AWS CloudFormation

API Reference

API Version 2010-05-15

AWS CloudFormation: API Reference

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Welcome

AWS CloudFormation allows you to create and manage AWS infrastructure deployments predictably and repeatedly. You can use AWS CloudFormation to leverage AWS products, such as Amazon Elastic Compute Cloud, Amazon Elastic Block Store, Amazon Simple Notification Service, Elastic Load Balancing, and Auto Scaling to build highly-reliable, highly scalable, cost-effective applications without creating or configuring the underlying AWS infrastructure.

With AWS CloudFormation, you declare all of your resources and dependencies in a template file. The template defines a collection of resources as a single unit called a stack. AWS CloudFormation creates and deletes all member resources of the stack together and manages all dependencies between the resources for you.

For more information about AWS CloudFormation, see the AWS CloudFormation Product Page.

Amazon CloudFormation makes use of other AWS products. If you need additional technical information about a specific AWS product, you can find the product's technical documentation at docs.aws.amazon.com.

APIs for stacks

When you use AWS CloudFormation, you manage related resources as a single unit called a stack. You create, update, and delete a collection of resources by creating, updating, and deleting stacks. All the resources in a stack are defined by the stack's AWS CloudFormation template.

Actions

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APIs for change sets

If you need to make changes to the running resources in a stack, you update the stack. Before making changes to your resources, you can generate a change set, which is summary of your proposed changes. Change sets allow you to see how your changes might impact your running resources, especially for critical resources, before implementing them.

Actions

- CreateChangeSet
- DeleteChangeSet
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Data Types

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- ResourceChangeDetail
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APIs for stack sets

AWS CloudFormation StackSets lets you create a collection, or *stack set*, of stacks that can automatically and safely provision a common set of AWS resources across multiple AWS accounts and multiple AWS regions from a single AWS CloudFormation template. When you create a stack set, AWS CloudFormation provisions a stack in each of the specified accounts and regions by using the supplied AWS CloudFormation template and parameters. Stack sets let you manage a common set of AWS resources in a selection of accounts and regions in a single operation.

Actions

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- Tag

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Actions

The following actions are supported:

-

CancelUpdateStack

Cancels an update on the specified stack. If the call completes successfully, the stack rolls back the update and reverts to the previous stack configuration.

> **Note**
> You can cancel only stacks that are in the UPDATE_IN_PROGRESS state.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

ClientRequestToken

A unique identifier for this `CancelUpdateStack` request. Specify this token if you plan to retry requests so that AWS CloudFormation knows that you're not attempting to cancel an update on a stack with the same name. You might retry `CancelUpdateStack` requests to ensure that AWS CloudFormation successfully received them.

Type: String

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

Pattern: `[a-zA-Z0-9][-a-zA-Z0-9]*`

Required: No

StackName

The name or the unique stack ID that is associated with the stack.

Type: String

Required: Yes

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

TokenAlreadyExists

A client request token already exists.

HTTP Status Code: 400

Example

CancelUpdateStack

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=CancelUpdateStack
```

```
&StackName=MyStack
&Version=2010-05-15
&SignatureVersion=2
&Timestamp=2010-07-27T22%3A26%3A28.000Z
&AWSAccessKeyId=[AWS Access KeyID]
&Signature=[Signature]
```

Sample Response

```
<CancelUpdateStackResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <ResponseMetadata>
    <RequestId>5ccc7dcd-744c-11e5-be70-1b08c228efb3</RequestId>
  </ResponseMetadata>
</CancelUpdateStackResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

ContinueUpdateRollback

For a specified stack that is in the `UPDATE_ROLLBACK_FAILED` state, continues rolling it back to the `UPDATE_ROLLBACK_COMPLETE` state. Depending on the cause of the failure, you can manually fix the error and continue the rollback. By continuing the rollback, you can return your stack to a working state (the `UPDATE_ROLLBACK_COMPLETE` state), and then try to update the stack again.

A stack goes into the `UPDATE_ROLLBACK_FAILED` state when AWS CloudFormation cannot roll back all changes after a failed stack update. For example, you might have a stack that is rolling back to an old database instance that was deleted outside of AWS CloudFormation. Because AWS CloudFormation doesn't know the database was deleted, it assumes that the database instance still exists and attempts to roll back to it, causing the update rollback to fail.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

ClientRequestToken

A unique identifier for this `ContinueUpdateRollback` request. Specify this token if you plan to retry requests so that AWS CloudFormation knows that you're not attempting to continue the rollback to a stack with the same name. You might retry `ContinueUpdateRollback` requests to ensure that AWS CloudFormation successfully received them.

Type: String

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

Pattern: `[a-zA-Z0-9][-a-zA-Z0-9]*`

Required: No

ResourcesToSkip.member.N

A list of the logical IDs of the resources that AWS CloudFormation skips during the continue update rollback operation. You can specify only resources that are in the `UPDATE_FAILED` state because a rollback failed. You can't specify resources that are in the `UPDATE_FAILED` state for other reasons, for example, because an update was cancelled. To check why a resource update failed, use the DescribeStackResources (p. 56) action, and view the resource status reason.

> **Important**
> Specify this property to skip rolling back resources that AWS CloudFormation can't successfully roll back. We recommend that you troubleshoot resources before skipping them. AWS CloudFormation sets the status of the specified resources to `UPDATE_COMPLETE` and continues to roll back the stack. After the rollback is complete, the state of the skipped resources will be inconsistent with the state of the resources in the stack template. Before performing another stack update, you must update the stack or resources to be consistent with each other. If you don't, subsequent stack updates might fail, and the stack will become unrecoverable.

Specify the minimum number of resources required to successfully roll back your stack. For example, a failed resource update might cause dependent resources to fail. In this case, it might not be necessary to skip the dependent resources.

To skip resources that are part of nested stacks, use the following format: `NestedStackName.ResourceLogicalID`. If you want to specify the logical ID of a stack resource (`Type: AWS::CloudFormation::Stack`) in the `ResourcesToSkip` list, then its

corresponding embedded stack must be in one of the following states: `DELETE_IN_PROGRESS`, `DELETE_COMPLETE`, or `DELETE_FAILED`.

> **Note**
> Don't confuse a child stack's name with its corresponding logical ID defined in the parent stack. For an example of a continue update rollback operation with nested stacks, see Using ResourcesToSkip to recover a nested stacks hierarchy.

Type: Array of strings

Pattern: `[a-zA-Z0-9]+|[a-zA-Z][-a-zA-Z0-9]*\.[a-zA-Z0-9]+`

Required: No

RoleARN

The Amazon Resource Name (ARN) of an AWS Identity and Access Management (IAM) role that AWS CloudFormation assumes to roll back the stack. AWS CloudFormation uses the role's credentials to make calls on your behalf. AWS CloudFormation always uses this role for all future operations on the stack. As long as users have permission to operate on the stack, AWS CloudFormation uses this role even if the users don't have permission to pass it. Ensure that the role grants least privilege.

If you don't specify a value, AWS CloudFormation uses the role that was previously associated with the stack. If no role is available, AWS CloudFormation uses a temporary session that is generated from your user credentials.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

Required: No

StackName

The name or the unique ID of the stack that you want to continue rolling back.

> **Note**
> Don't specify the name of a nested stack (a stack that was created by using the `AWS::CloudFormation::Stack` resource). Instead, use this operation on the parent stack (the stack that contains the `AWS::CloudFormation::Stack` resource).

Type: String

Length Constraints: Minimum length of 1.

Pattern: `([a-zA-Z][-a-zA-Z0-9]*)|(arn:\b(aws|aws-us-gov|aws-cn)\b:[-a-zA-Z0-9:/._+]*)`

Required: Yes

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

TokenAlreadyExists

A client request token already exists.

HTTP Status Code: 400

Example

ContinueUpdateRollback

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=ContinueUpdateRollback
 &StackName=MyUpdatRollbackFailedStack
 &Version=2010-05-15
 &SignatureVersion=2
 &Timestamp=2010-07-27T22%3A26%3A28.000Z
 &AWSAccessKeyId=[AWS Access KeyID]
 &Signature=[Signature]
```

Sample Response

```
<ContinueUpdateRollbackResponse xmlns="http://cloudformation.amazonaws.com/
doc/2010-05-15/">
  <ResponseMetadata>
    <RequestId>5ccc7dcd-744c-11e5-be70-1b08c228efb3</RequestId>
  </ResponseMetadata>
</ContinueUpdateRollbackResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

CreateChangeSet

Creates a list of changes that will be applied to a stack so that you can review the changes before executing them. You can create a change set for a stack that doesn't exist or an existing stack. If you create a change set for a stack that doesn't exist, the change set shows all of the resources that AWS CloudFormation will create. If you create a change set for an existing stack, AWS CloudFormation compares the stack's information with the information that you submit in the change set and lists the differences. Use change sets to understand which resources AWS CloudFormation will create or change, and how it will change resources in an existing stack, before you create or update a stack.

To create a change set for a stack that doesn't exist, for the `ChangeSetType` parameter, specify `CREATE`. To create a change set for an existing stack, specify `UPDATE` for the `ChangeSetType` parameter. After the `CreateChangeSet` call successfully completes, AWS CloudFormation starts creating the change set. To check the status of the change set or to review it, use the DescribeChangeSet (p. 43) action.

When you are satisfied with the changes the change set will make, execute the change set by using the ExecuteChangeSet (p. 70) action. AWS CloudFormation doesn't make changes until you execute the change set.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

Capabilities.member.N

A list of values that you must specify before AWS CloudFormation can update certain stacks. Some stack templates might include resources that can affect permissions in your AWS account, for example, by creating new AWS Identity and Access Management (IAM) users. For those stacks, you must explicitly acknowledge their capabilities by specifying this parameter.

The only valid values are `CAPABILITY_IAM` and `CAPABILITY_NAMED_IAM`. The following resources require you to specify this parameter: AWS::IAM::AccessKey, AWS::IAM::Group, AWS::IAM::InstanceProfile, AWS::IAM::Policy, AWS::IAM::Role, AWS::IAM::User, and AWS::IAM::UserToGroupAddition. If your stack template contains these resources, we recommend that you review all permissions associated with them and edit their permissions if necessary.

If you have IAM resources, you can specify either capability. If you have IAM resources with custom names, you must specify `CAPABILITY_NAMED_IAM`. If you don't specify this parameter, this action returns an `InsufficientCapabilities` error.

For more information, see Acknowledging IAM Resources in AWS CloudFormation Templates.

Type: Array of strings

Valid Values: `CAPABILITY_IAM | CAPABILITY_NAMED_IAM`

Required: No

ChangeSetName

The name of the change set. The name must be unique among all change sets that are associated with the specified stack.

A change set name can contain only alphanumeric, case sensitive characters and hyphens. It must start with an alphabetic character and cannot exceed 128 characters.

Type: String

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

Pattern: `[a-zA-Z][-a-zA-Z0-9]*`

Required: Yes

ChangeSetType

The type of change set operation. To create a change set for a new stack, specify `CREATE`. To create a change set for an existing stack, specify `UPDATE`.

If you create a change set for a new stack, AWS Cloudformation creates a stack with a unique stack ID, but no template or resources. The stack will be in the `REVIEW_IN_PROGRESS` state until you execute the change set.

By default, AWS CloudFormation specifies `UPDATE`. You can't use the `UPDATE` type to create a change set for a new stack or the `CREATE` type to create a change set for an existing stack.

Type: String

Valid Values: `CREATE | UPDATE`

Required: No

ClientToken

A unique identifier for this `CreateChangeSet` request. Specify this token if you plan to retry requests so that AWS CloudFormation knows that you're not attempting to create another change set with the same name. You might retry `CreateChangeSet` requests to ensure that AWS CloudFormation successfully received them.

Type: String

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

Required: No

Description

A description to help you identify this change set.

Type: String

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

Required: No

NotificationARNs.member.N

The Amazon Resource Names (ARNs) of Amazon Simple Notification Service (Amazon SNS) topics that AWS CloudFormation associates with the stack. To remove all associated notification topics, specify an empty list.

Type: Array of strings

Array Members: Maximum number of 5 items.

Required: No

Parameters.member.N

A list of `Parameter` structures that specify input parameters for the change set. For more information, see the Parameter data type.

Type: Array of Parameter (p. 143) objects

Required: No

ResourceTypes.member.N

The template resource types that you have permissions to work with if you execute this change set, such as `AWS::EC2::Instance`, `AWS::EC2::*`, or `Custom::MyCustomInstance`.

If the list of resource types doesn't include a resource type that you're updating, the stack update fails. By default, AWS CloudFormation grants permissions to all resource types. AWS Identity and Access Management (IAM) uses this parameter for condition keys in IAM policies for AWS CloudFormation. For more information, see Controlling Access with AWS Identity and Access Management in the AWS CloudFormation User Guide.

Type: Array of strings

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

Required: No

RoleARN

The Amazon Resource Name (ARN) of an AWS Identity and Access Management (IAM) role that AWS CloudFormation assumes when executing the change set. AWS CloudFormation uses the role's credentials to make calls on your behalf. AWS CloudFormation uses this role for all future operations on the stack. As long as users have permission to operate on the stack, AWS CloudFormation uses this role even if the users don't have permission to pass it. Ensure that the role grants least privilege.

If you don't specify a value, AWS CloudFormation uses the role that was previously associated with the stack. If no role is available, AWS CloudFormation uses a temporary session that is generated from your user credentials.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

Required: No

RollbackConfiguration

The rollback triggers for AWS CloudFormation to monitor during stack creation and updating operations, and for the specified monitoring period afterwards.

Type: RollbackConfiguration (p. 152) object

Required: No

StackName

The name or the unique ID of the stack for which you are creating a change set. AWS CloudFormation generates the change set by comparing this stack's information with the information that you submit, such as a modified template or different parameter input values.

Type: String

Length Constraints: Minimum length of 1.

Pattern: `([a-zA-Z][-a-zA-Z0-9]*)|(arn:\b(aws|aws-us-gov|aws-cn)\b:[-a-zA-Z0-9:/._+]*)`

Required: Yes

Tags.member.N

Key-value pairs to associate with this stack. AWS CloudFormation also propagates these tags to resources in the stack. You can specify a maximum of 50 tags.

Type: Array of Tag (p. 184) objects

Array Members: Maximum number of 50 items.

Required: No

TemplateBody

A structure that contains the body of the revised template, with a minimum length of 1 byte and a maximum length of 51,200 bytes. AWS CloudFormation generates the change set by comparing this template with the template of the stack that you specified.

Conditional: You must specify only `TemplateBody` or `TemplateURL`.

Type: String

Length Constraints: Minimum length of 1.

Required: No

TemplateURL

The location of the file that contains the revised template. The URL must point to a template (max size: 460,800 bytes) that is located in an S3 bucket. AWS CloudFormation generates the change set by comparing this template with the stack that you specified.

Conditional: You must specify only `TemplateBody` or `TemplateURL`.

Type: String

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

Required: No

UsePreviousTemplate

Whether to reuse the template that is associated with the stack to create the change set.

Type: Boolean

Required: No

Response Elements

The following elements are returned by the service.

Id

The Amazon Resource Name (ARN) of the change set.

Type: String

Length Constraints: Minimum length of 1.

Pattern: `arn:[-a-zA-Z0-9:/]*`

StackId

The unique ID of the stack.

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

AlreadyExists

The resource with the name requested already exists.

HTTP Status Code: 400

InsufficientCapabilities

The template contains resources with capabilities that weren't specified in the Capabilities parameter.

HTTP Status Code: 400

LimitExceeded

The quota for the resource has already been reached.

For information on stack set limitations, see Limitations of StackSets.

HTTP Status Code: 400

Example

CreateChangeSet

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=CreateChangeSet
 &ChangeSetName=SampleChangeSet
 &Parameters.member.1.ParameterKey=KeyName
 &Parameters.member.1.UsePreviousValue=true
 &Parameters.member.2.ParameterKey=Purpose
 &Parameters.member.2.ParameterValue=production
 &StackName=arn:aws:cloudformation:us-east-1:123456789012:stack/
SampleStack/1a2345b6-0000-00a0-a123-00abc0abc000
 &UsePreviousTemplate=true
 &Version=2010-05-15
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20160316T233349Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<CreateChangeSetResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <CreateChangeSetResult>
    <Id>arn:aws:cloudformation:us-east-1:123456789012:changeSet/
SampleChangeSet/12a3b456-0e10-4ce0-9052-5d484a8c4e5b</Id>
  </CreateChangeSetResult>
  <ResponseMetadata>
```

```
    <RequestId>b9b4b068-3a41-11e5-94eb-example</RequestId>
  </ResponseMetadata>
</CreateChangeSetResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

CreateStack

Creates a stack as specified in the template. After the call completes successfully, the stack creation starts. You can check the status of the stack via the DescribeStacks (p. 59) API.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

Capabilities.member.N

A list of values that you must specify before AWS CloudFormation can create certain stacks. Some stack templates might include resources that can affect permissions in your AWS account, for example, by creating new AWS Identity and Access Management (IAM) users. For those stacks, you must explicitly acknowledge their capabilities by specifying this parameter.

The only valid values are `CAPABILITY_IAM` and `CAPABILITY_NAMED_IAM`. The following resources require you to specify this parameter: AWS::IAM::AccessKey, AWS::IAM::Group, AWS::IAM::InstanceProfile, AWS::IAM::Policy, AWS::IAM::Role, AWS::IAM::User, and AWS::IAM::UserToGroupAddition. If your stack template contains these resources, we recommend that you review all permissions associated with them and edit their permissions if necessary.

If you have IAM resources, you can specify either capability. If you have IAM resources with custom names, you must specify `CAPABILITY_NAMED_IAM`. If you don't specify this parameter, this action returns an `InsufficientCapabilities` error.

For more information, see Acknowledging IAM Resources in AWS CloudFormation Templates.

Type: Array of strings

Valid Values: `CAPABILITY_IAM | CAPABILITY_NAMED_IAM`

Required: No

ClientRequestToken

A unique identifier for this `CreateStack` request. Specify this token if you plan to retry requests so that AWS CloudFormation knows that you're not attempting to create a stack with the same name. You might retry `CreateStack` requests to ensure that AWS CloudFormation successfully received them.

All events triggered by a given stack operation are assigned the same client request token, which you can use to track operations. For example, if you execute a `CreateStack` operation with the token `token1`, then all the `StackEvents` generated by that operation will have `ClientRequestToken` set as `token1`.

In the console, stack operations display the client request token on the Events tab. Stack operations that are initiated from the console use the token format *Console-StackOperation-ID*, which helps you easily identify the stack operation . For example, if you create a stack using the console, each stack event would be assigned the same token in the following format: `Console-CreateStack-7f59c3cf-00d2-40c7-b2ff-e75db0987002`.

Type: String

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

Pattern: `[a-zA-Z0-9][-a-zA-Z0-9]*`

Required: No

DisableRollback

Set to `true` to disable rollback of the stack if stack creation failed. You can specify either `DisableRollback` or `OnFailure`, but not both.

Default: `false`

Type: Boolean

Required: No

EnableTerminationProtection

Whether to enable termination protection on the specified stack. If a user attempts to delete a stack with termination protection enabled, the operation fails and the stack remains unchanged. For more information, see Protecting a Stack From Being Deleted in the *AWS CloudFormation User Guide*. Termination protection is disabled on stacks by default.

For nested stacks, termination protection is set on the root stack and cannot be changed directly on the nested stack.

Type: Boolean

Required: No

NotificationARNs.member.N

The Simple Notification Service (SNS) topic ARNs to publish stack related events. You can find your SNS topic ARNs using the SNS console or your Command Line Interface (CLI).

Type: Array of strings

Array Members: Maximum number of 5 items.

Required: No

OnFailure

Determines what action will be taken if stack creation fails. This must be one of: DO_NOTHING, ROLLBACK, or DELETE. You can specify either `OnFailure` or `DisableRollback`, but not both.

Default: `ROLLBACK`

Type: String

Valid Values: `DO_NOTHING | ROLLBACK | DELETE`

Required: No

Parameters.member.N

A list of `Parameter` structures that specify input parameters for the stack. For more information, see the Parameter data type.

Type: Array of Parameter (p. 143) objects

Required: No

ResourceTypes.member.N

The template resource types that you have permissions to work with for this create stack action, such as `AWS::EC2::Instance`, `AWS::EC2::*`, or `Custom::MyCustomInstance`. Use the following syntax to describe template resource types: `AWS::*` (for all AWS resource),

`Custom::*` (for all custom resources), `Custom::`*`logical_ID`* (for a specific custom resource), `AWS::`*`service_name`*`::*` (for all resources of a particular AWS service), and `AWS::`*`service_name`*`::`*`resource_logical_ID`* (for a specific AWS resource).

If the list of resource types doesn't include a resource that you're creating, the stack creation fails. By default, AWS CloudFormation grants permissions to all resource types. AWS Identity and Access Management (IAM) uses this parameter for AWS CloudFormation-specific condition keys in IAM policies. For more information, see Controlling Access with AWS Identity and Access Management.

Type: Array of strings

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

Required: No

RoleARN

The Amazon Resource Name (ARN) of an AWS Identity and Access Management (IAM) role that AWS CloudFormation assumes to create the stack. AWS CloudFormation uses the role's credentials to make calls on your behalf. AWS CloudFormation always uses this role for all future operations on the stack. As long as users have permission to operate on the stack, AWS CloudFormation uses this role even if the users don't have permission to pass it. Ensure that the role grants least privilege.

If you don't specify a value, AWS CloudFormation uses the role that was previously associated with the stack. If no role is available, AWS CloudFormation uses a temporary session that is generated from your user credentials.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

Required: No

RollbackConfiguration

The rollback triggers for AWS CloudFormation to monitor during stack creation and updating operations, and for the specified monitoring period afterwards.

Type: RollbackConfiguration (p. 152) object

Required: No

StackName

The name that is associated with the stack. The name must be unique in the region in which you are creating the stack.

> **Note**
> A stack name can contain only alphanumeric characters (case sensitive) and hyphens. It must start with an alphabetic character and cannot be longer than 128 characters.

Type: String

Required: Yes

StackPolicyBody

Structure containing the stack policy body. For more information, go to Prevent Updates to Stack Resources in the *AWS CloudFormation User Guide*. You can specify either the `StackPolicyBody` or the `StackPolicyURL` parameter, but not both.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 16384.

