



Welcome

# Amazon CloudWatch Synthetics



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# Amazon CloudWatch Synthetics: Welcome

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# Welcome

You can use Amazon CloudWatch Synthetics to continually monitor your services. You can create and manage *canaries*, which are modular, lightweight scripts that monitor your endpoints and APIs from the outside-in. You can set up your canaries to run 24 hours a day, once per minute. The canaries help you check the availability and latency of your web services and troubleshoot anomalies by investigating load time data, screenshots of the UI, logs, and metrics. The canaries seamlessly integrate with CloudWatch ServiceLens to help you trace the causes of impacted nodes in your applications. For more information, see [Using ServiceLens to Monitor the Health of Your Applications](#) in the *Amazon CloudWatch User Guide*.

Before you create and manage canaries, be aware of the security considerations. For more information, see [Security Considerations for Synthetics Canaries](#).

This document was last published on July 3, 2024.

# Actions

The following actions are supported:

- [AssociateResource](#)
- [CreateCanary](#)
- [CreateGroup](#)
- [DeleteCanary](#)
- [DeleteGroup](#)
- [DescribeCanaries](#)
- [DescribeCanariesLastRun](#)
- [DescribeRuntimeVersions](#)
- [DisassociateResource](#)
- [GetCanary](#)
- [GetCanaryRuns](#)
- [GetGroup](#)
- [ListAssociatedGroups](#)
- [ListGroupResources](#)
- [ListGroups](#)
- [ListTagsForResource](#)
- [StartCanary](#)
- [StopCanary](#)
- [TagResource](#)
- [UntagResource](#)
- [UpdateCanary](#)

# AssociateResource

Associates a canary with a group. Using groups can help you with managing and automating your canaries, and you can also view aggregated run results and statistics for all canaries in a group.

You must run this operation in the Region where the canary exists.

## Request Syntax

```
PATCH /group/groupIdentifier/associate HTTP/1.1
Content-type: application/json

{
  "ResourceArn": "string"
}
```

## URI Request Parameters

The request uses the following URI parameters.

### [groupIdentifier](#)

Specifies the group. You can specify the group name, the ARN, or the group ID as the `GroupIdentifier`.

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

Required: Yes

## Request Body

The request accepts the following data in JSON format.

### [ResourceArn](#)

The ARN of the canary that you want to associate with the specified group.

Type: String

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

```
Pattern: arn:(aws[a-zA-Z-]*)?:synthetics:[a-z]{2}((-gov)|(-iso(b?)))?-[a-z]+-\d{1}:\d{12}:canary:[0-9a-z_\-]{1,21}
```

Required: Yes

## Response Syntax

```
HTTP/1.1 200
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

## Errors

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

### **ConflictException**

A conflicting operation is already in progress.

HTTP Status Code: 409

### **InternalServerError**

An unknown internal error occurred.

HTTP Status Code: 500

### **ResourceNotFoundException**

One of the specified resources was not found.

HTTP Status Code: 404

### **ServiceQuotaExceededException**

The request exceeded a service quota value.

HTTP Status Code: 402

### **ValidationException**

A parameter could not be validated.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateCanary

Creates a canary. Canaries are scripts that monitor your endpoints and APIs from the outside-in. Canaries help you check the availability and latency of your web services and troubleshoot anomalies by investigating load time data, screenshots of the UI, logs, and metrics. You can set up a canary to run continuously or just once.

Do not use CreateCanary to modify an existing canary. Use [UpdateCanary](#) instead.

To create canaries, you must have the CloudWatchSyntheticsFullAccess policy. If you are creating a new IAM role for the canary, you also need the iam:CreateRole, iam:CreatePolicy and iam:AttachRolePolicy permissions. For more information, see [Necessary Roles and Permissions](#).

Do not include secrets or proprietary information in your canary names. The canary name makes up part of the Amazon Resource Name (ARN) for the canary, and the ARN is included in outbound calls over the internet. For more information, see [Security Considerations for Synthetics Canaries](#).

## Request Syntax

```
POST /canary HTTP/1.1
Content-type: application/json

{
  "ArtifactConfig": {
    "S3Encryption": {
      "EncryptionMode": "string",
      "KmsKeyArn": "string"
    }
  },
  "ArtifactS3Location": "string",
  "Code": {
    "Handler": "string",
    "S3Bucket": "string",
    "S3Key": "string",
    "S3Version": "string",
    "ZipFile": blob
  },
  "ExecutionRoleArn": "string",
  "FailureRetentionPeriodInDays": number,
  "Name": "string",
  "RunConfig": {
```

```
"ActiveTracing": boolean,
"EnvironmentVariables": {
  "string" : "string"
},
"MemoryInMB": number,
"TimeoutInSeconds": number
},
"RuntimeVersion": "string",
"Schedule": {
  "DurationInSeconds": number,
  "Expression": "string"
},
"SuccessRetentionPeriodInDays": number,
"Tags": {
  "string" : "string"
},
"VpcConfig": {
  "SecurityGroupIds": [ "string" ],
  "SubnetIds": [ "string" ]
}
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### ArtifactConfig

A structure that contains the configuration for canary artifacts, including the encryption-at-rest settings for artifacts that the canary uploads to Amazon S3.

Type: [ArtifactConfigInput](#) object

Required: No

### ArtifactS3Location

The location in Amazon S3 where Synthetics stores artifacts from the test runs of this canary. Artifacts include the log file, screenshots, and HAR files. The name of the S3 bucket can't include a period (.).



Type: String

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

Required: Yes

### Code

A structure that includes the entry point from which the canary should start running your script. If the script is stored in an S3 bucket, the bucket name, key, and version are also included.

Type: [CanaryCodeInput](#) object

Required: Yes

### ExecutionRoleArn

The ARN of the IAM role to be used to run the canary. This role must already exist, and must include `lambda.amazonaws.com` as a principal in the trust policy. The role must also have the following permissions:

- `s3:PutObject`
- `s3:GetBucketLocation`
- `s3:ListAllMyBuckets`
- `cloudwatch:PutMetricData`
- `logs:CreateLogGroup`
- `logs:CreateLogStream`
- `logs:PutLogEvents`

Type: String

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

Pattern: `arn:(aws[a-zA-Z-]*)?:iam::\d{12}:role/?[a-zA-Z_0-9+=,.\@-\_/\]+`

Required: Yes

### FailureRetentionPeriodInDays

The number of days to retain data about failed runs of this canary. If you omit this field, the default of 31 days is used. The valid range is 1 to 455 days.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1024.

Required: No

## Name

The name for this canary. Be sure to give it a descriptive name that distinguishes it from other canaries in your account.

Do not include secrets or proprietary information in your canary names. The canary name makes up part of the canary ARN, and the ARN is included in outbound calls over the internet. For more information, see [Security Considerations for Synthetics Canaries](#).

Type: String

Length Constraints: Minimum length of 1. Maximum length of 21.

Pattern: `^[0-9a-z_\-]+$`

Required: Yes

## RunConfig

A structure that contains the configuration for individual canary runs, such as timeout value and environment variables.

### **Important**

The environment variables keys and values are not encrypted. Do not store sensitive information in this field.

Type: [CanaryRunConfigInput](#) object

Required: No

## RuntimeVersion

Specifies the runtime version to use for the canary. For a list of valid runtime versions and more information about runtime versions, see [Canary Runtime Versions](#).

Type: String

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

Required: Yes

### Schedule

A structure that contains information about how often the canary is to run and when these test runs are to stop.

Type: [CanaryScheduleInput](#) object

Required: Yes

### SuccessRetentionPeriodInDays

The number of days to retain data about successful runs of this canary. If you omit this field, the default of 31 days is used. The valid range is 1 to 455 days.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1024.

Required: No

### Tags

A list of key-value pairs to associate with the canary. You can associate as many as 50 tags with a canary.

Tags can help you organize and categorize your resources. You can also use them to scope user permissions, by granting a user permission to access or change only the resources that have certain tag values.

Type: String to string map

Map Entries: Maximum number of 50 items.

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

Key Pattern: `^(?!aws:)[a-zA-Z+ -= . _ : / ]+$`

Value Length Constraints: Maximum length of 256.

Required: No

## VpcConfig

If this canary is to test an endpoint in a VPC, this structure contains information about the subnet and security groups of the VPC endpoint. For more information, see [Running a Canary in a VPC](#).

