacity	Bucket Refill Rate (per second)
<code>DescribeJobFlows</code>	20	0.2
<code>RunJobFlow</code>	10	0.5
<code>TerminateJobFlows</code>	10	0.5
<code>AddJobFlowSteps</code>	10	0.5
<code>AddInstanceGroups</code>	5	0.2
<code>ModifyInstanceGroups</code>	5	0.2
<code>SetTerminationProtection</code>	5	0.2
<code>SetVisibleToAllUsers</code>	5	0.2
<code>ListClusters</code>	20	0.5
<code>DescribeCluster</code>	10	1.0
<code>ListSteps</code>	10	0.5
<code>DescribeStep</code>	10	0.5
<code>ListInstanceGroups</code>	5	0.5
<code>ListBootstrapActions</code>	5	0.5
<code>ListInstances</code>	10	0.5
<code>AddTags</code>	5	0.5
<code>RemoveTags</code>	5	0.5
At the AWS account level, the bucket maximum capacity and	25	5

API Action	Bucket Maximum Capacity	Bucket Refill Rate (per second)
refill rate for the sum of all API actions listed above		

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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



AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
China (Beijing)	cn-north-1	events.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	events.cn-northwest-1.amazonaws.com.cn	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	HTTPS	
		events.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	events.us-gov-west-1.amazonaws.com	HTTPS	
		events.us-gov-west-1.amazonaws.com	HTTPS	

## Service quotas

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

# 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 \(p. 592\)](#). 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 \(p. 596\)](#).

## 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

Region Name	Region	Endpoint	Protocol
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
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 \(p. 592\)](#).

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 \(p. 596\)](#).

## 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	
US West (N. California)	us-west-1	fms.us-west-1.amazonaws.com	HTTPS	
		fms-fips.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	fms.us-west-2.amazonaws.com	HTTPS	
		fms-fips.us-west-2.amazonaws.com	HTTPS	
Africa (Cape Town)	af-south-1	fms.af-south-1.amazonaws.com	HTTPS	
		fms-fips.af-south-1.amazonaws.com	HTTPS	
Asia Pacific (Hong Kong)	ap-east-1	fms.ap-east-1.amazonaws.com	HTTPS	
		fms-fips.ap-east-1.amazonaws.com	HTTPS	
Asia Pacific (Mumbai)	ap-south-1	fms.ap-south-1.amazonaws.com	HTTPS	
		fms-fips.ap-south-1.amazonaws.com	HTTPS	
Asia Pacific (Seoul)	ap-northeast-2	fms.ap-northeast-2.amazonaws.com	HTTPS	
		fms-fips.ap-northeast-2.amazonaws.com	HTTPS	
Asia Pacific (Singapore)	ap-southeast-1	fms.ap-southeast-1.amazonaws.com	HTTPS	
		fms-fips.ap-southeast-1.amazonaws.com	HTTPS	
Asia Pacific (Sydney)	ap-southeast-2	fms.ap-southeast-2.amazonaws.com	HTTPS	
		fms-fips.ap-southeast-2.amazonaws.com	HTTPS	
Asia Pacific (Tokyo)	ap-northeast-1	fms.ap-northeast-1.amazonaws.com	HTTPS	
		fms-fips.ap-northeast-1.amazonaws.com	HTTPS	
Canada (Central)	ca-central-1	fms.ca-central-1.amazonaws.com	HTTPS	
		fms-fips.ca-central-1.amazonaws.com	HTTPS	
Europe (Frankfurt)	eu-central-1	fms.eu-central-1.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol	
		fms-fips.eu-central-1.amazonaws.com	HTTPS	
Europe (Ireland)	eu-west-1	fms.eu-west-1.amazonaws.com	HTTPS	
		fms-fips.eu-west-1.amazonaws.com	HTTPS	
Europe (London)	eu-west-2	fms.eu-west-2.amazonaws.com	HTTPS	
		fms-fips.eu-west-2.amazonaws.com	HTTPS	
Europe (Milan)	eu-south-1	fms.eu-south-1.amazonaws.com	HTTPS	
		fms-fips.eu-south-1.amazonaws.com	HTTPS	
Europe (Paris)	eu-west-3	fms.eu-west-3.amazonaws.com	HTTPS	
		fms-fips.eu-west-3.amazonaws.com	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	HTTPS	
		fms-fips.me-south-1.amazonaws.com	HTTPS	
South America (São Paulo)	sa-east-1	fms.sa-east-1.amazonaws.com	HTTPS	
		fms-fips.sa-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-East)	us-gov-east-1	fms.us-gov-east-1.amazonaws.com	HTTPS	
		fms-fips.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	fms.us-gov-west-1.amazonaws.com	HTTPS	
		fms-fips.us-gov-west-1.amazonaws.com	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	10	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

Name	Default	Adjustable
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
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

#### Amazon Forecast

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

Region Name	Region	Endpoint	Protocol	
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	
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

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

Region Name	Region	Endpoint	Protocol	
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	
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

Name	Default	Adjustable
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	1,000,000,000	Yes
Maximum number of tags you can add to a resource	50	No
Maximum number of time series per predictor	1,000,000	Yes
Maximum parallel running CreateDatasetImportJob tasks	3	Yes



Name	Default	Adjustable
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
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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

### Machine learning model

Resource	Default Limit
Training data size	5 GB per model training
Number of custom models per account	100
Number of versions per custom model	5000
Number of deployed model versions	20
Number of concurrent training jobs per custom model	3

### Applications and Evaluations

Resource	Default Limit
Number of variables per account	5000
Number of rules per account	5000
Number of outcomes per account	5000
Number of applications per account	100
Number of evaluations per application	100
Number of models per evaluation	10

### getEventEvaluation

Resource	Default Limit
Maximum event evaluations per account	200 TPS
Maximum size of payload per call	256 KB

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 \(p. 592\)](#). 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 \(p. 596\)](#).

## 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	
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	

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	

## 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

Region Name	Region	Endpoint	Protocol
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

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

## Service endpoints

Region Name	Region	Endpoint	Protocol	
US East (Ohio)	us-east-2	fsx.us-east-2.amazonaws.com	HTTPS	
		fsx-fips.us-east-2.amazonaws.com	HTTPS	
US East (N. Virginia)	us-east-1	fsx.us-east-1.amazonaws.com	HTTPS	
		fsx-fips.us-east-1.amazonaws.com	HTTPS	
US West (N. California)	us-west-1	fsx.us-west-1.amazonaws.com	HTTPS	
		fsx-fips.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	fsx.us-west-2.amazonaws.com	HTTPS	
		fsx-fips.us-west-2.amazonaws.com	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 (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	HTTPS	
		fsx-fips.ca-central-1.amazonaws.com	HTTPS	
China (Beijing)	cn-north-1	fsx.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	fsx.cn-northwest-1.amazonaws.com.cn	HTTPS	

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

Name	Default	Adjustable
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 *Amazon FSx for Lustre User Guide*
- [FSx for Windows quotas](#) in the *Amazon 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	



Region Name	Region	Endpoint	Protocol	
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	
China (Beijing)	cn-north-1	gamelift.cn-north-1.amazonaws.com.cn	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	
South America (São Paulo)	sa-east-1	gamelift.sa-east-1.amazonaws.com	HTTPS	

## Service quotas

Name	Default	Adjustable
Aliases per region	20	No
Build capacity	100 Gigabytes	No
Buils per region	1,000	No
Fleets per region	20	No
Game server groups per region	20	No
Game servers per game server group	1,000	No
Game session log file size	200 Megabytes	No
Instances per region	20	Yes
Matchmakers per account	100	No
Player sessions per game session	200	No
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
Canada (Central)	ca-central-1	glacier.ca-central-1.amazonaws.com glacier-fips.ca-central-1.amazonaws.com	HTTP and HTTPS HTTPS	
China (Beijing)	cn-north-1	glacier.cn-north-1.amazonaws.com.cn	HTTP and HTTPS	
China (Ningxia)	cn-northwest-1	glacier.cn-northwest-1.amazonaws.com.cn	HTTP and 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 glacier.us-gov-east-1.amazonaws.com	HTTP and HTTPS HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	glacier.us-gov-west-1.amazonaws.com glacier.us-gov-west-1.amazonaws.com	HTTP and HTTPS 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
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	Yes
Endpoints per endpoint group - Application Load Balancers	10	No
Endpoints per endpoint group - EC2 instances	10	Yes
Endpoints per endpoint group - Elastic IP addresses	10	Yes

Name	Default	Adjustable
Endpoints per endpoint group - Network Load Balancers	10	No
Endpoints per endpoint group - VPC subnets	10	Yes
Endpoints per endpoint group - more than one endpoint type	10	No
Listeners per accelerator	10	Yes
Port overrides per endpoint group	10	Yes
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
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	
China (Beijing)	cn-north-1	glue.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	glue.cn-northwest-1.amazonaws.com.cn	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	

Region Name	Region	Endpoint	Protocol	
AWS GovCloud (US-East)	us-gov-east-1	glue.us-gov-east-1.amazonaws.com	HTTPS	
		glue-fips.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	glue.us-gov-west-1.amazonaws.com	HTTPS	
		glue-fips.us-gov-west-1.amazonaws.com	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 Megabytes	Yes
Max task dpus per account	300	Yes

Name	Default	Adjustable
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
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*.

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	
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	
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	



Region Name	Region	Endpoint	Protocol	
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	
China (Beijing)	cn-north-1	databrew.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	databrew.cn-northwest-1.amazonaws.com.cn	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 (Paris)	eu-west-3	databrew.eu-west-3.amazonaws.com	HTTPS	
Europe (Stockholm)	eu-north-1	databrew.eu-north-1.amazonaws.com	HTTPS	
South America (São Paulo)	sa-east-1	databrew.sa-east-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
Open projects per AWS account	10	Yes
Projects per AWS account	100	Yes

Name	Default	Adjustable
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

Region Name	Region	Endpoint	Protocol	
US East (Ohio)	us-east-2	groundstation.us-east-2.amazonaws.com	HTTPS	
		groundstation-fips.us-east-2.amazonaws.com	HTTPS	
US East (N. Virginia)	us-east-1	groundstation.us-east-1.amazonaws.com	HTTPS	
		groundstation-fips.us-east-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	groundstation.us-west-2.amazonaws.com	HTTPS	
		groundstation-fips.us-west-2.amazonaws.com	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
(Hong Kong)				
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	
Canada (Central)	ca-central-1	guardduty.ca-central-1.amazonaws.com	HTTPS	
China (Beijing)	cn-north-1	guardduty.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	guardduty.cn-northwest-1.amazonaws.com.cn	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	

Region Name	Region	Endpoint	Protocol	
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	HTTPS	
		guardduty.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	guardduty.us-gov-west-1.amazonaws.com	HTTPS	
		guardduty.us-gov-west-1.amazonaws.com	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service Endpoints

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

## Quotas for Amazon HealthLake

### Throttling and quotas for Amazon HealthLake

The following table describes throttling limits for resource management within Amazon HealthLake. For information about limits that can be changed while the service is in preview, see [AWS Service Limits](#).

Description	Limit
CreateFHIRDatastore and DeleteFHIRDatastore	4 requests per 5 minutes
DescribeFHIRDatastore	4 TPS
ListFHIRDatastores	3 TPS
CreateResource, ReadResource, UpdateResource, DeleteResource, GetCapabilities	1 TPS
SearchWithGet and SearchWithPost	0.2 TPS
StartFHIRImportJob and StartFHIRExportJob	1 request per minute
DescribeFHIRImportJob and DescribeFHIRExportJob	1 TPS

The following table describes the Data Store service quotas for HealthLake for the preview period.

Description	Limit
Maximum active Data Stores per account	2 Data Stores
Maximum number of Data Stores being created per account	2 Data Store
Maximum characters for a medical note within the DocumentReference ResourceType (CreateResource/UpdateResource)	10,000 characters
Maximum resources for ingestion per Data Store	500,000

The following table lists the quotas for Import jobs for the preview period.

Description	Limit
Maximum job size	1 GB
Maximum file size	50 MB
Maximum number of files	100
Maximum number of Import jobs per Data Store	4
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 \(p. 592\)](#). 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 \(p. 596\)](#).

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	HTTPS	
		iam-fips.amazonaws.com	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	

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
China (Beijing)	cn-north-1	iam.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	iam.cn-north-1.amazonaws.com.cn	HTTPS	
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 iam.us-gov.amazonaws.com	HTTPS HTTPS	



## Service quotas

Quotas, also referred to as limits in AWS, are the maximum values for the resources, actions, and items in your AWS account. Use Service Quotas to manage your IAM quotas. You can request an increase to default quotas for adjustable IAM quotas. Requests up to the maximum are automatically approved and are completed within a few minutes.

To request a quota increase, sign in to the AWS Management Console and open the Service Quotas console at <https://console.aws.amazon.com/servicequotas/>. In the navigation pane, choose **AWS services**. On the navigation bar, choose the **US East (N. Virginia)** Region. Then search for **IAM**. Choose **AWS Identity and Access Management (IAM)**, choose 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*.

The following quotas are adjustable.

Name	Default	Maximum
Role trust policy length	2048 characters	4096 characters
Customer managed policies per account	1500	5000
Groups per account	300	500
Roles per account	1000	5000
Managed policies per role	10	20
Managed policies per user	10	20
Instance profiles per account	1000	5000
Server certificates per account	20	1000

These quotas can be changed. For information about other quotas that cannot be changed, see [IAM and 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
US East (N. Virginia)	us-east-1	access-analyzer.us-east-1.amazonaws.com	HTTPS	
		access-analyzer-fips.us-east-1.amazonaws.com	HTTPS	
US West (N. California)	us-west-1	access-analyzer.us-west-1.amazonaws.com	HTTPS	
		access-analyzer-fips.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	access-analyzer.us-west-2.amazonaws.com	HTTPS	
		access-analyzer-fips.us-west-2.amazonaws.com	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	HTTPS	
		access-analyzer-fips.ca-central-1.amazonaws.com	HTTPS	
China (Beijing)	cn-north-1	access-analyzer.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	access-analyzer.cn-northwest-1.amazonaws.com.cn	HTTPS	
Europe (Frankfurt)	eu-central-1	access-analyzer.eu-central-1.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol	
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	
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	HTTPS	
		access-analyzer.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	access-analyzer.us-gov-west-1.amazonaws.com	HTTPS	
		access-analyzer.us-gov-west-1.amazonaws.com	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Incident Manager 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	

Region Name	Region	Endpoint	Protocol	
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

## Incident Manager service quotas

Capability	Resource	Default
Incident Manager incidents	Replication sets per account	1
Incident Manager incidents	Regions per replication set	3
Incident Manager incidents	Incidents per response plan per month	200
Incident Manager incidents	Related items per incident	50
Incident Manager incidents	Timeline events per incident	1000
Incident Manager incidents	StartIncident requests per second	5
Incident Manager incidents	CreateResponsePlan requests per second	5

AWS General Reference Reference guide  
Incident Manager service quotas

Capability	Resource	Default
Incident Manager incidents	UpdateResponsePlan requests per second	5
Incident Manager incidents	DeleteResponsePlan requests per second	5
Incident Manager incidents	TagResource requests per second	5
Incident Manager incidents	Untag requests per second	5
Incident Manager incidents	CreateTimelineEvent requests per second	5
Incident Manager incidents	UpdateTimelineEvent requests per second	5
Incident Manager incidents	DeleteTimelineEvent requests per second	5
Incident Manager incidents	UpdateIncidentRecord requests per second	5
Incident Manager incidents	UpdateRelatedItems requests per second	5
Incident Manager incidents	DeleteIncidentRecord requests per second	5
Incident Manager incidents	CreateReplicationSet requests per second	1
Incident Manager incidents	UpdateReplicationSet requests per second	1
Incident Manager incidents	UpdateDeletionProtection requests per second	1
Incident Manager incidents	DeleteReplicationSet requests per second	1
Incident Manager incidents	PutResourcePolicy requests per second	5
Incident Manager incidents	DeleteResourcePolicy requests per second	5
Incident Manager incidents	All other requests per second	10
Incident Manager contacts	Contact per account	1000
Incident Manager contacts	Stages per plan	5
Incident Manager contacts	Contact channels per stage	10
Incident Manager contacts	Email engagements per contact per second	.05
Incident Manager contacts	SMS engagements per contact per second	.05
Incident Manager contacts	SNS engagements per contact per second	.05

Capability	Resource	Default
Incident Manager contacts	Voice engagements per contact per second	.05
Incident Manager contacts	Push notification engagements per contact per second	.05
Incident Manager contacts	StartEngagement requests per second	2
Incident Manager contacts	DescribeEngagement requests per second	1
Incident Manager contacts	DescribePage requests per second	1
Incident Manager contacts	ListEngagements requests per second	1
Incident Manager contacts	ListPageReceipts requests per second	1
Incident Manager contacts	ListPagesByContact requests per second	1
Incident Manager contacts	ListPagesByEngagement requests per second	1
Incident Manager contacts	StopEngagement requests per second	10
Incident Manager contacts	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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

Region Name	Region	Endpoint	Protocol	
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	
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	HTTPS	
		inspector-fips.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	inspector.us-gov-west-1.amazonaws.com	HTTPS	
		inspector-fips.us-gov-west-1.amazonaws.com	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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
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 \(p. 592\)](#). 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 \(p. 596\)](#).

## 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 (Sydney)	ap-southeast-2	iotanalytics.ap-southeast-2.amazonaws.com	HTTPS	
Asia Pacific (Tokyo)	ap-northeast-1	iotanalytics.ap-northeast-1.amazonaws.com	HTTPS	
China (Beijing)	cn-north-1	iotanalytics.cn-north-1.amazonaws.com.cn	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	Yes
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

Name	Default	Adjustable
Minimum data set refresh interval	15	Yes
Number of Parquet SchemaDefinition columns	100	Yes
Number of StartPipelineReprocessing requests	1,000	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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

- [Control Plane API Endpoints \(p. 270\)](#)
- [Data Plane API Endpoints \(p. 272\)](#)
- [Jobs Data Plane API Endpoints \(p. 274\)](#)
- [Secure Tunneling API Endpoints \(p. 276\)](#)

### Control Plane API Endpoints

The following table contains AWS Region-specific endpoints that AWS IoT Core supports for group management operations. For information about the actions supported by these 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	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	
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	
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	
AWS GovCloud (US-West)	us-gov-west-1	iot.us-gov-west-1.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 [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 Data Plane API 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 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	HTTPS	
US East (N. Virginia)	us-east-1	data.iot.us-east-1.amazonaws.com	HTTPS	

AWS General Reference Reference guide  
Service Endpoints

Region Name	Region	Endpoint	Protocol	
US West (N. California)	us-west-1	data.iot.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	data.iot.us-west-2.amazonaws.com	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	HTTPS	
China (Beijing)	cn-north-1	data.iot.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	data.iot.cn-northwest-1.amazonaws.com.cn	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	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	data.iot.us-gov-west-1.amazonaws.com	HTTPS	

## Jobs Data Plane API Endpoints

The Jobs Data Plane API endpoints are specific to each AWS Account and Region. To find the Jobs Data Plane API endpoint for your AWS Account and 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 Jobs Data Plane API 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	



Region Name	Region	Endpoint	Protocol	
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</i> .jobs.iot.us-gov-west-1.amazonaws.com	HTTPS	

## Secure Tunneling API 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	HTTPS	
US East (N. Virginia)	us-east-1	api.tunneling.iot.us-east-1.amazonaws.com	HTTPS	
US West (N. California)	us-west-1	api.tunneling.iot.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	api.tunneling.iot.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	

Region Name	Region	Endpoint	Protocol	
China (Beijing)	cn-north-1	api.tunneling.iot.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	api.tunneling.iot.cn-northwest-1.amazonaws.com.cn	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	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	api.tunneling.iot.us-gov-west-1.amazonaws.com	HTTPS	

## Service Quotas

### Contents

<a href="#">AWS IoT Core Bulk Thing Registration (p. 278)</a>
<a href="#">AWS IoT Core Rules Engine (p. 278)</a>
<a href="#">AWS IoT Core Throttling (p. 279)</a>
<a href="#">AWS IoT Core for LoRaWAN limits (p. 284)</a>
<a href="#">Billing Group Restrictions (p. 286)</a>
<a href="#">Device Shadows (p. 287)</a>

<a href="#">AWS IoT Core Fleet Provisioning (p. 288)</a>
<a href="#">AWS IoT Core Message Broker (p. 288)</a>
<a href="#">Protocols (p. 292)</a>
<a href="#">Security and Identity (p. 293)</a>
<a href="#">MQTT-based File Delivery (p. 295)</a>
<a href="#">Things (p. 295)</a>
<a href="#">Thing Groups (p. 296)</a>

## AWS IoT Core Bulk Thing Registration

Resource	Default	Note
Allowed registration tasks	1	For any given AWS account, only one bulk registration task can run at a time.
Data retention policy	30 days	After the bulk registration task (which can be long lived) is complete, data related to bulk thing registration is permanently deleted after 30 days.
Maximum line length	256K	Each line in an <a href="#">Amazon S3 input JSON file</a> can't exceed 256K in length.
Registration task termination	30 days	Any pending or incomplete bulk registration tasks are terminated after 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	Yes
Maximum number of actions per rule	The maximum number of entries in the rule's <code>actions</code> property.	10	No
Maximum number of rules per AWS account	The maximum number rule actions that can be	1,000	Yes

Resource	Description	Quota	Adjustable
	defined in a single AWS account.		
Rule size	The maximum number of UTF-8 encoded characters, including white space characters) that a rule document can contain.	256 KB	No

## AWS IoT Core Rules Engine HTTP Actions

Resource	Quota	Adjustable
Maximum length of an endpoint URL	2 KiB	No
Maximum number of headers per action	100	No
Maximum size of a header key	256 bytes	No
Maximum topic rule destinations per AWS account	1,000	No
Ports allowed for HTTP action	443 and 8443	No
Request timeout	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.

AWS General Reference Reference guide  
Service Quotas

API	Quota (tps)	Adjustable
AcceptCertificateTransfer	10	Yes
AddThingToBillingGroup	60	Yes
AddThingToThingGroup	60	Yes
AssociateTargetsWithJob	10	
AttachPolicy	15	Yes
AttachPrincipalPolicy	15	Yes
AttachThingPrincipal	15	
CancelCertificateTransfer	10	Yes
CancelJob	10	
CancelJobExecution	10	
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
CreateRoleAlias	10	Yes
CreateThing	15	Yes
CreateThingGroup	25	Yes
CreateThingType	15	Yes
CreateTopicRule	5	No
CreateTopicRuleDestination	5	No
DeleteAuthorizer	10	Yes
DeleteBillingGroup	15	Yes

AWS General Reference Reference guide  
Service Quotas

API	Quota (tps)	Adjustable
DeleteCertificate	10	Yes
DeleteDomainConfiguration	10	Yes
DeleteCACertificate	10	Yes
DeleteDynamicThingGroup	5	Yes
DeleteJob	10	
DeleteJobExecution	10	
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	No
DeleteTopicRuleDestination	5	No
DeleteV2LoggingLevel	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	
DescribeJobExecution	10	
DescribeProvisioningTemplate	10	Yes
DescribeProvisioningTemplateVersion	10	Yes

AWS General Reference Reference guide  
Service Quotas

API	Quota (tps)	Adjustable
DescribeRoleAlias	10	Yes
DescribeThing	350	Yes
DescribeThingGroup	100	Yes
DescribeThingType	10	Yes
DetachThingPrincipal	15	Yes
DisableTopicRule	5	No
EnableTopicRule	5	No
DetachPrincipalPolicy	15	Yes
DetachPolicy	15	Yes
GetEffectivePolicies	50	Yes
GetJobDocument	10	
GetLoggingOptions	2	No
GetPolicy	10	Yes
GetPolicyVersion	15	Yes
GetRegistrationCode	10	Yes
GetTopicRule	200	No
GetTopicRuleDestination	50	No
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	
ListJobExecutionsForThing	10	
ListJobs	10	
ListOutgoingCertificates	10	Yes
ListPolicies	10	Yes
ListPolicyPrincipals	10	Yes



AWS General Reference Reference guide  
Service Quotas

API	Quota (tps)	Adjustable
ListPolicyVersions	10	Yes
ListPrincipalPolicies	15	Yes
ListPrincipalThings	10	Yes
ListProvisioningTemplates	10	Yes
ListProvisioningTemplateVersions	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	No
ListTopicRules	1	No
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	No
SetDefaultAuthorizer	10	Yes
SetDefaultPolicyVersion	10	Yes
SetLoggingOptions	2	No
SetV2LoggingLevel	2	No
SetV2LoggingOptions	2	No

API	Quota (tps)	Adjustable
TagResource	10	Yes
TestAuthorization	10	Yes
TestInvokeAuthorizer	10	Yes
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	
UpdateProvisioningTemplate	10	Yes
UpdateRoleAlias	10	Yes
UpdateThing	10	Yes
UpdateThingGroup	15	Yes
UpdateTopicRuleDestination	5	No

## AWS IoT Core for LoRaWAN limits

### AWS IoT Core for LoRaWAN device data limits

Description	Quota (messages/second)	Adjustable
Uplink messages (Messages from devices received by AWS IoT Core for LoRaWAN)	50	Yes
Downlink messages (Messages from AWS IoT Core for LoRaWAN received by devices)	10	Yes

This table describes the maximum number of transactions per second (TPS) that can be made to each acton in the [AWS IoT Wireless API](#).

**AWS IoT Core for LoRaWAN and Amazon Sidewalk Integration API throttling**

API	Quota (tps)	Adjustable
AssociateAwsAccountWithPartnerAccount	10	Yes
AssociateWirelessDeviceWithThing	10	Yes
AssociateWirelessGatewayWithCertificate	10	No
AssociateWirelessGatewayWithThing	10	Yes
CreateDestination	10	Yes
CreateDeviceProfile	10	Yes
CreateServiceProfile	10	Yes
CreateWirelessDevice	10	Yes
CreateWirelessGateway	10	Yes
CreateWirelessGatewayTask	10	No
CreateWirelessGatewayTaskDefinition	10	No
DeleteDestination	10	Yes
DeleteDeviceProfile	10	Yes
DeleteServiceProfile	10	Yes
DeleteWirelessDevice	10	Yes
DeleteWirelessGateway	10	Yes
DeleteWirelessGatewayTask	10	No
DeleteWirelessGatewayTaskDefinition	10	No
DisassociateAwsAccountFromPartnerAccount	10	Yes
DisassociateWirelessDeviceFromThing	10	Yes
DisassociateWirelessGatewayFromCertificate	10	No
DisassociateWirelessGatewayFromThing	10	Yes
GetDestination	10	Yes
GetDeviceProfile	10	Yes
GetPartnerAccount	10	Yes
GetServiceEndpoint	10	No
GetServiceProfile	10	Yes
GetWirelessDevice	10	Yes
GetWirelessDeviceStatistics	10	No
GetWirelessGateway	10	Yes

API	Quota (tps)	Adjustable
GetWirelessGatewayCertificate	10	No
GetWirelessGatewayFirmwareInformation	10	No
GetWirelessGatewayStatistics	10	No
GetWirelessGatewayTask	10	No
GetWirelessGatewayTaskDefinition	10	No
ListDestinations	10	Yes
ListDeviceProfiles	10	Yes
ListPartnerAccounts	10	Yes
ListServiceProfiles	10	Yes
ListTagsForResource	10	Yes
ListWirelessDevices	10	Yes
ListWirelessGatewayTaskDefinitions	10	No
ListWirelessGateways	10	Yes
SendDataToWirelessDevice	10	Yes
TagResource	10	Yes
TestWirelessDevice	10	Yes
UntagResource	10	Yes
UpdateDestination	10	Yes
UpdatePartnerAccount	10	Yes
UpdateWirelessDevice	10	Yes
UpdateWirelessGateway	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 Shadows

The [Device Shadow Service API](#) is subject to these per-account limits, depending on the region.