Required: No

StackPolicyURL

Location of a file containing the stack policy. The URL must point to a policy (maximum size: 16 KB) located in an S3 bucket in the same region as the stack. You can specify either the `StackPolicyBody` or the `StackPolicyURL` parameter, but not both.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1350.

Required: No

Tags.member.N

Key-value pairs to associate with this stack. AWS CloudFormation also propagates these tags to the resources created in the stack. A maximum number of 50 tags can be specified.

Type: Array of Tag (p. 184) objects

Array Members: Maximum number of 50 items.

Required: No

TemplateBody

Structure containing the template body with a minimum length of 1 byte and a maximum length of 51,200 bytes. For more information, go to Template Anatomy in the AWS CloudFormation User Guide.

Conditional: You must specify either the `TemplateBody` or the `TemplateURL` parameter, but not both.

Type: String

Length Constraints: Minimum length of 1.

Required: No

TemplateURL

Location of file containing the template body. The URL must point to a template (max size: 460,800 bytes) that is located in an Amazon S3 bucket. For more information, go to the Template Anatomy in the AWS CloudFormation User Guide.

Conditional: You must specify either the `TemplateBody` or the `TemplateURL` parameter, but not both.

Type: String

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

Required: No

TimeoutInMinutes

The amount of time that can pass before the stack status becomes CREATE_FAILED; if `DisableRollback` is not set or is set to `false`, the stack will be rolled back.

Type: Integer

Valid Range: Minimum value of 1.

Required: No

Response Elements

The following element is returned by the service.

StackId

Unique identifier of the stack.

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

AlreadyExists

The resource with the name requested already exists.

HTTP Status Code: 400

InsufficientCapabilities

The template contains resources with capabilities that weren't specified in the Capabilities parameter.

HTTP Status Code: 400

LimitExceeded

The quota for the resource has already been reached.

For information on stack set limitations, see Limitations of StackSets.

HTTP Status Code: 400

TokenAlreadyExists

A client request token already exists.

HTTP Status Code: 400

Example

CreateStack

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=CreateStack
 &StackName=MyStack
 &TemplateBody=[Template Document]
 &NotificationARNs.member.1=arn:aws:sns:us-east-1:1234567890:my-topic
 &Parameters.member.1.ParameterKey=AvailabilityZone
 &Parameters.member.1.ParameterValue=us-east-1a
 &Version=2010-05-15
 &SignatureVersion=2
 &Timestamp=2010-07-27T22%3A26%3A28.000Z
```

```
&AWSAccessKeyId=[AWS Access KeyID]
&Signature=[Signature]
```

Sample Response

```
<CreateStackResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <CreateStackResult>
    <StackId>arn:aws:cloudformation:us-east-1:123456789:stack/MyStack/aaf549a0-a413-11df-
adb3-5081b3858e83</StackId>
  </CreateStackResult>
  <ResponseMetadata>
    <RequestId>b9b4b068-3a41-11e5-94eb-example</RequestId>
  </ResponseMetadata>
</CreateStackResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

CreateStackInstances

Creates stack instances for the specified accounts, within the specified regions. A stack instance refers to a stack in a specific account and region. `Accounts` and `Regions` are required parameters—you must specify at least one account and one region.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

Accounts.member.N

The names of one or more AWS accounts that you want to create stack instances in the specified region(s) for.

Type: Array of strings

Pattern: `[0-9]{12}`

Required: Yes

OperationId

The unique identifier for this stack set operation.

The operation ID also functions as an idempotency token, to ensure that AWS CloudFormation performs the stack set operation only once, even if you retry the request multiple times. You might retry stack set operation requests to ensure that AWS CloudFormation successfully received them.

Repeating this stack set operation with a new operation ID retries all stack instances whose status is `OUTDATED`.

Type: String

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

Pattern: `[a-zA-Z0-9][-a-zA-Z0-9]*`

Required: No

OperationPreferences

Preferences for how AWS CloudFormation performs this stack set operation.

Type: StackSetOperationPreferences (p. 175) object

Required: No

ParameterOverrides.member.N

A list of stack set parameters whose values you want to override in the selected stack instances.

Any overridden parameter values will be applied to all stack instances in the specified accounts and regions. When specifying parameters and their values, be aware of how AWS CloudFormation sets parameter values during stack instance operations:

- To override the current value for a parameter, include the parameter and specify its value.
- To leave a parameter set to its present value, you can do one of the following:
  - Do not include the parameter in the list.

- Include the parameter and specify `UsePreviousValue` as `true`. (You cannot specify both a value and set `UsePreviousValue` to `true`.)
- To set all overridden parameter back to the values specified in the stack set, specify a parameter list but do not include any parameters.
- To leave all parameters set to their present values, do not specify this property at all.

During stack set updates, any parameter values overridden for a stack instance are not updated, but retain their overridden value.

You can only override the parameter *values* that are specified in the stack set; to add or delete a parameter itself, use UpdateStackSet to update the stack set template.

Type: Array of Parameter (p. 143) objects

Required: No

Regions.member.N

The names of one or more regions where you want to create stack instances using the specified AWS account(s).

Type: Array of strings

Required: Yes

StackSetName

The name or unique ID of the stack set that you want to create stack instances from.

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

OperationId

The unique identifier for this stack set operation.

Type: String

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

Pattern: `[a-zA-Z0-9][-a-zA-Z0-9]*`

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

InvalidOperation

The specified operation isn't valid.

HTTP Status Code: 400

LimitExceeded

The quota for the resource has already been reached.

For information on stack set limitations, see Limitations of StackSets.

HTTP Status Code: 400

OperationIdAlreadyExists

The specified operation ID already exists.

HTTP Status Code: 409

OperationInProgress

Another operation is currently in progress for this stack set. Only one operation can be performed for a stack set at a given time.

HTTP Status Code: 409

StackSetNotFound

The specified stack set doesn't exist.

HTTP Status Code: 404

StaleRequest

Another operation has been performed on this stack set since the specified operation was performed.

HTTP Status Code: 409

Example

CreateStackInstances

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=CreateStackInstances
 &Version=2010-05-15
 &StackSetName=stack-set-example
 &Regions.member.1=us-east-1
 &Regions.member.2=us-west-2
 &OperationPreferences.MaxConcurrentCount=5
 &OperationPreferences.FailureTolerancePercentage=10
 &Accounts.member.1=[account]
 &Accounts.member.2=[account]
 &OperationId=c424b651-2fda-4d6f-a4f1-20c0example
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20170810T233349Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<CreateStackInstancesResponse xmlns="http://internal.amazon.com/coral/
com.amazonaws.maestro.service.v20160713/">
  <CreateStackInstancesResult>
```

```
    <OperationId>c424b651-2fda-4d6f-a4f1-20c0fc62a6fe</OperationId>
  </CreateStackInstancesResult>
  <ResponseMetadata>
    <RequestId>97564c5e-813e-11e7-a9b2-5b163763e702</RequestId>
  </ResponseMetadata>
</CreateStackInstancesResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

CreateStackSet

Creates a stack set.

Request Parameters

For information about the parameters that are common to all actions, see Common
Parameters (p. 186).

Capabilities.member.N

A list of values that you must specify before AWS CloudFormation can create certain stack sets.
Some stack set templates might include resources that can affect permissions in your AWS account—
for example, by creating new AWS Identity and Access Management (IAM) users. For those stack sets,
you must explicitly acknowledge their capabilities by specifying this parameter.

The only valid values are CAPABILITY_IAM and CAPABILITY_NAMED_IAM. The following resources
require you to specify this parameter:

- AWS::IAM::AccessKey
- AWS::IAM::Group
- AWS::IAM::InstanceProfile
- AWS::IAM::Policy
- AWS::IAM::Role
- AWS::IAM::User
- AWS::IAM::UserToGroupAddition

If your stack template contains these resources, we recommend that you review all permissions that
are associated with them and edit their permissions if necessary.

If you have IAM resources, you can specify either capability. If you have IAM resources with custom
names, you must specify CAPABILITY_NAMED_IAM. If you don't specify this parameter, this action
returns an `InsufficientCapabilities` error.

For more information, see Acknowledging IAM Resources in AWS CloudFormation Templates.

Type: Array of strings

Valid Values: `CAPABILITY_IAM | CAPABILITY_NAMED_IAM`

Required: No

ClientRequestToken

A unique identifier for this `CreateStackSet` request. Specify this token if you plan to retry requests
so that AWS CloudFormation knows that you're not attempting to create another stack set with
the same name. You might retry `CreateStackSet` requests to ensure that AWS CloudFormation
successfully received them.

Type: String

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

Pattern: `[a-zA-Z0-9][-a-zA-Z0-9]*`

Required: No

Description

A description of the stack set. You can use the description to identify the stack set's purpose or other important information.

Type: String

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

Required: No

Parameters.member.N

The input parameters for the stack set template.

Type: Array of Parameter (p. 143) objects

Required: No

StackSetName

The name to associate with the stack set. The name must be unique in the region where you create your stack set.

> **Note**
> A stack name can contain only alphanumeric characters (case-sensitive) and hyphens. It must start with an alphabetic character and can't be longer than 128 characters.

Type: String

Required: Yes

Tags.member.N

The key-value pairs to associate with this stack set and the stacks created from it. AWS CloudFormation also propagates these tags to supported resources that are created in the stacks. A maximum number of 50 tags can be specified.

If you specify tags as part of a `CreateStackSet` action, AWS CloudFormation checks to see if you have the required IAM permission to tag resources. If you don't, the entire `CreateStackSet` action fails with an `access denied` error, and the stack set is not created.

Type: Array of Tag (p. 184) objects

Array Members: Maximum number of 50 items.

Required: No

TemplateBody

The structure that contains the template body, with a minimum length of 1 byte and a maximum length of 51,200 bytes. For more information, see Template Anatomy in the AWS CloudFormation User Guide.

Conditional: You must specify either the TemplateBody or the TemplateURL parameter, but not both.

Type: String

Length Constraints: Minimum length of 1.

Required: No

TemplateURL

The location of the file that contains the template body. The URL must point to a template (maximum size: 460,800 bytes) that's located in an Amazon S3 bucket. For more information, see Template Anatomy in the AWS CloudFormation User Guide.

Conditional: You must specify either the TemplateBody or the TemplateURL parameter, but not both.

Type: String

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

Required: No

Response Elements

The following element is returned by the service.

StackSetId

The ID of the stack set that you're creating.

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

CreatedButModified

The specified resource exists, but has been changed.

HTTP Status Code: 409

LimitExceeded

The quota for the resource has already been reached.

For information on stack set limitations, see Limitations of StackSets.

HTTP Status Code: 400

NameAlreadyExists

The specified name is already in use.

HTTP Status Code: 409

Example

CreateStackSet

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=CreateStackSet
 &TemplateURL=https://s3.amazonaws.com/cloudformation-stackset-sample-templates-us-east-1/
EnableAWSConfig.yml
 &Version=2010-05-15
 &StackSetName=stack-set-example
 &ClientRequestToken=61806005-bde9-46f1-949d-6791example
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20170810T233349Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<CreateStackSetResponse xmlns="http://internal.amazon.com/coral/
com.amazonaws.maestro.service.v20160713/">
  <CreateStackSetResult>
    <StackSetId>stack-set-example:22f04391-472b-4e36-b11a-727example</StackSetId>
  </CreateStackSetResult>
  <ResponseMetadata>
    <RequestId>ad9647cb-7949-11e7-ac43-9938example</RequestId>
  </ResponseMetadata>
</CreateStackSetResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

DeleteChangeSet

Deletes the specified change set. Deleting change sets ensures that no one executes the wrong change set.

If the call successfully completes, AWS CloudFormation successfully deleted the change set.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

ChangeSetName

The name or Amazon Resource Name (ARN) of the change set that you want to delete.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1600.

Pattern: `[a-zA-Z][-a-zA-Z0-9]*|arn:[-a-zA-Z0-9:/]*`

Required: Yes

StackName

If you specified the name of a change set to delete, specify the stack name or ID (ARN) that is associated with it.

Type: String

Length Constraints: Minimum length of 1.

Pattern: `([a-zA-Z][-a-zA-Z0-9]*)|(arn:\b(aws|aws-us-gov|aws-cn)\b:[-a-zA-Z0-9:/._+]*)`

Required: No

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

InvalidChangeSetStatus

The specified change set can't be used to update the stack. For example, the change set status might be `CREATE_IN_PROGRESS`, or the stack status might be `UPDATE_IN_PROGRESS`.

HTTP Status Code: 400

Example

DeleteChangeSet

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=DeleteChangeSet
 &ChangeSetName=arn:aws:cloudformation:us-east-1:123456789012:changeSet/
SampleChangeSet/12a3b456-0e10-4ce0-9052-5d484a8c4e5b
 &Version=2010-05-15
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20160316T233349Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<DeleteChangeSetResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <DeleteChangeSetResult/>
  <ResponseMetadata>
    <RequestId>5ccc7dcd-744c-11e5-be70-example</RequestId>
  </ResponseMetadata>
</DeleteChangeSetResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

DeleteStack

Deletes a specified stack. Once the call completes successfully, stack deletion starts. Deleted stacks do not show up in the DescribeStacks (p. 59) API if the deletion has been completed successfully.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

ClientRequestToken

A unique identifier for this `DeleteStack` request. Specify this token if you plan to retry requests so that AWS CloudFormation knows that you're not attempting to delete a stack with the same name. You might retry `DeleteStack` requests to ensure that AWS CloudFormation successfully received them.

All events triggered by a given stack operation are assigned the same client request token, which you can use to track operations. For example, if you execute a `CreateStack` operation with the token `token1`, then all the `StackEvents` generated by that operation will have `ClientRequestToken` set as `token1`.

In the console, stack operations display the client request token on the Events tab. Stack operations that are initiated from the console use the token format *Console-StackOperation-ID*, which helps you easily identify the stack operation . For example, if you create a stack using the console, each stack event would be assigned the same token in the following format: `Console-CreateStack-7f59c3cf-00d2-40c7-b2ff-e75db0987002`.

Type: String

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

Pattern: `[a-zA-Z0-9][-a-zA-Z0-9]*`

Required: No

RetainResources.member.N

For stacks in the `DELETE_FAILED` state, a list of resource logical IDs that are associated with the resources you want to retain. During deletion, AWS CloudFormation deletes the stack but does not delete the retained resources.

Retaining resources is useful when you cannot delete a resource, such as a non-empty S3 bucket, but you want to delete the stack.

Type: Array of strings

Required: No

RoleARN

The Amazon Resource Name (ARN) of an AWS Identity and Access Management (IAM) role that AWS CloudFormation assumes to delete the stack. AWS CloudFormation uses the role's credentials to make calls on your behalf.

If you don't specify a value, AWS CloudFormation uses the role that was previously associated with the stack. If no role is available, AWS CloudFormation uses a temporary session that is generated from your user credentials.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

Required: No

StackName

The name or the unique stack ID that is associated with the stack.

Type: String

Required: Yes

Errors

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

TokenAlreadyExists

A client request token already exists.

HTTP Status Code: 400

Example

DeleteStack

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=DeleteStack
 &StackName=MyStack
 &Version=2010-05-15
 &SignatureVersion=2
 &Timestamp=2010-07-27T22%3A26%3A28.000Z
 &AWSAccessKeyId=[AWS Access KeyID]
 &Signature=[Signature]
```

Sample Response

```
<DeleteStackResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <ResponseMetadata>
    <RequestId>5ccc7dcd-744c-11e5-be70-example</RequestId>
  </ResponseMetadata>
</DeleteStackResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++

- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

DeleteStackInstances

Deletes stack instances for the specified accounts, in the specified regions.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

Accounts.member.N

The names of the AWS accounts that you want to delete stack instances for.

Type: Array of strings

Pattern: `[0-9]{12}`

Required: Yes

OperationId

The unique identifier for this stack set operation.

The operation ID also functions as an idempotency token, to ensure that AWS CloudFormation performs the stack set operation only once, even if you retry the request multiple times. You can retry stack set operation requests to ensure that AWS CloudFormation successfully received them.

Repeating this stack set operation with a new operation ID retries all stack instances whose status is `OUTDATED`.

Type: String

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

Pattern: `[a-zA-Z0-9][-a-zA-Z0-9]*`

Required: No

OperationPreferences

Preferences for how AWS CloudFormation performs this stack set operation.

Type: StackSetOperationPreferences (p. 175) object

Required: No

Regions.member.N

The regions where you want to delete stack set instances.

Type: Array of strings

Required: Yes

RetainStacks

Removes the stack instances from the specified stack set, but doesn't delete the stacks. You can't reassociate a retained stack or add an existing, saved stack to a new stack set.

For more information, see Stack set operation options.

Type: Boolean

Required: Yes

StackSetName

The name or unique ID of the stack set that you want to delete stack instances for.

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

OperationId

The unique identifier for this stack set operation.

Type: String

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

Pattern: `[a-zA-Z0-9][-a-zA-Z0-9]*`

Errors

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

InvalidOperation

The specified operation isn't valid.

HTTP Status Code: 400

OperationIdAlreadyExists

The specified operation ID already exists.

HTTP Status Code: 409

OperationInProgress

Another operation is currently in progress for this stack set. Only one operation can be performed for a stack set at a given time.

HTTP Status Code: 409

StackSetNotFound

The specified stack set doesn't exist.

HTTP Status Code: 404

StaleRequest

Another operation has been performed on this stack set since the specified operation was performed.

HTTP Status Code: 409

Example

DeleteStackInstances

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=DeleteStackInstances
 &Regions.member.1=us-east-1
 &Regions.member.2=us-west-1
 &Version=2010-05-15
 &StackSetName=stack-set-example
 &RetainStacks=false
 &OperationPreferences.MaxConcurrentCount=2
 &OperationPreferences.FailureToleranceCount=1
 &Accounts.member.1=[account]
 &Accounts.member.2=[account]
 &OperationId=a0f49354-a1eb-42b7-9e5d-c0897example
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20170810T233349Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<DeleteStackInstancesResponse xmlns="http://internal.amazon.com/coral/
com.amazonaws.maestro.service.v20160713/">
  <DeleteStackInstancesResult>
    <OperationId>a0f49354-a1eb-42b7-9e5d-c08977e317a0</OperationId>
  </DeleteStackInstancesResult>
  <ResponseMetadata>
    <RequestId>0f3c3dcc-7945-11e7-a4ac-9503729bf9ee</RequestId>
  </ResponseMetadata>
</DeleteStackInstancesResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

DeleteStackSet

Deletes a stack set. Before you can delete a stack set, all of its member stack instances must be deleted. For more information about how to do this, see DeleteStackInstances (p. 36).

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

StackSetName

The name or unique ID of the stack set that you're deleting. You can obtain this value by running ListStackSets (p. 106).

Type: String

Required: Yes

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

OperationInProgress

Another operation is currently in progress for this stack set. Only one operation can be performed for a stack set at a given time.

HTTP Status Code: 409

StackSetNotEmpty

You can't yet delete this stack set, because it still contains one or more stack instances. Delete all stack instances from the stack set before deleting the stack set.

HTTP Status Code: 409

Example

DeleteStackSet

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=DeleteStackSet
 &Version=2010-05-15
 &StackSetName=stack-set-example
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20170810T233349Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<DeleteStackSetResponse xmlns="http://internal.amazon.com/coral/
com.amazonaws.maestro.service.v20160713/">
  <DeleteStackSetResult/>
  <ResponseMetadata>
    <RequestId>792b1f2b-7946-11e7-a7db-afc00fexample</RequestId>
  </ResponseMetadata>
</DeleteStackSetResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

DescribeAccountLimits

Retrieves your account's AWS CloudFormation limits, such as the maximum number of stacks that you can create in your account.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

NextToken

A string that identifies the next page of limits that you want to retrieve.

Type: String

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

Required: No

Response Elements

The following elements are returned by the service.

AccountLimits.member.N

An account limit structure that contain a list of AWS CloudFormation account limits and their values.

Type: Array of AccountLimit (p. 137) objects

NextToken

If the output exceeds 1 MB in size, a string that identifies the next page of limits. If no additional page exists, this value is null.

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 (p. 188).

Example

DescribeAccountLimits

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=DescribeAccountLimits
 &NextToken=[NextToken]
```

```
&Version=2010-05-15
&SignatureVersion=2
&Timestamp=2010-07-27T22%3A26%3A28.000Z
&AWSAccessKeyId=[AWS Access KeyID]
&Signature=[Signature]
```

Sample Response

```
<DescribeAccountLimitsResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <DescribeAccountLimitsResult>
    <AccountLimits>
      <member>
        <Name>StackLimit</Name>
        <Value>20</Value>
      </member>
    </AccountLimits>
  </DescribeAccountLimitsResult>
  <ResponseMetadata>
    <RequestId>b9b4b068-3a41-11e5-94eb-example</RequestId>
  </ResponseMetadata>
</DescribeAccountLimitsResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

DescribeChangeSet

Returns the inputs for the change set and a list of changes that AWS CloudFormation will make if you execute the change set. For more information, see Updating Stacks Using Change Sets in the AWS CloudFormation User Guide.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

ChangeSetName

The name or Amazon Resource Name (ARN) of the change set that you want to describe.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1600.

Pattern: `[a-zA-Z][-a-zA-Z0-9]*|arn:[-a-zA-Z0-9:/]*`

Required: Yes

NextToken

A string (provided by the DescribeChangeSet (p. 43) response output) that identifies the next page of information that you want to retrieve.

Type: String

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

Required: No

StackName

If you specified the name of a change set, specify the stack name or ID (ARN) of the change set you want to describe.

Type: String

Length Constraints: Minimum length of 1.

Pattern: `([a-zA-Z][-a-zA-Z0-9]*)|(arn:\b(aws|aws-us-gov|aws-cn)\b:[-a-zA-Z0-9:/._+]*)`

Required: No

Response Elements

The following elements are returned by the service.

Capabilities.member.N

If you execute the change set, the list of capabilities that were explicitly acknowledged when the change set was created.

Type: Array of strings

Valid Values: `CAPABILITY_IAM` | `CAPABILITY_NAMED_IAM`

Changes.member.N

A list of `Change` structures that describes the resources AWS CloudFormation changes if you execute the change set.

Type: Array of Change (p. 138) objects

ChangeSetId

The ARN of the change set.

Type: String

Length Constraints: Minimum length of 1.

Pattern: `arn:[-a-zA-Z0-9:/]*`

ChangeSetName

The name of the change set.

