
Braket

API Reference

API Version 2019-09-01



Bracket: API Reference

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Welcome

The Amazon Bracket API Reference provides information about the operations and structures supported in Amazon Bracket.

This document was last published on January 13, 2021.

Actions

The following actions are supported:

- [CancelQuantumTask](#) (p. 3)
- [CreateQuantumTask](#) (p. 6)
- [GetDevice](#) (p. 9)
- [GetQuantumTask](#) (p. 12)
- [ListTagsForResource](#) (p. 15)
- [SearchDevices](#) (p. 17)
- [SearchQuantumTasks](#) (p. 20)
- [TagResource](#) (p. 23)
- [UntagResource](#) (p. 25)

CancelQuantumTask

Cancels the specified task.

Request Syntax

```
PUT /quantum-task/quantumTaskArn/cancel HTTP/1.1
Content-type: application/json

{
  "clientToken": "string"
}
```

URI Request Parameters

The request uses the following URI parameters.

[quantumTaskArn \(p. 3\)](#)

The ARN of the task to cancel.

Length Constraints: Minimum length of 1. Maximum length of 256.

Required: Yes

Request Body

The request accepts the following data in JSON format.

[clientToken \(p. 3\)](#)

The client token associated with the request.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Required: Yes

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "cancellationStatus": "string",
  "quantumTaskArn": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

cancellationStatus (p. 3)

The status of the cancellation request.

Type: String

Valid Values: CANCELLING | CANCELLED

quantumTaskArn (p. 3)

The ARN of the task.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 256.

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 36\)](#).

AccessDeniedException

You do not have sufficient access to perform this action.

HTTP Status Code: 403

ConflictException

An error occurred due to a conflict.

HTTP Status Code: 409

InternalServiceException

The request processing has failed because of an unknown error, exception, or failure.

HTTP Status Code: 500

ResourceNotFoundException

The specified resource was not found.

HTTP Status Code: 404

ThrottlingException

The throttling rate limit is met.

HTTP Status Code: 429

ValidationException

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)

- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

CreateQuantumTask

Creates a quantum task.

Request Syntax

```
POST /quantum-task HTTP/1.1
Content-type: application/json

{
  "action": "string",
  "clientToken": "string",
  "deviceArn": "string",
  "deviceParameters": "string",
  "outputS3Bucket": "string",
  "outputS3KeyPrefix": "string",
  "shots": number,
  "tags": {
    "string" : "string"
  }
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

action (p. 6)

The action associated with the task.

Type: String

Required: Yes

clientToken (p. 6)

The client token associated with the request.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Required: Yes

deviceArn (p. 6)

The ARN of the device to run the task on.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 256.

Required: Yes

deviceParameters (p. 6)

The parameters for the device to run the task on.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2048.

Required: No

outputS3Bucket (p. 6)

The S3 bucket to store task result files in.

Type: String

Length Constraints: Minimum length of 3. Maximum length of 63.

Required: Yes

outputS3KeyPrefix (p. 6)

The key prefix for the location in the S3 bucket to store task results in.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

Required: Yes

shots (p. 6)

The number of shots to use for the task.

Type: Long

Valid Range: Minimum value of 0.

Required: Yes

tags (p. 6)

Tags to be added to the quantum task you're creating.

Type: String to string map

Required: No

Response Syntax

```
HTTP/1.1 201
Content-type: application/json

{
  "quantumTaskArn": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 201 response.

The following data is returned in JSON format by the service.

quantumTaskArn (p. 7)

The ARN of the task created by the request.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 256.

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 36\)](#).

AccessDeniedException

You do not have sufficient access to perform this action.

HTTP Status Code: 403

DeviceOfflineException

The specified device is currently offline.

HTTP Status Code: 424

InternalServiceException

The request processing has failed because of an unknown error, exception, or failure.

HTTP Status Code: 500

ServiceQuotaExceededException

The request failed because a service quota is exceeded.

HTTP Status Code: 402

ThrottlingException

The throttling rate limit is met.

