
AWS CloudFormation

API Reference

API Version 2010-05-15



AWS CloudFormation: API Reference

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Welcome

AWS CloudFormation enables you to create and manage AWS infrastructure deployments predictably and repeatedly. AWS CloudFormation helps you leverage AWS products such as Amazon EC2, EBS, Amazon SNS, ELB, and Auto Scaling to build highly-reliable, highly scalable, cost effective applications without worrying about creating and configuring the underlying AWS infrastructure.

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

For more information about this product, go to the [CloudFormation Product Page](#).

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

This document was last updated on November 19, 2014.

Actions

The following actions are supported:

- [CancelUpdateStack](#) (p. 3)
- [CreateStack](#) (p. 4)
- [DeleteStack](#) (p. 8)
- [DescribeStackEvents](#) (p. 9)
- [DescribeStackResource](#) (p. 12)
- [DescribeStackResources](#) (p. 14)
- [DescribeStacks](#) (p. 17)
- [EstimateTemplateCost](#) (p. 19)
- [GetStackPolicy](#) (p. 21)
- [GetTemplate](#) (p. 23)
- [GetTemplateSummary](#) (p. 25)
- [ListStackResources](#) (p. 28)
- [ListStacks](#) (p. 31)
- [SetStackPolicy](#) (p. 33)
- [SignalResource](#) (p. 35)
- [UpdateStack](#) (p. 37)
- [ValidateTemplate](#) (p. 41)

CancelUpdateStack

Description

Cancels an update on the specified stack. If the call completes successfully, the stack will roll back the update and revert to the previous stack configuration.

Note

Only stacks that are in the UPDATE_IN_PROGRESS state can be canceled.

Request Parameters

For information about the common parameters that all actions use, see [Common Parameters \(p. 62\)](#).

StackName

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

Type: String

Required: Yes

Examples

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

```
<CancelUpdateStackResult/>
```


CreateStack

Description

Creates a stack as specified in the template. After the call completes successfully, the stack creation starts. You can check the status of the stack via the [DescribeStacks \(p. 17\)](#) API.

Request Parameters

For information about the common parameters that all actions use, see [Common Parameters \(p. 62\)](#).

Capabilities.member.N

A list of capabilities that you must specify before AWS CloudFormation can create or update certain stacks. Some stack templates might include resources that can affect permissions in your AWS account. For those stacks, you must explicitly acknowledge their capabilities by specifying this parameter.

Currently, the only valid value is `CAPABILITY_IAM`, which is required for the following resources: [AWS::CloudFormation::Stack](#), [AWS::IAM::AccessKey](#), [AWS::IAM::Group](#), [AWS::IAM::InstanceProfile](#), [AWS::IAM::Policy](#), [AWS::IAM::Role](#), [AWS::IAM::User](#), and [AWS::IAM::UserToGroupAddition](#). If your stack template contains these resources, we recommend that you review any permissions associated with them. If you don't specify this parameter, this action returns an `InsufficientCapabilities` error.

Type: String list

Valid Values: `CAPABILITY_IAM`

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

NotificationARNs.member.N

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

Type: String list

Length constraints: Minimum of 0 item(s) in the list. Maximum of 5 item(s) in the list.

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.

Type: [Parameter \(p. 50\)](#) list

Required: No

StackName

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

Note

A stack name can contain only alphanumeric characters (case sensitive) and hyphens. It must start with an alphabetic character and cannot be longer than 255 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 (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.

Type: String

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

Required: No

Tags.member.N

A set of user-defined `Tags` to associate with this stack, represented by key/value pairs. Tags defined for the stack are propagated to EC2 resources that are created as part of the stack. A maximum number of 10 tags can be specified.

Type: [Tag \(p. 59\)](#) list

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: 307,200 bytes) located in an S3 bucket in the same region as the stack. 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

Required: No

Response Elements

The following element is returned in a structure named `CreateStackResult`.

StackId

Unique identifier of the stack.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 64\)](#).

AlreadyExists

Resource with the name requested already exists.

HTTP Status Code: 400

InsufficientCapabilities

The template contains resources with capabilities that were not specified in the `Capabilities` parameter.

HTTP Status Code: 400

LimitExceeded

Quota for the resource has already been reached.

HTTP Status Code: 400

Examples

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

Sample Response

```
<CreateStackResult>
  <StackId>arn:aws:cloudformation:us-east-1:123456789:stack/MyStack/aaf549a0-
a413-11df-adb3-5081b3858e83</StackId>
</CreateStackResult>
```

DeleteStack

Description

Deletes a specified stack. Once the call completes successfully, stack deletion starts. Deleted stacks do not show up in the [DescribeStacks](#) (p. 17) API if the deletion has been completed successfully.