Type: String

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

Pattern: `[a-zA-Z][-a-zA-Z0-9]*`

CreationTime

The start time when the change set was created, in UTC.

Type: Timestamp

Description

Information about the change set.

Type: String

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

ExecutionStatus

If the change set execution status is `AVAILABLE`, you can execute the change set. If you can't execute the change set, the status indicates why. For example, a change set might be in an `UNAVAILABLE` state because AWS CloudFormation is still creating it or in an `OBSOLETE` state because the stack was already updated.

Type: String

Valid Values: `UNAVAILABLE` | `AVAILABLE` | `EXECUTE_IN_PROGRESS` | `EXECUTE_COMPLETE` | `EXECUTE_FAILED` | `OBSOLETE`

NextToken

If the output exceeds 1 MB, a string that identifies the next page of changes. If there is no additional page, this value is null.

Type: String

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

NotificationARNs.member.N

The ARNs of the Amazon Simple Notification Service (Amazon SNS) topics that will be associated with the stack if you execute the change set.

Type: Array of strings

Array Members: Maximum number of 5 items.

Parameters.member.N

A list of `Parameter` structures that describes the input parameters and their values used to create the change set. For more information, see the Parameter data type.

Type: Array of Parameter (p. 143) objects

RollbackConfiguration

The rollback triggers for AWS CloudFormation to monitor during stack creation and updating operations, and for the specified monitoring period afterwards.

Type: RollbackConfiguration (p. 152) object

StackId

The ARN of the stack that is associated with the change set.

Type: String

StackName

The name of the stack that is associated with the change set.

Type: String

Status

The current status of the change set, such as `CREATE_IN_PROGRESS`, `CREATE_COMPLETE`, or `FAILED`.

Type: String

Valid Values: `CREATE_PENDING` | `CREATE_IN_PROGRESS` | `CREATE_COMPLETE` | `DELETE_COMPLETE` | `FAILED`

StatusReason

A description of the change set's status. For example, if your attempt to create a change set failed, AWS CloudFormation shows the error message.

Type: String

Tags.member.N

If you execute the change set, the tags that will be associated with the stack.

Type: Array of Tag (p. 184) objects

Array Members: Maximum number of 50 items.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

ChangeSetNotFound

The specified change set name or ID doesn't exit. To view valid change sets for a stack, use the `ListChangeSets` action.

HTTP Status Code: 404

Example

DescribeChangeSet

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=DescribeChangeSet
 &ChangeSetName=arn:aws:cloudformation:us-east-1:123456789012:changeSet/
SampleChangeSet/12a3b456-0e10-4ce0-9052-5d484a8c4e5b
 &Version=2010-05-15
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20160316T233349Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<DescribeChangeSetResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <DescribeChangeSetResult>
    <StackId>arn:aws:cloudformation:us-east-1:123456789012:stack/
SampleStack/12a3b456-0e10-4ce0-9052-5d484a8c4e5b</StackId>
    <Status>CREATE_COMPLETE</Status>
    <ChangeSetId>arn:aws:cloudformation:us-east-1:123456789012:changeSet/SampleChangeSet-
direct/12a3b456-0e10-4ce0-9052-5d484a8c4e5b</ChangeSetId>
    <StackName>SampleStack</StackName>
    <ChangeSetName>SampleChangeSet-direct</ChangeSetName>
    <NotificationARNs/>
    <CreationTime>2016-03-17T23:35:25.813Z</CreationTime>
    <Capabilities/>
    <Parameters>
      <member>
        <ParameterValue>testing</ParameterValue>
        <ParameterKey>Purpose</ParameterKey>
      </member>
      <member>
        <ParameterValue>MyKeyName</ParameterValue>
        <ParameterKey>KeyPairName</ParameterKey>
      </member>
      <member>
        <ParameterValue>t2.micro</ParameterValue>
        <ParameterKey>InstanceType</ParameterKey>
      </member>
    </Parameters>
    <Changes>
      <member>
        <ResourceChange>
          <Replacement>False</Replacement>
          <Scope>
            <member>Tags</member>
          </Scope>
          <Details>
            <member>
              <ChangeSource>DirectModification</ChangeSource>
              <Target>
                <RequiresRecreation>Never</RequiresRecreation>
                <Attribute>Tags</Attribute>
```

```
          </Target>
          <Evaluation>Static</Evaluation>
        </member>
      </Details>
      <LogicalResourceId>MyEC2Instance</LogicalResourceId>
      <Action>Modify</Action>
      <PhysicalResourceId>i-1abc23d4</PhysicalResourceId>
      <ResourceType>AWS::EC2::Instance</ResourceType>
    </ResourceChange>
    <Type>Resource</Type>
  </member>
</Changes>
</DescribeChangeSetResult>
<ResponseMetadata>
  <RequestId>b9b4b068-3a41-11e5-94eb-example</RequestId>
</ResponseMetadata>
</DescribeChangeSetResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

DescribeStackEvents

Returns all stack related events for a specified stack in reverse chronological order. For more information about a stack's event history, go to Stacks in the AWS CloudFormation User Guide.

> **Note**
> You can list events for stacks that have failed to create or have been deleted by specifying the unique stack identifier (stack ID).

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

NextToken

A string that identifies the next page of events that you want to retrieve.

Type: String

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

Required: No

StackName

The name or the unique stack ID that is associated with the stack, which are not always interchangeable:
- Running stacks: You can specify either the stack's name or its unique stack ID.
- Deleted stacks: You must specify the unique stack ID.

Default: There is no default value.

Type: String

Required: No

Response Elements

The following elements are returned by the service.

NextToken

If the output exceeds 1 MB in size, a string that identifies the next page of events. If no additional page exists, this value is null.

Type: String

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

StackEvents.member.N

A list of `StackEvents` structures.

Type: Array of StackEvent (p. 159) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

Example

DescribeStackEvents

Sample Request

```
        https://cloudformation.us-east-1.amazonaws.com/
?Action=DescribeStackEvents
&StackName=MyStack
&Version=2010-05-15
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=[Access key ID and scope]
&X-Amz-Date=20160316T233349Z
&X-Amz-SignedHeaders=content-type;host
&X-Amz-Signature=[Signature]
```

Sample Response

```
<DescribeStackEventsResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <DescribeStackEventsResult>
    <StackEvents>
      <member>
        <Timestamp>2016-03-15T20:54:31.809Z</Timestamp>
        <ResourceStatus>CREATE_COMPLETE</ResourceStatus>
        <StackId>arn:aws:cloudformation:us-east-1:123456789012:stack/
SampleStack/12a3b456-0e10-4ce0-9052-5d484a8c4e5b</StackId>
        <EventId>1dedea10-eaf0-11e5-8451-500c5242948e</EventId>
        <LogicalResourceId>SampleStack</LogicalResourceId>
        <StackName>SampleStack</StackName>
        <PhysicalResourceId>arn:aws:cloudformation:us-east-1:123456789012:stack/
SampleStack/12a3b456-0e10-4ce0-9052-5d484a8c4e5b</PhysicalResourceId>
        <ResourceType>AWS::CloudFormation::Stack</ResourceType>
      </member>
      <member>
        <Timestamp>2016-03-15T20:54:30.174Z</Timestamp>
        <ResourceStatus>CREATE_COMPLETE</ResourceStatus>
        <StackId>arn:aws:cloudformation:us-east-1:123456789012:stack/
SampleStack/12a3b456-0e10-4ce0-9052-5d484a8c4e5b</StackId>
        <EventId>MyEC2Instance-CREATE_COMPLETE-2016-03-15T20:54:30.174Z</EventId>
        <LogicalResourceId>MyEC2Instance</LogicalResourceId>
        <StackName>SampleStack</StackName>
        <PhysicalResourceId>i-1abc23d4</PhysicalResourceId>
        <ResourceProperties>{"ImageId":ami-8fcee4e5",...}</ResourceProperties>
        <ResourceType>AWS::EC2::Instance</ResourceType>
      </member>
      <member>
        <Timestamp>2016-03-15T20:53:17.660Z</Timestamp>
        <ResourceStatus>CREATE_IN_PROGRESS</ResourceStatus>
        <StackId>arn:aws:cloudformation:us-east-1:123456789012:stack/
SampleStack/12a3b456-0e10-4ce0-9052-5d484a8c4e5b</StackId>
        <EventId>MyEC2Instance-CREATE_IN_PROGRESS-2016-03-15T20:53:17.660Z</EventId>
        <LogicalResourceId>MyEC2Instance</LogicalResourceId>
        <ResourceStatusReason>Resource creation Initiated</ResourceStatusReason>
        <StackName>SampleStack</StackName>
        <PhysicalResourceId>i-1abc23d4</PhysicalResourceId>
        <ResourceProperties>{"ImageId":ami-8fcee4e5",...}</ResourceProperties>
        <ResourceType>AWS::EC2::Instance</ResourceType>
      </member>
```

```
        <member>
          <Timestamp>2016-03-15T20:53:16.516Z</Timestamp>
          <ResourceStatus>CREATE_IN_PROGRESS</ResourceStatus>
          <StackId>arn:aws:cloudformation:us-east-1:123456789012:stack/
SampleStack/12a3b456-0e10-4ce0-9052-5d484a8c4e5b</StackId>
          <EventId>MyEC2Instance-CREATE_IN_PROGRESS-2016-03-15T20:53:16.516Z</EventId>
          <LogicalResourceId>MyEC2Instance</LogicalResourceId>
          <StackName>SampleStack</StackName>
          <PhysicalResourceId/>
          <ResourceProperties>{"ImageId":ami-8fcee4e5",...}</ResourceProperties>
          <ResourceType>AWS::EC2::Instance</ResourceType>
        </member>
        <member>
          <Timestamp>2016-03-15T20:53:11.231Z</Timestamp>
          <ResourceStatus>CREATE_IN_PROGRESS</ResourceStatus>
          <StackId>arn:aws:cloudformation:us-east-1:123456789012:stack/
SampleStack/12a3b456-0e10-4ce0-9052-5d484a8c4e5b</StackId>
          <EventId>edbf2ac0-eaef-11e5-adeb-500c28903236</EventId>
          <LogicalResourceId>SampleStack</LogicalResourceId>
          <ResourceStatusReason>User Initiated</ResourceStatusReason>
          <StackName>SampleStack</StackName>
          <PhysicalResourceIdI>arn:aws:cloudformation:us-east-1:123456789012:stack/
SampleStack/12a3b456-0e10-4ce0-9052-5d484a8c4e5b</PhysicalResourceId>
          <ResourceType>AWS::CloudFormation::Stack</ResourceType>
        </member>
      </StackEvents>
  </DescribeStackEventsResult>
  <ResponseMetadata>
    <RequestId>b9b4b068-3a41-11e5-94eb-example</RequestId>
  </ResponseMetadata>
</DescribeStackEventsResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

DescribeStackInstance

Returns the stack instance that's associated with the specified stack set, AWS account, and region.

For a list of stack instances that are associated with a specific stack set, use ListStackInstances (p. 90).

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

StackInstanceAccount

The ID of an AWS account that's associated with this stack instance.

Type: String

Pattern: `[0-9]{12}`

Required: Yes

StackInstanceRegion

The name of a region that's associated with this stack instance.

Type: String

Required: Yes

StackSetName

The name or the unique stack ID of the stack set that you want to get stack instance information for.

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

StackInstance

The stack instance that matches the specified request parameters.

Type: StackInstance (p. 161) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

StackInstanceNotFound

The specified stack instance doesn't exist.

HTTP Status Code: 404

StackSetNotFound

The specified stack set doesn't exist.

HTTP Status Code: 404

Example

DescribeStackInstance

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=DescribeStackInstance
 &StackInstanceRegion=us-west-2
 &Version=2010-05-15
 &StackSetName=stack-set-example
 &StackInstanceAccount=[account]
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20170810T233349Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<DescribeStackInstanceResponse xmlns="http://internal.amazon.com/coral/
com.amazonaws.maestro.service.v20160713/">
  <DescribeStackInstanceResult>
    <StackInstance>
      <StackId>arn:aws:cloudformation:us-west-2:[account]:stack/StackSet-
a3c97291-8df5-448e-b576-8c7cexample/f857db10-793e-11e7-ab1a-50d5example</StackId>
      <StackSetId>stack-set-example:c14cd6d1-cd17-40bd-82ed-ff97dexample</StackSetId>
      <Region>us-west-2</Region>
      <Account>[account]</Account>
      <Status>CURRENT</Status>
    </StackInstance>
  </DescribeStackInstanceResult>
  <ResponseMetadata>
    <RequestId>2ede1ddf-7e19-11e7-bcf2-8951example</RequestId>
  </ResponseMetadata>
</DescribeStackInstanceResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go

- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

DescribeStackResource

Returns a description of the specified resource in the specified stack.

For deleted stacks, DescribeStackResource returns resource information for up to 90 days after the stack has been deleted.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

LogicalResourceId

The logical name of the resource as specified in the template.

Default: There is no default value.

Type: String

Required: Yes

StackName

The name or the unique stack ID that is associated with the stack, which are not always interchangeable:

- Running stacks: You can specify either the stack's name or its unique stack ID.
- Deleted stacks: You must specify the unique stack ID.

Default: There is no default value.

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

StackResourceDetail

A `StackResourceDetail` structure containing the description of the specified resource in the specified stack.

Type: StackResourceDetail (p. 167) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

Example

DescribeStackResource

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=DescribeStackResource
 &StackName=MyStack
 &LogicalResourceId=MyDBInstance
 &Version=2010-05-15
 &SignatureVersion=2
 &Timestamp=2011-07-08T22%3A26%3A28.000Z
 &AWSAccessKeyId=[AWS Access KeyID]
 &Signature=[Signature]
```

Sample Response

```
<DescribeStackResourceResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <DescribeStackResourceResult>
    <StackResourceDetail>
      <StackId>arn:aws:cloudformation:us-east-1:123456789:stack/MyStack/aaf549a0-a413-11df-
adb3-5081b3858e83</StackId>
      <StackName>MyStack</StackName>
      <LogicalResourceId>MyDBInstance</LogicalResourceId>
      <PhysicalResourceId>MyStack_DB1</PhysicalResourceId>
      <ResourceType>AWS::RDS::DBInstance</ResourceType>
      <LastUpdatedTimestamp>2011-07-07T22:27:28Z</LastUpdatedTimestamp>
      <ResourceStatus>CREATE_COMPLETE</ResourceStatus>
    </StackResourceDetail>
  </DescribeStackResourceResult>
  <ResponseMetadata>
    <RequestId>b9b4b068-3a41-11e5-94eb-example</RequestId>
  </ResponseMetadata>
</DescribeStackResourceResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

DescribeStackResources

Returns AWS resource descriptions for running and deleted stacks. If `StackName` is specified, all the associated resources that are part of the stack are returned. If `PhysicalResourceId` is specified, the associated resources of the stack that the resource belongs to are returned.

> **Note**
> Only the first 100 resources will be returned. If your stack has more resources than this, you should use `ListStackResources` instead.

For deleted stacks, `DescribeStackResources` returns resource information for up to 90 days after the stack has been deleted.

You must specify either `StackName` or `PhysicalResourceId`, but not both. In addition, you can specify `LogicalResourceId` to filter the returned result. For more information about resources, the `LogicalResourceId` and `PhysicalResourceId`, go to the [AWS CloudFormation User Guide](#).

> **Note**
> A `ValidationError` is returned if you specify both `StackName` and `PhysicalResourceId` in the same request.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

LogicalResourceId

The logical name of the resource as specified in the template.

Default: There is no default value.

Type: String

Required: No

PhysicalResourceId

The name or unique identifier that corresponds to a physical instance ID of a resource supported by AWS CloudFormation.

For example, for an Amazon Elastic Compute Cloud (EC2) instance, `PhysicalResourceId` corresponds to the `InstanceId`. You can pass the EC2 `InstanceId` to `DescribeStackResources` to find which stack the instance belongs to and what other resources are part of the stack.

Required: Conditional. If you do not specify `PhysicalResourceId`, you must specify `StackName`.

Default: There is no default value.

Type: String

Required: No

StackName

The name or the unique stack ID that is associated with the stack, which are not always interchangeable:
- Running stacks: You can specify either the stack's name or its unique stack ID.
- Deleted stacks: You must specify the unique stack ID.

Default: There is no default value.

Required: Conditional. If you do not specify `StackName`, you must specify `PhysicalResourceId`.

Type: String

Required: No

Response Elements

The following element is returned by the service.

StackResources.member.N

A list of `StackResource` structures.

Type: Array of StackResource (p. 165) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

Example

DescribeStackResources

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=DescribeStackResources
 &StackName=MyStack
 &Version=2010-05-15
 &SignatureVersion=2
 &Timestamp=2010-07-27T22%3A26%3A28.000Z
 &AWSAccessKeyId=[AWS Access KeyID]
 &Signature=[Signature]
```

Sample Response

```
<DescribeStackResourcesResponse xmlns="http://cloudformation.amazonaws.com/
doc/2010-05-15/">
  <DescribeStackResourcesResult>
    <StackResources>
      <member>
        <StackId>arn:aws:cloudformation:us-east-1:123456789:stack/MyStack/aaf549a0-
a413-11df-adb3-5081b3858e83</StackId>
        <StackName>MyStack</StackName>
        <LogicalResourceId>MyDBInstance</LogicalResourceId>
        <PhysicalResourceId>MyStack_DB1</PhysicalResourceId>
        <ResourceType>AWS::DBInstance</ResourceType>
        <Timestamp>2010-07-27T22:27:28Z</Timestamp>
        <ResourceStatus>CREATE_COMPLETE</ResourceStatus>
      </member>
      <member>
```

```
        <StackId>arn:aws:cloudformation:us-east-1:123456789:stack/MyStack/aaf549a0-
a413-11df-adb3-5081b3858e83</StackId>
        <StackName>MyStack</StackName>
        <LogicalResourceId>MyAutoScalingGroup</LogicalResourceId>
        <PhysicalResourceId>MyStack_ASG1</PhysicalResourceId>
        <ResourceType>AWS::AutoScalingGroup</ResourceType>
        <Timestamp>2010-07-27T22:28:28Z</Timestamp>
        <ResourceStatus>CREATE_IN_PROGRESS</ResourceStatus>
      </member>
    </StackResources>
  </DescribeStackResourcesResult>
  <ResponseMetadata>
    <RequestId>b9b4b068-3a41-11e5-94eb-example</RequestId>
  </ResponseMetadata>
</DescribeStackResourcesResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

DescribeStacks

Returns the description for the specified stack; if no stack name was specified, then it returns the description for all the stacks created.

> **Note**
> If the stack does not exist, an `AmazonCloudFormationException` is returned.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

NextToken

A string that identifies the next page of stacks that you want to retrieve.

Type: String

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

Required: No

StackName

The name or the unique stack ID that is associated with the stack, which are not always interchangeable:

- Running stacks: You can specify either the stack's name or its unique stack ID.
- Deleted stacks: You must specify the unique stack ID.

Default: There is no default value.

Type: String

Required: No

Response Elements

The following elements are returned by the service.

NextToken

If the output exceeds 1 MB in size, a string that identifies the next page of stacks. If no additional page exists, this value is null.

Type: String

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

Stacks.member.N

A list of stack structures.

Type: Array of Stack (p. 155) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

Example

DescribeStacks

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=DescribeStacks
 &StackName=MyStack
 &Version=2010-05-15
 &SignatureVersion=2
 &Timestamp=2010-07-27T22%3A26%3A28.000Z
 &AWSAccessKeyId=[AWS Access KeyID]
 &Signature=[Signature]
```

