AWS CloudTrail

API Reference

API Version 2013-11-01

AWS CloudTrail: API Reference

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Welcome

This is the CloudTrail API Reference. It provides descriptions of actions, data types, common parameters, and common errors for CloudTrail.

CloudTrail is a web service that records AWS API calls for your AWS account and delivers log files to an Amazon S3 bucket. The recorded information includes the identity of the user, the start time of the AWS API call, the source IP address, the request parameters, and the response elements returned by the service.

> **Note**
> As an alternative to using the API, you can use one of the AWS SDKs, which consist of libraries and sample code for various programming languages and platforms (Java, Ruby, .NET, iOS, Android, etc.). The SDKs provide a convenient way to create programmatic access to AWSCloudTrail. For example, the SDKs take care of cryptographically signing requests, managing errors, and retrying requests automatically. For information about the AWS SDKs, including how to download and install them, see the Tools for Amazon Web Services page.

See the CloudTrail User Guide for information about the data that is included with each AWS API call listed in the log files.

This document was last updated on August 27, 2014.

Actions

The following actions are supported:

CreateTrail

From the command line, use `create-subscription`.

Creates a trail that specifies the settings for delivery of log data to an Amazon S3 bucket.

Request Syntax

```
{
    "IncludeGlobalServiceEvents": "boolean",
    "Name": "string",
    "S3BucketName": "string",
    "S3KeyPrefix": "string",
    "SnsTopicName": "string"
}
```

Request Parameters

For information about the common parameters that all actions use, see Common Parameters (p. 20).

The request accepts the following data in JSON format.

IncludeGlobalServiceEvents
Specifies whether the trail is publishing events from global services such as IAM to the log files.

Type: Boolean

Required: No

Name
Specifies the name of the trail.

Type: String

Required: Yes

S3BucketName
Specifies the name of the Amazon S3 bucket designated for publishing log files.

Type: String

Required: Yes

S3KeyPrefix
Specifies the Amazon S3 key prefix that precedes the name of the bucket you have designated for log file delivery.

Type: String

Required: No

SnsTopicName
Specifies the name of the Amazon SNS topic defined for notification of log file delivery.

Type: String

Required: No

Response Syntax

```
{
    "IncludeGlobalServiceEvents": "boolean",
    "Name": "string",
    "S3BucketName": "string",
    "S3KeyPrefix": "string",
    "SnsTopicName": "string"
}
```

Response Elements

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

IncludeGlobalServiceEvents
Specifies whether the trail is publishing events from global services such as IAM to the log files.

Type: Boolean

Name
Specifies the name of the trail.

Type: String

S3BucketName
Specifies the name of the Amazon S3 bucket designated for publishing log files.

Type: String

S3KeyPrefix
Specifies the Amazon S3 key prefix that precedes the name of the bucket you have designated for log file delivery.

Type: String

SnsTopicName
Specifies the name of the Amazon SNS topic defined for notification of log file delivery.

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 24).

InsufficientS3BucketPolicyException
This exception is thrown when the policy on the S3 bucket is not sufficient.

HTTP Status Code: 403

InsufficientSnsTopicPolicyException
This exception is thrown when the policy on the SNS topic is not sufficient.

HTTP Status Code: 403

InvalidS3BucketNameException

This exception is thrown when the provided S3 bucket name is not valid.

HTTP Status Code: 400

InvalidS3PrefixException

This exception is thrown when the provided S3 prefix is not valid.

HTTP Status Code: 400

InvalidSnsTopicNameException

This exception is thrown when the provided SNS topic name is not valid.

HTTP Status Code: 400

InvalidTrailNameException

This exception is thrown when the provided trail name is not valid.

HTTP Status Code: 400

MaximumNumberOfTrailsExceededException

This exception is thrown when the maximum number of trails is reached.

HTTP Status Code: 403

S3BucketDoesNotExistException

This exception is thrown when the specified S3 bucket does not exist.

HTTP Status Code: 404

TrailAlreadyExistsException

This exception is thrown when the specified trail already exists.

HTTP Status Code: 400

DeleteTrail

Deletes a trail.

Request Syntax

```
{
    "Name": "string"
}
```

Request Parameters

For information about the common parameters that all actions use, see Common Parameters (p. 20).

The request accepts the following data in JSON format.

Name
    The name of a trail to be deleted.

    Type: String

    Required: Yes

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. 24).

InvalidTrailNameException
    This exception is thrown when the provided trail name is not valid.

    HTTP Status Code: 400
TrailNotFoundException
    This exception is thrown when the trail with the given name is not found.