Type: [VpcConfigInput](#) object

Required: No

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "Canary": {
    "ArtifactConfig": {
      "S3Encryption": {
        "EncryptionMode": "string",
        "KmsKeyArn": "string"
      }
    },
    "ArtifactS3Location": "string",
    "Code": {
      "Handler": "string",
      "SourceLocationArn": "string"
    },
    "EngineArn": "string",
    "ExecutionRoleArn": "string",
    "FailureRetentionPeriodInDays": number,
    "Id": "string",
    "Name": "string",
    "RunConfig": {
      "ActiveTracing": boolean,
      "MemoryInMB": number,
      "TimeoutInSeconds": number
    },
    "RuntimeVersion": "string",
    "Schedule": {
      "DurationInSeconds": number,
```

```
    "Expression": "string"
  },
  "Status": {
    "State": "string",
    "StateReason": "string",
    "StateReasonCode": "string"
  },
  "SuccessRetentionPeriodInDays": number,
  "Tags": {
    "string": "string"
  },
  "Timeline": {
    "Created": number,
    "LastModified": number,
    "LastStarted": number,
    "LastStopped": number
  },
  "VisualReference": {
    "BaseCanaryRunId": "string",
    "BaseScreenshots": [
      {
        "IgnoreCoordinates": [ "string " ],
        "ScreenshotName": "string"
      }
    ]
  },
  "VpcConfig": {
    "SecurityGroupIds": [ "string " ],
    "SubnetIds": [ "string " ],
    "VpcId": "string"
  }
}
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

### Canary

The full details about the canary you have created.

Type: [Canary](#) object

## Errors

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

### InternalServerErrorException

An unknown internal error occurred.

HTTP Status Code: 500

### RequestEntityTooLargeException

One of the input resources is larger than is allowed.

HTTP Status Code: 413

### ValidationException

A parameter could not be validated.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateGroup

Creates a group which you can use to associate canaries with each other, including cross-Region canaries. Using groups can help you with managing and automating your canaries, and you can also view aggregated run results and statistics for all canaries in a group.

Groups are global resources. When you create a group, it is replicated across AWS Regions, and you can view it and add canaries to it from any Region. Although the group ARN format reflects the Region name where it was created, a group is not constrained to any Region. This means that you can put canaries from multiple Regions into the same group, and then use that group to view and manage all of those canaries in a single view.

Groups are supported in all Regions except the Regions that are disabled by default. For more information about these Regions, see [Enabling a Region](#).

Each group can contain as many as 10 canaries. You can have as many as 20 groups in your account. Any single canary can be a member of up to 10 groups.

## Request Syntax

```
POST /group HTTP/1.1
Content-type: application/json
```

```
{
  "Name": "string",
  "Tags": {
    "string" : "string"
  }
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### Name

The name for the group. It can include any Unicode characters.

The names for all groups in your account, across all Regions, must be unique.

Type: String

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

Required: Yes

## Tags

A list of key-value pairs to associate with the group. You can associate as many as 50 tags with a group.

Tags can help you organize and categorize your resources. You can also use them to scope user permissions, by granting a user permission to access or change only the resources that have certain tag values.

Type: String to string map

Map Entries: Maximum number of 50 items.

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

Key Pattern:  $^(?!aws:)[a-zA-Z+-. _:/]+$

Value Length Constraints: Maximum length of 256.

Required: No

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "Group": {
    "Arn": "string",
    "CreatedTime": number,
    "Id": "string",
    "LastModifiedTime": number,
    "Name": "string",
    "Tags": {
      "string" : "string"
    }
  }
}
```



```
    }  
  }  
}
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

### Group

A structure that contains information about the group that was just created.

Type: [Group](#) object

## Errors

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

### **ConflictException**

A conflicting operation is already in progress.

HTTP Status Code: 409

### **InternalServerError**

An unknown internal error occurred.

HTTP Status Code: 500

### **ServiceQuotaExceededException**

The request exceeded a service quota value.

HTTP Status Code: 402

### **ValidationException**

A parameter could not be validated.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
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# DeleteCanary

Permanently deletes the specified canary.

If you specify `DeleteLambda` to `true`, CloudWatch Synthetics also deletes the Lambda functions and layers that are used by the canary.

Other resources used and created by the canary are not automatically deleted. After you delete a canary that you do not intend to use again, you should also delete the following:

- The CloudWatch alarms created for this canary. These alarms have a name of `Synthetics-SharpDrop-Alarm-MyCanaryName` .
- Amazon S3 objects and buckets, such as the canary's artifact location.
- IAM roles created for the canary. If they were created in the console, these roles have the name `role/service-role/CloudWatchSyntheticsRole-MyCanaryName` .
- CloudWatch Logs log groups created for the canary. These logs groups have the name `/aws/lambda/cwsyn-MyCanaryName` .

Before you delete a canary, you might want to use `GetCanary` to display the information about this canary. Make note of the information returned by this operation so that you can delete these resources after you delete the canary.

## Request Syntax

```
DELETE /canary/name?deleteLambda=DeleteLambda HTTP/1.1
```

## URI Request Parameters

The request uses the following URI parameters.

### DeleteLambda

Specifies whether to also delete the Lambda functions and layers used by this canary. The default is `false`.

Type: Boolean

## name

The name of the canary that you want to delete. To find the names of your canaries, use [DescribeCanaries](#).

Length Constraints: Minimum length of 1. Maximum length of 21.

Pattern: `^[0-9a-z_\-\-]+$`

Required: Yes

## Request Body

The request does not have a request body.

## Response Syntax

```
HTTP/1.1 200
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

## Errors

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

### **ConflictException**

A conflicting operation is already in progress.

HTTP Status Code: 409

### **InternalServerError**

An unknown internal error occurred.

HTTP Status Code: 500

### **ResourceNotFoundException**

One of the specified resources was not found.

HTTP Status Code: 404

## ValidationException

A parameter could not be validated.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteGroup

Deletes a group. The group doesn't need to be empty to be deleted. If there are canaries in the group, they are not deleted when you delete the group.

Groups are a global resource that appear in all Regions, but the request to delete a group must be made from its home Region. You can find the home Region of a group within its ARN.

## Request Syntax

```
DELETE /group/groupIdentifier HTTP/1.1
```

## URI Request Parameters

The request uses the following URI parameters.

### groupIdentifier

Specifies which group to delete. You can specify the group name, the ARN, or the group ID as the `GroupIdentifier`.

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

Required: Yes

## Request Body

The request does not have a request body.

## Response Syntax

```
HTTP/1.1 200
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

## Errors

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

## **ConflictException**

A conflicting operation is already in progress.

HTTP Status Code: 409

## **InternalServerError**

An unknown internal error occurred.

HTTP Status Code: 500

## **ResourceNotFoundException**

One of the specified resources was not found.

HTTP Status Code: 404

## **ValidationException**

A parameter could not be validated.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeCanaries

This operation returns a list of the canaries in your account, along with full details about each canary.

This operation supports resource-level authorization using an IAM policy and the `Names` parameter. If you specify the `Names` parameter, the operation is successful only if you have authorization to view all the canaries that you specify in your request. If you do not have permission to view any of the canaries, the request fails with a 403 response.

You are required to use the `Names` parameter if you are logged on to a user or role that has an IAM policy that restricts which canaries that you are allowed to view. For more information, see [Limiting a user to viewing specific canaries](#).

## Request Syntax

```
POST /canaries HTTP/1.1
Content-type: application/json

{
  "MaxResults": number,
  "Names": [ "string" ],
  "NextToken": "string"
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### MaxResults

Specify this parameter to limit how many canaries are returned each time you use the `DescribeCanaries` operation. If you omit this parameter, the default of 20 is used.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 20.



Required: No

## Names

Use this parameter to return only canaries that match the names that you specify here. You can specify as many as five canary names.

If you specify this parameter, the operation is successful only if you have authorization to view all the canaries that you specify in your request. If you do not have permission to view any of the canaries, the request fails with a 403 response.

You are required to use this parameter if you are logged on to a user or role that has an IAM policy that restricts which canaries that you are allowed to view. For more information, see [Limiting a user to viewing specific canaries](#).

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 5 items.

Length Constraints: Minimum length of 1. Maximum length of 21.

Pattern: `^[0-9a-z_\-\-]+$`

Required: No

## NextToken

A token that indicates that there is more data available. You can use this token in a subsequent operation to retrieve the next set of results.

Type: String

Length Constraints: Minimum length of 4. Maximum length of 252.

Required: No

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "Canaries": [
    {
```

```
"ArtifactConfig": {
  "S3Encryption": {
    "EncryptionMode": "string",
    "KmsKeyArn": "string"
  }
},
"ArtifactS3Location": "string",
"Code": {
  "Handler": "string",
  "SourceLocationArn": "string"
},
"EngineArn": "string",
"ExecutionRoleArn": "string",
"FailureRetentionPeriodInDays": number,
"Id": "string",
"Name": "string",
"RunConfig": {
  "ActiveTracing": boolean,
  "MemoryInMB": number,
  "TimeoutInSeconds": number
},
"RuntimeVersion": "string",
"Schedule": {
  "DurationInSeconds": number,
  "Expression": "string"
},
"Status": {
  "State": "string",
  "StateReason": "string",
  "StateReasonCode": "string"
},
"SuccessRetentionPeriodInDays": number,
"Tags": {
  "string" : "string"
},
"Timeline": {
  "Created": number,
  "LastModified": number,
  "LastStarted": number,
  "LastStopped": number
},
"VisualReference": {
  "BaseCanaryRunId": "string",
  "BaseScreenshots": [
```

```
    {
      "IgnoreCoordinates": [ "string" ],
      "ScreenshotName": "string"
    }
  ],
  "VpcConfig": {
    "SecurityGroupIds": [ "string" ],
    "SubnetIds": [ "string" ],
    "VpcId": "string"
  }
},
"NextToken": "string"
}
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

### Canaries

Returns an array. Each item in the array contains the full information about one canary.