### Device Shadow Service API limits

Region	Limit	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>• cn-north-1</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-1</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	Adjustable
Maximum depth of JSON device state documents	<p>The maximum number of levels in the <code>desired</code> or <code>reported</code> section of the JSON device state document is 5. For example:</p> <pre> "desired": {   "one": {     "two": {       "three": {         "four": {           "five": {             }           }         }       }     }   } } </pre>	
Maximum number of in-flight, unacknowledged messages per thing	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 shadow requests are	

Resource	Description	Adjustable
	rejected with a 429 error code until the number of in-flight requests drop below the limit.	
Maximum number of JSON objects per AWS account	Unlimited.	
Maximum number of shadows in an AWS account	Unlimited.	
Maximum size of a JSON state document	Each individual shadow document must be 8KB or less in size. Metadata doesn't contribute to the document size for service quotas or pricing.	Yes
Maximum thing name size	128 bytes of UTF-8 encoded characters.	
Maximum shadow name size	64 bytes of UTF-8 encoded characters.	
Requests per second per thing	The Device Shadow service supports up to 20 requests per second per thing. This quota is per thing, not per API.	No

**Note**

AWS IoT Core deletes a device shadow 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

Resource	Quota
Maximum number of fleet provisioning template versions per template	5
Maximum number of fleet provisioning templates per customer	256
Maximum size of fleet provisioning template	10 KiB
Maximum number of provisioning claims that can be generated per second by trusted user	10 tps

## AWS IoT Core Message Broker

Resource	Description	Default	Adjustable
Connect requests per second per account	AWS IoT Core restricts an account to a maximum number	500	Yes

AWS General Reference Reference guide  
Service Quotas

Resource	Description	Default	Adjustable
	of MQTT CONNECT requests per second.		
Connect requests per second per client ID	AWS IoT Core restricts MQTT CONNECT requests from the same accountId and clientId to 1 MQTT CONNECT operation per second.	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 \$aws/things/ <i>device</i> /shadow/update topic can result in publishing 3 additional messages to \$aws/things/ <i>device</i> /shadow/update/accepted, \$aws/things/ <i>device</i> /shadow/update/documents, and \$aws/things/ <i>device</i> /shadow/delta topics. In this case, AWS IoT Core counts those as 4 inbound publish requests. However, a single message to an unreserved topic like a/b is counted as a single inbound publish request.	20,000	Yes
Maximum concurrent client connections per account	The maximum number of concurrent connections allowed per account.	500,000	Yes

Resource	Description	Default	Adjustable
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 <code>PUBACK</code> message is returned by the server.	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	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 <code>PUBACK</code> message from the client after one hour, it drops the publish requests.	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 <code>a/b</code> and a rule is subscribed to topic filter <code>a/#</code> . An inbound publish request on topic <code>a/b</code> results in a total of 3 outbound publish requests.	20,000	Yes



Resource	Description	Default	Adjustable
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	Yes
Persistent session message requests per second per account	AWS IoT Core restricts an account to a maximum number of persisted message per second per account. This limit applies when AWS IoT Core stores the messages send to offline persistent sessions.	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	No
Subscriptions per account	AWS IoT Core restricts an account to a maximum number of subscriptions across all active connections.	500,000	Yes

Resource	Description	Default	Adjustable
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 <code>SUBACK</code> message to ensure that their subscription requests have been successfully processed.	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 <code>SUBSCRIBE</code> requests sent within a second, each with 3 subscriptions (topic filters), AWS IoT Core counts those as 6 subscriptions.	500	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 KiB	No

## Protocols

Resource	Description
Client ID size	128 bytes of UTF-8 encoded characters.
Connection inactivity (keep-alive interval)	For MQTT (or MQTT over WebSocket) connections, a client can request a keep-alive interval between 30—1200 seconds as part of the MQTT <code>CONNECT</code> message. AWS IoT Core starts the keep-alive timer for a client when sending <code>CONNACK</code> in response to the <code>CONNECT</code> message. This timer is reset whenever AWS IoT receives a <code>PUBLISH</code> , <code>SUBSCRIBE</code> , <code>PING</code> , or <code>PUBACK</code> message from the client. AWS IoT Core disconnects a client whose

Resource	Description
	<p>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>
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> ).
Maximum subscriptions per subscribe request	A single SUBSCRIBE request has a quota of 8 subscriptions.
Message size	The payload for every publish request can be no larger than 128 KB. AWS IoT Core rejects publish and connect requests larger than this size.
Restricted client ID prefix	\$ is reserved for AWS IoT Core-generated client IDs.
Restricted topic prefix	Topics that start with \$ 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).
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> ).
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.

## Security and Identity

Resource	Default	Adjustable
Maximum number of AWS IoT Core role aliases per AWS Account per AWS Region	100	No
Maximum number of CA certificates with the same	10	No

AWS General Reference Reference guide  
Service Quotas

Resource	Default	Adjustable
subject field allowed per AWS account per Region		
Maximum number of device certificates that can be registered per second	15	Yes
Maximum number of named policy versions per policy	5	No
Maximum number of policies that can be attached to a certificate or Amazon Cognito identity	10	No
Maximum policy document size	2048 characters (excluding white space)	No
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	10	No
Custom authentication: minimum connection duration (value of <code>DisconnectAfterInSecs</code> )	300	No
Custom authentication: maximum connection duration (value of <code>DisconnectAfterInSecs</code> )	86,400	No
Custom authentication: minimum policy refresh rate (value of <code>RefreshAfterInSecs</code> )	300	No
Custom authentication: maximum policy refresh rate (value of <code>RefreshAfterInSecs</code> )	86,400	No
Configurable endpoints: maximum number of domain configurations per account	10	Yes

## MQTT-based File Delivery

### MQTT-based File Delivery Resource Quotas

Resource	Default	Adjustable
Streams per account	10000*	Yes
Files per stream	10	No
File size	24 MB	No
Maximum data block size	128 KB	No
Minimum data block size	256 bytes	No
Maximum block offset specified in a stream file request	98,304	No
Maximum blocks that can be requested per stream file request	98,304	No
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	Default	Adjustable
Maximum number of thing attributes for a thing with a thing type	50	Yes
Maximum number of thing attributes for a thing without a thing type	3	No
Maximum number of groups to which a thing can belong	10	No

Resource	Default	Adjustable
Maximum number of thing types in an AWS account	Unlimited.	
Number of thing types that can be associated with a thing	1	
Maximum thing name size	128 bytes of UTF-8 encoded characters.	
Size of thing attributes per thing	47 KB	Yes

## Thing Groups

Resource	Default	Adjustable
Maximum number of thing groups a thing can belong to	10	No
Maximum number of things in a thing group	Unlimited	No
Maximum depth of a thing group hierarchy	7	No
Maximum number of attributes associated with a thing group	50	No
Maximum number of direct child groups	100	No
Maximum number of dynamic groups	100	No
Maximum thing group name size	128 bytes of UTF-8 encoded characters.	No
Maximum size of a thing group attribute name, in chars.	128	No
Maximum size of a thing group attribute value, in chars.	800	No
Maximum number of policies attached to a static thing 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 \(p. 592\)](#). 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 \(p. 596\)](#).

## 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	
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	

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	
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
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 \(p. 592\)](#).

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 \(p. 596\)](#).

## 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
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
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

AWS General Reference Reference guide  
Service Endpoints

Region Name	Region	Endpoint	Protocol
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 Device Management supports additional endpoints for working with jobs. These endpoints add an 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:

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
China (Beijing)	cn-north-1	<i>prefix</i> .iot.cn-north-1.amazonaws.com.cn	MQTT
China (Ningxia)	cn-northwest-1	<i>prefix</i> .iot.cn-northwest-1.amazonaws.com.cn	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

AWS General Reference Reference guide  
Service Endpoints

Region Name	Region	Endpoint	Protocol
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

Region Name	Region	Endpoint	Protocol
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
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

Region Name	Region	Endpoint	Protocol
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 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
US East (N. Virginia)	us-east-1	<i>api.tunneling.iot.us-east-1.amazonaws.com</i>	HTTPS
US West (N. California)	us-west-1	<i>api.tunneling.iot.us-west-1.amazonaws.com</i>	HTTPS
US West (Oregon)	us-west-2	<i>api.tunneling.iot.us-west-2.amazonaws.com</i>	HTTPS
Asia Pacific (Hong Kong)	ap-east-1	<i>api.tunneling.iot.ap-east-1.amazonaws.com</i>	HTTPS
Asia Pacific (Mumbai)	ap-south-1	<i>api.tunneling.iot.ap-south-1.amazonaws.com</i>	HTTPS

AWS General Reference Reference guide  
Service Endpoints

Region Name	Region	Endpoint	Protocol	
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	
China (Beijing)	cn-north-1	api.tunneling.iot.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	api.tunneling.iot.cn-northwest-1.amazonaws.com.cn	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	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	api.tunneling.iot.us-gov-west-1.amazonaws.com	HTTPS	

### Secure Tunneling Device Connection Endpoints

Region Name	Region	Endpoint	Protocol
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
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

Region Name	Region	Endpoint	Protocol
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

## Service Quotas

### Contents

<a href="#">AWS IoT Fleet Indexing (p. 306)</a>
<a href="#">AWS IoT Jobs (p. 307)</a>
<a href="#">AWS IoT Secure Tunneling (p. 310)</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



Resource	Default	Notes	Adjustable
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
SearchIndex	15	Yes
UpdateIndexingConfiguration		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	No

AWS General Reference Reference guide  
Service Quotas

Resource	Minimum	Maximum	Notes	Adjustable
			up to 10 pre-signed URLs in the Job Doc. Only pre-signed URLs are supported as variables.	
Concurrent jobs being deleted	0	10	The maximum number of jobs that can have a <code>DELETION_IN_PROGRESS</code> 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 S3 job document that can be sent to an AWS IoT device is 32 KB.	Yes
DocumentSource	N/A	1350 characters		No
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
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

AWS General Reference Reference guide  
Service Quotas

Resource	Minimum	Maximum	Notes	Adjustable
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
<a href="#">DescribeJobExecution</a> and <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> property of <a href="#">TimeoutConfig</a>		10080	Values are in minutes (1 minute to 7 days).	No
<a href="#">StartNextPendingExecution</a> and <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

Resource	Minimum	Maximum	Notes	Adjustable
<code>stepTimeoutInMinutes</code> value passed with <code>UpdateJobExecution</code> and <code>StartNextPendingJobExecution</code>		10080	Values are in minutes (1 minute to 7 days). A value of -1 is also valid when using the <code>UpdateJobExecution</code> API and discards a previously set timer.	No

† 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
Web applications	10 per region per account
Alarms	100 per region per account

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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 (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	
China (Beijing)	cn-north-1	iotevents.cn-north-1.amazonaws.com.cn	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	

## 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 (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	
China (Beijing)	cn-north-1	data.iotevents.cn-north-1.amazonaws.com.cn	HTTPS	
Europe (Frankfurt)	eu-central-1	data.iotevents.eu-central-1.amazonaws.com	HTTPS	
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	

## Service quotas

Name	Default	Adjustable
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 event	10	Yes
Maximum events per state	20	Yes
Maximum transition events per state	20	Yes
Message size	1 Kilobytes	Yes
Messages per detector per second	10	No
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
Total messages evaluated per second	1,000	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 \(p. 592\)](#). 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 \(p. 596\)](#).

## 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	
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-East)	us-gov-east-1	greengrass.us-gov-east-1.amazonaws.com	HTTPS	
		greengrass-fips.us-gov-east-1.amazonaws.com	HTTPS	
		greengrass.us-gov-east-1.amazonaws.com	HTTPS	
		greengrass-ats.iot.us-gov-east-1.amazonaws.com	MQTT and HTTPS	



Region Name	Region	Endpoint	Protocol
AWS GovCloud (US-West)	us-gov-west-1	greengrass.us-gov-west-1.amazonaws.com	HTTPS
		greengrass.us-gov-west-1.amazonaws.com	HTTPS
		greengrass-ats.iot.us-gov-west-1.amazonaws.com	MQTT and 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
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

Region Name	Region	Endpoint	Protocol
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 \(p. 317\)](#), 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	greengrass-ats.iot.us-east-2.amazonaws.com	HTTPS
US East (N. Virginia)	us-east-1	greengrass-ats.iot.us-east-1.amazonaws.com	HTTPS
US West (Oregon)	us-west-2	greengrass-ats.iot.us-west-2.amazonaws.com	HTTPS
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 \(p. 317\)](#), 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
Europe (Frankfurt)	eu-central-1	<i>prefix</i> .iot.eu-central-1.amazonaws.com	HTTPS, MQTT
Europe (Ireland)	eu-west-1	<i>prefix</i> .iot.eu-west-1.amazonaws.com	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

Region Name	Region	Endpoint	Protocol
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. 318)</a> .
Maximum number of subscriptions per group.	10000
Maximum number of subscriptions that specify Cloud as the source per group.	50
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 \(p. 314\)](#), 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 <code>CLOUD</code> 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 400 MB when using <a href="#">OTA updates</a>
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 \(p. 592\)](#). 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 \(p. 596\)](#).

## 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	
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	HTTPS	
		greengrass.us-gov-west-1.amazonaws.com	HTTPS	
		greengrass-ats.iot.us-gov-west-1.amazonaws.com	MQTT and HTTPS	

Region Name	Region	Endpoint	Protocol
AWS GovCloud (US-East)	us-gov-east-1	greengrass.us-gov-east-1.amazonaws.com	HTTPS
		greengrass.us-gov-east-1.amazonaws.com	HTTPS
		greengrass-ats.iot.us-gov-east-1.amazonaws.com	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.

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
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

Region Name	Region	Endpoint	Protocol
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 \(p. 323\)](#), 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	greengrass-ats.iot.us-east-2.amazonaws.com	HTTPS
US East (N. Virginia)	us-east-1	greengrass-ats.iot.us-east-1.amazonaws.com	HTTPS
US West (Oregon)	us-west-2	greengrass-ats.iot.us-west-2.amazonaws.com	HTTPS
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 \(p. 323\)](#), 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
Europe (Frankfurt)	eu-central-1	<i>prefix</i> .iot.eu-central-1.amazonaws.com	HTTPS, MQTT
Europe (Ireland)	eu-west-1	<i>prefix</i> .iot.eu-west-1.amazonaws.com	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

Region Name	Region	Endpoint	Protocol
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 \(p. 596\)](#).

### 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	4 KB	No	The deployment document includes the component configurations, deployment configurations, and payload overhead.
Maximum size of deployment document for a thing group deployment	16 KB	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	
China (Beijing)	cn-north-1	iotsitewise.cn-north-1.amazonaws.com.cn	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	

## Service quotas

Name	Default	Adjustable
Depth of asset hierarchy tree	10	Yes
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

Name	Default	Adjustable
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	Yes
Maximum number of flows triggered	5 Count/Second	Yes
Maximum number of steps executed per deployment	50 Count/Second	Yes

AWS General Reference Reference guide  
Service quotas

Name	Default	Adjustable
TPS limit for AssociateEntityToThing	10 Count/ Second	Yes
TPS limit for CreateDeploymentConfiguration	10 Count/ Second	Yes
TPS limit for CreateFlowTemplate	10 Count/ Second	Yes
TPS limit for CreateSystemInstance	10 Count/ Second	Yes
TPS limit for CreateSystemTemplate	10 Count/ Second	Yes
TPS limit for DeleteDeploymentConfiguration	10 Count/ Second	Yes
TPS limit for DeleteFlowTemplate	10 Count/ Second	Yes
TPS limit for DeleteNamespace	10 Count/ Second	Yes
TPS limit for DeleteSystemInstance	10 Count/ Second	Yes
TPS limit for DeleteSystemTemplate	10 Count/ Second	Yes
TPS limit for DeployConfigurationToTarget	10 Count/ Second	Yes
TPS limit for DeploySystemInstance	10 Count/ Second	Yes
TPS limit for DeprecateDeploymentConfiguration	10 Count/ Second	Yes
TPS limit for DeprecateFlowTemplate	10 Count/ Second	Yes
TPS limit for DeprecateSystemTemplate	10 Count/ Second	Yes
TPS limit for DescribeNamespace	10 Count/ Second	Yes
TPS limit for DissociateEntityFromThing	10 Count/ Second	Yes
TPS limit for GetDeploymentConfiguration	10 Count/ Second	Yes
TPS limit for GetEntities	10 Count/ Second	Yes
TPS limit for GetFlowTemplate	10 Count/ Second	Yes

Name	Default	Adjustable
TPS limit for GetFlowTemplateRevisions	10 Count/Second	Yes
TPS limit for GetNamespaceDeletionStatus	10 Count/Second	Yes
TPS limit for GetRecentUploads	10 Count/Second	Yes
TPS limit for GetSystemInstance	10 Count/Second	Yes
TPS limit for GetSystemTemplate	10 Count/Second	Yes
TPS limit for GetSystemTemplateRevisions	10 Count/Second	Yes
TPS limit for GetUploadStatus	10 Count/Second	Yes
TPS limit for ListFlowExecutionMessages	10 Count/Second	Yes
TPS limit for ListMappingPaths	10 Count/Second	Yes
TPS limit for SearchDeploymentConfigurations	10 Count/Second	Yes
TPS limit for SearchEntities	10 Count/Second	Yes
TPS limit for SearchFlowExecutions	10 Count/Second	Yes
TPS limit for SearchFlowTemplates	10 Count/Second	Yes
TPS limit for SearchSystemInstance	10 Count/Second	Yes
TPS limit for SearchSystemTemplates	10 Count/Second	Yes
TPS limit for SearchThings	10 Count/Second	Yes
TPS limit for UndeploySystemInstance	10 Count/Second	Yes
TPS limit for UpdateFlowTemplate	10 Count/Second	Yes
TPS limit for UpdateSystemTemplate	10 Count/Second	Yes
TPS limit for UploadEntityDefinitions	10 Count/Second	Yes

Name	Default	Adjustable
TPS limit for ValidateEntityDefinitions	10 Count/ 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
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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



Name	Default	Adjustable
Metadata payload	1 Kilobytes	No
Playback authorization key pairs	3	No
Playback token size	2 Kilobytes	No
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

Region Name	Region	Endpoint	Protocol	
US East (N. Virginia)	us-east-1	kendra.us-east-1.amazonaws.com	HTTPS	
		kendra-fips.us-east-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	kendra.us-west-2.amazonaws.com	HTTPS	
		kendra-fips.us-west-2.amazonaws.com	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	
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	No
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
Query attributes user group list size	10	Yes
Query capacity unit	20	Yes
Storage capacity unit	20	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

Region Name	Region	Endpoint	Protocol	
US East (Ohio)	us-east-2	cassandra.us-east-2.amazonaws.com	TLS	

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
China (Beijing)	cn-north-1	cassandra.cn-north-1.amazonaws.com.cn	TLS	
China (Ningxia)	cn-northwest-1	cassandra.cn-northwest-1.amazonaws.com.cn	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	

Region Name	Region	Endpoint	Protocol	
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.

Region Name	Region	FIPS Endpoint	Protocol
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

Name	Default	Adjustable
Account-level read throughput quota (Provisioned mode)	80,000	Yes
Account-level write throughput quota (Provisioned mode)	80,000	Yes
Concurrent DDL operations	50	Yes
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
Asia Pacific (Osaka)	ap-northeast-3	kms.ap-northeast-3.amazonaws.com	HTTPS	
		kms-fips.ap-northeast-3.amazonaws.com	HTTPS	
Asia Pacific (Seoul)	ap-northeast-2	kms.ap-northeast-2.amazonaws.com	HTTPS	
		kms-fips.ap-northeast-2.amazonaws.com	HTTPS	
Asia Pacific (Singapore)	ap-southeast-1	kms.ap-southeast-1.amazonaws.com	HTTPS	
		kms-fips.ap-southeast-1.amazonaws.com	HTTPS	
Asia Pacific (Sydney)	ap-southeast-2	kms.ap-southeast-2.amazonaws.com	HTTPS	
		kms-fips.ap-southeast-2.amazonaws.com	HTTPS	
Asia Pacific (Tokyo)	ap-northeast-1	kms.ap-northeast-1.amazonaws.com	HTTPS	
		kms-fips.ap-northeast-1.amazonaws.com	HTTPS	
Canada (Central)	ca-central-1	kms.ca-central-1.amazonaws.com	HTTPS	
		kms-fips.ca-central-1.amazonaws.com	HTTPS	
China (Beijing)	cn-north-1	kms.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	kms.cn-northwest-1.amazonaws.com.cn	HTTPS	
Europe (Frankfurt)	eu-central-1	kms.eu-central-1.amazonaws.com	HTTPS	
		kms-fips.eu-central-1.amazonaws.com	HTTPS	
Europe (Ireland)	eu-west-1	kms.eu-west-1.amazonaws.com	HTTPS	
		kms-fips.eu-west-1.amazonaws.com	HTTPS	
Europe (London)	eu-west-2	kms.eu-west-2.amazonaws.com	HTTPS	
		kms-fips.eu-west-2.amazonaws.com	HTTPS	
Europe (Milan)	eu-south-1	kms.eu-south-1.amazonaws.com	HTTPS	
		kms-fips.eu-south-1.amazonaws.com	HTTPS	
Europe (Paris)	eu-west-3	kms.eu-west-3.amazonaws.com	HTTPS	
		kms-fips.eu-west-3.amazonaws.com	HTTPS	
Europe (Stockholm)	eu-north-1	kms.eu-north-1.amazonaws.com	HTTPS	
		kms-fips.eu-north-1.amazonaws.com	HTTPS	
Middle East (Bahrain)	me-south-1	kms.me-south-1.amazonaws.com	HTTPS	
		kms-fips.me-south-1.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol	
South America (São Paulo)	sa-east-1	kms.sa-east-1.amazonaws.com	HTTPS	
		kms-fips.sa-east-1.amazonaws.com	HTTPS	
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	5,500 per second	Yes
Customer Master Keys (CMKs)	10,000	Yes

Name	Default	Adjustable
DeleteAlias request rate	15 per second	Yes
DeleteCustomKeyStore request rate	5 per second	Yes
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



Name	Default	Adjustable
GetPublicKey request rate	2,000 per second	Yes
Grants per CMK	50,000	Yes
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
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

# 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 \(p. 592\)](#). 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 \(p. 596\)](#).

## 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	
China (Beijing)	cn-north-1	kinesisanalytics.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	kinesisanalytics.cn-northwest-1.amazonaws.com.cn	HTTPS	
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 (KPIUs)	32	Yes
Application count	50	Yes
Input Parallelism in input streams for SQL applications	64	No
Kinesis Processing Units (KPIUs)	8	Yes
SQL Kinesis Processing Units (KPIUs)	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
Asia Pacific (Singapore)	ap-southeast-1	firehose.ap-southeast-1.amazonaws.com	HTTPS	
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	
China (Beijing)	cn-north-1	firehose.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	firehose.cn-northwest-1.amazonaws.com.cn	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	HTTPS	
		firehose-fips.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	firehose.us-gov-west-1.amazonaws.com	HTTPS	
		firehose-fips.us-gov-west-1.amazonaws.com	HTTPS	

## Service quotas

Name	Default	Adjustable
Delivery streams	50	Yes
Rate of CreateDeliveryStream requests	5	No
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	1,000	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	1	No
Rate of records	1,000	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
US West (Oregon)	us-west-2	kinesis.us-west-2.amazonaws.com	HTTPS	
		kinesis-fips.us-west-2.amazonaws.com	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	
China (Beijing)	cn-north-1	kinesis.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	kinesis.cn-northwest-1.amazonaws.com.cn	HTTPS	
Europe (Frankfurt)	eu-central-1	kinesis.eu-central-1.amazonaws.com	HTTPS	

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

## Service quotas

Name	Default	Adjustable
Shards per Region	200	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 \(p. 592\)](#). 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 \(p. 596\)](#).



## 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	
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
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	1,000	Yes
PutMedia bandwidth	100 Megabits per second	Yes
PutMedia concurrent connections per stream	1	No

AWS General Reference Reference guide  
Service quotas

Name	Default	Adjustable
PutMedia fragment duration	10 Seconds	Yes
PutMedia fragment size	50 Megabytes	No
PutMedia minimum fragment duration	1 Seconds	No
PutMedia tracks	3	No
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

AWS General Reference Reference guide  
Service quotas

Name	Default	Adjustable
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
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

Name	Default	Adjustable
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
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

Name	Default	Adjustable
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
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	
China (Beijing)	cn-north-1	lakeformation.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	lakeformation.cn-northwest-1.amazonaws.com.cn	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	HTTPS	
		lakeformation-fips.us-gov-west-1.amazonaws.com	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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



AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
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	
China (Beijing)	cn-north-1	lambda.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	lambda.cn-northwest-1.amazonaws.com.cn	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	

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

## Service quotas

Name	Default	Adjustable
Asynchronous payload	256 Kilobytes	No
Burst concurrency	500	No
Concurrent executions	1,000	Yes
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

Name	Default	Adjustable
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

Region Name	Region	Endpoint	Protocol
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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	
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	

Region Name	Region	Endpoint	Protocol	
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	
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	HTTPS	
		models-fips.lex.us-east-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	models.lex.us-west-2.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol	
		models-fips.lex.us-west-2.amazonaws.com	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	
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	HTTPS	
		models-fips.lex.us-gov-west-1.amazonaws.com	HTTPS	

## Runtime endpoints

Region Name	Region	Endpoint	Protocol	
US East (N. Virginia)	us-east-1	runtime.lex.us-east-1.amazonaws.com	HTTPS	
		runtime-fips.lex.us-east-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	runtime.lex.us-west-2.amazonaws.com	HTTPS	
		runtime-fips.lex.us-west-2.amazonaws.com	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	

Region Name	Region	Endpoint	Protocol	
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	HTTPS	
		runtime-fips.lex.us-gov-west-1.amazonaws.com	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
Intents per bot locale (V2)	100	Yes
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 \(p. 592\)](#). 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 \(p. 596\)](#).



