Amazon CloudWatch Synthetics

Welcome

API Version 2017-10-11

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.

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Actions

The following actions are supported:

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 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

{
   "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.

ArtifactS3Location (p. 3)

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 (p. 3)

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 (p. 44) object

Required: Yes

ExecutionRoleArn (p. 3)

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 (p. 3)

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 (p. 3)

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 (p. 3)

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

Type: CanaryRunConfigInput (p. 50) object

Required: No

RuntimeVersion (p. 3)

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 (p. 3)

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

Type: CanaryScheduleInput (p. 55) object

Required: Yes

SuccessRetentionPeriodInDays (p. 3)

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 (p. 3)

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 (p. 3)

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 (p. 62) object

Required: No

Response Syntax

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

{
   "Canary": {
      "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 (p. 6)

The full details about the canary you have created.

Type: Canary (p. 41) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 66).

InternalServerException

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

DeleteCanary

Permanently deletes the specified canary.

When you delete a canary, 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 Lambda functions and layers used by this canary. These have the prefix `cwsyn-`*`MyCanaryName`* .
- 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 HTTP/1.1
```

URI Request Parameters

The request uses the following URI parameters.

name (p. 8)

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 (p. 66).

ConflictException

A conflicting operation is already in progress.

HTTP Status Code: 409

InternalServerException

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
- AWS SDK for Java V2
- AWS SDK for JavaScript
- 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 does not have resource-level authorization, so if a user is able to use `DescribeCanaries`, the user can see all of the canaries in the account. A deny policy can only be used to restrict access to all canaries. It cannot be used on specific resources.

Request Syntax

```
POST /canaries 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 (p. 10)

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 100 is used.

Type: Integer

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

Required: No

NextToken (p. 10)

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": [
```

```
      {
         "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 (p. 10)

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

Type: Array of Canary (p. 41) objects

NextToken (p. 10)

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 (p. 66).

InternalServerException

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
- AWS SDK for Java V2
- AWS SDK for JavaScript
- 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.