HTTP Status Code: 429

ValidationException

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

GetDevice

Retrieves the devices available in Amazon Braket.

Request Syntax

```
GET /device/deviceArn HTTP/1.1
```

URI Request Parameters

The request uses the following URI parameters.

deviceArn (p. 9)

The ARN of the device to retrieve.

Length Constraints: Minimum length of 1. Maximum length of 256.

Required: Yes

Request Body

The request does not have a request body.

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "deviceArn": "string",
  "deviceCapabilities": "string",
  "deviceName": "string",
  "deviceStatus": "string",
  "deviceType": "string",
  "providerName": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

deviceArn (p. 9)

The ARN of the device.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 256.

deviceCapabilities (p. 9)

Details about the capabilities of the device.

Type: String

deviceName (p. 9)

The name of the device.

Type: String

deviceStatus (p. 9)

The status of the device.

Type: String

Valid Values: ONLINE | OFFLINE

deviceType (p. 9)

The type of the device.

Type: String

Valid Values: QPU | SIMULATOR

providerName (p. 9)

The name of the partner company for the device.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 36\)](#).

AccessDeniedException

You do not have sufficient access to perform this action.

HTTP Status Code: 403

InternalServiceException

The request processing has failed because of an unknown error, exception, or failure.

HTTP Status Code: 500

ResourceNotFoundException

The specified resource was not found.

HTTP Status Code: 404

ThrottlingException

The throttling rate limit is met.

HTTP Status Code: 429

ValidationException

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

GetQuantumTask

Retrieves the specified quantum task.

Request Syntax

```
GET /quantum-task/quantumTaskArn HTTP/1.1
```

URI Request Parameters

The request uses the following URI parameters.

[quantumTaskArn \(p. 12\)](#)

the ARN of the task to retrieve.

Length Constraints: Minimum length of 1. Maximum length of 256.

Required: Yes

Request Body

The request does not have a request body.

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "createdAt": number,
  "deviceArn": "string",
  "deviceParameters": "string",
  "endedAt": number,
  "failureReason": "string",
  "outputS3Bucket": "string",
  "outputS3Directory": "string",
  "quantumTaskArn": "string",
  "shots": number,
  "status": "string",
  "tags": {
    "string" : "string"
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

[createdAt \(p. 12\)](#)

The time at which the task was created.

Type: Timestamp

deviceArn (p. 12)

The ARN of the device the task was run on.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 256.

deviceParameters (p. 12)

The parameters for the device on which the task ran.

Type: String

endedAt (p. 12)

The time at which the task ended.

Type: Timestamp

failureReason (p. 12)

The reason that a task failed.

Type: String

outputS3Bucket (p. 12)

The S3 bucket where task results are stored.

Type: String

outputS3Directory (p. 12)

The folder in the S3 bucket where task results are stored.

Type: String

quantumTaskArn (p. 12)

The ARN of the task.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 256.

shots (p. 12)

The number of shots used in the task.

Type: Long

status (p. 12)

The status of the task.

Type: String

Valid Values: `CREATED` | `QUEUED` | `RUNNING` | `COMPLETED` | `FAILED` | `CANCELLING` | `CANCELLED`

tags (p. 12)

The tags that belong to this task.

Type: String to string map

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 36\)](#).

AccessDeniedException

You do not have sufficient access to perform this action.

HTTP Status Code: 403

InternalServiceException

The request processing has failed because of an unknown error, exception, or failure.

HTTP Status Code: 500

ResourceNotFoundException

The specified resource was not found.

HTTP Status Code: 404

ThrottlingException

The throttling rate limit is met.

HTTP Status Code: 429

ValidationException

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

ListTagsForResource

Shows the tags associated with this resource.

Request Syntax

```
GET /tags/resourceArn HTTP/1.1
```

URI Request Parameters

The request uses the following URI parameters.

[resourceArn \(p. 15\)](#)

Specify the `resourceArn` for the resource whose tags to display.

Required: Yes

Request Body

The request does not have a request body.