Type: Array of [Canary](#) objects

### NextToken

A token that indicates that there is more data available. You can use this token in a subsequent `DescribeCanaries` operation to retrieve the next set of results.

Type: String

Length Constraints: Minimum length of 4. Maximum length of 252.

## Errors

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

### **InternalServerError**

An unknown internal error occurred.

HTTP Status Code: 500

## ValidationException

A parameter could not be validated.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeCanariesLastRun

Use this operation to see information from the most recent run of each canary that you have created.

This operation supports resource-level authorization using an IAM policy and the `Names` parameter. If you specify the `Names` parameter, the operation is successful only if you have authorization to view all the canaries that you specify in your request. If you do not have permission to view any of the canaries, the request fails with a 403 response.

You are required to use the `Names` parameter if you are logged on to a user or role that has an IAM policy that restricts which canaries that you are allowed to view. For more information, see [Limiting a user to viewing specific canaries](#).

## Request Syntax

```
POST /canaries/last-run HTTP/1.1
Content-type: application/json
```

```
{
  "MaxResults": number,
  "Names": [ "string" ],
  "NextToken": "string"
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### MaxResults

Specify this parameter to limit how many runs are returned each time you use the `DescribeLastRun` operation. If you omit this parameter, the default of 100 is used.

Type: Integer

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

Required: No

## Names

Use this parameter to return only canaries that match the names that you specify here. You can specify as many as five canary names.

If you specify this parameter, the operation is successful only if you have authorization to view all the canaries that you specify in your request. If you do not have permission to view any of the canaries, the request fails with a 403 response.

You are required to use the Names parameter if you are logged on to a user or role that has an IAM policy that restricts which canaries that you are allowed to view. For more information, see [Limiting a user to viewing specific canaries](#).

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 5 items.

Length Constraints: Minimum length of 1. Maximum length of 21.

Pattern: `^[0-9a-z_\-]+$`

Required: No

## NextToken

A token that indicates that there is more data available. You can use this token in a subsequent DescribeCanariesLastRun operation to retrieve the next set of results.

Type: String

Length Constraints: Minimum length of 4. Maximum length of 252.

Required: No

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json
```

```
{
  "CanariesLastRun": [
    {
      "CanaryName": "string",
      "LastRun": {
        "ArtifactS3Location": "string",
        "Id": "string",
        "Name": "string",
        "Status": {
          "State": "string",
          "StateReason": "string",
          "StateReasonCode": "string"
        },
        "Timeline": {
          "Completed": number,
          "Started": number
        }
      }
    }
  ],
  "NextToken": "string"
}
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

### CanariesLastRun

An array that contains the information from the most recent run of each canary.

Type: Array of [CanaryLastRun](#) objects

### NextToken

A token that indicates that there is more data available. You can use this token in a subsequent DescribeCanariesLastRun operation to retrieve the next set of results.

Type: String

Length Constraints: Minimum length of 4. Maximum length of 252.

## Errors

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

### InternalServerErrorException

An unknown internal error occurred.

HTTP Status Code: 500

### ValidationException

A parameter could not be validated.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)



# DescribeRuntimeVersions

Returns a list of Synthetics canary runtime versions. For more information, see [Canary Runtime Versions](#).

## Request Syntax

```
POST /runtime-versions HTTP/1.1
Content-type: application/json
```

```
{
  "MaxResults": number,
  "NextToken": "string"
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### [MaxResults](#)

Specify this parameter to limit how many runs are returned each time you use the DescribeRuntimeVersions operation. If you omit this parameter, the default of 100 is used.

Type: Integer

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

Required: No

### [NextToken](#)

A token that indicates that there is more data available. You can use this token in a subsequent DescribeRuntimeVersions operation to retrieve the next set of results.

Type: String

Length Constraints: Minimum length of 4. Maximum length of 252.

Required: No

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "NextToken": "string",
  "RuntimeVersions": [
    {
      "DeprecationDate": number,
      "Description": "string",
      "ReleaseDate": number,
      "VersionName": "string"
    }
  ]
}
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

### NextToken

A token that indicates that there is more data available. You can use this token in a subsequent DescribeRuntimeVersions operation to retrieve the next set of results.

Type: String

Length Constraints: Minimum length of 4. Maximum length of 252.

### RuntimeVersions

An array of objects that display the details about each Synthetics canary runtime version.

Type: Array of [RuntimeVersion](#) objects

## Errors

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

### InternalServerErrorException

An unknown internal error occurred.

HTTP Status Code: 500

### ValidationException

A parameter could not be validated.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DisassociateResource

Removes a canary from a group. You must run this operation in the Region where the canary exists.

## Request Syntax

```
PATCH /group/groupIdentifier/disassociate HTTP/1.1
Content-type: application/json

{
  "ResourceArn": "string"
}
```

## URI Request Parameters

The request uses the following URI parameters.

### groupIdentifier

Specifies the group. You can specify the group name, the ARN, or the group ID as the `GroupIdentifier`.

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

Required: Yes

## Request Body

The request accepts the following data in JSON format.

### ResourceArn

The ARN of the canary that you want to remove from the specified group.

Type: String

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

Pattern: `arn:(aws[a-zA-Z-]*)?:synthetics:[a-z]{2}((-gov)|(-iso(b?)))?-[a-z]+-\d{1}:\d{12}:canary:[0-9a-z_\-]{1,21}`

Required: Yes

## Response Syntax

```
HTTP/1.1 200
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

## Errors

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

### ConflictException

A conflicting operation is already in progress.

HTTP Status Code: 409

### InternalServerError

An unknown internal error occurred.

HTTP Status Code: 500

### ResourceNotFoundException

One of the specified resources was not found.

HTTP Status Code: 404

### ValidationException

A parameter could not be validated.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetCanary

Retrieves complete information about one canary. You must specify the name of the canary that you want. To get a list of canaries and their names, use [DescribeCanaries](#).

## Request Syntax

```
GET /canary/name HTTP/1.1
```

## URI Request Parameters

The request uses the following URI parameters.

### name

The name of the canary that you want details for.

Length Constraints: Minimum length of 1. Maximum length of 21.

Pattern: `^[0-9a-z_\-\-]+$`

Required: Yes

## Request Body

The request does not have a request body.

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "Canary": {
    "ArtifactConfig": {
      "S3Encryption": {
        "EncryptionMode": "string",
        "KmsKeyArn": "string"
      }
    },
    "ArtifactS3Location": "string",
```

```
"Code": {
  "Handler": "string",
  "SourceLocationArn": "string"
},
"EngineArn": "string",
"ExecutionRoleArn": "string",
"FailureRetentionPeriodInDays": number,
"Id": "string",
"Name": "string",
"RunConfig": {
  "ActiveTracing": boolean,
  "MemoryInMB": number,
  "TimeoutInSeconds": number
},
"RuntimeVersion": "string",
"Schedule": {
  "DurationInSeconds": number,
  "Expression": "string"
},
"Status": {
  "State": "string",
  "StateReason": "string",
  "StateReasonCode": "string"
},
"SuccessRetentionPeriodInDays": number,
"Tags": {
  "string" : "string"
},
"Timeline": {
  "Created": number,
  "LastModified": number,
  "LastStarted": number,
  "LastStopped": number
},
"VisualReference": {
  "BaseCanaryRunId": "string",
  "BaseScreenshots": [
    {
      "IgnoreCoordinates": [ "string" ],
      "ScreenshotName": "string"
    }
  ]
},
"VpcConfig": {
```



```
    "SecurityGroupIds": [ "string" ],
    "SubnetIds": [ "string" ],
    "VpcId": "string"
  }
}
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

### Canary

A structure that contains the full information about the canary.

Type: [Canary](#) object

## Errors

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

### **InternalServerError**

An unknown internal error occurred.

HTTP Status Code: 500

### **ValidationException**

A parameter could not be validated.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetCanaryRuns

Retrieves a list of runs for a specified canary.

## Request Syntax

