



API Reference

Amazon Braket



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Amazon Braket: API Reference

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Welcome

The Amazon Braket API Reference provides information about the operations and structures supported by Amazon Braket.

To learn about the permissions required to call an Amazon Braket API action, see [Actions, resources, and condition keys for Amazon Braket](#). [Amazon Braket Python SDK](#) and the [AWS Command Line Interface](#) can be used to make discovery and creation of API calls easier. For more information about Amazon Braket features, see [What is Amazon Braket?](#) and important [terms and concepts](#) in the *Amazon Braket Developer Guide*.

In this guide:

- [Actions](#)
- [Data Types](#)
- [Common Parameters](#)
- [Common Errors](#)

Available languages for AWS SDK:

- [.NET](#)
- [C++](#)
- [Go](#)
- [Java](#)
- [JavaScript](#)
- [PHP](#)
- [Python \(Boto\)](#)
- [Ruby](#)

Code examples from the Amazon Braket Tutorials GitHub repository:

- [Amazon Braket Examples](#)

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Actions

The following actions are supported:

- [CancelJob](#)
- [CancelQuantumTask](#)
- [CreateJob](#)
- [CreateQuantumTask](#)
- [GetDevice](#)
- [GetJob](#)
- [GetQuantumTask](#)
- [ListTagsForResource](#)
- [SearchDevices](#)
- [SearchJobs](#)
- [SearchQuantumTasks](#)
- [TagResource](#)
- [UntagResource](#)

CancelJob

Cancels an Amazon Braket hybrid job.

Request Syntax

```
PUT /job/jobArn/cancel HTTP/1.1
```

URI Request Parameters

The request uses the following URI parameters.

[jobArn](#)

The ARN of the Amazon Braket hybrid job to cancel.

Pattern: `^arn:aws[a-z\-\]*:braket:[a-z0-9\-\]+:[0-9]{12}:job/.*$`

Required: Yes

Request Body

The request does not have a request body.

Response Syntax

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

{
  "cancellationStatus": "string",
  "jobArn": "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

The status of the hybrid job.

Type: String

Valid Values: CANCELLING | CANCELLED

jobArn

The ARN of the Amazon Braket job.

Type: String

Pattern: `^arn:aws[a-z\-\]*:braket:[a-z0-9\-\]+:[0-9]{12}:job/.*$`

Errors

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

AccessDeniedException

You do not have sufficient permissions to perform this action.

HTTP Status Code: 403

ConflictException

An error occurred due to a conflict.

HTTP Status Code: 409

InternalServiceException

The request failed because of an unknown error.

HTTP Status Code: 500

ResourceNotFoundException

The specified resource was not found.

HTTP Status Code: 404

ThrottlingException

The API throttling rate limit is exceeded.

HTTP Status Code: 429

ValidationException

The input request failed to satisfy constraints expected by Amazon Braket.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

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

The ARN of the quantum task to cancel.

Length Constraints: Minimum length of 0. Maximum length of 256.

Required: Yes

Request Body

The request accepts the following data in JSON format.

clientToken

The client token associated with the cancellation 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](#)

The status of the quantum task.

Type: String

Valid Values: CANCELLING | CANCELLED

[quantumTaskArn](#)

The ARN of the quantum task.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Errors

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

AccessDeniedException

You do not have sufficient permissions to perform this action.

HTTP Status Code: 403

ConflictException

An error occurred due to a conflict.

HTTP Status Code: 409

InternalServiceException

The request failed because of an unknown error.

HTTP Status Code: 500

ResourceNotFoundException

The specified resource was not found.

HTTP Status Code: 404

ThrottlingException

The API throttling rate limit is exceeded.

HTTP Status Code: 429

ValidationException

The input request failed to satisfy constraints expected by Amazon Braket.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)

- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

CreateJob

Creates an Amazon Braket hybrid job.

Request Syntax

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

{
  "algorithmSpecification": {
    "containerImage": {
      "uri": "string"
    },
    "scriptModeConfig": {
      "compressionType": "string",
      "entryPoint": "string",
      "s3Uri": "string"
    }
  },
  "associations": [
    {
      "arn": "string",
      "type": "string"
    }
  ],
  "checkpointConfig": {
    "localPath": "string",
    "s3Uri": "string"
  },
  "clientToken": "string",
  "deviceConfig": {
    "device": "string"
  },
  "hyperParameters": {
    "string" : "string"
  },
  "inputDataConfig": [
    {
      "channelName": "string",
      "contentType": "string",
      "dataSource": {
        "s3DataSource": {
```

```

        "s3Uri": "string"
    }
}
],
"instanceConfig": {
    "instanceCount": number,
    "instanceType": "string",
    "volumeSizeInGb": number
},
"jobName": "string",
"outputDataConfig": {
    "kmsKeyId": "string",
    "s3Path": "string"
},
"roleArn": "string",
"stoppingCondition": {
    "maxRuntimeInSeconds": 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.

algorithmSpecification

Definition of the Amazon Braket job to be created. Specifies the container image the job uses and information about the Python scripts used for entry and training.

