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# **AWS X-Ray**

## **API Reference**

### **API Version 2016-04-12**



## **AWS X-Ray: API Reference**

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# Welcome

AWS X-Ray provides APIs for managing debug traces and retrieving service maps and other data created by processing those traces.

This document was last published on October 6, 2021.

# Actions

The following actions are supported:

- [BatchGetTraces](#) (p. 3)
- [CreateGroup](#) (p. 6)
- [CreateSamplingRule](#) (p. 9)
- [DeleteGroup](#) (p. 12)
- [DeleteSamplingRule](#) (p. 14)
- [GetEncryptionConfig](#) (p. 16)
- [GetGroup](#) (p. 18)
- [GetGroups](#) (p. 20)
- [GetInsight](#) (p. 22)
- [GetInsightEvents](#) (p. 25)
- [GetInsightImpactGraph](#) (p. 28)
- [GetInsightSummaries](#) (p. 31)
- [GetSamplingRules](#) (p. 35)
- [GetSamplingStatisticSummaries](#) (p. 37)
- [GetSamplingTargets](#) (p. 39)
- [GetServiceGraph](#) (p. 42)
- [GetTimeSeriesServiceStatistics](#) (p. 46)
- [GetTraceGraph](#) (p. 50)
- [GetTraceSummaries](#) (p. 53)
- [ListTagsForResource](#) (p. 59)
- [PutEncryptionConfig](#) (p. 62)
- [PutTelemetryRecords](#) (p. 64)
- [PutTraceSegments](#) (p. 66)
- [TagResource](#) (p. 69)
- [UntagResource](#) (p. 71)
- [UpdateGroup](#) (p. 73)
- [UpdateSamplingRule](#) (p. 76)

# BatchGetTraces

Retrieves a list of traces specified by ID. Each trace is a collection of segment documents that originates from a single request. Use `GetTraceSummaries` to get a list of trace IDs.

## Request Syntax

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

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

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### NextToken (p. 3)

Pagination token.

Type: String

Required: No

### TraceIds (p. 3)

Specify the trace IDs of requests for which to retrieve segments.

Type: Array of strings

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

Length Constraints: Minimum length of 1. Maximum length of 35.

Required: Yes

## Response Syntax

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

{
  "NextToken": "string",
  "Traces": [
    {
      "Duration": number,
      "Id": "string",
      "LimitExceeded": boolean,
      "Segments": [
```

```
{
  {
    "Document": "string",
    "Id": "string"
  }
]
},
"UnprocessedTraceIds": [ "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. 3)

Pagination token.

Type: String

### Traces (p. 3)

Full traces for the specified requests.

Type: Array of [Trace \(p. 144\)](#) objects

### UnprocessedTraceIds (p. 3)

Trace IDs of requests that haven't been processed.

Type: Array of strings

Length Constraints: Minimum length of 1. Maximum length of 35.

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 154\)](#).

### InvalidRequestException

The request is missing required parameters or has invalid parameters.

HTTP Status Code: 400

### ThrottledException

The request exceeds the maximum number of requests per second.

HTTP Status Code: 429

## See Also

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

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)

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

# CreateGroup

Creates a group resource with a name and a filter expression.

## Request Syntax

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

{
  "FilterExpression": "string",
  "GroupName": "string",
  "InsightsConfiguration": {
    "InsightsEnabled": boolean,
    "NotificationsEnabled": boolean
  },
  "Tags": [
    {
      "Key": "string",
      "Value": "string"
    }
  ]
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### FilterExpression (p. 6)

The filter expression defining criteria by which to group traces.

Type: String

Required: No

### GroupName (p. 6)

The case-sensitive name of the new group. Default is a reserved name and names must be unique.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 32.

Required: Yes

### InsightsConfiguration (p. 6)

The structure containing configurations related to insights.

- The InsightsEnabled boolean can be set to true to enable insights for the new group or false to disable insights for the new group.
- The NotificationsEnabled boolean can be set to true to enable insights notifications for the new group. Notifications may only be enabled on a group with InsightsEnabled set to true.

Type: [InsightsConfiguration \(p. 111\)](#) object

Required: No

### Tags (p. 6)

A map that contains one or more tag keys and tag values to attach to an X-Ray group. For more information about ways to use tags, see [Tagging AWS resources](#) in the *AWS General Reference*.

The following restrictions apply to tags:

- Maximum number of user-applied tags per resource: 50
- Maximum tag key length: 128 Unicode characters
- Maximum tag value length: 256 Unicode characters
- Valid values for key and value: a-z, A-Z, 0-9, space, and the following characters: \_ . : / = + - and @
- Tag keys and values are case sensitive.
- Don't use `aws:` as a prefix for keys; it's reserved for AWS use.

Type: Array of [Tag \(p. 141\)](#) objects

Array Members: Minimum number of 0 items. Maximum number of 200 items.

Required: No

## Response Syntax

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

{
  "Group": {
    "FilterExpression": "string",
    "GroupARN": "string",
    "GroupName": "string",
    "InsightsConfiguration": {
      "InsightsEnabled": boolean,
      "NotificationsEnabled": boolean
    }
  }
}
```

## Response Elements

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

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

### Group (p. 7)

The group that was created. Contains the name of the group that was created, the Amazon Resource Name (ARN) of the group that was generated based on the group name, the filter expression, and the insight configuration that was assigned to the group.

Type: [Group \(p. 101\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 154\)](#).



### **InvalidRequestException**

The request is missing required parameters or has invalid parameters.

HTTP Status Code: 400

### **ThrottledException**

The request exceeds the maximum number of requests per second.

HTTP Status Code: 429

## See Also

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

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateSamplingRule

Creates a rule to control sampling behavior for instrumented applications. Services retrieve rules with [GetSamplingRules](#), and evaluate each rule in ascending order of *priority* for each request. If a rule matches, the service records a trace, borrowing it from the reservoir size. After 10 seconds, the service reports back to X-Ray with [GetSamplingTargets](#) to get updated versions of each in-use rule. The updated rule contains a trace quota that the service can use instead of borrowing from the reservoir.

## Request Syntax

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

```
{
  "SamplingRule": {
    "Attributes": {
      "string": "string"
    },
    "FixedRate": number,
    "Host": "string",
    "HTTPMethod": "string",
    "Priority": number,
    "ReservoirSize": number,
    "ResourceARN": "string",
    "RuleARN": "string",
    "RuleName": "string",
    "ServiceName": "string",
    "ServiceType": "string",
    "URLPath": "string",
    "Version": number
  },
  "Tags": [
    {
      "Key": "string",
      "Value": "string"
    }
  ]
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### [SamplingRule](#) (p. 9)

The rule definition.

