API Reference

AWS Step Functions

API Version 2016-11-23

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AWS Step Functions: API Reference

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Welcome

With AWS Step Functions, you can create workflows, also called *state machines*, to build distributed applications, automate processes, orchestrate microservices, and create data and machine learning pipelines.

Through the Step Functions API, you can create, list, update, and delete state machines, activities, and other data types. You can start, stop, and redrive your state machines. Your activity workers can send task success, heartbeat, and failure responses.

With API calls, you can also manage other aspects of your workflow, such as tags, versions, and aliases.

For more information about developing solutions with Step Functions, see the *AWS Step Functions Developer Guide* .

Important

If you use the Step Functions API actions using AWS SDK integrations, make sure the API actions are in camel case and parameter names are in Pascal case. For example, you might use Step Functions API action `startSyncExecution` and specify its parameter as `StateMachineArn`.

This document was last published on October 14, 2026.

Actions

The following actions are supported:

- CreateActivity
- CreateStateMachine
- CreateStateMachineAlias
- DeleteActivity
- DeleteStateMachine
- DeleteStateMachineAlias
- DeleteStateMachineVersion
- DescribeActivity
- DescribeExecution
- DescribeMapRun
- DescribeStateMachine
- DescribeStateMachineAlias
- DescribeStateMachineForExecution
- GetActivityTask
- GetExecutionHistory
- ListActivities
- ListExecutions
- ListMapRuns
- ListStateMachineAliases
- ListStateMachines
- ListStateMachineVersions
- ListTagsForResource
- PublishStateMachineVersion
- RedriveExecution
- SendTaskFailure
- SendTaskHeartbeat
- SendTaskSuccess

- StartExecution
- StartSyncExecution
- StopExecution
- TagResource
- TestState
- UntagResource
- UpdateMapRun
- UpdateStateMachine
- UpdateStateMachineAlias
- ValidateStateMachineDefinition

CreateActivity

Creates an activity. An activity is a task that you write in any programming language and host on any machine that has access to AWS Step Functions. Activities must poll Step Functions using the `GetActivityTask` API action and respond using `SendTask*` API actions. This function lets Step Functions know the existence of your activity and returns an identifier for use in a state machine and when polling from the activity.

> **Note**
>
> This operation is eventually consistent. The results are best effort and may not reflect very recent updates and changes.

> **Note**
>
> `CreateActivity` is an idempotent API. Subsequent requests won't create a duplicate resource if it was already created. `CreateActivity`'s idempotency check is based on the activity `name`. If a following request has different `tags` values, Step Functions will ignore these differences and treat it as an idempotent request of the previous. In this case, `tags` will not be updated, even if they are different.

Request Syntax

```
{
   "encryptionConfiguration": {
      "kmsDataKeyReusePeriodSeconds": number,
      "kmsKeyId": "string",
      "type": "string"
   },
   "name": "string",
   "tags": [
      {
         "key": "string",
         "value": "string"
      }
   ]
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

encryptionConfiguration

Settings to configure server-side encryption.

Type: EncryptionConfiguration object

Required: No

name

The name of the activity to create. This name must be unique for your AWS account and region.

A name must *not* contain:

- white space
- brackets < > { } [ ]
- wildcard characters ? *
- special characters " # % \ ^ | ~ ` $ & , ; : /
- control characters (U+0000-001F, U+007F-009F, U+FFFE-FFFF)
- surrogates (U+D800-DFFF)
- invalid characters (U+10FFFF)

To enable logging with CloudWatch Logs, the name should only contain 0-9, A-Z, a-z, - and _.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Required: Yes

tags

The list of tags to add to a resource.

An array of key-value pairs. For more information, see Using Cost Allocation Tags in the *AWS Billing and Cost Management User Guide*, and Controlling Access Using IAM Tags.

Tags may only contain Unicode letters, digits, white space, or these symbols: `_ . : / = + - @`.

Type: Array of Tag objects

Required: No

Response Syntax

```
{
   "activityArn": "string",
   "creationDate": number
}
```

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.

activityArn

The Amazon Resource Name (ARN) that identifies the created activity.

Type: String

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

creationDate

The date the activity is created.

Type: Timestamp

Errors

For information about the errors that are common to all actions, see Common Error Types.

ActivityAlreadyExists

Activity already exists. `EncryptionConfiguration` may not be updated.

HTTP Status Code: 400

ActivityLimitExceeded

The maximum number of activities has been reached. Existing activities must be deleted before a new activity can be created.

HTTP Status Code: 400

InvalidEncryptionConfiguration

Received when `encryptionConfiguration` is specified but various conditions exist which make the configuration invalid. For example, if `type` is set to `CUSTOMER_MANAGED_KMS_KEY`, but `kmsKeyId` is null, or `kmsDataKeyReusePeriodSeconds` is not between 60 and 900, or the AWS KMS key is not symmetric or inactive.

HTTP Status Code: 400

InvalidName

The provided name is not valid.

HTTP Status Code: 400

KmsAccessDeniedException

Either your AWS KMS key policy or API caller does not have the required permissions.

HTTP Status Code: 400

KmsThrottlingException

Received when AWS KMS returns `ThrottlingException` for a AWS KMS call that Step Functions makes on behalf of the caller.

HTTP Status Code: 400

TooManyTags

You've exceeded the number of tags allowed for a resource. See the Limits Topic in the AWS Step Functions Developer Guide.

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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

CreateStateMachine

Creates a state machine. A state machine consists of a collection of states that can do work (`Task` states), determine to which states to transition next (`Choice` states), stop an execution with an error (`Fail` states), and so on. State machines are specified using a JSON-based, structured language. For more information, see Amazon States Language in the AWS Step Functions User Guide.

If you set the `publish` parameter of this API action to `true`, it publishes version 1 as the first revision of the state machine.

For additional control over security, you can encrypt your data using a **customer-managed key** for Step Functions state machines. You can configure a symmetric AWS KMS key and data key reuse period when creating or updating a **State Machine**. The execution history and state machine definition will be encrypted with the key applied to the State Machine.

> **Note**
>
> This operation is eventually consistent. The results are best effort and may not reflect very recent updates and changes.

> **Note**
>
> `CreateStateMachine` is an idempotent API. Subsequent requests won't create a duplicate resource if it was already created. `CreateStateMachine`'s idempotency check is based on the state machine `name`, `definition`, `type`, `LoggingConfiguration`, `TracingConfiguration`, and `EncryptionConfiguration` The check is also based on the `publish` and `versionDescription` parameters. If a following request has a different `roleArn` or `tags`, Step Functions will ignore these differences and treat it as an idempotent request of the previous. In this case, `roleArn` and `tags` will not be updated, even if they are different.

Request Syntax

```
{
   "definition": "string",
```

```
    "encryptionConfiguration": {
       "kmsDataKeyReusePeriodSeconds": number,
       "kmsKeyId": "string",
       "type": "string"
    },
    "loggingConfiguration": {
       "destinations": [
          {
             "cloudWatchLogsLogGroup": {
                "logGroupArn": "string"
             }
          }
       ],
       "includeExecutionData": boolean,
       "level": "string"
    },
    "name": "string",
    "publish": boolean,
    "roleArn": "string",
    "tags": [
       {
          "key": "string",
          "value": "string"
       }
    ],
    "tracingConfiguration": {
       "enabled": boolean
    },
    "type": "string",
    "versionDescription": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

definition

The Amazon States Language definition of the state machine. See Amazon States Language.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1048576.

Required: Yes

encryptionConfiguration

Settings to configure server-side encryption.

Type: EncryptionConfiguration object

Required: No

loggingConfiguration

Defines what execution history events are logged and where they are logged.

> **Note**
>
> By default, the `level` is set to `OFF`. For more information see Log Levels in the AWS Step Functions User Guide.

Type: LoggingConfiguration object

Required: No

name

The name of the state machine.

A name must *not* contain:

- white space
- brackets `< > { } [ ]`
- wildcard characters `? *`
- special characters `" # % \ ^ | ~ ` $ & , ; : /`
- control characters (`U+0000-001F`, `U+007F-009F`, `U+FFFE-FFFF`)
- surrogates (`U+D800-DFFF`)
- invalid characters (`U+10FFFF`)

To enable logging with CloudWatch Logs, the name should only contain 0-9, A-Z, a-z, - and _.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Required: Yes

publish

Set to `true` to publish the first version of the state machine during creation. The default is `false`.

Type: Boolean

Required: No

roleArn

The Amazon Resource Name (ARN) of the IAM role to use for this state machine.

Type: String

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

Required: Yes

tags

Tags to be added when creating a state machine.

An array of key-value pairs. For more information, see Using Cost Allocation Tags in the *AWS Billing and Cost Management User Guide*, and Controlling Access Using IAM Tags.

Tags may only contain Unicode letters, digits, white space, or these symbols: `_ . : / = + - @`.

Type: Array of Tag objects

Required: No

tracingConfiguration

Selects whether AWS X-Ray tracing is enabled.

Type: TracingConfiguration object

Required: No

type

Determines whether a Standard or Express state machine is created. The default is `STANDARD`. You cannot update the `type` of a state machine once it has been created.

Type: String

Valid Values: `STANDARD` | `EXPRESS`

Required: No

versionDescription

Sets description about the state machine version. You can only set the description if the `publish` parameter is set to `true`. Otherwise, if you set `versionDescription`, but `publish` to `false`, this API action throws `ValidationException`.

Type: String

Length Constraints: Maximum length of 256.

Required: No

Response Syntax

```
{
   "creationDate": number,
   "stateMachineArn": "string",
   "stateMachineVersionArn": "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.

creationDate

The date the state machine is created.

Type: Timestamp

stateMachineArn

The Amazon Resource Name (ARN) that identifies the created state machine.

Type: String

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

stateMachineVersionArn

The Amazon Resource Name (ARN) that identifies the created state machine version. If you do not set the `publish` parameter to `true`, this field returns null value.

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 Error Types.

ConflictException

Updating or deleting a resource can cause an inconsistent state. This error occurs when there're concurrent requests for DeleteStateMachineVersion, PublishStateMachineVersion, or UpdateStateMachine with the `publish` parameter set to `true`.

HTTP Status Code: 409

HTTP Status Code: 400

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

HTTP Status Code: 400

InvalidDefinition

The provided Amazon States Language definition is not valid.

HTTP Status Code: 400

InvalidEncryptionConfiguration

Received when `encryptionConfiguration` is specified but various conditions exist which make the configuration invalid. For example, if `type` is set to `CUSTOMER_MANAGED_KMS_KEY`, but `kmsKeyId` is null, or `kmsDataKeyReusePeriodSeconds` is not between 60 and 900, or the AWS KMS key is not symmetric or inactive.

HTTP Status Code: 400

InvalidLoggingConfiguration

Configuration is not valid.

HTTP Status Code: 400

InvalidName

The provided name is not valid.

HTTP Status Code: 400

InvalidTracingConfiguration

Your `tracingConfiguration` key does not match, or `enabled` has not been set to `true` or `false`.

HTTP Status Code: 400

KmsAccessDeniedException

Either your AWS KMS key policy or API caller does not have the required permissions.

HTTP Status Code: 400

KmsThrottlingException

Received when AWS KMS returns `ThrottlingException` for a AWS KMS call that Step Functions makes on behalf of the caller.

HTTP Status Code: 400

StateMachineAlreadyExists

A state machine with the same name but a different definition or role ARN already exists.

HTTP Status Code: 400

StateMachineDeleting

The specified state machine is being deleted.

HTTP Status Code: 400

StateMachineLimitExceeded

The maximum number of state machines has been reached. Existing state machines must be deleted before a new state machine can be created.

HTTP Status Code: 400

StateMachineTypeNotSupported

State machine type is not supported.

HTTP Status Code: 400

TooManyTags

You've exceeded the number of tags allowed for a resource. See the Limits Topic in the AWS Step Functions Developer Guide.

HTTP Status Code: 400

ValidationException

The input does not satisfy the constraints specified by an AWS service.

reason

The input does not 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 V2
- AWS SDK for .NET V4
- AWS SDK for C++

- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

CreateStateMachineAlias

Creates an alias for a state machine that points to one or two versions of the same state machine. You can set your application to call StartExecution with an alias and update the version the alias uses without changing the client's code.

You can also map an alias to split StartExecution requests between two versions of a state machine. To do this, add a second `RoutingConfig` object in the `routingConfiguration` parameter. You must also specify the percentage of execution run requests each version should receive in both `RoutingConfig` objects. Step Functions randomly chooses which version runs a given execution based on the percentage you specify.

To create an alias that points to a single version, specify a single `RoutingConfig` object with a `weight` set to 100.

You can create up to 100 aliases for each state machine. You must delete unused aliases using the DeleteStateMachineAlias API action.

`CreateStateMachineAlias` is an idempotent API. Step Functions bases the idempotency check on the `stateMachineArn`, `description`, `name`, and `routingConfiguration` parameters. Requests that contain the same values for these parameters return a successful idempotent response without creating a duplicate resource.

Related operations:

- DescribeStateMachineAlias
- ListStateMachineAliases
- UpdateStateMachineAlias
- DeleteStateMachineAlias

Request Syntax

```
{
   "description": "string",
   "name": "string",
   "routingConfiguration": [
      {
         "stateMachineVersionArn": "string",
         "weight": number
```

```
        }
    ]
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

description

A description for the state machine alias.

Type: String

Length Constraints: Maximum length of 256.

Required: No

name

The name of the state machine alias.

To avoid conflict with version ARNs, don't use an integer in the name of the alias.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Pattern: `^(?=.*[a-zA-Z_\-\.])[a-zA-Z0-9_\-\.]+$`

Required: Yes

routingConfiguration

The routing configuration of a state machine alias. The routing configuration shifts execution traffic between two state machine versions. `routingConfiguration` contains an array of `RoutingConfig` objects that specify up to two state machine versions. Step Functions then randomly choses which version to run an execution with based on the weight assigned to each `RoutingConfig`.

Type: Array of RoutingConfigurationListItem objects

Array Members: Minimum number of 1 item. Maximum number of 2 items.

Required: Yes

Response Syntax

```
{
   "creationDate": number,
   "stateMachineAliasArn": "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.

creationDate

The date the state machine alias was created.

Type: Timestamp

stateMachineAliasArn

The Amazon Resource Name (ARN) that identifies the created state machine alias.

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 Error Types.

ConflictException

Updating or deleting a resource can cause an inconsistent state. This error occurs when there're concurrent requests for DeleteStateMachineVersion, PublishStateMachineVersion, or UpdateStateMachine with the `publish` parameter set to `true`.

HTTP Status Code: 409

HTTP Status Code: 400

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

HTTP Status Code: 400

InvalidName

The provided name is not valid.

HTTP Status Code: 400

ResourceNotFound

Could not find the referenced resource.

HTTP Status Code: 400

ServiceQuotaExceededException

The request would cause a service quota to be exceeded.

HTTP Status Code: 402

HTTP Status Code: 400

StateMachineDeleting

The specified state machine is being deleted.

HTTP Status Code: 400

ValidationException

The input does not satisfy the constraints specified by an AWS service.

reason

The input does not 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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

DeleteActivity

Deletes an activity.

Request Syntax

```
{
   "activityArn": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

activityArn

The Amazon Resource Name (ARN) of the activity to delete.

Type: String

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

Required: Yes

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 Error Types.

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

DeleteStateMachine

Deletes a state machine. This is an asynchronous operation. It sets the state machine's status to `DELETING` and begins the deletion process. A state machine is deleted only when all its executions are completed. On the next state transition, the state machine's executions are terminated.

A qualified state machine ARN can either refer to a *Distributed Map state* defined within a state machine, a version ARN, or an alias ARN.

The following are some examples of qualified and unqualified state machine ARNs:

- The following qualified state machine ARN refers to a *Distributed Map state* with a label `mapStateLabel` in a state machine named `myStateMachine`.

  ```
  arn:partition:states:region:account-id:stateMachine:myStateMachine/
  mapStateLabel
  ```

  > **Note**
  >
  > If you provide a qualified state machine ARN that refers to a *Distributed Map state*, the request fails with `ValidationException`.

- The following unqualified state machine ARN refers to a state machine named `myStateMachine`.

  ```
  arn:partition:states:region:account-id:stateMachine:myStateMachine
  ```

This API action also deletes all versions and aliases associated with a state machine.

> **Note**
>
> For `EXPRESS` state machines, the deletion happens eventually (usually in less than a minute). Running executions may emit logs after `DeleteStateMachine` API is called.

Request Syntax

```
{
```

```
    "stateMachineArn": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

stateMachineArn

The Amazon Resource Name (ARN) of the state machine to delete.

Type: String

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

Required: Yes

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 Error Types.

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

HTTP Status Code: 400

ValidationException

The input does not satisfy the constraints specified by an AWS service.

reason

The input does not 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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

DeleteStateMachineAlias

Deletes a state machine alias.

After you delete a state machine alias, you can't use it to start executions. When you delete a state machine alias, Step Functions doesn't delete the state machine versions that alias references.

Related operations:

- CreateStateMachineAlias
- DescribeStateMachineAlias
- ListStateMachineAliases
- UpdateStateMachineAlias

Request Syntax

```
{
   "stateMachineAliasArn": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

stateMachineAliasArn

The Amazon Resource Name (ARN) of the state machine alias to delete.

Type: String

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

Required: Yes

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 Error Types.

ConflictException

Updating or deleting a resource can cause an inconsistent state. This error occurs when there're concurrent requests for DeleteStateMachineVersion, PublishStateMachineVersion, or UpdateStateMachine with the `publish` parameter set to `true`.

HTTP Status Code: 409

HTTP Status Code: 400

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

HTTP Status Code: 400

ResourceNotFound

Could not find the referenced resource.

HTTP Status Code: 400

ValidationException

The input does not satisfy the constraints specified by an AWS service.

reason

The input does not 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 V2
- AWS SDK for .NET V4

- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

DeleteStateMachineVersion

Deletes a state machine version. After you delete a version, you can't call StartExecution using that version's ARN or use the version with a state machine alias.

> **Note**
>
> Deleting a state machine version won't terminate its in-progress executions.

> **Note**
>
> You can't delete a state machine version currently referenced by one or more aliases. Before you delete a version, you must either delete the aliases or update them to point to another state machine version.

Related operations:

- PublishStateMachineVersion
- ListStateMachineVersions

Request Syntax

```
{
   "stateMachineVersionArn": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

stateMachineVersionArn

The Amazon Resource Name (ARN) of the state machine version to delete.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2000.

Required: Yes

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 Error Types.

ConflictException

Updating or deleting a resource can cause an inconsistent state. This error occurs when there're concurrent requests for DeleteStateMachineVersion, PublishStateMachineVersion, or UpdateStateMachine with the `publish` parameter set to `true`.

HTTP Status Code: 409

HTTP Status Code: 400

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

HTTP Status Code: 400

ValidationException

The input does not satisfy the constraints specified by an AWS service.

reason

The input does not 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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

DescribeActivity

Describes an activity.

> **Note**
>
> This operation is eventually consistent. The results are best effort and may not reflect very recent updates and changes.

Request Syntax

```
{
   "activityArn": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

activityArn

The Amazon Resource Name (ARN) of the activity to describe.

Type: String

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

Required: Yes

Response Syntax

```
{
   "activityArn": "string",
   "creationDate": number,
   "encryptionConfiguration": {
      "kmsDataKeyReusePeriodSeconds": number,
```

```
        "kmsKeyId": "string",
        "type": "string"
    },
    "name": "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.

activityArn

The Amazon Resource Name (ARN) that identifies the activity.

Type: String

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

creationDate

The date the activity is created.

Type: Timestamp

encryptionConfiguration

Settings for configured server-side encryption.

Type: EncryptionConfiguration object

name

The name of the activity.

A name must *not* contain:

- white space
- brackets < > { } [ ]
- wildcard characters ? *
- special characters " # % \ ^ | ~ ` $ & , ; : /
- control characters (U+0000-001F, U+007F-009F, U+FFFE-FFFF)

- surrogates (U+D800-DFFF)
- invalid characters (U+10FFFF)

To enable logging with CloudWatch Logs, the name should only contain 0-9, A-Z, a-z, - and _.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Errors

For information about the errors that are common to all actions, see Common Error Types.

ActivityDoesNotExist

The specified activity does not exist.

HTTP Status Code: 400

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3

- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

DescribeExecution

Provides information about a state machine execution, such as the state machine associated with the execution, the execution input and output, and relevant execution metadata. If you've redriven an execution, you can use this API action to return information about the redrives of that execution. In addition, you can use this API action to return the Map Run Amazon Resource Name (ARN) if the execution was dispatched by a Map Run.

If you specify a version or alias ARN when you call the StartExecution API action, `DescribeExecution` returns that ARN.

> **Note**
>
> This operation is eventually consistent. The results are best effort and may not reflect very recent updates and changes.

Executions of an EXPRESS state machine aren't supported by `DescribeExecution` unless a Map Run dispatched them.

Request Syntax

```
{
   "executionArn": "string",
   "includedData": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

executionArn

The Amazon Resource Name (ARN) of the execution to describe.

