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 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.

AWS 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.

Stack actions

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 template.

Change set actions

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.

Stack sets actions

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.

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Extension management actions

The AWS CloudFormation registry enables you to manage the extensions, both private and public, that are available for use in your account.

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Extension publication actions

Use the AWS CloudFormation API to develop and publish your own public third-party extensions.

For more information, see Publishing extensions to make them available for public use in the *CFN-CLI User Guide for Extension Development*.

PublishType (p. 172) | TestType (p. 198)

Publishers: DescribePublisher (p. 65) | RegisterPublisher (p. 177)

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Actions

The following actions are supported:

ActivateType

Activates a public third-party extension, making it available for use in stack templates. For more information, see Using public extensions in the *CloudFormation User Guide*.

Once you have activated a public third-party extension in your account and region, use SetTypeConfiguration to specify configuration properties for the extension. For more information, see Configuring extensions at the account level in the *CloudFormation User Guide*.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

AutoUpdate

Whether to automatically update the extension in this account and region when a new *minor* version is published by the extension publisher. Major versions released by the publisher must be manually updated.

The default is `true`.

Type: Boolean

Required: No

ExecutionRoleArn

The name of the IAM execution role to use to activate the extension.

Type: String

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

Pattern: `arn:.+:iam::[0-9]{12}:role/.+`

Required: No

LoggingConfig

Contains logging configuration information for an extension.

Type: LoggingConfig (p. 238) object

Required: No

MajorVersion

The major version of this extension you want to activate, if multiple major versions are available. The default is the latest major version. CloudFormation uses the latest available *minor* version of the major version selected.

You can specify `MajorVersion` or `VersionBump`, but not both.

Type: Long

Valid Range: Minimum value of 1. Maximum value of 100000.

Required: No

PublicTypeArn

The Amazon Resource Number (ARN) of the public extension.

Conditional: You must specify `PublicTypeArn`, or `TypeName`, `Type`, and `PublisherId`.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[A-Za-z0-9-]{0,64}:cloudformation:[A-Za-z0-9-]{1,64}::type/.+/`
`[0-9a-zA-Z]{12,40}/.+`

Required: No

PublisherId

The ID of the extension publisher.

Conditional: You must specify `PublicTypeArn`, or `TypeName`, `Type`, and `PublisherId`.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 40.

Pattern: `[0-9a-zA-Z]{12,40}`

Required: No

Type

The extension type.

Conditional: You must specify `PublicTypeArn`, or `TypeName`, `Type`, and `PublisherId`.

Type: String

Valid Values: `RESOURCE | MODULE`

Required: No

TypeName

The name of the extension.

Conditional: You must specify `PublicTypeArn`, or `TypeName`, `Type`, and `PublisherId`.

Type: String

Length Constraints: Minimum length of 10. Maximum length of 204.

Pattern: `[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}(::MODULE)`
`{0,1}`

Required: No

TypeNameAlias

An alias to assign to the public extension, in this account and region. If you specify an alias for the extension, CloudFormation treats the alias as the extension type name within this account and region. You must use the alias to refer to the extension in your templates, API calls, and CloudFormation console.

An extension alias must be unique within a given account and region. You can activate the same public resource multiple times in the same account and region, using different type name aliases.

Type: String

Length Constraints: Minimum length of 10. Maximum length of 204.

Pattern: `[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}(::MODULE)` `{0,1}`

Required: No

VersionBump

Manually updates a previously-activated type to a new major or minor version, if available. You can also use this parameter to update the value of `AutoUpdate`.

- `MAJOR`: CloudFormation updates the extension to the newest major version, if one is available.
- `MINOR`: CloudFormation updates the extension to the newest minor version, if one is available.

Type: String

Valid Values: `MAJOR | MINOR`

Required: No

Response Elements

The following element is returned by the service.

Arn

The Amazon Resource Number (ARN) of the activated extension, in this account and region.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[A-Za-z0-9-]{0,64}:cloudformation:[A-Za-z0-9-]{1,64}:[0-9]` `{12}:type/.+`

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

CFNRegistry

An error occurred during a CloudFormation registry operation.

HTTP Status Code: 400

TypeNotFound

The specified extension doesn't exist in the CloudFormation registry.

HTTP Status Code: 404

See Also

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

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

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

BatchDescribeTypeConfigurations

Returns configuration data for the specified CloudFormation extensions, from the CloudFormation registry for the account and region.

For more information, see Configuring extensions at the account level in the *CloudFormation User Guide*.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

TypeConfigurationIdentifiers.member.N

The list of identifiers for the desired extension configurations.

Type: Array of TypeConfigurationIdentifier (p. 311) objects

Array Members: Minimum number of 1 item.

Required: Yes

Response Elements

The following elements are returned by the service.

Errors.member.N

A list of information concerning any errors generated during the setting of the specified configurations.

Type: Array of BatchDescribeTypeConfigurationsError (p. 231) objects

TypeConfigurations.member.N

A list of any of the specified extension configurations from the CloudFormation registry.

Type: Array of TypeConfigurationDetails (p. 309) objects

UnprocessedTypeConfigurations.member.N

A list of any of the specified extension configurations that CloudFormation could not process for any reason.

Type: Array of TypeConfigurationIdentifier (p. 311) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

CFNRegistry

An error occurred during a CloudFormation registry operation.

HTTP Status Code: 400

TypeConfigurationNotFound

The specified extension configuration can't be found.

HTTP Status Code: 404

See Also

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

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

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. 321).

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's associated with the stack.

Type: String

Required: Yes

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

TokenAlreadyExists

A client request token already exists.

HTTP Status Code: 400

Examples

CancelUpdateStack

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

ContinueUpdateRollback

For a specified stack that's 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 can't 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. 321).

ClientRequestToken

A unique identifier for this `ContinueUpdateRollback` request. Specify this token if you plan to retry requests so that AWS CloudFormationknows 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 canceled. To check why a resource update failed, use the DescribeStackResources (p. 82) 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 permission.

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. 323).

TokenAlreadyExists

A client request token already exists.

HTTP Status Code: 400

Examples

ContinueUpdateRollback

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

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. To create a change set for an import operation, specify `IMPORT` 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 action.

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

To create a change set for the entire stack hierarchy, set `IncludeNestedStacks` to `True`.

Request Parameters

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

Capabilities.member.N

In some cases, you must explicitly acknowledge that your stack template contains certain capabilities in order for AWS CloudFormation to create the stack.

- `CAPABILITY_IAM` and `CAPABILITY_NAMED_IAM`

  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 this by specifying one of these capabilities.

  The following IAM resources require you to specify either the `CAPABILITY_IAM` or `CAPABILITY_NAMED_IAM` capability.

  - 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 either of these capabilities, CloudFormation returns an `InsufficientCapabilities` error.

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

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

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

- `CAPABILITY_AUTO_EXPAND`

  Some template contain macros. Macros perform custom processing on templates; this can include simple actions like find-and-replace operations, all the way to extensive transformations of entire templates. Because of this, users typically create a change set from the processed template, so that they can review the changes resulting from the macros before actually creating the stack. If your stack template contains one or more macros, and you choose to create a stack directly from the processed template, without first reviewing the resulting changes in a change set, you must acknowledge this capability. This includes the AWS::Include and AWS::Serverless transforms, which are macros hosted by AWS CloudFormation.

  > **Note**
  > This capacity doesn't apply to creating change sets, and specifying it when creating change sets has no effect.
  > If you want to create a stack from a stack template that contains macros *and* nested stacks, you must create or update the stack directly from the template using the CreateStack (p. 23) or UpdateStack (p. 201) action, and specifying this capability.

  For more information on macros, see Using AWS CloudFormation Macros to Perform Custom Processing on Templates.

  Type: Array of strings

  Valid Values: `CAPABILITY_IAM | CAPABILITY_NAMED_IAM | CAPABILITY_AUTO_EXPAND`

  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 alphabetical character and can't 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`. To create a change set for an import operation, specify `IMPORT`.

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 | IMPORT`

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

IncludeNestedStacks

Creates a change set for the all nested stacks specified in the template. The default behavior of this action is set to `False`. To include nested sets in a change set, specify `True`.

Type: Boolean

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 (p. 241) data type.

Type: Array of Parameter (p. 241) objects

Required: No

ResourcesToImport.member.N

The resources to import into your stack.

Type: Array of ResourceToImport (p. 255) objects

Array Members: Maximum number of 200 items.

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 permission.

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. 256) 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. 307) 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's located in an S3 bucket or a Systems Manager document. 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's 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. 323).

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 resource and stack limitations, see Limits in the *AWS CloudFormation User Guide*.

HTTP Status Code: 400

Examples

CreateChangeSet

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

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 through the DescribeStacks (p. 85) API.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

Capabilities.member.N

In some cases, you must explicitly acknowledge that your stack template contains certain capabilities in order for AWS CloudFormation to create the stack.

- `CAPABILITY_IAM` and `CAPABILITY_NAMED_IAM`

  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 this by specifying one of these capabilities.

  The following IAM resources require you to specify either the `CAPABILITY_IAM` or `CAPABILITY_NAMED_IAM` capability.

  - 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 either of these capabilities, AWS CloudFormation returns an `InsufficientCapabilities` error.

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

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

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

- `CAPABILITY_AUTO_EXPAND`

  Some template contain macros. Macros perform custom processing on templates; this can include simple actions like find-and-replace operations, all the way to extensive transformations of entire templates. Because of this, users typically create a change set from the processed template, so that they can review the changes resulting from the macros before actually creating the stack. If your stack template contains one or more macros, and you choose to create a stack directly from the processed template, without first reviewing the resulting changes in a change set, you must acknowledge this capability. This includes the AWS::Include and AWS::Serverless transforms, which are macros hosted by AWS CloudFormation.

  If you want to create a stack from a stack template that contains macros *and* nested stacks, you must create the stack directly from the template using this capability.

  > **Important**
  > You should only create stacks directly from a stack template that contains macros if you know what processing the macro performs.

Each macro relies on an underlying Lambda service function for processing stack templates. Be aware that the Lambda function owner can update the function operation without AWS CloudFormation being notified.

For more information, see Using AWS CloudFormation Macros to Perform Custom Processing on Templates.

Type: Array of strings

Valid Values: `CAPABILITY_IAM` | `CAPABILITY_NAMED_IAM` | `CAPABILITY_AUTO_EXPAND`

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 Amazon Simple Notification Service (Amazon SNS) topic ARNs to publish stack related events. You can find your Amazon SNS topic ARNs using the Amazon 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. 241) 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 resources), `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. 256) 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 alphabetical 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. 307) 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 or a Systems Manager document. 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. 323).

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 resource and stack limitations, see Limits in the *AWS CloudFormation User Guide*.

HTTP Status Code: 400

TokenAlreadyExists

A client request token already exists.

HTTP Status Code: 400

Examples

CreateStack

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

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. You must specify at least one value for either `Accounts` or `DeploymentTargets`, and you must specify at least one value for `Regions`.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

Accounts.member.N

[Self-managed permissions] The names of one or more AWS accounts that you want to create stack instances in the specified Region(s) for.

You can specify `Accounts` or `DeploymentTargets`, but not both.

Type: Array of strings

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

Required: No

CallAs

[Service-managed permissions] Specifies whether you are acting as an account administrator in the organization's management account or as a delegated administrator in a member account.

By default, `SELF` is specified. Use `SELF` for stack sets with self-managed permissions.
- If you are signed in to the management account, specify `SELF`.
- If you are signed in to a delegated administrator account, specify `DELEGATED_ADMIN`.

  Your AWS account must be registered as a delegated administrator in the management account. For more information, see Register a delegated administrator in the *AWS CloudFormation User Guide*.

Type: String

Valid Values: `SELF | DELEGATED_ADMIN`

Required: No

DeploymentTargets

[Service-managed permissions] The AWS Organizations accounts for which to create stack instances in the specified Regions.

You can specify `Accounts` or `DeploymentTargets`, but not both.

Type: DeploymentTargets (p. 236) object

Required: No

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. 297) 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 an overridden parameter set to its present value, include the parameter and specify `UsePreviousValue` as `true`. (You can't specify both a value and set `UsePreviousValue` to `true`.)
- To set an overridden parameter back to the value specified in the stack set, specify a parameter list but don't include the parameter in the list.
- To leave all parameters set to their present values, don't specify this property at all.

During stack set updates, any parameter values overridden for a stack instance aren't 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. 241) objects

Required: No

Regions.member.N

The names of one or more Regions where you want to create stack instances using the specified AWS accounts.

Type: Array of strings

Pattern: `^[a-zA-Z0-9-]{1,128}$`

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. 323).

InvalidOperation

The specified operation isn't valid.

HTTP Status Code: 400

LimitExceeded

The quota for the resource has already been reached.

For information on resource and stack limitations, see Limits in the *AWS CloudFormation User Guide*.

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

Examples

CreateStackInstances

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

CreateStackSet

Creates a stack set.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

AdministrationRoleARN

The Amazon Resource Number (ARN) of the IAM role to use to create this stack set.

Specify an IAM role only if you are using customized administrator roles to control which users or groups can manage specific stack sets within the same administrator account. For more information, see Prerequisites: Granting Permissions for Stack Set Operations in the *AWS CloudFormation User Guide*.

Type: String

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

Required: No

AutoDeployment

Describes whether StackSets automatically deploys to AWS Organizations accounts that are added to the target organization or organizational unit (OU). Specify only if `PermissionModel` is `SERVICE_MANAGED`.

Type: AutoDeployment (p. 230) object

Required: No

CallAs

[Service-managed permissions] Specifies whether you are acting as an account administrator in the organization's management account or as a delegated administrator in a member account.

By default, `SELF` is specified. Use `SELF` for stack sets with self-managed permissions.

- To create a stack set with service-managed permissions while signed in to the management account, specify `SELF`.
- To create a stack set with service-managed permissions while signed in to a delegated administrator account, specify `DELEGATED_ADMIN`.

  Your AWS account must be registered as a delegated admin in the management account. For more information, see Register a delegated administrator in the *AWS CloudFormation User Guide*.

Stack sets with service-managed permissions are created in the management account, including stack sets that are created by delegated administrators.

Type: String

Valid Values: `SELF | DELEGATED_ADMIN`

Required: No

Capabilities.member.N

In some cases, you must explicitly acknowledge that your stack set template contains certain capabilities in order for AWS CloudFormation to create the stack set and related stack instances.

- `CAPABILITY_IAM` and `CAPABILITY_NAMED_IAM`

  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 stack sets, you must explicitly acknowledge this by specifying one of these capabilities.

  The following IAM resources require you to specify either the `CAPABILITY_IAM` or `CAPABILITY_NAMED_IAM` capability.

  - 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 either of these capabilities, AWS CloudFormation returns an `InsufficientCapabilities` error.

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

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

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

- `CAPABILITY_AUTO_EXPAND`

  Some templates reference macros. If your stack set template references one or more macros, you must create the stack set directly from the processed template, without first reviewing the resulting changes in a change set. To create the stack set directly, you must acknowledge this capability. For more information, see Using AWS CloudFormation Macros to Perform Custom Processing on Templates.

  > **Important**
  > Stack sets with service-managed permissions don't currently support the use of macros in templates. (This includes the AWS::Include and AWS::Serverless transforms, which are macros hosted by AWS CloudFormation.) Even if you specify this capability for a stack set with service-managed permissions, if you reference a macro in your template the stack set operation will fail.

  Type: Array of strings

  Valid Values: `CAPABILITY_IAM | CAPABILITY_NAMED_IAM | CAPABILITY_AUTO_EXPAND`

  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

ExecutionRoleName

The name of the IAM execution role to use to create the stack set. If you do not specify an execution role, AWS CloudFormation uses the `AWSCloudFormationStackSetExecutionRole` role for the stack set operation.

Specify an IAM role only if you are using customized execution roles to control which stack resources users and groups can include in their stack sets.

Type: String

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

Pattern: `[a-zA-Z_0-9+=,.@-]+`

Required: No

Parameters.member.N

The input parameters for the stack set template.

Type: Array of Parameter (p. 241) objects

Required: No

PermissionModel

Describes how the IAM roles required for stack set operations are created. By default, `SELF-MANAGED` is specified.

- With `self-managed` permissions, you must create the administrator and execution roles required to deploy to target accounts. For more information, see Grant Self-Managed Stack Set Permissions.
- With `service-managed` permissions, StackSets automatically creates the IAM roles required to deploy to accounts managed by AWS Organizations. For more information, see Grant Service-Managed Stack Set Permissions.

Type: String

Valid Values: `SERVICE_MANAGED | SELF_MANAGED`

Required: No

StackId

The stack ID you are importing into a new stack set. Specify the Amazon Resource Number (ARN) of the stack.

Type: String

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. 307) 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 or a Systems Manager document. 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. 323).

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 resource and stack limitations, see Limits in the *AWS CloudFormation User Guide*.

HTTP Status Code: 400

NameAlreadyExists

The specified name is already in use.

HTTP Status Code: 409

Examples

CreateStackSet

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

DeactivateType

Deactivates a public extension that was previously activated in this account and region.

Once deactivated, an extension can't be used in any CloudFormation operation. This includes stack update operations where the stack template includes the extension, even if no updates are being made to the extension. In addition, deactivated extensions aren't automatically updated if a new version of the extension is released.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

Arn

The Amazon Resource Name (ARN) for the extension, in this account and region.

Conditional: You must specify either `Arn`, or `TypeName` and `Type`.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[A-Za-z0-9-]{0,64}:cloudformation:[A-Za-z0-9-]{1,64}:[0-9]{12}:type/.+`

Required: No

Type

The extension type.

Conditional: You must specify either `Arn`, or `TypeName` and `Type`.

Type: String

Valid Values: `RESOURCE | MODULE`

Required: No

TypeName

The type name of the extension, in this account and region. If you specified a type name alias when enabling the extension, use the type name alias.

Conditional: You must specify either `Arn`, or `TypeName` and `Type`.

Type: String

Length Constraints: Minimum length of 10. Maximum length of 204.

Pattern: `[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}(::MODULE){0,1}`

Required: No

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

CFNRegistry

An error occurred during a CloudFormation registry operation.

HTTP Status Code: 400

TypeNotFound

The specified extension doesn't exist in the CloudFormation registry.

HTTP Status Code: 404

See Also

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

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

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.

If `IncludeNestedStacks` specifies `True` during the creation of the nested change set, then `DeleteChangeSet` will delete all change sets that belong to the stacks hierarchy and will also delete all change sets for nested stacks with the status of `REVIEW_IN_PROGRESS`.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

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's 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. 323).

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

Examples

DeleteChangeSet

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

DeleteStack

Deletes a specified stack. Once the call completes successfully, stack deletion starts. Deleted stacks don't show up in the DescribeStacks (p. 85) 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. 321).

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 doesn't delete the retained resources.

Retaining resources is useful when you can't 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's associated with the stack.

Type: String

Required: Yes

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

TokenAlreadyExists

A client request token already exists.

HTTP Status Code: 400

Examples

DeleteStack

This example illustrates one usage of 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 V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

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. 321).

Accounts.member.N

[Self-managed permissions] The names of the AWS accounts that you want to delete stack instances
for.

You can specify `Accounts` or `DeploymentTargets`, but not both.

Type: Array of strings

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

Required: No

CallAs

[Service-managed permissions] Specifies whether you are acting as an account administrator in the
organization's management account or as a delegated administrator in a member account.

By default, `SELF` is specified. Use `SELF` for stack sets with self-managed permissions.

- If you are signed in to the management account, specify `SELF`.
- If you are signed in to a delegated administrator account, specify `DELEGATED_ADMIN`.

  Your AWS account must be registered as a delegated administrator in the management account.
  For more information, see Register a delegated administrator in the *AWS CloudFormation User
  Guide*.

Type: String

Valid Values: `SELF  |  DELEGATED_ADMIN`

Required: No

DeploymentTargets

[Service-managed permissions] The AWS Organizations accounts from which to delete stack
instances.

You can specify `Accounts` or `DeploymentTargets`, but not both.

Type: DeploymentTargets (p. 236) object

Required: No

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. 297) object

Required: No

Regions.member.N

The Regions where you want to delete stack set instances.

Type: Array of strings

Pattern: `^[a-zA-Z0-9-]{1,128}$`

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 Common Errors (p. 323).

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

Examples

DeleteStackInstances

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

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. 48).

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

CallAs

[Service-managed permissions] Specifies whether you are acting as an account administrator in the organization's management account or as a delegated administrator in a member account.

By default, `SELF` is specified. Use `SELF` for stack sets with self-managed permissions.

- If you are signed in to the management account, specify `SELF`.
- If you are signed in to a delegated administrator account, specify `DELEGATED_ADMIN`.