Sample Response

```
<DescribeStacksResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <DescribeStacksResult>
    <Stacks>
      <member>
        <StackName>MyStack</StackName>
        <StackId>arn:aws:cloudformation:us-east-1:123456789:stack/MyStack/aaf549a0-
a413-11df-adb3-5081b3858e83</StackId>
        <CreationTime>2010-07-27T22:28:28Z</CreationTime>
        <StackStatus>CREATE_COMPLETE</StackStatus>
        <DisableRollback>false</DisableRollback>
        <Outputs>
          <member>
            <OutputKey>StartPage</OutputKey>
            <OutputValue>http://my-load-balancer.amazonaws.com:80/index.html</OutputValue>
          </member>
        </Outputs>
      </member>
    </Stacks>
  </DescribeStacksResult>
  <ResponseMetadata>
    <RequestId>b9b4b068-3a41-11e5-94eb-example</RequestId>
  </ResponseMetadata>
</DescribeStacksResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

DescribeStackSet

Returns the description of the specified stack set.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

StackSetName

The name or unique ID of the stack set whose description you want.

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

StackSet

The specified stack set.

Type: StackSet (p. 171) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

StackSetNotFound

The specified stack set doesn't exist.

HTTP Status Code: 404

Example

DescribeStackSet

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=DescribeStackSet
 &Version=2010-05-15
 &StackSetName=stack-set-example
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20170810T233349Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<DescribeStackSetResponse xmlns="http://internal.amazon.com/coral/
com.amazonaws.maestro.service.v20160713/">
  <DescribeStackSetResult>
    <StackSet>
      <Capabilities>
        <member>CAPABILITY_IAM</member>
      </Capabilities>
      <StackSetId>stack-set-example:c14cd6d1-cd17-40bd-82ed-ff97example</StackSetId>
      <TemplateBody>
        [details omitted]
      </TemplateBody>
      <StackSetName>stack-set-example</StackSetName>
      <Description>Enable AWS Config</Description>
      <Parameters>
        <member>
          <ParameterKey>AllSupported</ParameterKey>
          <UsePreviousValue>false</UsePreviousValue>
          <ParameterValue>true</ParameterValue>
        </member>
        <member>
          <ParameterKey>DeliveryChannelName</ParameterKey>
          <UsePreviousValue>false</UsePreviousValue>
          <ParameterValue><Generated></ParameterValue>
        </member>
        <member>
          <ParameterKey>Frequency</ParameterKey>
          <UsePreviousValue>false</UsePreviousValue>
          <ParameterValue>24hours</ParameterValue>
        </member>
        <member>
          <ParameterKey>IncludeGlobalResourceTypes</ParameterKey>
          <UsePreviousValue>false</UsePreviousValue>
          <ParameterValue>true</ParameterValue>
        </member>
        <member>
          <ParameterKey>NotificationEmail</ParameterKey>
          <UsePreviousValue>false</UsePreviousValue>
          <ParameterValue><None></ParameterValue>
        </member>
        <member>
          <ParameterKey>ResourceTypes</ParameterKey>
          <UsePreviousValue>false</UsePreviousValue>
          <ParameterValue><All></ParameterValue>
        </member>
        <member>
          <ParameterKey>TopicArn</ParameterKey>
          <UsePreviousValue>false</UsePreviousValue>
          <ParameterValue><New Topic></ParameterValue>
        </member>
      </Parameters>
      <Tags>
        <member>
          <Value>marketing</Value>
          <Key>business-unit</Key>
        </member>
      </Tags>
      <Status>ACTIVE</Status>
    </StackSet>
  </DescribeStackSetResult>
  <ResponseMetadata>
    <RequestId>48d13e76-794b-11e7-95e6-f946example</RequestId>
  </ResponseMetadata>
```

```
</DescribeStackSetResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

DescribeStackSetOperation

Returns the description of the specified stack set operation.

Request Parameters

For information about the parameters that are common to all actions, see Common
Parameters (p. 186).

OperationId

The unique ID of the stack set operation.

Type: String

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

Pattern: `[a-zA-Z0-9][-a-zA-Z0-9]*`

Required: Yes

StackSetName

The name or the unique stack ID of the stack set for the stack operation.

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

StackSetOperation

The specified stack set operation.

Type: StackSetOperation (p. 173) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

OperationNotFound

The specified ID refers to an operation that doesn't exist.

HTTP Status Code: 404

StackSetNotFound

The specified stack set doesn't exist.

HTTP Status Code: 404

Example

DescribeStackSetOperation

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=DescribeStackSetOperation
 &Version=2010-05-15
 &StackSetName=stack-set-example
 &OperationId=61806005-bde9-46f1-949d-6791example
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20170810T233349Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<DescribeStackSetOperationResponse xmlns="http://internal.amazon.com/coral/
com.amazonaws.maestro.service.v20160713/">
  <DescribeStackSetOperationResult>
    <StackSetOperation>
      <StackSetId>stack-set-example:c14cd6d1-cd17-40bd-82ed-ff97example</StackSetId>
      <CreationTimestamp>2017-08-04T18:01:29.508Z</CreationTimestamp>
      <OperationId>ddf16f54-ad62-4d9b-b0ab-3ed8e9example</OperationId>
      <Action>UPDATE</Action>
      <OperationPreferences>
        <FailureToleranceCount>0</FailureToleranceCount>
        <MaxConcurrentCount>1</MaxConcurrentCount>
        <RegionOrder/>
      </OperationPreferences>
      <EndTimestamp>2017-08-04T18:03:43.672Z</EndTimestamp>
      <Status>SUCCEEDED</Status>
    </StackSetOperation>
  </DescribeStackSetOperationResult>
  <ResponseMetadata>
    <RequestId>20133b62-7e1a-11e7-838a-a182example</RequestId>
  </ResponseMetadata>
</DescribeStackSetOperationResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3

- AWS SDK for Python
- AWS SDK for Ruby V2

EstimateTemplateCost

Returns the estimated monthly cost of a template. The return value is an AWS Simple Monthly Calculator URL with a query string that describes the resources required to run the template.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

Parameters.member.N

A list of `Parameter` structures that specify input parameters.

Type: Array of Parameter (p. 143) objects

Required: No

TemplateBody

Structure containing the template body with a minimum length of 1 byte and a maximum length of 51,200 bytes. (For more information, go to Template Anatomy in the AWS CloudFormation User Guide.)

Conditional: You must pass `TemplateBody` or `TemplateURL`. If both are passed, only `TemplateBody` is used.

Type: String

Length Constraints: Minimum length of 1.

Required: No

TemplateURL

Location of file containing the template body. The URL must point to a template that is located in an Amazon S3 bucket. For more information, go to Template Anatomy in the AWS CloudFormation User Guide.

Conditional: You must pass `TemplateURL` or `TemplateBody`. If both are passed, only `TemplateBody` is used.

Type: String

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

Required: No

Response Elements

The following element is returned by the service.

Url

An AWS Simple Monthly Calculator URL with a query string that describes the resources required to run the template.

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

Example

EstimateTemplateCost

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=EstimateTemplateCost
 &TemplateURL= https://s3.amazonaws.com/cloudformation-samples-us-east-1/
Drupal_Simple.template
 &Version=2010-05-15
 &SignatureVersion=2
 &Timestamp=2011-12-04T22%3A26%3A28.000Z
 &AWSAccessKeyId=[AWS Access KeyID]
 &Signature=[Signature]
```

Sample Response

```
<Response xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <EstimateTemplateCostResult>
    <Url>http://calculator.s3.amazonaws.com/calc5.html?key=cf-2e351785-
e821-450c-9d58-625e1e1ebfb6</Url>
  </EstimateTemplateCostResult>
  <ResponseMetadata>
    <RequestId>b9b4b068-3a41-11e5-94eb-example</RequestId>
  </ResponseMetadata>
</Response>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

ExecuteChangeSet

Updates a stack using the input information that was provided when the specified change set was created. After the call successfully completes, AWS CloudFormation starts updating the stack. Use the DescribeStacks (p. 59) action to view the status of the update.

When you execute a change set, AWS CloudFormation deletes all other change sets associated with the stack because they aren't valid for the updated stack.

If a stack policy is associated with the stack, AWS CloudFormation enforces the policy during the update. You can't specify a temporary stack policy that overrides the current policy.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

ChangeSetName

The name or ARN of the change set that you want use to update the specified stack.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1600.

Pattern: `[a-zA-Z][-a-zA-Z0-9]*|arn:[-a-zA-Z0-9:/]*`

Required: Yes

ClientRequestToken

A unique identifier for this `ExecuteChangeSet` request. Specify this token if you plan to retry requests so that AWS CloudFormation knows that you're not attempting to execute a change set to update a stack with the same name. You might retry `ExecuteChangeSet` requests to ensure that AWS CloudFormation successfully received them.

Type: String

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

Pattern: `[a-zA-Z0-9][-a-zA-Z0-9]*`

Required: No

StackName

If you specified the name of a change set, specify the stack name or ID (ARN) that is associated with the change set you want to execute.

Type: String

Length Constraints: Minimum length of 1.

Pattern: `([a-zA-Z][-a-zA-Z0-9]*)|(arn:\b(aws|aws-us-gov|aws-cn)\b:[-a-zA-Z0-9:/._+]*)`

Required: No

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

ChangeSetNotFound

The specified change set name or ID doesn't exit. To view valid change sets for a stack, use the `ListChangeSets` action.

HTTP Status Code: 404

InsufficientCapabilities

The template contains resources with capabilities that weren't specified in the Capabilities parameter.

HTTP Status Code: 400

InvalidChangeSetStatus

The specified change set can't be used to update the stack. For example, the change set status might be `CREATE_IN_PROGRESS`, or the stack status might be `UPDATE_IN_PROGRESS`.

HTTP Status Code: 400

TokenAlreadyExists

A client request token already exists.

HTTP Status Code: 400

Example

ExecuteChangeSet

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=ExecuteChangeSet
 &ChangeSetName=arn:aws:cloudformation:us-east-1:123456789012:changeSet/
SampleChangeSet/12a3b456-0e10-4ce0-9052-5d484a8c4e5b
 &Version=2010-05-15
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20160316T233349Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<ExecuteChangeSetResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <ExecuteChangeSetResult/>
  <ResponseMetadata>
    <RequestId>5ccc7dcd-744c-11e5-be70-example</RequestId>
  </ResponseMetadata>
</ExecuteChangeSetResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

GetStackPolicy

Returns the stack policy for a specified stack. If a stack doesn't have a policy, a null value is returned.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

StackName

The name or unique stack ID that is associated with the stack whose policy you want to get.

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

StackPolicyBody

Structure containing the stack policy body. (For more information, go to Prevent Updates to Stack Resources in the AWS CloudFormation User Guide.)

Type: String

Length Constraints: Minimum length of 1. Maximum length of 16384.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

Example

GetStackPolicy

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=GetStackPolicy
 &StackName=MyStack
 &Version=2010-05-15
 &SignatureVersion=2
 &Timestamp=2010-07-27T22%3A26%3A28.000Z
 &AWSAccessKeyId=[AWS Access KeyID]
 &Signature=[Signature]
```

Sample Response

```
<GetStackPolicyResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <GetStackPolicyResult>
      <StackPolicyBody>"{
      "Statement" : [
        {
          "Effect" : "Deny",
          "Action" : "Update:*",
          "Principal" : "*",
          "Resource" : "LogicalResourceId/ProductionDatabase"
        },
        {
          "Effect" : "Allow",
          "Action" : "Update:*",
          "Principal" : "*",
          "Resource" : "*"
        }
      ]
    }</StackPolicyBody>
  </GetStackPolicyResult>
  <ResponseMetadata>
    <RequestId>b9b4b068-3a41-11e5-94eb-example</RequestId>
  </ResponseMetadata>
</GetStackPolicyResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

GetTemplate

Returns the template body for a specified stack. You can get the template for running or deleted stacks.

For deleted stacks, GetTemplate returns the template for up to 90 days after the stack has been deleted.

Note
If the template does not exist, a `ValidationError` is returned.

Request Parameters

For information about the parameters that are common to all actions, see Common
Parameters (p. 186).

ChangeSetName

The name or Amazon Resource Name (ARN) of a change set for which AWS CloudFormation returns
the associated template. If you specify a name, you must also specify the `StackName`.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1600.

Pattern: `[a-zA-Z][-a-zA-Z0-9]*|arn:[-a-zA-Z0-9:/]*`

Required: No

StackName

The name or the unique stack ID that is associated with the stack, which are not always
interchangeable:

- Running stacks: You can specify either the stack's name or its unique stack ID.
- Deleted stacks: You must specify the unique stack ID.

Default: There is no default value.

Type: String

Required: No

TemplateStage

For templates that include transforms, the stage of the template that AWS CloudFormation
returns. To get the user-submitted template, specify `Original`. To get the template after AWS
CloudFormation has processed all transforms, specify `Processed`.

If the template doesn't include transforms, `Original` and `Processed` return the same template. By
default, AWS CloudFormation specifies `Original`.

Type: String

Valid Values: `Original | Processed`

Required: No

Response Elements

The following elements are returned by the service.

StagesAvailable.member.N

The stage of the template that you can retrieve. For stacks, the `Original` and `Processed` templates are always available. For change sets, the `Original` template is always available. After AWS CloudFormation finishes creating the change set, the `Processed` template becomes available.

Type: Array of strings

Valid Values: `Original | Processed`

TemplateBody

Structure containing the template body. (For more information, go to Template Anatomy in the AWS CloudFormation User Guide.)

AWS CloudFormation returns the same template that was used when the stack was created.

Type: String

Length Constraints: Minimum length of 1.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

ChangeSetNotFound

The specified change set name or ID doesn't exit. To view valid change sets for a stack, use the `ListChangeSets` action.

HTTP Status Code: 404

Example

GetTemplate

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=GetTemplate
 &StackName=MyStack
 &Version=2010-05-15
 &SignatureVersion=2
 &Timestamp=2010-07-27T22%3A26%3A28.000Z
 &AWSAccessKeyId=[AWS Access KeyID]
 &Signature=[Signature]
```

Sample Response

```
<GetTemplateResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <GetTemplateResult>
    <TemplateBody>"{
    "AWSTemplateFormatVersion" : "2010-09-09",
    "Description" : "Simple example",
    "Resources" : {
```

```
      "MySQS" : {
        "Type" : "AWS::SQS::Queue",
        "Properties" : {
        }
      }
    }
  }</TemplateBody>
  </GetTemplateResult>
  <ResponseMetadata>
    <RequestId>b9b4b068-3a41-11e5-94eb-example</RequestId>
  </ResponseMetadata>
</GetTemplateResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

GetTemplateSummary

Returns information about a new or existing template. The `GetTemplateSummary` action is useful for viewing parameter information, such as default parameter values and parameter types, before you create or update a stack or stack set.

You can use the `GetTemplateSummary` action when you submit a template, or you can get template information for a stack set, or a running or deleted stack.

For deleted stacks, `GetTemplateSummary` returns the template information for up to 90 days after the stack has been deleted. If the template does not exist, a `ValidationError` is returned.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

StackName

The name or the stack ID that is associated with the stack, which are not always interchangeable. For running stacks, you can specify either the stack's name or its unique stack ID. For deleted stack, you must specify the unique stack ID.

Conditional: You must specify only one of the following parameters: `StackName`, `StackSetName`, `TemplateBody`, or `TemplateURL`.

Type: String

Length Constraints: Minimum length of 1.

Pattern: `([a-zA-Z][-a-zA-Z0-9]*)|(arn:\b(aws|aws-us-gov|aws-cn)\b:[-a-zA-Z0-9:/._+]*)`

Required: No

StackSetName

The name or unique ID of the stack set from which the stack was created.

Conditional: You must specify only one of the following parameters: `StackName`, `StackSetName`, `TemplateBody`, or `TemplateURL`.

Type: String

Pattern: `[a-zA-Z][-a-zA-Z0-9]*(?::[a-zA-Z0-9]{8}-[a-zA-Z0-9]{4}-[a-zA-Z0-9]{4}-[a-zA-Z0-9]{4}-[a-zA-Z0-9]{12})?`

Required: No

TemplateBody

Structure containing the template body with a minimum length of 1 byte and a maximum length of 51,200 bytes. For more information about templates, see Template Anatomy in the AWS CloudFormation User Guide.

Conditional: You must specify only one of the following parameters: `StackName`, `StackSetName`, `TemplateBody`, or `TemplateURL`.

Type: String

Length Constraints: Minimum length of 1.

Required: No

TemplateURL

Location of file containing the template body. The URL must point to a template (max size: 460,800 bytes) that is located in an Amazon S3 bucket. For more information about templates, see Template Anatomy in the AWS CloudFormation User Guide.

Conditional: You must specify only one of the following parameters: `StackName`, `StackSetName`, `TemplateBody`, or `TemplateURL`.

Type: String

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

Required: No

Response Elements

The following elements are returned by the service.

Capabilities.member.N

The capabilities found within the template. If your template contains IAM resources, you must specify the CAPABILITY_IAM or CAPABILITY_NAMED_IAM value for this parameter when you use the CreateStack (p. 17) or UpdateStack (p. 115) actions with your template; otherwise, those actions return an InsufficientCapabilities error.

For more information, see Acknowledging IAM Resources in AWS CloudFormation Templates.

Type: Array of strings

Valid Values: `CAPABILITY_IAM | CAPABILITY_NAMED_IAM`

CapabilitiesReason

The list of resources that generated the values in the `Capabilities` response element.

Type: String

DeclaredTransforms.member.N

A list of the transforms that are declared in the template.

Type: Array of strings

Description

The value that is defined in the `Description` property of the template.

Type: String

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

Metadata

The value that is defined for the `Metadata` property of the template.

Type: String

Parameters.member.N

A list of parameter declarations that describe various properties for each parameter.

Type: Array of ParameterDeclaration (p. 145) objects

ResourceTypes.member.N

A list of all the template resource types that are defined in the template, such as `AWS::EC2::Instance`, `AWS::Dynamo::Table`, and `Custom::MyCustomInstance`.

Type: Array of strings

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

Version

The AWS template format version, which identifies the capabilities of the template.

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

StackSetNotFound

The specified stack set doesn't exist.

HTTP Status Code: 404

Example

GetTemplateSummary

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=GetTemplateSummary
 &TemplateURL=https%3A%2F%2Fs3-us-east-1.amazonaws.com%2Fsamplebucketname
%2Fsampletemplate.template
 &Version=2010-05-15
 &SignatureVersion=2
 &Timestamp=2010-07-27T22%3A26%3A28.000Z
 &AWSAccessKeyId=[AWS Access KeyID]
 &Signature=[Signature]
```

Sample Response

```
<GetTemplateSummaryResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <GetTemplateSummaryResult>
    <Description>A sample template description.</Description>
    <Parameters>
      <member>
        <NoEcho>false</NoEcho>
        <ParameterKey>KeyName</ParameterKey>
        <Description>Name of an existing EC2 KeyPair to enable SSH access to the instance</
Description>
        <ParameterType>AWS::EC2::KeyPair::KeyName</ParameterType>
      </member>
```

```
    </Parameters>
    <Metadata>{"Instances":{"SampleDescription":"Information about the instances"}}</
Metadata>
    <Version>2010-09-09</Version>
  </GetTemplateSummaryResult>
  <ResponseMetadata>
    <RequestId>b9b4b068-3a41-11e5-94eb-example</RequestId>
  </ResponseMetadata>
</GetTemplateSummaryResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

ListChangeSets

Returns the ID and status of each active change set for a stack. For example, AWS CloudFormation lists change sets that are in the `CREATE_IN_PROGRESS` or `CREATE_PENDING` state.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

NextToken

A string (provided by the ListChangeSets (p. 82) response output) that identifies the next page of change sets that you want to retrieve.

Type: String

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

Required: No

StackName

The name or the Amazon Resource Name (ARN) of the stack for which you want to list change sets.

Type: String

Length Constraints: Minimum length of 1.

Pattern: `([a-zA-Z][-a-zA-Z0-9]*)|(arn:\b(aws|aws-us-gov|aws-cn)\b:[-a-zA-Z0-9:/._+]*)`

Required: Yes

Response Elements

The following elements are returned by the service.

NextToken

If the output exceeds 1 MB, a string that identifies the next page of change sets. If there is no additional page, this value is null.

Type: String

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

Summaries.member.N

A list of `ChangeSetSummary` structures that provides the ID and status of each change set for the specified stack.

Type: Array of ChangeSetSummary (p. 139) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

Example

ListChangeSets

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=ListChangeSets
 &StackName=arn:aws:cloudformation:us-east-1:123456789012:changeSet/
SampleChangeSet/12a3b456-0e10-4ce0-9052-5d484a8c4e5b
 &Version=2010-05-15
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20160316T233349Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<ListChangeSetsResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <ListChangeSetsResult>
    <Summaries>
      <member>
        <StackId>arn:aws:cloudformation:us-east-1:123456789012:changeSet/
SampleChangeSet/12a3b456-0e10-4ce0-9052-5d484a8c4e5b</StackId>
        <Status>CREATE_COMPLETE</Status>
        <ChangeSetId>arn:aws:cloudformation:us-east-1:123456789012:changeSet/
SampleChangeSet/12a3b456-0e10-4ce0-9052-5d484a8c4e5b</ChangeSetId>
        <StackName>SampleStack</StackName>
        <CreationTime>2016-03-16T20:44:05.889Z</CreationTime>
        <ChangeSetName>SampleChangeSet</ChangeSetName>
      </member>
      <member>
        <StackId>arn:aws:cloudformation:us-east-1:123456789012:changeSet/
SampleChangeSet/12a3b456-0e10-4ce0-9052-5d484a8c4e5b</StackId>
        <Status>CREATE_COMPLETE</Status>
        <ChangeSetId>arn:aws:cloudformation:us-east-1:123456789012:changeSet/
SampleChangeSet-conditional/12a3b456-0e10-4ce0-9052-5d484a8c4e5b</ChangeSetId>
        <StackName>SampleStack</StackName>
        <CreationTime>2016-03-16T21:15:56.398Z</CreationTime>
        <ChangeSetName>SampleChangeSet-conditional</ChangeSetName>
      </member>
      <member>
        <StackId>arn:aws:cloudformation:us-east-1:123456789012:changeSet/
SampleChangeSet/12a3b456-0e10-4ce0-9052-5d484a8c4e5b</StackId>
        <Status>CREATE_COMPLETE</Status>
        <ChangeSetId>arn:aws:cloudformation:us-east-1:123456789012:changeSet/
SampleChangeSet-replacement/12a3b456-0e10-4ce0-9052-5d484a8c4e5b</ChangeSetId>
        <StackName>SampleStack</StackName>
        <CreationTime>2016-03-16T21:03:37.706Z</CreationTime>
        <ChangeSetName>SampleChangeSet-replacement</ChangeSetName>
      </member>
    </Summaries>
  </ListChangeSetsResult>
  <ResponseMetadata>
    <RequestId>b9b4b068-3a41-11e5-94eb-example</RequestId>
  </ResponseMetadata>
</ListChangeSetsResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

ListExports

Lists all exported output values in the account and region in which you call this action. Use this action to see the exported output values that you can import into other stacks. To import values, use the `Fn::ImportValue` function.

For more information, see AWS CloudFormation Export Stack Output Values.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

NextToken

A string (provided by the ListExports (p. 85) response output) that identifies the next page of exported output values that you asked to retrieve.

Type: String

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

Required: No

Response Elements

The following elements are returned by the service.

Exports.member.N

The output for the ListExports (p. 85) action.

Type: Array of Export (p. 141) objects

NextToken

If the output exceeds 100 exported output values, a string that identifies the next page of exports. If there is no additional page, this value is null.

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 (p. 188).

Example

ListExports

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
```

```
?Action=ListExports
&Version=2010-05-15
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=[Access key ID and scope]
&X-Amz-Date=20160316T233349Z
&X-Amz-SignedHeaders=content-type;host
&X-Amz-Signature=[Signature]
```