    HTTP Status Code: 404

DescribeTrails

Retrieves the settings for some or all trails associated with an account.

Request Syntax

```
{
    "TrailNameList": [
        "string"
    ]
}
```

Request Parameters

For information about the common parameters that all actions use, see Common Parameters (p. 20).

The request accepts the following data in JSON format.

TrailNameList
    The list of trails.

    Type: array of Strings

    Required: No

Response Syntax

```
{
    "TrailList": [
        {
            "IncludeGlobalServiceEvents": "boolean",
            "Name": "string",
            "S3BucketName": "string",
            "S3KeyPrefix": "string",
            "SnsTopicName": "string"
        }
    ]
}
```

Response Elements

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

TrailList
    The list of trails.

    Type: array of Trail (p. 18) objects

GetTrailStatus

Returns a JSON-formatted list of information about the specified trail. Fields include information on delivery errors, Amazon SNS and Amazon S3 errors, and start and stop logging times for each trail.

Request Syntax

```
{
    "Name": "string"
}
```

Request Parameters

For information about the common parameters that all actions use, see Common Parameters (p. 20).

The request accepts the following data in JSON format.

Name
The name of the trail for which you are requesting the current status.

Type: String

Required: Yes

Response Syntax

```
{
    "IsLogging": "boolean",
    "LatestDeliveryError": "string",
    "LatestDeliveryTime": "number",
    "LatestNotificationError": "string",
    "LatestNotificationTime": "number",
    "StartLoggingTime": "number",
    "StopLoggingTime": "number"
}
```

Response Elements

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

IsLogging
Whether the CloudTrail is currently logging AWS API calls.

Type: Boolean

LatestDeliveryError
Displays any Amazon S3 error that CloudTrail encountered when attempting to deliver log files to the designated bucket. For more information see the topic Error Responses in the Amazon S3 API Reference.

Type: String

LatestDeliveryTime

Specifies the date and time that CloudTrail last delivered log files to an account's Amazon S3 bucket.

Type: DateTime

LatestNotificationError

Displays any Amazon SNS error that CloudTrail encountered when attempting to send a notification. For more information about Amazon SNS errors, see the Amazon SNS Developer Guide.

Type: String

LatestNotificationTime

Specifies the date and time of the most recent Amazon SNS notification that CloudTrail has written a new log file to an account's Amazon S3 bucket.

Type: DateTime

StartLoggingTime

Specifies the most recent date and time when CloudTrail started recording API calls for an AWS account.

Type: DateTime

StopLoggingTime

Specifies the most recent date and time when CloudTrail stopped recording API calls for an AWS account.

Type: DateTime

Errors

For information about the errors that are common to all actions, see Common Errors (p. 24).

InvalidTrailNameException

This exception is thrown when the provided trail name is not valid.

HTTP Status Code: 400

TrailNotFoundException

This exception is thrown when the trail with the given name is not found.

HTTP Status Code: 404

StartLogging

Starts the recording of AWS API calls and log file delivery for a trail.

Request Syntax

```
{
    "Name": "string"
}
```

Request Parameters

For information about the common parameters that all actions use, see Common Parameters (p. 20).

The request accepts the following data in JSON format.

Name
The name of the trail for which CloudTrail logs AWS API calls.

Type: String

Required: Yes

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. 24).

InvalidTrailNameException
This exception is thrown when the provided trail name is not valid.

HTTP Status Code: 400

TrailNotFoundException
This exception is thrown when the trail with the given name is not found.

HTTP Status Code: 404

StopLogging

Suspends the recording of AWS API calls and log file delivery for the specified trail. Under most circumstances, there is no need to use this action. You can update a trail without stopping it first. This action is the only way to stop recording.

Request Syntax

```
{
    "Name": "string"
}
```

Request Parameters

For information about the common parameters that all actions use, see Common Parameters (p. 20).

The request accepts the following data in JSON format.

Name
Communicates to CloudTrail the name of the trail for which to stop logging AWS API calls.

Type: String

Required: Yes

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. 24).

InvalidTrailNameException
This exception is thrown when the provided trail name is not valid.

HTTP Status Code: 400

TrailNotFoundException
This exception is thrown when the trail with the given name is not found.

HTTP Status Code: 404

UpdateTrail

From the command line, use `update-subscription`.

Updates the settings that specify delivery of log files. Changes to a trail do not require stopping the CloudTrail service. Use this action to designate an existing bucket for log delivery. If the existing bucket has previously been a target for CloudTrail log files, an IAM policy exists for the bucket.