## 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	
US West (Oregon)	us-west-2	license-manager.us-west-2.amazonaws.com	HTTPS	
		license-manager-fips.us-west-2.amazonaws.com	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	
China (Beijing)	cn-north-1	license-manager.cn-north-1.amazonaws.com.cn	HTTPS	

Region Name	Region	Endpoint	Protocol	
China (Ningxia)	cn-northwest-1	license-manager.cn-northwest-1.amazonaws.com.cn	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	
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	HTTPS	
		license-manager-fips.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	license-manager.us-gov-west-1.amazonaws.com	HTTPS	
		license-manager-fips.us-gov-west-1.amazonaws.com	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
Number of Report generators	25	No
Number of grants per license	2,000	No

Name	Default	Adjustable
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	

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

## Service quotas

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

Name	Default	Adjustable
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
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

Amazon Location is available in the following AWS Regions:

Region name	Region code	
US East (N. Virginia)	us-east-1	
US East (Ohio)	us-east-2	
US West (Oregon)	us-west-2	
Europe (Ireland)	eu-west-1	

Region name	Region code	
Asia Pacific (Tokyo)	ap-northeast-1	

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 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

Name	Default	Adjustable
Geofence Collection resources per account	1,000	Yes
Geofences per Geofence Collection	50,000	Yes
Map resources per account	20	Yes
Place Index resources per account	20	Yes
Rate of AssociateTrackerConsumer API requests	10	Yes
Rate of BatchDeleteGeofence API requests	50	Yes
Rate of BatchEvaluateGeofences API requests	50	Yes
Rate of BatchGetDevicePosition API requests	50	Yes
Rate of BatchPutGeofence API requests	50	Yes
Rate of BatchUpdateDevicePosition API requests	50	Yes
Rate of CreateGeofenceCollection API requests	10	Yes
Rate of CreateMap API requests	10	Yes
Rate of CreatePlaceIndex API requests	10	Yes
Rate of CreateTracker API requests	10	Yes
Rate of DeleteGeofenceCollection API requests	10	Yes

AWS General Reference Reference guide  
Service quotas

Name	Default	Adjustable
Rate of DeleteMap API requests	10	Yes
Rate of DeletePlaceIndex API requests	10	Yes
Rate of DeleteTracker API requests	10	Yes
Rate of DescribeGeofenceCollection API requests	10	Yes
Rate of DescribeMap API requests	10	Yes
Rate of DescribePlaceIndex API requests	10	Yes
Rate of DescribeTracker API requests	10	Yes
Rate of DisassociateTrackerConsumer API requests	10	Yes
Rate of GetDevicePosition API requests	50	Yes
Rate of GetDevicePositionHistory API requests	50	Yes
Rate of GetGeofence API requests	50	Yes
Rate of GetMapGlyphs API requests	50	Yes
Rate of GetMapSprites API requests	50	Yes
Rate of GetMapStyleDescriptor API requests	50	Yes
Rate of GetMapTile API requests	500	Yes
Rate of ListGeofenceCollections API requests	10	Yes
Rate of ListGeofences API requests	50	Yes
Rate of ListMaps API requests	10	Yes
Rate of ListPlaceIndexes API requests	10	Yes
Rate of ListTrackerConsumers API requests	10	Yes
Rate of ListTrackers API requests	10	Yes
Rate of PutGeofence API requests	50	Yes
Rate of SearchPlaceIndexForPosition API requests	50	Yes
Rate of SearchPlaceIndexForText API requests	50	Yes
Tracker consumers per tracker	10	Yes
Tracker resources per account	100	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 \(p. 592\)](#). 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 \(p. 596\)](#).

## 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
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



Name	Default	Adjustable
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 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 \(p. 592\)](#). 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 \(p. 596\)](#).

## 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

Name	Default	Adjustable
ImageDimension	4,096	No
ImageFileSize	8 Megabytes	No
ImagesPerTestingDataset	16,000	No
ImagesPerTrainingDataset	16,000	No
ImagesPerTrialDetectionDataset	2,000	No
InferenceUnits	5	Yes
MinImageDimension	64	No
Models	100	Yes
Projects	100	Yes
Rate of API requests	5 per second	Yes
Rate of DetectAnomalies requests	10 per second	Yes

Name	Default	Adjustable
RunningModels	2	Yes
TrainingJobs	2	Yes
TrialDetectionTasks	2	Yes

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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

#### Amazon Macie

Region Name	Region	Endpoint	Protocol	
US East (Ohio)	us-east-2	macie2.us-east-2.amazonaws.com	HTTPS	
		macie2-fips.us-east-2.amazonaws.com	HTTPS	
US East (N. Virginia)	us-east-1	macie2.us-east-1.amazonaws.com	HTTPS	
		macie2-fips.us-east-1.amazonaws.com	HTTPS	
US West (N. California)	us-west-1	macie2.us-west-1.amazonaws.com	HTTPS	
		macie2-fips.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	macie2.us-west-2.amazonaws.com	HTTPS	
		macie2-fips.us-west-2.amazonaws.com	HTTPS	
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	

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
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	HTTPS	
		macie-fips.us-east-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	macie.us-west-2.amazonaws.com	HTTPS	
		macie-fips.us-west-2.amazonaws.com	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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

Region Name	Region	Endpoint	Protocol	
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 \(p. 592\)](#). 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 \(p. 596\)](#).

## 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](#).

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

## 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	



AWS General Reference Reference guide  
Service Endpoints

Region Name	Region	Endpoint	Protocol	
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	
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	

Region Name	Region	Endpoint	Protocol	
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	

AWS General Reference Reference guide  
Service Endpoints

Region Name	Region	Endpoint	Protocol	
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 (Hong Kong)	ap-east-1	kafka.ap-east-1.amazonaws.com	HTTPS	
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	
China (Beijing)	cn-north-1	kafka.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	kafka.cn-northwest-1.amazonaws.com.cn	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	

Region Name	Region	Endpoint	Protocol	
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	
AWS GovCloud (US-West)	us-gov-west-1	kafka.us-gov-west-1.amazonaws.com	HTTPS	

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

Region Name	Region	Endpoint	Protocol	
US East (Ohio)	us-east-2	mediacconnect.us-east-2.amazonaws.com	HTTPS	
US East (N. Virginia)	us-east-1	mediacconnect.us-east-1.amazonaws.com	HTTPS	
US West (N. California)	us-west-1	mediacconnect.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	mediacconnect.us-west-2.amazonaws.com	HTTPS	
Asia Pacific (Hong Kong)	ap-east-1	mediacconnect.ap-east-1.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol	
Asia Pacific (Mumbai)	ap-south-1	mediacconnect.ap-south-1.amazonaws.com	HTTPS	
Asia Pacific (Seoul)	ap-northeast-2	mediacconnect.ap-northeast-2.amazonaws.com	HTTPS	
Asia Pacific (Singapore)	ap-southeast-1	mediacconnect.ap-southeast-1.amazonaws.com	HTTPS	
Asia Pacific (Sydney)	ap-southeast-2	mediacconnect.ap-southeast-2.amazonaws.com	HTTPS	
Asia Pacific (Tokyo)	ap-northeast-1	mediacconnect.ap-northeast-1.amazonaws.com	HTTPS	
Europe (Frankfurt)	eu-central-1	mediacconnect.eu-central-1.amazonaws.com	HTTPS	
Europe (Ireland)	eu-west-1	mediacconnect.eu-west-1.amazonaws.com	HTTPS	
Europe (London)	eu-west-2	mediacconnect.eu-west-2.amazonaws.com	HTTPS	
Europe (Paris)	eu-west-3	mediacconnect.eu-west-3.amazonaws.com	HTTPS	
Europe (Stockholm)	eu-north-1	mediacconnect.eu-north-1.amazonaws.com	HTTPS	
South America (São Paulo)	sa-east-1	mediacconnect.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 \(p. 592\)](#). 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 \(p. 596\)](#).

## 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	
China (Ningxia)	cn-northwest-1	subscribe.mediaconvert.cn-northwest-1.amazonaws.com.cn	HTTPS	

Region Name	Region	Endpoint	Protocol	
Europe (Frankfurt)	eu-central-1	mediaconvert.eu-central-1.amazonaws.com	HTTPS	
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	20	Yes
Concurrent jobs per on-demand queue, peak	100	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 \(p. 592\)](#).

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 \(p. 596\)](#).

## 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 \(p. 615\)](#).

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



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

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

These are the endpoints for live content workflows.

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

Region Name	Region	Endpoint	Protocol	
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.

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

Region Name	Region	Endpoint	Protocol	
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	50	No

Name	Default	Adjustable
Burst rate of REST API requests	50	No
Channels	30	Yes
Concurrent harvest jobs	3	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	5	No
Rate of REST API requests	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	10	No
Tracks per ingest stream	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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

Region Name	Region	Endpoint	Protocol	
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
Rate of PutObject API requests for standard upload availability	100	Yes
Rate of PutObject API requests for streaming upload availability	10	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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
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

Name	Default	Adjustable
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	
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 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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



Region Name	Region	Endpoint	Protocol	
Canada (Central)	ca-central-1	mq.ca-central-1.amazonaws.com	HTTPS	
China (Beijing)	cn-north-1	mq.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	mq.cn-northwest-1.amazonaws.com.cn	HTTPS	
Europe (Frankfurt)	eu-central-1	mq.eu-central-1.amazonaws.com	HTTPS	
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	

## Service quotas

Name	Default	Adjustable
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

Name	Default	Adjustable
Revisions per configuration	300	No
Security groups per broker	5	No
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	ap-east-1	rds.ap-east-1.amazonaws.com	HTTP and HTTPS	

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
(Hong Kong)				
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	
China (Ningxia)	cn-northwest-1	rds.cn-northwest-1.amazonaws.com.cn	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	

Region Name	Region	Endpoint	Protocol	
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 \(p. 592\)](#). 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 \(p. 596\)](#).

## Service endpoints

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

Region Name	Region	Endpoint	Protocol	
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	
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	

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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](#).

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	
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	

Region Name	Region	Endpoint	Protocol	
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 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.

Region Name	Region	Endpoint	Protocol	
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	
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	



Region Name	Region	Endpoint	Protocol	
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
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	HTTPS	
		organizations.us-east-1.amazonaws.com	HTTPS	
		organizations-fips.us-east-1.amazonaws.com	HTTPS	
US East (N. Virginia)	us-east-1	organizations.us-east-1.amazonaws.com	HTTPS	
		organizations.us-east-1.amazonaws.com	HTTPS	
		organizations-fips.us-east-1.amazonaws.com	HTTPS	
US West (N. California)	us-west-1	organizations.us-east-1.amazonaws.com	HTTPS	
		organizations.us-east-1.amazonaws.com	HTTPS	
		organizations-fips.us-east-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	organizations.us-east-1.amazonaws.com	HTTPS	
		organizations.us-east-1.amazonaws.com	HTTPS	
		organizations-fips.us-east-1.amazonaws.com	HTTPS	
Africa (Cape Town)	af-south-1	organizations.us-east-1.amazonaws.com	HTTPS	
		organizations.us-east-1.amazonaws.com	HTTPS	
		organizations-fips.us-east-1.amazonaws.com	HTTPS	
Asia Pacific (Hong Kong)	ap-east-1	organizations.us-east-1.amazonaws.com	HTTPS	
		organizations.us-east-1.amazonaws.com	HTTPS	
		organizations-fips.us-east-1.amazonaws.com	HTTPS	
Asia Pacific (Mumbai)	ap-south-1	organizations.us-east-1.amazonaws.com	HTTPS	
		organizations.us-east-1.amazonaws.com	HTTPS	
		organizations-fips.us-east-1.amazonaws.com	HTTPS	

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
Asia Pacific (Osaka)	ap-northeast-3	organizations.us-east-1.amazonaws.com	HTTPS	
		organizations.us-east-1.amazonaws.com	HTTPS	
		organizations-fips.us-east-1.amazonaws.com	HTTPS	
Asia Pacific (Seoul)	ap-northeast-2	organizations.us-east-1.amazonaws.com	HTTPS	
		organizations.us-east-1.amazonaws.com	HTTPS	
		organizations-fips.us-east-1.amazonaws.com	HTTPS	
Asia Pacific (Singapore)	ap-southeast-1	organizations.us-east-1.amazonaws.com	HTTPS	
		organizations.us-east-1.amazonaws.com	HTTPS	
		organizations-fips.us-east-1.amazonaws.com	HTTPS	
Asia Pacific (Sydney)	ap-southeast-2	organizations.us-east-1.amazonaws.com	HTTPS	
		organizations.us-east-1.amazonaws.com	HTTPS	
		organizations-fips.us-east-1.amazonaws.com	HTTPS	
Asia Pacific (Tokyo)	ap-northeast-1	organizations.us-east-1.amazonaws.com	HTTPS	
		organizations.us-east-1.amazonaws.com	HTTPS	
		organizations-fips.us-east-1.amazonaws.com	HTTPS	
Canada (Central)	ca-central-1	organizations.us-east-1.amazonaws.com	HTTPS	
		organizations.us-east-1.amazonaws.com	HTTPS	
		organizations-fips.us-east-1.amazonaws.com	HTTPS	
China (Beijing)	cn-north-1	organizations.cn-northwest-1.amazonaws.com.cn	HTTPS	
		organizations.cn-northwest-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	organizations.cn-northwest-1.amazonaws.com.cn	HTTPS	
		organizations.cn-northwest-1.amazonaws.com.cn	HTTPS	
Europe (Frankfurt)	eu-central-1	organizations.us-east-1.amazonaws.com	HTTPS	
		organizations.us-east-1.amazonaws.com	HTTPS	
		organizations-fips.us-east-1.amazonaws.com	HTTPS	
Europe (Ireland)	eu-west-1	organizations.us-east-1.amazonaws.com	HTTPS	
		organizations.us-east-1.amazonaws.com	HTTPS	
		organizations-fips.us-east-1.amazonaws.com	HTTPS	

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

## Service quotas

Name	Default	Adjustable
Default maximum number of accounts	4	Yes
Enable all features request expiration	90	No

Name	Default	Adjustable
Handshake expiration	30	No
Invitation acceptance expiration	15	No
Member accounts you can concurrently create	5	No
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
US West (Oregon)	us-west-2	outposts.us-west-2.amazonaws.com	HTTPS	
		outposts-fips.us-west-2.amazonaws.com	HTTPS	
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 (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	HTTPS	
		outposts-fips.ca-central-1.amazonaws.com	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	HTTPS	
		outposts.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	outposts.us-gov-west-1.amazonaws.com	HTTPS	
		outposts.us-gov-west-1.amazonaws.com	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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

AWS General Reference Reference guide  
Service quotas

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

AWS General Reference Reference guide  
Service quotas

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 \(p. 592\)](#). 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 \(p. 596\)](#).

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

AWS General Reference Reference guide  
Service quotas

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

AWS General Reference Reference guide  
Service quotas

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



AWS General Reference Reference guide  
Service quotas

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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

Region Name	Region	Endpoint	Protocol	
US East (Ohio)	us-east-2	polly.us-east-2.amazonaws.com	HTTPS	
		polly-fips.us-east-2.amazonaws.com	HTTPS	
US East (N. Virginia)	us-east-1	polly.us-east-1.amazonaws.com	HTTPS	
		polly-fips.us-east-1.amazonaws.com	HTTPS	
US West (N. California)	us-west-1	polly.us-west-1.amazonaws.com	HTTPS	
		polly-fips.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	polly.us-west-2.amazonaws.com	HTTPS	
		polly-fips.us-west-2.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	
Asia Pacific (Tokyo)	ap-northeast-1	polly.ap-northeast-1.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol	
Canada (Central)	ca-central-1	polly.ca-central-1.amazonaws.com	HTTPS	
China (Ningxia)	cn-northwest-1	polly.cn-northwest-1.amazonaws.com.cn	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	HTTPS	
		polly-fips.us-gov-west-1.amazonaws.com	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 Characters	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 Characters	Yes
StartSpeechSynthesisTask lexicons count	5	No
StartSpeechSynthesisTask total characters limit	200,000 Characters	Yes
SynthesizeSpeech billed characters limit	3,000 Characters	Yes
SynthesizeSpeech lexicons count	5	No
SynthesizeSpeech total characters limit	6,000 Characters	Yes

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

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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

For more information, see [AWS Proton quotas](#) 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

#### QLDB control plane

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

## QLDB transactional data plane

Region Name	Region	Endpoint	Protocol	
US East (Ohio)	us-east-2	session.qldb.us-east-2.amazonaws.com	HTTPS	
		session.qldb-fips.us-east-2.amazonaws.com	HTTPS	
US East (N. Virginia)	us-east-1	session.qldb.us-east-1.amazonaws.com	HTTPS	
		session.qldb-fips.us-east-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	session.qldb.us-west-2.amazonaws.com	HTTPS	
		session.qldb-fips.us-west-2.amazonaws.com	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	

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	sa-east-1	quicksight.sa-east-1.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol	
(São Paulo)				
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	https://us-east-2.quicksight.amazonaws.com
US East (N. Virginia)	us-east-1	https://us-east-1.quicksight.amazonaws.com
US West (Oregon)	us-west-2	https://us-west-2.quicksight.aws.amazon.com
Asia Pacific (Singapore)	ap-southeast-1	https://ap-southeast-1.quicksight.aws.amazon.com
Asia Pacific (Sydney)	ap-southeast-2	https://ap-southeast-2.quicksight.aws.amazon.com
Asia Pacific (Tokyo)	ap-northeast-1	https://ap-northeast-1.quicksight.aws.amazon.com
Europe (Frankfurt)	eu-central-1	https://eu-central-1.quicksight.aws.amazon.com
Europe (Ireland)	eu-west-1	https://eu-west-1.quicksight.aws.amazon.com
Europe (London)	eu-west-2	https://eu-west-2.quicksight.aws.amazon.com

## 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 Seconds	No



Name	Default	Adjustable
The maximum amount of time to wait for a dataset preview	45 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
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 ram-fips.ca-central-1.amazonaws.com	HTTPS HTTPS	
China (Beijing)	cn-north-1	ram.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	ram.cn-northwest-1.amazonaws.com.cn	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 ram.us-gov-east-1.amazonaws.com	HTTPS HTTPS	

Region Name	Region	Endpoint	Protocol	
AWS GovCloud (US-West)	us-gov-west-1	ram.us-gov-west-1.amazonaws.com	HTTPS	
		ram.us-gov-west-1.amazonaws.com	HTTPS	

## Service quotas

Name	Default	Adjustable
Number of pending invitations	20	Yes
Number of resource shares	5,000	Yes
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

#### Redshift API

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
(Hong Kong)				
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	
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 redshift-fips.ca-central-1.amazonaws.com	HTTPS HTTPS	
China (Beijing)	cn-north-1	redshift.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	redshift.cn-northwest-1.amazonaws.com.cn	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	

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

### Redshift Data API

Region Name	Region	Endpoint	Protocol	
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 (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	

Region Name	Region	Endpoint	Protocol	
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	
China (Beijing)	cn-north-1	redshift-data.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	redshift-data.cn-northwest-1.amazonaws.com.cn	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	
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service Endpoints

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

Region Name	Region	Endpoint	Protocol	
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	HTTPS	
		rekognition-fips.us-gov-west-1.amazonaws.com	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
<p>Transactions per second per account for individual Amazon Rekognition Image data plane operations:</p> <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. 433)</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>
<p>Transactions per second per account for the personal protective equipment data plane operation:</p> <ul style="list-style-type: none"> <li>• <a href="#">DetectProtectiveEquipment</a></li> </ul>	<p>In each Region that Amazon Rekognition Image supports – 5</p>
<p>Transactions per second per account for individual Amazon Rekognition Image control plane operations:</p> <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> </ul>	<p>In each Region that Amazon Rekognition Image supports – 5</p>

Resource	Default
<ul style="list-style-type: none"> <li>ListCollections</li> </ul>	
<p>Transactions per second per account for individual stored video start operations:</p> <ul style="list-style-type: none"> <li>StartCelebrityRecognition</li> <li>StartContentModeration</li> <li>StartFaceDetection</li> <li>StartFaceSearch</li> <li>StartLabelDetection</li> <li>StartPersonTracking</li> <li>StartTextDetection</li> <li>StartSegmentDetection</li> </ul>	<p>In each Region that Amazon Rekognition Video supports – 5</p> <p>Note that StartCelebrityRecognition is not available in AWS GovCloud.</p>
<p>Transactions per second per account for individual Amazon Rekognition Video stored video get operations:</p> <ul style="list-style-type: none"> <li>GetCelebrityRecognition</li> <li>GetContentModeration</li> <li>GetFaceDetection</li> <li>GetFaceSearch</li> <li>GetLabelDetection</li> <li>GetPersonTracking</li> <li>GetTextDetection</li> <li>GetSegmentDetection</li> </ul>	<ul style="list-style-type: none"> <li>US East (Ohio) Region – 5</li> <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
<p>Transactions per second per account for individual streaming video operations:</p> <ul style="list-style-type: none"> <li>CreateStreamProcessor</li> <li>DeleteStreamProcessor</li> <li>DescribeStreamProcessor</li> <li>ListStreamProcessors</li> <li>StartStreamProcessor</li> <li>StopStreamProcessor</li> </ul>	In each Region that Amazon Rekognition Video supports – 1

Resource	Default
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
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

#### Amazon RDS

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
		rds-fips.us-east-2.amazonaws.com	HTTPS	
US East (N. Virginia)	us-east-1	rds.us-east-1.amazonaws.com	HTTPS	
		rds-fips.us-east-1.amazonaws.com	HTTPS	
US West (N. California)	us-west-1	rds.us-west-1.amazonaws.com	HTTPS	
		rds-fips.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	rds.us-west-2.amazonaws.com	HTTPS	
		rds-fips.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	
		rds-fips.ca-central-1.amazonaws.com	HTTPS	
China (Beijing)	cn-north-1	rds.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	rds.cn-northwest-1.amazonaws.com.cn	HTTPS	

Region Name	Region	Endpoint	Protocol	
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	

## Amazon RDS Performance Insights

Region Name	Region	Endpoint	Protocol	
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	ap-east-1	pi.ap-east-1.amazonaws.com	HTTPS	

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
(Hong Kong)				
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	
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	
China (Beijing)	cn-north-1	pi.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	pi.cn-northwest-1.amazonaws.com.cn	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
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 result set size	1 Megabytes	No
Data API requests per second	1,000	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 concurrent requests	500	No
Total storage for all DB instances	100,000 Gigabytes	Yes

## AWS Resource Groups 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

#### Resource Groups

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



AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
China (Beijing)	cn-north-1	resource-groups.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	resource-groups.cn-northwest-1.amazonaws.com.cn	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	
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	HTTPS	
		resource-groups.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	resource-groups.us-gov-west-1.amazonaws.com	HTTPS	
		resource-groups.us-gov-west-1.amazonaws.com	HTTPS	

## Resource Groups tagging API

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	
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	
China (Beijing)	cn-north-1	tagging.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	tagging.cn-northwest-1.amazonaws.com.cn	HTTPS	

Region Name	Region	Endpoint	Protocol	
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	
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	

## Service quotas

Name	Default	Adjustable
Resource groups per account	100	Yes

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

## 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

Name	Default	Adjustable
Simulation duration	14	No
Simulation job requests per batch	20	Yes
Source size	5 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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 \(p. 615\)](#).

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	

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
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	
China (Beijing)	cn-north-1	route53.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	route53.amazonaws.com.cn	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	

Region Name	Region	Endpoint	Protocol	
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

Region Name	Region	Endpoint	Protocol	
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	

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
China (Beijing)	cn-north-1	route53resolver.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	route53resolver.cn-northwest-1.amazonaws.com.cn	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	
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	



Region Name	Region	Endpoint	Protocol	
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 \(p. 89\)](#). 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
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

Name	Default	Adjustable
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	100,000	Yes
Domains per account	100,000	Yes
IP addresses per resolver endpoint	6	No
Maximum number of resolver endpoints per AWS Region	4	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	HTTPS	
		api-fips.sagemaker.us-east-2.amazonaws.com	HTTPS	

AWS General Reference Reference guide  
Service Endpoints

Region Name	Region	Endpoint	Protocol	
US East (N. Virginia)	us-east-1	api.sagemaker.us-east-1.amazonaws.com	HTTPS	
		api-fips.sagemaker.us-east-1.amazonaws.com	HTTPS	
US West (N. California)	us-west-1	api.sagemaker.us-west-1.amazonaws.com	HTTPS	
		api-fips.sagemaker.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	api.sagemaker.us-west-2.amazonaws.com	HTTPS	
		api-fips.sagemaker.us-west-2.amazonaws.com	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 (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	
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	
China (Beijing)	cn-north-1	api.sagemaker.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	api.sagemaker.cn-northwest-1.amazonaws.com.cn	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	

Region Name	Region	Endpoint	Protocol	
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 api-fips.sagemaker.us-gov-west-1.amazonaws.com api.sagemaker.us-gov-west-1.amazonaws.com	HTTPS HTTPS HTTPS	

The following table provides a list of Region-specific endpoints that Amazon SageMaker supports for making inference requests against models hosted in SageMaker.

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

AWS General Reference Reference guide  
Service Endpoints

Region Name	Region	Endpoint	Protocol	
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 (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	
China (Beijing)	cn-north-1	runtime.sagemaker.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	runtime.sagemaker.cn-northwest-1.amazonaws.com.cn	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	
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	

Region Name	Region	Endpoint	Protocol	
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 runtime.sagemaker.us-gov-west-1.amazonaws.com	HTTPS 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
KernelGateway-ml.g4dn.8xlarge	0
KernelGateway-ml.g4dn.12xlarge	0
KernelGateway-ml.g4dn.16xlarge	0

Resource	Default
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
Max running apps per account	20
Number of user profiles per account	2

### SageMaker Images

Resource	Default
Number of SageMaker Images	250
Number of image versions per SageMaker image	1,000

### SageMaker Notebooks

Resource	Default
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

AWS General Reference Reference guide  
Service Quotas

Resource	Default
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
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



Resource	Default
ml.p3.16xlarge instances	0
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

### 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.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

Resource	Default
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
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**

Resource	Default
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

AWS General Reference Reference guide  
Service Quotas

Resource	Default
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	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

Resource	Default
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

Resource	Default
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
ml.m4.4xlarge instances	2
ml.m4.10xlarge instances	0
ml.m4.16xlarge instances	0

Resource	Default
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
ml.p4d.24xlarge instances	0
Number of instances across training jobs	4
Number of instances per training job	20

### SageMaker Autopilot

Resource	Default
Maximum dataset size in GB	5
Maximum number of parallel Autopilot Jobs	1

### SageMaker Automatic Model Hyperparameter Tuning

Resource	Default
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)

Resource	Default
Number of trials	300
Number of experiments	5,000

Resource	Default
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

### SageMaker Hosting

Resource	Default
ml.c4.large instances	0
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

AWS General Reference Reference guide  
Service Quotas

Resource	Default
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
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



AWS General Reference Reference guide  
Service Quotas

Resource	Default
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
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

AWS General Reference Reference guide  
Service Quotas

Resource	Default
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
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

Resource	Default
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

Resource	Default
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	1
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

Resource	Default
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
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	
China (Beijing)	cn-north-1	secretsmanager.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	secretsmanager.cn-northwest-1.amazonaws.com.cn	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	

Region Name	Region	Endpoint	Protocol	
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	HTTPS	
		secretsmanager-fips.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	secretsmanager.us-gov-west-1.amazonaws.com	HTTPS	
		secretsmanager-fips.us-gov-west-1.amazonaws.com	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 \(p. 592\)](#). 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 \(p. 596\)](#).

## Service endpoints

Region Name	Region	Endpoint	Protocol	
US East (Ohio)	us-east-2	securityhub.us-east-2.amazonaws.com	HTTPS	
		securityhub-fips.us-east-2.amazonaws.com	HTTPS	
US East (N. Virginia)	us-east-1	securityhub.us-east-1.amazonaws.com	HTTPS	
		securityhub-fips.us-east-1.amazonaws.com	HTTPS	
US West (N. California)	us-west-1	securityhub.us-west-1.amazonaws.com	HTTPS	
		securityhub-fips.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	securityhub.us-west-2.amazonaws.com	HTTPS	
		securityhub-fips.us-west-2.amazonaws.com	HTTPS	
Africa (Cape Town)	af-south-1	securityhub.af-south-1.amazonaws.com	HTTPS	
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	
China (Beijing)	cn-north-1	securityhub.cn-north-1.amazonaws.com.cn	HTTPS	

Region Name	Region	Endpoint	Protocol	
China (Ningxia)	cn-northwest-1	securityhub.cn-northwest-1.amazonaws.com.cn	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	
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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*.