Type: [AlgorithmSpecification](#) object

Required: Yes

associations

The list of Amazon Braket resources associated with the hybrid job.

Type: Array of [Association](#) objects

Array Members: Minimum number of 0 items. Maximum number of 1 item.

Required: No

[checkpointConfig](#)

Information about the output locations for hybrid job checkpoint data.

Type: [JobCheckpointConfig](#) object

Required: No

[clientToken](#)

The client token associated with this request that guarantees that the request is idempotent.

Type: String

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

Required: Yes

[deviceConfig](#)

The quantum processing unit (QPU) or simulator used to create an Amazon Braket hybrid job.

Type: [DeviceConfig](#) object

Required: Yes

[hyperParameters](#)

Algorithm-specific parameters used by an Amazon Braket hybrid job that influence the quality of the training job. The values are set with a map of JSON key:value pairs, where the key is the name of the hyperparameter and the value is the value of the hyperparameter.

Type: String to string map

Map Entries: Minimum number of 0 items. Maximum number of 100 items.

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

Value Length Constraints: Minimum length of 1. Maximum length of 2500.

Value Pattern: `^.*$`

Required: No

inputDataConfig

A list of parameters that specify the name and type of input data and where it is located.

Type: Array of [InputFileConfig](#) objects

Array Members: Minimum number of 0 items. Maximum number of 20 items.

Required: No

instanceConfig

Configuration of the resource instances to use while running the hybrid job on Amazon Braket.

Type: [InstanceConfig](#) object

Required: Yes

jobName

The name of the Amazon Braket hybrid job.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 50.

Pattern: `^[a-zA-Z0-9](-*[a-zA-Z0-9]){0,50}$`

Required: Yes

outputDataConfig

The path to the S3 location where you want to store hybrid job artifacts and the encryption key used to store them.

Type: [JobOutputDataConfig](#) object

Required: Yes

roleArn

The Amazon Resource Name (ARN) of an IAM role that Amazon Braket can assume to perform tasks on behalf of a user. It can access user resources, run an Amazon Braket job container on behalf of user, and output results and hybrid job details to the users' s3 buckets.

Type: String

Pattern: `^arn:aws[a-z\-*:iam::\d{12}:role/?[a-zA-Z_0-9+=,.\@-_/\]]+$`

Required: Yes

stoppingCondition

The user-defined criteria that specifies when a hybrid job stops running.

Type: [JobStoppingCondition](#) object

Required: No

tags

Tags to be added to the hybrid job you're creating.

Type: String to string map

Required: No

Response Syntax

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

{
  "jobArn": "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.

jobArn

The ARN of the Amazon Braket hybrid job created.

Type: String

Pattern: `^arn:aws[a-z\-\-]*:braket:[a-z0-9\-\-]+:[0-9]{12}:job/.*$`

Errors

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

AccessDeniedException

You do not have sufficient permissions to perform this action.

HTTP Status Code: 403

ConflictException

An error occurred due to a conflict.

HTTP Status Code: 409

DeviceOfflineException

The specified device is currently offline.

HTTP Status Code: 424

DeviceRetiredException

The specified device has been retired.

HTTP Status Code: 410

InternalServiceException

The request failed because of an unknown error.

HTTP Status Code: 500

ServiceQuotaExceededException

The request failed because a service quota is exceeded.

HTTP Status Code: 402

ThrottlingException

The API throttling rate limit is exceeded.

HTTP Status Code: 429

ValidationException

The input request failed to satisfy constraints expected by Amazon Braket.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [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",
  "associations": [
    {
      "arn": "string",
      "type": "string"
    }
  ],
  "clientToken": "string",
  "deviceArn": "string",
  "deviceParameters": "string",
  "jobToken": "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

The action associated with the quantum task.

Type: String

Required: Yes

associations

The list of Amazon Braket resources associated with the quantum task.

Type: Array of [Association](#) objects

Array Members: Minimum number of 0 items. Maximum number of 1 item.

Required: No

clientToken

The client token associated with the request.

Type: String

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

Required: Yes

deviceArn

The ARN of the device to run the quantum task on.

Type: String

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

Required: Yes

deviceParameters

The parameters for the device to run the quantum task on.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 48000.

Required: No

jobToken

The token for an Amazon Braket hybrid job that associates it with the quantum task.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 128.

Required: No

outputS3Bucket

The S3 bucket to store quantum task result files in.

Type: String

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

Required: Yes

outputS3KeyPrefix

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

Type: String

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

Required: Yes

shots

The number of shots to use for the quantum task.

Type: Long

Valid Range: Minimum value of 0.

Required: Yes

tags

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

The ARN of the quantum task created by the request.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Errors

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

AccessDeniedException

You do not have sufficient permissions to perform this action.

HTTP Status Code: 403

DeviceOfflineException

The specified device is currently offline.

HTTP Status Code: 424

DeviceRetiredException

The specified device has been retired.