Type: String

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

Required: Yes

includedData

If your state machine definition is encrypted with a AWS KMS key, callers must have `kms:Decrypt` permission to decrypt the definition. Alternatively, you can call DescribeStateMachine API with `includedData = METADATA_ONLY` to get a successful response without the encrypted definition.

Type: String

Valid Values: `ALL_DATA | METADATA_ONLY`

Required: No

Response Syntax

```
{
   "cause": "string",
   "error": "string",
   "executionArn": "string",
   "input": "string",
   "inputDetails": {
      "included": boolean
   },
   "mapRunArn": "string",
   "name": "string",
   "output": "string",
   "outputDetails": {
      "included": boolean
   },
   "redriveCount": number,
   "redriveDate": number,
   "redriveStatus": "string",
   "redriveStatusReason": "string",
   "startDate": number,
   "stateMachineAliasArn": "string",
   "stateMachineArn": "string",
   "stateMachineVersionArn": "string",
   "status": "string",
   "stopDate": number,
   "traceHeader": "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.

cause

The cause string if the state machine execution failed.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 32768.

error

The error string if the state machine execution failed.

Type: String

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

executionArn

The Amazon Resource Name (ARN) that identifies the execution.

Type: String

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

input

The string that contains the JSON input data of the execution. Length constraints apply to the payload size, and are expressed as bytes in UTF-8 encoding.

Type: String

Length Constraints: Maximum length of 262144.

inputDetails

Provides details about execution input or output.

Type: CloudWatchEventsExecutionDataDetails object

mapRunArn

The Amazon Resource Name (ARN) that identifies a Map Run, which dispatched this execution.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2000.

name

The name of the execution.

A name must *not* contain:

- white space
- brackets `< > { } [ ]`
- wildcard characters `? *`
- special characters `" # % \ ^ | ~ ` $ & , ; : /`
- control characters (`U+0000-001F`, `U+007F-009F`, `U+FFFE-FFFF`)
- surrogates (`U+D800-DFFF`)
- invalid characters (`U+10FFFF`)

To enable logging with CloudWatch Logs, the name should only contain 0-9, A-Z, a-z, - and _.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

output

The JSON output data of the execution. Length constraints apply to the payload size, and are expressed as bytes in UTF-8 encoding.

> **Note**
>
> This field is set only if the execution succeeds. If the execution fails, this field is null.

Type: String

Length Constraints: Maximum length of 262144.

outputDetails

Provides details about execution input or output.

Type: CloudWatchEventsExecutionDataDetails object

redriveCount

The number of times you've redriven an execution. If you have not yet redriven an execution, the `redriveCount` is 0. This count is only updated if you successfully redrive an execution.

Type: Integer

redriveDate

The date the execution was last redriven. If you have not yet redriven an execution, the `redriveDate` is null.

The `redriveDate` is unavailable if you redrive a Map Run that starts child workflow executions of type `EXPRESS`.

Type: Timestamp

redriveStatus

Indicates whether or not an execution can be redriven at a given point in time.

- For executions of type `STANDARD`, `redriveStatus` is `NOT_REDRIVABLE` if calling the RedriveExecution API action would return the `ExecutionNotRedrivable` error.
- For a Distributed Map that includes child workflows of type `STANDARD`, `redriveStatus` indicates whether or not the Map Run can redrive child workflow executions.
- For a Distributed Map that includes child workflows of type `EXPRESS`, `redriveStatus` indicates whether or not the Map Run can redrive child workflow executions.

  You can redrive failed or timed out `EXPRESS` workflows *only if* they're a part of a Map Run. When you redrive the Map Run, these workflows are restarted using the StartExecution API action.

Type: String

Valid Values: `REDRIVABLE | NOT_REDRIVABLE | REDRIVABLE_BY_MAP_RUN`

redriveStatusReason

When `redriveStatus` is `NOT_REDRIVABLE`, `redriveStatusReason` specifies the reason why an execution cannot be redriven.

- For executions of type `STANDARD`, or for a Distributed Map that includes child workflows of type `STANDARD`, `redriveStatusReason` can include one of the following reasons:
  - `State machine is in DELETING status.`
  - `Execution is RUNNING and cannot be redriven.`
  - `Execution is SUCCEEDED and cannot be redriven.`
  - `Execution was started before the launch of RedriveExecution.`
  - `Execution history event limit exceeded.`
  - `Execution has exceeded the max execution time.`
  - `Execution redrivable period exceeded.`
- For a Distributed Map that includes child workflows of type `EXPRESS`, `redriveStatusReason` is only returned if the child workflows are not redrivable. This happens when the child workflow executions have completed successfully.

Type: String

Length Constraints: Maximum length of 262144.

startDate

The date the execution is started.

Type: Timestamp

stateMachineAliasArn

The Amazon Resource Name (ARN) of the state machine alias associated with the execution. The alias ARN is a combination of state machine ARN and the alias name separated by a colon (:). For example, `stateMachineARN:PROD`.

If you start an execution from a `StartExecution` request with a state machine version ARN, this field will be null.

Type: String

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

stateMachineArn

The Amazon Resource Name (ARN) of the executed stated machine.

Type: String

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

stateMachineVersionArn

The Amazon Resource Name (ARN) of the state machine version associated with the execution. The version ARN is a combination of state machine ARN and the version number separated by a colon (:). For example, `stateMachineARN:1`.

If you start an execution from a `StartExecution` request without specifying a state machine version or alias ARN, Step Functions returns a null value.

Type: String

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

status

The current status of the execution.

Type: String

Valid Values: `RUNNING | SUCCEEDED | FAILED | TIMED_OUT | ABORTED | PENDING_REDRIVE`

stopDate

If the execution ended, the date the execution stopped.

Type: Timestamp

traceHeader

The AWS X-Ray trace header that was passed to the execution.

> **Note**
>
> For X-Ray traces, all AWS services use the `X-Amzn-Trace-Id` header from the HTTP request. Using the header is the preferred mechanism to identify a trace.

`StartExecution` and `StartSyncExecution` API operations can also use `traceHeader` from the body of the request payload. If **both** sources are provided, Step Functions will use the **header value** (preferred) over the value in the request body.

Type: String

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

Pattern: `\p{ASCII}*`

Errors

For information about the errors that are common to all actions, see Common Error Types.

ExecutionDoesNotExist

The specified execution does not exist.

HTTP Status Code: 400

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

HTTP Status Code: 400

KmsAccessDeniedException

Either your AWS KMS key policy or API caller does not have the required permissions.

HTTP Status Code: 400

KmsInvalidStateException

The AWS KMS key is not in valid state, for example: Disabled or Deleted.

kmsKeyState

Current status of the AWS KMS; key. For example: `DISABLED`, `PENDING_DELETION`, `PENDING_IMPORT`, `UNAVAILABLE`, `CREATING`.

HTTP Status Code: 400

KmsThrottlingException

Received when AWS KMS returns `ThrottlingException` for a AWS KMS call that Step Functions makes on behalf of the caller.

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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

DescribeMapRun

Provides information about a Map Run's configuration, progress, and results. If you've redriven a Map Run, this API action also returns information about the redrives of that Map Run. For more information, see Examining Map Run in the *AWS Step Functions Developer Guide*.

Request Syntax

```
{
   "mapRunArn": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

mapRunArn

The Amazon Resource Name (ARN) that identifies a Map Run.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2000.

Required: Yes

Response Syntax

```
{
   "executionArn": "string",
   "executionCounts": {
      "aborted": number,
      "failed": number,
      "failuresNotRedrivable": number,
      "pending": number,
      "pendingRedrive": number,
      "resultsWritten": number,
```

```
        "running": number,
        "succeeded": number,
        "timedOut": number,
        "total": number
    },
    "itemCounts": {
        "aborted": number,
        "failed": number,
        "failuresNotRedrivable": number,
        "pending": number,
        "pendingRedrive": number,
        "resultsWritten": number,
        "running": number,
        "succeeded": number,
        "timedOut": number,
        "total": number
    },
    "mapRunArn": "string",
    "maxConcurrency": number,
    "redriveCount": number,
    "redriveDate": number,
    "startDate": number,
    "status": "string",
    "stopDate": number,
    "toleratedFailureCount": number,
    "toleratedFailurePercentage": number
}
```

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.

executionArn

The Amazon Resource Name (ARN) that identifies the execution in which the Map Run was started.

Type: String

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

executionCounts

A JSON object that contains information about the total number of child workflow executions for the Map Run, and the count of child workflow executions for each status, such as `failed` and `succeeded`.

Type: MapRunExecutionCounts object

itemCounts

A JSON object that contains information about the total number of items, and the item count for each processing status, such as `pending` and `failed`.

Type: MapRunItemCounts object

mapRunArn

The Amazon Resource Name (ARN) that identifies a Map Run.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2000.

maxConcurrency

The maximum number of child workflow executions configured to run in parallel for the Map Run at the same time.

Type: Integer

Valid Range: Minimum value of 0.

redriveCount

The number of times you've redriven a Map Run. If you have not yet redriven a Map Run, the `redriveCount` is 0. This count is only updated if you successfully redrive a Map Run.

Type: Integer

redriveDate

The date a Map Run was last redriven. If you have not yet redriven a Map Run, the `redriveDate` is null.

Type: Timestamp

startDate

The date when the Map Run was started.

Type: Timestamp

status

The current status of the Map Run.

Type: String

Valid Values: `RUNNING | SUCCEEDED | FAILED | ABORTED`

stopDate

The date when the Map Run was stopped.

Type: Timestamp

toleratedFailureCount

The maximum number of failed child workflow executions before the Map Run fails.

Type: Long

Valid Range: Minimum value of 0.

toleratedFailurePercentage

The maximum percentage of failed child workflow executions before the Map Run fails.

Type: Float

Valid Range: Minimum value of 0. Maximum value of 100.

Errors

For information about the errors that are common to all actions, see Common Error Types.

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

HTTP Status Code: 400

ResourceNotFound

Could not find the referenced resource.

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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

DescribeStateMachine

Provides information about a state machine's definition, its IAM role Amazon Resource Name (ARN), and configuration.

A qualified state machine ARN can either refer to a *Distributed Map state* defined within a state machine, a version ARN, or an alias ARN.

The following are some examples of qualified and unqualified state machine ARNs:

- The following qualified state machine ARN refers to a *Distributed Map state* with a label `mapStateLabel` in a state machine named `myStateMachine`.

  ```
  arn:partition:states:region:account-id:stateMachine:myStateMachine/
  mapStateLabel
  ```

  > **Note**
  >
  > If you provide a qualified state machine ARN that refers to a *Distributed Map state*, the request fails with `ValidationException`.

- The following qualified state machine ARN refers to an alias named `PROD`.

  ```
  arn:<partition>:states:<region>:<account-
  id>:stateMachine:<myStateMachine:PROD>
  ```

  > **Note**
  >
  > If you provide a qualified state machine ARN that refers to a version ARN or an alias ARN, the request starts execution for that version or alias.

- The following unqualified state machine ARN refers to a state machine named `myStateMachine`.

  ```
  arn:<partition>:states:<region>:<account-
  id>:stateMachine:<myStateMachine>
  ```

This API action returns the details for a state machine version if the `stateMachineArn` you specify is a state machine version ARN.

> **Note**
>
> This operation is eventually consistent. The results are best effort and may not reflect very recent updates and changes.

Request Syntax

```
{
   "includedData": "string",
   "stateMachineArn": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

includedData

If your state machine definition is encrypted with a AWS KMS key, callers must have `kms:Decrypt` permission to decrypt the definition. Alternatively, you can call the API with `includedData = METADATA_ONLY` to get a successful response without the encrypted definition.

> **Note**
>
> When calling a labelled ARN for an encrypted state machine, the `includedData = METADATA_ONLY` parameter will not apply because Step Functions needs to decrypt the entire state machine definition to get the Distributed Map state's definition. In this case, the API caller needs to have `kms:Decrypt` permission.

Type: String

Valid Values: `ALL_DATA | METADATA_ONLY`

Required: No

stateMachineArn

The Amazon Resource Name (ARN) of the state machine for which you want the information.

If you specify a state machine version ARN, this API returns details about that version. The version ARN is a combination of state machine ARN and the version number separated by a colon (:). For example, `stateMachineARN:1`.

Type: String

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

Required: Yes

Response Syntax

```
{
   "creationDate": number,
   "definition": "string",
   "description": "string",
   "encryptionConfiguration": {
      "kmsDataKeyReusePeriodSeconds": number,
      "kmsKeyId": "string",
      "type": "string"
   },
   "label": "string",
   "loggingConfiguration": {
      "destinations": [
         {
            "cloudWatchLogsLogGroup": {
               "logGroupArn": "string"
            }
         }
      ],
      "includeExecutionData": boolean,
      "level": "string"
   },
   "name": "string",
   "revisionId": "string",
   "roleArn": "string",
   "stateMachineArn": "string",
   "status": "string",
```

```
    "tracingConfiguration": {
       "enabled": boolean
    },
    "type": "string",
    "variableReferences": {
       "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.

creationDate

The date the state machine is created.

For a state machine version, `creationDate` is the date the version was created.

Type: Timestamp

definition

The Amazon States Language definition of the state machine. See Amazon States Language.

If called with `includedData = METADATA_ONLY`, the returned definition will be `{}`.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1048576.

description

The description of the state machine version.

Type: String

Length Constraints: Maximum length of 256.

encryptionConfiguration

Settings to configure server-side encryption.

Type: EncryptionConfiguration object

label

A user-defined or an auto-generated string that identifies a `Map` state. This parameter is present only if the `stateMachineArn` specified in input is a qualified state machine ARN.

Type: String

loggingConfiguration

Type: LoggingConfiguration object

name

The name of the state machine.

A name must *not* contain:

- white space
- brackets `< > { } [ ]`
- wildcard characters `? *`
- special characters `" # % \ ^ | ~ ` $ & , ; : /`
- control characters (`U+0000-001F`, `U+007F-009F`, `U+FFFE-FFFF`)
- surrogates (`U+D800-DFFF`)
- invalid characters (`U+10FFFF`)

To enable logging with CloudWatch Logs, the name should only contain 0-9, A-Z, a-z, - and _.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

revisionId

The revision identifier for the state machine.

Use the `revisionId` parameter to compare between versions of a state machine configuration used for executions without performing a diff of the properties, such as `definition` and `roleArn`.

Type: String

roleArn

The Amazon Resource Name (ARN) of the IAM role used when creating this state machine. (The IAM role maintains security by granting Step Functions access to AWS resources.)

Type: String

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

stateMachineArn

The Amazon Resource Name (ARN) that identifies the state machine.

If you specified a state machine version ARN in your request, the API returns the version ARN. The version ARN is a combination of state machine ARN and the version number separated by a colon (:). For example, `stateMachineARN:1`.

Type: String

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

status

The current status of the state machine.

Type: String

Valid Values: `ACTIVE | DELETING`

tracingConfiguration

Selects whether AWS X-Ray tracing is enabled.

Type: TracingConfiguration object

type

The `type` of the state machine (`STANDARD` or `EXPRESS`).

Type: String

Valid Values: `STANDARD | EXPRESS`

variableReferences

A map of **state name** to a list of variables referenced by that state. States that do not use variable references will not be shown in the response.

Type: String to array of strings map

Key Length Constraints: Minimum length of 1. Maximum length of 80.

Errors

For information about the errors that are common to all actions, see Common Error Types.

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

HTTP Status Code: 400

KmsAccessDeniedException

Either your AWS KMS key policy or API caller does not have the required permissions.

HTTP Status Code: 400

KmsInvalidStateException

The AWS KMS key is not in valid state, for example: Disabled or Deleted.

kmsKeyState

Current status of the AWS KMS; key. For example: `DISABLED`, `PENDING_DELETION`, `PENDING_IMPORT`, `UNAVAILABLE`, `CREATING`.

HTTP Status Code: 400

KmsThrottlingException

Received when AWS KMS returns `ThrottlingException` for a AWS KMS call that Step Functions makes on behalf of the caller.

HTTP Status Code: 400

StateMachineDoesNotExist

The specified state machine does not exist.

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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

DescribeStateMachineAlias

Returns details about a state machine alias.

Related operations:

- CreateStateMachineAlias
- ListStateMachineAliases
- UpdateStateMachineAlias
- DeleteStateMachineAlias

Request Syntax

```
{
   "stateMachineAliasArn": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

stateMachineAliasArn

The Amazon Resource Name (ARN) of the state machine alias.

Type: String

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

Required: Yes

Response Syntax

```
{
   "creationDate": number,
```

```
    "description": "string",
    "name": "string",
    "routingConfiguration": [
       {
          "stateMachineVersionArn": "string",
          "weight": number
       }
    ],
    "stateMachineAliasArn": "string",
    "updateDate": number
}
```

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.

creationDate

The date the state machine alias was created.

Type: Timestamp

description

A description of the alias.

Type: String

Length Constraints: Maximum length of 256.

name

The name of the state machine alias.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

routingConfiguration

The routing configuration of the alias.

Type: Array of RoutingConfigurationListItem objects

Array Members: Minimum number of 1 item. Maximum number of 2 items.

stateMachineAliasArn

The Amazon Resource Name (ARN) of the state machine alias.

Type: String

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

updateDate

The date the state machine alias was last updated.

For a newly created state machine, this is the same as the creation date.

Type: Timestamp

Errors

For information about the errors that are common to all actions, see Common Error Types.

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

HTTP Status Code: 400

ResourceNotFound

Could not find the referenced resource.

HTTP Status Code: 400

ValidationException

The input does not satisfy the constraints specified by an AWS service.

reason

The input does not 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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

DescribeStateMachineForExecution

Provides information about a state machine's definition, its execution role ARN, and configuration. If a Map Run dispatched the execution, this action returns the Map Run Amazon Resource Name (ARN) in the response. The state machine returned is the state machine associated with the Map Run.

> **Note**
>
> This operation is eventually consistent. The results are best effort and may not reflect very recent updates and changes.

This API action is not supported by `EXPRESS` state machines.

Request Syntax

```
{
   "executionArn": "string",
   "includedData": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

executionArn

The Amazon Resource Name (ARN) of the execution you want state machine information for.

Type: String

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

Required: Yes

includedData

If your state machine definition is encrypted with a AWS KMS key, callers must have `kms:Decrypt` permission to decrypt the definition. Alternatively, you can call the API with

`includedData = METADATA_ONLY` to get a successful response without the encrypted definition.