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
China (Beijing)	cn-north-1	sts.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	sts.cn-northwest-1.amazonaws.com.cn	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	
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 \(p. 592\)](#). 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 \(p. 596\)](#).

## Service endpoints

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

Region Name	Region	Endpoint	Protocol	
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	
China (Beijing)	cn-north-1	sms.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	sms.cn-northwest-1.amazonaws.com.cn	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	
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	HTTPS	
		sms-fips.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	sms.us-gov-west-1.amazonaws.com	HTTPS	
		sms-fips.us-gov-west-1.amazonaws.com	HTTPS	

## Service quotas

Name	Default	Adjustable
Concurrent VM migrations	50	Yes

Name	Default	Adjustable
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	
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	

Region Name	Region	Endpoint	Protocol	
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	
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

Name	Default	Adjustable
Active requests per account	20	No
Active requests per account per Region	2	No

AWS General Reference Reference guide  
Service quotas

Name	Default	Adjustable
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
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 PutServiceQuotaIncreaseRequestIntoTemplate	1 per second	No
Throttle rate for RequestServiceQuotaIncrease	3 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 \(p. 592\)](#). 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 \(p. 596\)](#).

## 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	
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	



Region Name	Region	Endpoint	Protocol	
China (Beijing)	cn-north-1	serverlessrepo.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	serverlessrepo.cn-northwest-1.amazonaws.com.cn	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	HTTPS	
		serverlessrepo.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	serverlessrepo.us-gov-west-1.amazonaws.com	HTTPS	
		serverlessrepo.us-gov-west-1.amazonaws.com	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	HTTPS	
		servicecatalog-fips.us-east-2.amazonaws.com	HTTPS	
US East (N. Virginia)	us-east-1	servicecatalog.us-east-1.amazonaws.com	HTTPS	
		servicecatalog-fips.us-east-1.amazonaws.com	HTTPS	
US West (N. California)	us-west-1	servicecatalog.us-west-1.amazonaws.com	HTTPS	
		servicecatalog-fips.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	servicecatalog.us-west-2.amazonaws.com	HTTPS	
		servicecatalog-fips.us-west-2.amazonaws.com	HTTPS	
Africa (Cape Town)	af-south-1	servicecatalog.af-south-1.amazonaws.com	HTTPS	
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	

Region Name	Region	Endpoint	Protocol	
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	
China (Beijing)	cn-north-1	servicecatalog.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	servicecatalog.cn-northwest-1.amazonaws.com.cn	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	
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	HTTPS	
		servicecatalog-fips.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	servicecatalog.us-gov-west-1.amazonaws.com	HTTPS	
		servicecatalog-fips.us-gov-west-1.amazonaws.com	HTTPS	

## Service quotas

Name	Default	Adjustable
Applications per region	100	Yes

Name	Default	Adjustable
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
		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	
Asia Pacific (Seoul)	ap-northeast-2	shield.us-east-1.amazonaws.com	HTTPS	
		shield.us-east-1.amazonaws.com	HTTPS	
		shield-fips.us-east-1.amazonaws.com	HTTPS	
Asia Pacific (Singapore)	ap-southeast-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 (Sydney)	ap-southeast-2	shield.us-east-1.amazonaws.com	HTTPS	
		shield.us-east-1.amazonaws.com	HTTPS	
		shield-fips.us-east-1.amazonaws.com	HTTPS	

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
Asia Pacific (Tokyo)	ap-northeast-1	shield.us-east-1.amazonaws.com	HTTPS	
		shield.us-east-1.amazonaws.com	HTTPS	
		shield-fips.us-east-1.amazonaws.com	HTTPS	
Canada (Central)	ca-central-1	shield.us-east-1.amazonaws.com	HTTPS	
		shield.us-east-1.amazonaws.com	HTTPS	
		shield-fips.us-east-1.amazonaws.com	HTTPS	
Europe (Frankfurt)	eu-central-1	shield.us-east-1.amazonaws.com	HTTPS	
		shield.us-east-1.amazonaws.com	HTTPS	
		shield-fips.us-east-1.amazonaws.com	HTTPS	
Europe (Ireland)	eu-west-1	shield.us-east-1.amazonaws.com	HTTPS	
		shield.us-east-1.amazonaws.com	HTTPS	
		shield-fips.us-east-1.amazonaws.com	HTTPS	
Europe (London)	eu-west-2	shield.us-east-1.amazonaws.com	HTTPS	
		shield.us-east-1.amazonaws.com	HTTPS	
		shield-fips.us-east-1.amazonaws.com	HTTPS	
Europe (Milan)	eu-south-1	shield.us-east-1.amazonaws.com	HTTPS	
		shield.us-east-1.amazonaws.com	HTTPS	
		shield-fips.us-east-1.amazonaws.com	HTTPS	
Europe (Paris)	eu-west-3	shield.us-east-1.amazonaws.com	HTTPS	
		shield.us-east-1.amazonaws.com	HTTPS	
		shield-fips.us-east-1.amazonaws.com	HTTPS	
Europe (Stockholm)	eu-north-1	shield.us-east-1.amazonaws.com	HTTPS	
		shield.us-east-1.amazonaws.com	HTTPS	
		shield-fips.us-east-1.amazonaws.com	HTTPS	
Middle East (Bahrain)	me-south-1	shield.us-east-1.amazonaws.com	HTTPS	
		shield.us-east-1.amazonaws.com	HTTPS	
		shield-fips.us-east-1.amazonaws.com	HTTPS	
South America (São Paulo)	sa-east-1	shield.us-east-1.amazonaws.com	HTTPS	
		shield.us-east-1.amazonaws.com	HTTPS	
		shield-fips.us-east-1.amazonaws.com	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

#### API Endpoints

Region Name	Region	Endpoint	Protocol	
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	HTTPS	
		email-fips.us-east-1.amazonaws.com	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	HTTPS	
		email-fips.us-west-2.amazonaws.com	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	

Region Name	Region	Endpoint	Protocol	
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	
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	HTTPS	
		email-fips.us-gov-west-1.amazonaws.com	HTTPS	

### SMTP Endpoints

**Note**

SMTP endpoints are not currently available in Africa (Cape Town), Europe (Milan), Middle East (Bahrain).



AWS General Reference Reference guide  
Service endpoints

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 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 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 (Seoul)	ap-northeast-2	email-smtp.ap-northeast-2.amazonaws.com	SMTP	
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	

Region Name	Region	Endpoint	Protocol	
AWS GovCloud (US)	us-gov-west-1	email-smtp.us-gov-west-1.amazonaws.com	SMTP	
		email-smtp-fips.us-gov-west-1.amazonaws.com		

### DKIM Domains

Region Name	Region	AWS DKIM domain		
Africa (Cape Town)	af-south-1	dkim.af-south-1.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 (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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	
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	signer.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	signer.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 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

Region Name	Region	Endpoint	Protocol
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
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

Region Name	Region	Endpoint	Protocol
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
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

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

## 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	
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	
China (Beijing)	cn-north-1	sns.cn-north-1.amazonaws.com.cn	HTTP and HTTPS	
China (Ningxia)	cn-northwest-1	sns.cn-northwest-1.amazonaws.com.cn	HTTP and HTTPS	

Region Name	Region	Endpoint	Protocol	
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
CheckIfPhoneNumbersOptedOut	50
GetSMSAttributes	20
ListEndpointsByPlatformApplication	30
ListPhoneNumbersOptedOut	10
ListTopics	30
ListPlatformApplications	15
ListSubscriptions	30
ListSubscriptionsByTopic	30
OptInPhoneNumber	20
SetSMSAttributes	1
Subscribe	100

API	Transactions per second
Unsubscribe	100

## 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	
	US West (N. California) Region		
	Asia Pacific (Mumbai) Region		
	Asia Pacific (Seoul) Region		
	Asia Pacific (Singapore) Region		
	Asia Pacific (Sydney) Region		
	Asia Pacific (Tokyo) Region		
	Europe (Frankfurt) Region		
	Africa (Cape Town) Region		
	Asia Pacific (Hong Kong) Region		
	Asia Pacific (Osaka) Region		
Canada (Central) Region			
China (Beijing) Region			
China (Ningxia) Region			
Europe (London) Region			

API	AWS Regions	Standard topics	FIFO topics
	Europe (Milan) Region Europe (Paris) Region Europe (Stockholm) Region Middle East (Bahrain) Region South America (São Paulo) Region		

### 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	
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	

APIs	AWS Regions	Transactions per second
	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

#### Amazon SQS

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
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	
China (Beijing)	cn-north-1	sqs.cn-north-1.amazonaws.com.cn	HTTP and HTTPS	
China (Ningxia)	cn-northwest-1	sqs.cn-northwest-1.amazonaws.com.cn	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	

Region Name	Region	Endpoint	Protocol	
AWS GovCloud (US-East)	us-gov-east-1	sq3.us-gov-east-1.amazonaws.com	HTTP and HTTPS	
		sq3.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	sq3.us-gov-west-1.amazonaws.com	HTTP and HTTPS	
		sq3.us-gov-west-1.amazonaws.com	HTTPS	

## Legacy endpoints

If you use the AWS CLI or SDK for Python, you can use the following legacy endpoints.

Region Name	Region	Endpoint	Protocol
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
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

Region Name	Region	Endpoint	Protocol
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 Characters	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	Yes
Message Retention Time	345,600 Seconds	Yes
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	Yes

Name	Default	Adjustable
Queue Name Length	80 Characters	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 Characters	No
UTF-8 Queue Tag Value Length	256 Characters	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	<b>Standard endpoints:</b> <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> </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>• <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> <li>• s3-accesspoint-fips.dualstack.us-east-2.amazonaws.com**</li> </ul>			

Region Name	Region	Endpoint	Location Constraint	Protocol	Signature Version(s) Support
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 Developer Guide*. You need the hosted zone IDs when using the Amazon Route 53 API to add an alias record to your hosted zone.

### Note

The website endpoints do not support HTTPS or Amazon S3 Access Points.

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	Z1QDHH18159H29
China (Ningxia)	s3-website.cn-northwest-1.amazonaws.com.cn	Z282HJ1KT0DH03

Region Name	Website Endpoint	Route 53 Hosted Zone ID
Europe (Frankfurt)	s3-website.eu-central-1.amazonaws.com	Z21DNDUULTQW6Q
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

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
Object size	5 Terabytes	No

Name	Default	Adjustable
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 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	
US West (N. California)	us-west-1	swf.us-west-1.amazonaws.com	HTTPS	
		swf-fips.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	swf.us-west-2.amazonaws.com	HTTPS	
		swf-fips.us-west-2.amazonaws.com	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	

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
China (Beijing)	cn-north-1	swf.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	swf.cn-northwest-1.amazonaws.com.cn	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	
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	

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

## Service quotas

Name	Default	Adjustable
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
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

AWS General Reference Reference guide  
Service quotas

Name	Default	Adjustable
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	10	Yes
PollForDecisionTask throttle burst limit in transaction per second	1,000	Yes
PollForDecisionTask throttle limit in transaction per second	12	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

AWS General Reference Reference guide  
Service quotas

Name	Default	Adjustable
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	10	Yes
RespondActivityTaskCompleted throttle burst limit in transaction per second	1,000	Yes
RespondActivityTaskCompleted throttle limit in transaction per second	10	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	12	Yes
SWF task in queue in year	1	No
ScheduleActivityTask throttle burst limit in transaction per second	100	Yes
ScheduleActivityTask throttle limit in transaction per second	10	Yes
SignalExternalWorkflowExecution throttle burst limit in transaction per second	100	Yes
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	100	Yes
StartChildWorkflowExecution throttle limit in transaction per second	2	Yes
StartTimer throttle burst limit in transaction per second	500	Yes

Name	Default	Adjustable
StartTimer throttle limit in transaction per second	25	Yes
StartWorkflowExecution throttle burst limit in transaction per second	1,000	Yes
StartWorkflowExecution throttle limit in transaction per second	2	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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	
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	



Region Name	Region	Endpoint	Protocol	
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	
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	

Region Name	Region	Endpoint	Protocol	
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 (Stockholm)	eu-north-1	sso.eu-north-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	

Region Name	Region	Endpoint	Protocol	
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	

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

## 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 snowball-fips.us-east-2.amazonaws.com	HTTPS	
US East (N. Virginia)	us-east-1	snowball.us-east-1.amazonaws.com snowball-fips.us-east-1.amazonaws.com	HTTPS	
US West (N. California)	us-west-1	snowball.us-west-1.amazonaws.com snowball-fips.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	snowball.us-west-2.amazonaws.com snowball-fips.us-west-2.amazonaws.com	HTTPS	
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 snowball-fips.ap-south-1.amazonaws.com	HTTPS	
Asia Pacific (Osaka)	ap-northeast-3	snowball.ap-northeast-3.amazonaws.com snowball-fips.ap-northeast-3.amazonaws.com	HTTPS	
Asia Pacific (Seoul)	ap-northeast-2	snowball.ap-northeast-2.amazonaws.com snowball-fips.ap-northeast-2.amazonaws.com	HTTPS	
Asia Pacific (Singapore)	ap-southeast-1	snowball.ap-southeast-1.amazonaws.com snowball-fips.ap-southeast-1.amazonaws.com	HTTPS	
Asia Pacific (Sydney)	ap-southeast-2	snowball.ap-southeast-2.amazonaws.com snowball-fips.ap-southeast-2.amazonaws.com	HTTPS	
Asia Pacific (Tokyo)	ap-northeast-1	snowball.ap-northeast-1.amazonaws.com snowball-fips.ap-northeast-1.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol	
Canada (Central)	ca-central-1	snowball.ca-central-1.amazonaws.com snowball-fips.ca-central-1.amazonaws.com	HTTPS	
China (Beijing)	cn-north-1	snowball.cn-north-1.amazonaws.com.cn snowball-fips.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	snowball.cn-northwest-1.amazonaws.com.cn snowball-fips.cn-northwest-1.amazonaws.com.cn	HTTPS	
Europe (Frankfurt)	eu-central-1	snowball.eu-central-1.amazonaws.com snowball-fips.eu-central-1.amazonaws.com	HTTPS	
Europe (Ireland)	eu-west-1	snowball.eu-west-1.amazonaws.com snowball-fips.eu-west-1.amazonaws.com	HTTPS	
Europe (London)	eu-west-2	snowball.eu-west-2.amazonaws.com 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 snowball-fips.eu-west-3.amazonaws.com	HTTPS	
Europe (Stockholm)	eu-north-1	snowball.eu-north-1.amazonaws.com		
South America (São Paulo)	sa-east-1	snowball.sa-east-1.amazonaws.com snowball-fips.sa-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-East)	us-gov-east-1	snowball.us-gov-east-1.amazonaws.com snowball-fips.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	snowball.us-gov-west-1.amazonaws.com 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)

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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

AWS General Reference Reference guide  
Service endpoints

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

Region Name	Region	Endpoint	Protocol	
AWS GovCloud (US-West)	us-gov-west-1	states.us-gov-west-1.amazonaws.com	HTTPS	
		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	250	Yes
DescribeExecution throttle token refill rate per second	10	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	1,500	Yes
GetActivityTask throttle token refill rate per second	300	Yes
GetExecutionHistory throttle token bucket size	400	Yes



AWS General Reference Reference guide  
Service quotas

Name	Default	Adjustable
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	5	Yes
ListExecutions throttle token bucket size	100	Yes
ListExecutions throttle token refill rate per second	2	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	1,500	Yes
SendTaskFailure throttle token refill rate per second	300	Yes
SendTaskHeartbeat throttle token bucket size	1,500	Yes
SendTaskHeartbeat throttle token refill rate per second	300	Yes
SendTaskSuccess throttle token bucket size	1,500	Yes
SendTaskSuccess throttle token refill rate per second	300	Yes
Size per API request	1 Megabytes	No
StartExecution throttle token bucket size	800	Yes
StartExecution throttle token refill rate per second	150	Yes
StateTransition throttle token bucket size	800	Yes
StateTransition throttle token refill rate per second	500	Yes
Step Functions task in queue in year	1	No
StopExecution throttle token bucket size	500	Yes
StopExecution throttle token refill rate per second	25	Yes
TagResource throttle token bucket size	200	Yes
TagResource throttle token refill rate per second	1	Yes

Name	Default	Adjustable
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 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

#### AWS Storage Gateway

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
Asia Pacific (Mumbai)	ap-south-1	storagegateway.ap-south-1.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	HTTPS	
		storagegateway-fips.ca-central-1.amazonaws.com	HTTPS	
China (Beijing)	cn-north-1	storagegateway.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	storagegateway.cn-northwest-1.amazonaws.com.cn	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	HTTPS	
		storagegateway-fips.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	storagegateway.us-gov-west-1.amazonaws.com	HTTPS	
		storagegateway-fips.us-gov-west-1.amazonaws.com	HTTPS	

For AWS Regions that the hardware appliance is supported in, see [Storage Gateway hardware appliance regions](#) (p. 542).

## 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 [AWS 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 \(p. 592\)](#). 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 \(p. 596\)](#).

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
China (Beijing)	cn-north-1	support.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	support.cn-north-1.amazonaws.com.cn	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	



Region Name	Region	Endpoint	Protocol	
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	
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 support.us-gov-west-1.amazonaws.com	HTTPS 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

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
US West (N. California)	us-west-1	ssm.us-west-1.amazonaws.com	HTTPS	
		ssm-fips.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	ssm.us-west-2.amazonaws.com	HTTPS	
		ssm-fips.us-west-2.amazonaws.com	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	HTTPS	
		ssm-fips.ca-central-1.amazonaws.com	HTTPS	
China (Beijing)	cn-north-1	ssm.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	ssm.cn-northwest-1.amazonaws.com.cn	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	

Region Name	Region	Endpoint	Protocol	
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	
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	HTTPS	
		ssm.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	ssm.us-gov-west-1.amazonaws.com	HTTPS	
		ssm.us-gov-west-1.amazonaws.com	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, ssmessages, 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 General Reference Reference guide  
Service quotas

Capability	Resource	Default
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: 64 KB Amazon S3: 1 MB
AWS AppConfig	Maximum throughput (transactions per second)	1000 TPS (applies to GetConfiguration)
Application Manager	Maximum number of applications in Application Manager	100  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  For applications based on AWS Resource Groups: Unlimited
Automation	Concurrently running automations	100  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.

Capability	Resource	Default
Automation	Automation queue	1000  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.
Automation	Concurrently running rate control automations	25  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  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.

Capability	Resource	Default
Automation	Number of levels of nested automation	5  A parent-level Automation document can start a child-level Automation document. This represents one level of nested automation. The child-level Automation document can start another Automation document, resulting in two levels of nested automation. This can continue up to a maximum of five (5) levels below the top-level parent Automation document.
Automation	Number of days an automation execution history is stored in the system	30
Automation	Additional automation executions that can be queued	1,000
Automation	Maximum duration an automation execution can run when running in the context of a user	12 hours  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  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  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 document (playbook) attachments	5  Each document can have up to five (5) attachments.

AWS General Reference Reference guide  
Service quotas

Capability	Resource	Default
Automation	Automation document (playbook) attachment size	256 MB  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 account, per Region	500
Distributor	Maximum number of package versions per Distributor package	25
Distributor	Maximum package size in Distributor	20 GB
Distributor	Maximum package manifest size in Distributor	64 KB
Explorer	Maximum number of resource data syncs (per account per Region)	5
Inventory	Maximum number of resource data syncs (per account per Region)	5
Inventory	Inventory data collected per instance per call	1 MB  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  When this quota is reached, no new inventory data is collected for the instance. Inventory data previously collected is stored until the expiration.

Capability	Resource	Default
Inventory	Custom inventory types	20  You can add up to 20 custom inventory types.
Inventory	Custom inventory type size	200 KB  This is the maximum size of the type, not the inventory collected.
Inventory	Custom inventory type attributes	50  This is the maximum number of attributes within the custom inventory type.
Inventory	Inventory data expiration	30 days  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 <i>AWS Config Developer Guide</i> .
Maintenance Windows	Maintenance windows per 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)  Advanced instances: 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 <i>AWS Systems Manager User Guide</i> . For more information about enabling advanced instances, see <a href="#">Using the Advanced-Instances Tier</a> .
OpsCenter	Total number of OpsItems allowed per account per AWS Region (including Open and Resolved OpsItems)	500,000
OpsCenter	Maximum number of OpsItems per 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  Advanced parameters: 100,000  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  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: GetParameter, GetParameters, GetParametersByPath)  Higher throughput: 100 (GetParametersByPath)  Higher throughput: 3000 (Shared by the following API actions: GetParameter and GetParameters)  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 Baselines	Patch baselines per account	50
Patch Baselines	Patch groups per patch baseline	25
Run Command	Execution history retention	30 days  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.

Capability	Resource	Default
Session Manager	Maximum idle time before session termination	Default: 20 minutes  Configurable to between 1 and 60 minutes.
SSM Documents	Total documents	500  Each AWS account can create a maximum of 500 documents per Region.
SSM Documents	Document versions	1000  A single SSM document can have a maximum of 1,000 versions.
SSM Documents	Privately shared Systems Manager document	1000  A single Systems Manager document can be shared with a maximum of 1000 AWS accounts.
SSM Documents	Publicly shared Systems Manager document	5  Each AWS account can publicly share a maximum of five documents.
State Manager	Concurrent State Manager associations	2,000  Each AWS Account can have 2,000 associations per Region at one time.
State Manager	State Manager association versions	1,000  You can created 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 \(p. 592\)](#). 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 \(p. 596\)](#).

## 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	
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	HTTPS	
		textract-fips.us-gov-east-1.amazonaws.com	HTTPS	

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

## Service quotas

Name	Default	Adjustable
AnalyzeDocument throttle limit in transactions per second	1	Yes
Async DocumentAnalysis throttle limit for max number of concurrent jobs	100	Yes
Async DocumentTextDetection throttle limit for max number of concurrent jobs	100	Yes
DetectDocumentText throttle limit in transactions per second	1	Yes
GetDocumentAnalysis throttle limit in transactions per second	1	Yes
GetDocumentTextDetection throttle limit in transactions per second	1	Yes
StartDocumentAnalysis throttle limit in transactions per second	2	Yes
StartDocumentTextDetection throttle limit in transactions per second	1	Yes

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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	HTTPS	
US East (N. Virginia)	us-east-1	ingest.timestream.us-east-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	ingest.timestream.us-west-2.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol	
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.

Region Name	Region	Endpoint	Protocol	
US East (Ohio)	us-east-2	query.timestream.us-east-2.amazonaws.com	HTTPS	
US East (N. Virginia)	us-east-1	query.timestream.us-east-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	query.timestream.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

Name	Default	Adjustable
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
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

Name	Default	Adjustable
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	
US West (N. California)	us-west-1	transcribe.us-west-1.amazonaws.com	HTTPS	
		fips.transcribe.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	transcribe.us-west-2.amazonaws.com	HTTPS	
		fips.transcribe.us-west-2.amazonaws.com	HTTPS	

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
China (Beijing)	cn-north-1	cn.transcribe.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	cn.transcribe.cn-northwest-1.amazonaws.com.cn	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	HTTPS	
		fips.transcribe.us-gov-east-1.amazonaws.com	HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	transcribe.us-gov-west-1.amazonaws.com	HTTPS	
		fips.transcribe.us-gov-west-1.amazonaws.com	HTTPS	

## Amazon Transcribe Streaming

Region Name	Region	Endpoint	Protocol	
US East (Ohio)	us-east-2	transcribestreaming.us-east-2.amazonaws.com	HTTPS	
US East (N. Virginia)	us-east-1	transcribestreaming.us-east-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	transcribestreaming.us-west-2.amazonaws.com	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	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	
South America (São Paulo)	sa-east-1	transcribestreaming.sa-east-1.amazonaws.com	HTTPS	

## Service quotas

Name	Default	Adjustable
Job queue bandwidth ratio	0.9	Yes
Maximum audio file length	14,400 Seconds	No
Maximum audio file length	14,400 Seconds	No
Maximum audio file size	2 Gigabytes	No
Maximum audio file size	2 Gigabytes	No
Maximum length of a custom vocabulary phrase	256	No
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
Minimum audio file duration	500 Milliseconds	No
Minimum audio file duration	500 Milliseconds	No
Number of StartMedicalStreamTranscription Websocket requests	5	Yes
Number of StartStreamTranscription Websocket requests	5	Yes
Number of channels for channel identification	2	Yes
Number of channels for channel identification	2	No
Number of concurrent HTTP/2 streams for streaming transcription.	5	Yes
Number of concurrent batch transcription jobs	100	Yes
Number of concurrent batch transcription jobs	100	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	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

Name	Default	Adjustable
Total number of vocabularies per account	100	Yes
Transactions per second, CreateVocabulary operation	10	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
Transactions per second, GetMedicalTranscriptionJob operation	20	Yes
Transactions per second, GetMedicalVocabulary operation	20	Yes
Transactions per second, GetTranscriptionJob operation	20	Yes
Transactions per second, GetVocabulary operation	20	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, StartMedicalStreamTranscription operation	5	Yes
Transactions per second, StartMedicalTranscriptionJob operation	10	Yes
Transactions per second, StartStreamTranscription operation	5	Yes
Transactions per second, StartTranscriptionJob 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*.

## Amazon Transcribe Medical 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 \(p. 592\)](#). 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 \(p. 596\)](#).

## Service Endpoints

### Amazon Transcribe Medical

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

### Service Quotas

Resource	Default
Number of concurrent batch transcription jobs	100
Transactions per second, StartMedicalTranscriptionJob operation	10
Number of StartMedicalStreamTranscription Websocket requests	5
Transactions per second, StartMedicalStreamTranscription operation	5
Transactions per second, GetMedicalTranscriptionJob operation	20
Transactions per second, DeleteMedicalTranscriptionJob operation	5
Transactions per second, ListMedicalTranscriptionJobs operation	5

Resource	Default
Transactions per second, ListMedicalTranscriptionJobs operation	5
Transactions per second, CreateMedicalVocabulary operation	10
Transactions per second, UpdateMedicalVocabulary operation	10
Transactions per second, DeleteMedicalVocabulary operation	5
Transactions per second, GetMedicalVocabulary operation	20
Transactions per second, ListMedicalVocabularies operation	5

## 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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 transfer-fips.ca-central-1.amazonaws.com	HTTPS 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	
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	

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

## Service quotas

Name	Default	Adjustable
Concurrent sessions per server	10,000	No
File size	5 Terabytes	No
Number of Service Managed users	10,000	Yes
SSH keys per Service Managed user	10	Yes
Servers 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 \(p. 592\)](#). 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 \(p. 596\)](#).