Type: [SamplingRule](#) (p. 123) object

Required: Yes

### [Tags](#) (p. 9)

A map that contains one or more tag keys and tag values to attach to an X-Ray sampling rule. For more information about ways to use tags, see [Tagging AWS resources](#) in the *AWS General Reference*.

The following restrictions apply to tags:

- Maximum number of user-applied tags per resource: 50
- Maximum tag key length: 128 Unicode characters
- Maximum tag value length: 256 Unicode characters
- Valid values for key and value: a-z, A-Z, 0-9, space, and the following characters: `_` `:` `/` `=` `+` `-` and `@`
- Tag keys and values are case sensitive.
- Don't use `aws:` as a prefix for keys; it's reserved for AWS use.

Type: Array of [Tag \(p. 141\)](#) objects

Array Members: Minimum number of 0 items. Maximum number of 200 items.

Required: No

## Response Syntax

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

{
  "SamplingRuleRecord": {
    "CreatedAt": number,
    "ModifiedAt": number,
    "SamplingRule": {
      "Attributes": {
        "string" : "string"
      },
      "FixedRate": number,
      "Host": "string",
      "HTTPMethod": "string",
      "Priority": number,
      "ReservoirSize": number,
      "ResourceARN": "string",
      "RuleARN": "string",
      "RuleName": "string",
      "ServiceName": "string",
      "ServiceType": "string",
      "URLPath": "string",
      "Version": number
    }
  }
}
```

## 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.

### [SamplingRuleRecord \(p. 10\)](#)

The saved rule definition and metadata.

Type: [SamplingRuleRecord \(p. 126\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 154\)](#).

### **InvalidRequestException**

The request is missing required parameters or has invalid parameters.

HTTP Status Code: 400

### **RuleLimitExceededException**

You have reached the maximum number of sampling rules.

HTTP Status Code: 400

### **ThrottledException**

The request exceeds the maximum number of requests per second.

HTTP Status Code: 429

## See Also

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

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteGroup

Deletes a group resource.

## Request Syntax

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

{
  "GroupARN": "string",
  "GroupName": "string"
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### GroupARN (p. 12)

The ARN of the group that was generated on creation.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 400.

Required: No

### GroupName (p. 12)

The case-sensitive name of the group.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 32.

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 \(p. 154\)](#).

### **InvalidRequestException**

The request is missing required parameters or has invalid parameters.

HTTP Status Code: 400

### **ThrottledException**

The request exceeds the maximum number of requests per second.

HTTP Status Code: 429

## See Also

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

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteSamplingRule

Deletes a sampling rule.

## Request Syntax

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

{
  "RuleARN": "string",
  "RuleName": "string"
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### RuleARN (p. 14)

The ARN of the sampling rule. Specify a rule by either name or ARN, but not both.

Type: String

Required: No

### RuleName (p. 14)

The name of the sampling rule. Specify a rule by either name or ARN, but not both.

Type: String

Required: No

## Response Syntax

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

{
  "SamplingRuleRecord": {
    "CreatedAt": number,
    "ModifiedAt": number,
    "SamplingRule": {
      "Attributes": {
        "string" : "string"
      },
      "FixedRate": number,
      "Host": "string",
      "HTTPMethod": "string",
      "Priority": number,
      "ReservoirSize": number,

```

```
    "ResourceARN": "string",  
    "RuleARN": "string",  
    "RuleName": "string",  
    "ServiceName": "string",  
    "ServiceType": "string",  
    "URLPath": "string",  
    "Version": number  
  }  
}
```

## 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.

### SamplingRuleRecord (p. 14)

The deleted rule definition and metadata.

Type: [SamplingRuleRecord \(p. 126\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 154\)](#).

### InvalidRequestException

The request is missing required parameters or has invalid parameters.

HTTP Status Code: 400

### ThrottledException

The request exceeds the maximum number of requests per second.

HTTP Status Code: 429

## See Also

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

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
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- [AWS SDK for PHP V3](#)
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- [AWS SDK for Ruby V3](#)



# GetEncryptionConfig

Retrieves the current encryption configuration for X-Ray data.

## Request Syntax

```
POST /EncryptionConfig HTTP/1.1
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request does not have a request body.

## Response Syntax

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

{
  "EncryptionConfig": {
    "KeyId": "string",
    "Status": "string",
    "Type": "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.

### EncryptionConfig (p. 16)

The encryption configuration document.

Type: [EncryptionConfig](#) (p. 89) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 154).

### InvalidRequestException

The request is missing required parameters or has invalid parameters.

HTTP Status Code: 400

### ThrottledException

The request exceeds the maximum number of requests per second.

HTTP Status Code: 429

## See Also

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

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetGroup

Retrieves group resource details.

## Request Syntax

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

{
  "GroupARN": "string",
  "GroupName": "string"
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### GroupARN (p. 18)

The ARN of the group that was generated on creation.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 400.

Required: No

### GroupName (p. 18)

The case-sensitive name of the group.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 32.

Required: No

## Response Syntax

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

{
  "Group": {
    "FilterExpression": "string",
    "GroupARN": "string",
    "GroupName": "string",
    "InsightsConfiguration": {
      "InsightsEnabled": boolean,
      "NotificationsEnabled": boolean
    }
  }
}
```

```
}  
}
```

## Response Elements

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

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

### Group (p. 18)

The group that was requested. Contains the name of the group, the ARN of the group, the filter expression, and the insight configuration assigned to the group.

Type: [Group \(p. 101\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 154\)](#).

### InvalidRequestException

The request is missing required parameters or has invalid parameters.

HTTP Status Code: 400

### ThrottledException

The request exceeds the maximum number of requests per second.

HTTP Status Code: 429

## See Also

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

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetGroups

Retrieves all active group details.

## Request Syntax

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

{
  "NextToken": "string"
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### NextToken (p. 20)

Pagination token.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 100.