Type: String

Valid Values: `ALL_DATA | METADATA_ONLY`

Required: No

Response Syntax

```
{
   "definition": "string",
   "encryptionConfiguration": {
      "kmsDataKeyReusePeriodSeconds": number,
      "kmsKeyId": "string",
      "type": "string"
   },
   "label": "string",
   "loggingConfiguration": {
      "destinations": [
         {
            "cloudWatchLogsLogGroup": {
               "logGroupArn": "string"
            }
         }
      ],
      "includeExecutionData": boolean,
      "level": "string"
   },
   "mapRunArn": "string",
   "name": "string",
   "revisionId": "string",
   "roleArn": "string",
   "stateMachineArn": "string",
   "tracingConfiguration": {
      "enabled": boolean
   },
   "updateDate": number,
   "variableReferences": {
      "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.

definition

The Amazon States Language definition of the state machine. See Amazon States Language.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1048576.

encryptionConfiguration

Settings to configure server-side encryption.

Type: EncryptionConfiguration object

label

A user-defined or an auto-generated string that identifies a `Map` state. This field is returned only if the `executionArn` is a child workflow execution that was started by a Distributed Map state.

Type: String

loggingConfiguration

The `LoggingConfiguration` data type is used to set CloudWatch Logs options.

Type: LoggingConfiguration object

mapRunArn

The Amazon Resource Name (ARN) of the Map Run that started the child workflow execution. This field is returned only if the `executionArn` is a child workflow execution that was started by a Distributed Map state.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2000.

name

The name of the state machine associated with the execution.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

revisionId

The revision identifier for the state machine. The first revision ID when you create the state machine is null.

Use the state machine `revisionId` parameter to compare the revision of a state machine with the configuration of the state machine used for executions without performing a diff of the properties, such as `definition` and `roleArn`.

Type: String

roleArn

The Amazon Resource Name (ARN) of the IAM role of the State Machine for the execution.

Type: String

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

stateMachineArn

The Amazon Resource Name (ARN) of the state machine associated with the execution.

Type: String

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

tracingConfiguration

Selects whether AWS X-Ray tracing is enabled.

Type: TracingConfiguration object

updateDate

The date and time the state machine associated with an execution was updated. For a newly created state machine, this is the creation date.

Type: Timestamp

variableReferences

A map of **state name** to a list of variables referenced by that state. States that do not use variable references will not be shown in the response.

Type: String to array of strings map

Key Length Constraints: Minimum length of 1. Maximum length of 80.

Errors

For information about the errors that are common to all actions, see Common Error Types.

ExecutionDoesNotExist

The specified execution does not exist.

HTTP Status Code: 400

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

HTTP Status Code: 400

KmsAccessDeniedException

Either your AWS KMS key policy or API caller does not have the required permissions.

HTTP Status Code: 400

KmsInvalidStateException

The AWS KMS key is not in valid state, for example: Disabled or Deleted.

kmsKeyState

Current status of the AWS KMS; key. For example: `DISABLED`, `PENDING_DELETION`, `PENDING_IMPORT`, `UNAVAILABLE`, `CREATING`.

HTTP Status Code: 400

KmsThrottlingException

Received when AWS KMS returns `ThrottlingException` for a AWS KMS call that Step Functions makes on behalf of the caller.

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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

GetActivityTask

Used by workers to retrieve a task (with the specified activity ARN) which has been scheduled for execution by a running state machine. This initiates a long poll, where the service holds the HTTP connection open and responds as soon as a task becomes available (i.e. an execution of a task of this type is needed.) The maximum time the service holds on to the request before responding is 60 seconds. If no task is available within 60 seconds, the poll returns a `taskToken` with a null string.

> **Important**
>
> Workers should set their client side socket timeout to at least 65 seconds (5 seconds higher than the maximum time the service may hold the poll request).
> Polling with `GetActivityTask` can cause latency in some implementations. See Avoid Latency When Polling for Activity Tasks in the Step Functions Developer Guide.

Request Syntax

```
{
   "activityArn": "string",
   "workerName": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

activityArn

The Amazon Resource Name (ARN) of the activity to retrieve tasks from (assigned when you create the task using CreateActivity.)

Type: String

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

Required: Yes

workerName

You can provide an arbitrary name in order to identify the worker that the task is assigned to. This name is used when it is logged in the execution history.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Required: No

Response Syntax

```
{
   "input": "string",
   "taskToken": "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.

input

The string that contains the JSON input data for the task. Length constraints apply to the payload size, and are expressed as bytes in UTF-8 encoding.

Type: String

Length Constraints: Maximum length of 1048576.

taskToken

A token that identifies the scheduled task. This token must be copied and included in subsequent calls to SendTaskHeartbeat, SendTaskSuccess or SendTaskFailure in order to report the progress or completion of the task.

Type: String

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

Errors

For information about the errors that are common to all actions, see Common Error Types.

ActivityDoesNotExist

The specified activity does not exist.

HTTP Status Code: 400

ActivityWorkerLimitExceeded

The maximum number of workers concurrently polling for activity tasks has been reached.

HTTP Status Code: 400

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

HTTP Status Code: 400

KmsAccessDeniedException

Either your AWS KMS key policy or API caller does not have the required permissions.

HTTP Status Code: 400

KmsInvalidStateException

The AWS KMS key is not in valid state, for example: Disabled or Deleted.

kmsKeyState

Current status of the AWS KMS; key. For example: `DISABLED`, `PENDING_DELETION`, `PENDING_IMPORT`, `UNAVAILABLE`, `CREATING`.

HTTP Status Code: 400

KmsThrottlingException

Received when AWS KMS returns `ThrottlingException` for a AWS KMS call that Step Functions makes on behalf of the caller.

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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

GetExecutionHistory

Returns the history of the specified execution as a list of events. By default, the results are returned in ascending order of the `timeStamp` of the events. Use the `reverseOrder` parameter to get the latest events first.

If `nextToken` is returned, there are more results available. The value of `nextToken` is a unique pagination token for each page. Make the call again using the returned token to retrieve the next page. Keep all other arguments unchanged. Each pagination token expires after 24 hours. Using an expired pagination token will return an *HTTP 400 InvalidToken* error.

This API action is not supported by EXPRESS state machines.

Request Syntax

```
{
   "executionArn": "string",
   "includeExecutionData": boolean,
   "maxResults": number,
   "nextToken": "string",
   "reverseOrder": boolean
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

executionArn

The Amazon Resource Name (ARN) of the execution.

Type: String

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

Required: Yes

includeExecutionData

You can select whether execution data (input or output of a history event) is returned. The default is `true`.

Type: Boolean

Required: No

maxResults

The maximum number of results that are returned per call. You can use `nextToken` to obtain further pages of results. The default is 100 and the maximum allowed page size is 1000. A value of 0 uses the default.

This is only an upper limit. The actual number of results returned per call might be fewer than the specified maximum.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 1000.

Required: No

nextToken

If `nextToken` is returned, there are more results available. The value of `nextToken` is a unique pagination token for each page. Make the call again using the returned token to retrieve the next page. Keep all other arguments unchanged. Each pagination token expires after 24 hours. Using an expired pagination token will return an *HTTP 400 InvalidToken* error.

Type: String

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

Required: No

reverseOrder

Lists events in descending order of their `timeStamp`.

Type: Boolean

Required: No

Response Syntax

```
{
   "events": [
      {
```

```
        "activityFailedEventDetails": {
           "cause": "string",
           "error": "string"
        },
        "activityScheduledEventDetails": {
           "heartbeatInSeconds": number,
           "input": "string",
           "inputDetails": {
              "truncated": boolean
           },
           "resource": "string",
           "timeoutInSeconds": number
        },
        "activityScheduleFailedEventDetails": {
           "cause": "string",
           "error": "string"
        },
        "activityStartedEventDetails": {
           "workerName": "string"
        },
        "activitySucceededEventDetails": {
           "output": "string",
           "outputDetails": {
              "truncated": boolean
           }
        },
        "activityTimedOutEventDetails": {
           "cause": "string",
           "error": "string"
        },
        "evaluationFailedEventDetails": {
           "cause": "string",
           "error": "string",
           "location": "string",
           "state": "string"
        },
        "executionAbortedEventDetails": {
           "cause": "string",
           "error": "string"
        },
        "executionFailedEventDetails": {
           "cause": "string",
           "error": "string"
        },
```

```
        "executionRedrivenEventDetails": {
           "redriveCount": number
        },
        "executionStartedEventDetails": {
           "input": "string",
           "inputDetails": {
              "truncated": boolean
           },
           "roleArn": "string",
           "stateMachineAliasArn": "string",
           "stateMachineVersionArn": "string"
        },
        "executionSucceededEventDetails": {
           "output": "string",
           "outputDetails": {
              "truncated": boolean
           }
        },
        "executionTimedOutEventDetails": {
           "cause": "string",
           "error": "string"
        },
        "id": number,
        "lambdaFunctionFailedEventDetails": {
           "cause": "string",
           "error": "string"
        },
        "lambdaFunctionScheduledEventDetails": {
           "input": "string",
           "inputDetails": {
              "truncated": boolean
           },
           "resource": "string",
           "taskCredentials": {
              "roleArn": "string"
           },
           "timeoutInSeconds": number
        },
        "lambdaFunctionScheduleFailedEventDetails": {
           "cause": "string",
           "error": "string"
        },
        "lambdaFunctionStartFailedEventDetails": {
           "cause": "string",
```

```
            "error": "string"
        },
        "lambdaFunctionSucceededEventDetails": {
            "output": "string",
            "outputDetails": {
                "truncated": boolean
            }
        },
        "lambdaFunctionTimedOutEventDetails": {
            "cause": "string",
            "error": "string"
        },
        "mapIterationAbortedEventDetails": {
            "index": number,
            "name": "string"
        },
        "mapIterationFailedEventDetails": {
            "index": number,
            "name": "string"
        },
        "mapIterationStartedEventDetails": {
            "index": number,
            "name": "string"
        },
        "mapIterationSucceededEventDetails": {
            "index": number,
            "name": "string"
        },
        "mapRunFailedEventDetails": {
            "cause": "string",
            "error": "string"
        },
        "mapRunRedrivenEventDetails": {
            "mapRunArn": "string",
            "redriveCount": number
        },
        "mapRunStartedEventDetails": {
            "mapRunArn": "string"
        },
        "mapStateStartedEventDetails": {
            "length": number
        },
        "previousEventId": number,
        "stateEnteredEventDetails": {
```

```
            "input": "string",
            "inputDetails": {
               "truncated": boolean
            },
            "name": "string"
         },
         "stateExitedEventDetails": {
            "assignedVariables": {
               "string" : "string"
            },
            "assignedVariablesDetails": {
               "truncated": boolean
            },
            "name": "string",
            "output": "string",
            "outputDetails": {
               "truncated": boolean
            }
         },
         "taskFailedEventDetails": {
            "cause": "string",
            "error": "string",
            "resource": "string",
            "resourceType": "string"
         },
         "taskScheduledEventDetails": {
            "heartbeatInSeconds": number,
            "parameters": "string",
            "region": "string",
            "resource": "string",
            "resourceType": "string",
            "taskCredentials": {
               "roleArn": "string"
            },
            "timeoutInSeconds": number
         },
         "taskStartedEventDetails": {
            "resource": "string",
            "resourceType": "string"
         },
         "taskStartFailedEventDetails": {
            "cause": "string",
            "error": "string",
            "resource": "string",
```

```
            "resourceType": "string"
         },
         "taskSubmitFailedEventDetails": {
            "cause": "string",
            "error": "string",
            "resource": "string",
            "resourceType": "string"
         },
         "taskSubmittedEventDetails": {
            "output": "string",
            "outputDetails": {
               "truncated": boolean
            },
            "resource": "string",
            "resourceType": "string"
         },
         "taskSucceededEventDetails": {
            "output": "string",
            "outputDetails": {
               "truncated": boolean
            },
            "resource": "string",
            "resourceType": "string"
         },
         "taskTimedOutEventDetails": {
            "cause": "string",
            "error": "string",
            "resource": "string",
            "resourceType": "string"
         },
         "timestamp": number,
         "type": "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.

events

The list of events that occurred in the execution.

Type: Array of HistoryEvent objects

nextToken

If `nextToken` is returned, there are more results available. The value of `nextToken` is a unique pagination token for each page. Make the call again using the returned token to retrieve the next page. Keep all other arguments unchanged. Each pagination token expires after 24 hours. Using an expired pagination token will return an *HTTP 400 InvalidToken* error.

Type: String

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

Errors

For information about the errors that are common to all actions, see Common Error Types.

ExecutionDoesNotExist

The specified execution does not exist.

HTTP Status Code: 400

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

HTTP Status Code: 400

InvalidToken

The provided token is not valid.

HTTP Status Code: 400

KmsAccessDeniedException

Either your AWS KMS key policy or API caller does not have the required permissions.

HTTP Status Code: 400

KmsInvalidStateException

The AWS KMS key is not in valid state, for example: Disabled or Deleted.

kmsKeyState

Current status of the AWS KMS; key. For example: `DISABLED`, `PENDING_DELETION`, `PENDING_IMPORT`, `UNAVAILABLE`, `CREATING`.

HTTP Status Code: 400

KmsThrottlingException

Received when AWS KMS returns `ThrottlingException` for a AWS KMS call that Step Functions makes on behalf of the caller.

HTTP Status Code: 400

Examples

HelloWorld Execution History

The following shows example output from `GetExecutionHistory` for a simple `HelloWorld` state machine, comprised of a single `Pass` state.

Sample Response

```
{
    "events": [
        {
            "timestamp": 1525283875.58,
            "executionStartedEventDetails": {
                "input": "{}",
                "inputDetails": {
                    "truncated": false
                },
                "roleArn": "arn:aws:iam::123456789123:role/service-role/
StatesExecutionRole-us-east-1"
            },
            "type": "ExecutionStarted",
            "id": 1,
            "previousEventId": 0
        },
        {
```

```
            "timestamp": 1525283875.612,
            "type": "PassStateEntered",
            "id": 2,
            "stateEnteredEventDetails": {
                "input": "{}",
                "inputDetails": {
                    "truncated": false
                },
                "name": "HelloWorld"
            },
            "previousEventId": 0
        },
        {
            "timestamp": 1525283875.612,
            "stateExitedEventDetails": {
                "output": "\"Hello World!\"",
                "outputDetails": {
                    "truncated": false
                },
                "name": "HelloWorld"
            },
            "type": "PassStateExited",
            "id": 3,
            "previousEventId": 2
        },
        {
            "executionSucceededEventDetails": {
                "output": "\"Hello World!\"",
                "outputDetails": {
                    "truncated": false
                }
            },
            "timestamp": 1525283875.612,
            "type": "ExecutionSucceeded",
            "id": 4,
            "previousEventId": 3
        }
    ]
}
```

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

ListActivities

Lists the existing activities.

If `nextToken` is returned, there are more results available. The value of `nextToken` is a unique pagination token for each page. Make the call again using the returned token to retrieve the next page. Keep all other arguments unchanged. Each pagination token expires after 24 hours. Using an expired pagination token will return an *HTTP 400 InvalidToken* error.

> **Note**
>
> This operation is eventually consistent. The results are best effort and may not reflect very recent updates and changes.

Request Syntax

```
{
   "maxResults": number,
   "nextToken": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

maxResults

The maximum number of results that are returned per call. You can use `nextToken` to obtain further pages of results. The default is 100 and the maximum allowed page size is 1000. A value of 0 uses the default.

This is only an upper limit. The actual number of results returned per call might be fewer than the specified maximum.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 1000.

Required: No

nextToken

If `nextToken` is returned, there are more results available. The value of `nextToken` is a unique pagination token for each page. Make the call again using the returned token to retrieve the next page. Keep all other arguments unchanged. Each pagination token expires after 24 hours. Using an expired pagination token will return an *HTTP 400 InvalidToken* error.

Type: String

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

Required: No

Response Syntax

```
{
   "activities": [
      {
         "activityArn": "string",
         "creationDate": number,
         "name": "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.

activities

The list of activities.

Type: Array of ActivityListItem objects

nextToken

If `nextToken` is returned, there are more results available. The value of `nextToken` is a unique pagination token for each page. Make the call again using the returned token to retrieve the next page. Keep all other arguments unchanged. Each pagination token expires after 24 hours. Using an expired pagination token will return an *HTTP 400 InvalidToken* error.

Type: String

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

Errors

For information about the errors that are common to all actions, see Common Error Types.

InvalidToken

The provided token is not valid.

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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

ListExecutions

Lists all executions of a state machine or a Map Run. You can list all executions related to a state machine by specifying a state machine Amazon Resource Name (ARN), or those related to a Map Run by specifying a Map Run ARN. Using this API action, you can also list all redriven executions.

You can also provide a state machine alias ARN or version ARN to list the executions associated with a specific alias or version.

Results are sorted by time, with the most recent execution first. Running executions are sorted by their `startDate` or `redriveDate`, and other executions are sorted by their `stopDate`.

If `nextToken` is returned, there are more results available. The value of `nextToken` is a unique pagination token for each page. Make the call again using the returned token to retrieve the next page. Keep all other arguments unchanged. Each pagination token expires after 24 hours. Using an expired pagination token will return an *HTTP 400 InvalidToken* error.

> **Note**
>
> This operation is eventually consistent. The results are best effort and may not reflect very recent updates and changes.

This API action is not supported by EXPRESS state machines. However, you may list EXPRESS children started by a map run using the `mapRunArn` parameter.

Request Syntax

```
{
   "mapRunArn": "string",
   "maxResults": number,
   "nextToken": "string",
   "redriveFilter": "string",
   "stateMachineArn": "string",
   "statusFilter": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

mapRunArn

The Amazon Resource Name (ARN) of the Map Run that started the child workflow executions. If the `mapRunArn` field is specified, a list of all of the child workflow executions started by a Map Run is returned. For more information, see Examining Map Run in the *AWS Step Functions Developer Guide*.

You can specify either a `mapRunArn` or a `stateMachineArn`, but not both.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2000.

Required: No

maxResults

The maximum number of results that are returned per call. You can use `nextToken` to obtain further pages of results. The default is 100 and the maximum allowed page size is 1000. A value of 0 uses the default.

This is only an upper limit. The actual number of results returned per call might be fewer than the specified maximum.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 1000.

Required: No

nextToken

If `nextToken` is returned, there are more results available. The value of `nextToken` is a unique pagination token for each page. Make the call again using the returned token to retrieve the next page. Keep all other arguments unchanged. Each pagination token expires after 24 hours. Using an expired pagination token will return an *HTTP 400 InvalidToken* error.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 3096.

Required: No

redriveFilter

Sets a filter to list executions based on whether or not they have been redriven.

For a Distributed Map, `redriveFilter` sets a filter to list child workflow executions based on whether or not they have been redriven.

If you do not provide a `redriveFilter`, Step Functions returns a list of both redriven and non-redriven executions.

If you provide a state machine ARN in `redriveFilter`, the API returns a validation exception.

Type: String

Valid Values: `REDRIVEN | NOT_REDRIVEN`

Required: No

stateMachineArn

The Amazon Resource Name (ARN) of the state machine whose executions is listed.

You can specify either a `mapRunArn` or a `stateMachineArn`, but not both.

You can also return a list of executions associated with a specific alias or version, by specifying an alias ARN or a version ARN in the `stateMachineArn` parameter.

Type: String

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

Required: No

statusFilter

If specified, only list the executions whose current execution status matches the given filter.

If you provide a `PENDING_REDRIVE` statusFilter, you must specify `mapRunArn`. For more information, see Child workflow execution redrive behaviour in the *AWS Step Functions Developer Guide*.

If you provide a stateMachineArn and a `PENDING_REDRIVE` statusFilter, the API returns a validation exception.

Type: String

Valid Values: `RUNNING | SUCCEEDED | FAILED | TIMED_OUT | ABORTED | PENDING_REDRIVE`

Required: No

Response Syntax

```
{
   "executions": [
      {
         "executionArn": "string",
         "itemCount": number,
         "mapRunArn": "string",
         "name": "string",
         "redriveCount": number,
         "redriveDate": number,
         "startDate": number,
         "stateMachineAliasArn": "string",
         "stateMachineArn": "string",
         "stateMachineVersionArn": "string",
         "status": "string",
         "stopDate": number
      }
   ],
   "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.

executions

The list of matching executions.

Type: Array of ExecutionListItem objects

nextToken

If `nextToken` is returned, there are more results available. The value of `nextToken` is a unique pagination token for each page. Make the call again using the returned token to retrieve the

next page. Keep all other arguments unchanged. Each pagination token expires after 24 hours. Using an expired pagination token will return an *HTTP 400 InvalidToken* error.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 3096.

Errors

For information about the errors that are common to all actions, see Common Error Types.

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

HTTP Status Code: 400

InvalidToken

The provided token is not valid.

HTTP Status Code: 400

ResourceNotFound

Could not find the referenced resource.

HTTP Status Code: 400

StateMachineDoesNotExist

The specified state machine does not exist.

HTTP Status Code: 400

StateMachineTypeNotSupported

State machine type is not supported.

HTTP Status Code: 400

ValidationException

The input does not satisfy the constraints specified by an AWS service.

reason

The input does not 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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

ListMapRuns

Lists all Map Runs that were started by a given state machine execution. Use this API action to obtain Map Run ARNs, and then call `DescribeMapRun` to obtain more information, if needed.

Request Syntax

```
{
   "executionArn": "string",
   "maxResults": number,
   "nextToken": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

executionArn

The Amazon Resource Name (ARN) of the execution for which the Map Runs must be listed.