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "tags": {
    "string" : "string"
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

[tags \(p. 15\)](#)

Displays the key, value pairs of tags associated with this resource.

Type: String to string map

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 36\)](#).

InternalServiceException

The request processing has failed because of an unknown error, exception, or failure.

HTTP Status Code: 500

ResourceNotFoundException

The specified resource was not found.

HTTP Status Code: 404

ValidationException

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

SearchDevices

Searches for devices using the specified filters.

Request Syntax

```
POST /devices HTTP/1.1
Content-type: application/json

{
  "filters": [
    {
      "name": "string",
      "values": [ "string" ]
    }
  ],
  "maxResults": number,
  "nextToken": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

filters (p. 17)

The filter values to use to search for a device.

Type: Array of [SearchDevicesFilter \(p. 32\)](#) objects

Array Members: Minimum number of 0 items. Maximum number of 10 items.

Required: Yes

maxResults (p. 17)

The maximum number of results to return in the response.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 100.

Required: No

nextToken (p. 17)

A token used for pagination of results returned in the response. Use the token returned from the previous request continue results where the previous request ended.

Type: String

Required: No

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "devices": [
    {
      "deviceArn": "string",
      "deviceName": "string",
      "deviceStatus": "string",
      "deviceType": "string",
      "providerName": "string"
    }
  ],
  "nextToken": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

devices (p. 18)

An array of `DeviceSummary` objects for devices that match the specified filter values.

Type: Array of [DeviceSummary](#) (p. 28) objects

nextToken (p. 18)

A token used for pagination of results, or null if there are no additional results. Use the token value in a subsequent request to continue results where the previous request ended.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 36).

AccessDeniedException

You do not have sufficient access to perform this action.

HTTP Status Code: 403

InternalServiceException

The request processing has failed because of an unknown error, exception, or failure.

HTTP Status Code: 500

ThrottlingException

The throttling rate limit is met.

HTTP Status Code: 429

ValidationException

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

SearchQuantumTasks

Searches for tasks that match the specified filter values.

Request Syntax

```
POST /quantum-tasks HTTP/1.1  
Content-type: application/json
```

```
{  
  "filters": [  
    {  
      "name": "string",  
      "operator": "string",  
      "values": [ "string" ]  
    }  
  ],  
  "maxResults": number,  
  "nextToken": "string"  
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

filters (p. 20)

Array of `SearchQuantumTasksFilter` objects.

Type: Array of `SearchQuantumTasksFilter` (p. 33) objects

Array Members: Minimum number of 0 items. Maximum number of 10 items.

Required: Yes

maxResults (p. 20)

Maximum number of results to return in the response.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 100.

Required: No

nextToken (p. 20)

A token used for pagination of results returned in the response. Use the token returned from the previous request continue results where the previous request ended.

Type: String

Required: No

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "nextToken": "string",
  "quantumTasks": [
    {
      "createdAt": number,
      "deviceArn": "string",
      "endedAt": number,
      "outputS3Bucket": "string",
      "outputS3Directory": "string",
      "quantumTaskArn": "string",
      "shots": number,
      "status": "string",
      "tags": {
        "string" : "string"
      }
    }
  ]
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

nextToken (p. 21)

A token used for pagination of results, or null if there are no additional results. Use the token value in a subsequent request to continue results where the previous request ended.

Type: String

quantumTasks (p. 21)

An array of `QuantumTaskSummary` objects for tasks that match the specified filters.

Type: Array of `QuantumTaskSummary` (p. 30) objects

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 36).

AccessDeniedException

You do not have sufficient access to perform this action.

HTTP Status Code: 403

InternalServiceException

The request processing has failed because of an unknown error, exception, or failure.

HTTP Status Code: 500

ThrottlingException

The throttling rate limit is met.

HTTP Status Code: 429

ValidationException

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

TagResource

Add a tag to the specified resource.

Request Syntax

```
POST /tags/resourceArn HTTP/1.1
Content-type: application/json

{
  "tags": {
    "string" : "string"
  }
}
```

URI Request Parameters

The request uses the following URI parameters.

resourceArn (p. 23)

Specify the `resourceArn` of the resource to which a tag will be added.