Request Parameters

For information about the common parameters that all actions use, see [Common Parameters](#) (p. 62).

StackName

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

Type: String

Required: Yes

Examples

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

```
<DeleteStackResult/>
```

DescribeStackEvents

Description

Returns all stack related events for a specified stack. 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 common parameters that all actions use, see [Common Parameters \(p. 62\)](#).

NextToken

String that identifies the start of the next list of events, if there is one.

Default: There is no default value.

Type: String

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

Required: No

StackName

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

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

Default: There is no default value.

Type: String

Required: No

Response Elements

The following elements are returned in a structure named `DescribeStackEventsResult`.

NextToken

String that identifies the start of the next list of events, if there is one.

Type: String

StackEvents

A list of `StackEvents` structures.

Type: [StackEvent \(p. 53\)](#) list

Examples

Sample Request

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

Sample Response

```
<DescribeStackEventsResult>  
  <StackEvents>  
    <member>  
      <EventId>Event-1-Id</EventId>  
      <StackId>arn:aws:cloudformation:us-east-1:123456789:stack/MyStack/aaf549a0-  
a413-11df-adb3-5081b3858e83</StackId>  
      <StackName>MyStack</StackName>  
      <LogicalResourceId>MyStack</LogicalResourceId>  
      <PhysicalResourceId>MyStack_One</PhysicalResourceId>  
      <ResourceType>AWS::CloudFormation::Stack</ResourceType>  
      <Timestamp>2010-07-27T22:26:28Z</Timestamp>  
      <ResourceStatus>CREATE_IN_PROGRESS</ResourceStatus>  
      <ResourceStatusReason>User initiated</ResourceStatusReason>  
    </member>  
    <member>  
      <EventId>Event-2-Id</EventId>  
      <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::SecurityGroup</ResourceType>  
      <Timestamp>2010-07-27T22:27:28Z</Timestamp>  
      <ResourceStatus>CREATE_IN_PROGRESS</ResourceStatus>  
      <ResourceProperties>{"GroupDescription":...}</ResourceProperties>  
    </member>  
    <member>  
      <EventId>Event-3-Id</EventId>  
      <StackId>arn:aws:cloudformation:us-east-1:123456789:stack/MyStack/aaf549a0-  
a413-11df-adb3-5081b3858e83</StackId>  
      <StackName>MyStack</StackName>  
      <LogicalResourceId>MySG1</LogicalResourceId>  
      <PhysicalResourceId>MyStack_SG1</PhysicalResourceId>  
      <ResourceType>AWS::SecurityGroup</ResourceType>  
      <Timestamp>2010-07-27T22:28:28Z</Timestamp>  
      <ResourceStatus>CREATE_COMPLETE</ResourceStatus>  
    </member>
```

```
</StackEvents>  
</DescribeStackEventsResult>
```


DescribeStackResource

Description

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 common parameters that all actions use, see [Common Parameters \(p. 62\)](#).

LogicalResourceId

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

Default: There is no default value.

Type: String

Required: Yes

StackName

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

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

Default: There is no default value.

Type: String

Required: Yes

Response Elements

The following element is returned in a structure named `DescribeStackResourceResult`.

StackResourceDetail

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

Type: [StackResourceDetail \(p. 56\)](#)

Examples

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>
  <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>
</DescribeStackResourceResponse>
```

DescribeStackResources

Description

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 common parameters that all actions use, see [Common Parameters \(p. 62\)](#).

LogicalResourceId

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

Default: There is no default value.

Type: String

Required: No

PhysicalResourceId

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

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

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

Default: There is no default value.

Type: String

Required: No

StackName

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

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

Default: There is no default value.

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

Type: String

Required: No

Response Elements

The following element is returned in a structure named `DescribeStackResourcesResult`.

StackResources

A list of `StackResource` structures.

Type: [StackResource](#) (p. 54) list

Examples

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  
&AWSSignatureVersion=3.0  
&AWSAccessKeyId=[AWS Access KeyID]  
&Signature=[Signature]
```

Sample Response

```
<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>
```

```
</member>  
</StackResources>  
</DescribeStackResourcesResult>
```

DescribeStacks

Description

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

Request Parameters

For information about the common parameters that all actions use, see [Common Parameters \(p. 62\)](#).

NextToken

String that identifies the start of the next list of stacks, if there is one.