Required: No

## Response Syntax

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

{
  "Groups": [
    {
      "FilterExpression": "string",
      "GroupARN": "string",
      "GroupName": "string",
      "InsightsConfiguration": {
        "InsightsEnabled": boolean,
        "NotificationsEnabled": boolean
      }
    }
  ],
  "NextToken": "string"
}
```

## Response Elements

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

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

**Groups** (p. 20)

The collection of all active groups.

Type: Array of [GroupSummary](#) (p. 102) objects

**NextToken** (p. 20)

Pagination token.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 154).

**InvalidRequestException**

The request is missing required parameters or has invalid parameters.

HTTP Status Code: 400

**ThrottledException**

The request exceeds the maximum number of requests per second.

HTTP Status Code: 429

## See Also

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

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetInsight

Retrieves the summary information of an insight. This includes impact to clients and root cause services, the top anomalous services, the category, the state of the insight, and the start and end time of the insight.

## Request Syntax

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

{
  "InsightId": "string"
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### InsightId (p. 22)

The insight's unique identifier. Use the GetInsightSummaries action to retrieve an InsightId.

Type: String

Pattern: [0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[1-5][0-9a-fA-F]{3}-[89abAB][0-9a-fA-F]{3}-[0-9a-fA-F]{12}

Required: Yes

## Response Syntax

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

{
  "Insight": {
    "Categories": [ "string" ],
    "ClientRequestImpactStatistics": {
      "FaultCount": number,
      "OkCount": number,
      "TotalCount": number
    },
    "EndTime": number,
    "GroupARN": "string",
    "GroupName": "string",
    "InsightId": "string",
    "RootCauseServiceId": {
      "AccountId": "string",
      "Name": "string",
      "Names": [ "string" ],
      "Type": "string"
    }
  }
}
```

```
    },
    "RootCauseServiceRequestImpactStatistics": {
      "FaultCount": number,
      "OkCount": number,
      "TotalCount": number
    },
    "StartTime": number,
    "State": "string",
    "Summary": "string",
    "TopAnomalousServices": [
      {
        "ServiceId": {
          "AccountId": "string",
          "Name": "string",
          "Names": [ "string" ],
          "Type": "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.

### Insight (p. 22)

The summary information of an insight.

Type: [Insight \(p. 105\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 154\)](#).

### InvalidRequestException

The request is missing required parameters or has invalid parameters.

HTTP Status Code: 400

### ThrottledException

The request exceeds the maximum number of requests per second.

HTTP Status Code: 429

## See Also

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

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)



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

# GetInsightEvents

X-Ray reevaluates insights periodically until they're resolved, and records each intermediate state as an event. You can review an insight's events in the Impact Timeline on the Inspect page in the X-Ray console.

## Request Syntax

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

{
  "InsightId": "string",
  "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.

### InsightId (p. 25)

The insight's unique identifier. Use the GetInsightSummaries action to retrieve an InsightId.

Type: String

Pattern: `[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[1-5][0-9a-fA-F]{3}-[89abAB][0-9a-fA-F]{3}-[0-9a-fA-F]{12}`

Required: Yes

### MaxResults (p. 25)

Used to retrieve at most the specified value of events.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 50.

Required: No

### NextToken (p. 25)

Specify the pagination token returned by a previous request to retrieve the next page of events.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2000.

Required: No

## Response Syntax

```
HTTP/1.1 200
```

Content-type: application/json

```
{
  "InsightEvents": [
    {
      "ClientRequestImpactStatistics": {
        "FaultCount": number,
        "OkCount": number,
        "TotalCount": number
      },
      "EventTime": number,
      "RootCauseServiceRequestImpactStatistics": {
        "FaultCount": number,
        "OkCount": number,
        "TotalCount": number
      },
      "Summary": "string",
      "TopAnomalousServices": [
        {
          "ServiceId": {
            "AccountId": "string",
            "Name": "string",
            "Names": [ "string " ],
            "Type": "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.

### InsightEvents (p. 25)

A detailed description of the event. This includes the time of the event, client and root cause impact statistics, and the top anomalous service at the time of the event.

Type: Array of [InsightEvent \(p. 107\)](#) objects

### NextToken (p. 25)

Use this token to retrieve the next page of insight events.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2000.

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 154\)](#).

### InvalidRequestException

The request is missing required parameters or has invalid parameters.

HTTP Status Code: 400

### **ThrottledException**

The request exceeds the maximum number of requests per second.

HTTP Status Code: 429

## See Also

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

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetInsightImpactGraph

Retrieves a service graph structure filtered by the specified insight. The service graph is limited to only structural information. For a complete service graph, use this API with the `GetServiceGraph` API.

## Request Syntax

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

{
  "EndTime": number,
  "InsightId": "string",
  "NextToken": "string",
  "StartTime": number
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### EndTime (p. 28)

The estimated end time of the insight, in Unix time seconds. The EndTime is exclusive of the value provided. The time range between the start time and end time can't be more than six hours.

Type: Timestamp

Required: Yes

### InsightId (p. 28)

The insight's unique identifier. Use the `GetInsightSummaries` action to retrieve an InsightId.

Type: String

Pattern: `[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[1-5][0-9a-fA-F]{3}-[89abAB][0-9a-fA-F]{3}-[0-9a-fA-F]{12}`

Required: Yes

### NextToken (p. 28)

Specify the pagination token returned by a previous request to retrieve the next page of results.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2000.

Required: No

### StartTime (p. 28)

The estimated start time of the insight, in Unix time seconds. The StartTime is inclusive of the value provided and can't be more than 30 days old.