Required: Yes

Request Body

The request accepts the following data in JSON format.

tags (p. 23)

Specify the tags to add to the resource.

Type: String to string map

Required: Yes

Response Syntax

```
HTTP/1.1 200
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 36\)](#).

InternalServiceException

The request processing has failed because of an unknown error, exception, or failure.

HTTP Status Code: 500

ResourceNotFoundException

The specified resource was not found.

HTTP Status Code: 404

ValidationException

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

UntagResource

Remove tags from a resource.

Request Syntax

```
DELETE /tags/resourceArn?tagKeys=tagKeys HTTP/1.1
```

URI Request Parameters

The request uses the following URI parameters.

resourceArn (p. 25)

Specify the `resourceArn` for the resource from which to remove the tags.

Required: Yes

tagKeys (p. 25)

Specify the keys for the tags to remove from the resource.

Required: Yes

Request Body

The request does not have a request body.

Response Syntax

```
HTTP/1.1 200
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 36\)](#).

InternalServerErrorException

The request processing has failed because of an unknown error, exception, or failure.

HTTP Status Code: 500

ResourceNotFoundException

The specified resource was not found.

HTTP Status Code: 404

ValidationException

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

Data Types

The Braket API contains several data types that various actions use. This section describes each data type in detail.

Note

The order of each element in a data type structure is not guaranteed. Applications should not assume a particular order.

The following data types are supported:

- [DeviceSummary](#) (p. 28)
- [QuantumTaskSummary](#) (p. 30)
- [SearchDevicesFilter](#) (p. 32)
- [SearchQuantumTasksFilter](#) (p. 33)

DeviceSummary

Includes information about the device.

Contents

deviceArn

The ARN of the device.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 256.

Required: Yes

deviceName

The name of the device.

Type: String

Required: Yes

deviceStatus

The status of the device.

Type: String

Valid Values: `ONLINE` | `OFFLINE`

Required: Yes

deviceType

The type of the device.

Type: String

Valid Values: `QPU` | `SIMULATOR`

Required: Yes

providerName

The provider of the device.

Type: String

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

QuantumTaskSummary

Includes information about a quantum task.

Contents

createdAt

The time at which the task was created.

Type: Timestamp

Required: Yes

deviceArn

The ARN of the device the task ran on.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 256.

Required: Yes

endedAt

The time at which the task finished.

Type: Timestamp

Required: No

outputS3Bucket

The S3 bucket where the task result file is stored..

Type: String

Required: Yes

outputS3Directory

The folder in the S3 bucket where the task result file is stored.

Type: String

Required: Yes

quantumTaskArn

The ARN of the task.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 256.

Required: Yes

shots

The shots used for the task.

Type: Long

Required: Yes

status

The status of the task.

Type: String

Valid Values: `CREATED` | `QUEUED` | `RUNNING` | `COMPLETED` | `FAILED` | `CANCELLING` | `CANCELLED`

Required: Yes

tags

Displays the key, value pairs of tags associated with this quantum task.

Type: String to string map

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

SearchDevicesFilter

The filter to use for searching devices.

Contents

name

The name to use to filter results.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Required: Yes

values

The values to use to filter results.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 10 items.

Length Constraints: Minimum length of 1. Maximum length of 256.

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

SearchQuantumTasksFilter

A filter to use to search for tasks.

Contents

name

The name of the device used for the task.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Required: Yes

operator

An operator to use in the filter.

Type: String

Valid Values: `LT` | `LTE` | `EQUAL` | `GT` | `GTE` | `BETWEEN`

Required: Yes

values

The values to use for the filter.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 10 items.

Length Constraints: Minimum length of 1. Maximum length of 256.

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

Common Parameters

The following list contains the parameters that all actions use for signing Signature Version 4 requests with a query string. Any action-specific parameters are listed in the topic for that action. For more information about Signature Version 4, see [Signature Version 4 Signing Process](#) in the *Amazon Web Services General Reference*.