HTTP Status Code: 410

InternalServiceException

The request failed because of an unknown error.

HTTP Status Code: 500

ServiceQuotaExceededException

The request failed because a service quota is exceeded.

HTTP Status Code: 402

ThrottlingException

The API throttling rate limit is exceeded.

HTTP Status Code: 429

ValidationException

The input request failed to satisfy constraints expected by Amazon Braket.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

GetDevice

Retrieves the devices available in Amazon Braket.

Note

For backwards compatibility with older versions of BraketSchemas, OpenQASM information is omitted from GetDevice API calls. To get this information the user-agent needs to present a recent version of the BraketSchemas (1.8.0 or later). The Braket SDK automatically reports this for you. If you do not see OpenQASM results in the GetDevice response when using a Braket SDK, you may need to set `AWS_EXECUTION_ENV` environment variable to configure user-agent. See the code examples provided below for how to do this for the AWS CLI, Boto3, and the Go, Java, and JavaScript/TypeScript SDKs.

Request Syntax

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

URI Request Parameters

The request uses the following URI parameters.

deviceArn

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",
  "deviceQueueInfo": [
    {
      "queue": "string",
      "queuePriority": "string",
      "queueSize": "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

The ARN of the device.

Type: String

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

deviceCapabilities

Details about the capabilities of the device.

Type: String

deviceName

The name of the device.

Type: String

deviceQueueInfo

The number of quantum tasks and hybrid jobs currently queued on the device.

Type: Array of [DeviceQueueInfo](#) objects

deviceStatus

The status of the device.

Type: String

Valid Values: ONLINE | OFFLINE | RETIRED

deviceType

The type of the device.

Type: String

Valid Values: QPU | SIMULATOR

providerName

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](#).

AccessDeniedException

You do not have sufficient permissions to perform this action.

HTTP Status Code: 403

InternalServiceException

The request failed because of an unknown error.

HTTP Status Code: 500

ResourceNotFoundException

The specified resource was not found.

HTTP Status Code: 404

ThrottlingException

The API throttling rate limit is exceeded.

HTTP Status Code: 429

ValidationException

The input request failed to satisfy constraints expected by Amazon Braket.

HTTP Status Code: 400

Examples

Example

To set `AWS_EXECUTION_ENV` environment variable to configure user-agent when using the AWS CLI SDK:

```
% export AWS_EXECUTION_ENV="aws-cli BraketSchemas/1.8.0"  
# Or for single execution  
% AWS_EXECUTION_ENV="aws-cli BraketSchemas/1.8.0" aws braket <cmd> [options]
```

Example

To set `AWS_EXECUTION_ENV` environment variable to configure user-agent when using the Boto3:

```
import boto3  
import botocore  
  
client = boto3.client("braket",  
    config=botocore.client.Config(user_agent_extra="BraketSchemas/1.8.0"))
```

Example

To set `AWS_EXECUTION_ENV` environment variable to configure user-agent when using the JavaScript/TypeScript (SDK v2):

```
import Braket from 'aws-sdk/clients/braket';  
const client = new Braket({ region: 'us-west-2', credentials: AWS_CREDENTIALS,  
    customUserAgent: 'BraketSchemas/1.8.0' });
```


Example

To set `AWS_EXECUTION_ENV` environment variable to configure user-agent when using the JavaScript/TypeScript (SDK v3):

```
import { Braket } from '@aws-sdk/client-braket';
const client = new Braket({ region: 'us-west-2', credentials: AWS_CREDENTIALS,
  customUserAgent: 'BraketSchemas/1.8.0' });
```

Example

To set `AWS_EXECUTION_ENV` environment variable to configure user-agent when using the Go SDK:

```
os.Setenv("AWS_EXECUTION_ENV", "BraketGo BraketSchemas/1.8.0")
mySession := session.Must(session.NewSession())
svc := braket.New(mySession)
```

Example

To set `AWS_EXECUTION_ENV` environment variable to configure user-agent when using the Java SDK:

```
ClientConfiguration config = new ClientConfiguration();
config.setUserAgentSuffix("BraketSchemas/1.8.0");
BraketClient braketClient =
  BraketClientBuilder.standard().withClientConfiguration(config).build();
```

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 v2](#)
- [AWS SDK for Java V2](#)

- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

GetJob

Retrieves the specified Amazon Braket hybrid job.

Request Syntax

```
GET /job/jobArn?additionalAttributeNames=additionalAttributeNames HTTP/1.1
```

URI Request Parameters

The request uses the following URI parameters.

additionalAttributeNames

A list of attributes to return additional information for. Only the QueueInfo additional attribute name is currently supported.

Valid Values: QueueInfo

jobArn

The ARN of the hybrid job to retrieve.

Pattern: `^arn:aws[a-z\-*:braket:[a-z0-9\-*]+:[0-9]{12}:job/.*$`

Required: Yes

Request Body

The request does not have a request body.