Type: Timestamp

Required: Yes

## Response Syntax

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

{
  "EndTime": number,
  "InsightId": "string",
  "NextToken": "string",
  "ServiceGraphEndTime": number,
  "ServiceGraphStartTime": number,
  "Services": [
    {
      "AccountId": "string",
      "Edges": [
        {
          "ReferenceId": number
        }
      ],
      "Name": "string",
      "Names": [ "string" ],
      "ReferenceId": number,
      "Type": "string"
    }
  ],
  "StartTime": number
}
```

## 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.

### EndTime (p. 29)

The provided end time.

Type: Timestamp

### InsightId (p. 29)

The insight's unique identifier.

Type: String

Pattern: [0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[1-5][0-9a-fA-F]{3}-[89abAB][0-9a-fA-F]{3}-[0-9a-fA-F]{12}

### NextToken (p. 29)

Pagination token.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2000.

### **ServiceGraphEndTime** (p. 29)

The time, in Unix seconds, at which the service graph ended.

Type: Timestamp

### **ServiceGraphStartTime** (p. 29)

The time, in Unix seconds, at which the service graph started.

Type: Timestamp

### **Services** (p. 29)

The AWS instrumented services related to the insight.

Type: Array of [InsightImpactGraphService](#) (p. 109) objects

### **StartTime** (p. 29)

The provided start time.

Type: Timestamp

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 154).

### **InvalidRequestException**

The request is missing required parameters or has invalid parameters.

HTTP Status Code: 400

### **ThrottledException**

The request exceeds the maximum number of requests per second.

HTTP Status Code: 429

## See Also

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

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetInsightSummaries

Retrieves the summaries of all insights in the specified group matching the provided filter values.

## Request Syntax

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

{
  "EndTime": number,
  "GroupARN": "string",
  "GroupName": "string",
  "MaxResults": number,
  "NextToken": "string",
  "StartTime": number,
  "States": [ "string" ]
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### EndTime (p. 31)

The end of the time frame in which the insights ended. The end time can't be more than 30 days old.

Type: Timestamp

Required: Yes

### GroupARN (p. 31)

The Amazon Resource Name (ARN) of the group. Required if the GroupName isn't provided.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 400.

Required: No

### GroupName (p. 31)

The name of the group. Required if the GroupARN isn't provided.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 32.

Required: No

### MaxResults (p. 31)

The maximum number of results to display.

Type: Integer



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

Required: No

#### **NextToken** (p. 31)

Pagination token.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2000.

Required: No

#### **StartTime** (p. 31)

The beginning of the time frame in which the insights started. The start time can't be more than 30 days old.

Type: Timestamp

Required: Yes

#### **States** (p. 31)

The list of insight states.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 1 item.

Valid Values: ACTIVE | CLOSED

Required: No

## Response Syntax

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

{
  "InsightSummaries": [
    {
      "Categories": [ "string" ],
      "ClientRequestImpactStatistics": {
        "FaultCount": number,
        "OkCount": number,
        "TotalCount": number
      },
      "EndTime": number,
      "GroupARN": "string",
      "GroupName": "string",
      "InsightId": "string",
      "LastUpdateTime": number,
      "RootCauseServiceId": {
        "AccountId": "string",
        "Name": "string",
        "Names": [ "string" ],
        "Type": "string"
      },
      "RootCauseServiceRequestImpactStatistics": {
        "FaultCount": number,
        "OkCount": number,
        "TotalCount": number
      }
    }
  ]
}
```

```
    },
    "StartTime": number,
    "State": "string",
    "Summary": "string",
    "TopAnomalousServices": [
      {
        "ServiceId": {
          "AccountId": "string",
          "Name": "string",
          "Names": [ "string" ],
          "Type": "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.

### **InsightSummaries** (p. 32)

The summary of each insight within the group matching the provided filters. The summary contains the InsightID, start and end time, the root cause service, the root cause and client impact statistics, the top anomalous services, and the status of the insight.

Type: Array of [InsightSummary](#) (p. 112) objects

### **NextToken** (p. 32)

Pagination token.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2000.

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 154).

### **InvalidRequestException**

The request is missing required parameters or has invalid parameters.

HTTP Status Code: 400

### **ThrottledException**

The request exceeds the maximum number of requests per second.

HTTP Status Code: 429

## See Also

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

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetSamplingRules

Retrieves all sampling rules.

## Request Syntax

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

{
  "NextToken": "string"
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### NextToken (p. 35)

Pagination token.

Type: String

Required: No

## Response Syntax

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

{
  "NextToken": "string",
  "SamplingRuleRecords": [
    {
      "CreatedAt": number,
      "ModifiedAt": number,
      "SamplingRule": {
        "Attributes": {
          "string": "string"
        },
        "FixedRate": number,
        "Host": "string",
        "HTTPMethod": "string",
        "Priority": number,
        "ReservoirSize": number,
        "ResourceARN": "string",
        "RuleARN": "string",
        "RuleName": "string",
        "ServiceName": "string",
        "ServiceType": "string",
        "URLPath": "string",
        "Version": number
      }
    }
  ]
}
```

```
}  
  }  
]  
}
```

## 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. 35)

Pagination token.

Type: String

### **SamplingRuleRecords** (p. 35)

Rule definitions and metadata.

Type: Array of [SamplingRuleRecord](#) (p. 126) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 154).

### **InvalidRequestException**

The request is missing required parameters or has invalid parameters.

HTTP Status Code: 400

### **ThrottledException**

The request exceeds the maximum number of requests per second.

HTTP Status Code: 429

## See Also

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

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetSamplingStatisticSummaries

Retrieves information about recent sampling results for all sampling rules.

## Request Syntax

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

```
{
  "NextToken": "string"
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### NextToken (p. 37)

Pagination token.

Type: String

Required: No

## Response Syntax

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

{
  "NextToken": "string",
  "SamplingStatisticSummaries": [
    {
      "BorrowCount": number,
      "RequestCount": number,
      "RuleName": "string",
      "SampledCount": number,
      "Timestamp": number
    }
  ]
}
```

## 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. 37)

Pagination token.

Type: String

### [SamplingStatisticSummaries](#) (p. 37)

Information about the number of requests instrumented for each sampling rule.

Type: Array of [SamplingStatisticSummary](#) (p. 132) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 154).

### **InvalidRequestException**

The request is missing required parameters or has invalid parameters.

HTTP Status Code: 400

### **ThrottledException**

The request exceeds the maximum number of requests per second.

HTTP Status Code: 429

## See Also

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

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetSamplingTargets

Requests a sampling quota for rules that the service is using to sample requests.

## Request Syntax

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

{
  "SamplingStatisticsDocuments": [
    {
      "BorrowCount": number,
      "ClientID": "string",
      "RequestCount": number,
      "RuleName": "string",
      "SampledCount": number,
      "Timestamp": number
    }
  ]
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### SamplingStatisticsDocuments (p. 39)

Information about rules that the service is using to sample requests.

Type: Array of [SamplingStatisticsDocument](#) (p. 130) objects

Array Members: Maximum number of 25 items.

Required: Yes

## Response Syntax

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

{
  "LastRuleModification": number,
  "SamplingTargetDocuments": [
    {
      "FixedRate": number,
      "Interval": number,
      "ReservoirQuota": number,
      "ReservoirQuotaTTL": number,
      "RuleName": "string"
    }
  ],
}
```



```
"UnprocessedStatistics": [  
  {  
    "ErrorCode": "string",  
    "Message": "string",  
    "RuleName": "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.

### **LastRuleModification** (p. 39)

The last time a user changed the sampling rule configuration, in Unix time seconds. If the sampling rule configuration changed since the service last retrieved it, the service should call [GetSamplingRules](#) to get the latest version.

Type: Timestamp

### **SamplingTargetDocuments** (p. 39)

Updated rules that the service should use to sample requests.

Type: Array of [SamplingTargetDocument](#) (p. 134) objects

### **UnprocessedStatistics** (p. 39)

Information about [SamplingStatisticsDocument](#) that X-Ray could not process.

Type: Array of [UnprocessedStatistics](#) (p. 149) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 154).

### **InvalidRequestException**

The request is missing required parameters or has invalid parameters.

HTTP Status Code: 400

### **ThrottledException**

The request exceeds the maximum number of requests per second.

HTTP Status Code: 429

## See Also

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

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)

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

# GetServiceGraph

Retrieves a document that describes services that process incoming requests, and downstream services that they call as a result. Root services process incoming requests and make calls to downstream services. Root services are applications that use the [AWS X-Ray SDK](#). Downstream services can be other applications, AWS resources, HTTP web APIs, or SQL databases.

## Request Syntax

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

{
  "EndTime": number,
  "GroupARN": "string",
  "GroupName": "string",
  "NextToken": "string",
  "StartTime": number
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### EndTime (p. 42)

The end of the timeframe for which to generate a graph, in Unix time seconds.