Type: String

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

Required: No

StackName

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

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

Default: There is no default value.

Type: String

Required: No

Response Elements

The following elements are returned in a structure named `DescribeStacksResult`.

NextToken

String that identifies the start of the next list of stacks, if there is one.

Type: String

Stacks

A list of stack structures.

Type: [Stack \(p. 51\)](#) list

Examples

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

```
<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</Out
putValue>
        </member>
      </Outputs>
    </member>
  </Stacks>
</DescribeStacksResult>
```

EstimateTemplateCost

Description

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 common parameters that all actions use, see [Common Parameters \(p. 62\)](#).

Parameters.member.N

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

Type: [Parameter \(p. 50\)](#) list

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 located in an S3 bucket in the same region as the stack. 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 in a structure named `EstimateTemplateCostResult`.

Url

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

Type: String

Examples

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

```
<EstimateTemplateCostResult>  
  <Url>http://calculator.s3.amazonaws.com/calc5.html?key=cf-2e351785-e821-450c-  
9d58-625e1e1ebfb6</Url>  
</EstimateTemplateCostResult>
```

GetStackPolicy

Description

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 common parameters that all actions use, see [Common Parameters \(p. 62\)](#).

StackName

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

Type: String

Required: Yes

Response Elements

The following element is returned in a structure named `GetStackPolicyResult`.

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

Examples

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

```
<GetStackPolicyResult>  
  <StackPolicyBody>"{  
    "Statement" : [  
      {  
        "Effect" : "Deny",  
        "Action" : "Update:*",
```

```
    "Principal" : "*",
    "Resource" : "LogicalResourceId/ProductionDatabase"
  },
  {
    "Effect" : "Allow",
    "Action" : "Update:*",
    "Principal" : "*",
    "Resource" : "*"
  }
]
}</StackPolicyBody>
</GetStackPolicyResult>
```

GetTemplate

Description

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

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

Note

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

Request Parameters

For information about the common parameters that all actions use, see [Common Parameters \(p. 62\)](#).

StackName

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

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

Default: There is no default value.

Type: String

Required: Yes

Response Elements

The following element is returned in a structure named `GetTemplateResult`.

TemplateBody

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

Type: String

Examples

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

```
<GetTemplateResult>
  <TemplateBody>{
    "AWSTemplateFormatVersion" : "2010-09-09",
    "Description" : "Simple example",
    "Resources" : {
      "MySQL" : {
        "Type" : "AWS::SQS::Queue",
        "Properties" : {
        }
      }
    }
  }
}</TemplateBody>
</GetTemplateResult>
```

GetTemplateSummary

Description

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.

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

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

Request Parameters

For information about the common parameters that all actions use, see [Common Parameters \(p. 62\)](#).

StackName

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

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

Type: String

Length constraints: Minimum length of 1.

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`, `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: 307,200 bytes) located in an Amazon S3 bucket. For more information about templates, see [Template Anatomy](#) in the AWS CloudFormation User Guide.

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

Type: String

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

Required: No

Response Elements

The following elements are returned in a structure named `GetTemplateSummaryResult`.

Capabilities

The capabilities found within the template. Currently, AWS CloudFormation supports only the `CAPABILITY_IAM` capability. If your template contains IAM resources, you must specify the `CAPABILITY_IAM` value for this parameter when you use the [CreateStack \(p. 4\)](#) or [UpdateStack \(p. 37\)](#) actions with your template; otherwise, those actions return an `InsufficientCapabilities` error.

Type: String list

Valid Values: `CAPABILITY_IAM`

CapabilitiesReason

The capabilities reason found within the template.

Type: String

Description

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

Type: String

Parameters

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

Type: [ParameterDeclaration \(p. 50\)](#) list

Version

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

Type: String

Examples

Sample Request

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

Sample Response

```
<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>
<Version>2010-09-09</Version>
</GetTemplateSummaryResult>
```


ListStackResources

Description

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 common parameters that all actions use, see [Common Parameters \(p. 62\)](#).

NextToken

String that identifies the start of the next list of stack resource summaries, if there is one.

Default: There is no default value.

Type: String

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

Required: No

StackName

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

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

Default: There is no default value.

Type: String

Required: Yes

Response Elements

The following elements are returned in a structure named `ListStackResourcesResult`.

NextToken

String that identifies the start of the next list of stack resources, if there is one.

Type: String

StackResourceSummaries

A list of `StackResourceSummary` structures.

