

Amazon Step Functions



Amazon Step Functions: API Reference

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Welcome

With Amazon 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 [Amazon Step Functions Developer Guide](#).

Important

If you use the Step Functions API actions using Amazon 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 May 16, 2025.

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 Amazon 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 Amazon account and region for 90 days. For more information, see [Limits Related to State Machine Executions](#) in the *Amazon Step Functions Developer Guide*.

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 *Amazon 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 Errors](#).

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 Amazon 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 Amazon KMS key policy or API caller does not have the required permissions.

HTTP Status Code: 400

KmsThrottlingException

Received when Amazon KMS returns ThrottlingException for a Amazon 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 Amazon Step Functions Developer Guide.

HTTP Status Code: 400

See Also

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

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon 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 Amazon 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 Amazon 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 *Amazon 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 Amazon 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 Errors](#).

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 Amazon 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 Amazon KMS key policy or API caller does not have the required permissions.

HTTP Status Code: 400

KmsThrottlingException

Received when Amazon KMS returns `ThrottlingException` for a Amazon 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 Amazon Step Functions Developer Guide.

HTTP Status Code: 400

ValidationException

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

HTTP Status Code: 400

See Also

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

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)

- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 chooses 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 Errors](#).

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 Amazon service.

HTTP Status Code: 400

See Also

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

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Errors](#).

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 Amazon SDKs, see the following:

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Errors](#).

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 Amazon service.

HTTP Status Code: 400

See Also

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

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Errors](#).

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 Amazon service.

HTTP Status Code: 400

See Also

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

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)

- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Errors](#).

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 Amazon service.

HTTP Status Code: 400

See Also

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

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)

- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Errors](#).

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 Amazon SDKs, see the following:

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)

- [Amazon SDK for Python](#)
- [Amazon 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 Amazon 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_REDDRIVABLE 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: REDDRIVABLE | NOT_REDDRIVABLE | REDDRIVABLE_BY_MAP_RUN

redriveStatusReason

When `redriveStatus` is `NOT_REDRIABLE`, `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 Amazon X-Ray trace header that was passed to the execution.

Note

For X-Ray traces, all Amazon 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 Errors](#).

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 Amazon KMS key policy or API caller does not have the required permissions.

HTTP Status Code: 400

KmsInvalidStateException

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

HTTP Status Code: 400

KmsThrottlingException

Received when Amazon KMS returns `ThrottlingException` for a Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 *Amazon 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 Errors](#).

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 Amazon SDKs, see the following:

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon 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 Amazon 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 Amazon 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 Errors](#).

InvalidArn

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

HTTP Status Code: 400

KmsAccessDeniedException

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

HTTP Status Code: 400

KmsInvalidStateException

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

HTTP Status Code: 400

KmsThrottlingException

Received when Amazon KMS returns `ThrottlingException` for a Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Errors](#).

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 Amazon service.

HTTP Status Code: 400

See Also

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

- [Amazon Command Line Interface](#)

- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon 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 Amazon 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 Errors](#).

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 Amazon KMS key policy or API caller does not have the required permissions.

HTTP Status Code: 400

KmsInvalidStateException

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

HTTP Status Code: 400

KmsThrottlingException

Received when Amazon KMS returns `ThrottlingException` for a Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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.

Note

This API action isn't logged in CloudTrail.

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 262144.

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 Errors](#).

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 Amazon KMS key policy or API caller does not have the required permissions.

HTTP Status Code: 400

KmsInvalidStateException

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

HTTP Status Code: 400

KmsThrottlingException

Received when Amazon KMS returns `ThrottlingException` for a Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Errors](#).

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 Amazon KMS key policy or API caller does not have the required permissions.

HTTP Status Code: 400

KmsInvalidStateException

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

HTTP Status Code: 400

KmsThrottlingException

Received when Amazon KMS returns `ThrottlingException` for a Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface](#)

- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Errors](#).

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 Amazon SDKs, see the following:

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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.

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.

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 *Amazon 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_RED RIVEN

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.

Type: String

Valid Values: RUNNING | SUCCEEDED | FAILED | TIMED_OUT | ABORTED | PENDING_RED RIVE

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 Errors](#).

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 Amazon service.

HTTP Status Code: 400

See Also

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

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Errors](#).

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 Amazon SDKs, see the following:

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)

- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Errors](#).

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 Amazon SDKs, see the following:

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Errors](#).

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 Amazon SDKs, see the following:

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Errors](#).