Response Syntax

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

{
  "algorithmSpecification": {
    "containerImage": {
      "uri": "string"
    },
    "scriptModeConfig": {
```

```
    "compressionType": "string",
    "entryPoint": "string",
    "s3Uri": "string"
  }
},
"associations": [
  {
    "arn": "string",
    "type": "string"
  }
],
"billableDuration": number,
"checkpointConfig": {
  "localPath": "string",
  "s3Uri": "string"
},
"createdAt": "string",
"deviceConfig": {
  "device": "string"
},
"endedAt": "string",
"events": [
  {
    "eventType": "string",
    "message": "string",
    "timeOfEvent": "string"
  }
],
"failureReason": "string",
"hyperParameters": {
  "string" : "string"
},
"inputDataConfig": [
  {
    "channelName": "string",
    "contentType": "string",
    "dataSource": {
      "s3DataSource": {
        "s3Uri": "string"
      }
    }
  }
],
"instanceConfig": {
```

```
    "instanceCount": number,
    "instanceType": "string",
    "volumeSizeInGb": number
  },
  "jobArn": "string",
  "jobName": "string",
  "outputDataConfig": {
    "kmsKeyId": "string",
    "s3Path": "string"
  },
  "queueInfo": {
    "message": "string",
    "position": "string",
    "queue": "string"
  },
  "roleArn": "string",
  "startedAt": "string",
  "status": "string",
  "stoppingCondition": {
    "maxRuntimeInSeconds": number
  },
  "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.

algorithmSpecification

Definition of the Amazon Braket hybrid job created. Provides information about the container image used, and the Python scripts used for training.

Type: [AlgorithmSpecification](#) object

associations

The list of Amazon Braket resources associated with the hybrid job.

Type: Array of [Association](#) objects

billableDuration

The billable time for which the Amazon Braket hybrid job used to complete.

Type: Integer

checkpointConfig

Information about the output locations for hybrid job checkpoint data.

Type: [JobCheckpointConfig](#) object

createdAt

The time at which the Amazon Braket hybrid job was created.

Type: Timestamp

deviceConfig

The primary device used by the Amazon Braket hybrid job.

Type: [DeviceConfig](#) object

endedAt

The time at which the Amazon Braket hybrid job ended.

Type: Timestamp

events

Details about the time and type of events occurred related to the Amazon Braket hybrid job.

Type: Array of [JobEventDetails](#) objects

Array Members: Minimum number of 0 items. Maximum number of 20 items.

failureReason

A description of the reason why an Amazon Braket hybrid job failed, if it failed.

Type: String

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

hyperParameters

Algorithm-specific parameters used by an Amazon Braket hybrid job that influence the quality of the training job. The values are set with a map of JSON key:value pairs, where the key is the name of the hyperparameter and the value is the value of the hyperparameter.

Type: String to string map

Map Entries: Minimum number of 0 items. Maximum number of 100 items.

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

Value Length Constraints: Minimum length of 1. Maximum length of 2500.

Value Pattern: `^.*$`

inputDataConfig

A list of parameters that specify the name and type of input data and where it is located.

Type: Array of [InputFileConfig](#) objects

instanceConfig

The resource instances to use while running the hybrid job on Amazon Braket.

Type: [InstanceConfig](#) object

jobArn

The ARN of the Amazon Braket hybrid job.

Type: String

Pattern: `^arn:aws[a-z\-*]:braket:[a-z0-9\-*]+:[0-9]{12}:job/.*$`

jobName

The name of the Amazon Braket hybrid job.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 50.

Pattern: `^[a-zA-Z0-9](-*[a-zA-Z0-9]){0,50}$`

outputDataConfig

The path to the S3 location where hybrid job artifacts are stored and the encryption key used to store them there.

Type: [JobOutputDataConfig](#) object

queueInfo

Queue information for the requested hybrid job. Only returned if QueueInfo is specified in the `additionalAttributeNames` field in the GetJob API request.

Type: [HybridJobQueueInfo](#) object

roleArn

The Amazon Resource Name (ARN) of an IAM role that Amazon Braket can assume to perform tasks on behalf of a user. It can access user resources, run an Amazon Braket job container on behalf of user, and output results and other hybrid job details to the s3 buckets of a user.

Type: String

Pattern: `^arn:aws[a-z\-*:iam::\d{12}:role/?[a-zA-Z_0-9+=,.\@-_/\]]+$`

startedAt

The time at which the Amazon Braket hybrid job was started.

Type: Timestamp

status

The status of the Amazon Braket hybrid job.

Type: String

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

stoppingCondition

The user-defined criteria that specifies when to stop a running hybrid job.

Type: [JobStoppingCondition](#) object

tags

The tags associated with this hybrid job.

Type: String to string map

Errors

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

AccessDeniedException

You do not have sufficient permissions to perform this action.

HTTP Status Code: 403

InternalServiceException

The request failed because of an unknown error.

HTTP Status Code: 500

ResourceNotFoundException

The specified resource was not found.

HTTP Status Code: 404

ThrottlingException

The API throttling rate limit is exceeded.