Request Syntax

```
POST /canaries/last-run 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 (p. 13)

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

NextToken (p. 13)

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.

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 (p. 13)

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

Type: Array of CanaryLastRun (p. 47) objects

NextToken (p. 13)

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 (p. 66).

InternalServerException

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
- AWS SDK for Java V2
- AWS SDK for JavaScript
- 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 (p. 16)

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 (p. 16)

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 (p. 16)

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 (p. 16)

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

Type: Array of RuntimeVersion (p. 59) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 66).

InternalServerException

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
- AWS SDK for Java V2
- AWS SDK for JavaScript
- 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 (p. 19)

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": {
      "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 (p. 19)

A strucure that contains the full information about the canary.

Type: Canary (p. 41) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 66).

InternalServerException

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
- AWS SDK for Java V2
- AWS SDK for JavaScript
- 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 (p. 22)

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 (p. 22)

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 (p. 22)

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 (p. 22)

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

Type: Array of CanaryRun (p. 48) objects

NextToken (p. 22)

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 (p. 66).

InternalServerException

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

ListTagsForResource

Displays the tags associated with a canary.

Request Syntax

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

URI Request Parameters

The request uses the following URI parameters.

resourceArn (p. 25)

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

The ARN format of a canary is `arn:aws:synthetics:Region:account-id:canary:canary-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:[0-9a-z_\-]{1,21}`

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 (p. 25)

The list of tag keys and values associated with the canary 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 (p. 66).

InternalServerException

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
- AWS SDK for Java V2
- AWS SDK for JavaScript
- 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 (p. 27)

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 (p. 66).

ConflictException

A conflicting operation is already in progress.

HTTP Status Code: 409

InternalServerException

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
- AWS SDK for Java V2
- AWS SDK for JavaScript
- 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, Synthetics stops waiting for the current run of the specified canary to complete. 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 (p. 29)

The name of the canary that you want to stop. 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 (p. 66).

ConflictException

A conflicting operation is already in progress.

HTTP Status Code: 409

InternalServerException

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
- AWS SDK for Java V2
- AWS SDK for JavaScript
- 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.

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 canary that already has tags. If you specify a new tag key for the alarm, this tag is appended to the list of tags associated with the alarm. If you specify a tag key that is already associated with the alarm, 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.

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 (p. 31)

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

The ARN format of a canary is `arn:aws:synthetics:`*`Region`*`:`*`account-id`*`:canary:`*`canary-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:[0-9a-z_\-]{1,21}`

Required: Yes

Request Body

The request accepts the following data in JSON format.

Tags (p. 31)

The list of key-value pairs to associate 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: 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 (p. 66).

InternalServerException

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

UntagResource

Removes one or more tags from the specified canary.

Request Syntax

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

URI Request Parameters

The request uses the following URI parameters.

resourceArn (p. 33)

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

The ARN format of a canary is `arn:aws:synthetics:Region:account-id:canary:canary-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:[0-9a-z_\-]{1,21}`

Required: Yes

TagKeys (p. 33)

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 (p. 66).

InternalServerException

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

UpdateCanary

Use this operation to change the settings 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

{
   "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 (p. 35)

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.

Code (p. 35)

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 (p. 44) object

Required: No

ExecutionRoleArn (p. 35)

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 (p. 35)

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 (p. 35)

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

Type: CanaryRunConfigInput (p. 50) object

Required: No

RuntimeVersion (p. 35)

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 (p. 35)

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

Type: CanaryScheduleInput (p. 55) object

Required: No

SuccessRetentionPeriodInDays (p. 35)

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 (p. 35)

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 (p. 60) object

Required: No

VpcConfig (p. 35)

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 (p. 62) 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 (p. 66).

ConflictException

A conflicting operation is already in progress.

HTTP Status Code: 409

InternalServerException

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

Data Types

The 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:

BaseScreenshot

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

Contents

IgnoreCoordinates

Coordinates that define the part of a screen to ignore during screenshot comparisons. To obtain the coordinates to use here, use the CloudWatch Logs console to draw the boundaries on the screen. For more information, see {LINK}

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

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

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for Ruby V3

Canary

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

Contents

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 (p. 46) 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 (p. 52) 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 (p. 56) object

Required: No

Status

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

Type: CanaryStatus (p. 57) 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 (p. 58) 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 (p. 61) 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 (p. 63) object

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for Ruby V3

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`.

Contents

Handler

The entry point to use for the source code when running the canary. This value must end with the string `.handler`. The string is limited to 29 characters or fewer.

Type: String

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

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 256 Kb.

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 Go
- 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 Go
- 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 (p. 48) object

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for Ruby V3

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 (p. 53) object

Required: No

Timeline

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

Type: CanaryRunTimeline (p. 54) object

Required: No

See Also

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

- AWS SDK for C++

- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for Ruby V3

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.

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 Go
- 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 Go
- 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 Go
- 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 Go
- 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

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

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

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for Ruby V3

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 Go
- 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`

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for Ruby V3

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 Go
- 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 Go
- 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, and optionally the 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 (p. 40) 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 Go
- 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 screenshots that are used as the baseline for visual monitoring comparisons during future runs of 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 (p. 40) 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 Go
- 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 Go
- 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 Go
- AWS SDK for Java V2
- AWS SDK for Ruby V3

Common Parameters

The following list contains the parameters that all actions use for signing Signature Version 4 requests with a query string. Any action-specific parameters are listed in the topic for that action. For more information about Signature Version 4, see Signature Version 4 Signing Process in the *Amazon Web Services General Reference*.

Action

The action to be performed.

Type: string

Required: Yes

Version

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

Type: string

Required: Yes

X-Amz-Algorithm

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

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

Type: string

Valid Values: `AWS4-HMAC-SHA256`

Required: Conditional

X-Amz-Credential

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

For more information, see Task 2: Create a String to Sign for Signature Version 4 in the *Amazon Web Services General Reference*.

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

Type: string

Required: Conditional

X-Amz-Date

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

Condition: X-Amz-Date is optional for all requests; it can be used to override the date used for signing requests. If the Date header is specified in the ISO 8601 basic format, X-Amz-Date is

not required. When X-Amz-Date is used, it always overrides the value of the Date header. For more information, see Handling Dates in Signature Version 4 in the *Amazon Web Services General Reference*.

Type: string

Required: Conditional

X-Amz-Security-Token

The temporary security token that was obtained through a call to AWS Security Token Service (AWS STS). For a list of services that support temporary security credentials from AWS Security Token Service, go to AWS Services That Work with IAM in the *IAM User Guide*.

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

Type: string

Required: Conditional

X-Amz-Signature

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

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

Type: string

Required: Conditional

X-Amz-SignedHeaders

Specifies all the HTTP headers that were included as part of the canonical request. For more information about specifying signed headers, see Task 1: Create a Canonical Request For Signature Version 4 in the *Amazon Web Services General Reference*.

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

Type: string

Required: Conditional

Common Errors

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

AccessDeniedException

You do not have sufficient access to perform this action.

HTTP Status Code: 400

IncompleteSignature

The request signature does not conform to AWS standards.

HTTP Status Code: 400

InternalFailure

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

HTTP Status Code: 500

InvalidAction

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

HTTP Status Code: 400

InvalidClientTokenId

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

HTTP Status Code: 403

InvalidParameterCombination

Parameters that must not be used together were used together.

HTTP Status Code: 400

InvalidParameterValue

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

HTTP Status Code: 400

InvalidQueryParameter

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

HTTP Status Code: 400

MalformedQueryString

The query string contains a syntax error.

HTTP Status Code: 404

MissingAction

The request is missing an action or a required parameter.

HTTP Status Code: 400

MissingAuthenticationToken

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

HTTP Status Code: 403

MissingParameter

A required parameter for the specified action is not supplied.

HTTP Status Code: 400

NotAuthorized

You do not have permission to perform this action.

HTTP Status Code: 400

OptInRequired

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

HTTP Status Code: 403

RequestExpired

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

HTTP Status Code: 400

ServiceUnavailable

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

HTTP Status Code: 503

ThrottlingException

The request was denied due to request throttling.

HTTP Status Code: 400

ValidationError

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

HTTP Status Code: 400