```
POST /canary/name/runs HTTP/1.1
Content-type: application/json
```

```
{
  "MaxResults": number,
  "NextToken": "string"
}
```

## URI Request Parameters

The request uses the following URI parameters.

### name

The name of the canary that you want to see runs for.

Length Constraints: Minimum length of 1. Maximum length of 21.

Pattern: `^[0-9a-z_\-]+$`

Required: Yes

## Request Body

The request accepts the following data in JSON format.

### MaxResults

Specify this parameter to limit how many runs are returned each time you use the GetCanaryRuns operation. If you omit this parameter, the default of 100 is used.

Type: Integer

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

Required: No

## NextToken

A token that indicates that there is more data available. You can use this token in a subsequent `GetCanaryRuns` operation to retrieve the next set of results.

Type: String

Length Constraints: Minimum length of 4. Maximum length of 252.

Required: No

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "CanaryRuns": [
    {
      "ArtifactS3Location": "string",
      "Id": "string",
      "Name": "string",
      "Status": {
        "State": "string",
        "StateReason": "string",
        "StateReasonCode": "string"
      },
      "Timeline": {
        "Completed": number,
        "Started": number
      }
    }
  ],
  "NextToken": "string"
}
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

## CanaryRuns

An array of structures. Each structure contains the details of one of the retrieved canary runs.

Type: Array of [CanaryRun](#) objects

## NextToken

A token that indicates that there is more data available. You can use this token in a subsequent `GetCanaryRuns` operation to retrieve the next set of results.

Type: String

Length Constraints: Minimum length of 4. Maximum length of 252.

## Errors

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

### **InternalServerErrorException**

An unknown internal error occurred.

HTTP Status Code: 500

### **ResourceNotFoundException**

One of the specified resources was not found.

HTTP Status Code: 404

### **ValidationException**

A parameter could not be validated.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetGroup

Returns information about one group. Groups are a global resource, so you can use this operation from any Region.

## Request Syntax

```
GET /group/groupIdentifier HTTP/1.1
```

## URI Request Parameters

The request uses the following URI parameters.

### groupIdentifier

Specifies the group to return information for. You can specify the group name, the ARN, or the group ID as the `GroupIdentifier`.

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

Required: Yes

## Request Body

The request does not have a request body.

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "Group": {
    "Arn": "string",
    "CreatedTime": number,
    "Id": "string",
    "LastModifiedTime": number,
    "Name": "string",
    "Tags": {
      "string" : "string"
    }
  }
}
```

```
}  
  }  
}
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

### Group

A structure that contains information about the group.

Type: [Group](#) object

## Errors

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

### **ConflictException**

A conflicting operation is already in progress.

HTTP Status Code: 409

### **InternalServerError**

An unknown internal error occurred.

HTTP Status Code: 500

### **ResourceNotFoundException**

One of the specified resources was not found.

HTTP Status Code: 404

### **ValidationException**

A parameter could not be validated.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ListAssociatedGroups

Returns a list of the groups that the specified canary is associated with. The canary that you specify must be in the current Region.

## Request Syntax

```
POST /resource/resourceArn/groups HTTP/1.1
Content-type: application/json
```

```
{
  "MaxResults": number,
  "NextToken": "string"
}
```

## URI Request Parameters

The request uses the following URI parameters.

### [resourceArn](#)

The ARN of the canary that you want to view groups for.

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

Pattern: `arn:(aws[a-zA-Z-]*)?:synthetics:[a-z]{2}((-gov)|(-iso(b?)))?-[a-z]+-\d{1}:\d{12}:canary:[0-9a-z_\-]{1,21}`

Required: Yes

## Request Body

The request accepts the following data in JSON format.

### [MaxResults](#)

Specify this parameter to limit how many groups are returned each time you use the ListAssociatedGroups operation. If you omit this parameter, the default of 20 is used.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 20.

Required: No

### NextToken

A token that indicates that there is more data available. You can use this token in a subsequent operation to retrieve the next set of results.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 512.

Pattern: ^.+ \$

Required: No

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "Groups": [
    {
      "Arn": "string",
      "Id": "string",
      "Name": "string"
    }
  ],
  "NextToken": "string"
}
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

### Groups

An array of structures that contain information about the groups that this canary is associated with.

Type: Array of [GroupSummary](#) objects

### NextToken

A token that indicates that there is more data available. You can use this token in a subsequent `ListAssociatedGroups` operation to retrieve the next set of results.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 512.

Pattern: `^\.+`

## Errors

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

### **InternalServerError**

An unknown internal error occurred.

HTTP Status Code: 500

### **ResourceNotFoundException**

One of the specified resources was not found.

HTTP Status Code: 404

### **ValidationException**

A parameter could not be validated.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ListGroupResources

This operation returns a list of the ARNs of the canaries that are associated with the specified group.

## Request Syntax

```
POST /group/groupIdentifier/resources HTTP/1.1
Content-type: application/json
```

```
{
  "MaxResults": number,
  "NextToken": "string"
}
```

## URI Request Parameters

The request uses the following URI parameters.

### groupIdentifier

Specifies the group to return information for. You can specify the group name, the ARN, or the group ID as the `GroupIdentifier`.

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

Required: Yes

## Request Body

The request accepts the following data in JSON format.

### MaxResults

Specify this parameter to limit how many canary ARNs are returned each time you use the `ListGroupResources` operation. If you omit this parameter, the default of 20 is used.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 20.

Required: No

### NextToken

A token that indicates that there is more data available. You can use this token in a subsequent operation to retrieve the next set of results.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 512.

Pattern: `^.+`

Required: No

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "NextToken": "string",
  "Resources": [ "string" ]
}
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

### NextToken

A token that indicates that there is more data available. You can use this token in a subsequent `ListGroupResources` operation to retrieve the next set of results.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 512.

Pattern: `^.+`

## Resources

An array of ARNs. These ARNs are for the canaries that are associated with the group.

Type: Array of strings

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](#).

### **ConflictException**

A conflicting operation is already in progress.

HTTP Status Code: 409

### **InternalServerError**

An unknown internal error occurred.

HTTP Status Code: 500

### **ResourceNotFoundException**

One of the specified resources was not found.

HTTP Status Code: 404

### **ValidationException**

A parameter could not be validated.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ListGroups

Returns a list of all groups in the account, displaying their names, unique IDs, and ARNs. The groups from all Regions are returned.

## Request Syntax

```
POST /groups HTTP/1.1
Content-type: application/json
```

```
{
  "MaxResults": number,
  "NextToken": "string"
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### MaxResults

Specify this parameter to limit how many groups are returned each time you use the ListGroups operation. If you omit this parameter, the default of 20 is used.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 20.

Required: No

### NextToken

A token that indicates that there is more data available. You can use this token in a subsequent operation to retrieve the next set of results.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 512.

Pattern: `^\.+`

Required: No

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "Groups": [
    {
      "Arn": "string",
      "Id": "string",
      "Name": "string"
    }
  ],
  "NextToken": "string"
}
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

### Groups

An array of structures that each contain information about one group.

Type: Array of [GroupSummary](#) objects

### NextToken

A token that indicates that there is more data available. You can use this token in a subsequent `ListGroups` operation to retrieve the next set of results.

Type: String

Length Constraints: Minimum length of 4. Maximum length of 252.

## Errors

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

### InternalServerErrorException

An unknown internal error occurred.

HTTP Status Code: 500

### ValidationException

A parameter could not be validated.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ListTagsForResource

Displays the tags associated with a canary or group.

## Request Syntax

```
GET /tags/resourceArn HTTP/1.1
```

## URI Request Parameters

The request uses the following URI parameters.

### resourceArn

The ARN of the canary or group that you want to view tags for.

The ARN format of a canary is `arn:aws:synthetics:Region:account-id:canary:canary-name` .

The ARN format of a group is `arn:aws:synthetics:Region:account-id:group:group-name`

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

Pattern: `arn:(aws[a-zA-Z-]*)?:synthetics:[a-z]{2}((-gov)|(-iso(b?)))?-[a-z]+-\d{1}:\d{12}:(canary|group):[0-9a-z_\-]+`

Required: Yes

## Request Body

The request does not have a request body.

## Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "Tags": {
```

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

## Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

### Tags

The list of tag keys and values associated with the resource that you specified.

Type: String to string map

Map Entries: Maximum number of 50 items.

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

Key Pattern: `^(?!aws:)[a-zA-Z+-. _:/]+$`

Value Length Constraints: Maximum length of 256.

## Errors

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

### **BadRequestException**

The request was not valid.

HTTP Status Code: 400

### **ConflictException**

A conflicting operation is already in progress.

HTTP Status Code: 409

### **InternalFailureException**

An internal failure occurred. Try the operation again.

HTTP Status Code: 500

### **NotFoundException**

The specified resource was not found.

HTTP Status Code: 404

### **TooManyRequestsException**

There were too many simultaneous requests. Try the operation again.

HTTP Status Code: 429

## **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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# StartCanary

Use this operation to run a canary that has already been created. The frequency of the canary runs is determined by the value of the canary's `Schedule`. To see a canary's schedule, use [GetCanary](#).

## Request Syntax

```
POST /canary/name/start HTTP/1.1
```

## URI Request Parameters

The request uses the following URI parameters.

### name

The name of the canary that you want to run. To find canary names, use [DescribeCanaries](#).

Length Constraints: Minimum length of 1. Maximum length of 21.

Pattern: `^[0-9a-z_\-\ ]+$`

Required: Yes

## Request Body

The request does not have a request body.

## Response Syntax

```
HTTP/1.1 200
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

## Errors

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



## ConflictException

A conflicting operation is already in progress.