HTTP Status Code: 429

ValidationException

The input request failed to satisfy constraints expected by Amazon Braket.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [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?additionalAttributeNames=additionalAttributeNames
HTTP/1.1
```

URI Request Parameters

The request uses the following URI parameters.

additionalAttributeNames

A list of attributes to return additional information for. Only the QueueInfo additional attribute name is currently supported.

Valid Values: QueueInfo

quantumTaskArn

The ARN of the quantum task to retrieve.

Length Constraints: Minimum length of 0. 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

{
  "associations": [
```

```
{
  {
    "arn": "string",
    "type": "string"
  }
],
"createdAt": "string",
"deviceArn": "string",
"deviceParameters": "string",
"endedAt": "string",
"failureReason": "string",
"jobArn": "string",
"outputS3Bucket": "string",
"outputS3Directory": "string",
"quantumTaskArn": "string",
"queueInfo": {
  "message": "string",
  "position": "string",
  "queue": "string",
  "queuePriority": "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.

associations

The list of Amazon Braket resources associated with the quantum task.

Type: Array of [Association](#) objects

createdAt

The time at which the quantum task was created.

Type: Timestamp

deviceArn

The ARN of the device the quantum task was run on.

Type: String

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

deviceParameters

The parameters for the device on which the quantum task ran.

Type: String

endedAt

The time at which the quantum task ended.

Type: Timestamp

failureReason

The reason that a quantum task failed.

Type: String

jobArn

The ARN of the Amazon Braket job associated with the quantum task.

Type: String

Pattern: `^arn:aws[a-z\-*]:braket:[a-z0-9\-*]+:[0-9]{12}:job/.*$`

outputS3Bucket

The S3 bucket where quantum task results are stored.

Type: String

outputS3Directory

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

Type: String

quantumTaskArn

The ARN of the quantum task.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

queueInfo

Queue information for the requested quantum task. Only returned if QueueInfo is specified in the `additionalAttributeNames` field in the GetQuantumTask API request.

Type: [QuantumTaskQueueInfo](#) object

shots

The number of shots used in the quantum task.

Type: Long

status

The status of the quantum task.

Type: String

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

tags

The tags that belong to this quantum task.

Type: String to string map

Errors

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

AccessDeniedException

You do not have sufficient permissions to perform this action.

HTTP Status Code: 403

InternalServiceException

The request failed because of an unknown error.

HTTP Status Code: 500

ResourceNotFoundException

The specified resource was not found.

HTTP Status Code: 404

ThrottlingException

The API throttling rate limit is exceeded.

HTTP Status Code: 429

ValidationException

The input request failed to satisfy constraints expected by Amazon Braket.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [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

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](#)

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](#).

InternalServiceException

The request failed because of an unknown error.

HTTP Status Code: 500

ResourceNotFoundException

The specified resource was not found.

HTTP Status Code: 404

ValidationException

The input request failed to satisfy constraints expected by Amazon Braket.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [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

Array of [SearchDevicesFilter](#) objects to use when searching for devices.

Type: Array of [SearchDevicesFilter](#) objects

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

Required: Yes

maxResults

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

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

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

Type: Array of [DeviceSummary](#) objects

[nextToken](#)

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 search where the previous request ended.

Type: String

Errors

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

AccessDeniedException

You do not have sufficient permissions to perform this action.

HTTP Status Code: 403

InternalServerError

The request failed because of an unknown error.

HTTP Status Code: 500

ThrottlingException

The API throttling rate limit is exceeded.

HTTP Status Code: 429

ValidationException

The input request failed to satisfy constraints expected by Amazon Braket.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

SearchJobs

Searches for Amazon Braket hybrid jobs that match the specified filter values.

Request Syntax

```
POST /jobs 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

Array of [SearchJobsFilter](#) objects to use when searching for hybrid jobs.

Type: Array of [SearchJobsFilter](#) objects

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

Required: Yes

maxResults

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

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

Type: String

Required: No

Response Syntax

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

{
  "jobs": [
    {
      "createdAt": "string",
      "device": "string",
      "endedAt": "string",
      "jobArn": "string",
      "jobName": "string",
      "startedAt": "string",
      "status": "string",
      "tags": {
        "string" : "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.

[jobs](#)

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

Type: Array of [JobSummary](#) objects

[nextToken](#)

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 search where the previous request ended.

Type: String

Errors

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

AccessDeniedException

You do not have sufficient permissions to perform this action.

HTTP Status Code: 403

InternalServiceException

The request failed because of an unknown error.

HTTP Status Code: 500

ThrottlingException

The API throttling rate limit is exceeded.

HTTP Status Code: 429

ValidationException

The input request failed to satisfy constraints expected by Amazon Braket.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [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

Array of `SearchQuantumTasksFilter` objects to use when searching for quantum tasks.

Type: Array of [SearchQuantumTasksFilter](#) objects

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

Required: Yes

maxResults

Maximum number of results to return in the response.