Sample Response

```
<ListExportsResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <ListExportsResult>
    <Exports>
      <member>
        <Name>mySampleStack1-SecurityGroupID</Name>
        <ExportingStackId>arn:aws:cloudformation:us-east-1:123456789012:stack/
mySampleStack1/12a3b456-0e10-4ce0-9052-5d484a8c4e5b</ExportingStackId>
        <Value>sg-0a123b45</Value>
      </member>
      <member>
        <Name>mySampleStack1-SubnetID</Name>
        <ExportingStackId>arn:aws:cloudformation:us-east-1:123456789012:stack/
mySampleStack1/12a3b456-0e10-4ce0-9052-5d484a8c4e5b</ExportingStackId>
        <Value>subnet-0a123b45</Value>
      </member>
      <member>
        <Name>mySampleStack1-VPCID</Name>
        <ExportingStackId>arn:aws:cloudformation:us-east-1:123456789012:stack/
mySampleStack1/12a3b456-0e10-4ce0-9052-5d484a8c4e5b</ExportingStackId>
        <Value>vpc-0a123b45</Value>
      </member>
      <member>
        <Name>WebSiteURL</Name>
        <ExportingStackId>arn:aws:cloudformation:us-east-1:123456789012:stack/
myS3StaticSite/12a3b456-0e10-4ce0-9052-5d484a8c4e5b</ExportingStackId>
        <Value>http://testsite.com.s3-website-us-east-1.amazonaws.com</Value>
      </member>
    </Exports>
  </ListExportsResult>
  <ResponseMetadata>
    <RequestId>5ccc7dcd-744c-11e5-be70-1b08c228efb3</RequestId>
  </ResponseMetadata>
</ListExportsResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python

- [AWS SDK for Ruby V2](#)

ListImports

Lists all stacks that are importing an exported output value. To modify or remove an exported output value, first use this action to see which stacks are using it. To see the exported output values in your account, see ListExports (p. 85).

For more information about importing an exported output value, see the `Fn::ImportValue` function.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

ExportName

The name of the exported output value. AWS CloudFormation returns the stack names that are importing this value.

Type: String

Required: Yes

NextToken

A string (provided by the ListImports (p. 88) response output) that identifies the next page of stacks that are importing the specified exported output value.

Type: String

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

Required: No

Response Elements

The following elements are returned by the service.

Imports.member.N

A list of stack names that are importing the specified exported output value.

Type: Array of strings

NextToken

A string that identifies the next page of exports. If there is no additional page, this value is null.

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 (p. 188).

Example

ListExports

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=ListImports
 &ExportName=SampleStack-MyExportedValue
 &Version=2010-05-15
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20160316T233349Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<ListImportsResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <ListImportsResult>
    <Imports>
      <member>Import-SampleStack</member>
    </Imports>
  </ListImportsResult>
  <ResponseMetadata>
    <RequestId>a13656a8-a7b9-11e6-964c-41b56747ddb0</RequestId>
  </ResponseMetadata>
</ListImportsResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

ListStackInstances

Returns summary information about stack instances that are associated with the specified stack set. You can filter for stack instances that are associated with a specific AWS account name or region.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

MaxResults

The maximum number of results to be returned with a single call. If the number of available results exceeds this maximum, the response includes a `NextToken` value that you can assign to the `NextToken` request parameter to get the next set of results.

Type: Integer

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

Required: No

NextToken

If the previous request didn't return all of the remaining results, the response's `NextToken` parameter value is set to a token. To retrieve the next set of results, call `ListStackInstances` again and assign that token to the request object's `NextToken` parameter. If there are no remaining results, the previous response object's `NextToken` parameter is set to `null`.

Type: String

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

Required: No

StackInstanceAccount

The name of the AWS account that you want to list stack instances for.

Type: String

Pattern: `[0-9]{12}`

Required: No

StackInstanceRegion

The name of the region where you want to list stack instances.

Type: String

Required: No

StackSetName

The name or unique ID of the stack set that you want to list stack instances for.

Type: String

Required: Yes

Response Elements

The following elements are returned by the service.

NextToken

If the request doesn't return all of the remaining results, `NextToken` is set to a token. To retrieve the next set of results, call `ListStackInstances` again and assign that token to the request object's `NextToken` parameter. If the request returns all results, `NextToken` is set to `null`.

Type: String

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

Summaries.member.N

A list of `StackInstanceSummary` structures that contain information about the specified stack instances.

Type: Array of StackInstanceSummary (p. 163) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

StackSetNotFound

The specified stack set doesn't exist.

HTTP Status Code: 404

Example

ListStackInstances

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=ListStackInstances
 &StackInstanceAccount=[account]
 &Version=2010-05-15
 &StackSetName=stack-set-example
 &MaxResults=10
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20170810T233349Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<ListStackInstancesResponse xmlns="http://internal.amazon.com/coral/
com.amazonaws.maestro.service.v20160713/">
```

```
   <ListStackInstancesResult>
     <Summaries>
       <member>
         <StackId>arn:aws:cloudformation:us-east-1:[account]:stack/StackSet-2adddc60-
b4be-4811-813d-9072example/1b0bfb00-793f-11e7-b627-500c2example</StackId>
         <StackSetId>stack-set-example:c14cd6d1-cd17-40bd-82ed-ff97example</StackSetId>
         <Region>us-east-1</Region>
         <Account>[account]</Account>
         <Status>CURRENT</Status>
       </member>
       <member>
         <StackId>arn:aws:cloudformation:us-west-2:[account]:stack/StackSet-
a3c97291-8df5-448e-b576-8c7c9example/f857db10-793e-11e7-ab1a-50d5example</StackId>
         <StackSetId>config-stack-test:c14cd6d1-cd17-40bd-82ed-ff97example</StackSetId>
         <Region>us-west-2</Region>
         <Account>[account]</Account>
         <Status>CURRENT</Status>
       </member>
     </Summaries>
   </ListStackInstancesResult>
   <ResponseMetadata>
     <RequestId>5387255d-7e18-11e7-a3cd-2f784example</RequestId>
   </ResponseMetadata>
</ListStackInstancesResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

ListStackResources

Returns descriptions of all resources of the specified stack.

For deleted stacks, ListStackResources returns resource information for up to 90 days after the stack has been deleted.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

NextToken

A string that identifies the next page of stack resources that you want to retrieve.

Type: String

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

Required: No

StackName

The name or the unique stack ID that is associated with the stack, which are not always interchangeable:

- Running stacks: You can specify either the stack's name or its unique stack ID.
- Deleted stacks: You must specify the unique stack ID.

Default: There is no default value.

Type: String

Required: Yes

Response Elements

The following elements are returned by the service.

NextToken

If the output exceeds 1 MB, a string that identifies the next page of stack resources. If no additional page exists, this value is null.

Type: String

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

StackResourceSummaries.member.N

A list of `StackResourceSummary` structures.

Type: Array of StackResourceSummary (p. 169) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

Example

ListStackResources

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=ListStackResources
 &StackName=MyStack
 &Version=2010-05-15
 &SignatureVersion=2
 &Timestamp=2011-07-08T22%3A26%3A28.000Z
 &AWSAccessKeyId=[AWS Access KeyID]
 &Signature=[Signature]
```

Sample Response

```
<ListStackResourcesResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <ListStackResourcesResult>
    <StackResourceSummaries>
      <member>
        <ResourceStatus>CREATE_COMPLETE</ResourceStatus>
        <LogicalResourceId>DBSecurityGroup</LogicalResourceId>
        <LastUpdatedTimestamp>2011-06-21T20:15:58Z</LastUpdatedTimestamp>
        <PhysicalResourceId>gmarcteststack-dbsecuritygroup-1s5m0ez5lkk6w</Physic
alResourceId>
        <ResourceType>AWS::RDS::DBSecurityGroup</ResourceType>
      </member>
      <member>
        <ResourceStatus>CREATE_COMPLETE</ResourceStatus>
        <LogicalResourceId>SampleDB</LogicalResourceId>
        <LastUpdatedTimestamp>2011-06-21T20:25:57Z</LastUpdatedTimestamp>
        <PhysicalResourceId>MyStack-sampledb-ycwhk1v830lx</PhysicalResour
ceId>
        <ResourceType>AWS::RDS::DBInstance</ResourceType>
      </member>
      <member>
        <ResourceStatus>CREATE_COMPLETE</ResourceStatus>
        <LogicalResourceId>SampleApplication</LogicalResourceId>
        <LastUpdatedTimestamp>2011-06-21T20:26:12Z</LastUpdatedTimestamp>
        <PhysicalResourceId>MyStack-SampleApplication-1MKNASYR3RBQL</Phys
icalResourceId>
        <ResourceType>AWS::ElasticBeanstalk::Application</ResourceType>
      </member>
      <member>
        <ResourceStatus>CREATE_COMPLETE</ResourceStatus>
        <LogicalResourceId>SampleEnvironment</LogicalResourceId>
        <LastUpdatedTimestamp>2011-06-21T20:28:48Z</LastUpdatedTimestamp>
        <PhysicalResourceId>myst-Samp-1AGU6ERZX6M3Q</PhysicalResourceId>
        <ResourceType>AWS::ElasticBeanstalk::Environment</ResourceType>
      </member>
      <member>
        <ResourceStatus>CREATE_COMPLETE</ResourceStatus>
        <LogicalResourceId>AlarmTopic</LogicalResourceId>
        <LastUpdatedTimestamp>2011-06-21T20:29:06Z</LastUpdatedTimestamp>
        <PhysicalResourceId>arn:aws:sns:us-east-1:803981987763:MyStack-Al
armTopic-SW4IQELG7RPJ</PhysicalResourceId>
        <ResourceType>AWS::SNS::Topic</ResourceType>
      </member>
```

```
       <member>
         <ResourceStatus>CREATE_COMPLETE</ResourceStatus>
         <LogicalResourceId>CPUAlarmHigh</LogicalResourceId>
         <LastUpdatedTimestamp>2011-06-21T20:29:23Z</LastUpdatedTimestamp>
         <PhysicalResourceId>MyStack-CPUAlarmHigh-POBWQPDJA81F</PhysicalRe
sourceId>
         <ResourceType>AWS::CloudWatch::Alarm</ResourceType>
       </member>
     </StackResourceSummaries>
   </ListStackResourcesResult>
   <ResponseMetadata>
     <RequestId>2d06e36c-ac1d-11e0-a958-example</RequestId>
   </ResponseMetadata>
</ListStackResourcesResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

ListStacks

Returns the summary information for stacks whose status matches the specified StackStatusFilter. Summary information for stacks that have been deleted is kept for 90 days after the stack is deleted. If no StackStatusFilter is specified, summary information for all stacks is returned (including existing stacks and stacks that have been deleted).

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

NextToken

A string that identifies the next page of stacks that you want to retrieve.

Type: String

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

Required: No

StackStatusFilter.member.N

Stack status to use as a filter. Specify one or more stack status codes to list only stacks with the specified status codes. For a complete list of stack status codes, see the `StackStatus` parameter of the Stack (p. 155) data type.

Type: Array of strings

Valid Values: `CREATE_IN_PROGRESS` | `CREATE_FAILED` | `CREATE_COMPLETE` | `ROLLBACK_IN_PROGRESS` | `ROLLBACK_FAILED` | `ROLLBACK_COMPLETE` | `DELETE_IN_PROGRESS` | `DELETE_FAILED` | `DELETE_COMPLETE` | `UPDATE_IN_PROGRESS` | `UPDATE_COMPLETE_CLEANUP_IN_PROGRESS` | `UPDATE_COMPLETE` | `UPDATE_ROLLBACK_IN_PROGRESS` | `UPDATE_ROLLBACK_FAILED` | `UPDATE_ROLLBACK_COMPLETE_CLEANUP_IN_PROGRESS` | `UPDATE_ROLLBACK_COMPLETE` | `REVIEW_IN_PROGRESS`

Required: No

Response Elements

The following elements are returned by the service.

NextToken

If the output exceeds 1 MB in size, a string that identifies the next page of stacks. If no additional page exists, this value is null.

Type: String

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

StackSummaries.member.N

A list of `StackSummary` structures containing information about the specified stacks.

Type: Array of StackSummary (p. 182) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

Example

ListStacks

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=ListStacks
 &StackStatusFilter.member.1=CREATE_IN_PROGRESS
 &StackStatusFilter.member.2=DELETE_COMPLETE
 &Version=2010-05-15
 &SignatureVersion=2
 &SignatureMethod=HmacSHA256
 &Timestamp=2010-07-27T22%3A26%3A28.000Z
 &AWSAccessKeyId=[AWS Access KeyID]
 &Signature=[Signature]
```

Sample Response

```
<ListStacksResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <ListStacksResult>
    <StackSummaries>
      <member>
        <StackId>
          arn:aws:cloudformation:us-east-1:1234567:stack/TestCreate1/aaaaa
        </StackId>
        <StackStatus>CREATE_IN_PROGRESS</StackStatus>
        <StackName>vpc1</StackName>
        <CreationTime>2011-05-23T15:47:44Z</CreationTime>
        <TemplateDescription>
          Creates one EC2 instance and a load balancer.
        </TemplateDescription>
        <ResourceTypes>
          <member>AWS::EC2::Instance</member>
          <member>AWS::ElasticLoadBalancing::LoadBalancer</member>
        </ResourceTypes>
      </member>
      <member>
        <StackId>
          arn:aws:cloudformation:us-east-1:1234567:stack/TestDelete2/bbbbb
        </StackId>
        <StackStatus>DELETE_COMPLETE</StackStatus>
        <DeletionTime>2011-03-10T16:20:51Z</DeletionTime>
        <StackName>WP1</StackName>
        <CreationTime>2011-03-05T19:57:58Z</CreationTime>
        <TemplateDescription>
          A simple basic Cloudformation Template.
        </TemplateDescription>
        <ResourceTypes>
          <member>AWS::EC2::Instance</member>
        </ResourceTypes>
      </member>
    </StackSummaries>
  </ListStacksResult>
```

```
  <ResponseMetadata>
    <RequestId>b9b4b068-3a41-11e5-94eb-example</RequestId>
  </ResponseMetadata>
</ListStacksResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

ListStackSetOperationResults

Returns summary information about the results of a stack set operation.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

MaxResults

The maximum number of results to be returned with a single call. If the number of available results exceeds this maximum, the response includes a `NextToken` value that you can assign to the `NextToken` request parameter to get the next set of results.

Type: Integer

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

Required: No

NextToken

If the previous request didn't return all of the remaining results, the response object's `NextToken` parameter value is set to a token. To retrieve the next set of results, call `ListStackSetOperationResults` again and assign that token to the request object's `NextToken` parameter. If there are no remaining results, the previous response object's `NextToken` parameter is set to `null`.

Type: String

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

Required: No

OperationId

The ID of the stack set operation.

Type: String

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

Pattern: `[a-zA-Z0-9][-a-zA-Z0-9]*`

Required: Yes

StackSetName

The name or unique ID of the stack set that you want to get operation results for.

Type: String

Required: Yes

Response Elements

The following elements are returned by the service.

NextToken

If the request doesn't return all results, `NextToken` is set to a token. To retrieve the next set of results, call `ListOperationResults` again and assign that token to the request object's `NextToken` parameter. If there are no remaining results, `NextToken` is set to `null`.

Type: String

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

Summaries.member.N

A list of `StackSetOperationResultSummary` structures that contain information about the specified operation results, for accounts and regions that are included in the operation.

Type: Array of StackSetOperationResultSummary (p. 177) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

OperationNotFound

The specified ID refers to an operation that doesn't exist.

HTTP Status Code: 404

StackSetNotFound

The specified stack set doesn't exist.

HTTP Status Code: 404

Examples

ListStackSetOperationResults

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=ListStackSetOperationResults
 &Version=2010-05-15
 &StackSetName=stack-set-example
 &OperationId=61806005-bde9-46f1-949d-6791example
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20170810T233349Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<ListStackSetOperationResultsResponse xmlns="http://internal.amazon.com/coral/
com.amazonaws.maestro.service.v20160713/">
  <ListStackSetOperationResultsResult>
```

```
      <Summaries>
        <member>
          <StatusReason>Cancelled since failure tolerance has exceeded</StatusReason>
          <Region>us-west-2</Region>
          <Account>[account]</Account>
          <Status>CANCELLED</Status>
        </member>
        <member>
          <AccountGateResult>
            <StatusReason>Account [account] should have
 'AWSCloudFormationStackSetAdministrationRole' role with trust relationship to
 CloudFormation service.</StatusReason>
            <Status>FAILED</Status>
          </AccountGateResult>
          <StatusReason>Account [account] should have
 'AWSCloudFormationStackSetAdministrationRole' role with trust relationship to
 CloudFormation service.</StatusReason>
          <Region>us-east-1</Region>
          <Account>[account]</Account>
          <Status>FAILED</Status>
        </member>
      </Summaries>
  </ListStackSetOperationResultsResult>
  <ResponseMetadata>
    <RequestId>bf662a8d-7e1b-11e7-98fb-db38example</RequestId>
  </ResponseMetadata>
</ListStackSetOperationResultsResponse>
```

ListStackSetOperationResults

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=ListStackSetOperationResults
 &Version=2010-05-15
 &StackSetName=stack-set-example
 &OperationId=61806005-bde9-46f1-949d-6791example
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20170810T233349Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<ListStackSetOperationResultsResponse xmlns="http://internal.amazon.com/coral/
com.amazonaws.maestro.service.v20160713/">
   <ListStackSetOperationResultsResult>
     <Summaries>
       <member>
         <AccountGateResult>
           <StatusReason>AWSCloudFormationStackSetAccountGate function not found</
StatusReason>
           <Status>SKIPPED</Status>
         </AccountGateResult>
         <Region>us-west-2</Region>
         <Account>[account]</Account>
         <Status>SUCCEEDED</Status>
```

```
        </member>
        <member>
          <AccountGateResult>
            <StatusReason>AWSCloudFormationStackSetAccountGate function not found</
StatusReason>
            <Status>SKIPPED</Status>
          </AccountGateResult>
          <Region>us-east-1</Region>
          <Account>[account]</Account>
          <Status>SUCCEEDED</Status>
        </member>
      </Summaries>
  </ListStackSetOperationResultsResult>
  <ResponseMetadata>
    <RequestId>ee444e6b-7e1b-11e7-8bb3-1f65example</RequestId>
  </ResponseMetadata>
</ListStackSetOperationResultsResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

ListStackSetOperations

Returns summary information about operations performed on a stack set.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

MaxResults

The maximum number of results to be returned with a single call. If the number of available results exceeds this maximum, the response includes a `NextToken` value that you can assign to the `NextToken` request parameter to get the next set of results.

Type: Integer

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

Required: No

NextToken

If the previous paginated request didn't return all of the remaining results, the response object's `NextToken` parameter value is set to a token. To retrieve the next set of results, call `ListStackSetOperations` again and assign that token to the request object's `NextToken` parameter. If there are no remaining results, the previous response object's `NextToken` parameter is set to `null`.

Type: String

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

Required: No

StackSetName

The name or unique ID of the stack set that you want to get operation summaries for.

Type: String

Required: Yes

Response Elements

The following elements are returned by the service.

NextToken

If the request doesn't return all results, `NextToken` is set to a token. To retrieve the next set of results, call `ListOperationResults` again and assign that token to the request object's `NextToken` parameter. If there are no remaining results, `NextToken` is set to `null`.

Type: String

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

Summaries.member.N

A list of `StackSetOperationSummary` structures that contain summary information about operations for the specified stack set.

Type: Array of StackSetOperationSummary (p. 179) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

StackSetNotFound

The specified stack set doesn't exist.

HTTP Status Code: 404

Example

ListStackSetOperations

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=ListStackSetOperations
 &Version=2010-05-15
 &StackSetName=stack-set-example
 &MaxResults=10
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20170810T233349Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<ListStackSetOperationsResponse xmlns="http://internal.amazon.com/coral/
com.amazonaws.maestro.service.v20160713/">
  <ListStackSetOperationsResult>
    <Summaries>
      <member>
        <CreationTimestamp>2017-08-04T18:01:29.508Z</CreationTimestamp>
        <OperationId>ddf16f54-ad62-4d9b-b0ab-3ed8example</OperationId>
        <Action>UPDATE</Action>
        <EndTimestamp>2017-08-04T18:03:43.672Z</EndTimestamp>
        <Status>SUCCEEDED</Status>
      </member>
      <member>
        <CreationTimestamp>2017-08-04T17:40:05.828Z</CreationTimestamp>
        <OperationId>fadffcdd-4ae1-4a26-aa02-cb81example</OperationId>
        <Action>CREATE</Action>
        <EndTimestamp>2017-08-04T17:40:24.107Z</EndTimestamp>
        <Status>FAILED</Status>
      </member>
    </Summaries>
  </ListStackSetOperationsResult>
  <ResponseMetadata>
    <RequestId>39602b0c-7e1b-11e7-a79f-5d957example</RequestId>
  </ResponseMetadata>
</ListStackSetOperationsResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

ListStackSets

Returns summary information about stack sets that are associated with the user.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

MaxResults

The maximum number of results to be returned with a single call. If the number of available results exceeds this maximum, the response includes a `NextToken` value that you can assign to the `NextToken` request parameter to get the next set of results.

Type: Integer

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

Required: No

NextToken

If the previous paginated request didn't return all of the remaining results, the response object's `NextToken` parameter value is set to a token. To retrieve the next set of results, call `ListStackSets` again and assign that token to the request object's `NextToken` parameter. If there are no remaining results, the previous response object's `NextToken` parameter is set to `null`.

Type: String

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

Required: No

Status

The status of the stack sets that you want to get summary information about.

Type: String

Valid Values: `ACTIVE | DELETED`

Required: No

Response Elements

The following elements are returned by the service.

NextToken

If the request doesn't return all of the remaining results, `NextToken` is set to a token. To retrieve the next set of results, call `ListStackInstances` again and assign that token to the request object's `NextToken` parameter. If the request returns all results, `NextToken` is set to `null`.

Type: String

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

Summaries.member.N

> A list of `StackSetSummary` structures that contain information about the user's stack sets.

> Type: Array of StackSetSummary (p. 181) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

Example

ListStackSets

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=ListStackSets
 &Status=ACTIVE
 &Version=2010-05-15
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20170810T233349Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<ListStackSetsResponse xmlns="http://internal.amazon.com/coral/
com.amazonaws.maestro.service.v20160713/">
  <ListStackSetsResult>
    <Summaries>
      <member>
        <StackSetName>stack-set-example-one</StackSetName>
        <Description>Description of the stack set</Description>
        <StackSetId>stack-set-example-one:c14cd6d1-cd17-40bd-82ed-ff97example</StackSetId>
        <Status>ACTIVE</Status>
      </member>
      <member>
        <StackSetName>stack-set-example-two</StackSetName>
        <StackSetId>stack-set-example-two:22f04391-472b-4e36-b11a-727example</StackSetId>
        <Status>ACTIVE</Status>
      </member>
    </Summaries>
  </ListStackSetsResult>
  <ResponseMetadata>
    <RequestId>35ec5187-794a-11e7-8c45-3f18example</RequestId>
  </ResponseMetadata>
</ListStackSetsResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

SetStackPolicy

Sets a stack policy for a specified stack.

Request Parameters

For information about the parameters that are common to all actions, see Common
Parameters (p. 186).

StackName

The name or unique stack ID that you want to associate a policy with.