  Your AWS account must be registered as a delegated administrator in the management account. For more information, see Register a delegated administrator in the *AWS CloudFormation User Guide*.

Type: String

Valid Values: `SELF | DELEGATED_ADMIN`

Required: No

StackSetName

The name or unique ID of the stack set that you're deleting. You can obtain this value by running ListStackSets (p. 158).

Type: String

Required: Yes

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

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

Examples

DeleteStackSet

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

DeregisterType

Marks an extension or extension version as `DEPRECATED` in the CloudFormation registry, removing it from active use. Deprecated extensions or extension versions cannot be used in CloudFormation operations.

To deregister an entire extension, you must individually deregister all active versions of that extension. If an extension has only a single active version, deregistering that version results in the extension itself being deregistered and marked as deprecated in the registry.

You can't deregister the default version of an extension if there are other active version of that extension. If you do deregister the default version of an extension, the textensionype itself is deregistered as well and marked as deprecated.

To view the deprecation status of an extension or extension version, use DescribeType.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

Arn

The Amazon Resource Name (ARN) of the extension.

Conditional: You must specify either `TypeName` and `Type`, or `Arn`.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[A-Za-z0-9-]{0,64}:cloudformation:[A-Za-z0-9-]{1,64}:[0-9]{12}:type/.+`

Required: No

Type

The kind of extension.

Conditional: You must specify either `TypeName` and `Type`, or `Arn`.

Type: String

Valid Values: `RESOURCE | MODULE`

Required: No

TypeName

The name of the extension.

Conditional: You must specify either `TypeName` and `Type`, or `Arn`.

Type: String

Length Constraints: Minimum length of 10. Maximum length of 204.

Pattern: `[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}(::MODULE){0,1}`

Required: No

VersionId

The ID of a specific version of the extension. The version ID is the value at the end of the Amazon Resource Name (ARN) assigned to the extension version when it is registered.

Type: String

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

Pattern: `[A-Za-z0-9-]+`

Required: No

Errors

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

CFNRegistry

An error occurred during a CloudFormation registry operation.

HTTP Status Code: 400

TypeNotFound

The specified extension doesn't exist in the CloudFormation registry.

HTTP Status Code: 404

Examples

Deregistering an extension version

The following example removes a specific version of the `My::Resource::Example` resource type from active use in the CloudFormation registry.

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=DeregisterType
 &Version=2010-05-15
 &TypeName=My::Resource::Example
 &Type=RESOURCE
 &VersionId=00000002
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20191204T181601Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<DeregisterTypeResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <DeregisterTypeResult/>
  <ResponseMetadata>
```

```
    <RequestId>78c291d1-4463-4845-a600-29221example</RequestId>
  </ResponseMetadata>
</DeregisterTypeResponse>
```

See Also

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

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

DescribeAccountLimits

Retrieves your account's AWS CloudFormation limits, such as the maximum number of stacks that you can create in your account. For more information about account limits, see AWS CloudFormation Quotas in the *AWS CloudFormation User Guide.*

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

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. 229) 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. 323).

Examples

DescribeAccountLimits

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

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. 321).

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. 59) 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` | `CAPABILITY_AUTO_EXPAND`

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. 232) 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`

IncludeNestedStacks

Verifies if `IncludeNestedStacks` is set to `True`.

Type: Boolean

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. 241) objects

ParentChangeSetId

Specifies the change set ID of the parent change set in the current nested change set hierarchy.

Type: String

Length Constraints: Minimum length of 1.

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

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. 256) object

RootChangeSetId

Specifies the change set ID of the root change set in the current nested change set hierarchy.

Type: String

Length Constraints: Minimum length of 1.

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

StackId

The ARN of the stack that's associated with the change set.

Type: String

StackName

The name of the stack that's 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_PENDING | DELETE_IN_PROGRESS | DELETE_COMPLETE | DELETE_FAILED | 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. 307) objects

Array Members: Maximum number of 50 items.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

ChangeSetNotFound

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

HTTP Status Code: 404

Examples

DescribeChangeSet

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3

- AWS SDK for Python
- AWS SDK for Ruby V3

DescribePublisher

Returns information about a CloudFormation extension publisher.

If you don't supply a `PublisherId`, and you have registered as an extension publisher, `DescribePublisher` returns information about your own publisher account.

For more information on registering as a publisher, see:

- RegisterPublisher
- Publishing extensions to make them available for public use in the *CloudFormation CLI User Guide*

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

PublisherId

The ID of the extension publisher.

If you don't supply a `PublisherId`, and you have registered as an extension publisher, `DescribePublisher` returns information about your own publisher account.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 40.

Pattern: `[0-9a-zA-Z]{12,40}`

Required: No

Response Elements

The following elements are returned by the service.

IdentityProvider

The type of account used as the identity provider when registering this publisher with CloudFormation.

Type: String

Valid Values: `AWS_Marketplace | GitHub | Bitbucket`

PublisherId

The ID of the extension publisher.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 40.

Pattern: `[0-9a-zA-Z]{12,40}`

PublisherProfile

The URL to the publisher's profile with the identity provider.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `(http:|https:)+[^\s]+[\w]`

PublisherStatus

Whether the publisher is verified. Currently, all registered publishers are verified.

Type: String

Valid Values: `VERIFIED | UNVERIFIED`

Errors

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

CFNRegistry

An error occurred during a CloudFormation registry operation.

HTTP Status Code: 400

See Also

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

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

DescribeStackDriftDetectionStatus

Returns information about a stack drift detection operation. A stack drift detection operation detects whether a stack's actual configuration differs, or has *drifted*, from it's expected configuration, as defined in the stack template and any values specified as template parameters. A stack is considered to have drifted if one or more of its resources have drifted. For more information on stack and resource drift, see Detecting Unregulated Configuration Changes to Stacks and Resources.

Use DetectStackDrift (p. 107) to initiate a stack drift detection operation. `DetectStackDrift` returns a `StackDriftDetectionId` you can use to monitor the progress of the operation using `DescribeStackDriftDetectionStatus`. Once the drift detection operation has completed, use DescribeStackResourceDrifts (p. 78) to return drift information about the stack and its resources.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

StackDriftDetectionId

The ID of the drift detection results of this operation.

AWS CloudFormation generates new results, with a new drift detection ID, each time this operation is run. However, the number of drift results AWS CloudFormation retains for any given stack, and for how long, may vary.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 36.

Required: Yes

Response Elements

The following elements are returned by the service.

DetectionStatus

The status of the stack drift detection operation.
- `DETECTION_COMPLETE`: The stack drift detection operation has successfully completed for all resources in the stack that support drift detection. (Resources that don't currently support stack detection remain unchecked.)

  If you specified logical resource IDs for AWS CloudFormation to use as a filter for the stack drift detection operation, only the resources with those logical IDs are checked for drift.
- `DETECTION_FAILED`: The stack drift detection operation has failed for at least one resource in the stack. Results will be available for resources on which AWS CloudFormation successfully completed drift detection.
- `DETECTION_IN_PROGRESS`: The stack drift detection operation is currently in progress.

Type: String

Valid Values: `DETECTION_IN_PROGRESS | DETECTION_FAILED | DETECTION_COMPLETE`

DetectionStatusReason

The reason the stack drift detection operation has its current status.

Type: String

DriftedStackResourceCount

Total number of stack resources that have drifted. This is NULL until the drift detection operation reaches a status of `DETECTION_COMPLETE`. This value will be 0 for stacks whose drift status is `IN_SYNC`.

Type: Integer

StackDriftDetectionId

The ID of the drift detection results of this operation.

AWS CloudFormation generates new results, with a new drift detection ID, each time this operation is run. However, the number of reports AWS CloudFormation retains for any given stack, and for how long, may vary.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 36.

StackDriftStatus

Status of the stack's actual configuration compared to its expected configuration.

- `DRIFTED`: The stack differs from its expected template configuration. A stack is considered to have drifted if one or more of its resources have drifted.
- `NOT_CHECKED`: AWS CloudFormation hasn't checked if the stack differs from its expected template configuration.
- `IN_SYNC`: The stack's actual configuration matches its expected template configuration.
- `UNKNOWN`: This value is reserved for future use.

Type: String

Valid Values: `DRIFTED | IN_SYNC | UNKNOWN | NOT_CHECKED`

StackId

The ID of the stack.

Type: String

Timestamp

Time at which the stack drift detection operation was initiated.

Type: Timestamp

Errors

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

Examples

DescribeStackDriftDetectionStatus

This example illustrates one usage of DescribeStackDriftDetectionStatus.

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=DescribeStackDriftDetectionStatus
 &Version=2010-05-15
 &StackDriftDetectionId=b78ac9b0-dec1-11e7-a451-503a3example
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20171211T230005Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<DescribeStackDriftDetectionStatusResponse xmlns="http://cloudformation.amazonaws.com/
doc/2010-05-15/">
  <DescribeStackDriftDetectionStatusResult>
    <DetectionStatus>DETECTION_COMPLETE</DetectionStatus>
    <StackDriftDetectionId>b78ac9b0-dec1-11e7-a451-503a3example</StackDriftDetectionId>
    <DriftedStackResourceCount>0</DriftedStackResourceCount>
    <StackId>arn:aws:cloudformation:us-east-1:012345678910:stack/example/
cb438120-6cc7-11e7-998e-50example</StackId>
    <StackDriftStatus>IN_SYNC</StackDriftStatus>
    <Timestamp>2017-12-11T22:22:04.747Z</Timestamp>
  </DescribeStackDriftDetectionStatusResult>
  <ResponseMetadata>
    <RequestId>f89bbda1-dec1-11e7-83c6-d92bexample</RequestId>
  </ResponseMetadata>
</DescribeStackDriftDetectionStatusResponse>
```

See Also

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

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

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. 321).

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's associated with the stack, which aren't 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. 265) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

Examples

DescribeStackEvents

This example illustrates one usage of 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>
        <PhysicalResourceIdI>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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

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. 141).

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

CallAs

[Service-managed permissions] Specifies whether you are acting as an account administrator in the organization's management account or as a delegated administrator in a member account.

By default, SELF is specified. Use SELF for stack sets with self-managed permissions.

- If you are signed in to the management account, specify SELF.
- If you are signed in to a delegated administrator account, specify DELEGATED_ADMIN.

  Your AWS account must be registered as a delegated administrator in the management account. For more information, see Register a delegated administrator in the *AWS CloudFormation User Guide*.

Type: String

Valid Values: SELF | DELEGATED_ADMIN

Required: No

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

Pattern: ^[a-zA-Z0-9-]{1,128}$

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. 268) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

StackInstanceNotFound

> The specified stack instance doesn't exist.
>
> HTTP Status Code: 404

StackSetNotFound

> The specified stack set doesn't exist.
>
> HTTP Status Code: 404

Examples

DescribeStackInstance

This example illustrates one usage of DescribeStackInstance.

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=DescribeStackInstance
 &StackInstanceRegion=ap-northeast-2
 &Version=2010-05-15
 &StackSetName=stack-set-example
 &StackInstanceAccount=012345678910
 &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>
      <DriftStatus>IN_SYNC</DriftStatus>
      <StackSetId>stack-set-example:45331555-4b18-45a1-aa43-ecf5example</StackSetId>
      <StackId>arn:aws:cloudformation:ap-northeast-2:012345678910:stack/StackSet-stack-set-
example-0ca3eed7-0b67-4be7-8a71-828641fa5193/ea68eca0-f9c1-11e9-aac0-0aaexample</StackId>
```

```
        <ParameterOverrides/>
        <Region>ap-northeast-2</Region>
        <Account>012345678910</Account>
        <LastDriftCheckTimestamp>2019-12-03T20:01:04.511Z</LastDriftCheckTimestamp>
        <Status>CURRENT</Status>
    </StackInstance>
  </DescribeStackInstanceResult>
  <ResponseMetadata>
    <RequestId>afc959f5-a87c-4e16-95a9-ca25example</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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

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. 321).

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's associated with the stack, which aren't 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. 278) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

Examples

DescribeStackResource

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

DescribeStackResourceDrifts

Returns drift information for the resources that have been checked for drift in the specified stack. This includes actual and expected configuration values for resources where AWS CloudFormation detects configuration drift.

For a given stack, there will be one `StackResourceDrift` for each stack resource that has been checked for drift. Resources that haven't yet been checked for drift aren't included. Resources that don't currently support drift detection aren't checked, and so not included. For a list of resources that support drift detection, see Resources that Support Drift Detection.

Use DetectStackResourceDrift (p. 110) to detect drift on individual resources, or DetectStackDrift (p. 107) to detect drift on all supported resources for a given stack.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

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

A string that identifies the next page of stack resource drift results.

Type: String

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

Required: No

StackName

The name of the stack for which you want drift information.

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

StackResourceDriftStatusFilters.member.N

The resource drift status values to use as filters for the resource drift results returned.
- `DELETED`: The resource differs from its expected template configuration in that the resource has been deleted.
- `MODIFIED`: One or more resource properties differ from their expected template values.

- `IN_SYNC`: The resources's actual configuration matches its expected template configuration.
- `NOT_CHECKED`: AWS CloudFormation doesn't currently return this value.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 4 items.

Valid Values: `IN_SYNC | MODIFIED | DELETED | NOT_CHECKED`

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 `DescribeStackResourceDrifts` 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.

StackResourceDrifts.member.N

Drift information for the resources that have been checked for drift in the specified stack. This includes actual and expected configuration values for resources where AWS CloudFormation detects drift.

For a given stack, there will be one `StackResourceDrift` for each stack resource that has been checked for drift. Resources that haven't yet been checked for drift aren't included. Resources that do not currently support drift detection aren't checked, and so not included. For a list of resources that support drift detection, see Resources that Support Drift Detection.

Type: Array of StackResourceDrift (p. 281) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

Examples

DescribeStackResourceDrifts

This example illustrates one usage of DescribeStackResourceDrifts.

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=DescribeStackResourceDrifts
 &Version=2010-05-15
 &StackName=my-stack-with-resource-drift
 &StackResourceDriftStatusFilters.member.1=MODIFIED
```

```
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=[Access key ID and scope]
&X-Amz-Date=20171228T233658Z
&X-Amz-SignedHeaders=content-type;host
&X-Amz-Signature=[Signature]
```

Sample Response

```
<DescribeStackResourceDriftsResponse xmlns="http://cloudformation.amazonaws.com/
doc/2010-05-15/">
  <DescribeStackResourceDriftsResult>
    <StackResourceDrifts>
      <member>
        <PropertyDifferences>
          <member>
            <ActualValue>120</ActualValue>
            <ExpectedValue>20</ExpectedValue>
            <DifferenceType>NOT_EQUAL</DifferenceType>
            <PropertyPath>/DelaySeconds</PropertyPath>
          </member>
          <member>
            <ActualValue>12</ActualValue>
            <ExpectedValue>10</ExpectedValue>
            <DifferenceType>NOT_EQUAL</DifferenceType>
            <PropertyPath>/RedrivePolicy/maxReceiveCount</PropertyPath>
          </member>
        </PropertyDifferences>
        <PhysicalResourceId>https://sqs.us-east-1.amazonaws.com/012345678910/my-stack-with-
resource-drift-Queue-494PBHCO76H4</PhysicalResourceId>
        <ExpectedProperties>{
          "ReceiveMessageWaitTimeSeconds":0,
          "DelaySeconds":20,
          "RedrivePolicy":{
            "deadLetterTargetArn":"arn:aws:sqs:us-east-1:012345678910:my-stack-with-
resource-drift-DLQ-1BCY7HHD5QIM3",
            "maxReceiveCount":10
            },
          "MessageRetentionPeriod":345600,
          "MaximumMessageSize":262144,
          "VisibilityTimeout":60,
          "QueueName":"my-stack-with-resource-drift-Queue-494PBHCO76H4"
        }
        </ExpectedProperties>
        <StackResourceDriftStatus>MODIFIED</StackResourceDriftStatus>
        <StackId>arn:aws:cloudformation:us-east-1:012345678910:stack/my-stack-with-
resource-drift/489e5570-df85-11e7-a7d9-503acac5c0fd</StackId>
        <LogicalResourceId>Queue</LogicalResourceId>
        <ActualProperties>{
          "ReceiveMessageWaitTimeSeconds":0,
          "DelaySeconds":120,
          "RedrivePolicy":{
            "deadLetterTargetArn":"arn:aws:sqs:us-east-1:012345678910:my-stack-with-
resource-drift-DLQ-1BCY7HHD5QIM3",
            "maxReceiveCount":12
            },
          "MessageRetentionPeriod":345600,
          "MaximumMessageSize":262144,
          "VisibilityTimeout":60,
          "QueueName":"my-stack-with-resource-drift-Queue-494PBHCO76H4"
          }
        </ActualProperties>
        <Timestamp>2017-12-28T23:18:45.997Z</Timestamp>
```

```
        <ResourceType>AWS::SQS::Queue</ResourceType>
      </member>
    </StackResourceDrifts>
  </DescribeStackResourceDriftsResult>
  <ResponseMetadata>
    <RequestId>fee6d615-ec27-11e7-948a-0bec95751ba6</RequestId>
  </ResponseMetadata>
</DescribeStackResourceDriftsResponse>
```

See Also

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

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

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. 321).

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 don't 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 aren't 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 don't 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. 276) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

Examples

DescribeStackResources

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

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 doesn't exist, an `ValidationError` is returned.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

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's associated with the stack, which aren't 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. 259) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

Examples

DescribeStacks

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3

- AWS SDK for Python
- AWS SDK for Ruby V3

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. 321).

CallAs

[Service-managed permissions] Specifies whether you are acting as an account administrator in the
organization's management account or as a delegated administrator in a member account.

By default, `SELF` is specified. Use `SELF` for stack sets with self-managed permissions.
- If you are signed in to the management account, specify `SELF`.
- If you are signed in to a delegated administrator account, specify `DELEGATED_ADMIN`.

    Your AWS account must be registered as a delegated administrator in the management account.
    For more information, see Register a delegated administrator in the *AWS CloudFormation User
    Guide*.

Type: String

Valid Values: `SELF | DELEGATED_ADMIN`

Required: No

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. 288) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

StackSetNotFound

The specified stack set doesn't exist.

HTTP Status Code: 404

Examples

DescribeStackSet

This example illustrates one usage of 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>
      <StackSetDriftDetectionDetails>
        <DriftDetectionStatus>COMPLETED</DriftDetectionStatus>
        <InSyncStackInstancesCount>5</InSyncStackInstancesCount>
        <FailedStackInstancesCount>0</FailedStackInstancesCount>
        <DriftStatus>IN_SYNC</DriftStatus>
        <TotalStackInstancesCount>5</TotalStackInstancesCount>
        <DriftedStackInstancesCount>0</DriftedStackInstancesCount>
        <InProgressStackInstancesCount>0</InProgressStackInstancesCount>
        <LastDriftCheckTimestamp>2019-12-03T20:00:27.877Z</LastDriftCheckTimestamp>
      </StackSetDriftDetectionDetails>
      <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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

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. 321).

CallAs

[Service-managed permissions] Specifies whether you are acting as an account administrator in the
organization's management account or as a delegated administrator in a member account.

By default, `SELF` is specified. Use `SELF` for stack sets with self-managed permissions.

- If you are signed in to the management account, specify `SELF`.
- If you are signed in to a delegated administrator account, specify `DELEGATED_ADMIN`.

  Your AWS account must be registered as a delegated administrator in the management account.
  For more information, see Register a delegated administrator in the *AWS CloudFormation User
  Guide*.

Type: String

Valid Values: `SELF | DELEGATED_ADMIN`

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: 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. 294) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

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

Describing an Update Stack Set Operation

The following example returns information about a successful update of a stack set and its associated stack instances.

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>
```

Describing a Drift Detection Stack Set Operation

The following example returns information about a drift detection operation run on a stack set.