Type: Integer

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

Required: No

nextToken

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

Type: String

Required: No

Response Syntax

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

{
  "nextToken": "string",
  "quantumTasks": [
    {
      "createdAt": "string",
      "deviceArn": "string",
      "endedAt": "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.

nextToken

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 search where the previous request ended.

Type: String

quantumTasks

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

Type: Array of [QuantumTaskSummary](#) objects

Errors

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

AccessDeniedException

You do not have sufficient permissions to perform this action.

HTTP Status Code: 403

InternalServiceException

The request failed because of an unknown error.

HTTP Status Code: 500

ThrottlingException

The API throttling rate limit is exceeded.

HTTP Status Code: 429

ValidationException

The input request failed to satisfy constraints expected by Amazon Braket.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [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

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

Specify the tags to add to the resource. Tags can be specified as a key-value map.

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](#).

InternalServerErrorException

The request failed because of an unknown error.

HTTP Status Code: 500

ResourceNotFoundException

The specified resource was not found.

HTTP Status Code: 404

ValidationException

The input request failed to satisfy constraints expected by Amazon Braket.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [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

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

Required: Yes

tagKeys

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](#).

InternalServiceException

The request failed because of an unknown error.

HTTP Status Code: 500

ResourceNotFoundException

The specified resource was not found.

HTTP Status Code: 404

ValidationException

The input request failed to satisfy constraints expected by Amazon Braket.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [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:

- [AlgorithmSpecification](#)
- [Association](#)
- [ContainerImage](#)
- [DataSource](#)
- [DeviceConfig](#)
- [DeviceQueueInfo](#)
- [DeviceSummary](#)
- [HybridJobQueueInfo](#)
- [InputFileConfig](#)
- [InstanceConfig](#)
- [JobCheckpointConfig](#)
- [JobEventDetails](#)
- [JobOutputDataConfig](#)
- [JobStoppingCondition](#)
- [JobSummary](#)
- [QuantumTaskQueueInfo](#)
- [QuantumTaskSummary](#)
- [S3DataSource](#)
- [ScriptModeConfig](#)
- [SearchDevicesFilter](#)

- [SearchJobsFilter](#)
- [SearchQuantumTasksFilter](#)

AlgorithmSpecification

Defines the Amazon Braket hybrid job to be created. Specifies the container image the job uses and the paths to the Python scripts used for entry and training.

Contents

containerImage

The container image used to create an Amazon Braket hybrid job.

Type: [ContainerImage](#) object

Required: No

scriptModeConfig

Configures the paths to the Python scripts used for entry and training.

Type: [ScriptModeConfig](#) object

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

Association

The Amazon Braket resource and the association type.

Contents

arn

The Amazon Braket resource arn.

Type: String

Pattern: `^arn:aws[a-z\-*]:braket:[a-z0-9\-*]:[0-9]{12}:.*$`

Required: Yes

type

The association type for the specified Amazon Braket resource arn.

Type: String

Valid Values: `RESERVATION_TIME_WINDOW_ARN`

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

ContainerImage

The container image used to create an Amazon Braket hybrid job.

Contents

uri

The URI locating the container image.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `\d{10,14}\.dkr\.ecr\.[a-z0-9-]+\\.amazonaws\.com\/.+(@sha256)??:.+`

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

DataSource

Information about the source of the input data used by the Amazon Braket hybrid job.

Contents

s3DataSource

Amazon S3 path of the input data used by the hybrid job.

Type: [S3DataSource](#) object

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

DeviceConfig

Configures the primary device used to create and run an Amazon Braket hybrid job.

Contents

device

The primary device ARN used to create and run an Amazon Braket hybrid job.

Type: String

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

DeviceQueueInfo

Information about quantum tasks and hybrid jobs queued on a device.

Contents

queue

The name of the queue.

Type: String

Valid Values: QUANTUM_TASKS_QUEUE | JOBS_QUEUE

Required: Yes

queueSize

The number of hybrid jobs or quantum tasks in the queue for a given device.

Type: String

Required: Yes

queuePriority

Optional. Specifies the priority of the queue. Quantum tasks in a priority queue are processed before the quantum tasks in a normal queue.

Type: String

Valid Values: Normal | Priority

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 Java V2](#)

- [AWS SDK for Ruby V3](#)

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 | RETIRED

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

HybridJobQueueInfo

Information about the queue for a specified hybrid job.

Contents

position

Current position of the hybrid job in the jobs queue.

Type: String

Required: Yes

queue

The name of the queue.

Type: String

Valid Values: QUANTUM_TASKS_QUEUE | JOBS_QUEUE

Required: Yes

message

Optional. Provides more information about the queue position. For example, if the hybrid job is complete and no longer in the queue, the message field contains that information.

Type: String

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

InputFileConfig

A list of parameters that specify the input channels, type of input data, and where it is located.

Contents

channelName

A named input source that an Amazon Braket hybrid job can consume.