Type: Timestamp

Required: Yes

### GroupARN (p. 42)

The Amazon Resource Name (ARN) of a group based on which you want to generate a graph.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 400.

Required: No

### GroupName (p. 42)

The name of a group based on which you want to generate a graph.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 32.

Required: No

### NextToken (p. 42)

Pagination token.

Type: String

Required: No

### StartTime (p. 42)

The start of the time frame for which to generate a graph, in Unix time seconds.

Type: Timestamp

Required: Yes

## Response Syntax

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

{
  "ContainsOldGroupVersions": boolean,
  "EndTime": number,
  "NextToken": "string",
  "Services": [
    {
      "AccountId": "string",
      "DurationHistogram": [
        {
          "Count": number,
          "Value": number
        }
      ],
      "Edges": [
        {
          "Aliases": [
            {
              "Name": "string",
              "Names": [ "string" ],
              "Type": "string"
            }
          ],
          "EndTime": number,
          "ReferenceId": number,
          "ResponseTimeHistogram": [
            {
              "Count": number,
              "Value": number
            }
          ],
          "StartTime": number,
          "SummaryStatistics": {
            "ErrorStatistics": {
              "OtherCount": number,
              "ThrottleCount": number,
              "TotalCount": number
            },
            "FaultStatistics": {
              "OtherCount": number,
              "TotalCount": number
            },
            "OkCount": number,
            "TotalCount": number,
            "TotalResponseTime": number
          }
        }
      ]
    }
  ]
}
```

```

    ],
    "EndTime": number,
    "Name": "string",
    "Names": [ "string" ],
    "ReferenceId": number,
    "ResponseTimeHistogram": [
      {
        "Count": number,
        "Value": number
      }
    ],
    "Root": boolean,
    "StartTime": number,
    "State": "string",
    "SummaryStatistics": {
      "ErrorStatistics": {
        "OtherCount": number,
        "ThrottleCount": number,
        "TotalCount": number
      },
      "FaultStatistics": {
        "OtherCount": number,
        "TotalCount": number
      },
      "OkCount": number,
      "TotalCount": number,
      "TotalResponseTime": number
    },
    "Type": "string"
  }
],
"StartTime": number
}

```

## 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.

### ContainsOldGroupVersions (p. 43)

A flag indicating whether the group's filter expression has been consistent, or if the returned service graph may show traces from an older version of the group's filter expression.

Type: Boolean

### EndTime (p. 43)

The end of the time frame for which the graph was generated, in Unix time seconds.

Type: Timestamp

### NextToken (p. 43)

Pagination token.

Type: String

### Services (p. 43)

The services that have processed a traced request during the specified time frame.

Type: Array of [Service](#) (p. 136) objects

### **StartTime** (p. 43)

The start of the time frame for which the graph was generated, in Unix time seconds.

Type: Timestamp

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 154).

### **InvalidRequestException**

The request is missing required parameters or has invalid parameters.

HTTP Status Code: 400

### **ThrottledException**

The request exceeds the maximum number of requests per second.

HTTP Status Code: 429

## See Also

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

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetTimeSeriesServiceStatistics

Get an aggregation of service statistics defined by a specific time range.

## Request Syntax

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

{
  "EndTime": number,
  "EntitySelectorExpression": "string",
  "ForecastStatistics": boolean,
  "GroupARN": "string",
  "GroupName": "string",
  "NextToken": "string",
  "Period": number,
  "StartTime": number
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### EndTime (p. 46)

The end of the time frame for which to aggregate statistics.

Type: Timestamp

Required: Yes

### EntitySelectorExpression (p. 46)

A filter expression defining entities that will be aggregated for statistics. Supports ID, service, and edge functions. If no selector expression is specified, edge statistics are returned.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 500.

Required: No

### ForecastStatistics (p. 46)

The forecasted high and low fault count values. Forecast enabled requests require the EntitySelectorExpression ID be provided.

Type: Boolean

Required: No

### GroupARN (p. 46)

The Amazon Resource Name (ARN) of the group for which to pull statistics from.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 400.

Required: No

#### **GroupName** (p. 46)

The case-sensitive name of the group for which to pull statistics from.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 32.

Required: No

#### **NextToken** (p. 46)

Pagination token.

Type: String

Required: No

#### **Period** (p. 46)

Aggregation period in seconds.

Type: Integer

Required: No

#### **StartTime** (p. 46)

The start of the time frame for which to aggregate statistics.

Type: Timestamp

Required: Yes

## Response Syntax

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

{
  "ContainsOldGroupVersions": boolean,
  "NextToken": "string",
  "TimeSeriesServiceStatistics": [
    {
      "EdgeSummaryStatistics": {
        "ErrorStatistics": {
          "OtherCount": number,
          "ThrottleCount": number,
          "TotalCount": number
        },
        "FaultStatistics": {
          "OtherCount": number,
          "TotalCount": number
        },
        "OkCount": number,
        "TotalCount": number,
        "TotalResponseTime": number
      }
    }
  ]
}
```



```

    },
    "ResponseTimeHistogram": [
      {
        "Count": number,
        "Value": number
      }
    ],
    "ServiceForecastStatistics": {
      "FaultCountHigh": number,
      "FaultCountLow": number
    },
    "ServiceSummaryStatistics": {
      "ErrorStatistics": {
        "OtherCount": number,
        "ThrottleCount": number,
        "TotalCount": number
      },
      "FaultStatistics": {
        "OtherCount": number,
        "TotalCount": number
      },
      "OkCount": number,
      "TotalCount": number,
      "TotalResponseTime": number
    },
    "Timestamp": number
  }
]
}

```

## 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.

### **ContainsOldGroupVersions** (p. 47)

A flag indicating whether or not a group's filter expression has been consistent, or if a returned aggregation might show statistics from an older version of the group's filter expression.

Type: Boolean

### **NextToken** (p. 47)

Pagination token.

Type: String

### **TimeSeriesServiceStatistics** (p. 47)

The collection of statistics.

Type: Array of [TimeSeriesServiceStatistics](#) (p. 143) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 154).

### **InvalidRequestException**

The request is missing required parameters or has invalid parameters.

HTTP Status Code: 400

**ThrottledException**

The request exceeds the maximum number of requests per second.

HTTP Status Code: 429

## See Also

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

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetTraceGraph

Retrieves a service graph for one or more specific trace IDs.

## Request Syntax

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

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

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### NextToken (p. 50)

Pagination token.

Type: String

Required: No

### TraceIds (p. 50)

Trace IDs of requests for which to generate a service graph.

Type: Array of strings

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

Length Constraints: Minimum length of 1. Maximum length of 35.