Type: [StackResourceSummary \(p. 57\)](#) list

Examples

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>  
  <ListStackResourcesResult>  
    <StackResourceSummaries>  
      <member>  
        <ResourceStatus>CREATE_COMPLETE</ResourceStatus>  
        <LogicalResourceId>DBSecurityGroup</LogicalResourceId>  
        <LastUpdatedTimestamp>2011-06-21T20:15:58Z</LastUpdatedTimestamp>  
        <PhysicalResourceId>gmarcteststack-dbsecuritygroup-  
1s5m0ez5lkk6w</PhysicalResourceId>  
        <ResourceType>AWS::RDS::DBSecurityGroup</ResourceType>  
      </member>  
      <member>  
        <ResourceStatus>CREATE_COMPLETE</ResourceStatus>  
        <LogicalResourceId>SampleDB</LogicalResourceId>  
        <LastUpdatedTimestamp>2011-06-21T20:25:57Z</LastUpdatedTimestamp>  
        <PhysicalResourceId>MyStack-sampledbycwhklv830lx</PhysicalResourceId>  
        <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</PhysicalResourceId>  
        <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>
```

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```
    <LastUpdatedTimestamp>2011-06-21T20:29:06Z</LastUpdatedTimestamp>
    <PhysicalResourceId>arn:aws:sns:us-east-1:803981987763:MyStack-AlarmTopic-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</PhysicalResourceId>
    <ResourceType>AWS::CloudWatch::Alarm</ResourceType>
  </member>
</StackResourceSummaries>
</ListStackResourcesResult>
<ResponseMetadata>
  <RequestId>2d06e36c-ac1d-11e0-a958-f9382b6eb86b</RequestId>
</ResponseMetadata>
</ListStackResourcesResponse>
```

ListStacks

Description

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 common parameters that all actions use, see [Common Parameters \(p. 62\)](#).

NextToken

String that identifies the start of the next list of stacks, if there is one.

Default: There is no default value.

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 \(p. 51\)](#) data type.

Type: String list

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

Required: No

Response Elements

The following elements are returned in a structure named `ListStacksResult`.

NextToken

String that identifies the start of the next list of stacks, if there is one.

Type: String

StackSummaries

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

Type: [StackSummary \(p. 58\)](#) list

Examples

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>  
<ListStacksResult>  
<StackSummaries>  
<member>  
<StackId>  
    arn:aws:cloudformation:us-east-1:1234567:stack/TestCreate1/aaaa  
</StackId>  
<StackStatus>CREATE_IN_PROGRESS</StackStatus>  
<StackName>vpcl</StackName>  
<CreationTime>2011-05-23T15:47:44Z</CreationTime>  
<TemplateDescription>  
    Creates one EC2 instance and a load balancer.  
</TemplateDescription>  
</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>  
</member>  
</StackSummaries>  
</ListStacksResult>  
</ListStacksResponse>
```

SetStackPolicy

Description

Sets a stack policy for a specified stack.

Request Parameters

For information about the common parameters that all actions use, see [Common Parameters \(p. 62\)](#).

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 (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.

Type: String

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

Required: No

Examples

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

Sample Response

```
<SetStackPolicyResponse/>
```

SignalResource

Description

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 common parameters that all actions use, see [Common Parameters \(p. 62\)](#).

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.

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

Examples

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/>
```

UpdateStack

Description

Updates a stack as specified in the template. After the call completes successfully, the stack update starts. You can check the status of the stack via the [DescribeStacks \(p. 17\)](#) action.

To get a copy of the template for an existing stack, you can use the [GetTemplate \(p. 23\)](#) action.

Tags that were associated with this stack during creation time will still be associated with the stack after an `UpdateStack` operation.

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 common parameters that all actions use, see [Common Parameters \(p. 62\)](#).

Capabilities.member.N

A list of capabilities that you must specify before AWS CloudFormation can create or update certain stacks. Some stack templates might include resources that can affect permissions in your AWS account. For those stacks, you must explicitly acknowledge their capabilities by specifying this parameter. Currently, the only valid value is `CAPABILITY_IAM`, which is required for the following resources: [AWS::CloudFormation::Stack](#), [AWS::IAM::AccessKey](#), [AWS::IAM::Group](#), [AWS::IAM::InstanceProfile](#), [AWS::IAM::Policy](#), [AWS::IAM::Role](#), [AWS::IAM::User](#), and [AWS::IAM::UserToGroupAddition](#). If your stack template contains these resources, we recommend that you review any permissions associated with them. If you don't specify this parameter, this action returns an `InsufficientCapabilities` error.