Type: String

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

Pattern: `^[A-Za-z0-9\.\-_]+$`

Required: Yes

dataSource

The location of the input data.

Type: [DataSource](#) object

Required: Yes

contentType

The MIME type of the data.

Type: String

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

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 Java V2](#)

- [AWS SDK for Ruby V3](#)

InstanceConfig

Configures the resource instances to use while running the Amazon Braket hybrid job on Amazon Braket.

Contents

instanceType

Configures the type of resource instances to use while running an Amazon Braket hybrid job.

Type: String

Valid Values: `m1.m4.xlarge` | `m1.m4.2xlarge` | `m1.m4.4xlarge` | `m1.m4.10xlarge` | `m1.m4.16xlarge` | `m1.g4dn.xlarge` | `m1.g4dn.2xlarge` | `m1.g4dn.4xlarge` | `m1.g4dn.8xlarge` | `m1.g4dn.12xlarge` | `m1.g4dn.16xlarge` | `m1.m5.large` | `m1.m5.xlarge` | `m1.m5.2xlarge` | `m1.m5.4xlarge` | `m1.m5.12xlarge` | `m1.m5.24xlarge` | `m1.c4.xlarge` | `m1.c4.2xlarge` | `m1.c4.4xlarge` | `m1.c4.8xlarge` | `m1.p2.xlarge` | `m1.p2.8xlarge` | `m1.p2.16xlarge` | `m1.p3.2xlarge` | `m1.p3.8xlarge` | `m1.p3.16xlarge` | `m1.p3dn.24xlarge` | `m1.p4d.24xlarge` | `m1.c5.xlarge` | `m1.c5.2xlarge` | `m1.c5.4xlarge` | `m1.c5.9xlarge` | `m1.c5.18xlarge` | `m1.c5n.xlarge` | `m1.c5n.2xlarge` | `m1.c5n.4xlarge` | `m1.c5n.9xlarge` | `m1.c5n.18xlarge`

Required: Yes

volumeSizeInGb

The size of the storage volume, in GB, to provision.

Type: Integer

Valid Range: Minimum value of 1.

Required: Yes

instanceCount

Configures the number of resource instances to use while running an Amazon Braket hybrid job on Amazon Braket. The default value is 1.

Type: Integer

Valid Range: Minimum value of 1.

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

JobCheckpointConfig

Contains information about the output locations for hybrid job checkpoint data.

Contents

s3Uri

Identifies the S3 path where you want Amazon Braket to store checkpoint data. For example, `s3://bucket-name/key-name-prefix`.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: `^(https|s3):\/\/([^\/]*)\/?(.*)$`

Required: Yes

localPath

(Optional) The local directory where checkpoint data is stored. The default directory is `/opt/braket/checkpoints/`.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 4096.

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

JobEventDetails

Details about the type and time events that occurred related to the Amazon Braket hybrid job.

Contents

eventType

The type of event that occurred related to the Amazon Braket hybrid job.

Type: String

Valid Values: WAITING_FOR_PRIORITY | QUEUED_FOR_EXECUTION
| STARTING_INSTANCE | DOWNLOADING_DATA | RUNNING |
DEPRIORITIZED_DUE_TO_INACTIVITY | UPLOADING_RESULTS | COMPLETED | FAILED
| MAX_RUNTIME_EXCEEDED | CANCELLED

Required: No

message

A message describing the event that occurred related to the Amazon Braket hybrid job.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 2500.

Required: No

timeOfEvent

The time of the event that occurred related to the Amazon Braket hybrid job.

Type: Timestamp

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

JobOutputDataConfig

Specifies the path to the S3 location where you want to store hybrid job artifacts and the encryption key used to store them.

Contents

s3Path

Identifies the S3 path where you want Amazon Braket to store the hybrid job training artifacts. For example, `s3://bucket-name/key-name-prefix`.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: `^(https|s3):\/\/([^\/]*)\/?(.*)$`

Required: Yes

kmsKeyId

The AWS Key Management Service (AWS KMS) key that Amazon Braket uses to encrypt the hybrid job training artifacts at rest using Amazon S3 server-side encryption.

Type: String

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

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

JobStoppingCondition

Specifies limits for how long an Amazon Braket hybrid job can run.

Contents

maxRuntimeInSeconds

The maximum length of time, in seconds, that an Amazon Braket hybrid job can run.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 432000.

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

JobSummary

Provides summary information about an Amazon Braket hybrid job.

Contents

createdAt

The time at which the Amazon Braket hybrid job was created.

Type: Timestamp

Required: Yes

device

The primary device used by an Amazon Braket hybrid job.

Type: String

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

Required: Yes

jobArn

The ARN of the Amazon Braket hybrid job.

Type: String

Pattern: `^arn:aws[a-z\-*]:braket:[a-z0-9\-*]+:[0-9]{12}:job/.*$`

Required: Yes

jobName

The name of the Amazon Braket hybrid job.

Type: String

Required: Yes

status

The status of the Amazon Braket hybrid job.