Type: String

Required: Yes

StackPolicyBody

Structure containing the stack policy body. For more information, go to Prevent Updates to Stack
Resources in the AWS CloudFormation User Guide. You can specify either the `StackPolicyBody` or
the `StackPolicyURL` parameter, but not both.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 16384.

Required: No

StackPolicyURL

Location of a file containing the stack policy. The URL must point to a policy (maximum size:
16 KB) located in an S3 bucket in the same region as the stack. You can specify either the
`StackPolicyBody` or the `StackPolicyURL` parameter, but not both.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1350.

Required: No

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

Example

SetStackPolicy

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=SetStackPolicy
 &StackName=MyStack
 &StackPolicyBody=[Stack Policy Document]
 &Version=2010-05-15
```

```
&SignatureVersion=2
&Timestamp=2010-07-27T22%3A26%3A28.000Z
&AWSAccessKeyId=[AWS Access KeyID]
&Signature=[Signature]
```

Sample Response

```
<SetStackPolicyResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <ResponseMetadata>
    <RequestId>e7d8c346-744b-11e5-b40b-example</RequestId>
  </ResponseMetadata>
</SetStackPolicyResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

SignalResource

Sends a signal to the specified resource with a success or failure status. You can use the SignalResource API in conjunction with a creation policy or update policy. AWS CloudFormation doesn't proceed with a stack creation or update until resources receive the required number of signals or the timeout period is exceeded. The SignalResource API is useful in cases where you want to send signals from anywhere other than an Amazon EC2 instance.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

LogicalResourceId

The logical ID of the resource that you want to signal. The logical ID is the name of the resource that given in the template.

Type: String

Required: Yes

StackName

The stack name or unique stack ID that includes the resource that you want to signal.

Type: String

Length Constraints: Minimum length of 1.

Pattern: `([a-zA-Z][-a-zA-Z0-9]*)|(arn:\b(aws|aws-us-gov|aws-cn)\b:[-a-zA-Z0-9:/._+]*)`

Required: Yes

Status

The status of the signal, which is either success or failure. A failure signal causes AWS CloudFormation to immediately fail the stack creation or update.

Type: String

Valid Values: `SUCCESS | FAILURE`

Required: Yes

UniqueId

A unique ID of the signal. When you signal Amazon EC2 instances or Auto Scaling groups, specify the instance ID that you are signaling as the unique ID. If you send multiple signals to a single resource (such as signaling a wait condition), each signal requires a different unique ID.

Type: String

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

Required: Yes

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

Example

SignalResource

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=SignalResource
 &LogicalResourceId=MyWaitCondition
 &StackName=AWaitingTestStack
 &Status=SUCCESS
 &UniqueId=test-signal
 &Version=2010-05-15
 &SignatureVersion=2
 &Timestamp=2010-07-27T22%3A26%3A28.000Z
 &AWSAccessKeyId=[AWS Access KeyID]
 &Signature=[Signature]
```

Sample Response

```
<SignalResourceResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <ResponseMetadata>
    <RequestId>e7d8c346-744b-11e5-b40b-example</RequestId>
  </ResponseMetadata>
</SignalResourceResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

StopStackSetOperation

Stops an in-progress operation on a stack set and its associated stack instances.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

OperationId

The ID of the stack operation.

Type: String

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

Pattern: `[a-zA-Z0-9][-a-zA-Z0-9]*`

Required: Yes

StackSetName

The name or unique ID of the stack set that you want to stop the operation for.

Type: String

Required: Yes

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

InvalidOperation

The specified operation isn't valid.

HTTP Status Code: 400

OperationNotFound

The specified ID refers to an operation that doesn't exist.

HTTP Status Code: 404

StackSetNotFound

The specified stack set doesn't exist.

HTTP Status Code: 404

Example

StopStackSetOperation

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=StopStackSetOperation
 &Version=2010-05-15
 &StackSetName=stack-set-example
 &OperationId=61806005-bde9-46f1-949d-6791example
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20170810T233349Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<StopStackSetOperationResponse xmlns="http://internal.amazon.com/coral/
com.amazonaws.maestro.service.v20160713/">
  <StopStackSetOperationResult/>
  <ResponseMetadata>
    <RequestId>dded5cd7-8140-11e7-bc66-f9191example</RequestId>
  </ResponseMetadata>
</StopStackSetOperationResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

UpdateStack

Updates a stack as specified in the template. After the call completes successfully, the stack update starts. You can check the status of the stack via the DescribeStacks (p. 59) action.

To get a copy of the template for an existing stack, you can use the GetTemplate (p. 75) action.

For more information about creating an update template, updating a stack, and monitoring the progress of the update, see Updating a Stack.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

Capabilities.member.N

A list of values that you must specify before AWS CloudFormation can update certain stacks. Some stack templates might include resources that can affect permissions in your AWS account, for example, by creating new AWS Identity and Access Management (IAM) users. For those stacks, you must explicitly acknowledge their capabilities by specifying this parameter.

The only valid values are `CAPABILITY_IAM` and `CAPABILITY_NAMED_IAM`. The following resources require you to specify this parameter: AWS::IAM::AccessKey, AWS::IAM::Group, AWS::IAM::InstanceProfile, AWS::IAM::Policy, AWS::IAM::Role, AWS::IAM::User, and AWS::IAM::UserToGroupAddition. If your stack template contains these resources, we recommend that you review all permissions associated with them and edit their permissions if necessary.

If you have IAM resources, you can specify either capability. If you have IAM resources with custom names, you must specify `CAPABILITY_NAMED_IAM`. If you don't specify this parameter, this action returns an `InsufficientCapabilities` error.

For more information, see Acknowledging IAM Resources in AWS CloudFormation Templates.

Type: Array of strings

Valid Values: `CAPABILITY_IAM | CAPABILITY_NAMED_IAM`

Required: No

ClientRequestToken

A unique identifier for this `UpdateStack` request. Specify this token if you plan to retry requests so that AWS CloudFormation knows that you're not attempting to update a stack with the same name. You might retry `UpdateStack` requests to ensure that AWS CloudFormation successfully received them.

All events triggered by a given stack operation are assigned the same client request token, which you can use to track operations. For example, if you execute a `CreateStack` operation with the token `token1`, then all the `StackEvents` generated by that operation will have `ClientRequestToken` set as `token1`.

In the console, stack operations display the client request token on the Events tab. Stack operations that are initiated from the console use the token format *Console-StackOperation-ID*, which helps you easily identify the stack operation . For example, if you create a stack using the console, each stack event would be assigned the same token in the following format: `Console-CreateStack-7f59c3cf-00d2-40c7-b2ff-e75db0987002`.

Type: String

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

Pattern: `[a-zA-Z0-9][-a-zA-Z0-9]*`

Required: No

NotificationARNs.member.N

Amazon Simple Notification Service topic Amazon Resource Names (ARNs) that AWS CloudFormation associates with the stack. Specify an empty list to remove all notification topics.

Type: Array of strings

Array Members: Maximum number of 5 items.

Required: No

Parameters.member.N

A list of `Parameter` structures that specify input parameters for the stack. For more information, see the Parameter data type.

Type: Array of Parameter (p. 143) objects

Required: No

ResourceTypes.member.N

The template resource types that you have permissions to work with for this update stack action, such as `AWS::EC2::Instance`, `AWS::EC2::*`, or `Custom::MyCustomInstance`.

If the list of resource types doesn't include a resource that you're updating, the stack update fails. By default, AWS CloudFormation grants permissions to all resource types. AWS Identity and Access Management (IAM) uses this parameter for AWS CloudFormation-specific condition keys in IAM policies. For more information, see Controlling Access with AWS Identity and Access Management.

Type: Array of strings

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

Required: No

RoleARN

The Amazon Resource Name (ARN) of an AWS Identity and Access Management (IAM) role that AWS CloudFormation assumes to update the stack. AWS CloudFormation uses the role's credentials to make calls on your behalf. AWS CloudFormation always uses this role for all future operations on the stack. As long as users have permission to operate on the stack, AWS CloudFormation uses this role even if the users don't have permission to pass it. Ensure that the role grants least privilege.

If you don't specify a value, AWS CloudFormation uses the role that was previously associated with the stack. If no role is available, AWS CloudFormation uses a temporary session that is generated from your user credentials.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

Required: No

RollbackConfiguration

The rollback triggers for AWS CloudFormation to monitor during stack creation and updating operations, and for the specified monitoring period afterwards.

Type: RollbackConfiguration (p. 152) object

Required: No

StackName

The name or unique stack ID of the stack to update.

Type: String

Required: Yes

StackPolicyBody

Structure containing a new stack policy body. You can specify either the `StackPolicyBody` or the `StackPolicyURL` parameter, but not both.

You might update the stack policy, for example, in order to protect a new resource that you created during a stack update. If you do not specify a stack policy, the current policy that is associated with the stack is unchanged.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 16384.

Required: No

StackPolicyDuringUpdateBody

Structure containing the temporary overriding stack policy body. You can specify either the `StackPolicyDuringUpdateBody` or the `StackPolicyDuringUpdateURL` parameter, but not both.

If you want to update protected resources, specify a temporary overriding stack policy during this update. If you do not specify a stack policy, the current policy that is associated with the stack will be used.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 16384.

Required: No

StackPolicyDuringUpdateURL

Location of a file containing the temporary overriding stack policy. The URL must point to a policy (max size: 16KB) located in an S3 bucket in the same region as the stack. You can specify either the `StackPolicyDuringUpdateBody` or the `StackPolicyDuringUpdateURL` parameter, but not both.

If you want to update protected resources, specify a temporary overriding stack policy during this update. If you do not specify a stack policy, the current policy that is associated with the stack will be used.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1350.

Required: No

StackPolicyURL

Location of a file containing the updated stack policy. The URL must point to a policy (max size: 16KB) located in an S3 bucket in the same region as the stack. You can specify either the `StackPolicyBody` or the `StackPolicyURL` parameter, but not both.

You might update the stack policy, for example, in order to protect a new resource that you created during a stack update. If you do not specify a stack policy, the current policy that is associated with the stack is unchanged.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1350.

Required: No

Tags.member.N

Key-value pairs to associate with this stack. AWS CloudFormation also propagates these tags to supported resources in the stack. You can specify a maximum number of 50 tags.

If you don't specify this parameter, AWS CloudFormation doesn't modify the stack's tags. If you specify an empty value, AWS CloudFormation removes all associated tags.

Type: Array of Tag (p. 184) objects

Array Members: Maximum number of 50 items.

Required: No

TemplateBody

Structure containing the template body with a minimum length of 1 byte and a maximum length of 51,200 bytes. (For more information, go to Template Anatomy in the AWS CloudFormation User Guide.)

Conditional: You must specify only one of the following parameters: `TemplateBody`, `TemplateURL`, or set the `UsePreviousTemplate` to `true`.

Type: String

Length Constraints: Minimum length of 1.

Required: No

TemplateURL

Location of file containing the template body. The URL must point to a template that is located in an Amazon S3 bucket. For more information, go to Template Anatomy in the AWS CloudFormation User Guide.

Conditional: You must specify only one of the following parameters: `TemplateBody`, `TemplateURL`, or set the `UsePreviousTemplate` to `true`.

Type: String

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

Required: No

UsePreviousTemplate

Reuse the existing template that is associated with the stack that you are updating.

Conditional: You must specify only one of the following parameters: `TemplateBody`, `TemplateURL`, or set the `UsePreviousTemplate` to `true`.

Type: Boolean

Required: No

Response Elements

The following element is returned by the service.

StackId

Unique identifier of the stack.

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

InsufficientCapabilities

The template contains resources with capabilities that weren't specified in the Capabilities parameter.

HTTP Status Code: 400

TokenAlreadyExists

A client request token already exists.

HTTP Status Code: 400

Example

UpdateStack

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=UpdateStack
 &StackName=MyStack
 &TemplateBody=[Template Document]
 &Parameters.member.1.ParameterKey=AvailabilityZone
 &Parameters.member.1.ParameterValue=us-east-1a
 &Version=2010-05-15
 &SignatureVersion=2
 &Timestamp=2010-07-27T22%3A26%3A28.000Z
 &AWSAccessKeyId=[AWS Access KeyID]
 &Signature=[Signature]
```

Sample Response

```
<UpdateStackResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <UpdateStackResult>
    <StackId>arn:aws:cloudformation:us-east-1:123456789:stack/MyStack/aaf549a0-a413-11df-
adb3-5081b3858e83</StackId>
  </UpdateStackResult>
  <ResponseMetadata>
    <RequestId>b9b4b068-3a41-11e5-94eb-example</RequestId>
```

```
    </ResponseMetadata>
</UpdateStackResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

UpdateStackInstances

Updates the parameter values for stack instances for the specified accounts, within the specified regions. A stack instance refers to a stack in a specific account and region.

You can only update stack instances in regions and accounts where they already exist; to create additional stack instances, use CreateStackInstances.

During stack set updates, any parameters overridden for a stack instance are not updated, but retain their overridden value.

You can only update the parameter *values* that are specified in the stack set; to add or delete a parameter itself, use UpdateStackSet to update the stack set template. If you add a parameter to a template, before you can override the parameter value specified in the stack set you must first use UpdateStackSet to update all stack instances with the updated template and parameter value specified in the stack set. Once a stack instance has been updated with the new parameter, you can then override the parameter value using `UpdateStackInstances`.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

Accounts.member.N

The names of one or more AWS accounts for which you want to update parameter values for stack instances. The overridden parameter values will be applied to all stack instances in the specified accounts and regions.

Type: Array of strings

Pattern: `[0-9]{12}`

Required: Yes

OperationId

The unique identifier for this stack set operation.

The operation ID also functions as an idempotency token, to ensure that AWS CloudFormation performs the stack set operation only once, even if you retry the request multiple times. You might retry stack set operation requests to ensure that AWS CloudFormation successfully received them.

Type: String

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

Pattern: `[a-zA-Z0-9][-a-zA-Z0-9]*`

Required: No

OperationPreferences

Preferences for how AWS CloudFormation performs this stack set operation.

Type: StackSetOperationPreferences (p. 175) object

Required: No

ParameterOverrides.member.N

A list of input parameters whose values you want to update for the specified stack instances.

Any overridden parameter values will be applied to all stack instances in the specified accounts and regions. When specifying parameters and their values, be aware of how AWS CloudFormation sets parameter values during stack instance update operations:

- To override the current value for a parameter, include the parameter and specify its value.

- To leave a parameter set to its present value, you can do one of the following:

  - Do not include the parameter in the list.

  - Include the parameter and specify `UsePreviousValue` as `true`. (You cannot specify both a value and set `UsePreviousValue` to `true`.)

- To set all overridden parameter back to the values specified in the stack set, specify a parameter list but do not include any parameters.

- To leave all parameters set to their present values, do not specify this property at all.

During stack set updates, any parameter values overridden for a stack instance are not updated, but retain their overridden value.

You can only override the parameter *values* that are specified in the stack set; to add or delete a parameter itself, use `UpdateStackSet` to update the stack set template. If you add a parameter to a template, before you can override the parameter value specified in the stack set you must first use UpdateStackSet to update all stack instances with the updated template and parameter value specified in the stack set. Once a stack instance has been updated with the new parameter, you can then override the parameter value using `UpdateStackInstances`.

Type: Array of Parameter (p. 143) objects

Required: No

Regions.member.N

The names of one or more regions in which you want to update parameter values for stack instances. The overridden parameter values will be applied to all stack instances in the specified accounts and regions.

Type: Array of strings

Required: Yes

StackSetName

The name or unique ID of the stack set associated with the stack instances.

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

OperationId

The unique identifier for this stack set operation.

Type: String

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

Pattern: `[a-zA-Z0-9][-a-zA-Z0-9]*`

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

InvalidOperation

The specified operation isn't valid.

HTTP Status Code: 400

OperationIdAlreadyExists

The specified operation ID already exists.

HTTP Status Code: 409

OperationInProgress

Another operation is currently in progress for this stack set. Only one operation can be performed for a stack set at a given time.

HTTP Status Code: 409

StackInstanceNotFound

The specified stack instance doesn't exist.

HTTP Status Code: 404

StackSetNotFound

The specified stack set doesn't exist.

HTTP Status Code: 404

StaleRequest

Another operation has been performed on this stack set since the specified operation was performed.

HTTP Status Code: 409

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

UpdateStackSet

Updates the stack set and *all* associated stack instances.

Even if the stack set operation created by updating the stack set fails (completely or partially, below or above a specified failure tolerance), the stack set is updated with your changes. Subsequent CreateStackInstances (p. 23) calls on the specified stack set use the updated stack set.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

Capabilities.member.N

A list of values that you must specify before AWS CloudFormation can create certain stack sets. Some stack set templates might include resources that can affect permissions in your AWS account— for example, by creating new AWS Identity and Access Management (IAM) users. For those stack sets, you must explicitly acknowledge their capabilities by specifying this parameter.

The only valid values are CAPABILITY_IAM and CAPABILITY_NAMED_IAM. The following resources require you to specify this parameter:
- AWS::IAM::AccessKey
- AWS::IAM::Group
- AWS::IAM::InstanceProfile
- AWS::IAM::Policy
- AWS::IAM::Role
- AWS::IAM::User
- AWS::IAM::UserToGroupAddition

If your stack template contains these resources, we recommend that you review all permissions that are associated with them and edit their permissions if necessary.

If you have IAM resources, you can specify either capability. If you have IAM resources with custom names, you must specify CAPABILITY_NAMED_IAM. If you don't specify this parameter, this action returns an `InsufficientCapabilities` error.

For more information, see Acknowledging IAM Resources in AWS CloudFormation Templates.

Type: Array of strings

Valid Values: `CAPABILITY_IAM | CAPABILITY_NAMED_IAM`

Required: No

Description

A brief description of updates that you are making.

Type: String

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

Required: No

OperationId

The unique ID for this stack set operation.

The operation ID also functions as an idempotency token, to ensure that AWS CloudFormation performs the stack set operation only once, even if you retry the request multiple times. You might retry stack set operation requests to ensure that AWS CloudFormation successfully received them.

Repeating this stack set operation with a new operation ID retries all stack instances whose status is `OUTDATED`.

Type: String

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

Pattern: `[a-zA-Z0-9][-a-zA-Z0-9]*`

Required: No

OperationPreferences

Preferences for how AWS CloudFormation performs this stack set operation.

Type: StackSetOperationPreferences (p. 175) object

Required: No

Parameters.member.N

A list of input parameters for the stack set template.

Type: Array of Parameter (p. 143) objects

Required: No

StackSetName

The name or unique ID of the stack set that you want to update.

Type: String

Required: Yes

Tags.member.N

The key-value pairs to associate with this stack set and the stacks created from it. AWS CloudFormation also propagates these tags to supported resources that are created in the stacks. You can specify a maximum number of 50 tags.

If you specify tags for this parameter, those tags replace any list of tags that are currently associated with this stack set. This means:

- If you don't specify this parameter, AWS CloudFormation doesn't modify the stack's tags.
- If you specify *any* tags using this parameter, you must specify *all* the tags that you want associated with this stack set, even tags you've specifed before (for example, when creating the stack set or during a previous update of the stack set.). Any tags that you don't include in the updated list of tags are removed from the stack set, and therefore from the stacks and resources as well.
- If you specify an empty value, AWS CloudFormation removes all currently associated tags.

If you specify new tags as part of an `UpdateStackSet` action, AWS CloudFormation checks to see if you have the required IAM permission to tag resources. If you omit tags that are currently associated with the stack set from the list of tags you specify, AWS CloudFormation assumes that you want to remove those tags from the stack set, and checks to see if you have permission to untag resources. If you don't have the necessary permission(s), the entire `UpdateStackSet` action fails with an `access denied` error, and the stack set is not updated.

Type: Array of Tag (p. 184) objects

Array Members: Maximum number of 50 items.

Required: No

TemplateBody

The structure that contains the template body, with a minimum length of 1 byte and a maximum length of 51,200 bytes. For more information, see Template Anatomy in the AWS CloudFormation User Guide.

Conditional: You must specify only one of the following parameters: `TemplateBody` or `TemplateURL`—or set `UsePreviousTemplate` to true.

Type: String

Length Constraints: Minimum length of 1.

Required: No

TemplateURL

The location of the file that contains the template body. The URL must point to a template (maximum size: 460,800 bytes) that is located in an Amazon S3 bucket. For more information, see Template Anatomy in the AWS CloudFormation User Guide.

Conditional: You must specify only one of the following parameters: `TemplateBody` or `TemplateURL`—or set `UsePreviousTemplate` to true.

Type: String

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

Required: No

UsePreviousTemplate

Use the existing template that's associated with the stack set that you're updating.

Conditional: You must specify only one of the following parameters: `TemplateBody` or `TemplateURL`—or set `UsePreviousTemplate` to true.

Type: Boolean

Required: No

Response Elements

The following element is returned by the service.

OperationId

The unique ID for this stack set operation.

Type: String

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

Pattern: `[a-zA-Z0-9][-a-zA-Z0-9]*`

Errors

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

InvalidOperation

The specified operation isn't valid.

HTTP Status Code: 400

OperationIdAlreadyExists

The specified operation ID already exists.

HTTP Status Code: 409

OperationInProgress

Another operation is currently in progress for this stack set. Only one operation can be performed for a stack set at a given time.

HTTP Status Code: 409

StackSetNotFound

The specified stack set doesn't exist.

HTTP Status Code: 404

StaleRequest

Another operation has been performed on this stack set since the specified operation was performed.

HTTP Status Code: 409

Example

UpdateStackSet

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=UpdateStackSet
 &Version=2010-05-15
 &StackSetName=stack-set-example
 &OperationPreferences.MaxConcurrentCount=2
 &OperationPreferences.FailureToleranceCount=1
 &UsePreviousTemplate=true
 &Tags.member.1.Key=new_key
 &Tags.member.1.Value=new_value
 &OperationId=bb1764f4-3dea-4c39-bd65-066aexample
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20170810T233349Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<UpdateStackSetResponse xmlns="http://internal.amazon.com/coral/
com.amazonaws.maestro.service.v20160713/">
```

```
  <UpdateStackSetResult>
    <OperationId>bb1764f4-3dea-4c39-bd65-066aexamplef</OperationId>
  </UpdateStackSetResult>
  <ResponseMetadata>
    <RequestId>32d4839e-7e24-11e7-b656-d39aexample</RequestId>
  </ResponseMetadata>
</UpdateStackSetResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

UpdateTerminationProtection

Updates termination protection for the specified stack. If a user attempts to delete a stack with termination protection enabled, the operation fails and the stack remains unchanged. For more information, see Protecting a Stack From Being Deleted in the *AWS CloudFormation User Guide*.