Type: String list

Valid Values: `CAPABILITY_IAM`

Required: No

NotificationARNs.member.N

Update the ARNs for the Amazon SNS topics that are associated with the stack.

Type: String list

Length constraints: Minimum of 0 item(s) in the list. Maximum of 5 item(s) in the list.

Required: No

Parameters.member.N

A list of `Parameter` structures that specify input parameters for the stack.

Type: [Parameter \(p. 50\)](#) list

Required: No

StackName

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

Type: String

Required: Yes

StackPolicyBody

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

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

Type: String

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

Required: No

StackPolicyDuringUpdateBody

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

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

Type: String

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

Required: No

StackPolicyDuringUpdateURL

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

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

Type: String

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

Required: No

StackPolicyURL

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

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

Type: String

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

Required: No

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 located in an S3 bucket in the same region as the stack. 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. Maximum length of 1024.

Required: No

UsePreviousTemplate

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

Type: Boolean

Required: No

Response Elements

The following element is returned in a structure named `UpdateStackResult`.

StackId

Unique identifier of the stack.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 64\)](#).

InsufficientCapabilities

The template contains resources with capabilities that were not specified in the `Capabilities` parameter.

HTTP Status Code: 400

Examples

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

```
<UpdateStackResult>
  <StackId>arn:aws:cloudformation:us-east-1:123456789:stack/MyStack/aaf549a0-
a413-11df-adb3-5081b3858e83</StackId>
</UpdateStackResult>
```

ValidateTemplate

Description

Validates a specified template.

Request Parameters

For information about the common parameters that all actions use, see [Common Parameters \(p. 62\)](#).

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: 307,200 bytes) located in an S3 bucket in the same region as the stack. 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 in a structure named `ValidateTemplateResult`.

Capabilities

The capabilities found within the template. Currently, AWS CloudFormation supports only the `CAPABILITY_IAM` capability. If your template contains IAM resources, you must specify the `CAPABILITY_IAM` value for this parameter when you use the [CreateStack \(p. 4\)](#) or [UpdateStack \(p. 37\)](#) actions with your template; otherwise, those actions return an `InsufficientCapabilities` error.

Type: String list

Valid Values: `CAPABILITY_IAM`

CapabilitiesReason

The capabilities reason found within the template.

Type: String

Description

The description found within the template.

Type: String

Parameters

A list of `TemplateParameter` structures.

Type: [TemplateParameter](#) (p. 60) list

Examples

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>ml.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-9f8d5a7dbc91</RequestId>
```