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=DescribeStackSetOperation
 &Version=2010-05-15
 &StackSetName=stack-set-drift-example
 &OperationId=9cc082fa-df4c-45cd-b9a8-7e5example
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20191203T201942Z
 &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>
      <ExecutionRoleName>AWSCloudFormationStackSetExecutionRole</ExecutionRoleName>
      <AdministrationRoleARN>arn:aws:iam::012345678910:role/
AWSCloudFormationStackSetAdministrationRole</AdministrationRoleARN>
      <StackSetId>stack-set-drift-example:bd1f4017-d4f9-432e-a73f-8c22eb708dd5</StackSetId>
      <OperationPreferences>
        <RegionOrder/>
      </OperationPreferences>
      <StackSetDriftDetectionDetails>
        <InSyncStackInstancesCount>2</InSyncStackInstancesCount>
        <FailedStackInstancesCount>0</FailedStackInstancesCount>
        <DriftStatus>DRIFTED</DriftStatus>
        <TotalStackInstancesCount>7</TotalStackInstancesCount>
        <DriftedStackInstancesCount>1</DriftedStackInstancesCount>
        <InProgressStackInstancesCount>4</InProgressStackInstancesCount>
        <LastDriftCheckTimestamp>2019-12-04T20:34:28.543Z</LastDriftCheckTimestamp>
      </StackSetDriftDetectionDetails>
      <CreationTimestamp>2019-12-04T20:33:13.673Z</CreationTimestamp>
      <OperationId>9cc082fa-df4c-45cd-b9a8-7e5example</OperationId>
      <Action>DETECT_DRIFT</Action>
      <Status>RUNNING</Status>
    </StackSetOperation>
  </DescribeStackSetOperationResult>
  <ResponseMetadata>
    <RequestId>e81844dc-6121-4b59-923a-e2417example</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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

DescribeType

Returns detailed information about an extension that has been registered.

If you specify a `VersionId`, `DescribeType` returns information about that specific extension version. Otherwise, it returns information about the default extension version.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

Arn

The Amazon Resource Name (ARN) of the extension.

Conditional: You must specify either `TypeName` and `Type`, or `Arn`.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[A-Za-z0-9-]{0,64}:cloudformation:[A-Za-z0-9-]{1,64}:([0-9]{12})?:type/.+`

Required: No

PublicVersionNumber

The version number of a public third-party extension.

Type: String

Length Constraints: Minimum length of 5.

Pattern: `^(0|[1-9]\d*)\.(0|[1-9]\d*)\.(.*)$`

Required: No

PublisherId

The publisher ID of the extension publisher.

Extensions provided by Amazon are not assigned a publisher ID.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 40.

Pattern: `[0-9a-zA-Z]{12,40}`

Required: No

Type

The kind of extension.

Conditional: You must specify either `TypeName` and `Type`, or `Arn`.

Type: String

Valid Values: `RESOURCE | MODULE`

Required: No

TypeName

The name of the extension.

Conditional: You must specify either `TypeName` and `Type`, or `Arn`.

Type: String

Length Constraints: Minimum length of 10. Maximum length of 204.

Pattern: `[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}(::MODULE){0,1}`

Required: No

VersionId

The ID of a specific version of the extension. The version ID is the value at the end of the Amazon Resource Name (ARN) assigned to the extension version when it is registered.

If you specify a `VersionId`, `DescribeType` returns information about that specific extension version. Otherwise, it returns information about the default extension version.

Type: String

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

Pattern: `[A-Za-z0-9-]+`

Required: No

Response Elements

The following elements are returned by the service.

Arn

The Amazon Resource Name (ARN) of the extension.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[A-Za-z0-9-]{0,64}:cloudformation:[A-Za-z0-9-]{1,64}:([0-9]{12})?:type/.+`

AutoUpdate

Whether CloudFormation automatically updates the extension in this account and region when a new *minor* version is published by the extension publisher. Major versions released by the publisher must be manually updated. For more information, see Activating public extensions for use in your account in the *AWS CloudFormation User Guide*.

Type: Boolean

ConfigurationSchema

A JSON string that represent the current configuration data for the extension in this account and region.

To set the configuration data for an extension, use SetTypeConfiguration. For more information, see Configuring extensions at the account level in the *CloudFormation User Guide*.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 60000.

Pattern: `[\s\S]+`

DefaultVersionId

The ID of the default version of the extension. The default version is used when the extension version isn't specified.

This applies only to private extensions you have registered in your account. For public extensions, both those provided by Amazon and published by third parties, CloudFormation returns `null`. For more information, see RegisterType.

To set the default version of an extension, use   SetTypeDefaultVersion   (p. 190) .

Type: String

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

Pattern: `[A-Za-z0-9-]+`

DeprecatedStatus

The deprecation status of the extension version.

Valid values include:

- `LIVE`: The extension is activated or registered and can be used in CloudFormation operations, dependent on its provisioning behavior and visibility scope.
- `DEPRECATED`: The extension has been deactivated or deregistered and can no longer be used in CloudFormation operations.

For public third-party extensions, CloudFormation returns `null`.

Type: String

Valid Values: `LIVE | DEPRECATED`

Description

The description of the extension.

Type: String

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

DocumentationUrl

The URL of a page providing detailed documentation for this extension.

Type: String

Length Constraints: Maximum length of 4096.

ExecutionRoleArn

The Amazon Resource Name (ARN) of the IAM execution role used to register the extension. This applies only to private extensions you have registered in your account. For more information, see RegisterType.

If the registered extension calls any AWS APIs, you must create an *IAM execution role* that includes the necessary permissions to call those AWS APIs, and provision that execution role in your account. CloudFormation then assumes that execution role to provide your extension with the appropriate credentials.

Type: String

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

Pattern: `arn:.+:iam::[0-9]{12}:role/.+`

IsActivated

Whether or not the extension is activated in the account and region.

This only applies to public third-party extensions. For all other extensions, CloudFormation returns `null`.

Type: Boolean

IsDefaultVersion

Whether the specified extension version is set as the default version.

This applies only to private extensions you have registered in your account, and extensions published by Amazon. For public third-party extensions, whether or not they are activated in your account, CloudFormation returns `null`.

Type: Boolean

LastUpdated

When the specified extension version was registered. This applies only to:

- Private extensions you have registered in your account. For more information, see RegisterType.
- Public extensions you have activated in your account with auto-update specified. For more information, see ActivateType.

Type: Timestamp

LatestPublicVersion

The latest version of a public extension *that is available* for use.

This only applies if you specify a public extension, and you don't specify a version. For all other requests, CloudFormation returns `null`.

Type: String

Length Constraints: Minimum length of 5.

Pattern: `^(0|[1-9]\d*)\.(0|[1-9]\d*)\.(.*)$`

LoggingConfig

Contains logging configuration information for private extensions. This applies only to private extensions you have registered in your account. For public extensions, both those provided by Amazon and published by third parties, CloudFormation returns `null`. For more information, see RegisterType.

Type: LoggingConfig (p. 238) object

OriginalTypeArn

For public extensions that have been activated for this account and region, the Amazon Resource Name (ARN) of the public extension.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[A-Za-z0-9-]{0,64}:cloudformation:[A-Za-z0-9-]{1,64}:([0-9]{12})?:type/.+`

OriginalTypeName

For public extensions that have been activated for this account and region, the type name of the public extension.

If you specified a `TypeNameAlias` when enabling the extension in this account and region, CloudFormation treats that alias as the extension's type name within the account and region, not the type name of the public extension. For more information, see Specifying aliases to refer to extensions in the *CloudFormation User Guide*.

Type: String

Length Constraints: Minimum length of 10. Maximum length of 204.

Pattern: `[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}(::MODULE){0,1}`

ProvisioningType

For resource type extensions, the provisioning behavior of the resource type. AWS CloudFormation determines the provisioning type during registration, based on the types of handlers in the schema handler package submitted.

Valid values include:

- `FULLY_MUTABLE`: The resource type includes an update handler to process updates to the type during stack update operations.
- `IMMUTABLE`: The resource type doesn't include an update handler, so the type can't be updated and must instead be replaced during stack update operations.
- `NON_PROVISIONABLE`: The resource type doesn't include all the following handlers, and therefore can't actually be provisioned.
  - create
  - read
  - delete

Type: String

Valid Values: `NON_PROVISIONABLE | IMMUTABLE | FULLY_MUTABLE`

PublicVersionNumber

The version number of a public third-party extension.

This applies only if you specify a public extension you have activated in your account, or specify a public extension without specifying a version. For all other extensions, CloudFormation returns `null`.

Type: String

Length Constraints: Minimum length of 5.

Pattern: `^(0|[1-9]\d*)\.(0|[1-9]\d*)\.(.*)$`

PublisherId

The publisher ID of the extension publisher.

This applies only to public third-party extensions. For private registered extensions, and extensions provided by AWS, CloudFormation returns `null`.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 40.

Pattern: `[0-9a-zA-Z]{12,40}`

RequiredActivatedTypes.member.N

For extensions that are modules, the public third-party extensions that must be activated in your account in order for the module itself to be activated.

Type: Array of RequiredActivatedType (p. 247) objects

Schema

The schema that defines the extension.

For more information on extension schemas, see Resource Provider Schema in the *CloudFormation CLI User Guide*.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 16777216.

SourceUrl

The URL of the source code for the extension.

Type: String

Length Constraints: Maximum length of 4096.

TimeCreated

When the specified private extension version was registered or activated in your account.

Type: Timestamp

Type

The kind of extension.

Type: String

Valid Values: `RESOURCE | MODULE`

TypeName

The name of the extension.

If the extension is a public third-party type you have activated with a type name alias, CloudFormation returns the type name alias. For more information, see ActivateType.

Type: String

Length Constraints: Minimum length of 10. Maximum length of 204.

Pattern: `[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}(::MODULE){0,1}`

TypeTestsStatus

The contract test status of the registered extension version. To return the extension test status of a specific extension version, you must specify `VersionId`.

This applies only to registered private extension versions. CloudFormation doesn't return this information for public extensions, whether or not they are activated in your account.

- `PASSED`: The extension has passed all its contract tests.

  An extension must have a test status of `PASSED` before it can be published. For more information, see Publishing extensions to make them available for public use in the *CloudFormation Command Line Interface User Guide*.

- `FAILED`: The extension has failed one or more contract tests.
- `IN_PROGRESS`: Contract tests are currently being performed on the extension.
- `NOT_TESTED`: Contract tests haven't been performed on the extension.

Type: String

Valid Values: `PASSED | FAILED | IN_PROGRESS | NOT_TESTED`

TypeTestsStatusDescription

The description of the test status. To return the extension test status of a specific extension version, you must specify `VersionId`.

This applies only to registered private extension versions. CloudFormation doesn't return this information for public extensions, whether or not they are activated in your account.

Type: String

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

Pattern: `[\s\S]+`

Visibility

The scope at which the extension is visible and usable in CloudFormation operations.

Valid values include:

- `PRIVATE`: The extension is only visible and usable within the account in which it is registered. AWS CloudFormation marks any extensions you register as `PRIVATE`.
- `PUBLIC`: The extension is publicly visible and usable within any Amazon account.

Type: String

Valid Values: `PUBLIC | PRIVATE`

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

CFNRegistry

An error occurred during a CloudFormation registry operation.

HTTP Status Code: 400

TypeNotFound

The specified extension doesn't exist in the CloudFormation registry.

HTTP Status Code: 404

Examples

DescribeType

This example illustrates one usage of DescribeType.

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=DescribeType
 &Version=2010-05-15
 &TypeName=My::Resource::Example
 &VersionId=00000002
 &Type=RESOURCE
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20191203T234428Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<DescribeTypeResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <DescribeTypeResult>
    <Schema>{
    [details omitted]
}
</Schema>
    <Visibility>PRIVATE</Visibility>
    <DeprecatedStatus>LIVE</DeprecatedStatus>
    <TypeName>My::Resource::Example</TypeName>
    <Description>Resource schema for My::Resource::Example</Description>
    <Type>RESOURCE</Type>
    <SourceUrl>https://github.com/aws-cloudformation/aws-cloudformation-resource-providers-
logs.git</SourceUrl>
    <LastUpdated>2019-12-03T23:29:33.321Z</LastUpdated>
    <ProvisioningType>FULLY_MUTABLE</ProvisioningType>
    <TimeCreated>2019-12-03T23:29:33.321Z</TimeCreated>
    <Arn>arn:aws:cloudformation:us-east-1:012345678910:type/resource/My-Resource-
Example/00000002</Arn>
  </DescribeTypeResult>
  <ResponseMetadata>
    <RequestId>8d2dd588-b16f-4096-8516-ee941example</RequestId>
  </ResponseMetadata>
</DescribeTypeResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2

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

DescribeTypeRegistration

Returns information about an extension's registration, including its current status and type and version identifiers.

When you initiate a registration request using `RegisterType` `(p. 179)`, you can then use `DescribeTypeRegistration` `(p. 104)` to monitor the progress of that registration request.

Once the registration request has completed, use `DescribeType` `(p. 95)` to return detailed information about an extension.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

RegistrationToken

The identifier for this registration request.

This registration token is generated by CloudFormation when you initiate a registration request using `RegisterType` `(p. 179)`.

Type: String

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

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

Required: Yes

Response Elements

The following elements are returned by the service.

Description

The description of the extension registration request.

Type: String

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

ProgressStatus

The current status of the extension registration request.

Type: String

Valid Values: `COMPLETE | IN_PROGRESS | FAILED`

TypeArn

The Amazon Resource Name (ARN) of the extension being registered.

For registration requests with a `ProgressStatus` of other than `COMPLETE`, this will be `null`.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[A-Za-z0-9-]{0,64}:cloudformation:[A-Za-z0-9-]{1,64}:([0-9]{12})?:type/.+`

TypeVersionArn

The Amazon Resource Name (ARN) of this specific version of the extension being registered.

For registration requests with a `ProgressStatus` of other than `COMPLETE`, this will be `null`.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[A-Za-z0-9-]{0,64}:cloudformation:[A-Za-z0-9-]{1,64}:([0-9]{12})?:type/.+`

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

CFNRegistry

An error occurred during a CloudFormation registry operation.

HTTP Status Code: 400

Examples

DescribeTypeRegistration while registration is in progress

The following example shows a typical response to `DescribeTypeRegistration` while CloudFormation is in the process of registering the extension.

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=DescribeTypeRegistration
 &Version=2010-05-15
 &RegistrationToken=03458954-61b1-44e9-90d8-f1b81example
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20191203T232905Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<DescribeTypeRegistrationResponse xmlns="http://cloudformation.amazonaws.com/
doc/2010-05-15/">
  <DescribeTypeRegistrationResult>
    <Description>Deployment is currently in VALIDATION_STAGE of status IN_PROGRESS; Next is
 DEPLOY_STAGE with status PENDING</Description>
    <ProgressStatus>IN_PROGRESS</ProgressStatus>
  </DescribeTypeRegistrationResult>
```

```
  <ResponseMetadata>
    <RequestId>5feae575-40a4-474c-b81c-ca861example</RequestId>
  </ResponseMetadata>
</DescribeTypeRegistrationResponse>
```

DescribeTypeRegistration once registration complete

The following example shows the response to `DescribeTypeRegistration` once CloudFormation has successfully completed registering the extension.

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=DescribeTypeRegistration
 &Version=2010-05-15
 &RegistrationToken=03458954-61b1-44e9-90d8-f1b81example
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20191203T233327Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<DescribeTypeRegistrationResponse xmlns="http://cloudformation.amazonaws.com/
doc/2010-05-15/">
  <DescribeTypeRegistrationResult>
    <Description>Deployment is currently in DEPLOY_STAGE of status COMPLETED; </
Description>
    <ProgressStatus>COMPLETE</ProgressStatus>
    <TypeArn>arn:aws:cloudformation:us-east-1:012345678910:type/resource/My-Resource-
Example</TypeArn>
    <TypeVersionArn>arn:aws:cloudformation:us-east-1:012345678910:type/resource/My-
Resource-Example/00000001</TypeVersionArn>
  </DescribeTypeRegistrationResult>
  <ResponseMetadata>
    <RequestId>2d187120-6f6e-4d43-80f5-99b588example</RequestId>
  </ResponseMetadata>
</DescribeTypeRegistrationResponse>
```

See Also

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

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

DetectStackDrift

Detects whether a stack's actual configuration differs, or has *drifted*, from it's expected configuration, as defined in the stack template and any values specified as template parameters. For each resource in the stack that supports drift detection, AWS CloudFormation compares the actual configuration of the resource with its expected template configuration. Only resource properties explicitly defined in the stack template are checked for drift. A stack is considered to have drifted if one or more of its resources differ from their expected template configurations. For more information, see Detecting Unregulated Configuration Changes to Stacks and Resources.

Use `DetectStackDrift` to detect drift on all supported resources for a given stack, or DetectStackResourceDrift (p. 110) to detect drift on individual resources.

For a list of stack resources that currently support drift detection, see Resources that Support Drift Detection.

`DetectStackDrift` can take up to several minutes, depending on the number of resources contained within the stack. Use DescribeStackDriftDetectionStatus (p. 67) to monitor the progress of a detect stack drift operation. Once the drift detection operation has completed, use DescribeStackResourceDrifts (p. 78) to return drift information about the stack and its resources.

When detecting drift on a stack, AWS CloudFormation doesn't detect drift on any nested stacks belonging to that stack. Perform `DetectStackDrift` directly on the nested stack itself.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

LogicalResourceIds.member.N

The logical names of any resources you want to use as filters.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 200 items.

Required: No

StackName

The name of the stack for which you want to detect drift.

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.

StackDriftDetectionId

The ID of the drift detection results of this operation.

AWS CloudFormation generates new results, with a new drift detection ID, each time this operation is run. However, the number of drift results AWS CloudFormation retains for any given stack, and for how long, may vary.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 36.

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

Examples

DetectStackDrift

This example illustrates one usage of DetectStackDrift.

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=DetectStackDrift
 &Version=2010-05-15
 &StackName=my-stack-with-resource-drift
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20171211T230005Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<DetectStackDriftResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <DetectStackDriftResult>
    <StackDriftDetectionId>2f2b2d60-df86-11e7-bea1-500c2example</StackDriftDetectionId>
  </DetectStackDriftResult>
  <ResponseMetadata>
    <RequestId>2f07c75d-df86-11e7-8270-89489example</RequestId>
  </ResponseMetadata>
</DetectStackDriftResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2

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

DetectStackResourceDrift

Returns information about whether a resource's actual configuration differs, or has *drifted*, from it's expected configuration, as defined in the stack template and any values specified as template parameters. This information includes actual and expected property values for resources in which AWS CloudFormation detects drift. Only resource properties explicitly defined in the stack template are checked for drift. For more information about stack and resource drift, see Detecting Unregulated Configuration Changes to Stacks and Resources.

Use `DetectStackResourceDrift` to detect drift on individual resources, or DetectStackDrift (p. 107) to detect drift on all resources in a given stack that support drift detection.

Resources that don't currently support drift detection can't be checked. For a list of resources that support drift detection, see Resources that Support Drift Detection.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

LogicalResourceId

> The logical name of the resource for which to return drift information.
>
> Type: String
>
> Required: Yes

StackName

> The name of the stack to which the resource belongs.
>
> 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.

StackResourceDrift

> Information about whether the resource's actual configuration has drifted from its expected template configuration, including actual and expected property values and any differences detected.
>
> Type: StackResourceDrift (p. 281) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

Examples

DetectStackResourceDrift

This example illustrates one usage of DetectStackResourceDrift.