## Service endpoints

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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 translate-fips.us-west-2.amazonaws.com	HTTPS 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	
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 translate-fips.us-gov-west-1.amazonaws.com	HTTPS 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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
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	
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
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

Name	Default	Adjustable
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Note

This page provides information related 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	HTTPS	
		wafv2-fips.us-east-2.amazonaws.com	HTTPS	
US East (N. Virginia)	us-east-1	wafv2.us-east-1.amazonaws.com	HTTPS	
		wafv2-fips.us-east-1.amazonaws.com	HTTPS	
US West (N. California)	us-west-1	wafv2.us-west-1.amazonaws.com	HTTPS	
		wafv2-fips.us-west-1.amazonaws.com	HTTPS	
US West (Oregon)	us-west-2	wafv2.us-west-2.amazonaws.com	HTTPS	
		wafv2-fips.us-west-2.amazonaws.com	HTTPS	
Africa (Cape Town)	af-south-1	wafv2.af-south-1.amazonaws.com	HTTPS	
		wafv2-fips.af-south-1.amazonaws.com	HTTPS	

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
Asia Pacific (Hong Kong)	ap-east-1	wafv2.ap-east-1.amazonaws.com	HTTPS	
		wafv2-fips.ap-east-1.amazonaws.com	HTTPS	
Asia Pacific (Mumbai)	ap-south-1	wafv2.ap-south-1.amazonaws.com	HTTPS	
		wafv2-fips.ap-south-1.amazonaws.com	HTTPS	
Asia Pacific (Seoul)	ap-northeast-2	wafv2.ap-northeast-2.amazonaws.com	HTTPS	
		wafv2-fips.ap-northeast-2.amazonaws.com	HTTPS	
Asia Pacific (Singapore)	ap-southeast-1	wafv2.ap-southeast-1.amazonaws.com	HTTPS	
		wafv2-fips.ap-southeast-1.amazonaws.com	HTTPS	
Asia Pacific (Sydney)	ap-southeast-2	wafv2.ap-southeast-2.amazonaws.com	HTTPS	
		wafv2-fips.ap-southeast-2.amazonaws.com	HTTPS	
Asia Pacific (Tokyo)	ap-northeast-1	wafv2.ap-northeast-1.amazonaws.com	HTTPS	
		wafv2-fips.ap-northeast-1.amazonaws.com	HTTPS	
Canada (Central)	ca-central-1	wafv2.ca-central-1.amazonaws.com	HTTPS	
		wafv2-fips.ca-central-1.amazonaws.com	HTTPS	
Europe (Frankfurt)	eu-central-1	wafv2.eu-central-1.amazonaws.com	HTTPS	
		wafv2-fips.eu-central-1.amazonaws.com	HTTPS	
Europe (Ireland)	eu-west-1	wafv2.eu-west-1.amazonaws.com	HTTPS	
		wafv2-fips.eu-west-1.amazonaws.com	HTTPS	
Europe (London)	eu-west-2	wafv2.eu-west-2.amazonaws.com	HTTPS	
		wafv2-fips.eu-west-2.amazonaws.com	HTTPS	
Europe (Milan)	eu-south-1	wafv2.eu-south-1.amazonaws.com	HTTPS	
		wafv2-fips.eu-south-1.amazonaws.com	HTTPS	
Europe (Paris)	eu-west-3	wafv2.eu-west-3.amazonaws.com	HTTPS	
		wafv2-fips.eu-west-3.amazonaws.com	HTTPS	
Europe (Stockholm)	eu-north-1	wafv2.eu-north-1.amazonaws.com	HTTPS	
		wafv2-fips.eu-north-1.amazonaws.com	HTTPS	
Middle East (Bahrain)	me-south-1	wafv2.me-south-1.amazonaws.com	HTTPS	
		wafv2-fips.me-south-1.amazonaws.com	HTTPS	

Region Name	Region	Endpoint	Protocol	
South America (São Paulo)	sa-east-1	wafv2.sa-east-1.amazonaws.com wafv2-fips.sa-east-1.amazonaws.com	HTTPS HTTPS	
AWS GovCloud (US-East)	us-gov-east-1	wafv2.us-gov-east-1.amazonaws.com wafv2-fips.us-gov-east-1.amazonaws.com	HTTPS HTTPS	
AWS GovCloud (US-West)	us-gov-west-1	wafv2.us-gov-west-1.amazonaws.com wafv2-fips.us-gov-west-1.amazonaws.com	HTTPS HTTPS	

## Service quotas

Name	Default	Adjustable
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
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

Name	Default	Adjustable
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
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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 \(p. 574\)](#).

## Service endpoints

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
		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	
Asia Pacific (Seoul)	ap-northeast-2	waf.amazonaws.com	HTTPS	
		waf-fips.amazonaws.com	HTTPS	
Asia Pacific (Singapore)	ap-southeast-1	waf.amazonaws.com	HTTPS	
		waf-fips.amazonaws.com	HTTPS	
Asia Pacific (Sydney)	ap-southeast-2	waf.amazonaws.com	HTTPS	
		waf-fips.amazonaws.com	HTTPS	
Asia Pacific (Tokyo)	ap-northeast-1	waf.amazonaws.com	HTTPS	
		waf-fips.amazonaws.com	HTTPS	
Canada (Central)	ca-central-1	waf.amazonaws.com	HTTPS	
		waf-fips.amazonaws.com	HTTPS	
Europe (Frankfurt)	eu-central-1	waf.amazonaws.com	HTTPS	
		waf-fips.amazonaws.com	HTTPS	
Europe (Ireland)	eu-west-1	waf.amazonaws.com	HTTPS	
		waf-fips.amazonaws.com	HTTPS	
Europe (London)	eu-west-2	waf.amazonaws.com	HTTPS	
		waf-fips.amazonaws.com	HTTPS	



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

AWS WAF Classic for Application Load Balancers and API Gateway APIs has the following endpoints:

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

AWS General Reference Reference guide  
Service endpoints

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

Region Name	Region	Endpoint	Protocol	
AWS GovCloud (US-West)	us-gov-west-1	waf-regional.us-gov-west-1.amazonaws.com	HTTPS	
		waf-regional-fips.us-gov-west-1.amazonaws.com	HTTPS	

## Service quotas

Name	Default	Adjustable
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
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	
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	

Region Name	Region	Endpoint	Protocol	
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 \(p. 592\)](#). 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 \(p. 596\)](#).

## Service Endpoints

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

Region Name	Region	Endpoint	Protocol	
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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 \(p. 592\)](#). 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 \(p. 596\)](#).

## Service Endpoints

Region Name	Region	Service	Endpoint
US East (N. Virginia)	us-east-1	Amazon WorkMail SDK	https://workmail.us-east-1.amazonaws.com
US East (N. Virginia)	us-east-1	Autodiscover	autodiscover-service.mail.us-east-1.awsapps.com
US East (N. Virginia)	us-east-1	Exchange Web Service	ews.mail.us-east-1.awsapps.com
US East (N. Virginia)	us-east-1	Exchange Active Sync	mobile.mail.us-east-1.awsapps.com
US East (N. Virginia)	us-east-1	MAPI Proxy	outlook.mail.us-east-1.awsapps.com
US East (N. Virginia)	us-east-1	IMAPS	imap.mail.us-east-1.awsapps.com
US East (N. Virginia)	us-east-1	SMTP via TLS (port 465)	smtp.mail.us-east-1.awsapps.com
US West (Oregon)	us-west-2	Amazon WorkMail SDK	https://workmail.us-west-2.amazonaws.com
US West (Oregon)	us-west-2	Autodiscover	autodiscover-service.mail.us-west-2.awsapps.com
US West (Oregon)	us-west-2	Exchange Web Service	ews.mail.us-west-2.awsapps.com
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	https://workmail.eu-west-1.amazonaws.com
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### 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	
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	
China (Ningxia)	cn-northwest-1	workspaces.cn-northwest-1.amazonaws.com.cn	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	



Region Name	Region	Endpoint	Protocol	
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	HTTPS	
		workspaces-fips.us-gov-west-1.amazonaws.com	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
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	No

Resource	Default	Description	Adjustable
		for use with Amazon WorkSpaces in this account in the current Region.	
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
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 \(p. 592\)](#). 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 \(p. 596\)](#).

### Service endpoints

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

AWS General Reference Reference guide  
Service endpoints

Region Name	Region	Endpoint	Protocol	
		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	
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	
China (Beijing)	cn-north-1	xray.cn-north-1.amazonaws.com.cn	HTTPS	
China (Ningxia)	cn-northwest-1	xray.cn-northwest-1.amazonaws.com.cn	HTTPS	

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

## Service quotas

Resource	Default	Adjustable
Trace and service graph retention	30 days	No
Trace data modification (The time to update recorded data at no additional cost.)	7 days	No
Segment document size	64kB	No
Trace document size	100kB-500kB	No
Indexed annotations per trace	50	No
Custom sampling rules per Region	25	No
Groups in an account	25	Yes

AWS General Reference Reference guide  
Service quotas

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Resource	Default	Adjustable
Tags per group	50	Yes
Tags per custom sampling rule	50	Yes

# AWS resources

The following pages provide information that helps you work with AWS resources.

## Contents

- [AWS service endpoints \(p. 592\)](#)
- [Managing AWS Regions \(p. 594\)](#)
- [AWS service quotas \(p. 596\)](#)
- [Tagging AWS resources \(p. 597\)](#)
- [Amazon Resource Names \(ARNs\) \(p. 600\)](#)

## 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 \(p. 592\)](#)
- [View the service endpoints \(p. 593\)](#)
- [FIPS endpoints \(p. 594\)](#)
- [Learn more \(p. 594\)](#)

## 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

Region Name	Code
US West (N. California)	us-west-1
US West (Oregon)	us-west-2
Africa (Cape Town)	af-south-1
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 \(p. 594\)](#).
- 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 \(p. 592\)](#).

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

After you disable a Region, the resources in this Region are immediately unavailable. However, they are not deleted. You cannot disable a Region that is enabled by default.

### 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 that Region. 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.

### 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.

## 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 \(p. 592\)](#).

### *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 \(p. 601\)](#). 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/*"
```

You cannot use a wildcard to specify all users in the `Principal` element in a resource-based policy or a role trust policy. Groups are not supported as principals in any policy.

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 \(p. 603\)](#)
- [Syntax \(p. 603\)](#)
- [Filtering the JSON file \(p. 605\)](#)
- [Implementing egress control \(p. 607\)](#)
- [AWS IP address ranges notifications \(p. 609\)](#)
- [Release notes \(p. 610\)](#)

## 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` | `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 EBS service code.	May 12, 2021
Added the KINESIS_VIDEO_STREAMS service code.	November 19, 2020



AWS General Reference Reference guide  
Release notes

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Description	Release date
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 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 \(p. 612\)](#)
- [Signing AWS API requests \(p. 614\)](#)
- [AWS SDK support for Amazon S3 client-side encryption \(p. 650\)](#)

## 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). You should use SigV4. All AWS services in all AWS Regions support SigV4, except Amazon SimpleDB which requires SigV2. For AWS services that support both versions, we recommend that you use SigV4.

## 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 \(p. 618\)](#).
- For sample signed requests, see [Examples of the complete Signature Version 4 signing process \(Python\) \(p. 633\)](#).
- 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 \(p. 626\)](#).
- 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 \(p. 630\)](#).
  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 \(p. 620\)](#).
  - 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 \(p. 625\)](#).
  - 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 \(p. 626\)](#).

## 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

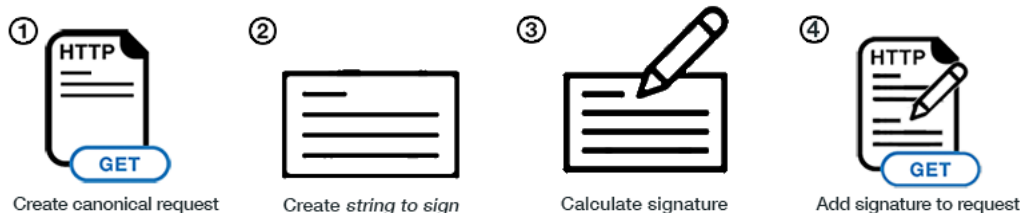
You must use lowercase characters for the Region, service name, and special termination string.

- *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 \(p. 626\)](#). 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 \(Python\) \(p. 633\)](#).

## 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 \(p. 620\)](#)

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 \(p. 625\)](#)

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 \(p. 626\)](#)

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 \(p. 628\)](#)

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 \(p. 630\)](#). 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 \(Python\) \(p. 633\)](#). 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=37ac2f4fde00b0ac9bd9eadeb459b1bbec224158d66e7ae5fcadb70b2d181d02 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%BC.
  - 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 \(p. 625\)](#).

#### 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\n
host:iam.amazonaws.com\n
x-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

```
/
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
e3b0c44298fc1c149afb4c8996fb92427ae41e4649b934ca495991b7852b855
```

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

```
f536975d06c0309214f805bb90ccff089219ecd68b2577efef23edd43b7e1a59
```

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. 625).

## 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. 620). 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. 626).

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. 620).

#### 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. See [AWS service endpoints \(p. 592\)](#).
4. Append the hash of the canonical request that you created in [Task 1: Create a canonical request for Signature Version 4 \(p. 620\)](#). 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](#).

```
f536975d06c0309214f805bb90ccff089219ecd68b2577efef23edd43b7e1a59
```

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
f536975d06c0309214f805bb90ccff089219ecd68b2577efef23edd43b7e1a59
```

## 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 \(p. 625\)](#) 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

1. 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 \(p. 630\)](#).

2. 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 (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 \(p. 625\)](#). 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 \(p. 620\)](#).

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=37ac2f4fde00b0ac9bd9eadb459b1bbe224158d66e7ae5fcadb70b2d181d02
```

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 \(p. 620\)](#).
- 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. 633).

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. 633).

### 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. 630)
- [Deriving a signing key using .NET \(C#\)](#) (p. 631)
- [Deriving a signing key using Python](#) (p. 631)
- [Deriving a signing key using Ruby](#) (p. 631)
- [Deriving a signing key using JavaScript \(Node.js\)](#) (p. 631)
- [Deriving a signing key using other languages](#) (p. 632)
- [Common coding errors](#) (p. 632)

### 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 = 'f72cfd46f26bc4643f06a11eabb6c0ba18780c19a8da0c31ace671265e3c87fa'
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. 640).

## 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 \(Python\) \(p. 633\)](#)
- [Using POST \(Python\) \(p. 636\)](#)
- [Using GET with authentication information in the Query string \(Python\) \(p. 638\)](#)

## 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.
```

AWS General Reference Reference guide  
Signature Version 4 signing process

---

```
#
# 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
```



AWS General Reference Reference guide  
Signature Version 4 signing process

---

```
# 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+++++')
print('Request URL = ' + request_url)
r = requests.get(request_url, headers=headers)

print('\nRESPONSE+++++')
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.
#
# 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.

# 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+++++')
print('Request URL = ' + endpoint)

r = requests.post(endpoint, data=request_parameters, headers=headers)

print('\nRESPONSE+++++')
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.

```
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#
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# 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%S%Z') # 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.parse.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, timestamp, 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+++++')
print('Request URL = ' + request_url)
r = requests.get(request_url)

print('\nRESPONSE+++++')
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 \(p. 641\)](#)
- [Troubleshooting credential scope errors \(p. 641\)](#)
- [Troubleshooting key signing errors \(p. 643\)](#)

## Troubleshooting canonicalization errors

Consider the following request:

```
https://iam.amazonaws.com/?MaxItems=100
&Action=ListGroupsWithUser
&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=ListGroupsWithUser&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 \(p. 630\)](#).

## 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 \(SigV4\) \(p. 615\)](#).

## 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. For the list of endpoints for each service, see [AWS service endpoints \(p. 592\)](#).

### 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 \(p. 646\)](#), 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
```

- Sample secret key:

```
wJalrXUtnFEMI/K7MDENG/bPxrRfiCYEXAMPLEKEY
```

The resulting signature must be base-64 encoded.

```
i91nKc4PWA0JJIdXwz9HxZCJDdiy6cf%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?AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Action=DescribeJobFlows&SignatureMethod=HmacSHA256&SignatureVersion=2&Signature=i91nKc4PWA0JJIdXwz9HxZCJDdiy6cf%2FMj6vPxyYIs%3D
```

#### 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/?Action=GetAttributes&AWSAccessKeyId=access-key-from-AWS Security Token Service&DomainName=MyDomain&ItemName=MyItem&SignatureVersion=2&SignatureMethod=HmacSHA256&Timestamp=2010-01-25T15%3A03%3A07-07%3A00&Version=2009-04-15&Signature=signature-calculated-using-the-temporary-access-key&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 \(p. 649\)](#).

## 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++
<a href="#">Amazon S3 client-side encryption</a>	Yes	Yes	Yes	No	No	Yes	No	Yes	Yes
<a href="#">AWS KMS–managed master keys</a>	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

AWS General Reference Reference guide  
Amazon S3 encryption client cryptographic algorithms

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	No	Deprecated	No	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	No	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 Developer 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

---

[Numbers and symbols \(p. 655\)](#) | [A \(p. 655\)](#) | [B \(p. 672\)](#) | [C \(p. 673\)](#) | [D \(p. 678\)](#) | [E \(p. 681\)](#) | [F \(p. 684\)](#) | [G \(p. 685\)](#) | [H \(p. 686\)](#) | [I \(p. 687\)](#) | [J \(p. 689\)](#) | [K \(p. 690\)](#) | [L \(p. 690\)](#) | [M \(p. 691\)](#) | [N \(p. 694\)](#) | [O \(p. 695\)](#) | [P \(p. 696\)](#) | [Q \(p. 699\)](#) | [R \(p. 700\)](#) | [S \(p. 703\)](#) | [T \(p. 709\)](#) | [U \(p. 711\)](#) | [V \(p. 712\)](#) | [W \(p. 713\)](#) | [X, Y, Z \(p. 713\)](#)

## 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 \(p. 655\)](#) | [A \(p. 655\)](#) | [B \(p. 672\)](#) | [C \(p. 673\)](#) | [D \(p. 678\)](#) | [E \(p. 681\)](#) | [F \(p. 684\)](#) | [G \(p. 685\)](#) | [H \(p. 686\)](#) | [I \(p. 687\)](#) | [J \(p. 689\)](#) | [K \(p. 690\)](#) | [L \(p. 690\)](#) | [M \(p. 691\)](#) | [N \(p. 694\)](#) | [O \(p. 695\)](#) | [P \(p. 696\)](#) | [Q \(p. 699\)](#) | [R \(p. 700\)](#) | [S \(p. 703\)](#) | [T \(p. 709\)](#) | [U \(p. 711\)](#) | [V \(p. 712\)](#) | [W \(p. 713\)](#) | [X, Y, Z \(p. 713\)](#)

AAD

See [additional authenticated data](#).

Access Analyzer

A feature of [AWS Identity and Access Management \(IAM\) \(p. 668\)](#) 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 \(p. 673\)](#) or object. Each [bucket \(p. 673\)](#) and object in [Amazon S3 \(p. 662\)](#) 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 \(p. 655\)](#) (for example, AKIAIOSFODNN7EXAMPLE) and a [secret access key \(p. 704\)](#) (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 \(p. 704\)](#); 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, <i>policies</i> (p. 697)) that specify who can access a particular AWS <i>resource</i> (p. 702) and under what conditions.
account	<p>A formal relationship with AWS that's associated with all of the following:</p> <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> <p>The AWS account has permission to do anything and everything with all the AWS account resources. This is in contrast to a <i>user</i> (p. 711), which is an entity contained within the account.</p>
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	<p>An API function. Also called <i>operation</i> or <i>call</i>. The activity the <i>principal</i> (p. 698) 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</a> (p. 662) with Action=ReceiveMessage.</p> <p><a href="#">Amazon CloudWatch</a> (p. 657): 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 <code>SetAlarmState</code> 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</a> (p. 662) notification, the running of an <a href="#">Amazon EC2 Auto Scaling</a> (p. 658) <a href="#">policy</a> (p. 697), or an <a href="#">Amazon EC2</a> (p. 658) <a href="#">instance</a> (p. 688) stop/terminate action.</p>
active trusted key groups	A list showing each of the <a href="#">trusted key groups</a> (p. 711), 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 and signed cookies</a> .
active trusted signers	See <a href="#">active trusted key groups</a> (p. 656).
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</a> (p. 658) might suspend processes for <a href="#">Auto Scaling group</a> (p. 665) 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</a> (p. 662) <a href="#">topic</a> (p. 710) or an <a href="#">Amazon EC2 Auto Scaling</a> (p. 658)

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	<p><a href="#">policy (p. 697)</a> 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. 680)</a>) when an <a href="#">IAM (p. 668)</a> access <a href="#">policy (p. 697)</a> 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. 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. 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. 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. 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. See Also <a href="https://aws.amazon.com/chime/">https://aws.amazon.com/chime/</a>.</p>
Amazon Cloud Directory (Cloud Directory)	<p>A service that provides a highly scalable directory store for your application's multihierarchical data. 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. 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. 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. 702)</a>s to <a href="#">AWS Lambda (p. 669)</a> functions, streams in <a href="#">Amazon Kinesis Data Streams (p. 660)</a>, <a href="#">Amazon Simple Notification Service (p. 662)</a> topics, or built-in targets. 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. 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>

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	code or managing any infrastructure. Amazon Cognito offers mobile identity management and data synchronization across devices. 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. 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. 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. 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). 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. 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. 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. 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. 658)</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. 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. 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. 661)</a> whose <a href="#">instance (p. 688)s</a> use an <a href="#">Amazon EBS (p. 659) volume (p. 713)</a> as their root device. Compare this with instances launched from <a href="#">instance store-backed AMI (p. 688)s</a> , which use the <a href="#">instance store (p. 688)</a> as the root device.
Amazon EC2	A web service for launching and managing Linux/UNIX and Windows Server <a href="#">instance (p. 688)s</a> in Amazon's data centers. 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. 688)s</a> automatically based on user-defined <a href="#">policies (p. 697)</a> , schedules, and <a href="#">health check (p. 686)s</a> .

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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. 713)s</a> for use with <a href="#">EC2 instance (p. 681)s</a> . 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. 688)s</a> in Amazon's data centers. 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. 659)</a> and <a href="#">AWS Identity and Access Management (IAM) (p. 668)</a> . 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. 676)</a> management service that makes it easy to run, stop, and manage Docker containers on a <a href="#">cluster (p. 675)</a> of <a href="#">EC2 instance (p. 681)s</a> . 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. 658) instance (p. 688)s</a> . 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. 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. 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. 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. See Also <a href="https://aws.amazon.com/elasticache/">https://aws.amazon.com/elasticache/</a> .
Amazon Elasticsearch Service (Amazon ES)	An AWS managed service for deploying, operating, and scaling Elasticsearch, an open-source search and analytics engine, in the AWS Cloud. Amazon Elasticsearch Service (Amazon ES) also offers security options, high availability, data durability, and direct access to the Elasticsearch API. 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. 686)</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. 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. 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. 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. 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. 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. 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. 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. 662)</a> and <a href="#">Amazon Redshift (p. 662)</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. 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. 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. 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. 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. 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. See Also <a href="https://aws.amazon.com/lumberyard/">https://aws.amazon.com/lumberyard/</a> .

Amazon Machine Image (AMI)	An encrypted machine image stored in <a href="#">Amazon Elastic Block Store (Amazon EBS) (p. 659)</a> or <a href="#">Amazon Simple Storage Service (p. 662)</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. 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. 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. 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. 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. 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. 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. 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. 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 build speech-enabled applications that work in many different countries. 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. 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. See Also <a href="https://aws.amazon.com/rekognition/">https://aws.amazon.com/rekognition/</a> .

Amazon Redshift	<p>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.</p> <p>See Also <a href="https://aws.amazon.com/redshift/">https://aws.amazon.com/redshift/</a>.</p>
Amazon Relational Database Service (Amazon RDS)	<p>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.</p> <p>See Also <a href="https://aws.amazon.com/rds">https://aws.amazon.com/rds</a>.</p>
Amazon Resource Name (ARN)	<p>A standardized way to refer to an AWS <a href="#">resource (p. 702)</a> (for example, <code>arn:aws:iam::123456789012:user/division_abc/subdivision_xyz/Bob</code>).</p>
Amazon Route 53	<p>A web service you can use to create a new DNS service or to migrate your existing DNS service to the cloud.</p> <p>See Also <a href="https://aws.amazon.com/route53">https://aws.amazon.com/route53</a>.</p>
Amazon S3	<p>Storage for the internet. You can use it to store and retrieve any amount of data at any time, from anywhere on the web.</p> <p>See Also <a href="#">Amazon Simple Storage Service (Amazon S3)</a>, <a href="https://aws.amazon.com/s3">https://aws.amazon.com/s3</a>.</p>
Amazon S3-Backed AMI	<p>See <a href="#">instance store-backed AMI</a>.</p>
Amazon S3 Glacier	<p>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.</p> <p>See Also <a href="https://aws.amazon.com/glacier/">https://aws.amazon.com/glacier/</a>.</p>
AWS Security Hub	<p>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.</p> <p>See Also <a href="https://aws.amazon.com/security-hub/">https://aws.amazon.com/security-hub/</a>.</p>
Amazon Silk	<p>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.</p>
Amazon Simple Email Service (Amazon SES)	<p>An easy-to-use, cost-effective email solution for applications.</p> <p>See Also <a href="https://aws.amazon.com/ses">https://aws.amazon.com/ses</a>.</p>
Amazon Simple Notification Service (Amazon SNS)	<p>A web service that applications, users, and devices can use to instantly send and receive notifications from the cloud.</p> <p>See Also <a href="https://aws.amazon.com/sns">https://aws.amazon.com/sns</a>.</p>
Amazon Simple Queue Service (Amazon SQS)	<p>Reliable and scalable hosted queues for storing messages as they travel between computers.</p> <p>See Also <a href="https://aws.amazon.com/sqs">https://aws.amazon.com/sqs</a>.</p>
Amazon Simple Storage Service (Amazon S3)	<p>Storage for the internet. You can use it to store and retrieve any amount of data at any time, from anywhere on the web.</p> <p>See Also <a href="https://aws.amazon.com/s3">https://aws.amazon.com/s3</a>.</p>
Amazon Simple Workflow Service (Amazon SWF)	<p>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.</p>

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	See Also <a href="https://aws.amazon.com/swf/">https://aws.amazon.com/swf/</a> .
Amazon Sumerian	A set of tools for creating and running high-quality 3D, augmented reality (AR), and virtual reality (VR) applications on the web. 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. 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. 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. 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. 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. 708)s</a> , and configuration of <a href="#">route table (p. 703)s</a> and network gateways. 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. 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. 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. 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. 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. 702)s</a> from supported devices. 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. 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. 657)</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. 667)</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. 666)</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. 666)</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. 664)</a>. Revisions are stored in <a href="#">Amazon S3 (p. 662) bucket (p. 673)s</a> or <a href="#">GitHub (p. 685)</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. 666)</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. 667)</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. 662)</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. 666)</a>: A copy of the files or changes that will be worked upon by the pipeline.</p>
asymmetric encryption	<p><a href="#">Encryption (p. 682)</a> that uses both a public key and a private key.</p>
asynchronous bounce	<p>A type of <a href="#">bounce (p. 673)</a> that occurs when a <a href="#">receiver (p. 700)</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>

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	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.
Aurora	See <a href="#">the section called “Amazon Aurora”</a> .
authenticated encryption	<a href="#">Encryption (p. 682)</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. 681)s</a> 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. 701)</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. 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. 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. 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. 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. 702)s</a> 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. 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. 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. 711)</a> (SSL/TLS) certificates for use with AWS services. 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. 674)s</a> .

	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 (AWS CDK)	An open-source software development framework for defining your cloud infrastructure in code and provisioning it through AWS CloudFormation. 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. 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. 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. 702)s</a> together as a unit. 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. 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. 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. 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. 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. 681)s</a> and <a href="#">instance (p. 688)s</a> running on-premises. 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. 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. 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. 702)</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. See Also <a href="https://aws.amazon.com/config/">https://aws.amazon.com/config/</a> .