For nested stacks, termination protection is set on the root stack and cannot be changed directly on the nested stack.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

EnableTerminationProtection

Whether to enable termination protection on the specified stack.

Type: Boolean

Required: Yes

StackName

The name or unique ID of the stack for which you want to set termination protection.

Type: String

Length Constraints: Minimum length of 1.

Pattern: `([a-zA-Z][-a-zA-Z0-9]*)|(arn:\b(aws|aws-us-gov|aws-cn)\b:[-a-zA-Z0-9:/._+]*)`

Required: Yes

Response Elements

The following element is returned by the service.

StackId

The unique ID of the stack.

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

ValidateTemplate

Validates a specified template. AWS CloudFormation first checks if the template is valid JSON. If it isn't, AWS CloudFormation checks if the template is valid YAML. If both these checks fail, AWS CloudFormation returns a template validation error.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 186).

TemplateBody

Structure containing the template body with a minimum length of 1 byte and a maximum length of 51,200 bytes. For more information, go to Template Anatomy in the AWS CloudFormation User Guide.

Conditional: You must pass `TemplateURL` or `TemplateBody`. If both are passed, only `TemplateBody` is used.

Type: String

Length Constraints: Minimum length of 1.

Required: No

TemplateURL

Location of file containing the template body. The URL must point to a template (max size: 460,800 bytes) that is located in an Amazon S3 bucket. For more information, go to Template Anatomy in the AWS CloudFormation User Guide.

Conditional: You must pass `TemplateURL` or `TemplateBody`. If both are passed, only `TemplateBody` is used.

Type: String

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

Required: No

Response Elements

The following elements are returned by the service.

Capabilities.member.N

The capabilities found within the template. If your template contains IAM resources, you must specify the CAPABILITY_IAM or CAPABILITY_NAMED_IAM value for this parameter when you use the CreateStack (p. 17) or UpdateStack (p. 115) actions with your template; otherwise, those actions return an InsufficientCapabilities error.

For more information, see Acknowledging IAM Resources in AWS CloudFormation Templates.

Type: Array of strings

Valid Values: `CAPABILITY_IAM | CAPABILITY_NAMED_IAM`

CapabilitiesReason

The list of resources that generated the values in the `Capabilities` response element.

Type: String

DeclaredTransforms.member.N

A list of the transforms that are declared in the template.

Type: Array of strings

Description

The description found within the template.

Type: String

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

Parameters.member.N

A list of `TemplateParameter` structures.

Type: Array of TemplateParameter (p. 185) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 188).

Example

ValidateTemplate

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=ValidateTemplate
 &TemplateBody=http://myTemplateRepository/TemplateOne.template
 &Version=2010-05-15
 &SignatureVersion=2
 &Timestamp=2010-07-27T22%3A26%3A28.000Z
 &AWSAccessKeyId=[AWS Access KeyID]
 &Signature=[Signature]
```

Sample Response

```
<ValidateTemplateResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <ValidateTemplateResult>
    <Description></Description>
    <Parameters>
      <member>
        <NoEcho>false</NoEcho>
        <ParameterKey>InstanceType</ParameterKey>
        <Description>Type of instance to launch</Description>
        <DefaultValue>m1.small</DefaultValue>
      </member>
      <member>
```

```
        <NoEcho>false</NoEcho>
        <ParameterKey>WebServerPort</ParameterKey>
        <Description>The TCP port for the Web Server</Description>
        <DefaultValue>8888</DefaultValue>
      </member>
      <member>
        <NoEcho>false</NoEcho>
        <ParameterKey>KeyName</ParameterKey>
        <Description>Name of an existing EC2 KeyPair to enable SSH access into the server</
Description>
      </member>
    </Parameters>
  </ValidateTemplateResult>
  <ResponseMetadata>
    <RequestId>0be7b6e8-e4a0-11e0-a5bd-example</RequestId>
  </ResponseMetadata>
</ValidateTemplateResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2

Data Types

The AWS CloudFormation 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:

AccountGateResult

Structure that contains the results of the account gate function which AWS CloudFormation invokes, if present, before proceeding with a stack set operation in an account and region.

For each account and region, AWS CloudFormation lets you specify a Lamdba function that encapsulates any requirements that must be met before CloudFormation can proceed with a stack set operation in that account and region. CloudFormation invokes the function each time a stack set operation is requested for that account and region; if the function returns `FAILED`, CloudFormation cancels the operation in that account and region, and sets the stack set operation result status for that account and region to `FAILED`.

For more information, see Configuring a target account gate.

Contents

Status

The status of the account gate function.

- `SUCCEEDED`: The account gate function has determined that the account and region passes any requirements for a stack set operation to occur. AWS CloudFormation proceeds with the stack operation in that account and region.

- `FAILED`: The account gate function has determined that the account and region does not meet the requirements for a stack set operation to occur. AWS CloudFormation cancels the stack set operation in that account and region, and sets the stack set operation result status for that account and region to `FAILED`.

- `SKIPPED`: AWS CloudFormation has skipped calling the account gate function for this account and region, for one of the following reasons:

  - An account gate function has not been specified for the account and region. AWS CloudFormation proceeds with the stack set operation in this account and region.

  - The `AWSCloudFormationStackSetExecutionRole` of the stack set adminstration account lacks permissions to invoke the function. AWS CloudFormation proceeds with the stack set operation in this account and region.

  - Either no action is necessary, or no action is possible, on the stack. AWS CloudFormation skips the stack set operation in this account and region.

Type: String

Valid Values: `SUCCEEDED | FAILED | SKIPPED`

Required: No

StatusReason

The reason for the account gate status assigned to this account and region for the stack set operation.

Type: String

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

AccountLimit

The AccountLimit data type.

Contents

Name

The name of the account limit. Currently, the only account limit is `StackLimit`.

Type: String

Required: No

Value

The value that is associated with the account limit name.

Type: Integer

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

Change

The `Change` structure describes the changes AWS CloudFormation will perform if you execute the change set.

Contents

ResourceChange

A `ResourceChange` structure that describes the resource and action that AWS CloudFormation will perform.

Type: ResourceChange (p. 147) object

Required: No

Type

The type of entity that AWS CloudFormation changes. Currently, the only entity type is `Resource`.

Type: String

Valid Values: `Resource`

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

ChangeSetSummary

The `ChangeSetSummary` structure describes a change set, its status, and the stack with which it's associated.

Contents

ChangeSetId

The ID of the change set.

Type: String

Length Constraints: Minimum length of 1.

Pattern: `arn:[-a-zA-Z0-9:/]*`

Required: No

ChangeSetName

The name of the change set.

Type: String

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

Pattern: `[a-zA-Z][-a-zA-Z0-9]*`

Required: No

CreationTime

The start time when the change set was created, in UTC.

Type: Timestamp

Required: No

Description

Descriptive information about the change set.

Type: String

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

Required: No

ExecutionStatus

If the change set execution status is `AVAILABLE`, you can execute the change set. If you can't execute the change set, the status indicates why. For example, a change set might be in an `UNAVAILABLE` state because AWS CloudFormation is still creating it or in an `OBSOLETE` state because the stack was already updated.

Type: String

Valid Values: `UNAVAILABLE | AVAILABLE | EXECUTE_IN_PROGRESS | EXECUTE_COMPLETE | EXECUTE_FAILED | OBSOLETE`

Required: No

StackId

The ID of the stack with which the change set is associated.

Type: String

Required: No

StackName

The name of the stack with which the change set is associated.

Type: String

Required: No

Status

The state of the change set, such as `CREATE_IN_PROGRESS`, `CREATE_COMPLETE`, or `FAILED`.

Type: String

Valid Values: `CREATE_PENDING | CREATE_IN_PROGRESS | CREATE_COMPLETE | DELETE_COMPLETE | FAILED`

Required: No

StatusReason

A description of the change set's status. For example, if your change set is in the `FAILED` state, AWS CloudFormation shows the error message.

Type: String

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

Export

The `Export` structure describes the exported output values for a stack.

Contents

ExportingStackId

The stack that contains the exported output name and value.

Type: String

Required: No

Name

The name of exported output value. Use this name and the `Fn::ImportValue` function to import the associated value into other stacks. The name is defined in the `Export` field in the associated stack's `Outputs` section.

Type: String

Required: No

Value

The value of the exported output, such as a resource physical ID. This value is defined in the `Export` field in the associated stack's `Outputs` section.

Type: String

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

Output

The Output data type.

Contents

Description

User defined description associated with the output.

Type: String

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

Required: No

ExportName

The name of the export associated with the output.

Type: String

Required: No

OutputKey

The key associated with the output.

Type: String

Required: No

OutputValue

The value associated with the output.

Type: String

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

Parameter

The Parameter data type.

Contents

ParameterKey

The key associated with the parameter. If you don't specify a key and value for a particular parameter, AWS CloudFormation uses the default value that is specified in your template.

Type: String

Required: No

ParameterValue

The input value associated with the parameter.

Type: String

Required: No

ResolvedValue

Read-only. The value that corresponds to a Systems Manager parameter key. This field is returned only for SSM parameter types in the template.

Type: String

Required: No

UsePreviousValue

During a stack update, use the existing parameter value that the stack is using for a given parameter key. If you specify `true`, do not specify a parameter value.

Type: Boolean

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

ParameterConstraints

A set of criteria that AWS CloudFormation uses to validate parameter values. Although other constraints might be defined in the stack template, AWS CloudFormation returns only the `AllowedValues` property.

Contents

AllowedValues.member.N

A list of values that are permitted for a parameter.

Type: Array of strings

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

ParameterDeclaration

The ParameterDeclaration data type.

Contents

DefaultValue

The default value of the parameter.

Type: String

Required: No

Description

The description that is associate with the parameter.

Type: String

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

Required: No

NoEcho

Flag that indicates whether the parameter value is shown as plain text in logs and in the AWS Management Console.

Type: Boolean

Required: No

ParameterConstraints

The criteria that AWS CloudFormation uses to validate parameter values.

Type: ParameterConstraints (p. 144) object

Required: No

ParameterKey

The name that is associated with the parameter.

Type: String

Required: No

ParameterType

The type of parameter.

Type: String

Required: No

See Also

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

- AWS SDK for C++

- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

ResourceChange

The `ResourceChange` structure describes the resource and the action that AWS CloudFormation will perform on it if you execute this change set.

Contents

Action

The action that AWS CloudFormation takes on the resource, such as `Add` (adds a new resource), `Modify` (changes a resource), or `Remove` (deletes a resource).

Type: String

Valid Values: `Add | Modify | Remove`

Required: No

Details.member.N

For the `Modify` action, a list of `ResourceChangeDetail` structures that describes the changes that AWS CloudFormation will make to the resource.

Type: Array of objects

Required: No

LogicalResourceId

The resource's logical ID, which is defined in the stack's template.

Type: String

Required: No

PhysicalResourceId

The resource's physical ID (resource name). Resources that you are adding don't have physical IDs because they haven't been created.

Type: String

Required: No

Replacement

For the `Modify` action, indicates whether AWS CloudFormation will replace the resource by creating a new one and deleting the old one. This value depends on the value of the `RequiresRecreation` property in the `ResourceTargetDefinition` structure. For example, if the `RequiresRecreation` field is `Always` and the `Evaluation` field is `Static`, `Replacement` is `True`. If the `RequiresRecreation` field is `Always` and the `Evaluation` field is `Dynamic`, `Replacement` is `Conditionally`.

If you have multiple changes with different `RequiresRecreation` values, the `Replacement` value depends on the change with the most impact. A `RequiresRecreation` value of `Always` has the most impact, followed by `Conditionally`, and then `Never`.

Type: String

Valid Values: `True | False | Conditional`

Required: No

ResourceType

The type of AWS CloudFormation resource, such as `AWS::S3::Bucket`.

Type: String

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

Required: No

Scope.member.N

For the `Modify` action, indicates which resource attribute is triggering this update, such as a change in the resource attribute's `Metadata`, `Properties`, or `Tags`.

Type: Array of strings

Valid Values: `Properties | Metadata | CreationPolicy | UpdatePolicy | DeletionPolicy | Tags`

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

ResourceChangeDetail

For a resource with `Modify` as the action, the `ResourceChange` structure describes the changes AWS CloudFormation will make to that resource.

Contents

CausingEntity

The identity of the entity that triggered this change. This entity is a member of the group that is specified by the `ChangeSource` field. For example, if you modified the value of the `KeyPairName` parameter, the `CausingEntity` is the name of the parameter (`KeyPairName`).

If the `ChangeSource` value is `DirectModification`, no value is given for `CausingEntity`.

Type: String

Required: No

ChangeSource

The group to which the `CausingEntity` value belongs. There are five entity groups:

- `ResourceReference` entities are `Ref` intrinsic functions that refer to resources in the template, such as `{ "Ref" : "MyEC2InstanceResource" }`.
- `ParameterReference` entities are `Ref` intrinsic functions that get template parameter values, such as `{ "Ref" : "MyPasswordParameter" }`.
- `ResourceAttribute` entities are `Fn::GetAtt` intrinsic functions that get resource attribute values, such as `{ "Fn::GetAtt" : [ "MyEC2InstanceResource", "PublicDnsName" ] }`.
- `DirectModification` entities are changes that are made directly to the template.
- `Automatic` entities are `AWS::CloudFormation::Stack` resource types, which are also known as nested stacks. If you made no changes to the `AWS::CloudFormation::Stack` resource, AWS CloudFormation sets the `ChangeSource` to `Automatic` because the nested stack's template might have changed. Changes to a nested stack's template aren't visible to AWS CloudFormation until you run an update on the parent stack.

Type: String

Valid Values: `ResourceReference` | `ParameterReference` | `ResourceAttribute` | `DirectModification` | `Automatic`

Required: No

Evaluation

Indicates whether AWS CloudFormation can determine the target value, and whether the target value will change before you execute a change set.

For `Static` evaluations, AWS CloudFormation can determine that the target value will change, and its value. For example, if you directly modify the `InstanceType` property of an EC2 instance, AWS CloudFormation knows that this property value will change, and its value, so this is a `Static` evaluation.

For `Dynamic` evaluations, cannot determine the target value because it depends on the result of an intrinsic function, such as a `Ref` or `Fn::GetAtt` intrinsic function, when the stack is updated. For example, if your template includes a reference to a resource that is conditionally recreated, the value of the reference (the physical ID of the resource) might change, depending on if the resource is

recreated. If the resource is recreated, it will have a new physical ID, so all references to that resource will also be updated.

Type: String

Valid Values: `Static | Dynamic`

Required: No

Target

A `ResourceTargetDefinition` structure that describes the field that AWS CloudFormation will change and whether the resource will be recreated.

Type: ResourceTargetDefinition (p. 151) object

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

ResourceTargetDefinition

The field that AWS CloudFormation will change, such as the name of a resource's property, and whether the resource will be recreated.

Contents

Attribute

Indicates which resource attribute is triggering this update, such as a change in the resource attribute's `Metadata`, `Properties`, or `Tags`.

Type: String

Valid Values: `Properties | Metadata | CreationPolicy | UpdatePolicy | DeletionPolicy | Tags`

Required: No

Name

If the `Attribute` value is `Properties`, the name of the property. For all other attributes, the value is null.

Type: String

Required: No

RequiresRecreation

If the `Attribute` value is `Properties`, indicates whether a change to this property causes the resource to be recreated. The value can be `Never`, `Always`, or `Conditionally`. To determine the conditions for a `Conditionally` recreation, see the update behavior for that [property](#) in the AWS CloudFormation User Guide.

Type: String

Valid Values: `Never | Conditionally | Always`

Required: No

See Also

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

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

RollbackConfiguration

Structure containing the rollback triggers for AWS CloudFormation to monitor during stack creation and updating operations, and for the specified monitoring period afterwards.

Rollback triggers enable you to have AWS CloudFormation monitor the state of your application during stack creation and updating, and to roll back that operation if the application breaches the threshold of any of the alarms you've specified. For more information, see Monitor and Roll Back Stack Operations.

Contents

MonitoringTimeInMinutes

The amount of time, in minutes, during which CloudFormation should monitor all the rollback triggers after the stack creation or update operation deploys all necessary resources.

The default is 0 minutes.

If you specify a monitoring period but do not specify any rollback triggers, CloudFormation still waits the specified period of time before cleaning up old resources after update operations. You can use this monitoring period to perform any manual stack validation desired, and manually cancel the stack creation or update (using CancelUpdateStack, for example) as necessary.

If you specify 0 for this parameter, CloudFormation still monitors the specified rollback triggers during stack creation and update operations. Then, for update operations, it begins disposing of old resources immediately once the operation completes.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 180.

Required: No

RollbackTriggers.member.N

The triggers to monitor during stack creation or update actions.

By default, AWS CloudFormation saves the rollback triggers specified for a stack and applies them to any subsequent update operations for the stack, unless you specify otherwise. If you do specify rollback triggers for this parameter, those triggers replace any list of triggers previously specified for the stack. This means:

- To use the rollback triggers previously specified for this stack, if any, don't specify this parameter.
- To specify new or updated rollback triggers, you must specify *all* the triggers that you want used for this stack, even triggers you've specifed before (for example, when creating the stack or during a previous stack update). Any triggers that you don't include in the updated list of triggers are no longer applied to the stack.
- To remove all currently specified triggers, specify an empty list for this parameter.

If a specified trigger is missing, the entire stack operation fails and is rolled back.

Type: Array of RollbackTrigger (p. 154) objects

Array Members: Maximum number of 5 items.

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

RollbackTrigger

A rollback trigger AWS CloudFormation monitors during creation and updating of stacks. If any of the alarms you specify goes to ALARM state during the stack operation or within the specified monitoring period afterwards, CloudFormation rolls back the entire stack operation.

Contents

Arn

The Amazon Resource Name (ARN) of the rollback trigger.

If a specified trigger is missing, the entire stack operation fails and is rolled back.

Type: String

Required: Yes

Type

The resource type of the rollback trigger. Currently, AWS::CloudWatch::Alarm is the only supported resource type.

Type: String

Required: Yes

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

Stack

The Stack data type.

Contents

Capabilities.member.N

The capabilities allowed in the stack.

Type: Array of strings

Valid Values: `CAPABILITY_IAM | CAPABILITY_NAMED_IAM`

Required: No

ChangeSetId

The unique ID of the change set.

Type: String

Length Constraints: Minimum length of 1.

Pattern: `arn:[-a-zA-Z0-9:/]*`

Required: No

CreationTime

The time at which the stack was created.

Type: Timestamp

Required: Yes

DeletionTime

The time the stack was deleted.

Type: Timestamp

Required: No

Description

A user-defined description associated with the stack.

Type: String

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

Required: No

DisableRollback

Boolean to enable or disable rollback on stack creation failures:
- `true`: disable rollback
- `false`: enable rollback

Type: Boolean

Required: No

EnableTerminationProtection

Whether termination protection is enabled for the stack.

For nested stacks, termination protection is set on the root stack and cannot be changed directly on the nested stack. For more information, see Protecting a Stack From Being Deleted in the *AWS CloudFormation User Guide*.

Type: Boolean

Required: No

LastUpdatedTime

The time the stack was last updated. This field will only be returned if the stack has been updated at least once.

Type: Timestamp

Required: No

NotificationARNs.member.N

SNS topic ARNs to which stack related events are published.

Type: Array of strings

Array Members: Maximum number of 5 items.

Required: No

Outputs.member.N

A list of output structures.

Type: Array of Output (p. 142) objects

Required: No

Parameters.member.N

A list of `Parameter` structures.

Type: Array of Parameter (p. 143) objects

Required: No

ParentId

For nested stacks--stacks created as resources for another stack--the stack ID of the direct parent of this stack. For the first level of nested stacks, the root stack is also the parent stack.

For more information, see Working with Nested Stacks in the *AWS CloudFormation User Guide*.

Type: String

Required: No

RoleARN

The Amazon Resource Name (ARN) of an AWS Identity and Access Management (IAM) role that is associated with the stack. During a stack operation, AWS CloudFormation uses this role's credentials to make calls on your behalf.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

Required: No

RollbackConfiguration

The rollback triggers for AWS CloudFormation to monitor during stack creation and updating operations, and for the specified monitoring period afterwards.

Type: RollbackConfiguration (p. 152) object

Required: No

RootId

For nested stacks--stacks created as resources for another stack--the stack ID of the the top-level stack to which the nested stack ultimately belongs.

For more information, see Working with Nested Stacks in the *AWS CloudFormation User Guide*.

Type: String

Required: No

StackId

Unique identifier of the stack.

Type: String

Required: No

StackName

The name associated with the stack.

Type: String

Required: Yes

StackStatus

Current status of the stack.

Type: String

Valid Values: `CREATE_IN_PROGRESS` | `CREATE_FAILED` | `CREATE_COMPLETE` | `ROLLBACK_IN_PROGRESS` | `ROLLBACK_FAILED` | `ROLLBACK_COMPLETE` | `DELETE_IN_PROGRESS` | `DELETE_FAILED` | `DELETE_COMPLETE` | `UPDATE_IN_PROGRESS` | `UPDATE_COMPLETE_CLEANUP_IN_PROGRESS` | `UPDATE_COMPLETE` | `UPDATE_ROLLBACK_IN_PROGRESS` | `UPDATE_ROLLBACK_FAILED` | `UPDATE_ROLLBACK_COMPLETE_CLEANUP_IN_PROGRESS` | `UPDATE_ROLLBACK_COMPLETE` | `REVIEW_IN_PROGRESS`

Required: Yes

StackStatusReason

Success/failure message associated with the stack status.

Type: String

Required: No

Tags.member.N

A list of `Tags` that specify information about the stack.

Type: Array of Tag (p. 184) objects

Array Members: Maximum number of 50 items.

Required: No

TimeoutInMinutes

The amount of time within which stack creation should complete.

Type: Integer

Valid Range: Minimum value of 1.

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

StackEvent

The StackEvent data type.

Contents

ClientRequestToken

The token passed to the operation that generated this event.

All events triggered by a given stack operation are assigned the same client request token, which you can use to track operations. For example, if you execute a `CreateStack` operation with the token `token1`, then all the `StackEvents` generated by that operation will have `ClientRequestToken` set as `token1`.