HTTP Status Code: 409

## InternalServerError

An unknown internal error occurred.

HTTP Status Code: 500

## ResourceNotFoundException

One of the specified resources was not found.

HTTP Status Code: 404

## ValidationException

A parameter could not be validated.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# StopCanary

Stops the canary to prevent all future runs. If the canary is currently running, the run that is in progress completes on its own, publishes metrics, and uploads artifacts, but it is not recorded in Synthetics as a completed run.

You can use `StartCanary` to start it running again with the canary's current schedule at any point in the future.

## Request Syntax

```
POST /canary/name/stop HTTP/1.1
```

## URI Request Parameters

The request uses the following URI parameters.

### name

The name of the canary that you want to stop. To find the names of your canaries, use [ListCanaries](#).

Length Constraints: Minimum length of 1. Maximum length of 21.

Pattern: `^[0-9a-z_\-]+$`

Required: Yes

## Request Body

The request does not have a request body.

## Response Syntax

```
HTTP/1.1 200
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

## Errors

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

### ConflictException

A conflicting operation is already in progress.

HTTP Status Code: 409

### InternalServerErrorException

An unknown internal error occurred.

HTTP Status Code: 500

### ResourceNotFoundException

One of the specified resources was not found.

HTTP Status Code: 404

### ValidationException

A parameter could not be validated.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)

- [AWS SDK for Ruby V3](#)

# TagResource

Assigns one or more tags (key-value pairs) to the specified canary or group.

Tags can help you organize and categorize your resources. You can also use them to scope user permissions, by granting a user permission to access or change only resources with certain tag values.

Tags don't have any semantic meaning to AWS and are interpreted strictly as strings of characters.

You can use the `TagResource` action with a resource that already has tags. If you specify a new tag key for the resource, this tag is appended to the list of tags associated with the resource. If you specify a tag key that is already associated with the resource, the new tag value that you specify replaces the previous value for that tag.

You can associate as many as 50 tags with a canary or group.

## Request Syntax

```
POST /tags/resourceArn HTTP/1.1
Content-type: application/json

{
  "Tags": {
    "string" : "string"
  }
}
```

## URI Request Parameters

The request uses the following URI parameters.

### resourceArn

The ARN of the canary or group that you're adding tags to.

The ARN format of a canary is `arn:aws:synthetics:Region:account-id:canary:canary-name` .

The ARN format of a group is `arn:aws:synthetics:Region:account-id:group:group-name`

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

Pattern: `arn:(aws[a-zA-Z-]*)?:synthetics:[a-z]{2}((-gov)|(-iso(b?)))?-[a-z]+-\d{1}:\d{12}:(canary|group):[0-9a-z_\-]+`

Required: Yes

## Request Body

The request accepts the following data in JSON format.

### Tags

The list of key-value pairs to associate with the resource.

Type: String to string map

Map Entries: Maximum number of 50 items.

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

Key Pattern: `^(?!aws:)[a-zA-Z+-. _:/]+$`

Value Length Constraints: Maximum length of 256.

Required: Yes

## Response Syntax

```
HTTP/1.1 200
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

## Errors

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

### BadRequestException

The request was not valid.

HTTP Status Code: 400

### **ConflictException**

A conflicting operation is already in progress.

HTTP Status Code: 409

### **InternalFailureException**

An internal failure occurred. Try the operation again.

HTTP Status Code: 500

### **NotFoundException**

The specified resource was not found.

HTTP Status Code: 404

### **TooManyRequestsException**

There were too many simultaneous requests. Try the operation again.

HTTP Status Code: 429

## **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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# UntagResource

Removes one or more tags from the specified resource.

## Request Syntax

```
DELETE /tags/resourceArn?tagKeys=TagKeys HTTP/1.1
```

## URI Request Parameters

The request uses the following URI parameters.

### resourceArn

The ARN of the canary or group that you're removing tags from.

The ARN format of a canary is `arn:aws:synthetics:Region:account-id:canary:canary-name` .

The ARN format of a group is `arn:aws:synthetics:Region:account-id:group:group-name`

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

Pattern: `arn:(aws[a-zA-Z-]*)?:synthetics:[a-z]{2}((-gov)|(-iso(b?)))?-[a-z]+-\d{1}:\d{12}:(canary|group):[0-9a-z_\-]+`

Required: Yes

### TagKeys

The list of tag keys to remove from the resource.

Array Members: Minimum number of 1 item. Maximum number of 50 items.

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

Pattern: `^(?!aws:)[a-zA-Z+-._:/*]+`

Required: Yes



## Request Body

The request does not have a request body.

## Response Syntax

```
HTTP/1.1 200
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

## Errors

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

### BadRequestException

The request was not valid.

HTTP Status Code: 400

### ConflictException

A conflicting operation is already in progress.

HTTP Status Code: 409

### InternalFailureException

An internal failure occurred. Try the operation again.

HTTP Status Code: 500

### NotFoundException

The specified resource was not found.

HTTP Status Code: 404

### TooManyRequestsException

There were too many simultaneous requests. Try the operation again.

HTTP Status Code: 429

## 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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# UpdateCanary

Updates the configuration of a canary that has already been created.

You can't use this operation to update the tags of an existing canary. To change the tags of an existing canary, use [TagResource](#).

## Request Syntax

```
PATCH /canary/name HTTP/1.1
Content-type: application/json

{
  "ArtifactConfig": {
    "S3Encryption": {
      "EncryptionMode": "string",
      "KmsKeyArn": "string"
    }
  },
  "ArtifactS3Location": "string",
  "Code": {
    "Handler": "string",
    "S3Bucket": "string",
    "S3Key": "string",
    "S3Version": "string",
    "ZipFile": blob
  },
  "ExecutionRoleArn": "string",
  "FailureRetentionPeriodInDays": number,
  "RunConfig": {
    "ActiveTracing": boolean,
    "EnvironmentVariables": {
      "string": "string"
    },
    "MemoryInMB": number,
    "TimeoutInSeconds": number
  },
  "RuntimeVersion": "string",
  "Schedule": {
    "DurationInSeconds": number,
    "Expression": "string"
  },
  "SuccessRetentionPeriodInDays": number,
```

```
"VisualReference": {
  "BaseCanaryRunId": "string",
  "BaseScreenshots": [
    {
      "IgnoreCoordinates": [ "string" ],
      "ScreenshotName": "string"
    }
  ]
},
"VpcConfig": {
  "SecurityGroupIds": [ "string" ],
  "SubnetIds": [ "string" ]
}
}
```

## URI Request Parameters

The request uses the following URI parameters.

### name

The name of the canary that you want to update. To find the names of your canaries, use [DescribeCanaries](#).

You cannot change the name of a canary that has already been created.

Length Constraints: Minimum length of 1. Maximum length of 21.

Pattern: `^[0-9a-z_\-]+$`

Required: Yes

## Request Body

The request accepts the following data in JSON format.

### ArtifactConfig

A structure that contains the configuration for canary artifacts, including the encryption-at-rest settings for artifacts that the canary uploads to Amazon S3.

Type: [ArtifactConfigInput](#) object

Required: No

### ArtifactS3Location

The location in Amazon S3 where Synthetics stores artifacts from the test runs of this canary. Artifacts include the log file, screenshots, and HAR files. The name of the S3 bucket can't include a period (.).

Type: String

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

Required: No

### Code

A structure that includes the entry point from which the canary should start running your script. If the script is stored in an S3 bucket, the bucket name, key, and version are also included.

Type: [CanaryCodeInput](#) object

Required: No

### ExecutionRoleArn

The ARN of the IAM role to be used to run the canary. This role must already exist, and must include `lambda.amazonaws.com` as a principal in the trust policy. The role must also have the following permissions:

- `s3:PutObject`
- `s3:GetBucketLocation`
- `s3:ListAllMyBuckets`
- `cloudwatch:PutMetricData`
- `logs:CreateLogGroup`
- `logs:CreateLogStream`
- `logs:CreateLogStream`

Type: String

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

Pattern: `arn:(aws[a-zA-Z-]*)?:iam::\d{12}:role/?[a-zA-Z_0-9+=,.\@-\_/\]+`

Required: No

### FailureRetentionPeriodInDays

The number of days to retain data about failed runs of this canary.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1024.

Required: No

### RunConfig

A structure that contains the timeout value that is used for each individual run of the canary.

#### **Important**

The environment variables keys and values are not encrypted. Do not store sensitive information in this field.

Type: [CanaryRunConfigInput](#) object

Required: No

### RuntimeVersion

Specifies the runtime version to use for the canary. For a list of valid runtime versions and for more information about runtime versions, see [Canary Runtime Versions](#).

Type: String

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

Required: No

### Schedule

A structure that contains information about how often the canary is to run, and when these runs are to stop.

Type: [CanaryScheduleInput](#) object

Required: No

### SuccessRetentionPeriodInDays

The number of days to retain data about successful runs of this canary.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1024.

Required: No

### VisualReference

Defines the screenshots to use as the baseline for comparisons during visual monitoring comparisons during future runs of this canary. If you omit this parameter, no changes are made to any baseline screenshots that the canary might be using already.

Visual monitoring is supported only on canaries running the **syn-puppeteer-node-3.2** runtime or later. For more information, see [Visual monitoring](#) and [Visual monitoring blueprint](#)

Type: [VisualReferenceInput](#) object

Required: No

### VpcConfig

If this canary is to test an endpoint in a VPC, this structure contains information about the subnet and security groups of the VPC endpoint. For more information, see [Running a Canary in a VPC](#).

Type: [VpcConfigInput](#) object

Required: No

## Response Syntax