AWS Database Migration Service	A web service that can help you migrate data to and from many widely used commercial and open-source databases. 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. 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. 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. 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. 702)</a> s to an existing on-premises Microsoft Active Directory or to set up and operate a new, standalone directory in the AWS Cloud. 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. 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. See Also <a href="https://aws.amazon.com/mediacconnect">https://aws.amazon.com/mediacconnect</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. 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. 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. 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. 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. 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. 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

	<p>applies your rules across your accounts and resources, even as you add new resources. 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. 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)</a> (p. 684) 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. 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. 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)</a> (p. 663) customers can use to manage users and user permissions within AWS. 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. 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. 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. 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. 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. 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. 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. 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. 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. 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. 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. 682)</a> keys that are used to encrypt data. 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. 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. 678)</a> in <a href="#">AWS Key Management Service (AWS KMS) (p. 669)</a> .
AWS managed policy	An <a href="#">IAM (p. 668) managed policy (p. 692)</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. 702)s</a> . 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. 702)s</a> 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. 658)</a> and manage AWS resources from within vCenter. 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. 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. 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. 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. 702)s</a> such as storage. You can automate tasks based on time, load, lifecycle events, and more. 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. 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 <a href="https://aws.amazon.com/ram/">https://aws.amazon.com/ram/</a> .
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 <a href="#">Amazon S3 (p. 662)</a> , <a href="#">Amazon EC2 (p. 658)</a> , <a href="#">Amazon DynamoDB (p. 658)</a> , and more. The single, downloadable package includes the AWS C++ library, code examples, and documentation. See Also <a href="https://aws.amazon.com/sdk-for-cpp/">https://aws.amazon.com/sdk-for-cpp/</a> .
AWS SDK for Go	A software development kit for integrating your Go application with the full suite of AWS services. See Also <a href="https://aws.amazon.com/sdk-for-go/">https://aws.amazon.com/sdk-for-go/</a> .
AWS SDK for Java	A software development kit that provides Java API operations for many AWS services including <a href="#">Amazon S3 (p. 662)</a> , <a href="#">Amazon EC2 (p. 658)</a> , <a href="#">Amazon DynamoDB (p. 658)</a> , and more. The single, downloadable package includes the AWS Java library, code examples, and documentation. See Also <a href="https://aws.amazon.com/sdk-for-java/">https://aws.amazon.com/sdk-for-java/</a> .
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 <a href="#">Amazon DynamoDB (p. 658)</a> , and save user files to <a href="#">Amazon S3 (p. 662)</a> . See Also <a href="https://docs.aws.amazon.com/sdk-for-javascript/v2/developer-guide/">https://docs.aws.amazon.com/sdk-for-javascript/v2/developer-guide/</a> .
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 <a href="#">Amazon S3 (p. 662)</a> , <a href="#">Amazon EC2 (p. 658)</a> , <a href="#">Amazon DynamoDB (p. 658)</a> , and <a href="#">Amazon Simple Workflow Service (Amazon SWF) (p. 662)</a> . The single, downloadable package includes the AWS JavaScript library and documentation. See Also <a href="https://docs.aws.amazon.com/sdk-for-javascript/v2/developer-guide/">https://docs.aws.amazon.com/sdk-for-javascript/v2/developer-guide/</a> .
AWS SDK for .NET	A software development kit that provides .NET API operations for AWS services including <a href="#">Amazon S3 (p. 662)</a> , <a href="#">Amazon EC2 (p. 658)</a> , <a href="#">IAM (p. 668)</a> , and more. You can download the SDK as multiple service-specific packages on NuGet. See Also <a href="https://aws.amazon.com/sdk-for-net/">https://aws.amazon.com/sdk-for-net/</a> .
AWS SDK for PHP	A software development kit and open-source PHP library for integrating your PHP application with AWS services such as <a href="#">Amazon S3 (p. 662)</a> , <a href="#">Amazon S3 Glacier (p. 662)</a> , and <a href="#">Amazon DynamoDB (p. 658)</a> . See Also <a href="https://aws.amazon.com/sdk-for-php/">https://aws.amazon.com/sdk-for-php/</a> .
AWS SDK for Python (Boto)	A software development kit for using Python to access AWS services such as <a href="#">Amazon EC2 (p. 658)</a> , <a href="#">Amazon EMR (p. 659)</a> , <a href="#">Amazon EC2 Auto Scaling (p. 658)</a> , <a href="#">Amazon Kinesis (p. 660)</a> , or <a href="#">AWS Lambda (p. 669)</a> . See Also <a href="http://boto.readthedocs.org/en/latest/">http://boto.readthedocs.org/en/latest/</a> .
AWS SDK for Ruby	A software development kit for accessing AWS services from Ruby. The SDK provides Ruby classes for many AWS services including <a href="#">Amazon S3 (p. 662)</a> , <a href="#">Amazon EC2 (p. 658)</a> , <a href="#">Amazon DynamoDB (p. 658)</a> , and more. The single, downloadable package includes the AWS Ruby Library and documentation. See Also <a href="https://aws.amazon.com/sdk-for-ruby/">https://aws.amazon.com/sdk-for-ruby/</a> .
AWS Secrets Manager	A service for securely encrypting, storing, and rotating credentials for databases and other services.

	See Also <a href="https://aws.amazon.com/secrets-manager/">https://aws.amazon.com/secrets-manager/</a> .
AWS Security Token Service (AWS STS)	A web service for requesting temporary, limited-privilege credentials for <a href="#">AWS Identity and Access Management (IAM)</a> (p. 668) users or for users that you authenticate ( <a href="#">federated users</a> (p. 684)). 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. 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. 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. 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. 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. See Also <a href="https://aws.amazon.com/snowball">https://aws.amazon.com/snowball</a> .
AWS Storage Gateway	A web service that connects an on-premises software appliance with cloud-based storage. AWS Storage Gateway provides seamless and secure integration between an organization's on-premises IT environment and AWS storage infrastructure. 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. 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. 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. 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. 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.

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	See Also <a href="https://aws.amazon.com/powershell/">https://aws.amazon.com/powershell/</a> .
AWS Toolkit for Microsoft Azure DevOps	Provides tasks you can use in build and release definitions in VSTS to interact with AWS services. 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. 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. 713)</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. 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. See Also <a href="https://aws.amazon.com/xray/">https://aws.amazon.com/xray/</a> .

## B

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[Numbers and symbols \(p. 655\)](#) | [A \(p. 655\)](#) | [B \(p. 672\)](#) | [C \(p. 673\)](#) | [D \(p. 678\)](#) | [E \(p. 681\)](#) | [F \(p. 684\)](#) | [G \(p. 685\)](#) | [H \(p. 686\)](#) | [I \(p. 687\)](#) | [J \(p. 689\)](#) | [K \(p. 690\)](#) | [L \(p. 690\)](#) | [M \(p. 691\)](#) | [N \(p. 694\)](#) | [O \(p. 695\)](#) | [P \(p. 696\)](#) | [Q \(p. 699\)](#) | [R \(p. 700\)](#) | [S \(p. 703\)](#) | [T \(p. 709\)](#) | [U \(p. 711\)](#) | [V \(p. 712\)](#) | [W \(p. 713\)](#) | [X, Y, Z \(p. 713\)](#)

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. 658)</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. 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. 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,

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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).

block	A dataset. <a href="#">Amazon EMR (p. 659)</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. 661)</a> and <a href="#">instance (p. 688)</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. 686)</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. 658)</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. 703)</a> .
bucket	<a href="#">Amazon Simple Storage Service (Amazon S3) (p. 662)</a> : A container for stored objects. Every object is contained in a bucket. For example, if the object named <code>photos/puppy.jpg</code> is stored in the <code>DOC-EXAMPLE-BUCKET</code> bucket, then authorized users can access the object with the URL <code>https://s3-bucket-endpoint/DOC-EXAMPLE-BUCKET/photos/puppy.jpg</code> .
bucket owner	The person or organization that owns a <a href="#">bucket (p. 673)</a> in <a href="#">Amazon S3 (p. 662)</a> . In the same way that Amazon is the only owner of the domain name <code>Amazon.com</code> , only one person or organization can own a bucket.
bundling	A commonly used term for creating an <a href="#">Amazon Machine Image (AMI) (p. 661)</a> . It specifically refers to creating <a href="#">instance store-backed AMI (p. 688)s</a> .

## C

[Numbers and symbols \(p. 655\)](#) | [A \(p. 655\)](#) | [B \(p. 672\)](#) | [C \(p. 673\)](#) | [D \(p. 678\)](#) | [E \(p. 681\)](#) | [F \(p. 684\)](#) | [G \(p. 685\)](#) | [H \(p. 686\)](#) | [I \(p. 687\)](#) | [J \(p. 689\)](#) | [K \(p. 690\)](#) | [L \(p. 690\)](#) | [M \(p. 691\)](#) | [N \(p. 694\)](#) | [O \(p. 695\)](#) | [P \(p. 696\)](#) | [Q \(p. 699\)](#) | [R \(p. 700\)](#) | [S \(p. 703\)](#) | [T \(p. 709\)](#) | [U \(p. 711\)](#) | [V \(p. 712\)](#) | [W \(p. 713\)](#) | [X, Y, Z \(p. 713\)](#)

cache cluster	A logical cache distributed over multiple <a href="#">cache node (p. 674)s</a> . 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. 701)</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.
cache node type	An <a href="#">EC2 instance (p. 681)</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. 658) security group (p. 704)</a> s specified through the console or the API or command line tools.
campaign	<a href="#">Amazon Personalize (p. 661)</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. 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. 673)</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. 662)</a> can recognize.
capacity	The amount of available compute size at a given time. Each <a href="#">Auto Scaling group (p. 665)</a> is defined with a minimum and maximum compute size. A <a href="#">scaling activity (p. 703)</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 AWS <a href="#">account (p. 656)</a> s and users. Also known as an <a href="#">X.509 certificate (p. 713)</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. 666) stack (p. 707)</a> , AWS <a href="#">resource (p. 702)</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. See Also <a href="#">Classless Inter-Domain Routing in Wikipedia</a> .
ciphertext	Information that has been <a href="#">encrypted (p. 682)</a> , as opposed to <a href="#">plaintext (p. 697)</a> , which is information that has not.



ClassicLink	A feature for linking an EC2-Classic <a href="#">instance (p. 688)</a> to a <a href="#">VPC (p. 713)</a> , allowing your EC2-Classic instance to communicate with VPC instances using private IP addresses. 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. Problems with more than two available categories (classes) are called "multiclass classification" problems. 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. 676)</a> s that you can place <a href="#">task (p. 709)</a> s on.  <a href="#">Amazon Elasticsearch Service (Amazon ES) (p. 659)</a> : A logical grouping of one or more data nodes, optional dedicated master nodes, and storage required to run Amazon Elasticsearch Service (Amazon ES) and operate your Amazon ES domain. 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. 688)</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. 675)</a> grouping to provide lower latency and high-bandwidth connectivity between the <a href="#">instance (p. 688)</a> s.
cluster status	<a href="#">Amazon Elasticsearch Service (Amazon ES) (p. 659)</a> : 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. 702)</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. 700)</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. 688)</a> sends a notification to <a href="#">Amazon SES (p. 662)</a> .
compound query	<a href="#">Amazon CloudSearch (p. 657)</a> : A search request that specifies multiple search criteria using the Amazon CloudSearch structured search syntax.

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condition	<p><a href="#">IAM (p. 668)</a>: 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."</p> <p><a href="#">AWS WAF (p. 672)</a>: A set of attributes that AWS WAF searches for in web requests to AWS <a href="#">resource (p. 702)</a>s such as <a href="#">Amazon CloudFront (p. 657)</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 conditions, you can configure AWS WAF to allow or block web requests to AWS resources.</p>
conditional parameter	See <a href="#">mapping</a> .
configuration API	<a href="#">Amazon CloudSearch (p. 657)</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. 667)</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. 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. 709)</a> .
container definition	Specifies which <a href="#">Docker image (p. 680)</a> to use for a <a href="#">container (p. 676)</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. 709)</a> .
container instance	An <a href="#">EC2 instance (p. 681)</a> that's running the <a href="#">Amazon Elastic Container Service (Amazon ECS) (p. 659)</a> agent and has been registered into a <a href="#">cluster (p. 675)</a> . Amazon ECS <a href="#">task (p. 709)</a> s are placed on active container instances.
container registry	Stores, manages, and deploys <a href="#">Docker image (p. 680)</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. 661)</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.

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	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. 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. See Also <a href="https://aws.amazon.com/devops/continuous-integration/">https://aws.amazon.com/devops/continuous-integration/</a> .
cooldown period	Amount of time that <a href="#">Amazon EC2 Auto Scaling (p. 658)</a> doesn't allow the desired size of the <a href="#">Auto Scaling group (p. 665)</a> to be changed by any other notification from an <a href="#">Amazon CloudWatch (p. 657) alarm (p. 656)</a> .
core node	An <a href="#">EC2 instance (p. 681)</a> that runs <a href="#">Hadoop (p. 686)</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. 692)</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.  Core nodes run both the DataNodes and TaskTracker Hadoop daemons.
corpus	<a href="#">Amazon CloudSearch (p. 657)</a> : A collection of data that you want to search.
coverage	<a href="#">Amazon Personalize (p. 661)</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. 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. 666)</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. 666)</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. 655)</a> and the <a href="#">secret access key (p. 704)</a> .
cross-account access	The process of permitting limited, controlled use of <a href="#">resource (p. 702)</a> s in one <a href="#">AWS account (p. 656)</a> by a user in another AWS account. For example, in <a href="#">AWS CodeCommit (p. 666)</a> and <a href="#">AWS CodeDeploy (p. 666)</a> you can configure cross-account access so that a user in AWS account A can access an CodeCommit repository created by account B. Or a pipeline in <a href="#">AWS CodePipeline (p. 666)</a> created by account A can use CodeDeploy resources created by account B. In <a href="#">IAM (p. 668)</a> you use a <a href="#">role (p. 702)</a> to <a href="#">delegate (p. 679)</a> temporary access to a <a href="#">user (p. 711)</a> in one account to resources in another.
cross-Region replication	A solution for replicating data across different <a href="#">AWS Region (p. 701)</a> s, 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. 663)</a> . The internal interfaces of the customer gateway are

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attached to one or more devices in your home network. The external interface is attached to the [virtual private gateway \(VGW\) \(p. 712\)](#) across the VPN tunnel.

customer managed policy	An <a href="#">IAM (p. 668) managed policy (p. 692)</a> that you create and manage in your <a href="#">AWS account (p. 656)</a> .
customer master key (CMK)	The fundamental <a href="#">resource (p. 702)</a> that <a href="#">AWS Key Management Service (AWS KMS) (p. 669)</a> manages. CMKs can be either customer managed keys or AWS managed keys. Use CMKs inside AWS KMS to <a href="#">encrypt (p. 682)</a> or decrypt 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

[Numbers and symbols \(p. 655\)](#) | [A \(p. 655\)](#) | [B \(p. 672\)](#) | [C \(p. 673\)](#) | [D \(p. 678\)](#) | [E \(p. 681\)](#) | [F \(p. 684\)](#) | [G \(p. 685\)](#) | [H \(p. 686\)](#) | [I \(p. 687\)](#) | [J \(p. 689\)](#) | [K \(p. 690\)](#) | [L \(p. 690\)](#) | [M \(p. 691\)](#) | [N \(p. 694\)](#) | [O \(p. 695\)](#) | [P \(p. 696\)](#) | [Q \(p. 699\)](#) | [R \(p. 700\)](#) | [S \(p. 703\)](#) | [T \(p. 709\)](#) | [U \(p. 711\)](#) | [V \(p. 712\)](#) | [W \(p. 713\)](#) | [X, Y, Z \(p. 713\)](#)

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 Region (p. 701)</a> s. However, it takes time for the data to propagate to all storage locations. To support varied application requirements, <a href="#">Amazon DynamoDB (p. 658)</a> supports both eventually consistent and strongly consistent reads. See Also <a href="#">eventual consistency</a> , <a href="#">eventually consistent read</a> , <a href="#">strongly consistent read</a> .
data node	<a href="#">Amazon Elasticsearch Service (Amazon ES) (p. 659)</a> : An Elasticsearch instance that holds data and responds to data upload requests. 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. 669)</a> , valid data sources include an <a href="#">instance (p. 688)</a> for a stack's MySQL layer or a stack's <a href="#">Amazon RDS (p. 662)</a> service layer. In <a href="#">Amazon Redshift (p. 662)</a> , valid data sources include text files in an <a href="#">Amazon S3 (p. 662) bucket (p. 673)</a> , in an <a href="#">Amazon EMR (p. 659)</a> cluster, or on a remote host that a cluster can access through an SSH connection. See Also <a href="#">datasource</a> .
database engine	The database software and version running on the <a href="#">DB instance (p. 679)</a> .
database name	The name of a database hosted in a <a href="#">DB instance (p. 679)</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. 661)</a> : A container for the data used by Amazon Personalize. There are three types of Amazon Personalize datasets: Users, Items, and Interactions. See Also <a href="#">Interactions dataset</a> , <a href="#">Users dataset</a> , <a href="#">Items dataset</a> .
dataset group	<a href="#">Amazon Personalize (p. 661)</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

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	<p>collections, so resources from one dataset group can't influence resources in any other dataset group.</p> <p>See Also <a href="#">dataset</a>, <a href="#">event tracker</a>, <a href="#">solution</a>, <a href="#">campaign</a>.</p>
datasource	<p><a href="#">Amazon Machine Learning (p. 661)</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.</p> <p>See Also <a href="#">data source</a>.</p>
DB compute class	<p>The size of the database compute platform used to run the instance.</p>
DB instance	<p>An isolated database environment running in the cloud. A DB instance can contain multiple user-created databases.</p>
DB instance identifier	<p>User-supplied identifier for the DB instance. The identifier must be unique for that user in an AWS <a href="#">Region (p. 701)</a>.</p>
DB parameter group	<p>A container for database engine parameter values that apply to one or more <a href="#">DB instance (p. 679)s</a>.</p>
DB security group	<p>A method that controls access to the <a href="#">DB instance (p. 679)</a>. By default, network access is turned off to DB instances. After inbound traffic is configured for a <a href="#">security group (p. 704)</a>, the same rules apply to all DB instances associated with that group.</p>
DB snapshot	<p>A user-initiated point backup of a <a href="#">DB instance (p. 679)</a>.</p>
Dedicated Host	<p>A physical server with <a href="#">EC2 instance (p. 681)</a> capacity fully dedicated to a user.</p>
Dedicated Instance	<p>An <a href="#">instance (p. 688)</a> that's physically isolated at the host hardware level and launched within a <a href="#">VPC (p. 713)</a>.</p>
dedicated master node	<p><a href="#">Amazon Elasticsearch Service (Amazon ES) (p. 659)</a>: An Elasticsearch instance that performs cluster management tasks, but doesn't hold data or respond to data upload requests. Amazon Elasticsearch Service (Amazon ES) uses dedicated master nodes to increase cluster stability.</p> <p>See Also <a href="#">data node</a>, <a href="#">node</a>.</p>
Dedicated Reserved Instance	<p>An option that you purchase to guarantee that sufficient capacity will be available to launch <a href="#">Dedicated Instance (p. 679)s</a> into a <a href="#">VPC (p. 713)</a>.</p>
delegation	<p>Within a single AWS <a href="#">account (p. 656)</a>: Giving AWS <a href="#">user (p. 711)s</a> access to <a href="#">resource (p. 702)s</a> in your AWS account.</p> <p>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).</p> <p>See Also <a href="#">trust policy</a>.</p>
delete marker	<p>An object with a key and version ID, but without content. <a href="#">Amazon S3 (p. 662)</a> inserts delete markers automatically into versioned <a href="#">bucket (p. 673)s</a> when an object is deleted.</p>
deliverability	<p>The likelihood that an email message will arrive at its intended destination.</p>
deliveries	<p>The number of email messages, sent through <a href="#">Amazon SES (p. 662)</a>, that were accepted by an <a href="#">internet service provider (ISP) (p. 688)</a> for delivery to <a href="#">recipient (p. 700)s</a> over a period of time.</p>

deny	The result of a <a href="#">policy (p. 697)</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 <a href="#">allow (p. 657)</a> .
deployment configuration	<a href="#">AWS CodeDeploy (p. 666)</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. 666)</a> : A set of individually tagged <a href="#">instance (p. 688)s</a> , <a href="#">EC2 instance (p. 681)s</a> in <a href="#">Auto Scaling group (p. 665)s</a> , or both.
detailed monitoring	Monitoring of AWS provided metrics derived at a 1-minute frequency.
Description property	A property added to parameters, <a href="#">resource (p. 702)s</a> , resource properties, mappings, and outputs to help you to document <a href="#">AWS CloudFormation (p. 666)</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. The discussion forums are located at <a href="https://forums.aws.amazon.com/">https://forums.aws.amazon.com/</a> .
distribution	A link between an origin server (such as an <a href="#">Amazon S3 (p. 662)</a> <a href="#">bucket (p. 673)</a> ) and a domain name, which <a href="#">CloudFront (p. 657)</a> automatically assigns. Through this link, CloudFront identifies the object you have stored in your <a href="#">origin server (p. 696)</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. 676)</a> . Docker images can comprise specific operating systems or applications.
document	<a href="#">Amazon CloudSearch (p. 657)</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. 657)</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. 657)</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. 657)</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 Elasticsearch Service (Amazon ES) (p. 659)</a> : The hardware, software, and data exposed by Amazon Elasticsearch Service (Amazon ES) endpoints. An Amazon ES domain is a service wrapper around an Elasticsearch cluster. An Amazon ES domain encapsulates the engine instances that process Amazon ES requests, the indexed data that you want to search, snapshots of the domain, access policies, and metadata.

See Also [cluster](#), [Elasticsearch](#).

Domain Name System	A service that routes internet traffic to websites by translating friendly domain names (for example, <a href="#">www.example.com</a> ) 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. 658)</a> table. When you enable a stream on a table, DynamoDB captures information about every modification to data items in the table. See Also <a href="#">Amazon DynamoDB Streams</a> .

## E

[Numbers and symbols \(p. 655\)](#) | [A \(p. 655\)](#) | [B \(p. 672\)](#) | [C \(p. 673\)](#) | [D \(p. 678\)](#) | [E \(p. 681\)](#) | [F \(p. 684\)](#) | [G \(p. 685\)](#) | [H \(p. 686\)](#) | [I \(p. 687\)](#) | [J \(p. 689\)](#) | [K \(p. 690\)](#) | [L \(p. 690\)](#) | [M \(p. 691\)](#) | [N \(p. 694\)](#) | [O \(p. 695\)](#) | [P \(p. 696\)](#) | [Q \(p. 699\)](#) | [R \(p. 700\)](#) | [S \(p. 703\)](#) | [T \(p. 709\)](#) | [U \(p. 711\)](#) | [V \(p. 712\)](#) | [W \(p. 713\)](#) | [X, Y, Z \(p. 713\)](#)

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. 681)</a> types.
EC2 instance	A compute <a href="#">instance (p. 688)</a> in the <a href="#">Amazon EC2 (p. 658)</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. 657)</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. 662)</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 Elasticsearch, Logstash, Kibana, and Beats—that are designed to take data from any source and search, analyze, and visualize it in real time.  Amazon Elasticsearch Service (Amazon ES) is an AWS managed service for deploying, operating, and scaling Elasticsearch in the AWS Cloud. See Also <a href="#">Amazon Elasticsearch Service (Amazon ES)</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. 658)</a> or <a href="#">Amazon VPC (p. 663)</a> and then attached to an <a href="#">instance (p. 688)</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

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	needs change. Unlike traditional static IP addresses, Elastic IP addresses allow you to mask instance or <a href="#">Availability Zone (p. 665)</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. 681)</a> s. 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. 688)</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. 704)</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.
Elasticsearch	An open-source, real-time distributed search and analytics engine used for full-text search, structured search, and analytics. Elasticsearch was developed by the Elastic company.  Amazon Elasticsearch Service (Amazon ES) is an AWS managed service for deploying, operating, and scaling Elasticsearch in the AWS Cloud. See Also <a href="#">Amazon Elasticsearch Service (Amazon ES)</a> , <a href="#">Elastic</a> .
EMR	See <a href="#">Amazon EMR</a> .
encrypt	To use a mathematical algorithm to make data unintelligible to unauthorized <a href="#">user (p. 711)</a> 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) (p. 669)</a> -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.  <a href="#">Amazon ElastiCache (p. 659)</a> : The DNS name of a <a href="#">cache node (p. 674)</a> .  <a href="#">Amazon RDS (p. 662)</a> : The DNS name of a <a href="#">DB instance (p. 679)</a> .  <a href="#">AWS CloudFormation (p. 666)</a> : The DNS name or IP address of the server that receives an HTTP request.
endpoint port	<a href="#">Amazon ElastiCache (p. 659)</a> : The port number used by a <a href="#">cache node (p. 674)</a> .  <a href="#">Amazon RDS (p. 662)</a> : The port number used by a <a href="#">DB instance (p. 679)</a> .
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 (p. 667)</a> : A specific running instance of an <a href="#">application (p. 664)</a> . The application has a CNAME and includes an application version and a customizable configuration (which is inherited from the default container type).  <a href="#">AWS CodeDeploy (p. 666)</a> : 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.

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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.  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. 661)</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. See Also <a href="#">dataset</a> , <a href="#">Interactions dataset</a> .
event tracker	<a href="#">Amazon Personalize (p. 661)</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. 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. 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. 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. 657)</a> of an object from an <a href="#">edge location (p. 681)</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.
exbibyte (EiB)	A contraction of exa binary byte, an exbibyte is 2 <sup>60</sup> or 1,152,921,504,606,846,976 bytes. An exabyte (EB) is 10 <sup>18</sup> or 1,000,000,000,000,000,000 bytes. 1,024 EiB is a <a href="#">zebibyte (ZiB) (p. 713)</a> .
expiration	For <a href="#">CloudFront (p. 657)</a> caching, the time when CloudFront stops responding to user requests with an object. If you don't use headers or CloudFront <a href="#">distribution (p. 680)</a> settings to specify how long you want objects to stay in an <a href="#">edge location (p. 681)</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. 696)</a> .

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explicit impressions	<a href="#">Amazon Personalize (p. 661)</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. 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. 661)</a> launch permission granted to a specific <a href="#">AWS account (p. 656)</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. 657)</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)	<p>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.</p> <p>ETL tools combine these three functions to consolidate and move data from one environment to another. <a href="#">AWS Glue (p. 668)</a> is a fully managed ETL service for discovering and organizing data, transforming it, and making it available for search and analytics.</p>

## F

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[Numbers and symbols \(p. 655\)](#) | [A \(p. 655\)](#) | [B \(p. 672\)](#) | [C \(p. 673\)](#) | [D \(p. 678\)](#) | [E \(p. 681\)](#) | [F \(p. 684\)](#) | [G \(p. 685\)](#) | [H \(p. 686\)](#) | [I \(p. 687\)](#) | [J \(p. 689\)](#) | [K \(p. 690\)](#) | [L \(p. 690\)](#) | [M \(p. 691\)](#) | [N \(p. 694\)](#) | [O \(p. 695\)](#) | [P \(p. 696\)](#) | [Q \(p. 699\)](#) | [R \(p. 700\)](#) | [S \(p. 703\)](#) | [T \(p. 709\)](#) | [U \(p. 711\)](#) | [V \(p. 712\)](#) | [W \(p. 713\)](#) | [X, Y, Z \(p. 713\)](#)

facet	<a href="#">Amazon CloudSearch (p. 657)</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. 657)</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. 702)</a> s in an <a href="#">AWS account (p. 656)</a> without having to create <a href="#">IAM user (p. 711)</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. 688)</a> ) forwards a <a href="#">recipient (p. 700)</a> 's <a href="#">complaint (p. 675)</a> back to the <a href="#">sender (p. 704)</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. 658) resource (p. 702)</a> 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. 657) fq</a> 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

[Numbers and symbols \(p. 655\)](#) | [A \(p. 655\)](#) | [B \(p. 672\)](#) | [C \(p. 673\)](#) | [D \(p. 678\)](#) | [E \(p. 681\)](#) | [F \(p. 684\)](#) | [G \(p. 685\)](#) | [H \(p. 686\)](#) | [I \(p. 687\)](#) | [J \(p. 689\)](#) | [K \(p. 690\)](#) | [L \(p. 690\)](#) | [M \(p. 691\)](#) | [N \(p. 694\)](#) | [O \(p. 695\)](#) | [P \(p. 696\)](#) | [Q \(p. 699\)](#) | [R \(p. 700\)](#) | [S \(p. 703\)](#) | [T \(p. 709\)](#) | [U \(p. 711\)](#) | [V \(p. 712\)](#) | [W \(p. 713\)](#) | [X, Y, Z \(p. 713\)](#)

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 <sup>30</sup> or 1,073,741,824 bytes. A gigabyte (GB) is 10 <sup>9</sup> or 1,000,000,000 bytes. 1,024 GiB is a <a href="#">tebibyte (TiB) (p. 710)</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. See Also <a href="#">local secondary index</a> .
grant	<a href="#">AWS Key Management Service (AWS KMS) (p. 669)</a> : A mechanism for giving AWS <a href="#">principal (p. 698)</a> s long-term permissions to use <a href="#">customer master key (CMK) (p. 678)</a> s.
grant token	A type of identifier that allows the permissions in a <a href="#">grant (p. 685)</a> to take effect immediately.