Required: Yes

## Response Syntax

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

{
  "NextToken": "string",
  "Services": [
    {
      "AccountId": "string",
      "DurationHistogram": [
        {
          "Count": number,
          "Value": number
        }
      ]
    }
  ]
}
```

```

    }
  ],
  "Edges": [
    {
      "Aliases": [
        {
          "Name": "string",
          "Names": [ "string" ],
          "Type": "string"
        }
      ],
      "EndTime": number,
      "ReferenceId": number,
      "ResponseTimeHistogram": [
        {
          "Count": number,
          "Value": number
        }
      ],
      "StartTime": number,
      "SummaryStatistics": {
        "ErrorStatistics": {
          "OtherCount": number,
          "ThrottleCount": number,
          "TotalCount": number
        },
        "FaultStatistics": {
          "OtherCount": number,
          "TotalCount": number
        },
        "OkCount": number,
        "TotalCount": number,
        "TotalResponseTime": number
      }
    }
  ],
  "EndTime": number,
  "Name": "string",
  "Names": [ "string" ],
  "ReferenceId": number,
  "ResponseTimeHistogram": [
    {
      "Count": number,
      "Value": number
    }
  ],
  "Root": boolean,
  "StartTime": number,
  "State": "string",
  "SummaryStatistics": {
    "ErrorStatistics": {
      "OtherCount": number,
      "ThrottleCount": number,
      "TotalCount": number
    },
    "FaultStatistics": {
      "OtherCount": number,
      "TotalCount": number
    },
    "OkCount": number,
    "TotalCount": number,
    "TotalResponseTime": number
  },
  "Type": "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. 50)

Pagination token.

Type: String

### **Services** (p. 50)

The services that have processed one of the specified requests.

Type: Array of [Service](#) (p. 136) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 154).

### **InvalidRequestException**

The request is missing required parameters or has invalid parameters.

HTTP Status Code: 400

### **ThrottledException**

The request exceeds the maximum number of requests per second.

HTTP Status Code: 429

## See Also

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

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetTraceSummaries

Retrieves IDs and annotations for traces available for a specified time frame using an optional filter. To get the full traces, pass the trace IDs to `BatchGetTraces`.

A filter expression can target traced requests that hit specific service nodes or edges, have errors, or come from a known user. For example, the following filter expression targets traces that pass through `api.example.com`:

```
service("api.example.com")
```

This filter expression finds traces that have an annotation named `account` with the value `12345`:

```
annotation.account = "12345"
```

For a full list of indexed fields and keywords that you can use in filter expressions, see [Using Filter Expressions](#) in the *AWS X-Ray Developer Guide*.

## Request Syntax

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

```
{
  "EndTime": number,
  "FilterExpression": "string",
  "NextToken": "string",
  "Sampling": boolean,
  "SamplingStrategy": {
    "Name": "string",
    "Value": number
  },
  "StartTime": number,
  "TimeRangeType": "string"
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### EndTime (p. 53)

The end of the time frame for which to retrieve traces, in Unix time seconds.

Type: Timestamp

Required: Yes

### FilterExpression (p. 53)

Specify a filter expression to retrieve trace summaries for services or requests that meet certain requirements.

Type: String

Required: No

**NextToken** (p. 53)

Specify the pagination token returned by a previous request to retrieve the next page of results.

Type: String

Required: No

**Sampling** (p. 53)

Set to `true` to get summaries for only a subset of available traces.

Type: Boolean

Required: No

**SamplingStrategy** (p. 53)

A parameter to indicate whether to enable sampling on trace summaries. Input parameters are Name and Value.

Type: [SamplingStrategy](#) (p. 133) object

Required: No

**StartTime** (p. 53)

The start of the time frame for which to retrieve traces, in Unix time seconds.

Type: Timestamp

Required: Yes

**TimeRangeType** (p. 53)

A parameter to indicate whether to query trace summaries by TraceId or Event time.

Type: String

Valid Values: `TraceId` | `Event`

Required: No

## Response Syntax

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

{
  "ApproximateTime": number,
  "NextToken": "string",
  "TracesProcessedCount": number,
  "TraceSummaries": [
    {
      "Annotations": {
        "string": [
          {
            "AnnotationValue": {
              "BooleanValue": boolean,
              "NumberValue": number,
              "StringValue": "string"
            }
          }
        ]
      }
    }
  ]
}
```

```
    "ServiceIds": [
      {
        "AccountId": "string",
        "Name": "string",
        "Names": [ "string" ],
        "Type": "string"
      }
    ]
  },
  "AvailabilityZones": [
    {
      "Name": "string"
    }
  ],
  "Duration": number,
  "EntryPoint": {
    "AccountId": "string",
    "Name": "string",
    "Names": [ "string" ],
    "Type": "string"
  },
  "ErrorRootCauses": [
    {
      "ClientImpacting": boolean,
      "Services": [
        {
          "AccountId": "string",
          "EntityPath": [
            {
              "Exceptions": [
                {
                  "Message": "string",
                  "Name": "string"
                }
              ],
              "Name": "string",
              "Remote": boolean
            }
          ],
          "Inferred": boolean,
          "Name": "string",
          "Names": [ "string" ],
          "Type": "string"
        }
      ]
    }
  ],
  "FaultRootCauses": [
    {
      "ClientImpacting": boolean,
      "Services": [
        {
          "AccountId": "string",
          "EntityPath": [
            {
              "Exceptions": [
                {
                  "Message": "string",
                  "Name": "string"
                }
              ],
              "Name": "string",
              "Remote": boolean
            }
          ]
        }
      ]
    }
  ]
}
```



```

        ],
        "Inferred": boolean,
        "Name": "string",
        "Names": [ "string" ],
        "Type": "string"
    }
]
}
],
"HasError": boolean,
"HasFault": boolean,
"HasThrottle": boolean,
"Http": {
    "ClientIp": "string",
    "HttpMethod": "string",
    "HttpStatus": number,
    "HttpURL": "string",
    "UserAgent": "string"
},
"Id": "string",
"InstanceIds": [
    {
        "Id": "string"
    }
],
"IsPartial": boolean,
"MatchedEventTime": number,
"ResourceARNs": [
    {
        "ARN": "string"
    }
],
"ResponseTime": number,
"ResponseTimeRootCauses": [
    {
        "ClientImpacting": boolean,
        "Services": [
            {
                "AccountId": "string",
                "EntityPath": [
                    {
                        "Coverage": number,
                        "Name": "string",
                        "Remote": boolean
                    }
                ],
                "Inferred": boolean,
                "Name": "string",
                "Names": [ "string" ],
                "Type": "string"
            }
        ]
    }
]
}
],
"Revision": number,
"ServiceIds": [
    {
        "AccountId": "string",
        "Name": "string",
        "Names": [ "string" ],
        "Type": "string"
    }
],
"Users": [
    {
        "ServiceIds": [