Type: String

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

Required: Yes

endedAt

The time at which the Amazon Braket hybrid job ended.

Type: Timestamp

Required: No

startedAt

The time at which the Amazon Braket hybrid job was started.

Type: Timestamp

Required: No

tags

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

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

QuantumTaskQueueInfo

The queue information for the specified quantum task.

Contents

position

Current position of the quantum task in the quantum tasks queue.

Type: String

Required: Yes

queue

The name of the queue.

Type: String

Valid Values: QUANTUM_TASKS_QUEUE | JOBS_QUEUE

Required: Yes

message

Optional. Provides more information about the queue position. For example, if the quantum task is complete and no longer in the queue, the message field contains that information.

Type: String

Required: No

queuePriority

Optional. Specifies the priority of the queue. Quantum tasks in a priority queue are processed before the quantum tasks in a normal queue.

Type: String

Valid Values: Normal | Priority

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

QuantumTaskSummary

Includes information about a quantum task.

Contents

createdAt

The time at which the quantum task was created.

Type: Timestamp

Required: Yes

deviceArn

The ARN of the device the quantum task ran on.

Type: String

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

Required: Yes

outputS3Bucket

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

Type: String

Required: Yes

outputS3Directory

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

Type: String

Required: Yes

quantumTaskArn

The ARN of the quantum task.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Required: Yes

shots

The shots used for the quantum task.

Type: Long

Required: Yes

status

The status of the quantum task.

Type: String

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

Required: Yes

endedAt

The time at which the quantum task finished.

Type: Timestamp

Required: No

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

S3DataSource

Information about the Amazon S3 storage used by the Amazon Braket hybrid job.

Contents

s3Uri

Depending on the value specified for the `S3DataType`, identifies either a key name prefix or a manifest that locates the S3 data source.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: `^(https|s3)://[^(/)]+/?(.*)$`

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

ScriptModeConfig

Contains information about algorithm scripts used for the Amazon Braket hybrid job.

Contents

entryPoint

The entry point in the algorithm scripts from where the execution begins in the hybrid job.

Type: String

Required: Yes

s3Uri

The URI that specifies the S3 path to the algorithm scripts used by an Amazon Braket hybrid job.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: `^(https|s3)://([^\s]+)?/?(.*)$`

Required: Yes

compressionType

The type of compression used to store the algorithm scripts in Amazon S3 storage.

Type: String

Valid Values: NONE | GZIP

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

SearchDevicesFilter

The filter used to search for devices.

Contents

name

The name of the device parameter to filter based on. Only `deviceArn` filter name is currently supported.

Type: String

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

Required: Yes

values

The values used to filter devices based on the filter name.

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

SearchJobsFilter

A filter used to search for Amazon Braket hybrid jobs.

Contents

name

The name of the hybrid job parameter to filter based on. Filter name can be either `jobArn` or `createdAt`.

Type: String

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

Required: Yes

operator

An operator to use for the filter.

Type: String

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

Required: Yes

values

The values used to filter hybrid jobs based on the filter name and operator.

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

SearchQuantumTasksFilter

A filter used to search for quantum tasks.

Contents

name

The name of the quantum task parameter to filter based on. Filter name can be either `quantumTaskArn`, `deviceArn`, `jobArn`, `status` or `createdAt`.

Type: String

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

Required: Yes

operator

An operator to use for the filter.

Type: String

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

Required: Yes

values

The values used to filter quantum tasks based on the filter name and operator.

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 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 [Signing AWS API requests](#) in the *IAM User Guide*.

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 [Create a signed AWS API request](#) in the *IAM User Guide*.

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'T'HHMMSS'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 [Elements of an AWS API request signature](#) in the *IAM User Guide*.

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 STS, see [AWS services that work with IAM](#) in the *IAM User Guide*.

Condition: If you're using temporary security credentials from AWS STS, 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 [Create a signed AWS API request](#) in the *IAM User Guide*.

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: 403

ExpiredTokenException

The security token included in the request is expired

HTTP Status Code: 403

IncompleteSignature

The request signature does not conform to AWS standards.

HTTP Status Code: 403

InternalFailure

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

HTTP Status Code: 500

MalformedHttpRequestException

Problems with the request at the HTTP level, e.g. we can't decompress the body according to the decompression algorithm specified by the content-encoding.

HTTP Status Code: 400

NotAuthorized

You do not have permission to perform this action.

HTTP Status Code: 401

OptInRequired

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

HTTP Status Code: 403

RequestAbortedException

Convenient exception that can be used when a request is aborted before a reply is sent back (e.g. client closed connection).

HTTP Status Code: 400

RequestEntityTooLargeException

Problems with the request at the HTTP level. The request entity is too large.

HTTP Status Code: 413

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

RequestTimeoutException

Problems with the request at the HTTP level. Reading the Request timed out.

HTTP Status Code: 408

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

UnrecognizedClientException

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

HTTP Status Code: 403

UnknownOperationException

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

HTTP Status Code: 404

ValidationError

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

HTTP Status Code: 400