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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. 668) user (p. 711)s</a> . You can use IAM groups to simplify specifying and managing permissions for multiple users.

## H

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[Numbers and symbols \(p. 655\)](#) | [A \(p. 655\)](#) | [B \(p. 672\)](#) | [C \(p. 673\)](#) | [D \(p. 678\)](#) | [E \(p. 681\)](#) | [F \(p. 684\)](#) | [G \(p. 685\)](#) | [H \(p. 686\)](#) | [I \(p. 687\)](#) | [J \(p. 689\)](#) | [K \(p. 690\)](#) | [L \(p. 690\)](#) | [M \(p. 691\)](#) | [N \(p. 694\)](#) | [O \(p. 695\)](#) | [P \(p. 696\)](#) | [Q \(p. 699\)](#) | [R \(p. 700\)](#) | [S \(p. 703\)](#) | [T \(p. 709\)](#) | [U \(p. 711\)](#) | [V \(p. 712\)](#) | [W \(p. 713\)](#) | [X, Y, Z \(p. 713\)](#)

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. 658)</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. 657)</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. 657)</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. 702)</a> sets that <a href="#">Amazon Route 53 (p. 662)</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. 661)</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. See Also <a href="#">PV virtualization</a> .

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Numbers and symbols (p. 655) | A (p. 655) | B (p. 672) | C (p. 673) | D (p. 678) | E (p. 681) | F (p. 684) | G (p. 685) | H (p. 686) | I (p. 687) | J (p. 689) | K (p. 690) | L (p. 690) | M (p. 691) | N (p. 694) | O (p. 695) | P (p. 696) | Q (p. 699) | R (p. 700) | S (p. 703) | T (p. 709) | U (p. 711) | V (p. 712) | W (p. 713) | X, Y, Z (p. 713)

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. 668)</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. 662)</a> .
import log	A report that contains details about how <a href="#">AWS Import/Export (p. 668)</a> processed your data.
implicit impressions	<a href="#">Amazon Personalize (p. 661)</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. See Also <a href="#">recommendations</a> , <a href="#">impressions data</a> , <a href="#">explicit impressions</a> .
impressions data	<a href="#">Amazon Personalize (p. 661)</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. 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. 657)</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. 657)</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. 668)</a> <a href="#">policy (p. 697)</a> that's embedded in a single IAM <a href="#">user (p. 711)</a> , <a href="#">group (p. 686)</a> , or <a href="#">role (p. 702)</a> .

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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. 661)</a> running as a virtual server in the AWS Cloud.
instance family	A general <a href="#">instance type (p. 688)</a> grouping using either storage or CPU capacity.
instance group	A <a href="#">Hadoop (p. 686)</a> cluster contains one master instance group that contains one <a href="#">master node (p. 692)</a> , a core instance group containing one or more <a href="#">core node (p. 677)</a> and an optional <a href="#">task node (p. 709)</a> instance group, which can contain any number of task nodes.
instance profile	A container that passes <a href="#">IAM (p. 668) role (p. 702)</a> information to an <a href="#">EC2 instance (p. 681)</a> at launch.
instance store	Disk storage that's physically attached to the host computer for an <a href="#">EC2 instance (p. 681)</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. 661)</a> whose <a href="#">instance (p. 688)</a> s use an <a href="#">instance store (p. 688) volume (p. 713)</a> as the root device. Compare this with instances launched from <a href="#">Amazon EBS (p. 659)</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. 688)</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. 661)</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. 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. 713)</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. 691)</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. 666)</a> template that assigns values to properties not available until runtime. These functions follow the format <i>Fn::Attribute</i> , 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. 681)</a> s are assigned two IP addresses at launch, which are directly mapped to each other through network address translation ( <a href="#">NAT (p. 694)</a> ): a private IP address (following RFC 1918) and a public IP address. Instances launched in a <a href="#">VPC (p. 663)</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. 672)</a> : An attribute that specifies the IP addresses or IP address ranges that web requests originate from. Based on the specified IP

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addresses, you can configure AWS WAF to allow or block web requests to AWS [resource \(p. 702\)](#)s such as [Amazon CloudFront \(p. 657\)](#) distributions.

ISP	See <a href="#">internet service provider (ISP)</a> .
issuer	The person who writes a <a href="#">policy (p. 697)</a> to grant permissions to a <a href="#">resource (p. 702)</a> . The issuer (by definition) is always the resource owner. AWS doesn't permit <a href="#">Amazon SQS (p. 662)</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. 658)</a> are similar in many ways to rows, records, or tuples in other database systems.
item exploration	<a href="#">Amazon Personalize (p. 661)</a> : 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 <a href="#">recommendations</a> , <a href="#">campaign</a> , <a href="#">solution version</a> , <a href="#">user-personalization recipe</a> .
item-to-item similarities (SIMS) recipe	<a href="#">Amazon Personalize (p. 661)</a> : 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 <a href="#">recipe</a> , <a href="#">RELATED_ITEMS recipes</a> , <a href="#">Interactions dataset</a> .
Items dataset	<a href="#">Amazon Personalize (p. 661)</a> : A container for metadata about items, such as price, genre, or availability. See Also <a href="#">dataset</a> .

## J

[Numbers and symbols \(p. 655\)](#) | [A \(p. 655\)](#) | [B \(p. 672\)](#) | [C \(p. 673\)](#) | [D \(p. 678\)](#) | [E \(p. 681\)](#) | [F \(p. 684\)](#) | [G \(p. 685\)](#) | [H \(p. 686\)](#) | [I \(p. 687\)](#) | [J \(p. 689\)](#) | [K \(p. 690\)](#) | [L \(p. 690\)](#) | [M \(p. 691\)](#) | [N \(p. 694\)](#) | [O \(p. 695\)](#) | [P \(p. 696\)](#) | [Q \(p. 699\)](#) | [R \(p. 700\)](#) | [S \(p. 703\)](#) | [T \(p. 709\)](#) | [U \(p. 711\)](#) | [V \(p. 712\)](#) | [W \(p. 713\)](#) | [X, Y, Z \(p. 713\)](#)

job flow	<a href="#">Amazon EMR (p. 659)</a> : One or more <a href="#">step (p. 707)</a> s that specify all of the functions to be performed on the data.
job ID	A five-character, alphanumeric string that uniquely identifies an <a href="#">AWS Import/Export (p. 668)</a> storage device in your shipment. AWS issues the job ID in response to a <code>CREATE JOB</code> email command.
job prefix	An optional string that you can add to the beginning of an <a href="#">AWS Import/Export (p. 668)</a> log file name to prevent collisions with objects of the same name. See Also <a href="#">key prefix</a> .
JSON	JavaScript Object Notation. A lightweight data interchange format. For information about JSON, see <a href="http://www.json.org/">http://www.json.org/</a> .
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 <a href="#">recipient (p. 700)</a> 's inbox but are still accessible to the recipient. This is also referred to as a <a href="#">spam (p. 706)</a> or bulk folder.

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# K

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[Numbers and symbols \(p. 655\)](#) | [A \(p. 655\)](#) | [B \(p. 672\)](#) | [C \(p. 673\)](#) | [D \(p. 678\)](#) | [E \(p. 681\)](#) | [F \(p. 684\)](#) | [G \(p. 685\)](#) | [H \(p. 686\)](#) | [I \(p. 687\)](#) | [J \(p. 689\)](#) | [K \(p. 690\)](#) | [L \(p. 690\)](#) | [M \(p. 691\)](#) | [N \(p. 694\)](#) | [O \(p. 695\)](#) | [P \(p. 696\)](#) | [Q \(p. 699\)](#) | [R \(p. 700\)](#) | [S \(p. 703\)](#) | [T \(p. 709\)](#) | [U \(p. 711\)](#) | [V \(p. 712\)](#) | [W \(p. 713\)](#) | [X, Y, Z \(p. 713\)](#)

key	<p>A credential that identifies an <a href="#">AWS account (p. 656)</a> or <a href="#">user (p. 711)</a> to AWS (such as the <a href="#">AWS secret access key (p. 704)</a>).</p> <p><a href="#">Amazon Simple Storage Service (Amazon S3) (p. 662)</a>, <a href="#">Amazon EMR (p. 659)</a>: The unique identifier for an object in a <a href="#">bucket (p. 673)</a>. 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 <i>bucket + key</i>, 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: <code>http://doc.s3.amazonaws.com/2006-03-01/AmazonS3.wsd1</code>, where <code>doc</code> is the name of the bucket, and <code>2006-03-01/AmazonS3.wsd1</code> is the key.</p> <p><a href="#">AWS Import/Export (p. 668)</a>: 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, <code>logPrefix + import-log-JOBID</code>) is longer than 1024 bytes, <a href="#">AWS Elastic Beanstalk (p. 667)</a> returns an <code>InvalidManifestField</code> error.</p> <p><a href="#">IAM (p. 668)</a>: In a <a href="#">policy (p. 697)</a>, a specific characteristic that's the basis for restricting access (such as the current time or the IP address of the requester).</p> <p>Tagging resources: A general <a href="#">tag (p. 709)</a> label that acts like a category for more specific tag values. For example, you might have <a href="#">EC2 instance (p. 681)</a> with the tag key of <i>Owner</i> and the tag value of <i>Jan</i>. You can tag an <a href="#">AWS resource (p. 702)</a> with up to 10 key–value pairs. Not all AWS resources can be tagged.</p>
key pair	<p>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.</p>
key prefix	<p>A logical grouping of the objects in a <a href="#">bucket (p. 673)</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.</p>
kibibyte (KiB)	<p>A contraction of kilo binary byte, a kibibyte is <math>2^{10}</math> or 1,024 bytes. A kilobyte (KB) is <math>10^3</math> or 1,000 bytes. 1,024 KiB is a <a href="#">mebibyte (MiB) (p. 692)</a>.</p>
KMS	<p>See <a href="#">AWS Key Management Service (AWS KMS)</a>.</p>

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# L

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[Numbers and symbols \(p. 655\)](#) | [A \(p. 655\)](#) | [B \(p. 672\)](#) | [C \(p. 673\)](#) | [D \(p. 678\)](#) | [E \(p. 681\)](#) | [F \(p. 684\)](#) | [G \(p. 685\)](#) | [H \(p. 686\)](#) | [I \(p. 687\)](#) | [J \(p. 689\)](#) | [K \(p. 690\)](#) | [L \(p. 690\)](#) | [M \(p. 691\)](#) | [N \(p. 694\)](#) | [O \(p. 695\)](#) | [P \(p. 696\)](#) | [Q \(p. 699\)](#) | [R \(p. 700\)](#) | [S \(p. 703\)](#) | [T \(p. 709\)](#) | [U \(p. 711\)](#) | [V \(p. 712\)](#) | [W \(p. 713\)](#) | [X, Y, Z \(p. 713\)](#)

labeled data	<p>In machine learning, data for which you already know the target or “correct” answer.</p>
launch configuration	<p>A set of descriptive parameters used to create new <a href="#">EC2 instance (p. 681)</a>s in an <a href="#">Amazon EC2 Auto Scaling (p. 658)</a> activity.</p>



	A template that an <a href="#">Auto Scaling group (p. 665)</a> uses to launch new EC2 instances. The launch configuration contains information such as the <a href="#">Amazon Machine Image (AMI) (p. 661)</a> ID, the instance type, key pairs, <a href="#">security group (p. 704)s</a> , and block device mappings, among other configuration settings.
launch permission	An <a href="#">Amazon Machine Image (AMI) (p. 661)</a> attribute that allows users to launch an AMI.
lifecycle	The lifecycle state of the <a href="#">EC2 instance (p. 681)</a> contained in an <a href="#">Auto Scaling group (p. 665)</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. 688)</a> to a ClassicLink-enabled <a href="#">VPC (p. 713)</a> . See Also <a href="#">ClassicLink</a> , <a href="#">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. 665)</a> within a <a href="#">Region (p. 701)</a> . Load balancers can span multiple Availability Zones within an AWS Region into which an <a href="#">Amazon EC2 (p. 658)</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. See Also <a href="#">local secondary index</a> .
logical name	A case-sensitive unique string within an <a href="#">AWS CloudFormation (p. 666)</a> template that identifies a <a href="#">resource (p. 702)</a> , <a href="#">mapping (p. 692)</a> , parameter, or output. In an AWS CloudFormation template, each parameter, <a href="#">resource (p. 702)</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

[Numbers and symbols \(p. 655\)](#) | [A \(p. 655\)](#) | [B \(p. 672\)](#) | [C \(p. 673\)](#) | [D \(p. 678\)](#) | [E \(p. 681\)](#) | [F \(p. 684\)](#) | [G \(p. 685\)](#) | [H \(p. 686\)](#) | [I \(p. 687\)](#) | [J \(p. 689\)](#) | [K \(p. 690\)](#) | [L \(p. 690\)](#) | [M \(p. 691\)](#) | [N \(p. 694\)](#) | [O \(p. 695\)](#) | [P \(p. 696\)](#) | [Q \(p. 699\)](#) | [R \(p. 700\)](#) | [S \(p. 703\)](#) | [T \(p. 709\)](#) | [U \(p. 711\)](#) | [V \(p. 712\)](#) | [W \(p. 713\)](#) | [X, Y, Z \(p. 713\)](#)

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. 688)s</a> , 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. 662)</a> -based email-sending application without sending messages to actual recipients. Each

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	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. 703)</a> that any new <a href="#">VPC (p. 713)</a> <a href="#">subnet (p. 708)</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. 668)</a> <a href="#">policy (p. 697)</a> that you can attach to multiple <a href="#">user (p. 711)s</a> , <a href="#">group (p. 686)s</a> , and <a href="#">role (p. 702)s</a> in your IAM <a href="#">account (p. 656)</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. 666)</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. 661)</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. 707)s</a> . If your maximum price exceeds the current <a href="#">Spot price (p. 707)</a> and your restrictions are met, <a href="#">Amazon EC2 (p. 658)</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. 662)</a> .
mean reciprocal rank at 25	<a href="#">Amazon Personalize (p. 661)</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. 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. 685)</a> .
member resources	See <a href="#">resource</a> .
message ID	<a href="#">Amazon Simple Email Service (Amazon SES) (p. 662)</a> : A unique identifier that's assigned to every email message that's sent.  <a href="#">Amazon Simple Queue Service (Amazon SQS) (p. 662)</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. 662)</a> and <a href="#">Amazon EMR (p. 659)</a> metadata takes the form of

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	<p>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. 658)</a> metadata includes data about an <a href="#">EC2 instance (p. 681)</a> that the instance can retrieve to determine things about itself, such as the instance type or the IP address.</p>
metric	<p>An element of time-series data defined by a unique combination of exactly one <a href="#">namespace (p. 694)</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. 657)</a>.</p>
metrics	<p><a href="#">Amazon Personalize (p. 661)</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.</p> <p>See Also <a href="#">solution</a>, <a href="#">recipe</a>.</p>
metric name	<p>The primary identifier of a metric, used in combination with a <a href="#">namespace (p. 694)</a> and optional dimensions.</p>
MFA	<p>See <a href="#">multi-factor authentication (MFA)</a>.</p>
micro instance	<p>A type of <a href="#">EC2 instance (p. 681)</a> that's more economical to use if you have occasional bursts of high CPU activity.</p>
MIME	<p>See <a href="#">Multipurpose Internet Mail Extensions (MIME)</a>.</p>
ML model	<p>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>.</p> <p>See Also <a href="#">binary classification model</a>, <a href="#">multiclass classification model</a>, <a href="#">regression model</a>.</p>
MTA	<p>See <a href="#">Mail Transfer Agent (MTA)</a>.</p>
Multi-AZ deployment	<p>A primary <a href="#">DB instance (p. 679)</a> that has a synchronous standby replica in a different <a href="#">Availability Zone (p. 665)</a>. The primary DB instance is synchronously replicated across Availability Zones to the standby replica.</p>
multiclass classification model	<p>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?"</p>
multi-factor authentication (MFA)	<p>An optional AWS <a href="#">account (p. 656)</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. 669)</a>. You get this single-use code from an authentication device that you keep in your physical possession.</p> <p>See Also <a href="https://aws.amazon.com/mfa/">https://aws.amazon.com/mfa/</a>.</p>
multi-valued attribute	<p>An attribute with more than one value.</p>
multipart upload	<p>A feature that you can use to upload a single object as a set of parts.</p>
Multipurpose Internet Mail Extensions (MIME)	<p>An internet standard that extends the email protocol to include non-ASCII text and nontext elements, such as attachments.</p>

Multitool A cascading application that provides a simple command-line interface for managing large datasets.

## N

[Numbers and symbols \(p. 655\)](#) | [A \(p. 655\)](#) | [B \(p. 672\)](#) | [C \(p. 673\)](#) | [D \(p. 678\)](#) | [E \(p. 681\)](#) | [F \(p. 684\)](#) | [G \(p. 685\)](#) | [H \(p. 686\)](#) | [I \(p. 687\)](#) | [J \(p. 689\)](#) | [K \(p. 690\)](#) | [L \(p. 690\)](#) | [M \(p. 691\)](#) | [N \(p. 694\)](#) | [O \(p. 695\)](#) | [P \(p. 696\)](#) | [Q \(p. 699\)](#) | [R \(p. 700\)](#) | [S \(p. 703\)](#) | [T \(p. 709\)](#) | [U \(p. 711\)](#) | [V \(p. 712\)](#) | [W \(p. 713\)](#) | [X, Y, Z \(p. 713\)](#)

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 is commonly used to restrict internet communication to private instances while allowing outgoing traffic.  
See Also [Network Address Translation and Protocol Translation](#), [NAT gateway](#), [NAT instance](#).

NAT gateway A [NAT \(p. 694\)](#) device, managed by AWS, that performs network address translation in a private [subnet \(p. 708\)](#), to secure inbound internet traffic. A NAT gateway uses both NAT and port address translation.  
See Also [NAT instance](#).

NAT instance A [NAT \(p. 694\)](#) device, configured by a user, that performs network address translation in a [VPC \(p. 713\)](#) public [subnet \(p. 708\)](#) to secure inbound internet traffic.  
See Also [NAT gateway](#).

network ACL An optional layer of security that acts as a firewall for controlling traffic in and out of a [subnet \(p. 708\)](#). You can associate multiple subnets with a single network [ACL \(p. 655\)](#), but a subnet can be associated with only one network ACL at a time.

Network Address Translation and Protocol Translation ([NAT \(p. 694\)](#)-PT) An internet protocol standard defined in RFC 2766.  
See Also [NAT instance](#), [NAT gateway](#).

n-gram processor A processor that performs n-gram transformations.  
See Also [n-gram transformation](#).

n-gram transformation 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  $n$  words, where  $n$  is specified by the user, over the text, and outputting every string of words of size  $n$  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.

NICE Desktop Cloud Visualization A remote visualization technology for securely connecting users to graphic-intensive 3D applications hosted on a remote, high-performance server.

node [Amazon Elasticsearch Service \(Amazon ES\) \(p. 659\)](#): An Elasticsearch instance. A node can be either a data instance or a dedicated master instance.  
See Also [dedicated master node](#).

NoEcho A property of [AWS CloudFormation \(p. 666\)](#) parameters that prevent the otherwise default reporting of names and values of a template parameter.

	Declaring the <code>NoEcho</code> property causes the parameter value to be masked with asterisks in the report by the <code>cfn-describe-stacks</code> command.
normalized discounted cumulative gain (NCDG) at K (5/10/25)	<a href="#">Amazon Personalize (p. 661)</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. See Also <a href="#">metrics</a> , <a href="#">recommendations</a> .
NoSQL	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. 658)</a> ) use alternate models for data management, such as key-value pairs or document storage.
null object	A null object is one whose version ID is null. <a href="#">Amazon S3 (p. 662)</a> adds a null object to a <a href="#">bucket (p. 673)</a> when <a href="#">versioning (p. 712)</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

[Numbers and symbols \(p. 655\)](#) | [A \(p. 655\)](#) | [B \(p. 672\)](#) | [C \(p. 673\)](#) | [D \(p. 678\)](#) | [E \(p. 681\)](#) | [F \(p. 684\)](#) | [G \(p. 685\)](#) | [H \(p. 686\)](#) | [I \(p. 687\)](#) | [J \(p. 689\)](#) | [K \(p. 690\)](#) | [L \(p. 690\)](#) | [M \(p. 691\)](#) | [N \(p. 694\)](#) | [O \(p. 695\)](#) | [P \(p. 696\)](#) | [Q \(p. 699\)](#) | [R \(p. 700\)](#) | [S \(p. 703\)](#) | [T \(p. 709\)](#) | [U \(p. 711\)](#) | [V \(p. 712\)](#) | [W \(p. 713\)](#) | [X, Y, Z \(p. 713\)](#)

object	<a href="#">Amazon Simple Storage Service (Amazon S3) (p. 662)</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. 657)</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. 658)</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. 658)</a> , optimistic locking support is provided by the AWS SDKs.
organization	<a href="#">AWS Organizations (p. 669)</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. 669)</a> : A container for accounts within a <a href="#">root (p. 702)</a> of an organization. An organizational unit (OU) can contain other OUs.

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origin access identity	Also called OAI. When using <a href="#">Amazon CloudFront (p. 657)</a> to serve content with an <a href="#">Amazon S3 (p. 662) bucket (p. 673)</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. 698)</a> .
origin server	The <a href="#">Amazon S3 (p. 662) bucket (p. 673)</a> or custom origin containing the definitive original version of the content you deliver through <a href="#">CloudFront (p. 657)</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 <i>n</i> words over the text, and outputting every pair of words that includes the first word in the window. 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.

## P

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[Numbers and symbols \(p. 655\)](#) | [A \(p. 655\)](#) | [B \(p. 672\)](#) | [C \(p. 673\)](#) | [D \(p. 678\)](#) | [E \(p. 681\)](#) | [F \(p. 684\)](#) | [G \(p. 685\)](#) | [H \(p. 686\)](#) | [I \(p. 687\)](#) | [J \(p. 689\)](#) | [K \(p. 690\)](#) | [L \(p. 690\)](#) | [M \(p. 691\)](#) | [N \(p. 694\)](#) | [O \(p. 695\)](#) | [P \(p. 696\)](#) | [Q \(p. 699\)](#) | [R \(p. 700\)](#) | [S \(p. 703\)](#) | [T \(p. 709\)](#) | [U \(p. 711\)](#) | [V \(p. 712\)](#) | [W \(p. 713\)](#) | [X, Y, Z \(p. 713\)](#)

pagination	<p>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:</p> <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	<p>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. See Also <a href="#">pagination</a>.</p>
paid AMI	An <a href="#">Amazon Machine Image (AMI) (p. 661)</a> that you sell to other <a href="#">Amazon EC2 (p. 658)</a> users on <a href="#">AWS Marketplace (p. 669)</a> .
paravirtual virtualization	See <a href="#">PV virtualization</a> .
part	A contiguous portion of the object's data in a multipart upload request.

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partition key	A simple primary key, composed of one attribute (also known as a <i>hash attribute</i> ). 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 <sup>50</sup> or 1,125,899,906,842,624 bytes. A petabyte (PB) is 10 <sup>15</sup> or 1,000,000,000,000,000 bytes. 1,024 PiB is an <a href="#">exbibyte (EiB)</a> (p. 683).
period	See <a href="#">sampling period</a> .
permission	A statement within a <a href="#">policy</a> (p. 697) that allows or denies access to a particular <a href="#">resource</a> (p. 702). 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</a> (p. 662) 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. 663) include: <a href="#">Amazon S3</a> (p. 662), <a href="#">Amazon RDS</a> (p. 662), <a href="#">Amazon DynamoDB</a> (p. 658), and other services.
PERSONALIZED_RANKING recipes	<a href="#">Amazon Personalize</a> (p. 661): Recipes that provide item recommendations in ranked order based on the predicted interest for a user. 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. 661): 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. See Also <a href="#">recipe</a> , <a href="#">PERSONALIZED_RANKING recipes</a> .
physical name	A unique label that <a href="#">AWS CloudFormation</a> (p. 666) assigns to each <a href="#">resource</a> (p. 702) when creating a <a href="#">stack</a> (p. 707). 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. 666): 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. 682), as opposed to <a href="#">ciphertext</a> (p. 674).
policy	<a href="#">IAM</a> (p. 668): 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. 657)s access to specific actions, and can optionally grant that the actions are allowed for specific <a href="#">resource</a> (p. 702)s, such as <a href="#">EC2 instance</a> (p. 681)s or <a href="#">Amazon S3</a> (p. 662) <a href="#">bucket</a> (p. 673)s. Policies can also explicitly <a href="#">deny</a> (p. 680) access.  <a href="#">Amazon EC2 Auto Scaling</a> (p. 658): 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. 656) to invoke an Auto Scaling policy.
policy generator	A tool in the <a href="#">IAM</a> (p. 668) <a href="#">AWS Management Console</a> (p. 669) that helps you build a <a href="#">policy</a> (p. 697) by selecting elements from lists of available options.

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policy simulator	A tool in the <a href="#">IAM (p. 668)</a> <a href="#">AWS Management Console (p. 669)</a> that helps you test and troubleshoot <a href="#">policies (p. 697)</a> so you can see their effects in real-world scenarios.
policy validator	A tool in the <a href="#">IAM (p. 668)</a> <a href="#">AWS Management Console (p. 669)</a> that examines your existing IAM access control <a href="#">policies (p. 697)</a> to ensure that they comply with the IAM policy grammar.
popularity-count recipe	<a href="#">Amazon Personalize (p. 661)</a> : A USER_PERSONALIZATION recipe that recommends the items that have had the most interactions with unique users. See Also <a href="#">recipe</a> , <a href="#">USER_PERSONALIZATION recipes</a> .
precision at K (5/10/25)	<a href="#">Amazon Personalize (p. 661)</a> : 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. 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. 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. 699)</a> .
primary key	One or two attributes that uniquely identify each item in a <a href="#">Amazon DynamoDB (p. 658)</a> table, so that no two items can have the same key. 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. 711)</a> , service, or <a href="#">account (p. 656)</a> that receives permissions that are defined in a <a href="#">policy (p. 697)</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. 657)</a> to serve content with an <a href="#">Amazon S3 (p. 662)</a> <a href="#">bucket (p. 673)</a> 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. 681)</a> s are assigned two IP addresses at launch, which are directly mapped to each other through network address translation ( <a href="#">NAT (p. 694)</a> ): a private address (following RFC 1918) and a public address. <i>Exception:</i> Instances launched in <a href="#">Amazon VPC (p. 663)</a> are assigned only a private IP address.
private subnet	A <a href="#">VPC (p. 713)</a> <a href="#">subnet (p. 708)</a> 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. 669)</a> .
properties	See <a href="#">resource property</a> .
property rule	A <a href="#">JSON (p. 689)</a> -compliant markup standard for declaring properties, mappings, and output values in an <a href="#">AWS CloudFormation (p. 666)</a> template.