```

```
{
  {
    "AccountId": "string",
    "Name": "string",
    "Names": [ "string" ],
    "Type": "string"
  },
  "UserName": "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.

### **ApproximateTime** (p. 54)

The start time of this page of results.

Type: Timestamp

### **NextToken** (p. 54)

If the requested time frame contained more than one page of results, you can use this token to retrieve the next page. The first page contains the most recent results, closest to the end of the time frame.

Type: String

### **TracesProcessedCount** (p. 54)

The total number of traces processed, including traces that did not match the specified filter expression.

Type: Long

### **TraceSummaries** (p. 54)

Trace IDs and annotations for traces that were found in the specified time frame.

Type: Array of [TraceSummary](#) (p. 145) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 154).

### **InvalidRequestException**

The request is missing required parameters or has invalid parameters.

HTTP Status Code: 400

### **ThrottledException**

The request exceeds the maximum number of requests per second.

HTTP Status Code: 429

## See Also

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

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ListTagsForResource

Returns a list of tags that are applied to the specified AWS X-Ray group or sampling rule.

## Request Syntax

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

{
  "NextToken": "string",
  "ResourceARN": "string"
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### NextToken (p. 59)

A pagination token. If multiple pages of results are returned, use the `NextToken` value returned with the current page of results as the value of this parameter to get the next page of results.

Type: String

Required: No

### ResourceARN (p. 59)

The Amazon Resource Number (ARN) of an X-Ray group or sampling rule.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1011.

Required: Yes

## Response Syntax

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

{
  "NextToken": "string",
  "Tags": [
    {
      "Key": "string",
      "Value": "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. 59)

A pagination token. If multiple pages of results are returned, use the `NextToken` value returned with the current page of results to get the next page of results.

Type: String

### **Tags** (p. 59)

A list of tags, as key and value pairs, that is associated with the specified X-Ray group or sampling rule.

Type: Array of [Tag](#) (p. 141) objects

Array Members: Minimum number of 0 items. Maximum number of 200 items.

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 154).

### **InvalidRequestException**

The request is missing required parameters or has invalid parameters.

HTTP Status Code: 400

### **ResourceNotFoundException**

The resource was not found. Verify that the name or Amazon Resource Name (ARN) of the resource is correct.

HTTP Status Code: 404

### **ThrottledException**

The request exceeds the maximum number of requests per second.

HTTP Status Code: 429

## See Also

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

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)

- [AWS SDK for Ruby V3](#)

# PutEncryptionConfig

Updates the encryption configuration for X-Ray data.

## Request Syntax

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

{
  "KeyId": "string",
  "Type": "string"
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### KeyId (p. 62)

An AWS KMS key in one of the following formats:

- **Alias** - The name of the key. For example, `alias/MyKey`.
- **Key ID** - The KMS key ID of the key. For example, `ae4aa6d49-a4d8-9df9-a475-4ff6d7898456`. AWS X-Ray does not support asymmetric KMS keys.
- **ARN** - The full Amazon Resource Name of the key ID or alias. For example, `arn:aws:kms:us-east-2:123456789012:key/ae4aa6d49-a4d8-9df9-a475-4ff6d7898456`. Use this format to specify a key in a different account.

Omit this key if you set `Type` to `NONE`.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 3000.

Required: No

### Type (p. 62)

The type of encryption. Set to `KMS` to use your own key for encryption. Set to `NONE` for default encryption.

Type: String

Valid Values: `NONE` | `KMS`

Required: Yes

## Response Syntax

```
HTTP/1.1 200
```

```
Content-type: application/json
```

```
{
  "EncryptionConfig": {
    "KeyId": "string",
    "Status": "string",
    "Type": "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.

### EncryptionConfig (p. 62)

The new encryption configuration.

Type: [EncryptionConfig](#) (p. 89) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 154).

### InvalidRequestException

The request is missing required parameters or has invalid parameters.

HTTP Status Code: 400

### ThrottledException

The request exceeds the maximum number of requests per second.

HTTP Status Code: 429

## See Also

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

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)



# PutTelemetryRecords

Used by the AWS X-Ray daemon to upload telemetry.

## Request Syntax

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

{
  "EC2InstanceId": "string",
  "Hostname": "string",
  "ResourceARN": "string",
  "TelemetryRecords": [
    {
      "BackendConnectionErrors": {
        "ConnectionRefusedCount": number,
        "HTTPCode4XXCount": number,
        "HTTPCode5XXCount": number,
        "OtherCount": number,
        "TimeoutCount": number,
        "UnknownHostCount": number
      },
      "SegmentsReceivedCount": number,
      "SegmentsRejectedCount": number,
      "SegmentsSentCount": number,
      "SegmentsSpilloverCount": number,
      "Timestamp": number
    }
  ]
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### [EC2InstanceId](#) (p. 64)

Type: String

Length Constraints: Maximum length of 20.

Required: No

### [Hostname](#) (p. 64)

Type: String

Length Constraints: Maximum length of 255.

Required: No

### [ResourceARN](#) (p. 64)

Type: String

Length Constraints: Maximum length of 500.

Required: No

[TelemetryRecords](#) (p. 64)

Type: Array of [TelemetryRecord](#) (p. 142) objects

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. 154).

### **InvalidRequestException**

The request is missing required parameters or has invalid parameters.

HTTP Status Code: 400

### **ThrottledException**

The request exceeds the maximum number of requests per second.

HTTP Status Code: 429

## See Also

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

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# PutTraceSegments

Uploads segment documents to AWS X-Ray. The [X-Ray SDK](#) generates segment documents and sends them to the X-Ray daemon, which uploads them in batches. A segment document can be a completed segment, an in-progress segment, or an array of subsegments.

Segments must include the following fields. For the full segment document schema, see [AWS X-Ray Segment Documents](#) in the *AWS X-Ray Developer Guide*.

## Required segment document fields

- `name` - The name of the service that handled the request.
- `id` - A 64-bit identifier for the segment, unique among segments in the same trace, in 16 hexadecimal digits.
- `trace_id` - A unique identifier that connects all segments and subsegments originating from a single client request.
- `start_time` - Time the segment or subsegment was created, in floating point seconds in epoch time, accurate to milliseconds. For example, `1480615200.010` or `1.480615200010E9`.
- `end_time` - Time the segment or subsegment was closed. For example, `1480615200.090` or `1.480615200090E9`. Specify either an `end_time` or `in_progress`.
- `in_progress` - Set to `true` instead of specifying an `end_time` to record that a segment has been started, but is not complete. Send an in-progress segment when your application receives a request that will take a long time to serve, to trace that the request was received. When the response is sent, send the complete segment to overwrite the in-progress segment.