```
</ResponseMetadata>  
</ValidateTemplateResponse>
```


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 the response is not guaranteed. Applications should not assume a particular order.

The following data types are supported:

- [CreateStackResult](#) (p. 45)
- [DescribeStackEventsResult](#) (p. 45)
- [DescribeStackResourceResult](#) (p. 45)
- [DescribeStackResourcesResult](#) (p. 46)
- [DescribeStacksResult](#) (p. 46)
- [EstimateTemplateCostResult](#) (p. 46)
- [GetStackPolicyResult](#) (p. 47)
- [GetTemplateResult](#) (p. 47)
- [GetTemplateSummaryResult](#) (p. 48)
- [ListStackResourcesResult](#) (p. 48)
- [ListStacksResult](#) (p. 49)
- [Output](#) (p. 49)
- [Parameter](#) (p. 50)
- [ParameterDeclaration](#) (p. 50)
- [Stack](#) (p. 51)
- [StackEvent](#) (p. 53)
- [StackResource](#) (p. 54)
- [StackResourceDetail](#) (p. 56)
- [StackResourceSummary](#) (p. 57)
- [StackSummary](#) (p. 58)
- [Tag](#) (p. 59)
- [TemplateParameter](#) (p. 60)
- [UpdateStackResult](#) (p. 60)
- [ValidateTemplateResult](#) (p. 61)

CreateStackResult

Description

The output for a [CreateStack](#) (p. 4) action.

Contents

StackId

Unique identifier of the stack.

Type: String

Required: No

DescribeStackEventsResult

Description

The output for a [DescribeStackEvents](#) (p. 9) action.

Contents

NextToken

String that identifies the start of the next list of events, if there is one.

Type: String

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

Required: No

StackEvents

A list of `StackEvents` structures.

Type: [StackEvent](#) (p. 53) list

Required: No

DescribeStackResourceResult

Description

The output for a [DescribeStackResource](#) (p. 12) action.

Contents

StackResourceDetail

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

Type: [StackResourceDetail](#) (p. 56)

Required: No

DescribeStackResourcesResult

Description

The output for a [DescribeStackResources](#) (p. 14) action.

Contents

StackResources

A list of `StackResource` structures.

Type: [StackResource](#) (p. 54) list

Required: No

DescribeStacksResult

Description

The output for a [DescribeStacks](#) (p. 17) action.

Contents

NextToken

String that identifies the start of the next list of stacks, if there is one.

Type: String

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

Required: No

Stacks

A list of stack structures.

Type: [Stack](#) (p. 51) list

Required: No

EstimateTemplateCostResult

Description

The output for a [EstimateTemplateCost](#) (p. 19) action.

Contents

Url

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

Type: String

Required: No

GetStackPolicyResult

Description

The output for the [GetStackPolicy](#) (p. 21) action.

Contents

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.

Required: No

GetTemplateResult

Description

The output for [GetTemplate](#) (p. 23) action.

Contents

TemplateBody

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

Type: String

Length constraints: Minimum length of 1.

Required: No

GetTemplateSummaryResult

Description

The output for the [GetTemplateSummary](#) (p. 25) action.

Contents

Capabilities

The capabilities found within the template. Currently, AWS CloudFormation supports only the `CAPABILITY_IAM` capability. If your template contains IAM resources, you must specify the `CAPABILITY_IAM` value for this parameter when you use the [CreateStack](#) (p. 4) or [UpdateStack](#) (p. 37) actions with your template; otherwise, those actions return an `InsufficientCapabilities` error.

Type: String list

Valid Values: `CAPABILITY_IAM`

Required: No

CapabilitiesReason

The capabilities reason found within the template.

Type: String

Required: No

Description

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

Type: String

Required: No

Parameters

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

Type: [ParameterDeclaration](#) (p. 50) list

Required: No

Version

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

Type: String

Required: No

ListStackResourcesResult

Description

The output for a [ListStackResources](#) (p. 28) action.

Contents

NextToken

String that identifies the start of the next list of stack resources, if there is one.

Type: String

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

Required: No

StackResourceSummaries

A list of `StackResourceSummary` structures.

Type: [StackResourceSummary \(p. 57\)](#) list

Required: No

ListStacksResult

Description

The output for [ListStacks \(p. 31\)](#) action.

Contents

NextToken

String that identifies the start of the next list of stacks, if there is one.

Type: String

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

Required: No

StackSummaries

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

Type: [StackSummary \(p. 58\)](#) list

Required: No

Output

Description

The Output data type.

Contents

Description

User defined description 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

Parameter

Description

The Parameter data type.

Contents

ParameterKey

The key associated with the parameter.

Type: String

Required: No

ParameterValue

The value associated with the parameter.

Type: String

Required: No

UsePreviousValue

During a stack update, use the existing parameter value that is being used for the stack.

Type: Boolean

Required: No

ParameterDeclaration

Description

The ParameterDeclaration data type.

Contents

DefaultValue

The default value of the parameter.

Type: String

Required: No

Description

The description that is associate with the parameter.

Type: String

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

ParameterKey

The name that is associated with the parameter.

Type: String

Required: No

ParameterType

The type of parameter.

Type: String

Required: No

Stack

Description

The Stack data type.

Contents

Capabilities

The capabilities allowed in the stack.

Type: String list

Valid Values: CAPABILITY_IAM