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=DetectStackResourceDrift
 &Version=2010-05-15
 &LogicalResourceId=Queue
 &StackName=my-stack-with-resource-drift
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20171211T230005Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<DetectStackResourceDriftResponse xmlns="http://cloudformation.amazonaws.com/
doc/2010-05-15/">
  <DetectStackResourceDriftResult>
    <StackResourceDrift>
      <PropertyDifferences>
        <member>
          <ActualValue>120</ActualValue>
          <ExpectedValue>20</ExpectedValue>
          <DifferenceType>NOT_EQUAL</DifferenceType>
          <PropertyPath>/DelaySeconds</PropertyPath>
        </member>
        <member>
          <ActualValue>12</ActualValue>
          <ExpectedValue>10</ExpectedValue>
          <DifferenceType>NOT_EQUAL</DifferenceType>
          <PropertyPath>/RedrivePolicy/maxReceiveCount</PropertyPath>
        </member>
      </PropertyDifferences>
      <PhysicalResourceId>https://sqs.us-east-1.amazonaws.com/012345678910/my-stack-with-
resource-drift-Queue-494PBHCO76H4</PhysicalResourceId>
      <ExpectedProperties>{
        "ReceiveMessageWaitTimeSeconds":0,
        "DelaySeconds":20,
        "RedrivePolicy":{
          "deadLetterTargetArn":"arn:aws:sqs:us-east-1:012345678910:my-stack-with-resource-
drift-DLQ-1BCY7HHD5QIM3",
          "maxReceiveCount":10
          },
        "MessageRetentionPeriod":345600,
        "MaximumMessageSize":262144,
        "VisibilityTimeout":60,
        "QueueName":"my-stack-with-resource-drift-Queue-494PBHCO76H4"
        }
      </ExpectedProperties>
      <StackResourceDriftStatus>MODIFIED</StackResourceDriftStatus>
      <StackId>arn:aws:cloudformation:us-east-1:012345678910:stack/my-stack-with-resource-
drift/489e5570-df85-11e7-a7d9-503acac5c0fd</StackId>
```

```
        <LogicalResourceId>Queue</LogicalResourceId>
        <ActualProperties>{
          "ReceiveMessageWaitTimeSeconds":0,
          "DelaySeconds":120,
          "RedrivePolicy":{
            "deadLetterTargetArn":"arn:aws:sqs:us-east-1:012345678910:my-stack-with-resource-
drift-DLQ-1BCY7HHD5QIM3",
            "maxReceiveCount":12
            },
          "MessageRetentionPeriod":345600,
          "MaximumMessageSize":262144,
          "VisibilityTimeout":60,
          "QueueName":"my-stack-with-resource-drift-Queue-494PBHCO76H4"
          }
        </ActualProperties>
        <Timestamp>2017-12-28T23:51:49.616Z</Timestamp>
        <ResourceType>AWS::SQS::Queue</ResourceType>
      </StackResourceDrift>
    </DetectStackResourceDriftResult>
    <ResponseMetadata>
      <RequestId>1229a48a-ec2a-11e7-a8e5-97a4c2fc6398</RequestId>
    </ResponseMetadata>
</DetectStackResourceDriftResponse>
```

See Also

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

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

DetectStackSetDrift

Detect drift on a stack set. When CloudFormation performs drift detection on a stack set, it performs drift detection on the stack associated with each stack instance in the stack set. For more information, see How CloudFormation Performs Drift Detection on a Stack Set.

`DetectStackSetDrift` returns the `OperationId` of the stack set drift detection operation. Use this operation id with `DescribeStackSetOperation (p. 91)` to monitor the progress of the drift detection operation. The drift detection operation may take some time, depending on the number of stack instances included in the stack set, as well as the number of resources included in each stack.

Once the operation has completed, use the following actions to return drift information:

- Use `DescribeStackSet (p. 88)` to return detailed information about the stack set, including detailed information about the last *completed* drift operation performed on the stack set. (Information about drift operations that are in progress isn't included.)
- Use `ListStackInstances (p. 141)` to return a list of stack instances belonging to the stack set, including the drift status and last drift time checked of each instance.
- Use `DescribeStackInstance (p. 73)` to return detailed information about a specific stack instance, including its drift status and last drift time checked.

For more information on performing a drift detection operation on a stack set, see Detecting Unmanaged Changes in Stack Sets.

You can only run a single drift detection operation on a given stack set at one time.

To stop a drift detection stack set operation, use `StopStackSetOperation (p. 195)`.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

CallAs

[Service-managed permissions] Specifies whether you are acting as an account administrator in the organization's management account or as a delegated administrator in a member account.

By default, `SELF` is specified. Use `SELF` for stack sets with self-managed permissions.
- If you are signed in to the management account, specify `SELF`.
- If you are signed in to a delegated administrator account, specify `DELEGATED_ADMIN`.

Your AWS account must be registered as a delegated administrator in the management account. For more information, see Register a delegated administrator in the *AWS CloudFormation User Guide*.

Type: String

Valid Values: `SELF | DELEGATED_ADMIN`

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: No

OperationPreferences

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.

Type: StackSetOperationPreferences (p. 297) object

Required: No

StackSetName

The name of the stack set on which to perform the drift detection operation.

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: Yes

Response Elements

The following element is returned by the service.

OperationId

The ID of the drift detection stack set operation.

You can use this operation ID with `DescribeStackSetOperation (p. 91)` to monitor the progress of the drift detection 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. 323).

InvalidOperation

The specified operation isn't valid.

HTTP Status Code: 400

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

Examples

DetectStackSetDrift

This example illustrates one usage of DetectStackSetDrift.

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=DetectStackSetDrift
 &Version=2010-05-15
 &StackSetName=stack-set-example
 &OperationId=9cc082fa-df4c-45cd-b9a8-7e56example
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20191203T195756Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<DetectStackSetDriftResponse xmlns="http://internal.amazon.com/coral/
com.amazonaws.maestro.service.v20160713/">
  <DetectStackSetDriftResult>
    <OperationId>9cc082fa-df4c-45cd-b9a8-7e56example</OperationId>
  </DetectStackSetDriftResult>
  <ResponseMetadata>
    <RequestId>38309f0a-d5f5-4330-b6ca-8eb1example</RequestId>
  </ResponseMetadata>
</DetectStackSetDriftResponse>
```

See Also

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

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

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. 321).

Parameters.member.N

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

Type: Array of Parameter (p. 241) 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's located in an Amazon S3 bucket or a Systems Manager document. 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. 323).

Examples

EstimateTemplateCost

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

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. 85) 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.

To create a change set for the entire stack hierarchy, `IncludeNestedStacks` must have been set to `True`.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

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

DisableRollback

Preserves the state of previously provisioned resources when an operation fails.

Default: `True`

Type: Boolean

Required: No

StackName

If you specified the name of a change set, specify the stack name or ID (ARN) that's 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 .

ChangeSetNotFound

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

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

Examples

ExecuteChangeSet

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

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. 321).

StackName

The name or unique stack ID that's 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. 323).

Examples

GetStackPolicy

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

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 doesn't exist, a `ValidationError` is returned.

Request Parameters

For information about the parameters that are common to all actions, see Common
Parameters (p. 321).

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 `Processed`.

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 .

ChangeSetNotFound

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

HTTP Status Code: 404

Examples

GetTemplate

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

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 doesn't exist, a `ValidationError` is returned.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

CallAs

[Service-managed permissions] Specifies whether you are acting as an account administrator in the organization's management account or as a delegated administrator in a member account.

By default, `SELF` is specified. Use `SELF` for stack sets with self-managed permissions.
- If you are signed in to the management account, specify `SELF`.
- If you are signed in to a delegated administrator account, specify `DELEGATED_ADMIN`.

  Your AWS account must be registered as a delegated administrator in the management account. For more information, see Register a delegated administrator in the *AWS CloudFormation User Guide*.

Type: String

Valid Values: `SELF | DELEGATED_ADMIN`

Required: No

StackName

The name or the stack ID that's associated with the stack, which aren't 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's located in an Amazon S3 bucket or a Systems Manager document. 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. 23) or UpdateStack (p. 201) 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 | CAPABILITY_AUTO_EXPAND`

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's defined in the `Description` property of the template.

Type: String

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

Metadata

The value that's 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. 243) objects

ResourceIdentifierSummaries.member.N

A list of resource identifier summaries that describe the target resources of an import operation and the properties you can provide during the import to identify the target resources. For example, `BucketName` is a possible identifier property for an `AWS::S3::Bucket` resource.

Type: Array of ResourceIdentifierSummary (p. 253) 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. 323).

StackSetNotFound

The specified stack set doesn't exist.

HTTP Status Code: 404

Examples

GetTemplateSummary

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

ImportStacksToStackSet

Import existing stacks into a new stack sets. Use the stack import operation to import up to 10 stacks into a new stack set in the same account as the source stack or in a different administrator account and Region, by specifying the stack ID of the stack you intend to import.

> **Note**
> `ImportStacksToStackSet` is only supported by self-managed permissions.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

CallAs

By default, `SELF` is specified. Use `SELF` for stack sets with self-managed permissions.

- If you are signed in to the management account, specify `SELF`.
- For service managed stack sets, specify `DELEGATED_ADMIN`.

Type: String

Valid Values: `SELF | DELEGATED_ADMIN`

Required: No

OperationId

A unique, user defined, identifier for 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

OperationPreferences

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.

Type: StackSetOperationPreferences (p. 297) object

Required: No

StackIds.member.N

The IDs of the stacks you are importing into a stack set. You import up to 10 stacks per stack set at a time.

Type: Array of strings

Required: Yes

StackSetName

The name of the stack set. The name must be unique in the Region where you create your stack set.

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: Yes

Response Elements

The following element is returned by the service.

OperationId

The unique identifier for 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]*`

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

InvalidOperation

The specified operation isn't valid.

HTTP Status Code: 400

LimitExceeded

The quota for the resource has already been reached.

For information on resource and stack limitations, see Limits in the *AWS CloudFormation User Guide*.

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

StackNotFound

The specified stack ARN doesn't exist or stack doesn't exist corresponding to the ARN in input.

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

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. 321).

NextToken

A string (provided by the ListChangeSets (p. 133) 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. 233) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

Examples

ListChangeSets

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

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. 321).

NextToken

A string (provided by the ListExports (p. 136) 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. 136) action.

Type: Array of Export (p. 237) 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. 323).

Examples

ListExports

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3

- AWS SDK for Python
- AWS SDK for Ruby V3

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. 136).

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. 321).

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. 139) 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. 323).

Examples

ListExports

This example illustrates one usage of ListImports.

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

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, or that have a specific status.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

CallAs

[Service-managed permissions] Specifies whether you are acting as an account administrator in the organization's management account or as a delegated administrator in a member account.

By default, `SELF` is specified. Use `SELF` for stack sets with self-managed permissions.

- If you are signed in to the management account, specify `SELF`.
- If you are signed in to a delegated administrator account, specify `DELEGATED_ADMIN`.

  Your AWS account must be registered as a delegated administrator in the management account. For more information, see Register a delegated administrator in the *AWS CloudFormation User Guide*.

Type: String

Valid Values: `SELF | DELEGATED_ADMIN`

Required: No

Filters.member.N

The status that stack instances are filtered by.

Type: Array of StackInstanceFilter (p. 272) objects

Array Members: Maximum number of 1 item.

Required: No

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

Pattern: `^[a-zA-Z0-9-]{1,128}$`

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 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. 273) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

StackSetNotFound

The specified stack set doesn't exist.

HTTP Status Code: 404

Examples

ListStackInstances

The following example returns summary information about the stack instances associated with the specified stack set in the specified account.

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=ListStackInstances
 &StackInstanceAccount=012345678910
 &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>
        <DriftStatus>IN_SYNC</DriftStatus>
        <StackSetId>stack-set-example:45331555-4b18-45a1-aa43-ecf5example</StackSetId>
        <StackId>arn:aws:cloudformation:ap-northeast-2:012345678910:stack/StackSet-stack-
set-example-0ca3eed7-0b67-4be7-8a71-828641fa5193/ea68eca0-f9c1-11e9-aac0-0example</StackId>
        <Region>ap-northeast-2</Region>
        <Account>012345678910</Account>
        <LastDriftCheckTimestamp>2019-12-03T20:01:04.511Z</LastDriftCheckTimestamp>
        <Status>CURRENT</Status>
      </member>
      <member>
        <DriftStatus>IN_SYNC</DriftStatus>
        <StackSetId>stack-set-example:45331555-4b18-45a1-aa43-ecf5example</StackSetId>
        <StackId>arn:aws:cloudformation:eu-west-2:012345678910:stack/StackSet-stack-set-
example-da07ae82-0478-485e-a32f-c1cb8cec57c2/e0df84a0-f9c1-11e9-bb3e-06afexamplec</StackId>
        <Region>eu-west-2</Region>
        <Account>012345678910</Account>
        <LastDriftCheckTimestamp>2019-12-03T19:59:14.488Z</LastDriftCheckTimestamp>
        <Status>CURRENT</Status>
      </member>
      <member>
        <DriftStatus>IN_SYNC</DriftStatus>
        <StackSetId>stack-set-example:45331555-4b18-45a1-aa43-ecf5example</StackSetId>
        <StackId>arn:aws:cloudformation:us-east-1:012345678910:stack/StackSet-stack-set-
example-35588cf5-396d-4469-8a9e-912214ce3a7a/c684ff40-f9c1-11e9-b738-1245bexample</StackId>
        <Region>us-east-1</Region>
        <Account>012345678910</Account>
        <LastDriftCheckTimestamp>2019-12-03T19:58:37.477Z</LastDriftCheckTimestamp>
        <Status>CURRENT</Status>
      </member>
```

```
      <member>
        <DriftStatus>IN_SYNC</DriftStatus>
        <StackSetId>stack-set-example:45331555-4b18-45a1-aa43-ecf5example</StackSetId>
        <StackId>arn:aws:cloudformation:us-east-2:012345678910:stack/StackSet-stack-set-
example-d3db3374-7683-4e82-bdeb-c388d7b16dc9/d8c208b0-f9c1-11e9-81c9-02300example</StackId>
        <Region>us-east-2</Region>
        <Account>012345678910</Account>
        <LastDriftCheckTimestamp>2019-12-03T20:00:27.570Z</LastDriftCheckTimestamp>
        <Status>CURRENT</Status>
      </member>
      <member>
        <DriftStatus>IN_SYNC</DriftStatus>
        <StackSetId>stack-set-example:45331555-4b18-45a1-aa43-ecf5example</StackSetId>
        <StackId>arn:aws:cloudformation:us-west-2:012345678910:stack/StackSet-stack-set-
example-05f9348f-3f6e-4051-9083-8663c59f0352/cffefdf0-f9c1-11e9-a552-02ca0example</StackId>
        <Region>us-west-2</Region>
        <Account>012345678910</Account>
        <LastDriftCheckTimestamp>2019-12-03T19:59:51.501Z</LastDriftCheckTimestamp>
        <Status>CURRENT</Status>
      </member>
    </Summaries>
  </ListStackInstancesResult>
  <ResponseMetadata>
    <RequestId>6a94faf0-5632-4618-9c0a-cf273example</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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

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. 321).

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 aren't 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. 286) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

Examples

ListStackResources

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

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. 321).

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. 259) 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_FAILED | UPDATE_ROLLBACK_IN_PROGRESS | UPDATE_ROLLBACK_FAILED | UPDATE_ROLLBACK_COMPLETE_CLEANUP_IN_PROGRESS | UPDATE_ROLLBACK_COMPLETE | REVIEW_IN_PROGRESS | IMPORT_IN_PROGRESS | IMPORT_COMPLETE | IMPORT_ROLLBACK_IN_PROGRESS | IMPORT_ROLLBACK_FAILED | IMPORT_ROLLBACK_COMPLETE`

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. 305) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

Examples

ListStacks

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

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. 321).

CallAs

[Service-managed permissions] Specifies whether you are acting as an account administrator in the organization's management account or as a delegated administrator in a member account.

By default, `SELF` is specified. Use `SELF` for stack sets with self-managed permissions.

- If you are signed in to the management account, specify `SELF`.
- If you are signed in to a delegated administrator account, specify `DELEGATED_ADMIN`.

  Your AWS account must be registered as a delegated administrator in the management account. For more information, see Register a delegated administrator in the *AWS CloudFormation User Guide*.

Type: String

Valid Values: `SELF | DELEGATED_ADMIN`

Required: No

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. 299) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

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

This example illustrates one usage of 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

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

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. 321).

CallAs

[Service-managed permissions] Specifies whether you are acting as an account administrator in the
organization's management account or as a delegated administrator in a member account.

By default, `SELF` is specified. Use `SELF` for stack sets with self-managed permissions.
- If you are signed in to the management account, specify `SELF`.
- If you are signed in to a delegated administrator account, specify `DELEGATED_ADMIN`.

    Your AWS account must be registered as a delegated administrator in the management account.
    For more information, see Register a delegated administrator in the *AWS CloudFormation User
    Guide*.

Type: String

Valid Values: `SELF | DELEGATED_ADMIN`

Required: No

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. 301) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

StackSetNotFound

The specified stack set doesn't exist.

HTTP Status Code: 404

Examples

ListStackSetOperations

This example illustrates one usage of 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>2019-12-03T19:57:57.573Z</CreationTimestamp>
      <OperationId>9cc082fa-df4c-45cd-b9a8-7e563e88418e</OperationId>
      <Action>DETECT_DRIFT</Action>
      <EndTimestamp>2019-12-03T20:01:04.630Z</EndTimestamp>
      <Status>SUCCEEDED</Status>
    </member>
    <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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

ListStackSets

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

- [Self-managed permissions] If you set the `CallAs` parameter to `SELF` while signed in to your AWS account, `ListStackSets` returns all self-managed stack sets in your AWS account.
- [Service-managed permissions] If you set the `CallAs` parameter to `SELF` while signed in to the organization's management account, `ListStackSets` returns all stack sets in the management account.
- [Service-managed permissions] If you set the `CallAs` parameter to `DELEGATED_ADMIN` while signed in to your member account, `ListStackSets` returns all stack sets with service-managed permissions in the management account.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

CallAs

[Service-managed permissions] Specifies whether you are acting as an account administrator in the management account or as a delegated administrator in a member account.

By default, `SELF` is specified. Use `SELF` for stack sets with self-managed permissions.
- If you are signed in to the management account, specify `SELF`.
- If you are signed in to a delegated administrator account, specify `DELEGATED_ADMIN`.

Your AWS account must be registered as a delegated administrator in the management account. For more information, see Register a delegated administrator in the *AWS CloudFormation User Guide*.

Type: String

Valid Values: `SELF | DELEGATED_ADMIN`

Required: No

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 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. 303) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

Examples

ListStackSets

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

ListTypeRegistrations

Returns a list of registration tokens for the specified extension(s).

Request Parameters

For information about the parameters that are common to all actions, see Common
Parameters (p. 321).

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 the remaining results, the response object's
`NextToken` parameter value is set to a token. To retrieve the next set of results, call this action
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

RegistrationStatusFilter

The current status of the extension registration request.

The default is `IN_PROGRESS`.

Type: String

Valid Values: `COMPLETE | IN_PROGRESS | FAILED`

Required: No

Type

The kind of extension.

Conditional: You must specify either `TypeName` and `Type`, or `Arn`.

Type: String

Valid Values: `RESOURCE | MODULE`

Required: No

TypeArn

The Amazon Resource Name (ARN) of the extension.

Conditional: You must specify either `TypeName` and `Type`, or `Arn`.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[A-Za-z0-9-]{0,64}:cloudformation:[A-Za-z0-9-]{1,64}:([0-9]{12})?:type/.+`

Required: No

TypeName

The name of the extension.

Conditional: You must specify either `TypeName` and `Type`, or `Arn`.

Type: String

Length Constraints: Minimum length of 10. Maximum length of 204.

Pattern: `[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}(::MODULE){0,1}`

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 this action 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.

RegistrationTokenList.member.N

A list of extension registration tokens.

Use DescribeTypeRegistration (p. 104) to return detailed information about a type registration request.

Type: Array of strings

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. 323).

CFNRegistry

An error occurred during a CloudFormation registry operation.

HTTP Status Code: 400

Examples

ListTypeRegistrations

The example below returns a list of the registration tokens for the three versions of
`My::Resource::Example`, a private resource type, that have completed registration.