Type: String

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

Required: Yes

maxResults

The maximum number of results that are returned per call. You can use `nextToken` to obtain further pages of results. The default is 100 and the maximum allowed page size is 1000. A value of 0 uses the default.

This is only an upper limit. The actual number of results returned per call might be fewer than the specified maximum.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 1000.

Required: No

nextToken

If `nextToken` is returned, there are more results available. The value of `nextToken` is a unique pagination token for each page. Make the call again using the returned token to retrieve the next page. Keep all other arguments unchanged. Each pagination token expires after 24 hours. Using an expired pagination token will return an *HTTP 400 InvalidToken* error.

Type: String

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

Required: No

Response Syntax

```
{
   "mapRuns": [
      {
         "executionArn": "string",
         "mapRunArn": "string",
         "startDate": number,
         "stateMachineArn": "string",
         "stopDate": number
      }
   ],
   "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.

mapRuns

An array that lists information related to a Map Run, such as the Amazon Resource Name (ARN) of the Map Run and the ARN of the state machine that started the Map Run.

Type: Array of MapRunListItem objects

nextToken

If `nextToken` is returned, there are more results available. The value of `nextToken` is a unique pagination token for each page. Make the call again using the returned token to retrieve the next page. Keep all other arguments unchanged. Each pagination token expires after 24 hours. Using an expired pagination token will return an *HTTP 400 InvalidToken* error.

Type: String

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

Errors

For information about the errors that are common to all actions, see Common Error Types.

ExecutionDoesNotExist

The specified execution does not exist.

HTTP Status Code: 400

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

HTTP Status Code: 400

InvalidToken

The provided token is not valid.

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 V2
- AWS SDK for .NET V4
- AWS SDK for C++

- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

ListStateMachineAliases

Lists aliases for a specified state machine ARN. Results are sorted by time, with the most recently created aliases listed first.

To list aliases that reference a state machine version, you can specify the version ARN in the `stateMachineArn` parameter.

If `nextToken` is returned, there are more results available. The value of `nextToken` is a unique pagination token for each page. Make the call again using the returned token to retrieve the next page. Keep all other arguments unchanged. Each pagination token expires after 24 hours. Using an expired pagination token will return an *HTTP 400 InvalidToken* error.

Related operations:

- CreateStateMachineAlias
- DescribeStateMachineAlias
- UpdateStateMachineAlias
- DeleteStateMachineAlias

Request Syntax

```
{
   "maxResults": number,
   "nextToken": "string",
   "stateMachineArn": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

maxResults

The maximum number of results that are returned per call. You can use `nextToken` to obtain further pages of results. The default is 100 and the maximum allowed page size is 1000. A value of 0 uses the default.

This is only an upper limit. The actual number of results returned per call might be fewer than the specified maximum.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 1000.

Required: No

nextToken

If `nextToken` is returned, there are more results available. The value of `nextToken` is a unique pagination token for each page. Make the call again using the returned token to retrieve the next page. Keep all other arguments unchanged. Each pagination token expires after 24 hours. Using an expired pagination token will return an *HTTP 400 InvalidToken* error.

Type: String

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

Required: No

stateMachineArn

The Amazon Resource Name (ARN) of the state machine for which you want to list aliases.

If you specify a state machine version ARN, this API returns a list of aliases for that version.

Type: String

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

Required: Yes

Response Syntax

```
{
   "nextToken": "string",
   "stateMachineAliases": [
      {
         "creationDate": number,
         "stateMachineAliasArn": "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

If `nextToken` is returned, there are more results available. The value of `nextToken` is a unique pagination token for each page. Make the call again using the returned token to retrieve the next page. Keep all other arguments unchanged. Each pagination token expires after 24 hours. Using an expired pagination token will return an *HTTP 400 InvalidToken* error.

Type: String

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

stateMachineAliases

Aliases for the state machine.

Type: Array of StateMachineAliasListItem objects

Errors

For information about the errors that are common to all actions, see Common Error Types.

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

HTTP Status Code: 400

InvalidToken

The provided token is not valid.

HTTP Status Code: 400

ResourceNotFound

Could not find the referenced resource.

HTTP Status Code: 400

StateMachineDeleting

The specified state machine is being deleted.

HTTP Status Code: 400

StateMachineDoesNotExist

The specified state machine does not exist.

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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

ListStateMachines

Lists the existing state machines.

If `nextToken` is returned, there are more results available. The value of `nextToken` is a unique pagination token for each page. Make the call again using the returned token to retrieve the next page. Keep all other arguments unchanged. Each pagination token expires after 24 hours. Using an expired pagination token will return an *HTTP 400 InvalidToken* error.

> **Note**
>
> This operation is eventually consistent. The results are best effort and may not reflect very recent updates and changes.

Request Syntax

```
{
   "maxResults": number,
   "nextToken": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

maxResults

The maximum number of results that are returned per call. You can use `nextToken` to obtain further pages of results. The default is 100 and the maximum allowed page size is 1000. A value of 0 uses the default.

This is only an upper limit. The actual number of results returned per call might be fewer than the specified maximum.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 1000.

Required: No

nextToken

If `nextToken` is returned, there are more results available. The value of `nextToken` is a unique pagination token for each page. Make the call again using the returned token to retrieve the next page. Keep all other arguments unchanged. Each pagination token expires after 24 hours. Using an expired pagination token will return an *HTTP 400 InvalidToken* error.

Type: String

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

Required: No

Response Syntax

```
{
   "nextToken": "string",
   "stateMachines": [
      {
         "creationDate": number,
         "name": "string",
         "stateMachineArn": "string",
         "type": "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

If `nextToken` is returned, there are more results available. The value of `nextToken` is a unique pagination token for each page. Make the call again using the returned token to retrieve the next page. Keep all other arguments unchanged. Each pagination token expires after 24 hours. Using an expired pagination token will return an *HTTP 400 InvalidToken* error.

Type: String

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

stateMachines

Type: Array of StateMachineListItem objects

Errors

For information about the errors that are common to all actions, see Common Error Types.

InvalidToken

The provided token is not valid.

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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

ListStateMachineVersions

Lists versions for the specified state machine Amazon Resource Name (ARN).

The results are sorted in descending order of the version creation time.

If `nextToken` is returned, there are more results available. The value of `nextToken` is a unique pagination token for each page. Make the call again using the returned token to retrieve the next page. Keep all other arguments unchanged. Each pagination token expires after 24 hours. Using an expired pagination token will return an *HTTP 400 InvalidToken* error.

Related operations:

- PublishStateMachineVersion
- DeleteStateMachineVersion

Request Syntax

```
{
   "maxResults": number,
   "nextToken": "string",
   "stateMachineArn": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

maxResults

The maximum number of results that are returned per call. You can use `nextToken` to obtain further pages of results. The default is 100 and the maximum allowed page size is 1000. A value of 0 uses the default.

This is only an upper limit. The actual number of results returned per call might be fewer than the specified maximum.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 1000.

Required: No

nextToken

If `nextToken` is returned, there are more results available. The value of `nextToken` is a unique pagination token for each page. Make the call again using the returned token to retrieve the next page. Keep all other arguments unchanged. Each pagination token expires after 24 hours. Using an expired pagination token will return an *HTTP 400 InvalidToken* error.

Type: String

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

Required: No

stateMachineArn

The Amazon Resource Name (ARN) of the state machine.

Type: String

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

Required: Yes

Response Syntax

```
{
   "nextToken": "string",
   "stateMachineVersions": [
      {
         "creationDate": number,
         "stateMachineVersionArn": "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

If `nextToken` is returned, there are more results available. The value of `nextToken` is a unique pagination token for each page. Make the call again using the returned token to retrieve the next page. Keep all other arguments unchanged. Each pagination token expires after 24 hours. Using an expired pagination token will return an *HTTP 400 InvalidToken* error.

Type: String

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

stateMachineVersions

Versions for the state machine.

Type: Array of StateMachineVersionListItem objects

Errors

For information about the errors that are common to all actions, see Common Error Types.

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

HTTP Status Code: 400

InvalidToken

The provided token is not valid.

HTTP Status Code: 400

ValidationException

The input does not satisfy the constraints specified by an AWS service.

reason

The input does not 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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

ListTagsForResource

List tags for a given resource.

Tags may only contain Unicode letters, digits, white space, or these symbols: `_ . : / = + - @`.

Request Syntax

```
{
   "resourceArn": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

resourceArn

The Amazon Resource Name (ARN) for the Step Functions state machine or activity.

Type: String

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

Required: Yes

Response Syntax

```
{
   "tags": [
      {
         "key": "string",
         "value": "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

An array of tags associated with the resource.

Type: Array of Tag objects

Errors

For information about the errors that are common to all actions, see Common Error Types.

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

HTTP Status Code: 400

ResourceNotFound

Could not find the referenced resource.

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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3

- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

PublishStateMachineVersion

Creates a version from the current revision of a state machine. Use versions to create immutable snapshots of your state machine. You can start executions from versions either directly or with an alias. To create an alias, use CreateStateMachineAlias.

You can publish up to 1000 versions for each state machine. You must manually delete unused versions using the DeleteStateMachineVersion API action.

`PublishStateMachineVersion` is an idempotent API. It doesn't create a duplicate state machine version if it already exists for the current revision. Step Functions bases `PublishStateMachineVersion`'s idempotency check on the `stateMachineArn`, `name`, and `revisionId` parameters. Requests with the same parameters return a successful idempotent response. If you don't specify a `revisionId`, Step Functions checks for a previously published version of the state machine's current revision.

Related operations:

- DeleteStateMachineVersion
- ListStateMachineVersions

Request Syntax

```
{
   "description": "string",
   "revisionId": "string",
   "stateMachineArn": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

description

An optional description of the state machine version.

Type: String

Length Constraints: Maximum length of 256.

Required: No

revisionId

Only publish the state machine version if the current state machine's revision ID matches the specified ID.

Use this option to avoid publishing a version if the state machine changed since you last updated it. If the specified revision ID doesn't match the state machine's current revision ID, the API returns `ConflictException`.

> **Note**
>
> To specify an initial revision ID for a state machine with no revision ID assigned, specify the string `INITIAL` for the `revisionId` parameter. For example, you can specify a `revisionID` of `INITIAL` when you create a state machine using the CreateStateMachine API action.

Type: String

Required: No

stateMachineArn

The Amazon Resource Name (ARN) of the state machine.

Type: String

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

Required: Yes

Response Syntax

```
{
   "creationDate": number,
   "stateMachineVersionArn": "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.

creationDate

The date the version was created.

Type: Timestamp

stateMachineVersionArn

The Amazon Resource Name (ARN) (ARN) that identifies the state machine version.

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 Error Types.

ConflictException

Updating or deleting a resource can cause an inconsistent state. This error occurs when there're concurrent requests for DeleteStateMachineVersion, PublishStateMachineVersion, or UpdateStateMachine with the `publish` parameter set to `true`.

HTTP Status Code: 409

HTTP Status Code: 400

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

HTTP Status Code: 400

ServiceQuotaExceededException

The request would cause a service quota to be exceeded.

HTTP Status Code: 402

HTTP Status Code: 400

StateMachineDeleting

The specified state machine is being deleted.

HTTP Status Code: 400

StateMachineDoesNotExist

The specified state machine does not exist.

HTTP Status Code: 400

ValidationException

The input does not satisfy the constraints specified by an AWS service.

reason

The input does not 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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

RedriveExecution

Restarts unsuccessful executions of Standard workflows that didn't complete successfully in the last 14 days. These include failed, aborted, or timed out executions. When you redrive an execution, it continues the failed execution from the unsuccessful step and uses the same input. Step Functions preserves the results and execution history of the successful steps, and doesn't rerun these steps when you redrive an execution. Redriven executions use the same state machine definition and execution ARN as the original execution attempt.

For workflows that include an Inline Map or Parallel state, `RedriveExecution` API action reschedules and redrives only the iterations and branches that failed or aborted.

To redrive a workflow that includes a Distributed Map state whose Map Run failed, you must redrive the parent workflow. The parent workflow redrives all the unsuccessful states, including a failed Map Run. If a Map Run was not started in the original execution attempt, the redriven parent workflow starts the Map Run.

> **Note**
>
> This API action is not supported by `EXPRESS` state machines.
> However, you can restart the unsuccessful executions of Express child workflows in a Distributed Map by redriving its Map Run. When you redrive a Map Run, the Express child workflows are rerun using the StartExecution API action. For more information, see Redriving Map Runs.

You can redrive executions if your original execution meets the following conditions:

- The execution status isn't `SUCCEEDED`.
- Your workflow execution has not exceeded the redrivable period of 14 days. Redrivable period refers to the time during which you can redrive a given execution. This period starts from the day a state machine completes its execution.
- The workflow execution has not exceeded the maximum open time of one year. For more information about state machine quotas, see Quotas related to state machine executions.
- The execution event history count is less than 24,999. Redriven executions append their event history to the existing event history. Make sure your workflow execution contains less than 24,999 events to accommodate the `ExecutionRedriven` history event and at least one other history event.

Request Syntax

```
{
   "clientToken": "string",
   "executionArn": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

clientToken

A unique, case-sensitive identifier that you provide to ensure the idempotency of the request. If you don't specify a client token, the AWS SDK automatically generates a client token and uses it for the request to ensure idempotency. The API will return idempotent responses for the last 10 client tokens used to successfully redrive the execution. These client tokens are valid for up to 15 minutes after they are first used.

Type: String

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

Pattern: `[!-~]+`

Required: No

executionArn

The Amazon Resource Name (ARN) of the execution to be redriven.

Type: String

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

Required: Yes

Response Syntax

```
{
```

```
    "redriveDate": number
}
```

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.

redriveDate

The date the execution was last redriven.

Type: Timestamp

Errors

For information about the errors that are common to all actions, see Common Error Types.

ExecutionDoesNotExist

The specified execution does not exist.

HTTP Status Code: 400

ExecutionLimitExceeded

The maximum number of running executions has been reached. Running executions must end or be stopped before a new execution can be started.

HTTP Status Code: 400

ExecutionNotRedrivable

The execution Amazon Resource Name (ARN) that you specified for `executionArn` cannot be redriven.

HTTP Status Code: 400

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

HTTP Status Code: 400

ValidationException

The input does not satisfy the constraints specified by an AWS service.

reason

The input does not 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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

SendTaskFailure

Used by activity workers, Task states using the callback pattern, and optionally Task states using the job run pattern to report that the task identified by the `taskToken` failed.

For an execution with encryption enabled, Step Functions will encrypt the error and cause fields using the AWS KMS key for the execution role.

A caller can mark a task as fail without using any AWS KMS permissions in the execution role if the caller provides a null value for both `error` and `cause` fields because no data needs to be encrypted.

Request Syntax

```
{
   "cause": "string",
   "error": "string",
   "taskToken": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

cause

A more detailed explanation of the cause of the failure.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 32768.

Required: No

error

The error code of the failure.

Type: String

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

Required: No

taskToken

The token that represents this task. Task tokens are generated by Step Functions when tasks are assigned to a worker, or in the context object when a workflow enters a task state. See GetActivityTask:taskToken.

Type: String

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

Required: Yes

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 Error Types.

InvalidToken

The provided token is not valid.

HTTP Status Code: 400

KmsAccessDeniedException

Either your AWS KMS key policy or API caller does not have the required permissions.

HTTP Status Code: 400

KmsInvalidStateException

The AWS KMS key is not in valid state, for example: Disabled or Deleted.

kmsKeyState

Current status of the AWS KMS; key. For example: `DISABLED`, `PENDING_DELETION`, `PENDING_IMPORT`, `UNAVAILABLE`, `CREATING`.

HTTP Status Code: 400

KmsThrottlingException

Received when AWS KMS returns `ThrottlingException` for a AWS KMS call that Step Functions makes on behalf of the caller.

HTTP Status Code: 400

TaskDoesNotExist

The activity does not exist.

HTTP Status Code: 400

TaskTimedOut

The task token has either expired or the task associated with the token has already been closed.

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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

SendTaskHeartbeat

Used by activity workers and Task states using the callback pattern, and optionally Task states using the job run pattern to report to Step Functions that the task represented by the specified `taskToken` is still making progress. This action resets the `Heartbeat` clock. The `Heartbeat` threshold is specified in the state machine's Amazon States Language definition (`HeartbeatSeconds`). This action does not in itself create an event in the execution history. However, if the task times out, the execution history contains an `ActivityTimedOut` entry for activities, or a `TaskTimedOut` entry for tasks using the job run or callback pattern.

> **Note**
>
> The `Timeout` of a task, defined in the state machine's Amazon States Language definition, is its maximum allowed duration, regardless of the number of SendTaskHeartbeat requests received. Use `HeartbeatSeconds` to configure the timeout interval for heartbeats.

Request Syntax

```
{
   "taskToken": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

taskToken

The token that represents this task. Task tokens are generated by Step Functions when tasks are assigned to a worker, or in the context object when a workflow enters a task state. See GetActivityTask:taskToken.

Type: String

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

Required: Yes

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 Error Types.

InvalidToken

The provided token is not valid.

HTTP Status Code: 400

TaskDoesNotExist

The activity does not exist.

HTTP Status Code: 400

TaskTimedOut

The task token has either expired or the task associated with the token has already been closed.

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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

SendTaskSuccess

Used by activity workers, Task states using the callback pattern, and optionally Task states using the job run pattern to report that the task identified by the `taskToken` completed successfully.

Request Syntax

```
{
   "output": "string",
   "taskToken": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

output

The JSON output of the task. Length constraints apply to the payload size, and are expressed as bytes in UTF-8 encoding.

Type: String

Length Constraints: Maximum length of 262144.

Required: Yes

taskToken

The token that represents this task. Task tokens are generated by Step Functions when tasks are assigned to a worker, or in the context object when a workflow enters a task state. See GetActivityTask:taskToken.

Type: String

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

Required: Yes

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 Error Types.

InvalidOutput

The provided JSON output data is not valid.

HTTP Status Code: 400

InvalidToken

The provided token is not valid.

HTTP Status Code: 400

KmsAccessDeniedException

Either your AWS KMS key policy or API caller does not have the required permissions.

HTTP Status Code: 400

KmsInvalidStateException

The AWS KMS key is not in valid state, for example: Disabled or Deleted.

kmsKeyState

Current status of the AWS KMS; key. For example: `DISABLED`, `PENDING_DELETION`, `PENDING_IMPORT`, `UNAVAILABLE`, `CREATING`.

HTTP Status Code: 400

KmsThrottlingException

Received when AWS KMS returns `ThrottlingException` for a AWS KMS call that Step Functions makes on behalf of the caller.

HTTP Status Code: 400

TaskDoesNotExist

The activity does not exist.

HTTP Status Code: 400

TaskTimedOut

The task token has either expired or the task associated with the token has already been closed.

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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

StartExecution

Starts a state machine execution.

A qualified state machine ARN can either refer to a *Distributed Map state* defined within a state machine, a version ARN, or an alias ARN.

The following are some examples of qualified and unqualified state machine ARNs:

- The following qualified state machine ARN refers to a *Distributed Map state* with a label `mapStateLabel` in a state machine named `myStateMachine`.

  ```
  arn:partition:states:region:account-id:stateMachine:myStateMachine/
  mapStateLabel
  ```

  > **Note**
  >
  > If you provide a qualified state machine ARN that refers to a *Distributed Map state*, the request fails with `ValidationException`.

- The following qualified state machine ARN refers to an alias named `PROD`.