Required: No

CreationTime

Time at which the stack was created.

Type: DateTime

Required: Yes

Description

User defined description associated with the stack.

Type: String

Required: No

DisableRollback

Boolean to enable or disable rollback on stack creation failures:

- `true`: disable rollback
- `false`: enable rollback

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: DateTime

Required: No

NotificationARNs

SNS topic ARNs to which stack related events are published.

Type: String list

Length constraints: Minimum of 0 item(s) in the list. Maximum of 5 item(s) in the list.

Required: No

Outputs

A list of output structures.

Type: [Output \(p. 49\)](#) list

Required: No

Parameters

A list of `Parameter` structures.

Type: [Parameter \(p. 50\)](#) list

Required: No

StackId

Unique identifier of the stack.

Type: String

Required: No

StackName

The name associated with the stack.

Type: String

Required: Yes

StackStatus

Current status of the stack.

Type: String

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

Required: Yes

StackStatusReason

Success/failure message associated with the stack status.

Type: String

Required: No

Tags

A list of `Tags` that specify cost allocation information for the stack.

Type: [Tag \(p. 59\)](#) list

Required: No

TimeoutInMinutes

The amount of time within which stack creation should complete.

Type: Integer

Required: No

StackEvent

Description

The StackEvent data type.

Contents

EventId

The unique ID of this event.

Type: String

Required: Yes

LogicalResourceId

The logical name of the resource specified in the template.

Type: String

Required: No

PhysicalResourceId

The name or unique identifier associated with the physical instance of the resource.

Type: String

Required: No

ResourceProperties

BLOB of the properties used to create the resource.

Type: String

Required: No

ResourceStatus

Current status of the resource.

Type: String

Valid Values: CREATE_IN_PROGRESS | CREATE_FAILED | CREATE_COMPLETE | DELETE_IN_PROGRESS | DELETE_FAILED | DELETE_COMPLETE | DELETE_SKIPPED | UPDATE_IN_PROGRESS | UPDATE_FAILED | UPDATE_COMPLETE

Required: No

ResourceStatusReason

Success/failure message associated with the resource.

Type: String

Required: No

ResourceType

Type of resource. (For more information, go to [AWS Resource Types Reference](#) in the AWS CloudFormation User Guide.)

Type: String

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: DateTime

Required: Yes

StackResource

Description

The StackResource data type.

Contents

Description

User defined description associated with the resource.

Type: String

Required: No

LogicalResourceId

The logical name of the resource specified in the template.

Type: String

Required: Yes

PhysicalResourceId

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

Type: String

Required: No

ResourceStatus

Current status of the resource.

Type: String

Valid Values: CREATE_IN_PROGRESS | CREATE_FAILED | CREATE_COMPLETE | DELETE_IN_PROGRESS | DELETE_FAILED | DELETE_COMPLETE | DELETE_SKIPPED | UPDATE_IN_PROGRESS | UPDATE_FAILED | UPDATE_COMPLETE

Required: Yes

ResourceStatusReason

Success/failure message associated with the resource.

Type: String

Required: No

ResourceType

Type of resource. (For more information, go to [AWS Resource Types Reference](#) in the AWS CloudFormation User Guide.)

Type: String

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: DateTime

Required: Yes

StackResourceDetail

Description

Contains detailed information about the specified stack resource.

Contents

Description

User defined description associated with the resource.

Type: String

Required: No

LastUpdatedTimestamp

Time the status was updated.

Type: DateTime

Required: Yes

LogicalResourceid

The logical name of the resource specified in the template.

Type: String

Required: Yes

Metadata

The JSON format content of the `Metadata` attribute declared for the resource. For more information, see [Metadata Attribute](#) in the AWS CloudFormation User Guide.

Type: String

Required: No

PhysicalResourceid

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

Type: String

Required: No

ResourceStatus

Current status of the resource.

Type: String

Valid Values: CREATE_IN_PROGRESS | CREATE_FAILED | CREATE_COMPLETE | DELETE_IN_PROGRESS | DELETE_FAILED | DELETE_COMPLETE | DELETE_SKIPPED | UPDATE_IN_PROGRESS | UPDATE_FAILED | UPDATE_COMPLETE

Required: Yes

ResourceStatusReason

Success/failure message associated with the resource.

Type: String

Required: No

ResourceType

Type of resource. ((For more information, go to [AWS Resource Types Reference](#) in the AWS CloudFormation User Guide.)

Type: String

Required: Yes

StackId

Unique identifier of the stack.

Type: String

Required: No

StackName

The name associated with the stack.

Type: String

Required: No

StackResourceSummary

Description

Contains high-level information about the specified stack resource.

Contents

LastUpdatedTimestamp

Time the status was updated.

Type: DateTime

Required: Yes

LogicalResourceId

The logical name of the resource specified in the template.

Type: String

Required: Yes

PhysicalResourceId

The name or unique identifier that corresponds to a physical instance ID of the resource.

Type: String

Required: No

ResourceStatus

Current status of the resource.

Type: String

Valid Values: CREATE_IN_PROGRESS | CREATE_FAILED | CREATE_COMPLETE | DELETE_IN_PROGRESS | DELETE_FAILED | DELETE_COMPLETE | DELETE_SKIPPED | UPDATE_IN_PROGRESS | UPDATE_FAILED | UPDATE_COMPLETE

Required: Yes

ResourceStatusReason

Success/failure message associated with the resource.

Type: String

Required: No

ResourceType

Type of resource. (For more information, go to [AWS Resource Types Reference](#) in the AWS CloudFormation User Guide.)

Type: String

Required: Yes

StackSummary

Description

The StackSummary Data Type