```
HTTP/1.1 200
```

## Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

## Errors

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

### ConflictException

A conflicting operation is already in progress.

HTTP Status Code: 409

### InternalServerErrorException

An unknown internal error occurred.

HTTP Status Code: 500

### RequestEntityTooLargeException

One of the input resources is larger than is allowed.

HTTP Status Code: 413

### ResourceNotFoundException

One of the specified resources was not found.

HTTP Status Code: 404

### ValidationException

A parameter could not be validated.

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 v2](#)



- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# Data Types

The Synthetics 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:

- [ArtifactConfigInput](#)
- [ArtifactConfigOutput](#)
- [BaseScreenshot](#)
- [Canary](#)
- [CanaryCodeInput](#)
- [CanaryCodeOutput](#)
- [CanaryLastRun](#)
- [CanaryRun](#)
- [CanaryRunConfigInput](#)
- [CanaryRunConfigOutput](#)
- [CanaryRunStatus](#)
- [CanaryRunTimeline](#)
- [CanaryScheduleInput](#)
- [CanaryScheduleOutput](#)
- [CanaryStatus](#)
- [CanaryTimeline](#)
- [Group](#)
- [GroupSummary](#)
- [RuntimeVersion](#)
- [S3EncryptionConfig](#)

- [VisualReferenceInput](#)
- [VisualReferenceOutput](#)
- [VpcConfigInput](#)
- [VpcConfigOutput](#)

# ArtifactConfigInput

A structure that contains the configuration for canary artifacts, including the encryption-at-rest settings for artifacts that the canary uploads to Amazon S3.

## Contents

### S3Encryption

A structure that contains the configuration of the encryption-at-rest settings for artifacts that the canary uploads to Amazon S3. Artifact encryption functionality is available only for canaries that use Synthetics runtime version `syn-nodejs-puppeteer-3.3` or later. For more information, see [Encrypting canary artifacts](#)

Type: [S3EncryptionConfig](#) object

Required: No

## See Also

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

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

# ArtifactConfigOutput

A structure that contains the configuration for canary artifacts, including the encryption-at-rest settings for artifacts that the canary uploads to Amazon S3.

## Contents

### S3Encryption

A structure that contains the configuration of encryption settings for canary artifacts that are stored in Amazon S3.

Type: [S3EncryptionConfig](#) object

Required: No

## See Also

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

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

# BaseScreenshot

A structure representing a screenshot that is used as a baseline during visual monitoring comparisons made by the canary.

## Contents

### ScreenshotName

The name of the screenshot. This is generated the first time the canary is run after the `UpdateCanary` operation that specified for this canary to perform visual monitoring.

Type: String

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

Required: Yes

### IgnoreCoordinates

Coordinates that define the part of a screen to ignore during screenshot comparisons. To obtain the coordinates to use here, use the CloudWatch console to draw the boundaries on the screen. For more information, see [Editing or deleting a canary](#)

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 20 items.

Pattern: `^( -?\d{1,5}\.?\d{0,2}, ){3}( -?\d{1,5}\.?\d{0,2}){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 Java V2](#)
- [AWS SDK for Ruby V3](#)



# Canary

This structure contains all information about one canary in your account.

## Contents

### ArtifactConfig

A structure that contains the configuration for canary artifacts, including the encryption-at-rest settings for artifacts that the canary uploads to Amazon S3.

Type: [ArtifactConfigOutput](#) object

Required: No

### ArtifactS3Location

The location in Amazon S3 where Synthetics stores artifacts from the runs of this canary. Artifacts include the log file, screenshots, and HAR files.

Type: String

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

Required: No

### Code

This structure contains information about the canary's Lambda handler and where its code is stored by CloudWatch Synthetics.

Type: [CanaryCodeOutput](#) object

Required: No

### EngineArn

The ARN of the Lambda function that is used as your canary's engine. For more information about Lambda ARN format, see [Resources and Conditions for Lambda Actions](#).

Type: String

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



Pattern: `arn:(aws[a-zA-Z-]*)?:lambda:[a-z]{2}((-gov)|(-iso(b?)))?-[a-z]+\d{1}:\d{12}:function:[a-zA-Z0-9-_]+(:(\$LATEST|[a-zA-Z0-9-_]+))?`

Required: No

### ExecutionRoleArn

The ARN of the IAM role used to run the canary. This role must include `lambda.amazonaws.com` as a principal in the trust policy.

Type: String

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

Pattern: `arn:(aws[a-zA-Z-]*)?:iam::\d{12}:role/?[a-zA-Z_0-9+=,.\@-_/]+`

Required: No

### FailureRetentionPeriodInDays

The number of days to retain data about failed runs of this canary.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1024.

Required: No

### Id

The unique ID of this canary.

Type: String

Pattern: `^[a-f0-9]{8}-[a-f0-9]{4}-[a-f0-9]{4}-[a-f0-9]{4}-[a-f0-9]{12}$`

Required: No

### Name

The name of the canary.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 21.

Pattern: `^[0-9a-z_\-\-]+$`

Required: No

## RunConfig

A structure that contains information about a canary run.

Type: [CanaryRunConfigOutput](#) object

Required: No

## RuntimeVersion

Specifies the runtime version to use for the canary. For more information about runtime versions, see [Canary Runtime Versions](#).

Type: String

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

Required: No

## Schedule

A structure that contains information about how often the canary is to run, and when these runs are to stop.

Type: [CanaryScheduleOutput](#) object

Required: No

## Status

A structure that contains information about the canary's status.

Type: [CanaryStatus](#) object

Required: No

## SuccessRetentionPeriodInDays

The number of days to retain data about successful runs of this canary.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1024.

Required: No

## Tags

The list of key-value pairs that are associated with the canary.

Type: String to string map

Map Entries: Maximum number of 50 items.

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

Key Pattern: `^(?!aws:)[a-zA-Z+-. _:/]+$`

Value Length Constraints: Maximum length of 256.

Required: No

## Timeline

A structure that contains information about when the canary was created, modified, and most recently run.

Type: [CanaryTimeline](#) object

Required: No

## VisualReference

If this canary performs visual monitoring by comparing screenshots, this structure contains the ID of the canary run to use as the baseline for screenshots, and the coordinates of any parts of the screen to ignore during the visual monitoring comparison.

Type: [VisualReferenceOutput](#) object

Required: No

## VpcConfig

If this canary is to test an endpoint in a VPC, this structure contains information about the subnets and security groups of the VPC endpoint. For more information, see [Running a Canary in a VPC](#).

Type: [VpcConfigOutput](#) object

Required: No

## See Also

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

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

# CanaryCodeInput

Use this structure to input your script code for the canary. This structure contains the Lambda handler with the location where the canary should start running the script. If the script is stored in an S3 bucket, the bucket name, key, and version are also included. If the script was passed into the canary directly, the script code is contained in the value of `Zipfile`.

If you are uploading your canary scripts with an Amazon S3 bucket, your zip file should include your script in a certain folder structure.

- For Node.js canaries, the folder structure must be `nodejs/  
node_modules/myCanaryFilename.js` For more information, see [Packaging your Node.js canary files](#)
- For Python canaries, the folder structure must be `python/myCanaryFilename.p` or `python/myFolder/myCanaryFilename.py` For more information, see [Packaging your Python canary files](#)

## Contents

### Handler

The entry point to use for the source code when running the canary. For canaries that use the `syn-python-selenium-1.0` runtime or a `syn-nodejs.puppeteer` runtime earlier than `syn-nodejs.puppeteer-3.4`, the handler must be specified as `fileName.handler`. For `syn-python-selenium-1.1`, `syn-nodejs.puppeteer-3.4`, and later runtimes, the handler can be specified as `fileName.functionName`, or you can specify a folder where canary scripts reside as `folder/fileName.functionName`.

Type: String

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

Pattern: `^([0-9a-zA-Z_-]+\\|)*[0-9A-Za-z_\\-]+\\. [A-Za-z_][A-Za-z0-9_]*$`

Required: Yes

### S3Bucket

If your canary script is located in S3, specify the bucket name here. Do not include `s3://` as the start of the bucket name.

Type: String

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

Required: No

### **S3Key**

The S3 key of your script. For more information, see [Working with Amazon S3 Objects](#).

Type: String

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

Required: No

### **S3Version**

The S3 version ID of your script.

Type: String

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

Required: No

### **ZipFile**

If you input your canary script directly into the canary instead of referring to an S3 location, the value of this parameter is the base64-encoded contents of the .zip file that contains the script. It must be smaller than 225 Kb.

For large canary scripts, we recommend that you use an S3 location instead of inputting it directly with this parameter.

Type: Base64-encoded binary data object

Length Constraints: Minimum length of 1. Maximum length of 10000000.

Required: No

## **See Also**

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

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

# CanaryCodeOutput

This structure contains information about the canary's Lambda handler and where its code is stored by CloudWatch Synthetics.

## Contents

### Handler

The entry point to use for the source code when running the canary.

Type: String

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

Required: No

### SourceLocationArn

The ARN of the Lambda layer where Synthetics stores the canary script code.

Type: String

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

Required: No

## See Also

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

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



# CanaryLastRun

This structure contains information about the most recent run of a single canary.

## Contents

### CanaryName

The name of the canary.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 21.

Pattern: `^[0-9a-z_\-]+$`

Required: No

### LastRun

The results from this canary's most recent run.

Type: [CanaryRun](#) object

Required: No

## See Also

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

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

# CanaryRun

This structure contains the details about one run of one canary.

## Contents

### ArtifactS3Location

The location where the canary stored artifacts from the run. Artifacts include the log file, screenshots, and HAR files.

Type: String

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

Required: No

### Id

A unique ID that identifies this canary run.

Type: String

Pattern: `^[a-f0-9]{8}-[a-f0-9]{4}-[a-f0-9]{4}-[a-f0-9]{4}-[a-f0-9]{12}$`

Required: No

### Name

The name of the canary.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 21.

Pattern: `^[0-9a-z_\-\-]+$`

Required: No

### Status

The status of this run.

Type: [CanaryRunStatus](#) object

Required: No

## Timeline

A structure that contains the start and end times of this run.

Type: [CanaryRunTimeline](#) object

Required: No

## See Also

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

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

# CanaryRunConfigInput

A structure that contains input information for a canary run.

## Contents

### ActiveTracing

Specifies whether this canary is to use active AWS X-Ray tracing when it runs. Active tracing enables this canary run to be displayed in the ServiceLens and X-Ray service maps even if the canary does not hit an endpoint that has X-Ray tracing enabled. Using X-Ray tracing incurs charges. For more information, see [Canaries and X-Ray tracing](#).

You can enable active tracing only for canaries that use version `syn-nodejs-2.0` or later for their canary runtime.

Type: Boolean

Required: No

### EnvironmentVariables

Specifies the keys and values to use for any environment variables used in the canary script. Use the following format:

```
{ "key1" : "value1", "key2" : "value2", ... }
```

Keys must start with a letter and be at least two characters. The total size of your environment variables cannot exceed 4 KB. You can't specify any Lambda reserved environment variables as the keys for your environment variables. For more information about reserved keys, see [Runtime environment variables](#).

#### Important

The environment variables keys and values are not encrypted. Do not store sensitive information in this field.

Type: String to string map

Key Pattern: `[a-zA-Z]([a-zA-Z0-9_])+`

Required: No

### **MemoryInMB**

The maximum amount of memory available to the canary while it is running, in MB. This value must be a multiple of 64.

Type: Integer

Valid Range: Minimum value of 960. Maximum value of 3008.

Required: No

### **TimeoutInSeconds**

How long the canary is allowed to run before it must stop. You can't set this time to be longer than the frequency of the runs of this canary.

If you omit this field, the frequency of the canary is used as this value, up to a maximum of 14 minutes.

Type: Integer

Valid Range: Minimum value of 3. Maximum value of 840.

Required: No

## **See Also**

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

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

# CanaryRunConfigOutput

A structure that contains information about a canary run.

## Contents

### ActiveTracing

Displays whether this canary run used active X-Ray tracing.

Type: Boolean

Required: No

### MemoryInMB

The maximum amount of memory available to the canary while it is running, in MB. This value must be a multiple of 64.

Type: Integer

Valid Range: Minimum value of 960. Maximum value of 3008.

Required: No

### TimeoutInSeconds

How long the canary is allowed to run before it must stop.

Type: Integer

Valid Range: Minimum value of 3. Maximum value of 840.

Required: No

## See Also

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

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

- [AWS SDK for Ruby V3](#)

# CanaryRunStatus

This structure contains the status information about a canary run.

## Contents

### State

The current state of the run.

Type: String

Valid Values: RUNNING | PASSED | FAILED

Required: No

### StateReason

If run of the canary failed, this field contains the reason for the error.

Type: String

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

Required: No

### StateReasonCode

If this value is CANARY\_FAILURE, an exception occurred in the canary code. If this value is EXECUTION\_FAILURE, an exception occurred in CloudWatch Synthetics.

Type: String

Valid Values: CANARY\_FAILURE | EXECUTION\_FAILURE

Required: No

## See Also

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

- [AWS SDK for C++](#)



- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CanaryRunTimeline

This structure contains the start and end times of a single canary run.

## Contents

### Completed

The end time of the run.

Type: Timestamp

Required: No

### Started

The start time of the run.

Type: Timestamp

Required: No

## See Also

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

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

# CanaryScheduleInput

This structure specifies how often a canary is to make runs and the date and time when it should stop making runs.

## Contents

### Expression

A rate expression or a cron expression that defines how often the canary is to run.

For a rate expression, The syntax is `rate(number unit)`. *unit* can be `minute`, `minutes`, or `hour`.

For example, `rate(1 minute)` runs the canary once a minute, `rate(10 minutes)` runs it once every 10 minutes, and `rate(1 hour)` runs it once every hour. You can specify a frequency between `rate(1 minute)` and `rate(1 hour)`.

Specifying `rate(0 minute)` or `rate(0 hour)` is a special value that causes the canary to run only once when it is started.

Use `cron(expression)` to specify a cron expression. You can't schedule a canary to wait for more than a year before running. For information about the syntax for cron expressions, see [Scheduling canary runs using cron](#).

Type: String

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

Required: Yes

### DurationInSeconds

How long, in seconds, for the canary to continue making regular runs according to the schedule in the `Expression` value. If you specify 0, the canary continues making runs until you stop it. If you omit this field, the default of 0 is used.

Type: Long

Valid Range: Minimum value of 0. Maximum value of 31622400.

Required: No

## See Also

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

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

# CanaryScheduleOutput

How long, in seconds, for the canary to continue making regular runs according to the schedule in the `Expression` value.

## Contents

### DurationInSeconds

How long, in seconds, for the canary to continue making regular runs after it was created. The runs are performed according to the schedule in the `Expression` value.

Type: Long

Valid Range: Minimum value of 0. Maximum value of 31622400.

Required: No

### Expression

A rate expression or a cron expression that defines how often the canary is to run.

For a rate expression, The syntax is `rate(number unit)`. `unit` can be `minute`, `minutes`, or `hour`.

For example, `rate(1 minute)` runs the canary once a minute, `rate(10 minutes)` runs it once every 10 minutes, and `rate(1 hour)` runs it once every hour. You can specify a frequency between `rate(1 minute)` and `rate(1 hour)`.

Specifying `rate(0 minute)` or `rate(0 hour)` is a special value that causes the canary to run only once when it is started.

Use `cron(expression)` to specify a cron expression. For information about the syntax for cron expressions, see [Scheduling canary runs using cron](#).

Type: String

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

Required: No

## See Also

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

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

# CanaryStatus

A structure that contains the current state of the canary.

## Contents

### State

The current state of the canary.

Type: String

Valid Values: CREATING | READY | STARTING | RUNNING | UPDATING | STOPPING | STOPPED | ERROR | DELETING

Required: No

### StateReason

If the canary has insufficient permissions to run, this field provides more details.

Type: String

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

Required: No

### StateReasonCode

If the canary cannot run or has failed, this field displays the reason.

Type: String

Valid Values: INVALID\_PERMISSIONS | CREATE\_PENDING | CREATE\_IN\_PROGRESS | CREATE\_FAILED | UPDATE\_PENDING | UPDATE\_IN\_PROGRESS | UPDATE\_COMPLETE | ROLLBACK\_COMPLETE | ROLLBACK\_FAILED | DELETE\_IN\_PROGRESS | DELETE\_FAILED | SYNC\_DELETE\_IN\_PROGRESS

Required: No

## See Also

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

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



# CanaryTimeline

This structure contains information about when the canary was created and modified.

## Contents

### Created

The date and time the canary was created.

Type: Timestamp

Required: No

### LastModified

The date and time the canary was most recently modified.

Type: Timestamp

Required: No

### LastStarted

The date and time that the canary's most recent run started.

Type: Timestamp

Required: No

### LastStopped

The date and time that the canary's most recent run ended.

Type: Timestamp

Required: No

## See Also

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

- [AWS SDK for C++](#)

- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Group

This structure contains information about one group.

## Contents

### Arn

The ARN of the group.

Type: String

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

Pattern: `arn:(aws[a-zA-Z-]*)?:synthetics:[a-z]{2}((-gov)|(-iso(b?)))?-[a-z]+-\d{1}:\d{12}:group:[0-9a-z]+`

Required: No

### CreatedTime

The date and time that the group was created.

Type: Timestamp

Required: No

### Id

The unique ID of the group.

Type: String

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

Required: No

### LastModifiedTime

The date and time that the group was most recently updated.

Type: Timestamp

Required: No

## Name

The name of the group.

Type: String

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

Required: No

## Tags

The list of key-value pairs that are associated with the canary.

Type: String to string map

Map Entries: Maximum number of 50 items.

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

Key Pattern: `^(?!aws:)[a-zA-Z+ -= ._: /]+`

Value Length Constraints: Maximum length of 256.

Required: No

## See Also

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

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

# GroupSummary

A structure containing some information about a group.

## Contents

### Arn

The ARN of the group.

Type: String

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

Pattern: `arn:(aws[a-zA-Z-]*)?:synthetics:[a-z]{2}((-gov)|(-iso(b?)))?-[a-z]+-\d{1}:\d{12}:group:[0-9a-z]+`

Required: No

### Id

The unique ID of the group.

Type: String

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

Required: No

### Name

The name of the group.

Type: String

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

Required: No

## See Also

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

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

# RuntimeVersion

This structure contains information about one canary runtime version. For more information about runtime versions, see [Canary Runtime Versions](#).

## Contents

### DeprecationDate

If this runtime version is deprecated, this value is the date of deprecation.