Action

The action to be performed.

Type: string

Required: Yes

Version

The API version that the request is written for, expressed in the format YYYY-MM-DD.

Type: string

Required: Yes

X-Amz-Algorithm

The hash algorithm that you used to create the request signature.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Valid Values: `AWS4-HMAC-SHA256`

Required: Conditional

X-Amz-Credential

The credential scope value, which is a string that includes your access key, the date, the region you are targeting, the service you are requesting, and a termination string ("aws4_request"). The value is expressed in the following format: `access_key/YYYYMMDD/region/service/aws4_request`.

For more information, see [Task 2: Create a String to Sign for Signature Version 4](#) in the *Amazon Web Services General Reference*.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

X-Amz-Date

The date that is used to create the signature. The format must be ISO 8601 basic format (YYYYMMDD'THHMMSS'Z'). For example, the following date time is a valid X-Amz-Date value: `20120325T120000Z`.

Condition: X-Amz-Date is optional for all requests; it can be used to override the date used for signing requests. If the Date header is specified in the ISO 8601 basic format, X-Amz-Date is

not required. When X-Amz-Date is used, it always overrides the value of the Date header. For more information, see [Handling Dates in Signature Version 4](#) in the *Amazon Web Services General Reference*.

Type: string

Required: Conditional

X-Amz-Security-Token

The temporary security token that was obtained through a call to AWS Security Token Service (AWS STS). For a list of services that support temporary security credentials from AWS Security Token Service, go to [AWS Services That Work with IAM](#) in the *IAM User Guide*.

Condition: If you're using temporary security credentials from the AWS Security Token Service, you must include the security token.

Type: string

Required: Conditional

X-Amz-Signature

Specifies the hex-encoded signature that was calculated from the string to sign and the derived signing key.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

X-Amz-SignedHeaders

Specifies all the HTTP headers that were included as part of the canonical request. For more information about specifying signed headers, see [Task 1: Create a Canonical Request For Signature Version 4](#) in the *Amazon Web Services General Reference*.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

Common Errors

This section lists the errors common to the API actions of all AWS services. For errors specific to an API action for this service, see the topic for that API action.

AccessDeniedException

You do not have sufficient access to perform this action.

HTTP Status Code: 400

IncompleteSignature

The request signature does not conform to AWS standards.

HTTP Status Code: 400

InternalFailure

The request processing has failed because of an unknown error, exception or failure.

HTTP Status Code: 500

InvalidAction

The action or operation requested is invalid. Verify that the action is typed correctly.

HTTP Status Code: 400

InvalidClientTokenId

The X.509 certificate or AWS access key ID provided does not exist in our records.

HTTP Status Code: 403

InvalidParameterCombination

Parameters that must not be used together were used together.

HTTP Status Code: 400

InvalidParameterValue

An invalid or out-of-range value was supplied for the input parameter.

HTTP Status Code: 400

InvalidQueryParameter

The AWS query string is malformed or does not adhere to AWS standards.

HTTP Status Code: 400

MalformedQueryString

The query string contains a syntax error.

HTTP Status Code: 404

MissingAction

The request is missing an action or a required parameter.

HTTP Status Code: 400

MissingAuthenticationToken

The request must contain either a valid (registered) AWS access key ID or X.509 certificate.

HTTP Status Code: 403

MissingParameter

A required parameter for the specified action is not supplied.

HTTP Status Code: 400

NotAuthorized

You do not have permission to perform this action.

HTTP Status Code: 400

OptInRequired

The AWS access key ID needs a subscription for the service.

HTTP Status Code: 403

RequestExpired

The request reached the service more than 15 minutes after the date stamp on the request or more than 15 minutes after the request expiration date (such as for pre-signed URLs), or the date stamp on the request is more than 15 minutes in the future.

HTTP Status Code: 400

ServiceUnavailable

The request has failed due to a temporary failure of the server.

HTTP Status Code: 503

ThrottlingException

The request was denied due to request throttling.

HTTP Status Code: 400

ValidationError

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400