  ```
  arn:<partition>:states:<region>:<account-
  id>:stateMachine:<myStateMachine:PROD>
  ```

  > **Note**
  >
  > If you provide a qualified state machine ARN that refers to a version ARN or an alias ARN, the request starts execution for that version or alias.

- The following unqualified state machine ARN refers to a state machine named `myStateMachine`.

  ```
  arn:<partition>:states:<region>:<account-
  id>:stateMachine:<myStateMachine>
  ```

If you start an execution with an unqualified state machine ARN, Step Functions uses the latest revision of the state machine for the execution.

To start executions of a state machine version, call `StartExecution` and provide the version ARN or the ARN of an alias that points to the version.

> **Note**
>
> `StartExecution` is idempotent for `STANDARD` workflows. For a `STANDARD` workflow, if you call `StartExecution` with the same name and input as a running execution, the call succeeds and return the same response as the original request. If the execution is closed or if the input is different, it returns a `400 ExecutionAlreadyExists` error. You can reuse the name 90 days after it closes.
> `StartExecution` isn't idempotent for `EXPRESS` workflows.

Request Syntax

```
{
   "input": "string",
   "name": "string",
   "stateMachineArn": "string",
   "traceHeader": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

input

The string that contains the JSON input data for the execution, for example:

```
"{\"first_name\" : \"Alejandro\"}"
```

> **Note**
>
> If you don't include any JSON input data, you still must include the two braces, for example: `"{}"`

Length constraints apply to the payload size, and are expressed as bytes in UTF-8 encoding.

Type: String

Length Constraints: Maximum length of 262144.

Required: No

name

Optional name of the execution. For STANDARD workflows, this name must be unique for your AWS account, region, and state machine. If a previous execution with the same name exists, you can reuse the name 90 days after it closes. For EXPRESS workflows, execution names can be reused immediately. For more information, see Limits Related to State Machine Executions in the *AWS Step Functions Developer Guide*.

If you don't provide a name for the execution, Step Functions automatically generates a universally unique identifier (UUID) as the execution name.

A name must *not* contain:

- white space
- brackets `< > { } [ ]`
- wildcard characters `? *`
- special characters `" # % \ ^ | ~ ` $ & , ; : /`
- control characters (`U+0000-001F`, `U+007F-009F`, `U+FFFE-FFFF`)
- surrogates (`U+D800-DFFF`)
- invalid characters (`U+10FFFF`)

To enable logging with CloudWatch Logs, the name should only contain 0-9, A-Z, a-z, - and _.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Required: No

stateMachineArn

The Amazon Resource Name (ARN) of the state machine to execute.

The `stateMachineArn` parameter accepts one of the following inputs:

- **An unqualified state machine ARN** – Refers to a state machine ARN that isn't qualified with a version or alias ARN. The following is an example of an unqualified state machine ARN.

  ```
  arn:<partition>:states:<region>:<account-
  id>:stateMachine:<myStateMachine>
  ```

  Step Functions doesn't associate state machine executions that you start with an unqualified ARN with a version. This is true even if that version uses the same revision that the execution used.

- **A state machine version ARN** – Refers to a version ARN, which is a combination of state machine ARN and the version number separated by a colon (:). The following is an example of the ARN for version 10.

  ```
  arn:<partition>:states:<region>:<account-
  id>:stateMachine:<myStateMachine>:10
  ```

  Step Functions doesn't associate executions that you start with a version ARN with any aliases that point to that version.

- **A state machine alias ARN** – Refers to an alias ARN, which is a combination of state machine ARN and the alias name separated by a colon (:). The following is an example of the ARN for an alias named PROD.

  ```
  arn:<partition>:states:<region>:<account-
  id>:stateMachine:<myStateMachine:PROD>
  ```

  Step Functions associates executions that you start with an alias ARN with that alias and the state machine version used for that execution.

Type: String

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

Required: Yes

traceHeader

Passes the AWS X-Ray trace header. The trace header can also be passed in the request payload.

> **Note**
>
> For X-Ray traces, all AWS services use the `X-Amzn-Trace-Id` header from the HTTP request. Using the header is the preferred mechanism to identify a trace. `StartExecution` and `StartSyncExecution` API operations can also use `traceHeader` from the body of the request payload. If **both** sources are provided, Step Functions will use the **header value** (preferred) over the value in the request body.

Type: String

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

Pattern: `\p{ASCII}*`

Required: No

Response Syntax

```
{
   "executionArn": "string",
   "startDate": number
}
```

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.

executionArn

The Amazon Resource Name (ARN) that identifies the execution.

Type: String

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

startDate

The date the execution is started.

Type: Timestamp

Errors

For information about the errors that are common to all actions, see Common Error Types.

ExecutionAlreadyExists

The execution has the same `name` as another execution (but a different `input`).

> **Note**
>
> Executions with the same `name` and `input` are considered idempotent.

HTTP Status Code: 400

ExecutionLimitExceeded

The maximum number of running executions has been reached. Running executions must end or be stopped before a new execution can be started.

HTTP Status Code: 400

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

HTTP Status Code: 400

InvalidExecutionInput

The provided JSON input data is not valid.

HTTP Status Code: 400

InvalidName

The provided name is not valid.

HTTP Status Code: 400

KmsAccessDeniedException

Either your AWS KMS key policy or API caller does not have the required permissions.

HTTP Status Code: 400

KmsInvalidStateException

The AWS KMS key is not in valid state, for example: Disabled or Deleted.

kmsKeyState

Current status of the AWS KMS; key. For example: `DISABLED`, `PENDING_DELETION`, `PENDING_IMPORT`, `UNAVAILABLE`, `CREATING`.

HTTP Status Code: 400

KmsThrottlingException

Received when AWS KMS returns `ThrottlingException` for a AWS KMS call that Step Functions makes on behalf of the caller.

HTTP Status Code: 400

StateMachineDeleting

The specified state machine is being deleted.

HTTP Status Code: 400

StateMachineDoesNotExist

The specified state machine does not exist.

HTTP Status Code: 400

ValidationException

The input does not satisfy the constraints specified by an AWS service.

reason

The input does not 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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

StartSyncExecution

Starts a Synchronous Express state machine execution. `StartSyncExecution` is not available for `STANDARD` workflows.

> **Note**
>
> `StartSyncExecution` will return a `200 OK` response, even if your execution fails, because the status code in the API response doesn't reflect function errors. Error codes are reserved for errors that prevent your execution from running, such as permissions errors, limit errors, or issues with your state machine code and configuration.

Request Syntax

```
{
   "includedData": "string",
   "input": "string",
   "name": "string",
   "stateMachineArn": "string",
   "traceHeader": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

includedData

If your state machine definition is encrypted with a AWS KMS key, callers must have `kms:Decrypt` permission to decrypt the definition. Alternatively, you can call the API with `includedData = METADATA_ONLY` to get a successful response without the encrypted definition.

Type: String

Valid Values: `ALL_DATA | METADATA_ONLY`

Required: No

input

The string that contains the JSON input data for the execution, for example:

```
"{\"first_name\" : \"Alejandro\"}"
```

> **Note**
>
> If you don't include any JSON input data, you still must include the two braces, for example: `"{}"`

Length constraints apply to the payload size, and are expressed as bytes in UTF-8 encoding.

Type: String

Length Constraints: Maximum length of 262144.

Required: No

name

The name of the execution.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Required: No

stateMachineArn

The Amazon Resource Name (ARN) of the state machine to execute.

Type: String

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

Required: Yes

traceHeader

Passes the AWS X-Ray trace header. The trace header can also be passed in the request payload.

> **Note**
>
> For X-Ray traces, all AWS services use the `X-Amzn-Trace-Id` header from the HTTP request. Using the header is the preferred mechanism to identify a trace. `StartExecution` and `StartSyncExecution` API operations can also use `traceHeader` from the body of the request payload. If **both** sources are provided, Step Functions will use the **header value** (preferred) over the value in the request body.

Type: String

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

Pattern: `\p{ASCII}*`

Required: No

Response Syntax

```
{
   "billingDetails": {
      "billedDurationInMilliseconds": number,
      "billedMemoryUsedInMB": number
   },
   "cause": "string",
   "error": "string",
   "executionArn": "string",
   "input": "string",
   "inputDetails": {
      "included": boolean
   },
   "name": "string",
   "output": "string",
   "outputDetails": {
      "included": boolean
   },
   "startDate": number,
   "stateMachineArn": "string",
   "status": "string",
   "stopDate": number,
   "traceHeader": "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.

billingDetails

An object that describes workflow billing details, including billed duration and memory use.

Type: BillingDetails object

cause

A more detailed explanation of the cause of the failure.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 32768.

error

The error code of the failure.

Type: String

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

executionArn

The Amazon Resource Name (ARN) that identifies the execution.

Type: String

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

input

The string that contains the JSON input data of the execution. Length constraints apply to the payload size, and are expressed as bytes in UTF-8 encoding.

Type: String

Length Constraints: Maximum length of 262144.

inputDetails

Provides details about execution input or output.

Type: CloudWatchEventsExecutionDataDetails object

name

The name of the execution.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

output

The JSON output data of the execution. Length constraints apply to the payload size, and are expressed as bytes in UTF-8 encoding.

> **Note**
>
> This field is set only if the execution succeeds. If the execution fails, this field is null.

Type: String

Length Constraints: Maximum length of 262144.

outputDetails

Provides details about execution input or output.

Type: CloudWatchEventsExecutionDataDetails object

startDate

The date the execution is started.

Type: Timestamp

stateMachineArn

The Amazon Resource Name (ARN) that identifies the state machine.

Type: String

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

status

The current status of the execution.

Type: String

Valid Values: `SUCCEEDED | FAILED | TIMED_OUT`

stopDate

If the execution has already ended, the date the execution stopped.

Type: Timestamp

traceHeader

The AWS X-Ray trace header that was passed to the execution.

> **Note**
>
> For X-Ray traces, all AWS services use the `X-Amzn-Trace-Id` header from the HTTP request. Using the header is the preferred mechanism to identify a trace. `StartExecution` and `StartSyncExecution` API operations can also use `traceHeader` from the body of the request payload. If **both** sources are provided, Step Functions will use the **header value** (preferred) over the value in the request body.

Type: String

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

Pattern: `\p{ASCII}*`

Errors

For information about the errors that are common to all actions, see Common Error Types.

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

HTTP Status Code: 400

InvalidExecutionInput

The provided JSON input data is not valid.

HTTP Status Code: 400

InvalidName

The provided name is not valid.

HTTP Status Code: 400

KmsAccessDeniedException

Either your AWS KMS key policy or API caller does not have the required permissions.

HTTP Status Code: 400

KmsInvalidStateException

The AWS KMS key is not in valid state, for example: Disabled or Deleted.

kmsKeyState

Current status of the AWS KMS; key. For example: `DISABLED`, `PENDING_DELETION`, `PENDING_IMPORT`, `UNAVAILABLE`, `CREATING`.

HTTP Status Code: 400

KmsThrottlingException

Received when AWS KMS returns `ThrottlingException` for a AWS KMS call that Step Functions makes on behalf of the caller.

HTTP Status Code: 400

StateMachineDeleting

The specified state machine is being deleted.

HTTP Status Code: 400

StateMachineDoesNotExist

The specified state machine does not exist.

HTTP Status Code: 400

StateMachineTypeNotSupported

State machine type is not supported.

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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

StopExecution

Stops an execution.

This API action is not supported by EXPRESS state machines.

For an execution with encryption enabled, Step Functions will encrypt the error and cause fields using the AWS KMS key for the execution role.

A caller can stop an execution without using any AWS KMS permissions in the execution role if the caller provides a null value for both `error` and `cause` fields because no data needs to be encrypted.

Request Syntax

```
{
   "cause": "string",
   "error": "string",
   "executionArn": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

cause

A more detailed explanation of the cause of the failure.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 32768.

Required: No

error

The error code of the failure.

Type: String

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

Required: No

executionArn

The Amazon Resource Name (ARN) of the execution to stop.

Type: String

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

Required: Yes

Response Syntax

```
{
   "stopDate": number
}
```

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.

stopDate

The date the execution is stopped.

Type: Timestamp

Errors

For information about the errors that are common to all actions, see Common Error Types.

ExecutionDoesNotExist

The specified execution does not exist.

HTTP Status Code: 400

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

HTTP Status Code: 400

KmsAccessDeniedException

Either your AWS KMS key policy or API caller does not have the required permissions.

HTTP Status Code: 400

KmsInvalidStateException

The AWS KMS key is not in valid state, for example: Disabled or Deleted.

kmsKeyState

Current status of the AWS KMS; key. For example: `DISABLED`, `PENDING_DELETION`, `PENDING_IMPORT`, `UNAVAILABLE`, `CREATING`.

HTTP Status Code: 400

KmsThrottlingException

Received when AWS KMS returns `ThrottlingException` for a AWS KMS call that Step Functions makes on behalf of the caller.

HTTP Status Code: 400

ValidationException

The input does not satisfy the constraints specified by an AWS service.

reason

The input does not 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 V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

TagResource

Add a tag to a Step Functions resource.

An array of key-value pairs. For more information, see Using Cost Allocation Tags in the *AWS Billing and Cost Management User Guide*, and Controlling Access Using IAM Tags.

Tags may only contain Unicode letters, digits, white space, or these symbols: `_ . : / = + - @`.

Request Syntax

```
{
   "resourceArn": "string",
   "tags": [
      {
         "key": "string",
         "value": "string"
      }
   ]
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

resourceArn

The Amazon Resource Name (ARN) for the Step Functions state machine or activity.

Type: String

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

Required: Yes

tags

The list of tags to add to a resource.

Tags may only contain Unicode letters, digits, white space, or these symbols: `_ . : / = + - @`.

Type: Array of Tag objects

Required: Yes

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 Error Types.

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

HTTP Status Code: 400

ResourceNotFound

Could not find the referenced resource.

HTTP Status Code: 400

TooManyTags

You've exceeded the number of tags allowed for a resource. See the Limits Topic in the AWS Step Functions Developer Guide.

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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

TestState

Accepts the definition of a single state and executes it. You can test a state without creating a state machine or updating an existing state machine. Using this API, you can test the following:

- A state's input and output processing data flow
- An AWS service integration request and response
- An HTTP Task request and response

You can call this API on only one state at a time. The states that you can test include the following:

- All Task types except Activity
- Pass
- Wait
- Choice
- Succeed
- Fail

The `TestState` API assumes an IAM role which must contain the required IAM permissions for the resources your state is accessing. For information about the permissions a state might need, see IAM permissions to test a state.

The `TestState` API can run for up to five minutes. If the execution of a state exceeds this duration, it fails with the `States.Timeout` error.

`TestState` only supports the following when a mock is specified: Activity tasks, `.sync` or `.waitForTaskToken` service integration patterns, Parallel, or Map states.

Request Syntax

```
{
   "context": "string",
   "definition": "string",
   "input": "string",
   "inspectionLevel": "string",
   "mock": {
      "errorOutput": {
```

```
            "cause": "string",
            "error": "string"
        },
        "fieldValidationMode": "string",
        "result": "string"
    },
    "revealSecrets": boolean,
    "roleArn": "string",
    "stateConfiguration": {
        "errorCausedByState": "string",
        "mapItemReaderData": "string",
        "mapIterationFailureCount": number,
        "retrierRetryCount": number
    },
    "stateName": "string",
    "variables": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

context

A JSON string representing a valid Context object for the state under test. This field may only be specified if a mock is specified in the same request.

Type: String

Length Constraints: Maximum length of 262144.

Required: No

definition

The Amazon States Language (ASL) definition of the state or state machine.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1048576.

Required: Yes

input

A string that contains the JSON input data for the state.

Type: String

Length Constraints: Maximum length of 262144.

Required: No

inspectionLevel

Determines the values to return when a state is tested. You can specify one of the following types:

- `INFO`: Shows the final state output. By default, Step Functions sets `inspectionLevel` to `INFO` if you don't specify a level.
- `DEBUG`: Shows the final state output along with the input and output data processing result.
- `TRACE`: Shows the HTTP request and response for an HTTP Task. This level also shows the final state output along with the input and output data processing result.

Each of these levels also provide information about the status of the state execution and the next state to transition to.

Type: String

Valid Values: `INFO | DEBUG | TRACE`

Required: No

mock

Defines a mocked result or error for the state under test.

A mock can only be specified for Task, Map, or Parallel states. If it is specified for another state type, an exception will be thrown.

Type: MockInput object

Required: No

revealSecrets

Specifies whether or not to include secret information in the test result. For HTTP Tasks, a secret includes the data that an EventBridge connection adds to modify the HTTP request

headers, query parameters, and body. Step Functions doesn't omit any information included in the state definition or the HTTP response.

If you set `revealSecrets` to `true`, you must make sure that the IAM user that calls the `TestState` API has permission for the `states:RevealSecrets` action. For an example of IAM policy that sets the `states:RevealSecrets` permission, see IAM permissions to test a state. Without this permission, Step Functions throws an access denied error.

By default, `revealSecrets` is set to `false`.

Type: Boolean

Required: No

roleArn

The Amazon Resource Name (ARN) of the execution role with the required IAM permissions for the state.

Type: String

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

Required: No

stateConfiguration

Contains configurations for the state under test.

Type: TestStateConfiguration object

Required: No

stateName

Denotes the particular state within a state machine definition to be tested. If this field is specified, the `definition` must contain a fully-formed state machine definition.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Required: No

variables

JSON object literal that sets variables used in the state under test. Object keys are the variable names and values are the variable values.

Type: String

Length Constraints: Maximum length of 262144.

Required: No

Response Syntax

```
{
   "cause": "string",
   "error": "string",
   "inspectionData": {
      "afterArguments": "string",
      "afterInputPath": "string",
      "afterItemBatcher": "string",
      "afterItemSelector": "string",
      "afterItemsPath": "string",
      "afterItemsPointer": "string",
      "afterParameters": "string",
      "afterResultPath": "string",
      "afterResultSelector": "string",
      "errorDetails": {
         "catchIndex": number,
         "retryBackoffIntervalSeconds": number,
         "retryIndex": number
      },
      "input": "string",
      "maxConcurrency": number,
      "request": {
         "body": "string",
         "headers": "string",
         "method": "string",
         "protocol": "string",
         "url": "string"
      },
      "response": {
         "body": "string",
         "headers": "string",
```

```
            "protocol": "string",
            "statusCode": "string",
            "statusMessage": "string"
        },
        "result": "string",
        "toleratedFailureCount": number,
        "toleratedFailurePercentage": number,
        "variables": "string"
    },
    "nextState": "string",
    "output": "string",
    "status": "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.

cause

A detailed explanation of the cause for the error when the execution of a state fails.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 32768.

error

The error returned when the execution of a state fails.

Type: String

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

inspectionData

Returns additional details about the state's execution, including its input and output data processing flow, and HTTP request and response information. The `inspectionLevel` request parameter specifies which details are returned.

Type: InspectionData object

nextState

The name of the next state to transition to. If you haven't defined a next state in your definition or if the execution of the state fails, this field doesn't contain a value.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

output

The JSON output data of the state. Length constraints apply to the payload size, and are expressed as bytes in UTF-8 encoding.

Type: String

Length Constraints: Maximum length of 262144.

status

The execution status of the state.

Type: String

Valid Values: `SUCCEEDED | FAILED | RETRIABLE | CAUGHT_ERROR`

Errors

For information about the errors that are common to all actions, see Common Error Types.

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

HTTP Status Code: 400

InvalidDefinition

The provided Amazon States Language definition is not valid.

HTTP Status Code: 400

InvalidExecutionInput

The provided JSON input data is not valid.

HTTP Status Code: 400

ValidationException

The input does not satisfy the constraints specified by an AWS service.

reason

The input does not 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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

UntagResource

Remove a tag from a Step Functions resource

Request Syntax

```
{
   "resourceArn": "string",
   "tagKeys": [ "string" ]
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

resourceArn

The Amazon Resource Name (ARN) for the Step Functions state machine or activity.

Type: String

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

Required: Yes

tagKeys

The list of tags to remove from the resource.

Type: Array of strings

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

Required: Yes

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 Error Types.

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

HTTP Status Code: 400

ResourceNotFound

Could not find the referenced resource.

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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

UpdateMapRun

Updates an in-progress Map Run's configuration to include changes to the settings that control maximum concurrency and Map Run failure.

Request Syntax

```
{
   "mapRunArn": "string",
   "maxConcurrency": number,
   "toleratedFailureCount": number,
   "toleratedFailurePercentage": number
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

mapRunArn

The Amazon Resource Name (ARN) of a Map Run.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2000.