In the console, stack operations display the client request token on the Events tab. Stack operations that are initiated from the console use the token format *Console-StackOperation-ID*, which helps you easily identify the stack operation . For example, if you create a stack using the console, each stack event would be assigned the same token in the following format: `Console-CreateStack-7f59c3cf-00d2-40c7-b2ff-e75db0987002`.

Type: String

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

Pattern: `[a-zA-Z0-9][-a-zA-Z0-9]*`

Required: No

EventId

The unique ID of this event.

Type: String

Required: Yes

LogicalResourceId

The logical name of the resource specified in the template.

Type: String

Required: No

PhysicalResourceId

The name or unique identifier associated with the physical instance of the resource.

Type: String

Required: No

ResourceProperties

BLOB of the properties used to create the resource.

Type: String

Required: No

ResourceStatus

Current status of the resource.

Type: String

Valid Values: `CREATE_IN_PROGRESS` | `CREATE_FAILED` | `CREATE_COMPLETE` |
`DELETE_IN_PROGRESS` | `DELETE_FAILED` | `DELETE_COMPLETE` | `DELETE_SKIPPED` |
`UPDATE_IN_PROGRESS` | `UPDATE_FAILED` | `UPDATE_COMPLETE`

Required: No

ResourceStatusReason

Success/failure message associated with the resource.

Type: String

Required: No

ResourceType

Type of resource. (For more information, go to AWS Resource Types Reference in the AWS
CloudFormation User Guide.)

Type: String

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

Required: No

StackId

The unique ID name of the instance of the stack.

Type: String

Required: Yes

StackName

The name associated with a stack.

Type: String

Required: Yes

Timestamp

Time the status was updated.

Type: Timestamp

Required: Yes

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

StackInstance

An AWS CloudFormation stack, in a specific account and region, that's part of a stack set operation. A stack instance is a reference to an attempted or actual stack in a given account within a given region. A stack instance can exist without a stack—for example, if the stack couldn't be created for some reason. A stack instance is associated with only one stack set. Each stack instance contains the ID of its associated stack set, as well as the ID of the actual stack and the stack status.

Contents

Account

The name of the AWS account that the stack instance is associated with.

Type: String

Pattern: `[0-9]{12}`

Required: No

ParameterOverrides.member.N

A list of parameters from the stack set template whose values have been overridden in this stack instance.

Type: Array of Parameter (p. 143) objects

Required: No

Region

The name of the AWS region that the stack instance is associated with.

Type: String

Required: No

StackId

The ID of the stack instance.

Type: String

Required: No

StackSetId

The name or unique ID of the stack set that the stack instance is associated with.

Type: String

Required: No

Status

The status of the stack instance, in terms of its synchronization with its associated stack set.

- `INOPERABLE`: A `DeleteStackInstances` operation has failed and left the stack in an unstable state. Stacks in this state are excluded from further `UpdateStackSet` operations. You might need to perform a `DeleteStackInstances` operation, with `RetainStacks` set to `true`, to delete the stack instance, and then delete the stack manually.
- `OUTDATED`: The stack isn't currently up to date with the stack set because:
  - The associated stack failed during a `CreateStackSet` or `UpdateStackSet` operation.

- The stack was part of a `CreateStackSet` or `UpdateStackSet` operation that failed or was stopped before the stack was created or updated.
- `CURRENT`: The stack is currently up to date with the stack set.

Type: String

Valid Values: `CURRENT | OUTDATED | INOPERABLE`

Required: No

StatusReason

The explanation for the specific status code that is assigned to this stack instance.

Type: String

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

StackInstanceSummary

The structure that contains summary information about a stack instance.

Contents

Account

The name of the AWS account that the stack instance is associated with.

Type: String

Pattern: `[0-9]{12}`

Required: No

Region

The name of the AWS region that the stack instance is associated with.

Type: String

Required: No

StackId

The ID of the stack instance.

Type: String

Required: No

StackSetId

The name or unique ID of the stack set that the stack instance is associated with.

Type: String

Required: No

Status

The status of the stack instance, in terms of its synchronization with its associated stack set.

- `INOPERABLE`: A `DeleteStackInstances` operation has failed and left the stack in an unstable state. Stacks in this state are excluded from further `UpdateStackSet` operations. You might need to perform a `DeleteStackInstances` operation, with `RetainStacks` set to `true`, to delete the stack instance, and then delete the stack manually.
- `OUTDATED`: The stack isn't currently up to date with the stack set because:
  - The associated stack failed during a `CreateStackSet` or `UpdateStackSet` operation.
  - The stack was part of a `CreateStackSet` or `UpdateStackSet` operation that failed or was stopped before the stack was created or updated.
- `CURRENT`: The stack is currently up to date with the stack set.

Type: String

Valid Values: `CURRENT | OUTDATED | INOPERABLE`

Required: No

StatusReason

The explanation for the specific status code assigned to this stack instance.

Type: String

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

StackResource

The StackResource data type.

Contents

Description

User defined description associated with the resource.

Type: String

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

Required: No

LogicalResourceId

The logical name of the resource specified in the template.

Type: String

Required: Yes

PhysicalResourceId

The name or unique identifier that corresponds to a physical instance ID of a resource supported by AWS CloudFormation.

Type: String

Required: No

ResourceStatus

Current status of the resource.

Type: String

Valid Values: `CREATE_IN_PROGRESS | CREATE_FAILED | CREATE_COMPLETE | DELETE_IN_PROGRESS | DELETE_FAILED | DELETE_COMPLETE | DELETE_SKIPPED | UPDATE_IN_PROGRESS | UPDATE_FAILED | UPDATE_COMPLETE`

Required: Yes

ResourceStatusReason

Success/failure message associated with the resource.

Type: String

Required: No

ResourceType

Type of resource. (For more information, go to AWS Resource Types Reference in the AWS CloudFormation User Guide.)

Type: String

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

Required: Yes

StackId

Unique identifier of the stack.

Type: String

Required: No

StackName

The name associated with the stack.

Type: String

Required: No

Timestamp

Time the status was updated.

Type: Timestamp

Required: Yes

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

StackResourceDetail

Contains detailed information about the specified stack resource.

Contents

Description

User defined description associated with the resource.

Type: String

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

Required: No

LastUpdatedTimestamp

Time the status was updated.

Type: Timestamp

Required: Yes

LogicalResourceId

The logical name of the resource specified in the template.

Type: String

Required: Yes

Metadata

The content of the `Metadata` attribute declared for the resource. For more information, see Metadata Attribute in the AWS CloudFormation User Guide.

Type: String

Required: No

PhysicalResourceId

The name or unique identifier that corresponds to a physical instance ID of a resource supported by AWS CloudFormation.

Type: String

Required: No

ResourceStatus

Current status of the resource.

Type: String

Valid Values: `CREATE_IN_PROGRESS | CREATE_FAILED | CREATE_COMPLETE | DELETE_IN_PROGRESS | DELETE_FAILED | DELETE_COMPLETE | DELETE_SKIPPED | UPDATE_IN_PROGRESS | UPDATE_FAILED | UPDATE_COMPLETE`

Required: Yes

ResourceStatusReason

Success/failure message associated with the resource.

Type: String

Required: No

ResourceType

Type of resource. ((For more information, go to AWS Resource Types Reference in the AWS
CloudFormation User Guide.)

Type: String

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

Required: Yes

StackId

Unique identifier of the stack.

Type: String

Required: No

StackName

The name associated with the stack.

Type: String

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

StackResourceSummary

Contains high-level information about the specified stack resource.

Contents

LastUpdatedTimestamp

Time the status was updated.

Type: Timestamp

Required: Yes

LogicalResourceId

The logical name of the resource specified in the template.

Type: String

Required: Yes

PhysicalResourceId

The name or unique identifier that corresponds to a physical instance ID of the resource.

Type: String

Required: No

ResourceStatus

Current status of the resource.

Type: String

Valid Values: `CREATE_IN_PROGRESS | CREATE_FAILED | CREATE_COMPLETE | DELETE_IN_PROGRESS | DELETE_FAILED | DELETE_COMPLETE | DELETE_SKIPPED | UPDATE_IN_PROGRESS | UPDATE_FAILED | UPDATE_COMPLETE`

Required: Yes

ResourceStatusReason

Success/failure message associated with the resource.

Type: String

Required: No

ResourceType

Type of resource. (For more information, go to AWS Resource Types Reference in the AWS CloudFormation User Guide.)

Type: String

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

Required: Yes

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

StackSet

A structure that contains information about a stack set. A stack set enables you to provision stacks into AWS accounts and across regions by using a single CloudFormation template. In the stack set, you specify the template to use, as well as any parameters and capabilities that the template requires.

Contents

Capabilities.member.N

The capabilities that are allowed in the stack set. Some stack set templates might include resources that can affect permissions in your AWS account—for example, by creating new AWS Identity and Access Management (IAM) users. For more information, see Acknowledging IAM Resources in AWS CloudFormation Templates.

Type: Array of strings

Valid Values: `CAPABILITY_IAM | CAPABILITY_NAMED_IAM`

Required: No

Description

A description of the stack set that you specify when the stack set is created or updated.

Type: String

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

Required: No

Parameters.member.N

A list of input parameters for a stack set.

Type: Array of Parameter (p. 143) objects

Required: No

StackSetId

The ID of the stack set.

Type: String

Required: No

StackSetName

The name that's associated with the stack set.

Type: String

Required: No

Status

The status of the stack set.

Type: String

Valid Values: `ACTIVE | DELETED`

Required: No

Tags.member.N

A list of tags that specify information about the stack set. A maximum number of 50 tags can be specified.

Type: Array of Tag (p. 184) objects

Array Members: Maximum number of 50 items.

Required: No

TemplateBody

The structure that contains the body of the template that was used to create or update the stack set.

Type: String

Length Constraints: Minimum length of 1.

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

StackSetOperation

The structure that contains information about a stack set operation.

Contents

Action

The type of stack set operation: `CREATE`, `UPDATE`, or `DELETE`. Create and delete operations affect only the specified stack set instances that are associated with the specified stack set. Update operations affect both the stack set itself, as well as *all* associated stack set instances.

Type: String

Valid Values: `CREATE | UPDATE | DELETE`

Required: No

CreationTimestamp

The time at which the operation was initiated. Note that the creation times for the stack set operation might differ from the creation time of the individual stacks themselves. This is because AWS CloudFormation needs to perform preparatory work for the operation, such as dispatching the work to the requested regions, before actually creating the first stacks.

Type: Timestamp

Required: No

EndTimestamp

The time at which the stack set operation ended, across all accounts and regions specified. Note that this doesn't necessarily mean that the stack set operation was successful, or even attempted, in each account or region.

Type: Timestamp

Required: No

OperationId

The unique ID of a stack set operation.

Type: String

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

Pattern: `[a-zA-Z0-9][-a-zA-Z0-9]*`

Required: No

OperationPreferences

The preferences for how AWS CloudFormation performs this stack set operation.

Type: StackSetOperationPreferences (p. 175) object

Required: No

RetainStacks

For stack set operations of action type `DELETE`, specifies whether to remove the stack instances from the specified stack set, but doesn't delete the stacks. You can't reassociate a retained stack, or add an existing, saved stack to a new stack set.

Type: Boolean

Required: No

StackSetId

The ID of the stack set.

Type: String

Required: No

Status

The status of the operation.

- `FAILED`: The operation exceeded the specified failure tolerance. The failure tolerance value that you've set for an operation is applied for each region during stack create and update operations. If the number of failed stacks within a region exceeds the failure tolerance, the status of the operation in the region is set to `FAILED`. This in turn sets the status of the operation as a whole to `FAILED`, and AWS CloudFormation cancels the operation in any remaining regions.
- `RUNNING`: The operation is currently being performed.
- `STOPPED`: The user has cancelled the operation.
- `STOPPING`: The operation is in the process of stopping, at user request.
- `SUCCEEDED`: The operation completed creating or updating all the specified stacks without exceeding the failure tolerance for the operation.

Type: String

Valid Values: `RUNNING | SUCCEEDED | FAILED | STOPPING | STOPPED`

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

StackSetOperationPreferences

The user-specified preferences for how AWS CloudFormation performs a stack set operation.

For more information on maximum concurrent accounts and failure tolerance, see Stack set operation options.

Contents

FailureToleranceCount

The number of accounts, per region, for which this operation can fail before AWS CloudFormation stops the operation in that region. If the operation is stopped in a region, AWS CloudFormation doesn't attempt the operation in any subsequent regions.

Conditional: You must specify either `FailureToleranceCount` or `FailureTolerancePercentage` (but not both).

Type: Integer

Valid Range: Minimum value of 0.

Required: No

FailureTolerancePercentage

The percentage of accounts, per region, for which this stack operation can fail before AWS CloudFormation stops the operation in that region. If the operation is stopped in a region, AWS CloudFormation doesn't attempt the operation in any subsequent regions.

When calculating the number of accounts based on the specified percentage, AWS CloudFormation rounds *down* to the next whole number.

Conditional: You must specify either `FailureToleranceCount` or `FailureTolerancePercentage`, but not both.

Type: Integer

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

Required: No

MaxConcurrentCount

The maximum number of accounts in which to perform this operation at one time. This is dependent on the value of `FailureToleranceCount`—`MaxConcurrentCount` is at most one more than the `FailureToleranceCount` .

Note that this setting lets you specify the *maximum* for operations. For large deployments, under certain circumstances the actual number of accounts acted upon concurrently may be lower due to service throttling.

Conditional: You must specify either `MaxConcurrentCount` or `MaxConcurrentPercentage`, but not both.

Type: Integer

Valid Range: Minimum value of 1.

Required: No

MaxConcurrentPercentage

The maximum percentage of accounts in which to perform this operation at one time.

When calculating the number of accounts based on the specified percentage, AWS CloudFormation rounds down to the next whole number. This is true except in cases where rounding down would result is zero. In this case, CloudFormation sets the number as one instead.

Note that this setting lets you specify the *maximum* for operations. For large deployments, under certain circumstances the actual number of accounts acted upon concurrently may be lower due to service throttling.

Conditional: You must specify either `MaxConcurrentCount` or `MaxConcurrentPercentage`, but not both.

Type: Integer

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

Required: No

RegionOrder.member.N

The order of the regions in where you want to perform the stack operation.

Type: Array of strings

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

StackSetOperationResultSummary

The structure that contains information about a specified operation's results for a given account in a given region.

Contents

Account

The name of the AWS account for this operation result.

Type: String

Pattern: `[0-9]{12}`

Required: No

AccountGateResult

The results of the account gate function AWS CloudFormation invokes, if present, before proceeding with stack set operations in an account

Type: AccountGateResult (p. 135) object

Required: No

Region

The name of the AWS region for this operation result.

Type: String

Required: No

Status

The result status of the stack set operation for the given account in the given region.

- `CANCELLED`: The operation in the specified account and region has been cancelled. This is either because a user has stopped the stack set operation, or because the failure tolerance of the stack set operation has been exceeded.
- `FAILED`: The operation in the specified account and region failed.

  If the stack set operation fails in enough accounts within a region, the failure tolerance for the stack set operation as a whole might be exceeded.
- `RUNNING`: The operation in the specified account and region is currently in progress.
- `PENDING`: The operation in the specified account and region has yet to start.
- `SUCCEEDED`: The operation in the specified account and region completed successfully.

Type: String

Valid Values: `PENDING | RUNNING | SUCCEEDED | FAILED | CANCELLED`

Required: No

StatusReason

The reason for the assigned result status.

Type: String

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

StackSetOperationSummary

The structures that contain summary information about the specified operation.

Contents

Action

The type of operation: `CREATE`, `UPDATE`, or `DELETE`. Create and delete operations affect only the specified stack instances that are associated with the specified stack set. Update operations affect both the stack set itself as well as *all* associated stack set instances.

Type: String

Valid Values: `CREATE | UPDATE | DELETE`

Required: No

CreationTimestamp

The time at which the operation was initiated. Note that the creation times for the stack set operation might differ from the creation time of the individual stacks themselves. This is because AWS CloudFormation needs to perform preparatory work for the operation, such as dispatching the work to the requested regions, before actually creating the first stacks.

Type: Timestamp

Required: No

EndTimestamp

The time at which the stack set operation ended, across all accounts and regions specified. Note that this doesn't necessarily mean that the stack set operation was successful, or even attempted, in each account or region.

Type: Timestamp

Required: No

OperationId

The unique ID of the stack set operation.

Type: String

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

Pattern: `[a-zA-Z0-9][-a-zA-Z0-9]*`

Required: No

Status

The overall status of the operation.

- `FAILED`: The operation exceeded the specified failure tolerance. The failure tolerance value that you've set for an operation is applied for each region during stack create and update operations. If the number of failed stacks within a region exceeds the failure tolerance, the status of the operation in the region is set to `FAILED`. This in turn sets the status of the operation as a whole to `FAILED`, and AWS CloudFormation cancels the operation in any remaining regions.
- `RUNNING`: The operation is currently being performed.
- `STOPPED`: The user has cancelled the operation.

- `STOPPING`: The operation is in the process of stopping, at user request.
- `SUCCEEDED`: The operation completed creating or updating all the specified stacks without exceeding the failure tolerance for the operation.

Type: String

Valid Values: `RUNNING | SUCCEEDED | FAILED | STOPPING | STOPPED`

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

StackSetSummary

The structures that contain summary information about the specified stack set.

Contents

Description

A description of the stack set that you specify when the stack set is created or updated.

Type: String

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

Required: No

StackSetId

The ID of the stack set.

Type: String

Required: No

StackSetName

The name of the stack set.

Type: String

Required: No

Status

The status of the stack set.

Type: String

Valid Values: `ACTIVE | DELETED`

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

StackSummary

The StackSummary Data Type

Contents

CreationTime

The time the stack was created.

Type: Timestamp

Required: Yes

DeletionTime

The time the stack was deleted.

Type: Timestamp

Required: No

LastUpdatedTime

The time the stack was last updated. This field will only be returned if the stack has been updated at least once.

Type: Timestamp

Required: No

ParentId

For nested stacks--stacks created as resources for another stack--the stack ID of the direct parent of this stack. For the first level of nested stacks, the root stack is also the parent stack.

For more information, see Working with Nested Stacks in the *AWS CloudFormation User Guide*.

Type: String

Required: No

RootId

For nested stacks--stacks created as resources for another stack--the stack ID of the the top-level stack to which the nested stack ultimately belongs.

For more information, see Working with Nested Stacks in the *AWS CloudFormation User Guide*.

Type: String

Required: No

StackId

Unique stack identifier.

Type: String

Required: No

StackName

The name associated with the stack.

Type: String

Required: Yes

StackStatus

The current status of the stack.

Type: String

Valid Values: `CREATE_IN_PROGRESS | CREATE_FAILED | CREATE_COMPLETE | ROLLBACK_IN_PROGRESS | ROLLBACK_FAILED | ROLLBACK_COMPLETE | DELETE_IN_PROGRESS | DELETE_FAILED | DELETE_COMPLETE | UPDATE_IN_PROGRESS | UPDATE_COMPLETE_CLEANUP_IN_PROGRESS | UPDATE_COMPLETE | UPDATE_ROLLBACK_IN_PROGRESS | UPDATE_ROLLBACK_FAILED | UPDATE_ROLLBACK_COMPLETE_CLEANUP_IN_PROGRESS | UPDATE_ROLLBACK_COMPLETE | REVIEW_IN_PROGRESS`

Required: Yes

StackStatusReason

Success/Failure message associated with the stack status.

Type: String

Required: No

TemplateDescription

The template description of the template used to create the stack.

Type: String

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

Tag

The Tag type enables you to specify a key-value pair that can be used to store information about an AWS CloudFormation stack.

Contents

Key

Required. A string used to identify this tag. You can specify a maximum of 128 characters for a tag key. Tags owned by Amazon Web Services (AWS) have the reserved prefix: `aws:`.

Type: String

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

Required: Yes

Value

Required. A string containing the value for this tag. You can specify a maximum of 256 characters for a tag value.

Type: String

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

Required: Yes

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

TemplateParameter

The TemplateParameter data type.

Contents

DefaultValue

The default value associated with the parameter.

Type: String

Required: No

Description

User defined description associated with the parameter.

Type: String

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

Required: No

NoEcho

Flag indicating whether the parameter should be displayed as plain text in logs and UIs.

Type: Boolean

Required: No

ParameterKey

The name associated with the parameter.

Type: String

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

Common Parameters

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

Action

The action to be performed.

Type: string

Required: Yes

Version

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

Type: string

Required: Yes

X-Amz-Algorithm

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

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

Type: string

Valid Values: `AWS4-HMAC-SHA256`

Required: Conditional

X-Amz-Credential

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

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

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

Type: string

Required: Conditional

X-Amz-Date

The date that is used to create the signature. The format must be ISO 8601 basic format (YYYYMMDD'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 Handling Dates in Signature Version 4 in the *Amazon Web Services General Reference*.

Type: string

Required: Conditional

X-Amz-Security-Token

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

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

Type: string

Required: Conditional

X-Amz-Signature

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

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

Type: string

Required: Conditional

X-Amz-SignedHeaders

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

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

Type: string

Required: Conditional

Common Errors

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

AccessDeniedException

You do not have sufficient access to perform this action.

HTTP Status Code: 400

IncompleteSignature

The request signature does not conform to AWS standards.

HTTP Status Code: 400

InternalFailure

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

HTTP Status Code: 500

InvalidAction

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

HTTP Status Code: 400

InvalidClientTokenId

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

HTTP Status Code: 403

InvalidParameterCombination

Parameters that must not be used together were used together.

HTTP Status Code: 400

InvalidParameterValue

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

HTTP Status Code: 400

InvalidQueryParameter

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

HTTP Status Code: 400

MalformedQueryString

The query string contains a syntax error.

HTTP Status Code: 404

MissingAction

The request is missing an action or a required parameter.

HTTP Status Code: 400

MissingAuthenticationToken

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

HTTP Status Code: 403

MissingParameter

A required parameter for the specified action is not supplied.

HTTP Status Code: 400

OptInRequired

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

HTTP Status Code: 403

RequestExpired

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

HTTP Status Code: 400

ServiceUnavailable

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

HTTP Status Code: 503

ThrottlingException

The request was denied due to request throttling.

HTTP Status Code: 400

ValidationError

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

HTTP Status Code: 400