Type: Timestamp

Required: No

### Description

A description of the runtime version, created by Amazon.

Type: String

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

Required: No

### ReleaseDate

The date that the runtime version was released.

Type: Timestamp

Required: No

### VersionName

The name of the runtime version. For a list of valid runtime versions, see [Canary Runtime Versions](#).

Type: String

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

Required: No

## See Also

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

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



# S3EncryptionConfig

A structure that contains the configuration of encryption-at-rest settings for canary artifacts that the canary uploads to Amazon S3.

For more information, see [Encrypting canary artifacts](#)

## Contents

### EncryptionMode

The encryption method to use for artifacts created by this canary. Specify `SSE_S3` to use server-side encryption (SSE) with an Amazon S3-managed key. Specify `SSE-KMS` to use server-side encryption with a customer-managed AWS KMS key.

If you omit this parameter, an AWS-managed AWS KMS key is used.

Type: String

Valid Values: `SSE_S3` | `SSE_KMS`

Required: No

### KmsKeyArn

The ARN of the customer-managed AWS KMS key to use, if you specify `SSE-KMS` for `EncryptionMode`

Type: String

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

Pattern: `arn:(aws[a-zA-Z-]*)?:kms:[a-z]{2}((-gov)|(-iso(b?)))?-[a-z]+-\d{1}:\d{12}:key/[\w\-\V]+`

Required: No

## See Also

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

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

# VisualReferenceInput

An object that specifies what screenshots to use as a baseline for visual monitoring by this canary. It can optionally also specify parts of the screenshots to ignore during the visual monitoring comparison.

Visual monitoring is supported only on canaries running the **syn-puppeteer-node-3.2** runtime or later. For more information, see [Visual monitoring](#) and [Visual monitoring blueprint](#)

## Contents

### BaseCanaryRunId

Specifies which canary run to use the screenshots from as the baseline for future visual monitoring with this canary. Valid values are `nextrun` to use the screenshots from the next run after this update is made, `lastrun` to use the screenshots from the most recent run before this update was made, or the value of `Id` in the [CanaryRun](#) from any past run of this canary.

Type: String

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

Required: Yes

### BaseScreenshots

An array of screenshots that will be used as the baseline for visual monitoring in future runs of this canary. If there is a screenshot that you don't want to be used for visual monitoring, remove it from this array.

Type: Array of [BaseScreenshot](#) objects

Required: No

## See Also

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

- [AWS SDK for C++](#)

- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VisualReferenceOutput

If this canary performs visual monitoring by comparing screenshots, this structure contains the ID of the canary run that is used as the baseline for screenshots, and the coordinates of any parts of those screenshots that are ignored during visual monitoring comparison.

Visual monitoring is supported only on canaries running the **syn-puppeteer-node-3.2** runtime or later.

## Contents

### BaseCanaryRunId

The ID of the canary run that produced the baseline screenshots that are used for visual monitoring comparisons by this canary.

Type: String

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

Required: No

### BaseScreenshots

An array of screenshots that are used as the baseline for comparisons during visual monitoring.

Type: Array of [BaseScreenshot](#) objects

Required: No

## See Also

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

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

# VpcConfigInput

If this canary is to test an endpoint in a VPC, this structure contains information about the subnets and security groups of the VPC endpoint. For more information, see [Running a Canary in a VPC](#).

## Contents

### SecurityGroupIds

The IDs of the security groups for this canary.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 5 items.

Required: No

### SubnetIds

The IDs of the subnets where this canary is to run.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 16 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 Java V2](#)
- [AWS SDK for Ruby V3](#)

# VpcConfigOutput

If this canary is to test an endpoint in a VPC, this structure contains information about the subnets and security groups of the VPC endpoint. For more information, see [Running a Canary in a VPC](#).

## Contents

### SecurityGroupIds

The IDs of the security groups for this canary.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 5 items.

Required: No

### SubnetIds

The IDs of the subnets where this canary is to run.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 16 items.

Required: No

### VpcId

The IDs of the VPC where this canary is to run.

Type: String

Required: No

## See Also

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

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

- [AWS SDK for Ruby V3](#)



# Common Parameters

The following list contains the parameters that all actions use for signing Signature Version 4 requests with a query string. Any action-specific parameters are listed in the topic for that action. For more information about Signature Version 4, see [Signing AWS API requests](#) in the *IAM User Guide*.

## Action

The action to be performed.

Type: string

Required: Yes

## Version

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

Type: string

Required: Yes

## X-Amz-Algorithm

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

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

Type: string

Valid Values: AWS4-HMAC-SHA256

Required: Conditional

## X-Amz-Credential

The credential scope value, which is a string that includes your access key, the date, the region you are targeting, the service you are requesting, and a termination string ("aws4\_request"). The value is expressed in the following format: *access\_key/YYYYMMDD/region/service/aws4\_request*.

For more information, see [Create a signed AWS API request](#) in the *IAM User Guide*.

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

Type: string

Required: Conditional

### **X-Amz-Date**

The date that is used to create the signature. The format must be ISO 8601 basic format (YYYYMMDD'T'HHMMSS'Z'). For example, the following date time is a valid X-Amz-Date value: 20120325T120000Z.

Condition: X-Amz-Date is optional for all requests; it can be used to override the date used for signing requests. If the Date header is specified in the ISO 8601 basic format, X-Amz-Date is not required. When X-Amz-Date is used, it always overrides the value of the Date header. For more information, see [Elements of an AWS API request signature](#) in the *IAM User Guide*.

Type: string

Required: Conditional

### **X-Amz-Security-Token**

The temporary security token that was obtained through a call to AWS Security Token Service (AWS STS). For a list of services that support temporary security credentials from AWS STS, see [AWS services that work with IAM](#) in the *IAM User Guide*.

Condition: If you're using temporary security credentials from AWS STS, you must include the security token.

Type: string

Required: Conditional

### **X-Amz-Signature**

Specifies the hex-encoded signature that was calculated from the string to sign and the derived signing key.

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

Type: string

Required: Conditional

### **X-Amz-SignedHeaders**

Specifies all the HTTP headers that were included as part of the canonical request. For more information about specifying signed headers, see [Create a signed AWS API request](#) in the *IAM User Guide*.

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

Type: string

Required: Conditional

# Common 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: 403

## **ExpiredTokenException**

The security token included in the request is expired

HTTP Status Code: 403

## **IncompleteSignature**

The request signature does not conform to AWS standards.

HTTP Status Code: 403

## **InternalFailure**

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

HTTP Status Code: 500

## **MalformedHttpRequestException**

Problems with the request at the HTTP level, e.g. we can't decompress the body according to the decompression algorithm specified by the content-encoding.

HTTP Status Code: 400

## **NotAuthorized**

You do not have permission to perform this action.

HTTP Status Code: 401

## **OptInRequired**

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

HTTP Status Code: 403

### **RequestAbortedException**

Convenient exception that can be used when a request is aborted before a reply is sent back (e.g. client closed connection).

HTTP Status Code: 400

### **RequestEntityTooLargeException**

Problems with the request at the HTTP level. The request entity is too large.

HTTP Status Code: 413

### **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

### **RequestTimeoutException**

Problems with the request at the HTTP level. Reading the Request timed out.

HTTP Status Code: 408

### **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

### **UnrecognizedClientException**

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

HTTP Status Code: 403

**UnknownOperationException**

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

HTTP Status Code: 404

**ValidationError**

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

HTTP Status Code: 400