Required: Yes

maxConcurrency

The maximum number of child workflow executions that can be specified to run in parallel for the Map Run at the same time.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

toleratedFailureCount

The maximum number of failed items before the Map Run fails.

Type: Long

Valid Range: Minimum value of 0.

Required: No

toleratedFailurePercentage

The maximum percentage of failed items before the Map Run fails.

Type: Float

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

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 Error Types.

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

HTTP Status Code: 400

ResourceNotFound

Could not find the referenced resource.

HTTP Status Code: 400

ValidationException

The input does not satisfy the constraints specified by an AWS service.

reason

The input does not 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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

UpdateStateMachine

Updates an existing state machine by modifying its `definition`, `roleArn`, `loggingConfiguration`, or `EncryptionConfiguration`. Running executions will continue to use the previous `definition` and `roleArn`. You must include at least one of `definition` or `roleArn` or you will receive a `MissingRequiredParameter` error.

A qualified state machine ARN refers to a *Distributed Map state* defined within a state machine. For example, the qualified state machine ARN `arn:partition:states:region:account-id:stateMachine:stateMachineName/mapStateLabel` refers to a *Distributed Map state* with a label `mapStateLabel` in the state machine named `stateMachineName`.

A qualified state machine ARN can either refer to a *Distributed Map state* defined within a state machine, a version ARN, or an alias ARN.

The following are some examples of qualified and unqualified state machine ARNs:

- The following qualified state machine ARN refers to a *Distributed Map state* with a label `mapStateLabel` in a state machine named `myStateMachine`.

  ```
  arn:partition:states:region:account-id:stateMachine:myStateMachine/
  mapStateLabel
  ```

  > **Note**
  >
  > If you provide a qualified state machine ARN that refers to a *Distributed Map state*, the request fails with `ValidationException`.

- The following qualified state machine ARN refers to an alias named PROD.

  ```
  arn:<partition>:states:<region>:<account-
  id>:stateMachine:<myStateMachine:PROD>
  ```

  > **Note**
  >
  > If you provide a qualified state machine ARN that refers to a version ARN or an alias ARN, the request starts execution for that version or alias.

- The following unqualified state machine ARN refers to a state machine named `myStateMachine`.

```
arn:<partition>:states:<region>:<account-
id>:stateMachine:<myStateMachine>
```

After you update your state machine, you can set the `publish` parameter to `true` in the same action to publish a new version. This way, you can opt-in to strict versioning of your state machine.

> **Note**
>
> Step Functions assigns monotonically increasing integers for state machine versions, starting at version number 1.

> **Note**
>
> All `StartExecution` calls within a few seconds use the updated `definition` and `roleArn`. Executions started immediately after you call `UpdateStateMachine` may use the previous state machine `definition` and `roleArn`.

Request Syntax

```
{
   "definition": "string",
   "encryptionConfiguration": {
      "kmsDataKeyReusePeriodSeconds": number,
      "kmsKeyId": "string",
      "type": "string"
   },
   "loggingConfiguration": {
      "destinations": [
         {
            "cloudWatchLogsLogGroup": {
               "logGroupArn": "string"
            }
         }
      ],
      "includeExecutionData": boolean,
      "level": "string"
   },
```

```
    "publish": boolean,
    "roleArn": "string",
    "stateMachineArn": "string",
    "tracingConfiguration": {
       "enabled": boolean
    },
    "versionDescription": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

definition

The Amazon States Language definition of the state machine. See Amazon States Language.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1048576.

Required: No

encryptionConfiguration

Settings to configure server-side encryption.

Type: EncryptionConfiguration object

Required: No

loggingConfiguration

Use the `LoggingConfiguration` data type to set CloudWatch Logs options.

Type: LoggingConfiguration object

Required: No

publish

Specifies whether the state machine version is published. The default is `false`. To publish a version after updating the state machine, set `publish` to `true`.

Type: Boolean

Required: No

roleArn

The Amazon Resource Name (ARN) of the IAM role of the state machine.

Type: String

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

Required: No

stateMachineArn

The Amazon Resource Name (ARN) of the state machine.

Type: String

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

Required: Yes

tracingConfiguration

Selects whether AWS X-Ray tracing is enabled.

Type: TracingConfiguration object

Required: No

versionDescription

An optional description of the state machine version to publish.

You can only specify the `versionDescription` parameter if you've set `publish` to `true`.

Type: String

Length Constraints: Maximum length of 256.

Required: No

Response Syntax

```
{
```

```
    "revisionId": "string",
    "stateMachineVersionArn": "string",
    "updateDate": number
}
```

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.

revisionId

The revision identifier for the updated state machine.

Type: String

stateMachineVersionArn

The Amazon Resource Name (ARN) of the published state machine version.

If the `publish` parameter isn't set to `true`, this field returns null.

Type: String

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

updateDate

The date and time the state machine was updated.

Type: Timestamp

Errors

For information about the errors that are common to all actions, see Common Error Types.

ConflictException

Updating or deleting a resource can cause an inconsistent state. This error occurs when there're concurrent requests for DeleteStateMachineVersion, PublishStateMachineVersion, or UpdateStateMachine with the `publish` parameter set to `true`.

HTTP Status Code: 409

HTTP Status Code: 400

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

HTTP Status Code: 400

InvalidDefinition

The provided Amazon States Language definition is not valid.

HTTP Status Code: 400

InvalidEncryptionConfiguration

Received when `encryptionConfiguration` is specified but various conditions exist which make the configuration invalid. For example, if `type` is set to `CUSTOMER_MANAGED_KMS_KEY`, but `kmsKeyId` is null, or `kmsDataKeyReusePeriodSeconds` is not between 60 and 900, or the AWS KMS key is not symmetric or inactive.

HTTP Status Code: 400

InvalidLoggingConfiguration

Configuration is not valid.

HTTP Status Code: 400

InvalidTracingConfiguration

Your `tracingConfiguration` key does not match, or `enabled` has not been set to `true` or `false`.

HTTP Status Code: 400

KmsAccessDeniedException

Either your AWS KMS key policy or API caller does not have the required permissions.

HTTP Status Code: 400

KmsThrottlingException

Received when AWS KMS returns `ThrottlingException` for a AWS KMS call that Step Functions makes on behalf of the caller.

HTTP Status Code: 400

MissingRequiredParameter

Request is missing a required parameter. This error occurs if both `definition` and `roleArn` are not specified.

HTTP Status Code: 400

ServiceQuotaExceededException

The request would cause a service quota to be exceeded.

HTTP Status Code: 402

HTTP Status Code: 400

StateMachineDeleting

The specified state machine is being deleted.

HTTP Status Code: 400

StateMachineDoesNotExist

The specified state machine does not exist.

HTTP Status Code: 400

ValidationException

The input does not satisfy the constraints specified by an AWS service.

reason

The input does not 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 V2
- AWS SDK for .NET V4

- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

UpdateStateMachineAlias

Updates the configuration of an existing state machine alias by modifying its `description` or `routingConfiguration`.

You must specify at least one of the `description` or `routingConfiguration` parameters to update a state machine alias.

> **Note**
>
> `UpdateStateMachineAlias` is an idempotent API. Step Functions bases the idempotency check on the `stateMachineAliasArn`, `description`, and `routingConfiguration` parameters. Requests with the same parameters return an idempotent response.

> **Note**
>
> This operation is eventually consistent. All StartExecution requests made within a few seconds use the latest alias configuration. Executions started immediately after calling `UpdateStateMachineAlias` may use the previous routing configuration.

Related operations:

- CreateStateMachineAlias
- DescribeStateMachineAlias
- ListStateMachineAliases
- DeleteStateMachineAlias

Request Syntax

```
{
   "description": "string",
   "routingConfiguration": [
      {
         "stateMachineVersionArn": "string",
         "weight": number
```

```
        }
    ],
    "stateMachineAliasArn": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

description

A description of the state machine alias.

Type: String

Length Constraints: Maximum length of 256.

Required: No

routingConfiguration

The routing configuration of the state machine alias.

An array of `RoutingConfig` objects that specifies up to two state machine versions that the alias starts executions for.

Type: Array of RoutingConfigurationListItem objects

Array Members: Minimum number of 1 item. Maximum number of 2 items.

Required: No

stateMachineAliasArn

The Amazon Resource Name (ARN) of the state machine alias.

Type: String

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

Required: Yes

Response Syntax

```
{
   "updateDate": number
}
```

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.

updateDate

The date and time the state machine alias was updated.

Type: Timestamp

Errors

For information about the errors that are common to all actions, see Common Error Types.

ConflictException

Updating or deleting a resource can cause an inconsistent state. This error occurs when there're concurrent requests for DeleteStateMachineVersion, PublishStateMachineVersion, or UpdateStateMachine with the `publish` parameter set to `true`.

HTTP Status Code: 409

HTTP Status Code: 400

InvalidArn

The provided Amazon Resource Name (ARN) is not valid.

HTTP Status Code: 400

ResourceNotFound

Could not find the referenced resource.

HTTP Status Code: 400

StateMachineDeleting

The specified state machine is being deleted.

HTTP Status Code: 400

ValidationException

The input does not satisfy the constraints specified by an AWS service.

reason

The input does not 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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

ValidateStateMachineDefinition

Validates the syntax of a state machine definition specified in Amazon States Language (ASL), a JSON-based, structured language.

You can validate that a state machine definition is correct without creating a state machine resource.

Suggested uses for `ValidateStateMachineDefinition`:

- Integrate automated checks into your code review or Continuous Integration (CI) process to check state machine definitions before starting deployments.
- Run validation from a Git pre-commit hook to verify the definition before committing to your source repository.

Validation will look for problems in your state machine definition and return a **result** and a list of **diagnostic elements**.

The **result** value will be `OK` when your workflow definition can be successfully created or updated. Note the result can be `OK` even when diagnostic warnings are present in the response. The **result** value will be `FAIL` when the workflow definition contains errors that would prevent you from creating or updating your state machine.

The list of ValidateStateMachineDefinitionDiagnostic data elements can contain zero or more **WARNING** and/or **ERROR** elements.

> **Note**
>
> The **ValidateStateMachineDefinition API** might add new diagnostics in the future, adjust diagnostic codes, or change the message wording. Your automated processes should only rely on the value of the **result** field value (OK, FAIL). Do **not** rely on the exact order, count, or wording of diagnostic messages.

Request Syntax

```
{
   "definition": "string",
```

```
    "maxResults": number,
    "severity": "string",
    "type": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

The request accepts the following data in JSON format.

definition

The Amazon States Language definition of the state machine. For more information, see Amazon States Language (ASL).

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1048576.

Required: Yes

maxResults

The maximum number of diagnostics that are returned per call. The default and maximum value is 100. Setting the value to 0 will also use the default of 100.

If the number of diagnostics returned in the response exceeds `maxResults`, the value of the `truncated` field in the response will be set to `true`.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

severity

Minimum level of diagnostics to return. `ERROR` returns only `ERROR` diagnostics, whereas `WARNING` returns both `WARNING` and `ERROR` diagnostics. The default is `ERROR`.

Type: String

Valid Values: `ERROR | WARNING`

Required: No

type

The target type of state machine for this definition. The default is `STANDARD`.

Type: String

Valid Values: `STANDARD | EXPRESS`

Required: No

Response Syntax

```
{
   "diagnostics": [
      {
         "code": "string",
         "location": "string",
         "message": "string",
         "severity": "string"
      }
   ],
   "result": "string",
   "truncated": boolean
}
```

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.

diagnostics

An array of diagnostic errors and warnings found during validation of the state machine definition. Since **warnings** do not prevent deploying your workflow definition, the **result** value could be `OK` even when warning diagnostics are present in the response.

Type: Array of ValidateStateMachineDefinitionDiagnostic objects

result

The result value will be `OK` when no syntax errors are found, or `FAIL` if the workflow definition does not pass verification.

Type: String

Valid Values: `OK` | `FAIL`

truncated

The result value will be `true` if the number of diagnostics found in the workflow definition exceeds `maxResults`. When all diagnostics results are returned, the value will be `false`.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Error Types.

ValidationException

The input does not satisfy the constraints specified by an AWS service.

reason

The input does not satisfy the constraints specified by an AWS service.

HTTP Status Code: 400

Examples

Validate an inline state machine definition

The following example shows how to invoke the API from the CLI:

```
aws stepfunctions validate-state-machine-definition \
    --definition '{"StartAt":"WaitState","States":{"WaitState":
{"Type":"Wait","Seconds":5,"End":true}}}' \
    --type 'STANDARD'
```

Validate a state machine definition from a file

If your state machine definition is saved in a JSON file, you can use the `file://` notation to pass the file contents to the API.

```
aws stepfunctions validate-state-machine-definition \
    --definition file://my-state-machine-definition.asl.json
```

Parse the validation result

On POSIX compliant systems, you can use a command-line utility like grep to parse the output and generate a non-zero return code if the definition did not successfully pass the syntax check:

```
aws stepfunctions validate-state-machine-definition \
    --definition file://my-state-machine-definition.asl.json | grep '"result": "OK"'
```

Validate a state machine definition with static analysis

By setting the **severity level** to `WARNING`, you can gain visibility into potential issues with your definition before deploying your state machine. In the following example, the four `WARNING` level diagnostics alert you to potential issues, but they will not prevent you from creating or updating your state machine. Any diagnostic results with `ERROR` level severity will prevent you from deploying the state machine.

Example results with static analysis warnings:

```
$ aws stepfunctions validate-state-machine-definition \
                    --definition file://my-workflow-definition.asl.json \
                    --severity WARNING
```

```
{
    "result": "OK",
    "diagnostics": [
        {
            "severity": "WARNING",
            "code": "NO_DOLLAR",
            "message": "The value of 'a' looks like a JSONPath. Instead of 'a', use 'a.
$' to evaluate it as a JSONPath at runtime.",
            "location": "/States/HelloWorld/Parameters"
```