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=ListTypeRegistrations
 &Version=2010-05-15
 &TypeName=My::Resource::Example
 &Type=RESOURCE
 &RegistrationStatusFilter=COMPLETE
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20191204T071759Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<ListTypeRegistrationsResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <ListTypeRegistrationsResult>
    <RegistrationTokenList>
      <member>b5c40e0e-68da-47d2-8ed2-b8db7example</member>
      <member>03458954-61b1-44e9-90d8-f1b8aexample</member>
      <member>356b9e72-7d1e-43aa-83ba-81c2example</member>
    </RegistrationTokenList>
  </ListTypeRegistrationsResult>
  <ResponseMetadata>
    <RequestId>de6b93f6-c68b-4840-9537-eb2357example</RequestId>
  </ResponseMetadata>
</ListTypeRegistrationsResponse>
```

See Also

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

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

ListTypes

Returns summary information about extension that have been registered with CloudFormation.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

DeprecatedStatus

The deprecation status of the extension that you want to get summary information about.

Valid values include:

- `LIVE`: The extension is registered for use in CloudFormation operations.
- `DEPRECATED`: The extension has been deregistered and can no longer be used in CloudFormation operations.

Type: String

Valid Values: `LIVE | DEPRECATED`

Required: No

Filters

Filter criteria to use in determining which extensions to return.

If you specify a filter, CloudFormation ignores any specified `Visibility` value when returning the list of types.

Type: TypeFilters (p. 313) object

Required: No

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 this action 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

ProvisioningType

For resource types, the provisioning behavior of the resource type. AWS CloudFormation determines the provisioning type during registration, based on the types of handlers in the schema handler package submitted.

Valid values include:

- `FULLY_MUTABLE`: The resource type includes an update handler to process updates to the type during stack update operations.
- `IMMUTABLE`: The resource type doesn't include an update handler, so the type can't be updated and must instead be replaced during stack update operations.
- `NON_PROVISIONABLE`: The resource type doesn't include create, read, and delete handlers, and therefore can't actually be provisioned.

The default is `FULLY_MUTABLE`.

Type: String

Valid Values: `NON_PROVISIONABLE | IMMUTABLE | FULLY_MUTABLE`

Required: No

Type

The type of extension.

Type: String

Valid Values: `RESOURCE | MODULE`

Required: No

Visibility

The scope at which the extensions are visible and usable in CloudFormation operations.

Valid values include:

- `PRIVATE`: Extensions that are visible and usable within this account and region. This includes:
  - Private extensions you have registered in this account and region.
  - Public extensions that you have activated in this account and region.
- `PUBLIC`: Extensions that are publicly visible and available to be activated within any Amazon account. This includes extensions from Amazon, as well as third-party publishers.

The default is `PRIVATE`.

Type: String

Valid Values: `PUBLIC | PRIVATE`

Required: No

Response Elements

The following elements are returned by the service.

NextToken

If the request doesn't return all the remaining results, `NextToken` is set to a token. To retrieve the next set of results, call this action 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.

TypeSummaries.member.N

A list of `TypeSummary` structures that contain information about the specified extensions.

Type: Array of TypeSummary (p. 315) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

CFNRegistry

An error occurred during a CloudFormation registry operation.

HTTP Status Code: 400

Examples

ListTypes

The following example returns summary information for all the private resource types registered in this AWS account.

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=ListTypes
 &Version=2010-05-15
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20191204T183443Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
  <ListTypesResult>
    <TypeSummaries>
      <member>
        <LastUpdated>2019-12-04T18:28:15.059Z</LastUpdated>
        <DefaultVersionId>00000003</DefaultVersionId>
        <TypeArn>arn:aws:cloudformation:us-east-1:012345678910:type/resource/My-Resource-
Example</TypeArn>
        <TypeName>My::Resource::Example</TypeName>
        <Description>Resource schema for My::Resource::Example</Description>
        <Type>RESOURCE</Type>
      </member>
      <member>
        <LastUpdated>2019-12-04T18:28:15.059Z</LastUpdated>
        <DefaultVersionId>00000001</DefaultVersionId>
        <TypeArn>arn:aws:cloudformation:us-east-1:012345678910:type/resource/My-Second-
Example</TypeArn>
        <TypeName>My::Second::Example</TypeName>
```

```
            <Description>Resource schema for My::Second::Example</Description>
            <Type>RESOURCE</Type>
        </member>
    </TypeSummaries>
  </ListTypesResult>
  <ResponseMetadata>
    <RequestId>69dc5a34-5462-4e1b-81fb-7a310example</RequestId>
  </ResponseMetadata>
</ListTypesResponse>
```

See Also

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

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

ListTypeVersions

Returns summary information about the versions of an extension.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

Arn

The Amazon Resource Name (ARN) of the extension for which you want version summary information.

Conditional: You must specify either `TypeName` and `Type`, or `Arn`.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[A-Za-z0-9-]{0,64}:cloudformation:[A-Za-z0-9-]{1,64}:([0-9]{12})?:type/.+`

Required: No

DeprecatedStatus

The deprecation status of the extension versions that you want to get summary information about.

Valid values include:

- `LIVE`: The extension version is registered and can be used in CloudFormation operations, dependent on its provisioning behavior and visibility scope.
- `DEPRECATED`: The extension version has been deregistered and can no longer be used in CloudFormation operations.

The default is `LIVE`.

Type: String

Valid Values: `LIVE | DEPRECATED`

Required: No

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 this action

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

PublisherId

The publisher ID of the extension publisher.

Extensions published by Amazon aren't assigned a publisher ID.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 40.

Pattern: `[0-9a-zA-Z]{12,40}`

Required: No

Type

The kind of the extension.

Conditional: You must specify either `TypeName` and `Type`, or `Arn`.

Type: String

Valid Values: `RESOURCE | MODULE`

Required: No

TypeName

The name of the extension for which you want version summary information.

Conditional: You must specify either `TypeName` and `Type`, or `Arn`.

Type: String

Length Constraints: Minimum length of 10. Maximum length of 204.

Pattern: `[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}(::MODULE){0,1}`

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 this action 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.

TypeVersionSummaries.member.N

> A list of `TypeVersionSummary` structures that contain information about the specified extension's versions.
>
> Type: Array of TypeVersionSummary (p. 319) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

CFNRegistry

> An error occurred during a CloudFormation registry operation.
>
> HTTP Status Code: 400

Examples

ListTypeRegistrations

The following example returns summary information about the two extension versions with a status of `LIVE` for the private resource type `My::Resource::Example`.

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=ListTypeRegistrations
 &Version=2010-05-15
 &TypeName=My::Resource::Example
 &Type=RESOURCE
 &DeprecatedStatus=LIVE
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20191204T070338Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<ListTypeVersionsResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <ListTypeVersionsResult>
    <TypeVersionSummaries>
      <member>
        <VersionId>00000001</VersionId>
        <TypeName>My::Resource::Example</TypeName>
        <Description>Resource schema for My::Resource::Example</Description>
        <TimeCreated>2019-12-03T23:29:33.321Z</TimeCreated>
        <Arn>arn:aws:cloudformation:us-east-1:012345678910:type/resource/My-Resource-
Example/00000001</Arn>
        <Type>RESOURCE</Type>
      </member>
      <member>
        <VersionId>00000002</VersionId>
        <TypeName>My::Resource::Example</TypeName>
        <Description>Resource schema for My::Resource::Example</Description>
```

```
        <TimeCreated>2019-12-04T06:58:14.902Z</TimeCreated>
        <Arn>arn:aws:cloudformation:us-east-1:012345678910:type/resource/My-Resource-
Example/00000002</Arn>
        <Type>RESOURCE</Type>
      </member>
    </TypeVersionSummaries>
  </ListTypeVersionsResult>
  <ResponseMetadata>
    <RequestId>caedd974-e865-4518-b7f0-a6972example</RequestId>
  </ResponseMetadata>
</ListTypeVersionsResponse>
```

See Also

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

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

PublishType

Publishes the specified extension to the CloudFormation registry as a public extension in this region. Public extensions are available for use by all CloudFormation users. For more information on publishing extensions, see Publishing extensions to make them available for public use in the *CloudFormation CLI User Guide*.

To publish an extension, you must be registered as a publisher with CloudFormation. For more information, see RegisterPublisher.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

Arn

The Amazon Resource Number (ARN) of the extension.

Conditional: You must specify `Arn`, or `TypeName` and `Type`.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[A-Za-z0-9-]{0,64}:cloudformation:[A-Za-z0-9-]{1,64}:[0-9]{12}:type/.+`

Required: No

PublicVersionNumber

The version number to assign to this version of the extension.

Use the following format, and adhere to semantic versioning when assigning a version number to your extension:

`MAJOR.MINOR.PATCH`

For more information, see Semantic Versioning 2.0.0.

If you don't specify a version number, CloudFormation increments the version number by one minor version release.

You cannot specify a version number the first time you publish a type. AWS CloudFormation automatically sets the first version number to be `1.0.0`.

Type: String

Length Constraints: Minimum length of 5.

Pattern: `^(0|[1-9]\d*)\.(0|[1-9]\d*)\.(.*)$`

Required: No

Type

The type of the extension.

Conditional: You must specify `Arn`, or `TypeName` and `Type`.

Type: String

Valid Values: `RESOURCE | MODULE`

Required: No

TypeName

The name of the extension.

Conditional: You must specify `Arn`, or `TypeName` and `Type`.

Type: String

Length Constraints: Minimum length of 10. Maximum length of 204.

Pattern: `[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}(::MODULE)` `{0,1}`

Required: No

Response Elements

The following element is returned by the service.

PublicTypeArn

The Amazon Resource Number (ARN) assigned to the public extension upon publication.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[A-Za-z0-9-]{0,64}:cloudformation:[A-Za-z0-9-]{1,64}:([0-9]` `{12})?:type/.+`

Errors

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

CFNRegistry

An error occurred during a CloudFormation registry operation.

HTTP Status Code: 400

TypeNotFound

The specified extension doesn't exist in the CloudFormation registry.

HTTP Status Code: 404

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET

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

RecordHandlerProgress

Reports progress of a resource handler to CloudFormation.

Reserved for use by the CloudFormation CLI. Don't use this API in your code.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

BearerToken

Reserved for use by the CloudFormation CLI.

Type: String

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

Required: Yes

ClientRequestToken

Reserved for use by the CloudFormation CLI.

Type: String

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

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

Required: No

CurrentOperationStatus

Reserved for use by the CloudFormation CLI.

Type: String

Valid Values: `PENDING | IN_PROGRESS | SUCCESS | FAILED`

Required: No

ErrorCode

Reserved for use by the CloudFormation CLI.

Type: String

Valid Values: `NotUpdatable | InvalidRequest | AccessDenied | InvalidCredentials | AlreadyExists | NotFound | ResourceConflict | Throttling | ServiceLimitExceeded | NotStabilized | GeneralServiceException | ServiceInternalError | NetworkFailure | InternalFailure | InvalidTypeConfiguration`

Required: No

OperationStatus

Reserved for use by the CloudFormation CLI.

Type: String

Valid Values: `PENDING | IN_PROGRESS | SUCCESS | FAILED`

Required: Yes

ResourceModel

Reserved for use by the CloudFormation CLI.

Type: String

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

Required: No

StatusMessage

Reserved for use by the CloudFormation CLI.

Type: String

Length Constraints: Maximum length of 1024.

Required: No

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

ConditionalCheckFailed

Error reserved for use by the CloudFormation CLI. CloudFormation doesn't return this error to users.

HTTP Status Code: 400

InvalidStateTransition

Error reserved for use by the CloudFormation CLI. CloudFormation doesn't return this error to users.

HTTP Status Code: 400

See Also

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

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

RegisterPublisher

Registers your account as a publisher of public extensions in the CloudFormation registry. Public extensions are available for use by all CloudFormation users. This publisher ID applies to your account in all AWS Regions.

For information on requirements for registering as a public extension publisher, see Registering your account to publish CloudFormation extensions in the *CloudFormation CLI User Guide*.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

AcceptTermsAndConditions

Whether you accept the Terms and Conditions for publishing extensions in the CloudFormation registry. You must accept the terms and conditions in order to register to publish public extensions to the CloudFormation registry.

The default is `false`.

Type: Boolean

Required: No

ConnectionArn

If you are using a Bitbucket or GitHub account for identity verification, the Amazon Resource Name (ARN) for your connection to that account.

For more information, see Registering your account to publish CloudFormation extensions in the *CloudFormation CLI User Guide*.

Type: String

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

Pattern: `arn:aws(-[\w]+)*:.+:.+:[0-9]{12}:.+`

Required: No

Response Elements

The following element is returned by the service.

PublisherId

The ID assigned this account by CloudFormation for publishing extensions.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 40.

Pattern: `[0-9a-zA-Z]{12,40}`

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

CFNRegistry

An error occurred during a CloudFormation registry operation.

HTTP Status Code: 400

See Also

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

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

RegisterType

Registers an extension with the CloudFormation service. Registering an extension makes it available for use in CloudFormation templates in your AWS account, and includes:

- Validating the extension schema.
- Determining which handlers, if any, have been specified for the extension.
- Making the extension available for use in your account.

For more information on how to develop extensions and ready them for registration, see Creating Resource Providers in the *CloudFormation CLI User Guide*.

You can have a maximum of 50 resource extension versions registered at a time. This maximum is per account and per region. Use DeregisterType to deregister specific extension versions if necessary.

Once you have initiated a registration request using `RegisterType (p. 179)`, you can use `DescribeTypeRegistration (p. 104)` to monitor the progress of the registration request.

Once you have registered a private extension in your account and region, use SetTypeConfiguration to specify configuration properties for the extension. For more information, see Configuring extensions at the account level in the *CloudFormation User Guide*.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

ClientRequestToken

A unique identifier that acts as an idempotency key for this registration request. Specifying a client request token prevents CloudFormation from generating more than one version of an extension from the same registration request, even if the request is submitted multiple times.

Type: String

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

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

Required: No

ExecutionRoleArn

The Amazon Resource Name (ARN) of the IAM role for CloudFormation to assume when invoking the extension.

For CloudFormation to assume the specified execution role, the role must contain a trust relationship with the CloudFormation service principle (`resources.cloudformation.amazonaws.com`). For more information on adding trust relationships, see Modifying a role trust policy in the *AWS Identity and Access Management User Guide*.

If your extension calls AWS APIs in any of its handlers, you must create an *IAM execution role* that includes the necessary permissions to call those AWS APIs, and provision that execution role in your account. When CloudFormation needs to invoke the resource type handler, AWS CloudFormation assumes this execution role to create a temporary session token, which it then passes to the resource type handler, thereby supplying your resource type with the appropriate credentials.

Type: String

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

Pattern: `arn:.+:iam::[0-9]{12}:role/.+`

Required: No

LoggingConfig

Specifies logging configuration information for an extension.

Type: LoggingConfig (p. 238) object

Required: No

SchemaHandlerPackage

A URL to the S3 bucket containing the extension project package that contains the necessary files for the extension you want to register.

For information on generating a schema handler package for the extension you want to register, see submit in the *CloudFormation CLI User Guide*.

> **Note**
> The user registering the extension must be able to access the package in the S3 bucket. That's, the user needs to have GetObject permissions for the schema handler package. For more information, see Actions, Resources, and Condition Keys for Amazon S3 in the *AWS Identity and Access Management User Guide*.

Type: String

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

Required: Yes

Type

The kind of extension.

Type: String

Valid Values: `RESOURCE | MODULE`

Required: No

TypeName

The name of the extension being registered.

We recommend that extension names adhere to the following patterns:

- For resource types, *company_or_organization*::*service*::*type*.
- For modules, *company_or_organization*::*service*::*type*::MODULE.

> **Note**
> The following organization namespaces are reserved and can't be used in your extension names:
> - `Alexa`
> - `AMZN`
> - `Amazon`
> - `AWS`
> - `Custom`
> - `Dev`

Type: String

Length Constraints: Minimum length of 10. Maximum length of 204.

Pattern: `[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}(::MODULE){0,1}`

Required: Yes

Response Elements

The following element is returned by the service.

RegistrationToken

The identifier for this registration request.

Use this registration token when calling `DescribeTypeRegistration (p. 104)`, which returns information about the status and IDs of the extension registration.

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. 323).

CFNRegistry

An error occurred during a CloudFormation registry operation.

HTTP Status Code: 400

Examples

RegisterType

This example illustrates one usage of RegisterType.

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=RegisterType
 &Version=2010-05-15
 &TypeName=My::Resource::Example
 &SchemaHandlerPackage=[s3 url]
 &Type=RESOURCE
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20171211T230005Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<RegisterTypeResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <RegisterTypeResult>
    <RegistrationToken>f5525280-104e-4d35-bef5-8f1f1example</RegistrationToken>
  </RegisterTypeResult>
  <ResponseMetadata>
    <RequestId>4d121847-1d2b-4ebe-8ca5-499405example</RequestId>
  </ResponseMetadata>
</RegisterTypeResponse>
```

See Also

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

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

RollbackStack

When specifying `RollbackStack`, you preserve the state of previously provisioned resources when an operation fails. You can check the status of the stack through the DescribeStacks (p. 85) operation.

Rolls back the specified stack to the last known stable state from `CREATE_FAILED` or `UPDATE_FAILED` stack statuses.

This operation will delete a stack if it doesn't contain a last known stable state. A last known stable state includes any status in a `*_COMPLETE`. This includes the following stack statuses.

- `CREATE_COMPLETE`
- `UPDATE_COMPLETE`
- `UPDATE_ROLLBACK_COMPLETE`
- `IMPORT_COMPLETE`
- `IMPORT_ROLLBACK_COMPLETE`

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

ClientRequestToken

A unique identifier for this `RollbackStack` request.

Type: String

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

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

Required: No

RoleARN

The Amazon Resource Name (ARN) of an AWS Identity and Access Management role that AWS CloudFormation assumes to rollback the stack.

Type: String

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

Required: No

StackName

The name that's associated with the stack.

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

Unique identifier of the stack.

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

TokenAlreadyExists

A client request token already exists.

HTTP Status Code: 400

See Also

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

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

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. 321).

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. 323).

Examples

SetStackPolicy

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

SetTypeConfiguration

Specifies the configuration data for a registered CloudFormation extension, in the given account and region.

To view the current configuration data for an extension, refer to the `ConfigurationSchema` element of DescribeType. For more information, see Configuring extensions at the account level in the *CloudFormation User Guide*.

> **Important**
> It's strongly recommended that you use dynamic references to restrict sensitive configuration definitions, such as third-party credentials. For more details on dynamic references, see Using dynamic references to specify template values in the *AWS CloudFormation User Guide*.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

Configuration

The configuration data for the extension, in this account and region.

The configuration data must be formatted as JSON, and validate against the schema returned in the `ConfigurationSchema` response element of API_DescribeType. For more information, see Defining account-level configuration data for an extension in the *CloudFormation CLI User Guide*.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 204800.

Pattern: `[\s\S]+`

Required: Yes

ConfigurationAlias

An alias by which to refer to this extension configuration data.

Conditional: Specifying a configuration alias is required when setting a configuration for a resource type extension.

Type: String

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

Pattern: `^[a-zA-Z0-9]{1,256}$`

Required: No

Type

The type of extension.

Conditional: You must specify `ConfigurationArn`, or `Type` and `TypeName`.

Type: String

Valid Values: `RESOURCE | MODULE`

Required: No

TypeArn

The Amazon Resource Name (ARN) for the extension, in this account and region.

For public extensions, this will be the ARN assigned when you activate the type in this account and region. For private extensions, this will be the ARN assigned when you register the type in this account and region.

Do not include the extension versions suffix at the end of the ARN. You can set the configuration for an extension, but not for a specific extension version.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[A-Za-z0-9-]{0,64}:cloudformation:[A-Za-z0-9-]{1,64}:([0-9]{12})?:type/.+`

Required: No

TypeName

The name of the extension.

Conditional: You must specify `ConfigurationArn`, or `Type` and `TypeName`.

Type: String

Length Constraints: Minimum length of 10. Maximum length of 204.

Pattern: `[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}(::MODULE){0,1}`

Required: No

Response Elements

The following element is returned by the service.

ConfigurationArn

The Amazon Resource Name (ARN) for the configuration data, in this account and region.

Conditional: You must specify `ConfigurationArn`, or `Type` and `TypeName`.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[A-Za-z0-9-]{0,64}:cloudformation:[A-Za-z0-9-]{1,64}:([0-9]{12})?:type-configuration/.+`

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

CFNRegistry

An error occurred during a CloudFormation registry operation.

HTTP Status Code: 400

TypeNotFound

The specified extension doesn't exist in the CloudFormation registry.

HTTP Status Code: 404

See Also

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

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

SetTypeDefaultVersion

Specify the default version of an extension. The default version of an extension will be used in CloudFormation operations.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

Arn

The Amazon Resource Name (ARN) of the extension for which you want version summary information.

Conditional: You must specify either `TypeName` and `Type`, or `Arn`.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[A-Za-z0-9-]{0,64}:cloudformation:[A-Za-z0-9-]{1,64}:[0-9]{12}:type/.+`

Required: No

Type

The kind of extension.

Conditional: You must specify either `TypeName` and `Type`, or `Arn`.

Type: String

Valid Values: `RESOURCE | MODULE`

Required: No

TypeName

The name of the extension.

Conditional: You must specify either `TypeName` and `Type`, or `Arn`.

Type: String

Length Constraints: Minimum length of 10. Maximum length of 204.

Pattern: `[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}(::MODULE){0,1}`

Required: No

VersionId

The ID of a specific version of the extension. The version ID is the value at the end of the Amazon Resource Name (ARN) assigned to the extension version when it is registered.

Type: String

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

Pattern: `[A-Za-z0-9-]+`

Required: No

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

CFNRegistry

An error occurred during a CloudFormation registry operation.

HTTP Status Code: 400

TypeNotFound

The specified extension doesn't exist in the CloudFormation registry.

HTTP Status Code: 404

Examples

SetTypeDefaultVersion

This example illustrates one usage of SetTypeDefaultVersion.