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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. 662)</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. 666)</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. 661)</a> that all <a href="#">AWS account (p. 656)</a> s 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 <a href="https://aws.amazon.com/publicdatasets">https://aws.amazon.com/publicdatasets</a> .
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). <a href="#">EC2 instance (p. 681)</a> s are assigned two IP addresses at launch, which are directly mapped to each other through Network Address Translation ( <a href="#">NAT (p. 694)</a> ): a private address (following RFC 1918) and a public address. <i>Exception:</i> Instances launched in <a href="#">Amazon VPC (p. 663)</a> are assigned only a private IP address.
public subnet	A <a href="#">subnet (p. 708)</a> 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 <a href="#">HVM virtualization</a> .

## Q

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[Numbers and symbols \(p. 655\)](#) | [A \(p. 655\)](#) | [B \(p. 672\)](#) | [C \(p. 673\)](#) | [D \(p. 678\)](#) | [E \(p. 681\)](#) | [F \(p. 684\)](#) | [G \(p. 685\)](#) | [H \(p. 686\)](#) | [I \(p. 687\)](#) | [J \(p. 689\)](#) | [K \(p. 690\)](#) | [L \(p. 690\)](#) | [M \(p. 691\)](#) | [N \(p. 694\)](#) | [O \(p. 695\)](#) | [P \(p. 696\)](#) | [Q \(p. 699\)](#) | [R \(p. 700\)](#) | [S \(p. 703\)](#) | [T \(p. 709\)](#) | [U \(p. 711\)](#) | [V \(p. 712\)](#) | [W \(p. 713\)](#) | [X, Y, Z \(p. 713\)](#)

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 <a href="#">REST</a> .
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 <code>Authorization</code> header, which provides URL-based access to objects in a <a href="#">bucket (p. 673)</a> .
queue	A sequence of messages or jobs that are held in temporary storage awaiting transmission or processing.

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queue URL	A web address that uniquely identifies a queue.
quota	The maximum value for your resources, actions, and items in your AWS account

## R

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[Numbers and symbols \(p. 655\)](#) | [A \(p. 655\)](#) | [B \(p. 672\)](#) | [C \(p. 673\)](#) | [D \(p. 678\)](#) | [E \(p. 681\)](#) | [F \(p. 684\)](#) | [G \(p. 685\)](#) | [H \(p. 686\)](#) | [I \(p. 687\)](#) | [J \(p. 689\)](#) | [K \(p. 690\)](#) | [L \(p. 690\)](#) | [M \(p. 691\)](#) | [N \(p. 694\)](#) | [O \(p. 695\)](#) | [P \(p. 696\)](#) | [Q \(p. 699\)](#) | [R \(p. 700\)](#) | [S \(p. 703\)](#) | [T \(p. 709\)](#) | [U \(p. 711\)](#) | [V \(p. 712\)](#) | [W \(p. 713\)](#) | [X, Y, Z \(p. 713\)](#)

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	<a href="#">Amazon RDS (p. 662)</a> : 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. See Also <a href="#">batch prediction</a> .
recipe	<a href="#">Amazon Personalize (p. 661)</a> : An Amazon Personalize algorithm that's preconfigured to predict the items that a user will interact with (for <code>USER_PERSONALIZATION</code> recipes), or calculate items that are similar to specific items that a user has shown interest in (for <code>RELATED_ITEMS</code> recipes), or rank a collection of items that you provide based on the predicted interest for a specific user (for <code>PERSONALIZED_RANKING</code> recipes). See Also <a href="#">USER_PERSONALIZATION recipes</a> , <a href="#">RELATED_ITEMS recipes</a> , <a href="#">PERSONALIZED_RANKING recipes</a> .
recommendations	<a href="#">Amazon Personalize (p. 661)</a> : 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 <code>USER_PERSONALIZATION</code> recipes and <code>RELATED_ITEMS</code> recipes), or a ranking of a collection of items you provided (with <code>PERSONALIZED_RANKING</code> recipes). 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	<a href="#">Amazon SQS (p. 662)</a> : 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. 700)</a> .
recipient	<a href="#">Amazon Simple Email Service (Amazon SES) (p. 662)</a> : 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.

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reference	A means of inserting a property from one AWS <a href="#">resource (p. 702)</a> into another. For example, you could insert an <a href="#">Amazon EC2 (p. 658) security group (p. 704)</a> property into an <a href="#">Amazon RDS (p. 662)</a> resource.
Region	A named set of AWS <a href="#">resource (p. 702)s</a> in the same geographical area. A Region comprises at least two <a href="#">Availability Zone (p. 665)s</a> .
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 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.
RELATED_ITEMS recipes	<a href="#">Amazon Personalize (p. 661)</a> Recipes that recommend items that are similar to a specified item, such as the <a href="#">item-to-item (SIMS) recipe</a> . See Also <a href="#">recipe</a> , <a href="#">item-to-item similarities (SIMS) recipe</a> .
replacement environment	The instances in a deployment group after the CodeDeploy blue/green deployment.
replica shard	See <a href="#">shard</a> .
reply path	The email address that an email reply is sent to. This is different from the <a href="#">return path (p. 702)</a> .
representational state transfer	See <a href="#">REST</a> .
reputation	<ol style="list-style-type: none"><li>1. An <a href="#">Amazon SES (p. 662)</a> metric, based on factors that might include <a href="#">bounce (p. 673)s</a>, <a href="#">complaint (p. 675)s</a>, 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. 688)</a> or other entity that an IP address that they are receiving email from isn't the source of <a href="#">spam (p. 706)</a>.</li></ol>
requester	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. 702)</a> ).
Requester Pays	An <a href="#">Amazon S3 (p. 662)</a> feature that allows a <a href="#">bucket owner (p. 673)</a> to specify that anyone who requests access to objects in a particular <a href="#">bucket (p. 673)</a> must pay the data transfer and request costs.
reservation	A collection of <a href="#">EC2 instance (p. 681)s</a> started as part of the same launch request. Not to be confused with a <a href="#">Reserved Instance (p. 701)</a> .
Reserved Instance	A pricing option for <a href="#">EC2 instance (p. 681)s</a> that discounts the <a href="#">on-demand (p. 695)</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.
Reserved Instance Marketplace	An online exchange that matches sellers who have reserved capacity that they no longer need with buyers who are looking to purchase additional capacity.

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	<p><a href="#">Reserved Instance (p. 701)</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. 681)</a>, an <a href="#">Amazon DynamoDB (p. 658) table</a>, an <a href="#">Amazon S3 (p. 662) bucket (p. 673)</a>, an <a href="#">IAM (p. 668) user</a>, or an <a href="#">AWS OpsWorks (p. 669) stack (p. 707)</a>.</p>
resource property	<p>A value required when including an AWS <a href="#">resource (p. 702)</a> in an <a href="#">AWS CloudFormation (p. 666) stack (p. 707)</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 <code>Properties</code> section, even if the resource has no properties.</p>
resource record	<p>Also called <i>resource record set</i>. The fundamental information elements in the Domain Name System (DNS). See Also <a href="#">Domain Name System in Wikipedia</a>.</p>
REST	<p>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. 689)</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. See Also <a href="#">Query</a>, <a href="#">WSDL</a>, <a href="#">SOAP</a>.</p>
RESTful web service	<p>Also known as RESTful API. A web service that follows <a href="#">REST (p. 702)</a> architectural constraints. The API operations must use HTTP methods explicitly; expose hierarchical URIs; and transfer either XML, <a href="#">JSON (p. 689)</a>, or both.</p>
return enabled	<p><a href="#">Amazon CloudSearch (p. 657)</a>: An index field option that enables the field's values to be returned in the search results.</p>
return path	<p>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. 701)</a>.</p>
revision	<p><a href="#">AWS CodePipeline (p. 666)</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. 685) repository</a> or an update to a file in a versioned <a href="#">Amazon S3 (p. 662) bucket (p. 673)</a>.</p>
role	<p>A tool for giving temporary access to AWS <a href="#">resource (p. 702)</a>s in your AWS <a href="#">account (p. 656)</a>.</p>
rollback	<p>A return to a previous state that follows the failure to create an object, such as <a href="#">AWS CloudFormation (p. 666) stack (p. 707)</a>. All <a href="#">resource (p. 702)</a>s associated with the failure are deleted during the rollback. For AWS CloudFormation, you can override this behavior using the <code>--disable-rollback</code> option on the command line.</p>
root	<p><a href="#">AWS Organizations (p. 669)</a>: A parent container for the accounts in your organization. If you apply a <a href="#">service control policy (p. 705)</a> to the root, it applies to every <a href="#">organizational unit (p. 695)</a> and account in the organization.</p>
root credentials	<p>Authentication information associated with the AWS <a href="#">account (p. 656)</a> owner.</p>
root device volume	<p>A <a href="#">volume (p. 713)</a> that contains the image used to boot the <a href="#">instance (p. 688)</a> (also known as a <i>root device</i>). If you launched the instance from an <a href="#">AMI (p. 661)</a> backed by <a href="#">instance store (p. 688)</a>, this is an instance store <a href="#">volume (p. 713)</a></p>

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	created from a template stored in <a href="#">Amazon S3 (p. 662)</a> . If you launched the instance from an AMI backed by <a href="#">Amazon EBS (p. 659)</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. 708)</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. 672)</a> : A set of conditions that AWS WAF searches for in web requests to AWS <a href="#">resource (p. 702)</a> s such as <a href="#">Amazon CloudFront (p. 657)</a> distributions. You add rules to a <a href="#">web ACL (p. 713)</a> , and then specify whether you want to allow or block web requests based on each rule.

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## S

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[Numbers and symbols \(p. 655\)](#) | [A \(p. 655\)](#) | [B \(p. 672\)](#) | [C \(p. 673\)](#) | [D \(p. 678\)](#) | [E \(p. 681\)](#) | [F \(p. 684\)](#) | [G \(p. 685\)](#) | [H \(p. 686\)](#) | [I \(p. 687\)](#) | [J \(p. 689\)](#) | [K \(p. 690\)](#) | [L \(p. 690\)](#) | [M \(p. 691\)](#) | [N \(p. 694\)](#) | [O \(p. 695\)](#) | [P \(p. 696\)](#) | [Q \(p. 699\)](#) | [R \(p. 700\)](#) | [S \(p. 703\)](#) | [T \(p. 709\)](#) | [U \(p. 711\)](#) | [V \(p. 712\)](#) | [W \(p. 713\)](#) | [X, Y, Z \(p. 713\)](#)

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. 657)</a> computes a <a href="#">statistic (p. 707)</a> over.
sandbox	A testing location where you can test the functionality of your application without affecting production, incurring charges, or purchasing products.  <a href="#">Amazon SES (p. 662)</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. 705)</a> than production accounts.
scale in	To remove EC2 instances from an <a href="#">Auto Scaling group (p. 665)</a> .
scale out	To add EC2 instances to an <a href="#">Auto Scaling group (p. 665)</a> .
scaling policy	A description of how Auto Scaling should automatically scale an <a href="#">Auto Scaling group (p. 665)</a> in response to changing demand. 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. 665)</a> by launching or terminating instances.
scheduler	The method used for placing <a href="#">task (p. 709)</a> s on <a href="#">container instance (p. 676)</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

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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. 657)</a> : The API that you use to submit search requests to a <a href="#">search domain (p. 704)</a> .
search domain	<a href="#">Amazon CloudSearch (p. 657)</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. 657)</a> : A domain's indexing options, <a href="#">analysis scheme (p. 663)s</a> , <a href="#">expression (p. 684)s</a> , <a href="#">suggester (p. 708)s</a> , access policies, and scaling and availability options.
search enabled	<a href="#">Amazon CloudSearch (p. 657)</a> : An index field option that enables the field data to be searched.
search endpoint	<a href="#">Amazon CloudSearch (p. 657)</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. 657)</a> : A representation of your searchable data that facilitates fast and accurate data retrieval.
search instance	<a href="#">Amazon CloudSearch (p. 657)</a> : A compute <a href="#">resource (p. 702)</a> 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. 657)</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. 657)</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. 655)</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 AWS <a href="#">account (p. 656)</a> , individual IAM <a href="#">user (p. 711)s</a> , and temporary sessions.
security group	A named set of allowed inbound network connections for an instance. (Security groups in <a href="#">Amazon VPC (p. 663)</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. 707)</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</a> (p. 705) and <a href="#">maximum send rate</a> (p. 692) that are associated with every <a href="#">Amazon SES</a> (p. 662) account.
sending quota	The maximum number of email messages that you can send using <a href="#">Amazon SES</a> (p. 662) in a 24-hour period.
server-side encryption (SSE)	The <a href="#">encrypting</a> (p. 682) of data at the server level. <a href="#">Amazon S3</a> (p. 662) 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)</a> (p. 669) manages keys.
service control policy	<a href="#">AWS Organizations</a> (p. 669): 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> .
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</a> (p. 668) <a href="#">role</a> (p. 702) that grants permissions to an AWS service so it can access AWS <a href="#">resource</a> (p. 702)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)</a> (p. 671) 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 Elasticsearch Service (Amazon ES)</a> (p. 659): 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)</a> (p. 661) that a developer builds and makes available for others to use.
shutdown action	<a href="#">Amazon EMR</a> (p. 659): 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</a> (p. 668): 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.

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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. 679)</a> that's deployed in one <a href="#">Availability Zone (p. 665)</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.
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. 659)</a> : A backup of your <a href="#">volume (p. 713)</a> s that's stored in <a href="#">Amazon S3 (p. 662)</a> . You can use these snapshots as the starting point for new Amazon EBS volumes or to protect your data for long-term durability. 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. 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. 661)</a> : The recipe, customized parameters, and trained models (solution versions) that can be used to generate recommendations. See Also <a href="#">recipe</a> , <a href="#">solution version</a> , <a href="#">recommendations</a> .
solution version	<a href="#">Amazon Personalize (p. 661)</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. See Also <a href="#">solution</a> , <a href="#">campaign</a> , <a href="#">recommendations</a> .
sort enabled	<a href="#">Amazon CloudSearch (p. 657)</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> ). 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. 681)</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. 713) NAT (p. 694)</a> instances, source/destination checking must be disabled.
spam	Unsolicited bulk email.

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spamtrap	An email address that's set up by an anti-spam (p. 706) 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. 681)</a> that you can bid on to take advantage of unused <a href="#">Amazon EC2 (p. 658)</a> capacity.
Spot price	The price for a <a href="#">Spot Instance (p. 707)</a> at any given time. If your maximum price exceeds the current price and your restrictions are met, <a href="#">Amazon EC2 (p. 658)</a> launches instances on your behalf.
SQL injection match condition	<a href="#">AWS WAF (p. 672)</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 requests to an <a href="#">AWS resource (p. 702)</a> , such as an <a href="#">Amazon CloudFront (p. 657)</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 See Also <a href="#">Transport Layer Security (TLS)</a> .
SSO	See <a href="#">AWS Single Sign-On</a> .
stack	<a href="#">AWS CloudFormation (p. 666)</a> : A collection of AWS resources that you create and delete as a single unit.  <a href="#">AWS OpsWorks (p. 669)</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. 666)</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. 703)</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. 657)</a> supports both dictionary based and algorithmic stemming.
step	<a href="#">Amazon EMR (p. 659)</a> : A single function applied to the data in a <a href="#">job flow (p. 689)</a> . The sum of all steps comprises a job flow.
step type	<a href="#">Amazon EMR (p. 659)</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. 662)</a> to <a href="#">Amazon EC2 (p. 658)</a> or from Amazon EC2 to Amazon S3.
sticky session	A feature of the <a href="#">Elastic Load Balancing (p. 682)</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

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	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. 659)</a> : A utility that comes with <a href="#">Hadoop (p. 686)</a> that you can use to develop MapReduce executables in languages other than Java.  <a href="#">Amazon CloudFront (p. 657)</a> : The ability to use a media file in real time—as it's transmitted in a steady stream from a server.
streaming distribution	A special kind of <a href="#">distribution (p. 680)</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. 686)</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. 672)</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 <a href="#">AWS resource (p. 702)</a> , such as a <a href="#">CloudFront (p. 657)</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. 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. 657)</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. 713)</a> that an <a href="#">EC2 instance (p. 681)</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.
suggester	<a href="#">Amazon CloudSearch (p. 657)</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="#">suggester (p. 708)</a> . <a href="#">Amazon CloudSearch (p. 657)</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. 661)</a> similar to a <a href="#">paid AMI (p. 696)</a> , except that the owner charges for additional software or a service that customers use with their own AMIs.

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SWF	See <a href="#">Amazon Simple Workflow Service (Amazon SWF)</a> .
symmetric encryption	<a href="#">Encryption (p. 682)</a> that uses a private key only. See Also <a href="#">asymmetric encryption</a> .
synchronous bounce	A type of <a href="#">bounce (p. 673)</a> that occurs while the email servers of the <a href="#">sender (p. 704)</a> and <a href="#">receiver (p. 700)</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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[Numbers and symbols \(p. 655\)](#) | [A \(p. 655\)](#) | [B \(p. 672\)](#) | [C \(p. 673\)](#) | [D \(p. 678\)](#) | [E \(p. 681\)](#) | [F \(p. 684\)](#) | [G \(p. 685\)](#) | [H \(p. 686\)](#) | [I \(p. 687\)](#) | [J \(p. 689\)](#) | [K \(p. 690\)](#) | [L \(p. 690\)](#) | [M \(p. 691\)](#) | [N \(p. 694\)](#) | [O \(p. 695\)](#) | [P \(p. 696\)](#) | [Q \(p. 699\)](#) | [R \(p. 700\)](#) | [S \(p. 703\)](#) | [T \(p. 709\)](#) | [U \(p. 711\)](#) | [V \(p. 712\)](#) | [W \(p. 713\)](#) | [X, Y, Z \(p. 713\)](#)

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. 702)</a> s, such as an <a href="#">EC2 instance (p. 681)</a> . Not all AWS resources can be tagged.
tagging	Tagging resources: Applying a <a href="#">tag (p. 709)</a> to an AWS <a href="#">resource (p. 702)</a> .  <a href="#">Amazon SES (p. 662)</a> : Also called <i>labeling</i> . A way to format <a href="#">return path (p. 702)</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. 712)</a> . For example, if Andrew manages a mailing list, he can use the return paths <code>andrew+recipient1@example.net</code> and <code>andrew+recipient2@example.net</code> 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. 666)</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. 709)</a> that's running on a <a href="#">container instance (p. 676)</a> .
task definition	The blueprint for your task. Specifies the name of the <a href="#">task (p. 709)</a> , revisions, <a href="#">container definition (p. 676)</a> s, and <a href="#">volume (p. 713)</a> information.
task node	An <a href="#">EC2 instance (p. 681)</a> that runs <a href="#">Hadoop (p. 686)</a> map and reduce tasks, but doesn't store data. Task nodes are managed by the <a href="#">master node (p. 692)</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

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	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)</a> (p. 697).
template format version	The version of an <a href="#">AWS CloudFormation</a> (p. 666) template design that determines the available features. If you omit the <code>AWS::TemplateFormatVersion</code> section from your template, AWS CloudFormation assumes the most recent format version.
template validation	The process of confirming the use of <a href="#">JSON</a> (p. 689) code in an <a href="#">AWS CloudFormation</a> (p. 666) 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</a> (p. 671) when you call an STS API action. Includes an <a href="#">access key ID</a> (p. 655), a <a href="#">secret access key</a> (p. 704), a <a href="#">session</a> (p. 705) 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</a> (p. 660) 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</a> (p. 657) uses throttling to limit the steady-state request rates for a single account. <a href="#">Amazon SES</a> (p. 662) uses throttling to reject attempts to send email that exceeds the <a href="#">sending limits</a> (p. 705).
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</a> (p. 657) 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. 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</a> (p. 666): The act of a revision in a pipeline continuing from one stage to the next in a workflow.

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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. 668) policy (p. 697)</a> that's an inherent part of an <a href="#">IAM role (p. 702)</a> . 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 and signed cookies</a> .
trusted signers	See <a href="#">trusted key groups (p. 711)</a> .
tuning	Selecting the number and type of <a href="#">AMIs (p. 661)</a> to run a <a href="#">Hadoop (p. 686)</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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[Numbers and symbols \(p. 655\)](#) | [A \(p. 655\)](#) | [B \(p. 672\)](#) | [C \(p. 673\)](#) | [D \(p. 678\)](#) | [E \(p. 681\)](#) | [F \(p. 684\)](#) | [G \(p. 685\)](#) | [H \(p. 686\)](#) | [I \(p. 687\)](#) | [J \(p. 689\)](#) | [K \(p. 690\)](#) | [L \(p. 690\)](#) | [M \(p. 691\)](#) | [N \(p. 694\)](#) | [O \(p. 695\)](#) | [P \(p. 696\)](#) | [Q \(p. 699\)](#) | [R \(p. 700\)](#) | [S \(p. 703\)](#) | [T \(p. 709\)](#) | [U \(p. 711\)](#) | [V \(p. 712\)](#) | [W \(p. 713\)](#) | [X, Y, Z \(p. 713\)](#)

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. 713)</a> .
unit	Standard measurement for the values submitted to <a href="#">Amazon CloudWatch (p. 657)</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. 688)</a> from a ClassicLink-enabled <a href="#">VPC (p. 713)</a> . 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. 656)</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 AWS account's security credentials. Each user is associated with one and only one AWS account.
Users dataset	<a href="#">Amazon Personalize (p. 661)</a> : A container for metadata about your users, such as age, gender, or loyalty membership. See Also <a href="#">dataset</a> .
user-personalization recipe	<a href="#">Amazon Personalize (p. 661)</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. 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

[Amazon Personalize \(p. 661\)](#): 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.  
See Also [recipe](#), [user-personalization recipe](#), [popularity-count recipe](#), [HRNN](#).

## V

[Numbers and symbols \(p. 655\)](#) | [A \(p. 655\)](#) | [B \(p. 672\)](#) | [C \(p. 673\)](#) | [D \(p. 678\)](#) | [E \(p. 681\)](#) | [F \(p. 684\)](#) | [G \(p. 685\)](#) | [H \(p. 686\)](#) | [I \(p. 687\)](#) | [J \(p. 689\)](#) | [K \(p. 690\)](#) | [L \(p. 690\)](#) | [M \(p. 691\)](#) | [N \(p. 694\)](#) | [O \(p. 695\)](#) | [P \(p. 696\)](#) | [Q \(p. 699\)](#) | [R \(p. 700\)](#) | [S \(p. 703\)](#) | [T \(p. 709\)](#) | [U \(p. 711\)](#) | [V \(p. 712\)](#) | [W \(p. 713\)](#) | [X, Y, Z \(p. 713\)](#)

validation	See <a href="#">template validation</a> .
value	Instances of <a href="#">attributes (p. 664)</a> for an item, such as cells in a spreadsheet. An attribute might have multiple values.  Tagging resources: A specific <a href="#">tag (p. 709)</a> label that acts as a descriptor within a tag category (key). For example, you might have <a href="#">EC2 instance (p. 681)</a> with the tag key of <i>Owner</i> and the tag value of <i>Jan</i> . You can tag an <a href="#">AWS resource (p. 702)</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. 673)</a> d email with the undeliverable address that caused the bounce by using a different <a href="#">return path (p. 702)</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. 662)</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. 673)</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. 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. 713)</a> that maintains connectivity. The internal interfaces of the virtual private gateway connect to your <a href="#">VPC (p. 713)</a> through the VPN attachment. The external interfaces connect to the VPN connection, which leads to the <a href="#">customer gateway (p. 677)</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. 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. 688)</a> . You can share volume data between more than one <a href="#">container (p. 676)</a> and persist the data on the <a href="#">container instance (p. 676)</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. 713)</a> and another AWS service without requiring access over the internet, through a <a href="#">NAT (p. 694)</a> instance, a <a href="#">VPN connection (p. 713)</a> , or <a href="#">AWS Direct Connect (p. 667)</a> .
VPG	See <a href="#">virtual private gateway (VGW)</a> .
VPN CloudHub	See <a href="#">AWS VPN CloudHub</a> .
VPN connection	<a href="#">Amazon Web Services (AWS) (p. 663)</a> : The IPsec connection between a <a href="#">VPC (p. 713)</a> and some other network, such as a corporate data center, home network, or colocation facility.

## W

[Numbers and symbols \(p. 655\)](#) | [A \(p. 655\)](#) | [B \(p. 672\)](#) | [C \(p. 673\)](#) | [D \(p. 678\)](#) | [E \(p. 681\)](#) | [F \(p. 684\)](#) | [G \(p. 685\)](#) | [H \(p. 686\)](#) | [I \(p. 687\)](#) | [J \(p. 689\)](#) | [K \(p. 690\)](#) | [L \(p. 690\)](#) | [M \(p. 691\)](#) | [N \(p. 694\)](#) | [O \(p. 695\)](#) | [P \(p. 696\)](#) | [Q \(p. 699\)](#) | [R \(p. 700\)](#) | [S \(p. 703\)](#) | [T \(p. 709\)](#) | [U \(p. 711\)](#) | [V \(p. 712\)](#) | [W \(p. 713\)](#) | [X, Y, Z \(p. 713\)](#)

WAM	See <a href="#">Amazon WorkSpaces Application Manager (Amazon WAM)</a> .
web access control list (web ACL)	<a href="#">AWS WAF (p. 672)</a> : A set of rules that defines the conditions that AWS WAF searches for in web requests to an AWS <a href="#">resource (p. 702)</a> , such as a <a href="#">Amazon CloudFront (p. 657)</a> distribution. A web access control list (web ACL) specifies whether to allow, block, or count the requests.
Web Services Description Language	See <a href="#">WSDL</a> .
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 <a href="#">REST</a> , <a href="#">SOAP</a> .

## X, Y, Z

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 <a href="#">certificate (p. 674)</a> .
yobibyte (YiB)	A contraction of yotta binary byte, a yobibyte is 2 <sup>80</sup> or 1,208,925,819,614,629,174,706,176 bytes. A yottabyte (YB) is 10 <sup>24</sup> or 1,000,000,000,000,000,000,000,000 bytes.
zebibyte (ZiB)	A contraction of zetta binary byte, a zebibyte is 2 <sup>70</sup> or 1,180,591,620,717,411,303,424 bytes. A zettabyte (ZB) is 10 <sup>21</sup> or 1,000,000,000,000,000,000,000 bytes. 1,024 ZiB is a <a href="#">yobibyte (YiB) (p. 713)</a> .

zone awareness

[Amazon Elasticsearch Service \(Amazon ES\) \(p. 659\)](#): A configuration that distributes nodes in a cluster across two [Availability Zone \(p. 665\)](#)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 Elasticsearch Service Configuration API to replicate your data for your Elasticsearch cluster.