```
        },
        {
            "severity": "WARNING",
            "code": "PASS_RESULT_IS_STATIC",
            "message": "The value of 'c.$' will not evaluate as a JSONPath or Intrinsic
 Function at runtime. Instead of 'Result', use 'Parameters' to evaluate it as a
 JSONPath or Intrinsic Function at runtime.",
            "location": "/States/HelloWorld/Result"
        },
        {
            "severity": "WARNING",
            "code": "NO_PATH",
            "message": "The value of 'Error' looks like a JSONPath. Instead of 'Error',
 use 'ErrorPath' to evaluate it as a JSONPath at runtime.",
            "location": "/States/FailState/Error"
        },
        {
            "severity": "WARNING",
            "code": "NO_PATH",
            "message": "The value of 'Cause' looks like a JSONPath. Instead of 'Cause',
 use 'CausePath' to evaluate it as a JSONPath at runtime.",
            "location": "/States/FailState/Cause"
        }
    ],
    "truncated": false
}
```

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

Data Types

The AWS Step Functions 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:

- ActivityFailedEventDetails
- ActivityListItem
- ActivityScheduledEventDetails
- ActivityScheduleFailedEventDetails
- ActivityStartedEventDetails
- ActivitySucceededEventDetails
- ActivityTimedOutEventDetails
- AssignedVariablesDetails
- BillingDetails
- CloudWatchEventsExecutionDataDetails
- CloudWatchLogsLogGroup
- EncryptionConfiguration
- EvaluationFailedEventDetails
- ExecutionAbortedEventDetails
- ExecutionFailedEventDetails
- ExecutionListItem
- ExecutionRedrivenEventDetails
- ExecutionStartedEventDetails
- ExecutionSucceededEventDetails
- ExecutionTimedOutEventDetails

- HistoryEvent
- HistoryEventExecutionDataDetails
- InspectionData
- InspectionDataRequest
- InspectionDataResponse
- InspectionErrorDetails
- LambdaFunctionFailedEventDetails
- LambdaFunctionScheduledEventDetails
- LambdaFunctionScheduleFailedEventDetails
- LambdaFunctionStartFailedEventDetails
- LambdaFunctionSucceededEventDetails
- LambdaFunctionTimedOutEventDetails
- LogDestination
- LoggingConfiguration
- MapIterationEventDetails
- MapRunExecutionCounts
- MapRunFailedEventDetails
- MapRunItemCounts
- MapRunListItem
- MapRunRedrivenEventDetails
- MapRunStartedEventDetails
- MapStateStartedEventDetails
- MockErrorOutput
- MockInput
- RoutingConfigurationListItem
- StateEnteredEventDetails
- StateExitedEventDetails
- StateMachineAliasListItem
- StateMachineListItem
- StateMachineVersionListItem

- Tag
- TaskCredentials
- TaskFailedEventDetails
- TaskScheduledEventDetails
- TaskStartedEventDetails
- TaskStartFailedEventDetails
- TaskSubmitFailedEventDetails
- TaskSubmittedEventDetails
- TaskSucceededEventDetails
- TaskTimedOutEventDetails
- TestStateConfiguration
- TracingConfiguration
- ValidateStateMachineDefinitionDiagnostic

ActivityFailedEventDetails

Contains details about an activity that failed during an execution.

Contents

cause

A more detailed explanation of the cause of the failure.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 32768.

Required: No

error

The error code of the failure.

Type: String

Length Constraints: Minimum length of 0. 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

ActivityListItem

Contains details about an activity.

Contents

activityArn

The Amazon Resource Name (ARN) that identifies the activity.

Type: String

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

Required: Yes

creationDate

The date the activity is created.

Type: Timestamp

Required: Yes

name

The name of the activity.

A name must *not* contain:

- white space
- brackets `< > { } [ ]`
- wildcard characters `? *`
- special characters `" # % \ ^ | ~ ` $ & , ; : /`
- control characters (`U+0000-001F`, `U+007F-009F`, `U+FFFE-FFFF`)
- surrogates (`U+D800-DFFF`)
- invalid characters (`U+10FFFF`)

To enable logging with CloudWatch Logs, the name should only contain 0-9, A-Z, a-z, - and _.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

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

ActivityScheduledEventDetails

Contains details about an activity scheduled during an execution.

Contents

resource

The Amazon Resource Name (ARN) of the scheduled activity.

Type: String

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

Required: Yes

heartbeatInSeconds

The maximum allowed duration between two heartbeats for the activity task.

Type: Long

Required: No

input

The JSON data input to the activity task. Length constraints apply to the payload size, and are expressed as bytes in UTF-8 encoding.

Type: String

Length Constraints: Maximum length of 262144.

Required: No

inputDetails

Contains details about the input for an execution history event.

Type: HistoryEventExecutionDataDetails object

Required: No

timeoutInSeconds

The maximum allowed duration of the activity task.

Type: Long

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

ActivityScheduleFailedEventDetails

Contains details about an activity schedule failure that occurred during an execution.

Contents

cause

A more detailed explanation of the cause of the failure.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 32768.

Required: No

error

The error code of the failure.

Type: String

Length Constraints: Minimum length of 0. 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

ActivityStartedEventDetails

Contains details about the start of an activity during an execution.

Contents

workerName

The name of the worker that the task is assigned to. These names are provided by the workers when calling GetActivityTask.

Type: String

Length Constraints: 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

ActivitySucceededEventDetails

Contains details about an activity that successfully terminated during an execution.

Contents

output

The JSON data output by the activity task. Length constraints apply to the payload size, and are expressed as bytes in UTF-8 encoding.

Type: String

Length Constraints: Maximum length of 262144.

Required: No

outputDetails

Contains details about the output of an execution history event.

Type: HistoryEventExecutionDataDetails 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

ActivityTimedOutEventDetails

Contains details about an activity timeout that occurred during an execution.

Contents

cause

A more detailed explanation of the cause of the timeout.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 32768.

Required: No

error

The error code of the failure.

Type: String

Length Constraints: Minimum length of 0. 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

AssignedVariablesDetails

Provides details about assigned variables in an execution history event.

Contents

truncated

Indicates whether assigned variables were truncated in the response. Always `false` for API calls. In CloudWatch logs, the value will be true if the data is truncated due to size limits.

Type: Boolean

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

BillingDetails

An object that describes workflow billing details.

Contents

billedDurationInMilliseconds

Billed duration of your workflow, in milliseconds.

Type: Long

Valid Range: Minimum value of 0.

Required: No

billedMemoryUsedInMB

Billed memory consumption of your workflow, in MB.

Type: Long

Valid Range: Minimum value of 0.

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

CloudWatchEventsExecutionDataDetails

Provides details about execution input or output.

Contents

included

Indicates whether input or output was included in the response. Always `true` for API calls.

Type: Boolean

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

CloudWatchLogsLogGroup

Contents

logGroupArn

The ARN of the the CloudWatch log group to which you want your logs emitted to. The ARN must end with `:*`

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

EncryptionConfiguration

Settings to configure server-side encryption.

For additional control over security, you can encrypt your data using a **customer-managed key** for Step Functions state machines and activities. You can configure a symmetric AWS KMS key and data key reuse period when creating or updating a **State Machine**, and when creating an **Activity**. The execution history and state machine definition will be encrypted with the key applied to the State Machine. Activity inputs will be encrypted with the key applied to the Activity.

> **Note**
>
> Step Functions automatically enables encryption at rest using AWS owned keys at no charge. However, AWS KMS charges apply when using a customer managed key. For more information about pricing, see AWS Key Management Service pricing.

For more information on AWS KMS, see What is AWS Key Management Service?

Contents

type

Encryption type

Type: String

Valid Values: `AWS_OWNED_KEY` | `CUSTOMER_MANAGED_KMS_KEY`

Required: Yes

kmsDataKeyReusePeriodSeconds

Maximum duration that Step Functions will reuse data keys. When the period expires, Step Functions will call `GenerateDataKey`. Only applies to customer managed keys.

Type: Integer

Valid Range: Minimum value of 60. Maximum value of 900.

Required: No

kmsKeyId

An alias, alias ARN, key ID, or key ARN of a symmetric encryption AWS KMS key to encrypt data. To specify a AWS KMS key in a different AWS account, you must use the key ARN or alias ARN.

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

EvaluationFailedEventDetails

Contains details about an evaluation failure that occurred while processing a state, for example, when a JSONata expression throws an error. This event will only be present in state machines that have **QueryLanguage** set to JSONata, or individual states set to JSONata.

Contents

state

The name of the state in which the evaluation error occurred.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Required: Yes

cause

A more detailed explanation of the cause of the failure.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 32768.

Required: No

error

The error code of the failure.

Type: String

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

Required: No

location

The location of the field in the state in which the evaluation error occurred.

Type: String

Length Constraints: Minimum length of 0. 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

ExecutionAbortedEventDetails

Contains details about an abort of an execution.

Contents

cause

A more detailed explanation of the cause of the failure.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 32768.

Required: No

error

The error code of the failure.

Type: String

Length Constraints: Minimum length of 0. 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

ExecutionFailedEventDetails

Contains details about an execution failure event.

Contents

cause

A more detailed explanation of the cause of the failure.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 32768.

Required: No

error

The error code of the failure.

Type: String

Length Constraints: Minimum length of 0. 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

ExecutionListItem

Contains details about an execution.

Contents

executionArn

The Amazon Resource Name (ARN) that identifies the execution.

Type: String

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

Required: Yes

name

The name of the execution.

A name must *not* contain:

- white space
- brackets < > { } [ ]
- wildcard characters ? *
- special characters " # % \ ^ | ~ ` $ & , ; : /
- control characters (U+0000-001F, U+007F-009F, U+FFFE-FFFF)
- surrogates (U+D800-DFFF)
- invalid characters (U+10FFFF)

To enable logging with CloudWatch Logs, the name should only contain 0-9, A-Z, a-z, - and _.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Required: Yes

startDate

The date the execution started.

Type: Timestamp

Required: Yes

stateMachineArn

The Amazon Resource Name (ARN) of the state machine that ran the execution.

Type: String

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

Required: Yes

status

The current status of the execution.

Type: String

Valid Values: `RUNNING | SUCCEEDED | FAILED | TIMED_OUT | ABORTED | PENDING_REDRIVE`

Required: Yes

itemCount

The total number of items processed in a child workflow execution. This field is returned only if `mapRunArn` was specified in the `ListExecutions` API action. If `stateMachineArn` was specified in `ListExecutions`, the `itemCount` field isn't returned.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

mapRunArn

The Amazon Resource Name (ARN) of a Map Run. This field is returned only if `mapRunArn` was specified in the `ListExecutions` API action. If `stateMachineArn` was specified in `ListExecutions`, the `mapRunArn` isn't returned.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2000.

Required: No

redriveCount

The number of times you've redriven an execution. If you have not yet redriven an execution, the `redriveCount` is 0. This count is only updated when you successfully redrive an execution.

Type: Integer

Required: No

redriveDate

The date the execution was last redriven.

Type: Timestamp

Required: No

stateMachineAliasArn

The Amazon Resource Name (ARN) of the state machine alias used to start an execution.

If the state machine execution was started with an unqualified ARN or a version ARN, it returns null.

Type: String

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

Required: No

stateMachineVersionArn

The Amazon Resource Name (ARN) of the state machine version associated with the execution.

If the state machine execution was started with an unqualified ARN, it returns null.

If the execution was started using a `stateMachineAliasArn`, both the `stateMachineAliasArn` and `stateMachineVersionArn` parameters contain the respective values.

Type: String

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

Required: No

stopDate

If the execution already ended, the date the execution stopped.

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

ExecutionRedrivenEventDetails

Contains details about a redriven execution.

Contents

redriveCount

The number of times you've redriven an execution. If you have not yet redriven an execution, the `redriveCount` is 0. This count is not updated for redrives that failed to start or are pending to be redriven.

Type: Integer

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

ExecutionStartedEventDetails

Contains details about the start of the execution.

Contents

input

The JSON data input to the execution. Length constraints apply to the payload size, and are expressed as bytes in UTF-8 encoding.

Type: String

Length Constraints: Maximum length of 262144.

Required: No

inputDetails

Contains details about the input for an execution history event.

Type: HistoryEventExecutionDataDetails object

Required: No

roleArn

The Amazon Resource Name (ARN) of the IAM role used for executing AWS Lambda tasks.

Type: String

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

Required: No

stateMachineAliasArn

The Amazon Resource Name (ARN) that identifies a state machine alias used for starting the state machine execution.

Type: String

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

Required: No

stateMachineVersionArn

The Amazon Resource Name (ARN) that identifies a state machine version used for starting the state machine execution.

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

ExecutionSucceededEventDetails

Contains details about the successful termination of the execution.

Contents

output

The JSON data output by the execution. Length constraints apply to the payload size, and are expressed as bytes in UTF-8 encoding.

Type: String

Length Constraints: Maximum length of 262144.

Required: No

outputDetails

Contains details about the output of an execution history event.

Type: HistoryEventExecutionDataDetails 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

ExecutionTimedOutEventDetails

Contains details about the execution timeout that occurred during the execution.

Contents

cause

A more detailed explanation of the cause of the timeout.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 32768.

Required: No

error

The error code of the failure.

Type: String

Length Constraints: Minimum length of 0. 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

HistoryEvent

Contains details about the events of an execution.

Contents

id

The id of the event. Events are numbered sequentially, starting at one.

Type: Long

Required: Yes

timestamp

The date and time the event occurred, expressed in seconds and fractional milliseconds since the Unix epoch, which is defined as January 1, 1970, at 00:00:00 Coordinated Universal Time (UTC).

Type: Timestamp

Required: Yes

type

The type of the event.

Type: String

Valid Values: `ActivityFailed | ActivityScheduled | ActivityScheduleFailed | ActivityStarted | ActivitySucceeded | ActivityTimedOut | ChoiceStateEntered | ChoiceStateExited | ExecutionAborted | ExecutionFailed | ExecutionStarted | ExecutionSucceeded | ExecutionTimedOut | FailStateEntered | LambdaFunctionFailed | LambdaFunctionScheduled | LambdaFunctionScheduleFailed | LambdaFunctionStarted | LambdaFunctionStartFailed | LambdaFunctionSucceeded | LambdaFunctionTimedOut | MapIterationAborted | MapIterationFailed | MapIterationStarted | MapIterationSucceeded | MapStateAborted | MapStateEntered | MapStateExited | MapStateFailed | MapStateStarted | MapStateSucceeded | ParallelStateAborted | ParallelStateEntered | ParallelStateExited | ParallelStateFailed |`