Sample Request

```
https://cloudformation.us-east-1.amazonaws.com/
 ?Action=SetTypeDefaultVersion
 &Version=2010-05-15
 &TypeName=My::Resource::Example
 &VersionId=00000003
 &Type=RESOURCE
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[Access key ID and scope]
 &X-Amz-Date=20191204T182814Z
 &X-Amz-SignedHeaders=content-type;host
 &X-Amz-Signature=[Signature]
```

Sample Response

```
<SetTypeDefaultVersionResponse xmlns="http://cloudformation.amazonaws.com/doc/2010-05-15/">
  <SetTypeDefaultVersionResult/>
  <ResponseMetadata>
    <RequestId>dc46ff50-4ab3-485a-a104-bbbd3example</RequestId>
  </ResponseMetadata>
</SetTypeDefaultVersionResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET

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

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. 321).

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. 323).

Examples

SignalResource

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

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. 321).

CallAs

[Service-managed permissions] Specifies whether you are acting as an account administrator in the
organization's management account or as a delegated administrator in a member account.

By default, `SELF` is specified. Use `SELF` for stack sets with self-managed permissions.

- If you are signed in to the management account, specify `SELF`.
- If you are signed in to a delegated administrator account, specify `DELEGATED_ADMIN`.

  Your AWS account must be registered as a delegated administrator in the management account.
  For more information, see Register a delegated administrator in the *AWS CloudFormation User
  Guide*.

Type: String

Valid Values: `SELF | DELEGATED_ADMIN`

Required: No

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. 323).

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

Examples

StopStackSetOperation

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript

- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

TestType

Tests a registered extension to make sure it meets all necessary requirements for being published in the CloudFormation registry.

- For resource types, this includes passing all contracts tests defined for the type.
- For modules, this includes determining if the module's model meets all necessary requirements.

For more information, see Testing your public extension prior to publishing in the *CloudFormation CLI User Guide*.

If you don't specify a version, CloudFormation uses the default version of the extension in your account and region for testing.

To perform testing, CloudFormation assumes the execution role specified when the type was registered. For more information, see RegisterType.

Once you've initiated testing on an extension using `TestType`, you can use DescribeType to monitor the current test status and test status description for the extension.

An extension must have a test status of `PASSED` before it can be published. For more information, see Publishing extensions to make them available for public use in the *CloudFormation CLI User Guide*.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

Arn

The Amazon Resource Number (ARN) of the extension.

Conditional: You must specify `Arn`, or `TypeName` and `Type`.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[A-Za-z0-9-]{0,64}:cloudformation:[A-Za-z0-9-]{1,64}:([0-9]{12})?:type/.+`

Required: No

LogDeliveryBucket

The S3 bucket to which CloudFormation delivers the contract test execution logs.

CloudFormation delivers the logs by the time contract testing has completed and the extension has been assigned a test type status of `PASSED` or `FAILED`.

The user calling `TestType` must be able to access items in the specified S3 bucket. Specifically, the user needs the following permissions:
- GetObject
- PutObject

For more information, see Actions, Resources, and Condition Keys for Amazon S3 in the *AWS Identity and Access Management User Guide*.

Type: String

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

Pattern: `[\s\S]+`

Required: No

Type

The type of the extension to test.

Conditional: You must specify `Arn`, or `TypeName` and `Type`.

Type: String

Valid Values: `RESOURCE | MODULE`

Required: No

TypeName

The name of the extension to test.

Conditional: You must specify `Arn`, or `TypeName` and `Type`.

Type: String

Length Constraints: Minimum length of 10. Maximum length of 204.

Pattern: `[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}(::MODULE){0,1}`

Required: No

VersionId

The version of the extension to test.

You can specify the version id with either `Arn`, or with `TypeName` and `Type`.

If you don't specify a version, CloudFormation uses the default version of the extension in this account and region for testing.

Type: String

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

Pattern: `[A-Za-z0-9-]+`

Required: No

Response Elements

The following element is returned by the service.

TypeVersionArn

The Amazon Resource Number (ARN) of the extension.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[A-Za-z0-9-]{0,64}:cloudformation:[A-Za-z0-9-]{1,64}:([0-9]{12})?:type/.+`

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

CFNRegistry

An error occurred during a CloudFormation registry operation.

HTTP Status Code: 400

TypeNotFound

The specified extension doesn't exist in the CloudFormation registry.

HTTP Status Code: 404

See Also

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

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

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 through the DescribeStacks (p. 85) action.

To get a copy of the template for an existing stack, you can use the GetTemplate (p. 123) 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. 321).

Capabilities.member.N

> In some cases, you must explicitly acknowledge that your stack template contains certain capabilities in order for AWS CloudFormation to update the stack.
>
> - `CAPABILITY_IAM` and `CAPABILITY_NAMED_IAM`
>
>   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 this by specifying one of these capabilities.
>
>   The following IAM resources require you to specify either the `CAPABILITY_IAM` or `CAPABILITY_NAMED_IAM` capability.
>
>   - 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 either of these capabilities, AWS CloudFormation returns an `InsufficientCapabilities` error.
>
>   If your stack template contains these resources, we recommend that you review all permissions associated with them and edit their permissions if necessary.
>
>   - AWS::IAM::AccessKey
>   - AWS::IAM::Group
>   - AWS::IAM::InstanceProfile
>   - AWS::IAM::Policy
>   - AWS::IAM::Role
>   - AWS::IAM::User
>   - AWS::IAM::UserToGroupAddition
>
>   For more information, see Acknowledging IAM Resources in AWS CloudFormation Templates.
>
> - `CAPABILITY_AUTO_EXPAND`
>
>   Some template contain macros. Macros perform custom processing on templates; this can include simple actions like find-and-replace operations, all the way to extensive transformations of entire templates. Because of this, users typically create a change set from the processed template, so that they can review the changes resulting from the macros before actually updating the stack. If your stack template contains one or more macros, and you choose to update a stack directly from the processed template, without first reviewing the resulting changes in a change set, you must acknowledge this capability. This includes the AWS::Include and AWS::Serverless transforms, which are macros hosted by AWS CloudFormation.

If you want to update a stack from a stack template that contains macros *and* nested stacks, you must update the stack directly from the template using this capability.

> **Important**
> You should only update stacks directly from a stack template that contains macros if you know what processing the macro performs.
> Each macro relies on an underlying Lambda service function for processing stack templates. Be aware that the Lambda function owner can update the function operation without AWS CloudFormation being notified.

For more information, see Using AWS CloudFormation Macros to Perform Custom Processing on Templates.

Type: Array of strings

Valid Values: `CAPABILITY_IAM` | `CAPABILITY_NAMED_IAM` | `CAPABILITY_AUTO_EXPAND`

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

DisableRollback

Preserve the state of previously provisioned resources when an operation fails.

Default: `False`

Type: Boolean

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. 241) 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. 256) 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 don't 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 don't 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. 307) 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's located in an Amazon S3 bucket or a Systems Manager document. 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. 323).

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

Examples

UpdateStack

This example illustrates one usage of 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 V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

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. 321).

Accounts.member.N

[Self-managed permissions] 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.

You can specify `Accounts` or `DeploymentTargets`, but not both.

Type: Array of strings

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

Required: No

CallAs

[Service-managed permissions] Specifies whether you are acting as an account administrator in the organization's management account or as a delegated administrator in a member account.

By default, `SELF` is specified. Use `SELF` for stack sets with self-managed permissions.

- If you are signed in to the management account, specify `SELF`.
- If you are signed in to a delegated administrator account, specify `DELEGATED_ADMIN`.

  Your AWS account must be registered as a delegated administrator in the management account. For more information, see Register a delegated administrator in the *AWS CloudFormation User Guide*.

Type: String

Valid Values: `SELF | DELEGATED_ADMIN`

Required: No

DeploymentTargets

[Service-managed permissions] The AWS Organizations accounts for which you want to update parameter values for stack instances. If your update targets OUs, the overridden parameter values

only apply to the accounts that are currently in the target OUs and their child OUs. Accounts added to the target OUs and their child OUs in the future won't use the overridden values.

You can specify `Accounts` or `DeploymentTargets`, but not both.

Type: DeploymentTargets (p. 236) object

Required: No

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. 297) 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 an overridden parameter set to its present value, include the parameter and specify `UsePreviousValue` as `true`. (You can't specify both a value and set `UsePreviousValue` to `true`.)
- To set an overridden parameter back to the value specified in the stack set, specify a parameter list but don't include the parameter in the list.
- 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. 241) 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

Pattern: `^[a-zA-Z0-9-]{1,128}$`

Required: Yes

StackSetName

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

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: 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. 323).

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

UpdateStackSet

Updates the stack set, and associated stack instances in the specified accounts and Regions.

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 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 .

Accounts.member.N

[Self-managed permissions] The accounts in which to update associated stack instances. If you specify accounts, you must also specify the Regions in which to update stack set instances.

To update *all* the stack instances associated with this stack set, do not specify the `Accounts` or `Regions` properties.

If the stack set update includes changes to the template (that is, if the `TemplateBody` or `TemplateURL` properties are specified), or the `Parameters` property, AWS CloudFormation marks all stack instances with a status of `OUTDATED` prior to updating the stack instances in the specified accounts and Regions. If the stack set update does not include changes to the template or parameters, AWS CloudFormation updates the stack instances in the specified accounts and Regions, while leaving all other stack instances with their existing stack instance status.

Type: Array of strings

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

Required: No

AdministrationRoleARN

The Amazon Resource Number (ARN) of the IAM role to use to update this stack set.

Specify an IAM role only if you are using customized administrator roles to control which users or groups can manage specific stack sets within the same administrator account. For more information, see Granting Permissions for Stack Set Operations in the *AWS CloudFormation User Guide*.

If you specified a customized administrator role when you created the stack set, you must specify a customized administrator role, even if it is the same customized administrator role used with this stack set previously.

Type: String

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

Required: No

AutoDeployment

[Service-managed permissions] Describes whether StackSets automatically deploys to AWS Organizations accounts that are added to a target organization or organizational unit (OU).

If you specify `AutoDeployment`, don't specify `DeploymentTargets` or `Regions`.

Type: AutoDeployment (p. 230) object

Required: No

CallAs

[Service-managed permissions] Specifies whether you are acting as an account administrator in the organization's management account or as a delegated administrator in a member account.

By default, `SELF` is specified. Use `SELF` for stack sets with self-managed permissions.

- If you are signed in to the management account, specify `SELF`.

- If you are signed in to a delegated administrator account, specify `DELEGATED_ADMIN`.

  Your AWS account must be registered as a delegated administrator in the management account. For more information, see Register a delegated administrator in the *AWS CloudFormation User Guide*.

Type: String

Valid Values: `SELF  |  DELEGATED_ADMIN`

Required: No

Capabilities.member.N

In some cases, you must explicitly acknowledge that your stack template contains certain capabilities in order for AWS CloudFormation to update the stack set and its associated stack instances.

- `CAPABILITY_IAM` and `CAPABILITY_NAMED_IAM`

  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 sets, you must explicitly acknowledge this by specifying one of these capabilities.

  The following IAM resources require you to specify either the `CAPABILITY_IAM` or `CAPABILITY_NAMED_IAM` capability.

  - 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 either of these capabilities, AWS CloudFormation returns an `InsufficientCapabilities` error.

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

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

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

- `CAPABILITY_AUTO_EXPAND`

  Some templates reference macros. If your stack set template references one or more macros, you must update the stack set directly from the processed template, without first reviewing the resulting changes in a change set. To update the stack set directly, you must acknowledge this capability. For more information, see Using AWS CloudFormation Macros to Perform Custom Processing on Templates.

Important
Stack sets with service-managed permissions do not currently support the use of macros in templates. (This includes the AWS::Include and AWS::Serverless transforms, which are macros hosted by AWS CloudFormation.) Even if you specify this capability for a stack set with service-managed permissions, if you reference a macro in your template the stack set operation will fail.

Type: Array of strings

Valid Values: `CAPABILITY_IAM` | `CAPABILITY_NAMED_IAM` | `CAPABILITY_AUTO_EXPAND`

Required: No

DeploymentTargets

[Service-managed permissions] The AWS Organizations accounts in which to update associated stack instances.

To update all the stack instances associated with this stack set, do not specify `DeploymentTargets` or `Regions`.

If the stack set update includes changes to the template (that is, if `TemplateBody` or `TemplateURL` is specified), or the `Parameters`, AWS CloudFormation marks all stack instances with a status of `OUTDATED` prior to updating the stack instances in the specified accounts and Regions. If the stack set update doesn't include changes to the template or parameters, AWS CloudFormation updates the stack instances in the specified accounts and Regions, while leaving all other stack instances with their existing stack instance status.

Type: DeploymentTargets (p. 236) object

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

ExecutionRoleName

The name of the IAM execution role to use to update the stack set. If you do not specify an execution role, AWS CloudFormation uses the `AWSCloudFormationStackSetExecutionRole` role for the stack set operation.

Specify an IAM role only if you are using customized execution roles to control which stack resources users and groups can include in their stack sets.

If you specify a customized execution role, AWS CloudFormation uses that role to update the stack. If you do not specify a customized execution role, AWS CloudFormation performs the update using the role previously associated with the stack set, so long as you have permissions to perform operations on the stack set.

Type: String

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

Pattern: `[a-zA-Z_0-9+=,.@-]+`

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. 297) object

Required: No

Parameters.member.N

A list of input parameters for the stack set template.

Type: Array of Parameter (p. 241) objects

Required: No

PermissionModel

Describes how the IAM roles required for stack set operations are created. You cannot modify `PermissionModel` if there are stack instances associated with your stack set.

- With `self-managed` permissions, you must create the administrator and execution roles required to deploy to target accounts. For more information, see Grant Self-Managed Stack Set Permissions.
- With `service-managed` permissions, StackSets automatically creates the IAM roles required to deploy to accounts managed by AWS Organizations. For more information, see Grant Service-Managed Stack Set Permissions.

Type: String

Valid Values: `SERVICE_MANAGED | SELF_MANAGED`

Required: No

Regions.member.N

The Regions in which to update associated stack instances. If you specify Regions, you must also specify accounts in which to update stack set instances.

To update *all* the stack instances associated with this stack set, do not specify the `Accounts` or `Regions` properties.

If the stack set update includes changes to the template (that is, if the `TemplateBody` or `TemplateURL` properties are specified), or the `Parameters` property, AWS CloudFormation

marks all stack instances with a status of `OUTDATED` prior to updating the stack instances in the specified accounts and Regions. If the stack set update does not include changes to the template or parameters, AWS CloudFormation updates the stack instances in the specified accounts and Regions, while leaving all other stack instances with their existing stack instance status.

Type: Array of strings

Pattern: `^[a-zA-Z0-9-]{1,128}$`

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 specified 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. 307) 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 or a Systems Manager document. 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 Common Errors (p. 323).

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

Examples

UpdateStackSet

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

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 can't be changed directly on the nested stack.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 321).

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. 323).

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET

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

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. 321).

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 or a Systems Manager document. 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. 23) or UpdateStack (p. 201) 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` | `CAPABILITY_AUTO_EXPAND`

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. 308) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 323).

Examples

ValidateTemplate

This example illustrates one usage of 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 V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

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 Lambda 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 doesn't 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 hasn't 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 administration 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 V2](#)
- [AWS SDK for Ruby V3](#)

AccountLimit

The AccountLimit data type.

CloudFormation has the following limits per account:

- Number of concurrent resources
- Number of stacks
- Number of stack outputs

For more information about these account limits, and other CloudFormation limits, see AWS CloudFormation Limits in the *AWS CloudFormation User Guide*.

Contents

Name

The name of the account limit.

Values: `ConcurrentResourcesLimit` | `StackLimit` | `StackOutputsLimit`

Type: String

Required: No

Value

The value that's 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 V2
- AWS SDK for Ruby V3

AutoDeployment

[Service-managed permissions] Describes whether StackSets automatically deploys to AWS Organizations accounts that are added to a target organization or organizational unit (OU).

Contents

Enabled

If set to `true`, StackSets automatically deploys additional stack instances to AWS Organizations accounts that are added to a target organization or organizational unit (OU) in the specified Regions. If an account is removed from a target organization or OU, StackSets deletes stack instances from the account in the specified Regions.

Type: Boolean

Required: No

RetainStacksOnAccountRemoval

If set to `true`, stack resources are retained when an account is removed from a target organization or OU. If set to `false`, stack resources are deleted. Specify only if `Enabled` is set to `True`.

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 V2
- AWS SDK for Ruby V3

BatchDescribeTypeConfigurationsError

Detailed information concerning an error generated during the setting of configuration data for a CloudFormation extension.

Contents

ErrorCode

The error code.

Type: String

Length Constraints: Fixed length of 3.

Required: No

ErrorMessage

The error message.

Type: String

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

Required: No

TypeConfigurationIdentifier

Identifying information for the configuration of a CloudFormation extension.

Type: TypeConfigurationIdentifier (p. 311) 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 V2
- AWS SDK for Ruby V3

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. 249) 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 V2
- AWS SDK for Ruby V3

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

IncludeNestedStacks

Specifies the current setting of `IncludeNestedStacks` for the change set.

Type: Boolean

Required: No

ParentChangeSetId

The parent change set ID.

Type: String

Length Constraints: Minimum length of 1.

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

Required: No

RootChangeSetId

The root change set ID.

Type: String

Length Constraints: Minimum length of 1.

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

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_PENDING` | `DELETE_IN_PROGRESS` | `DELETE_COMPLETE` | `DELETE_FAILED` | `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 V2
- AWS SDK for Ruby V3

DeploymentTargets

[Service-managed permissions] The AWS Organizations accounts to which StackSets deploys. StackSets doesn't deploy stack instances to the organization management account, even if the organization management account is in your organization or in an OU in your organization.

For update operations, you can specify either `Accounts` or `OrganizationalUnitIds`. For create and delete operations, specify `OrganizationalUnitIds`.

Contents

Accounts.member.N

The names of one or more AWS accounts for which you want to deploy stack set updates.

Type: Array of strings

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

Required: No

AccountsUrl

Returns the value of the `AccountsUrl` property.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 5120.

Pattern: `(s3://|http(s?)://).+`

Required: No

OrganizationalUnitIds.member.N

The organization root ID or organizational unit (OU) IDs to which StackSets deploys.

Type: Array of strings

Pattern: `^(ou-[a-z0-9]{4,32}-[a-z0-9]{8,32}|r-[a-z0-9]{4,32})$`

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for Ruby V3

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 V2
- AWS SDK for Ruby V3

LoggingConfig

Contains logging configuration information for an extension.

Contents

LogGroupName

The Amazon CloudWatch Logs group to which CloudFormation sends error logging information when invoking the extension's handlers.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 512.

Pattern: `[\.\-_/#A-Za-z0-9]+`

Required: Yes

LogRoleArn

The ARN of the role that CloudFormation should assume when sending log entries to CloudWatch Logs.

Type: String

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

Pattern: `arn:.+:iam::[0-9]{12}:role/.+`

Required: Yes

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for Ruby V3

ModuleInfo

Contains information about the module from which the resource was created, if the resource was created from a module included in the stack template.

For more information on modules, see Using modules to encapsulate and reuse resource configurations in the *CloudFormation User Guide*.

Contents

LogicalIdHierarchy

A concantenated list of the logical IDs of the module or modules containing the resource. Modules are listed starting with the inner-most nested module, and separated by `/`.

In the following example, the resource was created from a module, `moduleA`, that's nested inside a parent module, `moduleB`.

```
moduleA/moduleB
```

For more information, see Referencing resources in a module in the *CloudFormation User Guide*.

Type: String

Required: No

TypeHierarchy

A concantenated list of the module type or types containing the resource. Module types are listed starting with the inner-most nested module, and separated by `/`.

In the following example, the resource was created from a module of type `AWS::First::Example::MODULE`, that's nested inside a parent module of type `AWS::Second::Example::MODULE`.