Request Syntax

```
{
    "IncludeGlobalServiceEvents": "boolean",
    "Name": "string",
    "S3BucketName": "string",
    "S3KeyPrefix": "string",
    "SnsTopicName": "string"
}
```

Request Parameters

For information about the common parameters that all actions use, see Common Parameters (p. 20).

The request accepts the following data in JSON format.

IncludeGlobalServiceEvents
Specifies whether the trail is publishing events from global services such as IAM to the log files.

Type: Boolean

Required: No

Name
Specifies the name of the trail.

Type: String

Required: Yes

S3BucketName
Specifies the name of the Amazon S3 bucket designated for publishing log files.

Type: String

Required: No

S3KeyPrefix
Specifies the Amazon S3 key prefix that precedes the name of the bucket you have designated for log file delivery.

Type: String

Required: No

SnsTopicName
Specifies the name of the Amazon SNS topic defined for notification of log file delivery.

Type: String

Required: No

Response Syntax

```
{
    "IncludeGlobalServiceEvents": "boolean",
    "Name": "string",
    "S3BucketName": "string",
    "S3KeyPrefix": "string",
    "SnsTopicName": "string"
}
```

Response Elements

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

IncludeGlobalServiceEvents
Specifies whether the trail is publishing events from global services such as IAM to the log files.

Type: Boolean

Name
Specifies the name of the trail.

Type: String

S3BucketName
Specifies the name of the Amazon S3 bucket designated for publishing log files.

Type: String

S3KeyPrefix
Specifies the Amazon S3 key prefix that precedes the name of the bucket you have designated for log file delivery.

Type: String

SnsTopicName
Specifies the name of the Amazon SNS topic defined for notification of log file delivery.

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 24).

InsufficientS3BucketPolicyException
This exception is thrown when the policy on the S3 bucket is not sufficient.

HTTP Status Code: 403

InsufficientSnsTopicPolicyException
This exception is thrown when the policy on the SNS topic is not sufficient.

HTTP Status Code: 403

InvalidS3BucketNameException

This exception is thrown when the provided S3 bucket name is not valid.

HTTP Status Code: 400

InvalidS3PrefixException

This exception is thrown when the provided S3 prefix is not valid.

HTTP Status Code: 400

InvalidSnsTopicNameException

This exception is thrown when the provided SNS topic name is not valid.

HTTP Status Code: 400

InvalidTrailNameException

This exception is thrown when the provided trail name is not valid.

HTTP Status Code: 400

S3BucketDoesNotExistException

This exception is thrown when the specified S3 bucket does not exist.

HTTP Status Code: 404

TrailNotFoundException

This exception is thrown when the trail with the given name is not found.

HTTP Status Code: 404

Data Types

The AWS CloudTrail API contains several data types that various actions use. This section describes each data type in detail.

> **Note**
> The order of each element in the response is not guaranteed. Applications should not assume a particular order.

The following data types are supported:

CreateTrailResult

Description

Returns the objects or data listed below if successful. Otherwise, returns an error.

Contents

IncludeGlobalServiceEvents
Specifies whether the trail is publishing events from global services such as IAM to the log files.

Type: Boolean

Required: No

Name
Specifies the name of the trail.

Type: String

Required: No

S3BucketName
Specifies the name of the Amazon S3 bucket designated for publishing log files.

Type: String

Required: No

S3KeyPrefix
Specifies the Amazon S3 key prefix that precedes the name of the bucket you have designated for log file delivery.

Type: String

Required: No

SnsTopicName
Specifies the name of the Amazon SNS topic defined for notification of log file delivery.

Type: String

Required: No

DeleteTrailResult

Description

Returns the objects or data listed below if successful. Otherwise, returns an error.

Contents

DescribeTrailsResult

Description

Returns the objects or data listed below if successful. Otherwise, returns an error.

Contents

TrailList
The list of trails.

Type: array of Trail (p. 18) objects

Required: No

GetTrailStatusResult

Description

Returns the objects or data listed below if successful. Otherwise, returns an error.

Contents

IsLogging
Whether the CloudTrail is currently logging AWS API calls.

Type: Boolean

Required: No

LatestDeliveryError
Displays any Amazon S3 error that CloudTrail encountered when attempting to deliver log files to the designated bucket. For more information see the topic Error Responses in the Amazon S3 API Reference.

Type: String

Required: No

LatestDeliveryTime
Specifies the date and time that CloudTrail last delivered log files to an account's Amazon S3 bucket.