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 Amazon service.

HTTP Status Code: 400

See Also

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

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Errors](#).

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 Amazon SDKs, see the following:

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)

- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Errors](#).

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 Amazon service.

HTTP Status Code: 400

See Also

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

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon 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 Errors](#).

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 Amazon service.

HTTP Status Code: 400

See Also

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

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon KMS key for the execution role.

A caller can mark a task as fail without using any Amazon 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 Errors](#).

InvalidToken

The provided token is not valid.

HTTP Status Code: 400

KmsAccessDeniedException

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

HTTP Status Code: 400

KmsInvalidStateException

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

HTTP Status Code: 400

KmsThrottlingException

Received when Amazon KMS returns `ThrottlingException` for a Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Errors](#).

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 Amazon SDKs, see the following:

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)

- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Errors](#).

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 Amazon KMS key policy or API caller does not have the required permissions.

HTTP Status Code: 400

KmsInvalidStateException

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

HTTP Status Code: 400

KmsThrottlingException

Received when Amazon KMS returns `ThrottlingException` for a Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 names after 90 days.

`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:

```
"input": "{\"first_name\" : \"test\"}"
```

Note

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

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. This name must be unique for your Amazon account, Region, and state machine for 90 days. For more information, see [Limits Related to State Machine Executions](#) in the *Amazon 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 Amazon X-Ray trace header. The trace header can also be passed in the request payload.

Note

For X-Ray traces, all Amazon 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 Errors](#).

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 Amazon KMS key policy or API caller does not have the required permissions.

HTTP Status Code: 400

KmsInvalidStateException

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

HTTP Status Code: 400

KmsThrottlingException

Received when Amazon KMS returns `ThrottlingException` for a Amazon 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 Amazon service.

HTTP Status Code: 400

See Also

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

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)

- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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.

Note

This API action isn't logged in CloudTrail.

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 Amazon 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:

```
"input": "{\"first_name\" : \"test\"}"
```

Note

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

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

Note

For X-Ray traces, all Amazon 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 Amazon X-Ray trace header that was passed to the execution.

Note

For X-Ray traces, all Amazon 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 Errors](#).

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 Amazon KMS key policy or API caller does not have the required permissions.

HTTP Status Code: 400

KmsInvalidStateException

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

HTTP Status Code: 400

KmsThrottlingException

Received when Amazon KMS returns `ThrottlingException` for a Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon KMS key for the execution role.

A caller can stop an execution without using any Amazon 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 Errors](#).

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 Amazon KMS key policy or API caller does not have the required permissions.

HTTP Status Code: 400

KmsInvalidStateException

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

HTTP Status Code: 400

KmsThrottlingException

Received when Amazon KMS returns `ThrottlingException` for a Amazon 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 Amazon service.

HTTP Status Code: 400

See Also

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

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)

- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 *Amazon 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 Errors](#).

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 Amazon Step Functions Developer Guide.

HTTP Status Code: 400

See Also

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

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)

- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 [Amazon 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 doesn't support [Activity tasks](#), `.sync` or `.waitForTaskToken` [service integration patterns](#), [Parallel](#), or [Map](#) states.