```
AWS::First::Example::MODULE/AWS::Second::Example::MODULE
```

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 V2
- AWS SDK for Ruby V3

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 V2
- AWS SDK for Ruby V3

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's 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 V2
- AWS SDK for Ruby V3

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 V2
- AWS SDK for Ruby V3

ParameterDeclaration

The ParameterDeclaration data type.

Contents

DefaultValue

The default value of the parameter.

Type: String

Required: No

Description

The description that's 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. 242) object

Required: No

ParameterKey

The name that's 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 V2
- AWS SDK for Ruby V3

PhysicalResourceIdContextKeyValuePair

Context information that enables AWS CloudFormation to uniquely identify a resource. AWS CloudFormation uses context key-value pairs in cases where a resource's logical and physical IDs aren't enough to uniquely identify that resource. Each context key-value pair specifies a resource that contains the targeted resource.

Contents

Key

The resource context key.

Type: String

Required: Yes

Value

The resource context value.

Type: String

Required: Yes

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for Ruby V3

PropertyDifference

Information about a resource property whose actual value differs from its expected value, as defined in the stack template and any values specified as template parameters. These will be present only for resources whose `StackResourceDriftStatus` is `MODIFIED`. For more information, see Detecting Unregulated Configuration Changes to Stacks and Resources.

Contents

ActualValue

The actual property value of the resource property.

Type: String

Required: Yes

DifferenceType

The type of property difference.
- `ADD`: A value has been added to a resource property that's an array or list data type.
- `REMOVE`: The property has been removed from the current resource configuration.
- `NOT_EQUAL`: The current property value differs from its expected value (as defined in the stack template and any values specified as template parameters).

Type: String

Valid Values: `ADD | REMOVE | NOT_EQUAL`

Required: Yes

ExpectedValue

The expected property value of the resource property, as defined in the stack template and any values specified as template parameters.

Type: String

Required: Yes

PropertyPath

The fully-qualified path to the resource property.

Type: String

Required: Yes

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for Ruby V3

RequiredActivatedType

For extensions that are modules, a public third-party extension that must be activated in your account in order for the module itself to be activated.

For more information, see Activating public modules for use in your account in the *AWS CloudFormation User Guide*.

Contents

OriginalTypeName

The type name of the public extension.

If you specified a `TypeNameAlias` when enabling the extension in this account and region, CloudFormation treats that alias as the extension's type name within the account and region, not the type name of the public extension. For more information, see Specifying aliases to refer to extensions in the *CloudFormation User Guide*.

Type: String

Length Constraints: Minimum length of 10. Maximum length of 204.

Pattern: `[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}(::MODULE){0,1}`

Required: No

PublisherId

The publisher ID of the extension publisher.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 40.

Pattern: `[0-9a-zA-Z]{12,40}`

Required: No

SupportedMajorVersions.member.N

A list of the major versions of the extension type that the macro supports.

Type: Array of integers

Valid Range: Minimum value of 1. Maximum value of 65535.

Required: No

TypeNameAlias

An alias assigned to the public extension, in this account and region. If you specify an alias for the extension, CloudFormation treats the alias as the extension type name within this account and region. You must use the alias to refer to the extension in your templates, API calls, and CloudFormation console.

Type: String

Length Constraints: Minimum length of 10. Maximum length of 204.

Pattern: `[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}(::MODULE)`
`{0,1}`

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 V2
- AWS SDK for Ruby V3

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), `Remove` (deletes a resource), `Import` (imports a resource), or `Dynamic` (exact action for the resource can't be determined).

Type: String

Valid Values: `Add | Modify | Remove | Import | Dynamic`

Required: No

ChangeSetId

The change set ID of the nested change set.

Type: String

Length Constraints: Minimum length of 1.

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

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 ResourceChangeDetail (p. 251) objects

Required: No

LogicalResourceId

The resource's logical ID, which is defined in the stack's template.

Type: String

Required: No

ModuleInfo

Contains information about the module from which the resource was created, if the resource was created from a module included in the stack template.

Type: ModuleInfo (p. 239) object

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 V2
- AWS SDK for Ruby V3

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's 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, can't 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's 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. 254) 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 V2
- AWS SDK for Ruby V3

ResourceIdentifierSummary

Describes the target resources of a specific type in your import template (for example, all `AWS::S3::Bucket` resources) and the properties you can provide during the import to identify resources of that type.

Contents

LogicalResourceIds.member.N

The logical IDs of the target resources of the specified `ResourceType`, as defined in the import template.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 200 items.

Required: No

ResourceIdentifiers.member.N

The resource properties you can provide during the import to identify your target resources. For example, `BucketName` is a possible identifier property for `AWS::S3::Bucket` resources.

Type: Array of strings

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

Required: No

ResourceType

The template resource type of the target resources, such as `AWS::S3::Bucket`.

Type: String

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

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for Ruby V3

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 V2
- AWS SDK for Ruby V3

ResourceToImport

Describes the target resource of an import operation.

Contents

LogicalResourceId

The logical ID of the target resource as specified in the template.

Type: String

Required: Yes

ResourceIdentifier , ResourceIdentifier.entry.N.key (key) , ResourceIdentifier.entry.N.value (value)

A key-value pair that identifies the target resource. The key is an identifier property (for example, `BucketName` for `AWS::S3::Bucket` resources) and the value is the actual property value (for example, `MyS3Bucket`).

Type: String to string map

Map Entries: Maximum number of 256 items.

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

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

Required: Yes

ResourceType

The type of resource to import into your stack, such as `AWS::S3::Bucket`. For a list of supported resource types, see Resources that support import operations 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 V2
- AWS SDK for Ruby V3

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 don't 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 specified 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. 258) 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 V2
- AWS SDK for Ruby V3

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 V2
- AWS SDK for Ruby V3

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` | `CAPABILITY_AUTO_EXPAND`

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

DriftInformation

Information on whether a stack's actual configuration differs, or has *drifted*, from it's expected configuration, as defined in the stack template and any values specified as template parameters. For more information, see Detecting Unregulated Configuration Changes to Stacks and Resources.

Type: StackDriftInformation (p. 263) object

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

Amazon 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. 240) objects

Required: No

Parameters.member.N

A list of `Parameter` structures.

Type: Array of Parameter (p. 241) 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's 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. 256) object

Required: No

RootId

For nested stacks--stacks created as resources for another stack--the stack ID of 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_FAILED` | `UPDATE_ROLLBACK_IN_PROGRESS` |
`UPDATE_ROLLBACK_FAILED` | `UPDATE_ROLLBACK_COMPLETE_CLEANUP_IN_PROGRESS`
| `UPDATE_ROLLBACK_COMPLETE` | `REVIEW_IN_PROGRESS` | `IMPORT_IN_PROGRESS` |
`IMPORT_COMPLETE` | `IMPORT_ROLLBACK_IN_PROGRESS` | `IMPORT_ROLLBACK_FAILED` |
`IMPORT_ROLLBACK_COMPLETE`

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. 307) 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 V2
- AWS SDK for Ruby V3

StackDriftInformation

Contains information about whether the stack's actual configuration differs, or has *drifted*, from its expected configuration, as defined in the stack template and any values specified as template parameters. A stack is considered to have drifted if one or more of its resources have drifted.

Contents

LastCheckTimestamp

Most recent time when a drift detection operation was initiated on the stack, or any of its individual resources that support drift detection.

Type: Timestamp

Required: No

StackDriftStatus

Status of the stack's actual configuration compared to its expected template configuration.

- `DRIFTED`: The stack differs from its expected template configuration. A stack is considered to have drifted if one or more of its resources have drifted.
- `NOT_CHECKED`: AWS CloudFormation hasn't checked if the stack differs from its expected template configuration.
- `IN_SYNC`: The stack's actual configuration matches its expected template configuration.
- `UNKNOWN`: This value is reserved for future use.

Type: String

Valid Values: `DRIFTED | IN_SYNC | UNKNOWN | NOT_CHECKED`

Required: Yes

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for Ruby V3

StackDriftInformationSummary

Contains information about whether the stack's actual configuration differs, or has *drifted*, from its expected configuration, as defined in the stack template and any values specified as template parameters. A stack is considered to have drifted if one or more of its resources have drifted.

Contents

LastCheckTimestamp

Most recent time when a drift detection operation was initiated on the stack, or any of its individual resources that support drift detection.

Type: Timestamp

Required: No

StackDriftStatus

Status of the stack's actual configuration compared to its expected template configuration.

- `DRIFTED`: The stack differs from its expected template configuration. A stack is considered to have drifted if one or more of its resources have drifted.
- `NOT_CHECKED`: AWS CloudFormation hasn't checked if the stack differs from its expected template configuration.
- `IN_SYNC`: The stack's actual configuration matches its expected template configuration.
- `UNKNOWN`: This value is reserved for future use.

Type: String

Valid Values: `DRIFTED | IN_SYNC | UNKNOWN | NOT_CHECKED`

Required: Yes

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for Ruby V3

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` | `IMPORT_FAILED` | `IMPORT_COMPLETE` | `IMPORT_IN_PROGRESS` | `IMPORT_ROLLBACK_IN_PROGRESS` | `IMPORT_ROLLBACK_FAILED` | `IMPORT_ROLLBACK_COMPLETE` | `UPDATE_ROLLBACK_IN_PROGRESS` | `UPDATE_ROLLBACK_COMPLETE` | `UPDATE_ROLLBACK_FAILED` | `ROLLBACK_IN_PROGRESS` | `ROLLBACK_COMPLETE` | `ROLLBACK_FAILED`

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 V2
- AWS SDK for Ruby V3

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, in addition to the ID of the actual stack and the stack status.

Contents

Account

[Self-managed permissions] The name of the AWS account that the stack instance is associated with.

Type: String

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

Required: No

DriftStatus

Status of the stack instance's actual configuration compared to the expected template and parameter configuration of the stack set to which it belongs.

- `DRIFTED`: The stack differs from the expected template and parameter configuration of the stack set to which it belongs. A stack instance is considered to have drifted if one or more of the resources in the associated stack have drifted.
- `NOT_CHECKED`: AWS CloudFormation hasn't checked if the stack instance differs from its expected stack set configuration.
- `IN_SYNC`: The stack instance's actual configuration matches its expected stack set configuration.
- `UNKNOWN`: This value is reserved for future use.

Type: String

Valid Values: `DRIFTED | IN_SYNC | UNKNOWN | NOT_CHECKED`

Required: No

LastDriftCheckTimestamp

Most recent time when CloudFormation performed a drift detection operation on the stack instance. This value will be `NULL` for any stack instance on which drift detection hasn't yet been performed.

Type: Timestamp

Required: No

OrganizationalUnitId

[Service-managed permissions] The organization root ID or organizational unit (OU) IDs that you specified for DeploymentTargets.

Type: String

Pattern: `^(ou-[a-z0-9]{4,32}-[a-z0-9]{8,32}|r-[a-z0-9]{4,32})$`

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. 241) objects

Required: No

Region

The name of the AWS Region that the stack instance is associated with.

Type: String

Pattern: `^[a-zA-Z0-9-]{1,128}$`

Required: No

StackId

The ID of the stack instance.

Type: String

Required: No

StackInstanceStatus

The detailed status of the stack instance.

Type: StackInstanceComprehensiveStatus (p. 271) object

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's 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 V2
- AWS SDK for Ruby V3

StackInstanceComprehensiveStatus

The detailed status of the stack instance.

Contents

DetailedStatus

- `CANCELLED`: The operation in the specified account and Region has been canceled. 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.
- `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.
- `PENDING`: The operation in the specified account and Region has yet to start.
- `RUNNING`: The operation in the specified account and Region is currently in progress.
- `SUCCEEDED`: The operation in the specified account and Region completed successfully.

Type: String

Valid Values: `PENDING | RUNNING | SUCCEEDED | FAILED | CANCELLED | INOPERABLE`

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for Ruby V3

StackInstanceFilter

The status that stack instances are filtered by.

Contents

Name

The type of filter to apply.

Type: String

Valid Values: `DETAILED_STATUS`

Required: No

Values

The status to filter by.

Type: String

Length Constraints: Minimum length of 6. Maximum length of 10.

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for Ruby V3

StackInstanceSummary

The structure that contains summary information about a stack instance.

Contents

Account

[Self-managed permissions] The name of the AWS account that the stack instance is associated with.

Type: String

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

Required: No

DriftStatus

Status of the stack instance's actual configuration compared to the expected template and parameter configuration of the stack set to which it belongs.

- `DRIFTED`: The stack differs from the expected template and parameter configuration of the stack set to which it belongs. A stack instance is considered to have drifted if one or more of the resources in the associated stack have drifted.
- `NOT_CHECKED`: AWS CloudFormation hasn't checked if the stack instance differs from its expected stack set configuration.
- `IN_SYNC`: The stack instance's actual configuration matches its expected stack set configuration.
- `UNKNOWN`: This value is reserved for future use.

Type: String

Valid Values: `DRIFTED | IN_SYNC | UNKNOWN | NOT_CHECKED`

Required: No

LastDriftCheckTimestamp

Most recent time when CloudFormation performed a drift detection operation on the stack instance. This value will be `NULL` for any stack instance on which drift detection hasn't yet been performed.

Type: Timestamp

Required: No

OrganizationalUnitId

[Service-managed permissions] The organization root ID or organizational unit (OU) IDs that you specified for DeploymentTargets.

Type: String

Pattern: `^(ou-[a-z0-9]{4,32}-[a-z0-9]{8,32}|r-[a-z0-9]{4,32})$`

Required: No

Region

The name of the AWS Region that the stack instance is associated with.

Type: String

Pattern: `^[a-zA-Z0-9-]{1,128}$`

Required: No

StackId

The ID of the stack instance.

Type: String

Required: No

StackInstanceStatus

The detailed status of the stack instance.

Type: StackInstanceComprehensiveStatus (p. 271) object

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 V2
- AWS SDK for Ruby V3

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

DriftInformation

Information about whether the resource's actual configuration differs, or has *drifted*, from its expected configuration, as defined in the stack template and any values specified as template parameters. For more information, see Detecting Unregulated Configuration Changes to Stacks and Resources.

Type: StackResourceDriftInformation (p. 284) object

Required: No

LogicalResourceId

The logical name of the resource specified in the template.

Type: String

Required: Yes

ModuleInfo

Contains information about the module from which the resource was created, if the resource was created from a module included in the stack template.

Type: ModuleInfo (p. 239) object

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 | IMPORT_FAILED | IMPORT_COMPLETE | IMPORT_IN_PROGRESS | IMPORT_ROLLBACK_IN_PROGRESS`

```
| IMPORT_ROLLBACK_FAILED | IMPORT_ROLLBACK_COMPLETE |
UPDATE_ROLLBACK_IN_PROGRESS | UPDATE_ROLLBACK_COMPLETE |
UPDATE_ROLLBACK_FAILED | ROLLBACK_IN_PROGRESS | ROLLBACK_COMPLETE |
ROLLBACK_FAILED
```

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 V2
- AWS SDK for Ruby V3

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

DriftInformation

Information about whether the resource's actual configuration differs, or has *drifted*, from its expected configuration, as defined in the stack template and any values specified as template parameters. For more information, see Detecting Unregulated Configuration Changes to Stacks and Resources.

Type: StackResourceDriftInformation (p. 284) object

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

ModuleInfo

Contains information about the module from which the resource was created, if the resource was created from a module included in the stack template.

Type: ModuleInfo (p. 239) object

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` | `IMPORT_FAILED` | `IMPORT_COMPLETE` | `IMPORT_IN_PROGRESS` | `IMPORT_ROLLBACK_IN_PROGRESS` | `IMPORT_ROLLBACK_FAILED` | `IMPORT_ROLLBACK_COMPLETE` | `UPDATE_ROLLBACK_IN_PROGRESS` | `UPDATE_ROLLBACK_COMPLETE` | `UPDATE_ROLLBACK_FAILED` | `ROLLBACK_IN_PROGRESS` | `ROLLBACK_COMPLETE` | `ROLLBACK_FAILED`

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 V2
- AWS SDK for Ruby V3

StackResourceDrift

Contains the drift information for a resource that has been checked for drift. This includes actual and expected property values for resources in which AWS CloudFormation has detected drift. Only resource properties explicitly defined in the stack template are checked for drift. For more information, see Detecting Unregulated Configuration Changes to Stacks and Resources.

Resources that don't currently support drift detection can't be checked. For a list of resources that support drift detection, see Resources that Support Drift Detection.

Use DetectStackResourceDrift (p. 110) to detect drift on individual resources, or DetectStackDrift (p. 107) to detect drift on all resources in a given stack that support drift detection.

Contents

ActualProperties

A JSON structure containing the actual property values of the stack resource.

For resources whose `StackResourceDriftStatus` is `DELETED`, this structure will not be present.

Type: String

Required: No

ExpectedProperties

A JSON structure containing the expected property values of the stack resource, as defined in the stack template and any values specified as template parameters.

For resources whose `StackResourceDriftStatus` is `DELETED`, this structure will not be present.

Type: String

Required: No

LogicalResourceId

The logical name of the resource specified in the template.

Type: String

Required: Yes

ModuleInfo

Contains information about the module from which the resource was created, if the resource was created from a module included in the stack template.

Type: ModuleInfo (p. 239) object

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

PhysicalResourceIdContext.member.N

Context information that enables AWS CloudFormation to uniquely identify a resource. AWS CloudFormation uses context key-value pairs in cases where a resource's logical and physical IDs aren't enough to uniquely identify that resource. Each context key-value pair specifies a unique resource that contains the targeted resource.

Type: Array of PhysicalResourceIdContextKeyValuePair (p. 245) objects

Array Members: Maximum number of 5 items.

Required: No

PropertyDifferences.member.N

A collection of the resource properties whose actual values differ from their expected values. These will be present only for resources whose `StackResourceDriftStatus` is `MODIFIED`.

Type: Array of PropertyDifference (p. 246) objects

Required: No

ResourceType

The type of the resource.

Type: String

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

Required: Yes

StackId

The ID of the stack.

Type: String

Required: Yes

StackResourceDriftStatus

Status of the resource's actual configuration compared to its expected configuration.

- `DELETED`: The resource differs from its expected template configuration because the resource has been deleted.
- `MODIFIED`: One or more resource properties differ from their expected values (as defined in the stack template and any values specified as template parameters).
- `IN_SYNC`: The resources's actual configuration matches its expected template configuration.
- `NOT_CHECKED`: AWS CloudFormation does not currently return this value.

Type: String

Valid Values: `IN_SYNC | MODIFIED | DELETED | NOT_CHECKED`

Required: Yes

Timestamp

Time at which AWS CloudFormation performed drift detection on the stack resource.

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 V2
- AWS SDK for Ruby V3

StackResourceDriftInformation

Contains information about whether the resource's actual configuration differs, or has *drifted*, from its expected configuration.

Contents

LastCheckTimestamp

When AWS CloudFormation last checked if the resource had drifted from its expected configuration.

Type: Timestamp

Required: No

StackResourceDriftStatus

Status of the resource's actual configuration compared to its expected configuration

- `DELETED`: The resource differs from its expected configuration in that it has been deleted.
- `MODIFIED`: The resource differs from its expected configuration.
- `NOT_CHECKED`: AWS CloudFormation has not checked if the resource differs from its expected configuration.

  Any resources that do not currently support drift detection have a status of `NOT_CHECKED`. For more information, see Resources that Support Drift Detection.
- `IN_SYNC`: The resources's actual configuration matches its expected configuration.

Type: String

Valid Values: `IN_SYNC | MODIFIED | DELETED | NOT_CHECKED`

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

StackResourceDriftInformationSummary

Summarizes information about whether the resource's actual configuration differs, or has *drifted*, from its expected configuration.

Contents

LastCheckTimestamp

When AWS CloudFormation last checked if the resource had drifted from its expected configuration.

Type: Timestamp

Required: No

StackResourceDriftStatus

Status of the resource's actual configuration compared to its expected configuration.

- `DELETED`: The resource differs from its expected configuration in that it has been deleted.
- `MODIFIED`: The resource differs from its expected configuration.
- `NOT_CHECKED`: AWS CloudFormation hasn't checked if the resource differs from its expected configuration.

  Any resources that don't currently support drift detection have a status of `NOT_CHECKED`. For more information, see Resources that Support Drift Detection. If you performed an operation on a stack, any resources included in `ResourcesToSkip` will also have a status of `NOT_CHECKED`. For more information on skipping resources during rollback operations, see Continue Rolling Back an Update in the AWS CloudFormation User Guide.
- `IN_SYNC`: The resource's actual configuration matches its expected configuration.

Type: String

Valid Values: `IN_SYNC | MODIFIED | DELETED | NOT_CHECKED`

Required: Yes

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for Ruby V3

StackResourceSummary

Contains high-level information about the specified stack resource.

Contents

DriftInformation

Information about whether the resource's actual configuration differs, or has *drifted*, from its expected configuration, as defined in the stack template and any values specified as template parameters. For more information, see Detecting Unregulated Configuration Changes to Stacks and Resources.

Type: StackResourceDriftInformationSummary (p. 285) object

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

ModuleInfo

Contains information about the module from which the resource was created, if the resource was created from a module included in the stack template.

Type: ModuleInfo (p. 239) object

Required: No

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` | `IMPORT_FAILED` | `IMPORT_COMPLETE` | `IMPORT_IN_PROGRESS` | `IMPORT_ROLLBACK_IN_PROGRESS` | `IMPORT_ROLLBACK_FAILED` | `IMPORT_ROLLBACK_COMPLETE` | `UPDATE_ROLLBACK_IN_PROGRESS` | `UPDATE_ROLLBACK_COMPLETE` |