Type: DateTime

Required: No

LatestNotificationError
Displays any Amazon SNS error that CloudTrail encountered when attempting to send a notification. For more information about Amazon SNS errors, see the Amazon SNS Developer Guide.

Type: String

Required: No

LatestNotificationTime
Specifies the date and time of the most recent Amazon SNS notification that CloudTrail has written a new log file to an account's Amazon S3 bucket.

Type: DateTime

Required: No

StartLoggingTime
Specifies the most recent date and time when CloudTrail started recording API calls for an AWS account.

Type: DateTime

Required: No

StopLoggingTime
Specifies the most recent date and time when CloudTrail stopped recording API calls for an AWS account.

Type: DateTime

Required: No

StartLoggingResult

Description

Returns the objects or data listed below if successful. Otherwise, returns an error.

Contents

StopLoggingResult

Description

Returns the objects or data listed below if successful. Otherwise, returns an error.

Contents

Trail

Description

The settings for a trail.

Contents

IncludeGlobalServiceEvents
> Set to **True** to include AWS API calls from AWS global services such as IAM. Otherwise, **False**.

> Type: Boolean

> Required: No

Name
> Name of the trail set by calling CreateTrail (p. 3).

> Type: String

> Required: No

S3BucketName
> Name of the Amazon S3 bucket into which CloudTrail delivers your trail files.

> Type: String

> Required: No

S3KeyPrefix
> Value of the Amazon S3 prefix.

> Type: String

> Required: No

SnsTopicName
Name of the existing Amazon SNS topic that CloudTrail uses to notify the account owner when new CloudTrail log files have been delivered.

Type: String

Required: No

UpdateTrailResult

Description

Returns the objects or data listed below if successful. Otherwise, returns an error.

Contents

IncludeGlobalServiceEvents
Specifies whether the trail is publishing events from global services such as IAM to the log files.

Type: Boolean

Required: No

Name
Specifies the name of the trail.

Type: String

Required: No

S3BucketName
Specifies the name of the Amazon S3 bucket designated for publishing log files.

Type: String

Required: No

S3KeyPrefix
Specifies the Amazon S3 key prefix that precedes the name of the bucket you have designated for log file delivery.

Type: String

Required: No

SnsTopicName
Specifies the name of the Amazon SNS topic defined for notification of log file delivery.

Type: String

Required: No

Common Parameters

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

Action
The action to be performed.

Default: None

Type: string

Required: Yes

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

- AWSAccessKeyID
- SignatureVersion
- Timestamp
- Signature

Default: None

Required: Conditional

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

Default: None

Type: string

Required: Yes

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

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

Default: None

Type: string

Required: Conditional

SecurityToken

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

Default: None

Type: string

Required: No

Signature

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

Default: None

Type: string

Required: Yes

SignatureMethod

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

Default: None

Type: string

Valid Values: `HmacSHA256 | HmacSHA1`

Required: Yes

SignatureVersion

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

Default: None

Type: string

Required: Yes

Timestamp

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

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

Default: None

Type: string

Required: Conditional

Version

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

Default: None

Type: string

Required: Yes

Common Parameters for Signature V4 Signing

The following table lists the parameters that all actions use for signing Signature Version 4 requests. Any action-specific parameters are listed in the topic for that action. To view sample requests, see Examples of Signed Signature Version 4 Requests or Signature Version 4 Test Suite 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 (YYYYMM-DD'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. For a list of services that support AWS Security Token Service, go to Using Temporary Security Credentials to Access AWS in *Using Temporary Security Credentials*.

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

IncompleteSignature

The request signature does not conform to AWS standards.

HTTP Status Code: 400

InternalFailure

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

HTTP Status Code: 500

InvalidAction

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

HTTP Status Code: 400

InvalidClientTokenId

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

HTTP Status Code: 403

InvalidParameterCombination

Parameters that must not be used together were used together.

HTTP Status Code: 400

InvalidParameterValue

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

HTTP Status Code: 400

InvalidQueryParameter

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

HTTP Status Code: 400

MalformedQueryString

The query string contains a syntax error.

HTTP Status Code: 404

MissingAction

The request is missing an action or a required parameter.

HTTP Status Code: 400

MissingAuthenticationToken

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

HTTP Status Code: 403

MissingParameter

A required parameter for the specified action is not supplied.

HTTP Status Code: 400

OptInRequired

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

HTTP Status Code: 403

RequestExpired

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

HTTP Status Code: 400

ServiceUnavailable

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

HTTP Status Code: 503

Throttling

The request was denied due to request throttling.

HTTP Status Code: 400

ValidationError

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

HTTP Status Code: 400