Request Syntax

```
{
  "definition": "string",
  "input": "string",
  "inspectionLevel": "string",
  "revealSecrets": boolean,
  "roleArn": "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.

definition

The [Amazon States Language](#) (ASL) definition of the state.

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

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

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",
    "afterParameters": "string",
    "afterResultPath": "string",
    "afterResultSelector": "string",
    "input": "string",
    "request": {
      "body": "string",
      "headers": "string",
      "method": "string",
      "protocol": "string",
      "url": "string"
    },
    "response": {
      "body": "string",
      "headers": "string",
      "protocol": "string",
      "statusCode": "string",
      "statusMessage": "string"
    },
    "result": "string",
    "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 Errors](#).

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 Amazon service.

HTTP Status Code: 400

See Also

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

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)

- [Amazon SDK for Python](#)
- [Amazon 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 Errors](#).

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 Amazon SDKs, see the following:

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Errors](#).

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 Amazon service.

HTTP Status Code: 400

See Also

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

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon 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 Errors](#).

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 Amazon 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 Amazon KMS key policy or API caller does not have the required permissions.

HTTP Status Code: 400

KmsThrottlingException

Received when Amazon KMS returns `ThrottlingException` for a Amazon 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 Amazon service.

HTTP Status Code: 400

See Also

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

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)

- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Errors](#).

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 Amazon service.

HTTP Status Code: 400

See Also

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

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Errors](#).

ValidationException

The input does not satisfy the constraints specified by an Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface](#)
- [Amazon SDK for .NET](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon SDK for Ruby V3](#)

Data Types

The Amazon 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](#)
- [LambdaFunctionFailedEventDetails](#)
- [LambdaFunctionScheduledEventDetails](#)
- [LambdaFunctionScheduleFailedEventDetails](#)
- [LambdaFunctionStartFailedEventDetails](#)
- [LambdaFunctionSucceededEventDetails](#)
- [LambdaFunctionTimedOutEventDetails](#)
- [LogDestination](#)
- [LoggingConfiguration](#)
- [MapIterationEventDetails](#)
- [MapRunExecutionCounts](#)
- [MapRunFailedEventDetails](#)
- [MapRunItemCounts](#)
- [MapRunListItem](#)
- [MapRunRedrivenEventDetails](#)
- [MapRunStartedEventDetails](#)
- [MapStateStartedEventDetails](#)
- [RoutingConfigurationListItem](#)
- [StateEnteredEventDetails](#)
- [StateExitedEventDetails](#)
- [StateMachineAliasListItem](#)
- [StateMachineListItem](#)
- [StateMachineVersionListItem](#)
- [Tag](#)
- [TaskCredentials](#)
- [TaskFailedEventDetails](#)

- [TaskScheduledEventDetails](#)
- [TaskStartedEventDetails](#)
- [TaskStartFailedEventDetails](#)
- [TaskSubmitFailedEventDetails](#)
- [TaskSubmittedEventDetails](#)
- [TaskSucceededEventDetails](#)
- [TaskTimedOutEventDetails](#)
- [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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon 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 Amazon owned keys at no charge. However, Amazon KMS charges apply when using a customer managed key. For more information about pricing, see [Amazon Key Management Service pricing](#).

For more information on Amazon KMS, see [What is Amazon 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 Amazon KMS key to encrypt data. To specify a Amazon KMS key in a different Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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.

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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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

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

input

The raw state input.

Type: String

Length Constraints: Maximum length of 262144.

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

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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

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

LogDestination

Contents

cloudWatchLogsLogGroup

An object describing a CloudWatch log group. For more information, see [AWS::Logs::LogGroup](#) in the Amazon CloudFormation User Guide.

Type: [CloudWatchLogsLogGroup](#) object

Required: No

See Also

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

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 *Amazon 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_REDRIABLE.

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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 *Amazon 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_REDRIABLE.

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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)

- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 *Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

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

TracingConfiguration

Selects whether or not the state machine's Amazon X-Ray tracing is enabled. Default is `false`

Contents

`enabled`

When set to `true`, Amazon X-Ray tracing is enabled.

Type: Boolean

Required: No

See Also

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

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 [ValidateStateMachineDefinitionAPI](#) 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)

- [Amazon 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 Amazon API requests](#) in the *IAM User Guide*.

Action

The action to be performed.

Type: string

Required: Yes

Version

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

Type: string

Required: Yes

X-Amz-Algorithm

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

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

Type: string

Valid Values: AWS4-HMAC-SHA256

Required: Conditional

X-Amz-Credential

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

For more information, see [Create a signed Amazon 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 Amazon 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 Amazon Security Token Service (Amazon STS). For a list of services that support temporary security credentials from Amazon STS, see [Amazon Web Services services that work with IAM](#) in the *IAM User Guide*.

Condition: If you're using temporary security credentials from Amazon 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 Amazon API request](#) in the *IAM User Guide*.

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

Type: string

Required: Conditional

Common Errors

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

AccessDeniedException

You do not have sufficient access to perform this action.

HTTP Status Code: 400

IncompleteSignature

The request signature does not conform to Amazon standards.

HTTP Status Code: 400

InternalFailure

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

HTTP Status Code: 500

InvalidAction

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

HTTP Status Code: 400

InvalidClientTokenId

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

HTTP Status Code: 403

NotAuthorized

You do not have permission to perform this action.

HTTP Status Code: 400

OptInRequired

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

HTTP Status Code: 403

RequestExpired

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

HTTP Status Code: 400

ServiceUnavailable

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

HTTP Status Code: 503

ThrottlingException

The request was denied due to request throttling.

HTTP Status Code: 400

ValidationError

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

HTTP Status Code: 400