```
UPDATE_ROLLBACK_FAILED | ROLLBACK_IN_PROGRESS | ROLLBACK_COMPLETE |
ROLLBACK_FAILED
```

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 V2
- AWS SDK for Ruby V3

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, in addition to any parameters and capabilities that the template requires.

Contents

AdministrationRoleARN

The Amazon Resource Number (ARN) of the IAM role used to create or update the stack set.

Use customized administrator roles to control which users or groups can manage specific stack sets within the same administrator account. For more information, see Prerequisites: Granting Permissions for Stack Set Operations in the *AWS CloudFormation User Guide*.

Type: String

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

Required: No

AutoDeployment

[Service-managed permissions] Describes whether StackSets automatically deploys to AWS Organizations accounts that are added to a target organization or organizational unit (OU).

Type: AutoDeployment (p. 230) object

Required: No

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` | `CAPABILITY_AUTO_EXPAND`

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

ExecutionRoleName

The name of the IAM execution role used to create or update the stack set.

Use customized execution roles to control which stack resources users and groups can include in their stack sets.

Type: String

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

Pattern: `[a-zA-Z_0-9+=,.@-]+`

Required: No

OrganizationalUnitIds.member.N

[Service-managed permissions] The organization root ID or organizational unit (OU) IDs that you specified for DeploymentTargets.

Type: Array of strings

Pattern: `^(ou-[a-z0-9]{4,32}-[a-z0-9]{8,32}|r-[a-z0-9]{4,32})$`

Required: No

Parameters.member.N

A list of input parameters for a stack set.

Type: Array of Parameter (p. 241) objects

Required: No

PermissionModel

Describes how the IAM roles required for stack set operations are created.
- With `self-managed` permissions, you must create the administrator and execution roles required to deploy to target accounts. For more information, see Grant Self-Managed Stack Set Permissions.
- With `service-managed` permissions, StackSets automatically creates the IAM roles required to deploy to accounts managed by AWS Organizations. For more information, see Grant Service-Managed Stack Set Permissions.

Type: String

Valid Values: `SERVICE_MANAGED | SELF_MANAGED`

Required: No

StackSetARN

The Amazon Resource Number (ARN) of the stack set.

Type: String

Required: No

StackSetDriftDetectionDetails

Detailed information about the drift status of the stack set.

For stack sets, contains information about the last *completed* drift operation performed on the stack set. Information about drift operations currently in progress isn't included.

Type: StackSetDriftDetectionDetails (p. 291) object

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. 307) 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 V2
- AWS SDK for Ruby V3

StackSetDriftDetectionDetails

Detailed information about the drift status of the stack set.

For stack sets, contains information about the last *completed* drift operation performed on the stack set. Information about drift operations in-progress isn't included.

For stack set operations, includes information about drift operations currently being performed on the stack set.

For more information, see Detecting Unmanaged Changes in Stack Sets in the *AWS CloudFormation User Guide*.

Contents

DriftDetectionStatus

The status of the stack set drift detection operation.
- `COMPLETED`: The drift detection operation completed without failing on any stack instances.
- `FAILED`: The drift detection operation exceeded the specified failure tolerance.
- `PARTIAL_SUCCESS`: The drift detection operation completed without exceeding the failure tolerance for the operation.
- `IN_PROGRESS`: The drift detection operation is currently being performed.
- `STOPPED`: The user has canceled the drift detection operation.

Type: String

Valid Values: `COMPLETED | FAILED | PARTIAL_SUCCESS | IN_PROGRESS | STOPPED`

Required: No

DriftedStackInstancesCount

The number of stack instances that have drifted from the expected template and parameter configuration of the stack set. A stack instance is considered to have drifted if one or more of the resources in the associated stack don't match their expected configuration.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

DriftStatus

Status of the stack set's actual configuration compared to its expected template and parameter configuration. A stack set is considered to have drifted if one or more of its stack instances have drifted from their expected template and parameter configuration.
- `DRIFTED`: One or more of the stack instances belonging to the stack set stack differs from the expected template and parameter configuration. A stack instance is considered to have drifted if one or more of the resources in the associated stack have drifted.
- `NOT_CHECKED`: AWS CloudFormation hasn't checked the stack set for drift.
- `IN_SYNC`: All of the stack instances belonging to the stack set stack match from the expected template and parameter configuration.

Type: String

Valid Values: `DRIFTED | IN_SYNC | NOT_CHECKED`

Required: No

FailedStackInstancesCount

The number of stack instances for which the drift detection operation failed.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

InProgressStackInstancesCount

The number of stack instances that are currently being checked for drift.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

InSyncStackInstancesCount

The number of stack instances which match the expected template and parameter configuration of the stack set.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

LastDriftCheckTimestamp

Most recent time when CloudFormation performed a drift detection operation on the stack set. This value will be `NULL` for any stack set on which drift detection hasn't yet been performed.

Type: Timestamp

Required: No

TotalStackInstancesCount

The total number of stack instances belonging to this stack set.

The total number of stack instances is equal to the total of:

- Stack instances that match the stack set configuration.
- Stack instances that have drifted from the stack set configuration.
- Stack instances where the drift detection operation has failed.
- Stack instances currently being checked for drift.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for Ruby V3

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, in addition to *all* associated stack set instances.

Type: String

Valid Values: `CREATE | UPDATE | DELETE | DETECT_DRIFT`

Required: No

AdministrationRoleARN

The Amazon Resource Number (ARN) of the IAM role used to perform this stack set operation.

Use customized administrator roles to control which users or groups can manage specific stack sets within the same administrator account. For more information, see Define Permissions for Multiple Administrators in the *AWS CloudFormation User Guide*.

Type: String

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

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

DeploymentTargets

[Service-managed permissions] The AWS Organizations accounts affected by the stack operation.

Type: DeploymentTargets (p. 236) object

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

ExecutionRoleName

The name of the IAM execution role used to create or update the stack set.

Use customized execution roles to control which stack resources users and groups can include in their stack sets.

Type: String

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

Pattern: `[a-zA-Z_0-9+=,.@-]+`

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. 297) 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 re-associate a retained stack, or add an existing, saved stack to a new stack set.

Type: Boolean

Required: No

StackSetDriftDetectionDetails

Detailed information about the drift status of the stack set. This includes information about drift operations currently being performed on the stack set.

This information will only be present for stack set operations whose `Action` type is `DETECT_DRIFT`.

For more information, see Detecting Unmanaged Changes in Stack Sets in the AWS CloudFormation User Guide.

Type: StackSetDriftDetectionDetails (p. 291) object

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.
- `QUEUED`: [Service-managed permissions] For automatic deployments that require a sequence of operations, the operation is queued to be performed. For more information, see the stack set operation status codes in the AWS CloudFormation User Guide.
- `RUNNING`: The operation is currently being performed.
- `STOPPED`: The user has canceled 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 | QUEUED`

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for Ruby V3

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).

By default, `0` is specified.

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.

By default, `0` is specified.

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.

By default, `1` is specified.

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.

By default, `1` is specified.

Type: Integer

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

Required: No

RegionConcurrencyType

The concurrency type of deploying StackSets operations in Regions, could be in parallel or one Region at a time.

Type: String

Valid Values: `SEQUENTIAL | PARALLEL`

Required: No

RegionOrder.member.N

The order of the Regions in where you want to perform the stack operation.

Type: Array of strings

Pattern: `^[a-zA-Z0-9-]{1,128}$`

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for Ruby V3

StackSetOperationResultSummary

The structure that contains information about a specified operation's results for a given account in a given Region.

Contents

Account

[Self-managed permissions] 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. 227) object

Required: No

OrganizationalUnitId

[Service-managed permissions] The organization root ID or organizational unit (OU) IDs that you specified for DeploymentTargets.

Type: String

Pattern: `^(ou-[a-z0-9]{4,32}-[a-z0-9]{8,32}|r-[a-z0-9]{4,32})$`

Required: No

Region

The name of the AWS Region for this operation result.

Type: String

Pattern: `^[a-zA-Z0-9-]{1,128}$`

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 canceled. 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 V2
- AWS SDK for Ruby V3

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 and *all* associated stack set instances.

Type: String

Valid Values: `CREATE | UPDATE | DELETE | DETECT_DRIFT`

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.

- `QUEUED`: [Service-managed permissions] For automatic deployments that require a sequence of operations, the operation is queued to be performed. For more information, see the stack set operation status codes in the AWS CloudFormation User Guide.

- `RUNNING`: The operation is currently being performed.
- `STOPPED`: The user has canceled 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 | QUEUED`

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for Ruby V3

StackSetSummary

The structures that contain summary information about the specified stack set.

Contents

AutoDeployment

[Service-managed permissions] Describes whether StackSets automatically deploys to AWS Organizations accounts that are added to a target organizational unit (OU).

Type: AutoDeployment (p. 230) object

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

DriftStatus

Status of the stack set's actual configuration compared to its expected template and parameter configuration. A stack set is considered to have drifted if one or more of its stack instances have drifted from their expected template and parameter configuration.

- `DRIFTED`: One or more of the stack instances belonging to the stack set stack differs from the expected template and parameter configuration. A stack instance is considered to have drifted if one or more of the resources in the associated stack have drifted.
- `NOT_CHECKED`: AWS CloudFormation hasn't checked the stack set for drift.
- `IN_SYNC`: All the stack instances belonging to the stack set stack match from the expected template and parameter configuration.
- `UNKNOWN`: This value is reserved for future use.

Type: String

Valid Values: `DRIFTED | IN_SYNC | UNKNOWN | NOT_CHECKED`

Required: No

LastDriftCheckTimestamp

Most recent time when CloudFormation performed a drift detection operation on the stack set. This value will be `NULL` for any stack set on which drift detection hasn't yet been performed.

Type: Timestamp

Required: No

PermissionModel

Describes how the IAM roles required for stack set operations are created.

- With `self-managed` permissions, you must create the administrator and execution roles required to deploy to target accounts. For more information, see Grant Self-Managed Stack Set Permissions.

- With `service-managed` permissions, StackSets automatically creates the IAM roles required to deploy to accounts managed by AWS Organizations. For more information, see Grant Service-Managed Stack Set Permissions.

Type: String

Valid Values: `SERVICE_MANAGED | SELF_MANAGED`

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 V2
- AWS SDK for Ruby V3

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

DriftInformation

Summarizes information on whether a stack's actual configuration differs, or has *drifted*, from it's expected configuration, as defined in the stack template and any values specified as template parameters. For more information, see Detecting Unregulated Configuration Changes to Stacks and Resources.

Type: StackDriftInformationSummary (p. 264) object

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 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_FAILED | UPDATE_ROLLBACK_IN_PROGRESS | UPDATE_ROLLBACK_FAILED | UPDATE_ROLLBACK_COMPLETE_CLEANUP_IN_PROGRESS | UPDATE_ROLLBACK_COMPLETE | REVIEW_IN_PROGRESS | IMPORT_IN_PROGRESS | IMPORT_COMPLETE | IMPORT_ROLLBACK_IN_PROGRESS | IMPORT_ROLLBACK_FAILED | IMPORT_ROLLBACK_COMPLETE`

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 V2
- AWS SDK for Ruby V3

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 V2
- AWS SDK for Ruby V3

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 V2
- AWS SDK for Ruby V3

TypeConfigurationDetails

Detailed information concerning the specification of a CloudFormation extension in a given account and region.

For more information, see Configuring extensions at the account level in the *CloudFormation User Guide*.

Contents

Alias

The alias specified for this configuration, if one was specified when the configuration was set.

Type: String

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

Pattern: `^[a-zA-Z0-9]{1,256}$`

Required: No

Arn

The Amazon Resource Name (ARN) for the configuration data, in this account and region.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[A-Za-z0-9-]{0,64}:cloudformation:[A-Za-z0-9-]{1,64}:([0-9]{12})?:type-configuration/.+`

Required: No

Configuration

A JSON string specifying the configuration data for the extension, in this account and region.

If a configuration hasn't been set for a specified extension, CloudFormation returns `{}`.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 204800.

Pattern: `[\s\S]+`

Required: No

IsDefaultConfiguration

Whether or not this configuration data is the default configuration for the extension.

Type: Boolean

Required: No

LastUpdated

When the configuration data was last updated for this extension.

If a configuration hasn't been set for a specified extension, CloudFormation returns `null`.

Type: Timestamp

Required: No

TypeArn

The Amazon Resource Name (ARN) for the extension, in this account and region.

For public extensions, this will be the ARN assigned when you activate the type in this account and region. For private extensions, this will be the ARN assigned when you register the type in this account and region.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[A-Za-z0-9-]{0,64}:cloudformation:[A-Za-z0-9-]{1,64}:([0-9]{12})?:type/.+`

Required: No

TypeName

The name of the extension.

Type: String

Length Constraints: Minimum length of 10. Maximum length of 204.

Pattern: `[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}(::MODULE){0,1}`

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 V2
- AWS SDK for Ruby V3

TypeConfigurationIdentifier

Identifying information for the configuration of a CloudFormation extension.

Contents

Type

The type of extension.

Type: String

Valid Values: `RESOURCE | MODULE`

Required: No

TypeArn

The Amazon Resource Name (ARN) for the extension, in this account and region.

For public extensions, this will be the ARN assigned when you activate the type in this account and region. For private extensions, this will be the ARN assigned when you register the type in this account and region.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[A-Za-z0-9-]{0,64}:cloudformation:[A-Za-z0-9-]{1,64}:([0-9]{12})?:type/.+`

Required: No

TypeConfigurationAlias

The alias specified for this configuration, if one was specified when the configuration was set.

Type: String

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

Pattern: `^[a-zA-Z0-9]{1,256}$`

Required: No

TypeConfigurationArn

The Amazon Resource Name (ARN) for the configuration, in this account and region.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[A-Za-z0-9-]{0,64}:cloudformation:[A-Za-z0-9-]{1,64}:([0-9]{12})?:type-configuration/.+`

Required: No

TypeName

The name of the extension type to which this configuration applies.

Type: String

Length Constraints: Minimum length of 10. Maximum length of 204.

Pattern: `[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}(::MODULE){0,1}`

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 V2
- AWS SDK for Ruby V3

TypeFilters

Filter criteria to use in determining which extensions to return.

Contents

Category

The category of extensions to return.

- `REGISTERED`: Private extensions that have been registered for this account and region.
- `ACTIVATED`: Public extensions that have been activated for this account and region.
- `THIRD-PARTY`: Extensions available for use from publishers other than Amazon. This includes:
    - Private extensions registered in the account.
    - Public extensions from publishers other than Amazon, whether activated or not.
- `AWS-TYPES`: Extensions available for use from Amazon.

Type: String

Valid Values: `REGISTERED | ACTIVATED | THIRD_PARTY | AWS_TYPES`

Required: No

PublisherId

The id of the publisher of the extension.

Extensions published by Amazon aren't assigned a publisher ID. Use the `AWS-TYPES` category to specify a list of types published by Amazon.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 40.

Pattern: `[0-9a-zA-Z]{12,40}`

Required: No

TypeNamePrefix

A prefix to use as a filter for results.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 204.

Pattern: `([A-Za-z0-9]{2,64}::){0,2}([A-Za-z0-9]{2,64}:?){0,1}`

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 V2

- AWS SDK for Ruby V3

TypeSummary

Contains summary information about the specified CloudFormation extension.

Contents

DefaultVersionId

The ID of the default version of the extension. The default version is used when the extension version isn't specified.

This applies only to private extensions you have registered in your account. For public extensions, both those provided by Amazon and published by third parties, CloudFormation returns `null`. For more information, see RegisterType.

To set the default version of an extension, use `SetTypeDefaultVersion (p. 190)` .

Type: String

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

Pattern: `[A-Za-z0-9-]+`

Required: No

Description

The description of the extension.

Type: String

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

Required: No

IsActivated

Whether or not the extension is activated for this account and region.

This applies only to third-party public extensions. Extensions published by Amazon are activated by default.

Type: Boolean

Required: No

LastUpdated

When the specified extension version was registered. This applies only to:

- Private extensions you have registered in your account. For more information, see RegisterType.
- Public extensions you have activated in your account with auto-update specified. For more information, see ActivateType.

For all other extension types, CloudFormation returns `null`.

Type: Timestamp

Required: No

LatestPublicVersion

For public extensions that have been activated for this account and region, the latest version of the public extension *that is available*. For any extensions other than activated third-arty extensions, CloudFormation returns `null`.

How you specified `AutoUpdate` when enabling the extension affects whether CloudFormation automatically updates the extension in this account and region when a new version is released. For more information, see Setting CloudFormation to automatically use new versions of extensions in the *CloudFormation User Guide*.

Type: String

Length Constraints: Minimum length of 5.

Pattern: ^(0|[1-9]\d*)\.(0|[1-9]\d*)\.(.*)$

Required: No

OriginalTypeName

For public extensions that have been activated for this account and region, the type name of the public extension.

If you specified a `TypeNameAlias` when enabling the extension in this account and region, CloudFormation treats that alias as the extension's type name within the account and region, not the type name of the public extension. For more information, see Specifying aliases to refer to extensions in the *CloudFormation User Guide*.

Type: String

Length Constraints: Minimum length of 10. Maximum length of 204.

Pattern: [A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}(::MODULE){0,1}

Required: No

PublicVersionNumber

For public extensions that have been activated for this account and region, the version of the public extension to be used for CloudFormation operations in this account and Region.

How you specified `AutoUpdate` when enabling the extension affects whether CloudFormation automatically updates the extension in this account and region when a new version is released. For more information, see Setting CloudFormation to automatically use new versions of extensions in the *CloudFormation User Guide*.

Type: String

Length Constraints: Minimum length of 5.

Pattern: ^(0|[1-9]\d*)\.(0|[1-9]\d*)\.(.*)$

Required: No

PublisherId

The ID of the extension publisher, if the extension is published by a third party. Extensions published by Amazon don't return a publisher ID.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 40.

Pattern: `[0-9a-zA-Z]{12,40}`

Required: No

PublisherIdentity

The service used to verify the publisher identity.

For more information, see Registering your account to publish CloudFormation extensions in the *CFN-CLI User Guide for Extension Development*.

Type: String

Valid Values: `AWS_Marketplace | GitHub | Bitbucket`

Required: No

PublisherName

The publisher name, as defined in the public profile for that publisher in the service used to verify the publisher identity.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 100.

Pattern: `[\s\S]+`

Required: No

Type

The kind of extension.

Type: String

Valid Values: `RESOURCE | MODULE`

Required: No

TypeArn

The Amazon Resource Name (ARN) of the extension.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[A-Za-z0-9-]{0,64}:cloudformation:[A-Za-z0-9-]{1,64}:([0-9]{12})?:type/.+`

Required: No

TypeName

The name of the extension.

If you specified a `TypeNameAlias` when you activate this extension in your account and region, CloudFormation considers that alias as the type name.

Type: String

Length Constraints: Minimum length of 10. Maximum length of 204.

Pattern: `[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}(::MODULE){0,1}`

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 V2
- AWS SDK for Ruby V3

TypeVersionSummary

Contains summary information about a specific version of a CloudFormation extension.

Contents

Arn

The Amazon Resource Name (ARN) of the extension version.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[A-Za-z0-9-]{0,64}:cloudformation:[A-Za-z0-9-]{1,64}:([0-9]{12})?:type/.+`

Required: No

Description

The description of the extension version.

Type: String

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

Required: No

IsDefaultVersion

Whether the specified extension version is set as the default version.

This applies only to private extensions you have registered in your account, and extensions published by Amazon. For public third-party extensions, CloudFormation returns `null`.

Type: Boolean

Required: No

PublicVersionNumber

For public extensions that have been activated for this account and region, the version of the public extension to be used for CloudFormation operations in this account and region. For any extensions other than activated third-arty extensions, CloudFormation returns `null`.

How you specified `AutoUpdate` when enabling the extension affects whether CloudFormation automatically updates the extension in this account and region when a new version is released. For more information, see [Setting CloudFormation to automatically use new versions of extensions](#) in the *CloudFormation User Guide*.

Type: String

Length Constraints: Minimum length of 5.

Pattern: `^(0|[1-9]\d*)\.(0|[1-9]\d*)\.(.*)$`

Required: No

TimeCreated

When the version was registered.

Type: Timestamp

Required: No

Type

The kind of extension.

Type: String

Valid Values: `RESOURCE | MODULE`

Required: No

TypeName

The name of the extension.

Type: String

Length Constraints: Minimum length of 10. Maximum length of 204.

Pattern: `[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}::[A-Za-z0-9]{2,64}(::MODULE)`
`{0,1}`

Required: No

VersionId

The ID of a specific version of the extension. The version ID is the value at the end of the Amazon Resource Name (ARN) assigned to the extension version when it's registered.

Type: String

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

Pattern: `[A-Za-z0-9-]+`

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for Ruby V3

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

NotAuthorized

You do not have permission to perform this action.

HTTP Status Code: 400

OptInRequired

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

HTTP Status Code: 403

RequestExpired

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

HTTP Status Code: 400

ServiceUnavailable

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

HTTP Status Code: 503

ThrottlingException

The request was denied due to request throttling.

HTTP Status Code: 400

ValidationError

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

HTTP Status Code: 400