```
ParallelStateStarted | ParallelStateSucceeded | PassStateEntered |
PassStateExited | SucceedStateEntered | SucceedStateExited | TaskFailed
| TaskScheduled | TaskStarted | TaskStartFailed | TaskStateAborted |
TaskStateEntered | TaskStateExited | TaskSubmitFailed | TaskSubmitted
| TaskSucceeded | TaskTimedOut | WaitStateAborted | WaitStateEntered
| WaitStateExited | MapRunAborted | MapRunFailed | MapRunStarted |
MapRunSucceeded | ExecutionRedriven | MapRunRedriven | EvaluationFailed
```

Required: Yes

activityFailedEventDetails

Type: ActivityFailedEventDetails object

Required: No

activityScheduledEventDetails

Type: ActivityScheduledEventDetails object

Required: No

activityScheduleFailedEventDetails

Contains details about an activity schedule event that failed during an execution.

Type: ActivityScheduleFailedEventDetails object

Required: No

activityStartedEventDetails

Type: ActivityStartedEventDetails object

Required: No

activitySucceededEventDetails

Type: ActivitySucceededEventDetails object

Required: No

activityTimedOutEventDetails

Type: ActivityTimedOutEventDetails object

Required: No

evaluationFailedEventDetails

Contains details about an evaluation failure that occurred while processing a state.

Type: EvaluationFailedEventDetails object

Required: No

executionAbortedEventDetails

Type: ExecutionAbortedEventDetails object

Required: No

executionFailedEventDetails

Type: ExecutionFailedEventDetails object

Required: No

executionRedrivenEventDetails

Contains details about the redrive attempt of an execution.

Type: ExecutionRedrivenEventDetails object

Required: No

executionStartedEventDetails

Type: ExecutionStartedEventDetails object

Required: No

executionSucceededEventDetails

Type: ExecutionSucceededEventDetails object

Required: No

executionTimedOutEventDetails

Type: ExecutionTimedOutEventDetails object

Required: No

lambdaFunctionFailedEventDetails

Type: LambdaFunctionFailedEventDetails object

Required: No

lambdaFunctionScheduledEventDetails

Type: LambdaFunctionScheduledEventDetails object

Required: No

lambdaFunctionScheduleFailedEventDetails

Type: LambdaFunctionScheduleFailedEventDetails object

Required: No

lambdaFunctionStartFailedEventDetails

Contains details about a lambda function that failed to start during an execution.

Type: LambdaFunctionStartFailedEventDetails object

Required: No

lambdaFunctionSucceededEventDetails

Contains details about a Lambda function that terminated successfully during an execution.

Type: LambdaFunctionSucceededEventDetails object

Required: No

lambdaFunctionTimedOutEventDetails

Type: LambdaFunctionTimedOutEventDetails object

Required: No

mapIterationAbortedEventDetails

Contains details about an iteration of a Map state that was aborted.

Type: MapIterationEventDetails object

Required: No

mapIterationFailedEventDetails

Contains details about an iteration of a Map state that failed.

Type: MapIterationEventDetails object

Required: No

mapIterationStartedEventDetails

Contains details about an iteration of a Map state that was started.

Type: MapIterationEventDetails object

Required: No

mapIterationSucceededEventDetails

Contains details about an iteration of a Map state that succeeded.

Type: MapIterationEventDetails object

Required: No

mapRunFailedEventDetails

Contains error and cause details about a Map Run that failed.

Type: MapRunFailedEventDetails object

Required: No

mapRunRedrivenEventDetails

Contains details about the redrive attempt of a Map Run.

Type: MapRunRedrivenEventDetails object

Required: No

mapRunStartedEventDetails

Contains details, such as `mapRunArn`, and the start date and time of a Map Run. `mapRunArn` is the Amazon Resource Name (ARN) of the Map Run that was started.

Type: MapRunStartedEventDetails object

Required: No

mapStateStartedEventDetails

Contains details about Map state that was started.

Type: MapStateStartedEventDetails object

Required: No

previousEventId

The id of the previous event.

Type: Long

Required: No

stateEnteredEventDetails

Type: StateEnteredEventDetails object

Required: No

stateExitedEventDetails

Type: StateExitedEventDetails object

Required: No

taskFailedEventDetails

Contains details about the failure of a task.

Type: TaskFailedEventDetails object

Required: No

taskScheduledEventDetails

Contains details about a task that was scheduled.

Type: TaskScheduledEventDetails object

Required: No

taskStartedEventDetails

Contains details about a task that was started.

Type: TaskStartedEventDetails object

Required: No

taskStartFailedEventDetails

Contains details about a task that failed to start.

Type: TaskStartFailedEventDetails object

Required: No

taskSubmitFailedEventDetails

Contains details about a task that where the submit failed.

Type: TaskSubmitFailedEventDetails object

Required: No

taskSubmittedEventDetails

Contains details about a submitted task.

Type: TaskSubmittedEventDetails object

Required: No

taskSucceededEventDetails

Contains details about a task that succeeded.

Type: TaskSucceededEventDetails object

Required: No

taskTimedOutEventDetails

Contains details about a task that timed out.

Type: TaskTimedOutEventDetails 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

HistoryEventExecutionDataDetails

Provides details about input or output in an execution history event.

Contents

truncated

Indicates whether input or output was truncated in the response. Always `false` for API calls. In CloudWatch logs, the value will be true if the data is truncated due to size limits.

Type: Boolean

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

InspectionData

Contains additional details about the state's execution, including its input and output data processing flow, and HTTP request and response information.

Contents

afterArguments

The input after Step Functions applies an Arguments filter. This event will only be present when QueryLanguage for the state machine or individual states is set to JSONata. For more info, see Transforming data with Step Functions.

Type: String

Length Constraints: Maximum length of 262144.

Required: No

afterInputPath

The input after Step Functions applies the InputPath filter. Not populated when QueryLanguage is JSONata.

Type: String

Length Constraints: Maximum length of 262144.

Required: No

afterItemBatcher

The effective input after the ItemBatcher filter is applied in a Map state.

Type: String

Length Constraints: Maximum length of 262144.

Required: No

afterItemSelector

An array containing the inputs for each Map iteration, transformed by the ItemSelector specified in a Map state.

Type: String

Length Constraints: Maximum length of 262144.

Required: No

afterItemsPath

The effective input after the ItemsPath filter is applied. Not populated when the QueryLanguage is JSONata.

Type: String

Length Constraints: Maximum length of 262144.

Required: No

afterItemsPointer

The effective input after the ItemsPointer filter is applied in a Map state.

Type: String

Length Constraints: Maximum length of 262144.

Required: No

afterParameters

The effective input after Step Functions applies the Parameters filter. Not populated when QueryLanguage is JSONata.

Type: String

Length Constraints: Maximum length of 262144.

Required: No

afterResultPath

The effective result combined with the raw state input after Step Functions applies the ResultPath filter. Not populated when QueryLanguage is JSONata.

Type: String

Length Constraints: Maximum length of 262144.

Required: No

afterResultSelector

The effective result after Step Functions applies the ResultSelector filter. Not populated when QueryLanguage is JSONata.

Type: String

Length Constraints: Maximum length of 262144.

Required: No

errorDetails

An object containing data about a handled exception in the tested state.

Type: InspectionErrorDetails object

Required: No

input

The raw state input.

Type: String

Length Constraints: Maximum length of 262144.

Required: No

maxConcurrency

The max concurrency of the Map state.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

request

The raw HTTP request that is sent when you test an HTTP Task.

Type: InspectionDataRequest object

Required: No

response

The raw HTTP response that is returned when you test an HTTP Task.

Type: InspectionDataResponse object

Required: No

result

The state's raw result.

Type: String

Length Constraints: Maximum length of 262144.

Required: No

toleratedFailureCount

The tolerated failure threshold for a Map state as defined in number of Map state iterations.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

toleratedFailurePercentage

The tolerated failure threshold for a Map state as defined in percentage of Map state iterations.

Type: Float

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

variables

JSON string that contains the set of workflow variables after execution of the state. The set will include variables assigned in the state and variables set up as test state input.

Type: String

Length Constraints: Maximum length of 262144.

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

InspectionDataRequest

Contains additional details about the state's execution, including its input and output data processing flow, and HTTP request information.

Contents

body

The request body for the HTTP request.

Type: String

Required: No

headers

The request headers associated with the HTTP request.

Type: String

Required: No

method

The HTTP method used for the HTTP request.

Type: String

Required: No

protocol

The protocol used to make the HTTP request.

Type: String

Required: No

url

The API endpoint used for the HTTP request.

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

InspectionDataResponse

Contains additional details about the state's execution, including its input and output data processing flow, and HTTP response information. The `inspectionLevel` request parameter specifies which details are returned.

Contents

body

The HTTP response returned.

Type: String

Required: No

headers

The response headers associated with the HTTP response.

Type: String

Required: No

protocol

The protocol used to return the HTTP response.

Type: String

Required: No

statusCode

The HTTP response status code for the HTTP response.

Type: String

Required: No

statusMessage

The message associated with the HTTP status code.

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

InspectionErrorDetails

An object containing data about a handled exception in the tested state.

Contents

catchIndex

The array index of the Catch which handled the exception.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

retryBackoffIntervalSeconds

The duration in seconds of the backoff for a retry on a failed state invocation.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

retryIndex

The array index of the Retry which handled the exception.

Type: Integer

Valid Range: Minimum value of 0.

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

LambdaFunctionFailedEventDetails

Contains details about a Lambda function that failed during an execution.

Contents

cause

A more detailed explanation of the cause of the failure.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 32768.

Required: No

error

The error code of the failure.

Type: String

Length Constraints: Minimum length of 0. 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

LambdaFunctionScheduledEventDetails

Contains details about a Lambda function scheduled during an execution.

Contents

resource

The Amazon Resource Name (ARN) of the scheduled Lambda function.

Type: String

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

Required: Yes

input

The JSON data input to the Lambda function. Length constraints apply to the payload size, and are expressed as bytes in UTF-8 encoding.

Type: String

Length Constraints: Maximum length of 262144.

Required: No

inputDetails

Contains details about input for an execution history event.

Type: HistoryEventExecutionDataDetails object

Required: No

taskCredentials

The credentials that Step Functions uses for the task.

Type: TaskCredentials object

Required: No

timeoutInSeconds

The maximum allowed duration of the Lambda function.

Type: Long

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

LambdaFunctionScheduleFailedEventDetails

Contains details about a failed Lambda function schedule event that occurred during an execution.

Contents

cause

A more detailed explanation of the cause of the failure.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 32768.

Required: No

error

The error code of the failure.

Type: String

Length Constraints: Minimum length of 0. 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

LambdaFunctionStartFailedEventDetails

Contains details about a lambda function that failed to start during an execution.

Contents

cause

A more detailed explanation of the cause of the failure.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 32768.

Required: No

error

The error code of the failure.

Type: String

Length Constraints: Minimum length of 0. 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

LambdaFunctionSucceededEventDetails

Contains details about a Lambda function that successfully terminated during an execution.

Contents

output

The JSON data output by the Lambda function. Length constraints apply to the payload size, and are expressed as bytes in UTF-8 encoding.

Type: String

Length Constraints: Maximum length of 262144.

Required: No

outputDetails

Contains details about the output of an execution history event.

Type: HistoryEventExecutionDataDetails 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

LambdaFunctionTimedOutEventDetails

Contains details about a Lambda function timeout that occurred during an execution.

Contents

cause

A more detailed explanation of the cause of the timeout.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 32768.

Required: No

error

The error code of the failure.

Type: String

Length Constraints: Minimum length of 0. 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

LogDestination

Contents

cloudWatchLogsLogGroup

An object describing a CloudWatch log group. For more information, see AWS::Logs::LogGroup in the CloudFormation User Guide.

Type: CloudWatchLogsLogGroup 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

LoggingConfiguration

The `LoggingConfiguration` data type is used to set CloudWatch Logs options.

Contents

destinations

An array of objects that describes where your execution history events will be logged. Limited to size 1. Required, if your log level is not set to `OFF`.

Type: Array of LogDestination objects

Required: No

includeExecutionData

Determines whether execution data is included in your log. When set to `false`, data is excluded.

Type: Boolean

Required: No

level

Defines which category of execution history events are logged.

Type: String

Valid Values: `ALL | ERROR | FATAL | OFF`

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

MapIterationEventDetails

Contains details about an iteration of a Map state.

Contents

index

The index of the array belonging to the Map state iteration.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

name

The name of the iteration's parent Map state.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

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

MapRunExecutionCounts

Contains details about all of the child workflow executions started by a Map Run.

Contents

aborted

The total number of child workflow executions that were started by a Map Run and were running, but were either stopped by the user or by Step Functions because the Map Run failed.

Type: Long

Valid Range: Minimum value of 0.

Required: Yes

failed

The total number of child workflow executions that were started by a Map Run, but have failed.

Type: Long

Valid Range: Minimum value of 0.

Required: Yes

pending

The total number of child workflow executions that were started by a Map Run, but haven't started executing yet.

Type: Long

Valid Range: Minimum value of 0.

Required: Yes

resultsWritten

Returns the count of child workflow executions whose results were written by `ResultWriter`. For more information, see ResultWriter in the *AWS Step Functions Developer Guide*.

Type: Long

Valid Range: Minimum value of 0.

Required: Yes

running

The total number of child workflow executions that were started by a Map Run and are currently in-progress.

Type: Long

Valid Range: Minimum value of 0.

Required: Yes

succeeded

The total number of child workflow executions that were started by a Map Run and have completed successfully.

Type: Long

Valid Range: Minimum value of 0.

Required: Yes

timedOut

The total number of child workflow executions that were started by a Map Run and have timed out.

Type: Long

Valid Range: Minimum value of 0.

Required: Yes

total

The total number of child workflow executions that were started by a Map Run.

Type: Long

Valid Range: Minimum value of 0.

Required: Yes

failuresNotRedrivable

The number of `FAILED`, `ABORTED`, or `TIMED_OUT` child workflow executions that cannot be redriven because their execution status is terminal. For example, child workflows with an execution status of `FAILED`, `ABORTED`, or `TIMED_OUT` and a `redriveStatus` of `NOT_REDRIVABLE`.

Type: Long

Required: No

pendingRedrive

The number of unsuccessful child workflow executions currently waiting to be redriven. The status of these child workflow executions could be `FAILED`, `ABORTED`, or `TIMED_OUT` in the original execution attempt or a previous redrive attempt.

Type: Long

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

MapRunFailedEventDetails

Contains details about a Map Run failure event that occurred during a state machine execution.

Contents

cause

A more detailed explanation of the cause of the failure.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 32768.

Required: No

error

The error code of the Map Run failure.

Type: String

Length Constraints: Minimum length of 0. 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

MapRunItemCounts

Contains details about items that were processed in all of the child workflow executions that were started by a Map Run.

Contents

aborted

The total number of items processed in child workflow executions that were either stopped by the user or by Step Functions, because the Map Run failed.

Type: Long

Valid Range: Minimum value of 0.

Required: Yes

failed

The total number of items processed in child workflow executions that have failed.

Type: Long

Valid Range: Minimum value of 0.

Required: Yes

pending

The total number of items to process in child workflow executions that haven't started running yet.

Type: Long

Valid Range: Minimum value of 0.

Required: Yes

resultsWritten

Returns the count of items whose results were written by `ResultWriter`. For more information, see ResultWriter in the *AWS Step Functions Developer Guide*.

Type: Long

Valid Range: Minimum value of 0.

Required: Yes

running

The total number of items being processed in child workflow executions that are currently in-progress.

Type: Long

Valid Range: Minimum value of 0.

Required: Yes

succeeded

The total number of items processed in child workflow executions that have completed successfully.

Type: Long

Valid Range: Minimum value of 0.

Required: Yes

timedOut

The total number of items processed in child workflow executions that have timed out.

Type: Long

Valid Range: Minimum value of 0.

Required: Yes

total

The total number of items processed in all the child workflow executions started by a Map Run.

Type: Long

Valid Range: Minimum value of 0.

Required: Yes

failuresNotRedrivable

The number of `FAILED`, `ABORTED`, or `TIMED_OUT` items in child workflow executions that cannot be redriven because the execution status of those child workflows is terminal. For example, child workflows with an execution status of `FAILED`, `ABORTED`, or `TIMED_OUT` and a `redriveStatus` of `NOT_REDRIVABLE`.

Type: Long

Required: No

pendingRedrive

The number of unsuccessful items in child workflow executions currently waiting to be redriven.

Type: Long

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

MapRunListItem

Contains details about a specific Map Run.

Contents

executionArn

The `executionArn` of the execution from which the Map Run was started.

Type: String

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

Required: Yes

mapRunArn

The Amazon Resource Name (ARN) of the Map Run.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2000.

Required: Yes

startDate

The date on which the Map Run started.

Type: Timestamp

Required: Yes

stateMachineArn

The Amazon Resource Name (ARN) of the executed state machine.

Type: String

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

Required: Yes

stopDate

The date on which the Map Run stopped.

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

MapRunRedrivenEventDetails

Contains details about a Map Run that was redriven.

Contents

mapRunArn

The Amazon Resource Name (ARN) of a Map Run that was redriven.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2000.

Required: No

redriveCount

The number of times the Map Run has been redriven at this point in the execution's history including this event. The redrive count for a redriven Map Run is always greater than 0.

Type: Integer

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

MapRunStartedEventDetails

Contains details about a Map Run that was started during a state machine execution.

Contents

mapRunArn

The Amazon Resource Name (ARN) of a Map Run that was started.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2000.

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

MapStateStartedEventDetails

Details about a Map state that was started.

Contents

length

The size of the array for Map state iterations.

Type: Integer

Valid Range: Minimum value of 0.

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

MockErrorOutput

A JSON object that contains a mocked error.

Contents

cause

A string containing the cause of the exception thrown when executing the state's logic.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 32768.

Required: No

error

A string denoting the error code of the exception thrown when invoking the tested state. This field is required if `mock.errorOutput` is specified.

Type: String

Length Constraints: Minimum length of 0. 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

MockInput

A JSON object that contains a mocked `result` or `errorOutput`.

Contents

errorOutput

The mocked error output when calling TestState. When specified, the mocked response is returned as a JSON object that contains an `error` and `cause` field.

Type: MockErrorOutput object

Required: No

fieldValidationMode

Determines the level of strictness when validating mocked results against their respective API models. Values include:

- `STRICT`: All required fields must be present, and all present fields must conform to the API's schema.
- `PRESENT`: All present fields must conform to the API's schema.
- `NONE`: No validation is performed.

If no value is specified, the default value is `STRICT`.

Type: String

Valid Values: `STRICT | PRESENT | NONE`

Required: No

result

A JSON string containing the mocked result of the state invocation.

Type: String

Length Constraints: Maximum length of 262144.

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

RoutingConfigurationListItem

Contains details about the routing configuration of a state machine alias. In a routing configuration, you define an array of objects that specify up to two state machine versions. You also specify the percentage of traffic to be routed to each version.

Contents

stateMachineVersionArn

The Amazon Resource Name (ARN) that identifies one or two state machine versions defined in the routing configuration.

If you specify the ARN of a second version, it must belong to the same state machine as the first version.

Type: String

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

Required: Yes

weight

The percentage of traffic you want to route to a state machine version. The sum of the weights in the routing configuration must be equal to 100.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

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

StateEnteredEventDetails

Contains details about a state entered during an execution.

Contents

name

The name of the state.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Required: Yes

input

The string that contains the JSON input data for the state. Length constraints apply to the payload size, and are expressed as bytes in UTF-8 encoding.

Type: String

Length Constraints: Maximum length of 262144.

Required: No

inputDetails

Contains details about the input for an execution history event.

Type: HistoryEventExecutionDataDetails 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

StateExitedEventDetails

Contains details about an exit from a state during an execution.

Contents

name

The name of the state.

A name must *not* contain:

- white space
- brackets `< > { } [ ]`
- wildcard characters `? *`
- special characters `" # % \ ^ | ~ ` $ & , ; : /`
- control characters (`U+0000-001F`, `U+007F-009F`, `U+FFFE-FFFF`)
- surrogates (`U+D800-DFFF`)
- invalid characters (`U+10FFFF`)

To enable logging with CloudWatch Logs, the name should only contain 0-9, A-Z, a-z, - and _.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Required: Yes

assignedVariables

Map of variable name and value as a serialized JSON representation.

Type: String to string map

Required: No

assignedVariablesDetails

Provides details about input or output in an execution history event.

Type: AssignedVariablesDetails object

Required: No

output

The JSON output data of the state. Length constraints apply to the payload size, and are expressed as bytes in UTF-8 encoding.

Type: String

Length Constraints: Maximum length of 262144.

Required: No

outputDetails

Contains details about the output of an execution history event.

Type: HistoryEventExecutionDataDetails 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

StateMachineAliasListItem

Contains details about a specific state machine alias.

Contents

creationDate

The creation date of a state machine alias.

Type: Timestamp

Required: Yes

stateMachineAliasArn

The Amazon Resource Name (ARN) that identifies a state machine alias. The alias ARN is a combination of state machine ARN and the alias name separated by a colon (:). For example, `stateMachineARN:PROD`.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2000.

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

StateMachineListItem

Contains details about the state machine.

Contents

creationDate

The date the state machine is created.

Type: Timestamp

Required: Yes

name

The name of the state machine.

A name must *not* contain:

- white space
- brackets < > { } [ ]
- wildcard characters ? *
- special characters " # % \ ^ | ~ ` $ & , ; : /
- control characters (U+0000-001F, U+007F-009F, U+FFFE-FFFF)
- surrogates (U+D800-DFFF)
- invalid characters (U+10FFFF)

To enable logging with CloudWatch Logs, the name should only contain 0-9, A-Z, a-z, - and _.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Required: Yes

stateMachineArn

The Amazon Resource Name (ARN) that identifies the state machine.

Type: String

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

Required: Yes

type

Type: String

Valid Values: `STANDARD | EXPRESS`

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

StateMachineVersionListItem

Contains details about a specific state machine version.

Contents

creationDate

The creation date of a state machine version.

Type: Timestamp

Required: Yes

stateMachineVersionArn

The Amazon Resource Name (ARN) that identifies a state machine version. The version ARN is a combination of state machine ARN and the version number separated by a colon (:). For example, `stateMachineARN:1`.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2000.

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

Tag

Tags are key-value pairs that can be associated with Step Functions state machines and activities.

An array of key-value pairs. For more information, see Using Cost Allocation Tags in the *AWS Billing and Cost Management User Guide*, and Controlling Access Using IAM Tags.

Tags may only contain Unicode letters, digits, white space, or these symbols: `_ . : / = + - @`.

Contents

key

The key of a tag.

Type: String

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

Required: No

value

The value of a tag.

Type: String

Length Constraints: Minimum length of 0. 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

TaskCredentials

Contains details about the credentials that Step Functions uses for a task.

Contents

roleArn

The ARN of an IAM role that Step Functions assumes for the task. The role can allow cross-account access to resources.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2000.

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

TaskFailedEventDetails

Contains details about a task failure event.

Contents

resource

The action of the resource called by a task state.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Required: Yes

resourceType

The service name of the resource in a task state.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Required: Yes

cause

A more detailed explanation of the cause of the failure.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 32768.

Required: No

error

The error code of the failure.

Type: String

Length Constraints: Minimum length of 0. 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

TaskScheduledEventDetails

Contains details about a task scheduled during an execution.

Contents

parameters

The JSON data passed to the resource referenced in a task state. Length constraints apply to the payload size, and are expressed as bytes in UTF-8 encoding.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 262144.

Required: Yes

region

The region of the scheduled task

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Required: Yes

resource

The action of the resource called by a task state.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Required: Yes

resourceType

The service name of the resource in a task state.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Required: Yes

heartbeatInSeconds

The maximum allowed duration between two heartbeats for the task.

Type: Long

Required: No

taskCredentials

The credentials that Step Functions uses for the task.

Type: TaskCredentials object

Required: No

timeoutInSeconds

The maximum allowed duration of the task.

Type: Long

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

TaskStartedEventDetails

Contains details about the start of a task during an execution.

Contents

resource

The action of the resource called by a task state.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Required: Yes

resourceType

The service name of the resource in a task state.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

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

TaskStartFailedEventDetails

Contains details about a task that failed to start during an execution.

Contents

resource

The action of the resource called by a task state.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Required: Yes

resourceType

The service name of the resource in a task state.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Required: Yes

cause

A more detailed explanation of the cause of the failure.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 32768.

Required: No

error

The error code of the failure.

Type: String

Length Constraints: Minimum length of 0. 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

TaskSubmitFailedEventDetails

Contains details about a task that failed to submit during an execution.

Contents

resource

The action of the resource called by a task state.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Required: Yes

resourceType

The service name of the resource in a task state.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Required: Yes

cause

A more detailed explanation of the cause of the failure.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 32768.

Required: No

error

The error code of the failure.

Type: String

Length Constraints: Minimum length of 0. 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

TaskSubmittedEventDetails

Contains details about a task submitted to a resource .

Contents

resource

The action of the resource called by a task state.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Required: Yes

resourceType

The service name of the resource in a task state.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Required: Yes

output

The response from a resource when a task has started. Length constraints apply to the payload size, and are expressed as bytes in UTF-8 encoding.

Type: String

Length Constraints: Maximum length of 262144.

Required: No

outputDetails

Contains details about the output of an execution history event.

Type: HistoryEventExecutionDataDetails 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

TaskSucceededEventDetails

Contains details about the successful completion of a task state.

Contents

resource

The action of the resource called by a task state.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Required: Yes

resourceType

The service name of the resource in a task state.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Required: Yes

output

The full JSON response from a resource when a task has succeeded. This response becomes the output of the related task. Length constraints apply to the payload size, and are expressed as bytes in UTF-8 encoding.

Type: String

Length Constraints: Maximum length of 262144.

Required: No

outputDetails

Contains details about the output of an execution history event.

Type: HistoryEventExecutionDataDetails 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

TaskTimedOutEventDetails

Contains details about a resource timeout that occurred during an execution.

Contents

resource

The action of the resource called by a task state.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Required: Yes

resourceType

The service name of the resource in a task state.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Required: Yes

cause

A more detailed explanation of the cause of the failure.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 32768.

Required: No

error

The error code of the failure.

Type: String

Length Constraints: Minimum length of 0. 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

TestStateConfiguration

Contains configurations for the tested state.

Contents

errorCausedByState

The name of the state from which an error originates when an error is mocked for a Map or Parallel state.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 80.

Required: No

mapItemReaderData

The data read by ItemReader in Distributed Map states as found in its original source.

Type: String

Length Constraints: Maximum length of 262144.

Required: No

mapIterationFailureCount

The number of Map state iterations that failed during the Map state invocation.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

retrierRetryCount

The number of retry attempts that have occurred for the state's Retry that applies to the mocked error.

Type: Integer

Valid Range: Minimum value of 0.

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

TracingConfiguration

Selects whether or not the state machine's AWS X-Ray tracing is enabled. Default is `false`

Contents

enabled

When set to `true`, AWS X-Ray tracing is enabled.

Type: Boolean

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

ValidateStateMachineDefinitionDiagnostic

Describes potential issues found during state machine validation. Rather than raise an exception, validation will return a list of **diagnostic elements** containing diagnostic information.

> **Note**
>
> The ValidateStateMachineDefinitionlAPI might add new diagnostics in the future, adjust diagnostic codes, or change the message wording. Your automated processes should only rely on the value of the **result** field value (OK, FAIL). Do **not** rely on the exact order, count, or wording of diagnostic messages.

List of warning codes

NO_DOLLAR

No `.$` on a field that appears to be a JSONPath or Intrinsic Function.

NO_PATH

Field value looks like a path, but field name does not end with 'Path'.

PASS_RESULT_IS_STATIC

Attempt to use a path in the result of a pass state.

List of error codes

INVALID_JSON_DESCRIPTION

JSON syntax problem found.

MISSING_DESCRIPTION

Received a null or empty workflow input.

SCHEMA_VALIDATION_FAILED

Schema validation reported errors.

INVALID_RESOURCE

The value of a Task-state resource field is invalid.

MISSING_END_STATE

The workflow does not have a terminal state.

DUPLICATE_STATE_NAME

The same state name appears more than once.

INVALID_STATE_NAME

The state name does not follow the naming convention.

STATE_MACHINE_NAME_EMPTY

The state machine name has not been specified.

STATE_MACHINE_NAME_INVALID

The state machine name does not follow the naming convention.

STATE_MACHINE_NAME_TOO_LONG

The state name exceeds the allowed length.

STATE_MACHINE_NAME_ALREADY_EXISTS

The state name already exists.

DUPLICATE_LABEL_NAME

A label name appears more than once.

INVALID_LABEL_NAME

You have provided an invalid label name.

MISSING_TRANSITION_TARGET

The value of "Next" field doesn't match a known state name.

TOO_DEEPLY_NESTED

The states are too deeply nested.

Contents

code

Identifying code for the diagnostic.

Type: String

Required: Yes

message

Message describing the diagnostic condition.

Type: String

Required: Yes

severity

A value of `ERROR` means that you cannot create or update a state machine with this definition.

`WARNING` level diagnostics alert you to potential issues, but they will not prevent you from creating or updating your state machine.

Type: String

Valid Values: `ERROR | WARNING`

Required: Yes

location

Location of the issue in the state machine, if available.

For errors specific to a field, the location could be in the format: `/States/<StateName>/<FieldName>`, for example: `/States/FailState/ErrorPath`.

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

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*.

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 Error Types

This section lists common error types that this AWS service may return. Not all services return all error types listed here. For errors specific to an API action for this service, see the topic for that API action.

AccessDeniedException

You don't have permission to perform this action. Verify that your IAM policy includes the required permissions.

HTTP Status Code: 403

ExpiredTokenException

The security token included in the request has expired. Request a new security token and try again.

HTTP Status Code: 403

IncompleteSignature

The request signature doesn't conform to AWS standards. Verify that you're using valid AWS credentials and that your request is properly formatted. If you're using an SDK, ensure it's up to date.

HTTP Status Code: 403

InternalFailure

The request can't be processed right now because of an internal server issue. Try again later. If the problem persists, contact AWS Support.

HTTP Status Code: 500

MalformedHttpRequestException

The request body can't be processed. This typically happens when the request body can't be decompressed using the specified content encoding algorithm. Verify that the content encoding header matches the compression format used.

HTTP Status Code: 400

NotAuthorized

You don't have permissions to perform this action. Verify that your IAM policy includes the required permissions.

HTTP Status Code: 401

OptInRequired

Your AWS account needs a subscription for this service. Verify that you've enabled the service in your account.

HTTP Status Code: 403

RequestAbortedException

The request was aborted before a response could be returned. This typically happens when the client closes the connection.

HTTP Status Code: 400

RequestEntityTooLargeException

The request entity is too large. Reduce the size of the request body and try again.

HTTP Status Code: 413

RequestTimeoutException

The request timed out. The server didn't receive the complete request within the expected time frame. Try again.

HTTP Status Code: 408

ServiceUnavailable

The service is temporarily unavailable. Try again later.

HTTP Status Code: 503

ThrottlingException

Your request rate is too high. The AWS SDKs automatically retry requests that receive this exception. Reduce the frequency of requests.

HTTP Status Code: 400

UnknownOperationException

The action or operation isn't recognized. Verify that the action name is spelled correctly and that it's supported by the API version you're using.

HTTP Status Code: 404

UnrecognizedClientException

The X.509 certificate or AWS access key ID you provided doesn't exist in our records. Verify that you're using valid credentials and that they haven't expired.

HTTP Status Code: 403

ValidationError

The input doesn't meet the required format or constraints. Check that all required parameters are included and that values are valid.

HTTP Status Code: 400