Contents

CreationTime

The time the stack was created.

Type: DateTime

Required: Yes

DeletionTime

The time the stack was deleted.

Type: DateTime

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: DateTime

Required: No

StackId

Unique stack identifier.

Type: String

Required: No

StackName

The name associated with the stack.

Type: String

Required: Yes

StackStatus

The current status of the stack.

Type: String

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

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

Tag

Description

The Tag type is used by `CreateStack` in the `Tags` parameter. It allows you to specify a key/value pair that can be used to store information related to cost allocation for 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

Required: No

Value

Required. A string containing the value for this tag. You can specify a maximum of 256 characters for a tag value.

Type: String

Required: No

TemplateParameter

Description

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

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

UpdateStackResult

Description

The output for a [UpdateStack](#) (p. 37) action.

Contents

StackId

Unique identifier of the stack.

Type: String

Required: No

ValidateTemplateResult

Description

The output for [ValidateTemplate](#) (p. 41) action.

Contents

Capabilities

The capabilities found within the template. Currently, AWS CloudFormation supports only the CAPABILITY_IAM capability. If your template contains IAM resources, you must specify the CAPABILITY_IAM value for this parameter when you use the [CreateStack](#) (p. 4) or [UpdateStack](#) (p. 37) actions with your template; otherwise, those actions return an InsufficientCapabilities error.

Type: String list

Valid Values: CAPABILITY_IAM

Required: No

CapabilitiesReason

The capabilities reason found within the template.

Type: String

Required: No

Description

The description found within the template.

Type: String

Required: No

Parameters

A list of `TemplateParameter` structures.

Type: [TemplateParameter](#) (p. 60) list

Required: No

Common Parameters

This section lists the request parameters that all actions use. Any action-specific parameters are listed in the topic for the action.

Action

The action to be performed.

Default: None

Type: string

Required: Yes

AuthParams

The parameters that are required to authenticate a Conditional request. Contains:

- `AWSSignatureVersion`
- `SignatureVersion`
- `Timestamp`
- `Signature`

Default: None

Required: Conditional

AWSSignatureVersion

The access key ID that corresponds to the secret access key that you used to sign the request.

Default: None

Type: string

Required: Yes

Expires

The date and time when the request signature expires, expressed in the format `YYYY-MM-DDThh:mm:ssZ`, as specified in the ISO 8601 standard.

Condition: Requests must include either *Timestamp* or *Expires*, but not both.

Default: None

Type: string

Required: Conditional

SecurityToken

The temporary security token that was obtained through a call to AWS Security Token Service. For a list of services that support AWS Security Token Service, go to [Using Temporary Security Credentials to Access AWS](#) in **Using Temporary Security Credentials**.

Default: None

Type: string

Required: No

Signature

The digital signature that you created for the request. For information about generating a signature, go to the service's developer documentation.

Default: None

Type: string

Required: Yes

SignatureMethod

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

Default: None

Type: string

Valid Values: HmacSHA256 | HmacSHA1

Required: Yes

SignatureVersion

The signature version you use to sign the request. Set this to the value that is recommended for your service.

Default: None

Type: string

Required: Yes

Timestamp

The date and time when the request was signed, expressed in the format YYYY-MM-DDThh:mm:ssZ, as specified in the ISO 8601 standard.

Condition: Requests must include either *Timestamp* or *Expires*, but not both.

Default: None

Type: string

Required: Conditional

Version

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

Default: None

Type: string

Required: Yes

Common Errors

This section lists the common errors that all actions return. Any action-specific errors are listed in the topic for the action.

IncompleteSignature

The request signature does not conform to AWS standards.

HTTP Status Code: 400

InternalFailure

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

HTTP Status Code: 500

InvalidAction

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

HTTP Status Code: 400

InvalidClientTokenId

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

HTTP Status Code: 403

InvalidParameterCombination

Parameters that must not be used together were used together.

HTTP Status Code: 400

InvalidParameterValue

An invalid or out-of-range value was supplied for the input parameter.

HTTP Status Code: 400

InvalidQueryParameter

The AWS query string is malformed or does not adhere to AWS standards.

HTTP Status Code: 400

MalformedQueryString

The query string contains a syntax error.

HTTP Status Code: 404

MissingAction

The request is missing an action or a required parameter.

HTTP Status Code: 400

MissingAuthenticationToken

The request must contain either a valid (registered) AWS access key ID or X.509 certificate.

HTTP Status Code: 403

MissingParameter

A required parameter for the specified action is not supplied.

HTTP Status Code: 400

OptInRequired

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

HTTP Status Code: 403

RequestExpired

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

HTTP Status Code: 400

ServiceUnavailable

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

HTTP Status Code: 503

Throttling

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