A `trace_id` consists of three numbers separated by hyphens. For example, `1-58406520-a006649127e371903a2de979`. This includes:

## Trace ID Format

- The version number, for instance, `1`.
- The time of the original request, in Unix epoch time, in 8 hexadecimal digits. For example, 10:00AM December 2nd, 2016 PST in epoch time is `1480615200` seconds, or `58406520` in hexadecimal.
- A 96-bit identifier for the trace, globally unique, in 24 hexadecimal digits.

## Request Syntax

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

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

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### [TraceSegmentDocuments](#) (p. 66)

A string containing a JSON document defining one or more segments or subsegments.

Type: Array of strings

Required: Yes

## Response Syntax

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

{
  "UnprocessedTraceSegments": [
    {
      "ErrorCode": "string",
      "Id": "string",
      "Message": "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.

### [UnprocessedTraceSegments](#) (p. 67)

Segments that failed processing.

Type: Array of [UnprocessedTraceSegment](#) (p. 150) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 154).

### **InvalidRequestException**

The request is missing required parameters or has invalid parameters.

HTTP Status Code: 400

### **ThrottledException**

The request exceeds the maximum number of requests per second.

HTTP Status Code: 429

## See Also

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

- [AWS Command Line Interface](#)

- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# TagResource

Applies tags to an existing AWS X-Ray group or sampling rule.

## Request Syntax

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

{
  "ResourceARN": "string",
  "Tags": [
    {
      "Key": "string",
      "Value": "string"
    }
  ]
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### ResourceARN (p. 69)

The Amazon Resource Number (ARN) of an X-Ray group or sampling rule.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1011.

Required: Yes

### Tags (p. 69)

A map that contains one or more tag keys and tag values to attach to an X-Ray group or sampling rule. For more information about ways to use tags, see [Tagging AWS resources](#) in the *AWS General Reference*.

The following restrictions apply to tags:

- Maximum number of user-applied tags per resource: 50
- Maximum tag key length: 128 Unicode characters
- Maximum tag value length: 256 Unicode characters
- Valid values for key and value: a-z, A-Z, 0-9, space, and the following characters: \_ . : / = + - and @
- Tag keys and values are case sensitive.
- Don't use `aws :` as a prefix for keys; it's reserved for AWS use. You cannot edit or delete system tags.

Type: Array of [Tag \(p. 141\)](#) objects

Array Members: Minimum number of 0 items. Maximum number of 200 items.

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 \(p. 154\)](#).

### **InvalidRequestException**

The request is missing required parameters or has invalid parameters.

HTTP Status Code: 400

### **ResourceNotFoundException**

The resource was not found. Verify that the name or Amazon Resource Name (ARN) of the resource is correct.

HTTP Status Code: 404

### **ThrottledException**

The request exceeds the maximum number of requests per second.

HTTP Status Code: 429

### **TooManyTagsException**

You have exceeded the maximum number of tags you can apply to this resource.

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 tags from an AWS X-Ray group or sampling rule. You cannot edit or delete system tags (those with an `aws:` prefix).

## Request Syntax

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

{
  "ResourceARN": "string",
  "TagKeys": [ "string" ]
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### ResourceARN (p. 71)

The Amazon Resource Number (ARN) of an X-Ray group or sampling rule.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1011.

Required: Yes

### TagKeys (p. 71)

Keys for one or more tags that you want to remove from an X-Ray group or sampling rule.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 200 items.

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

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 \(p. 154\)](#).

### **InvalidRequestException**

The request is missing required parameters or has invalid parameters.

HTTP Status Code: 400

### **ResourceNotFoundException**

The resource was not found. Verify that the name or Amazon Resource Name (ARN) of the resource is correct.

HTTP Status Code: 404

### **ThrottledException**

The request exceeds the maximum number of requests per second.

HTTP Status Code: 429

## See Also

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

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# UpdateGroup

Updates a group resource.

## Request Syntax

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

{
  "FilterExpression": "string",
  "GroupARN": "string",
  "GroupName": "string",
  "InsightsConfiguration": {
    "InsightsEnabled": boolean,
    "NotificationsEnabled": boolean
  }
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### FilterExpression (p. 73)

The updated filter expression defining criteria by which to group traces.

Type: String

Required: No

### GroupARN (p. 73)

The ARN that was generated upon creation.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 400.

Required: No

### GroupName (p. 73)

The case-sensitive name of the group.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 32.

Required: No

### InsightsConfiguration (p. 73)

The structure containing configurations related to insights.

- The InsightsEnabled boolean can be set to true to enable insights for the group or false to disable insights for the group.

- The `NotificationsEnabled` boolean can be set to `true` to enable insights notifications for the group. Notifications can only be enabled on a group with `InsightsEnabled` set to `true`.

Type: [InsightsConfiguration](#) (p. 111) object

Required: No

## Response Syntax

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

{
  "Group": {
    "FilterExpression": "string",
    "GroupARN": "string",
    "GroupName": "string",
    "InsightsConfiguration": {
      "InsightsEnabled": boolean,
      "NotificationsEnabled": boolean
    }
  }
}
```

## Response Elements

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

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

### Group (p. 74)

The group that was updated. Contains the name of the group that was updated, the ARN of the group that was updated, the updated filter expression, and the updated insight configuration assigned to the group.

Type: [Group](#) (p. 101) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 154).

### InvalidRequestException

The request is missing required parameters or has invalid parameters.

HTTP Status Code: 400

### ThrottledException

The request exceeds the maximum number of requests per second.

HTTP Status Code: 429

## See Also

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

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# UpdateSamplingRule

Modifies a sampling rule's configuration.

## Request Syntax

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

```
{
  "SamplingRuleUpdate": {
    "Attributes": {
      "string" : "string"
    },
    "FixedRate": number,
    "Host": "string",
    "HTTPMethod": "string",
    "Priority": number,
    "ReservoirSize": number,
    "ResourceARN": "string",
    "RuleARN": "string",
    "RuleName": "string",
    "ServiceName": "string",
    "ServiceType": "string",
    "URLPath": "string"
  }
}
```

## URI Request Parameters

The request does not use any URI parameters.

## Request Body

The request accepts the following data in JSON format.

### SamplingRuleUpdate (p. 76)

The rule and fields to change.

Type: [SamplingRuleUpdate](#) (p. 127) object

Required: Yes

## Response Syntax

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

```
{
  "SamplingRuleRecord": {
    "CreatedAt": number,
    "ModifiedAt": number,
    "SamplingRule": {
      "Attributes": {
        "string" : "string"
      }
    }
  }
}
```

```
    },
    "FixedRate": number,
    "Host": "string",
    "HTTPMethod": "string",
    "Priority": number,
    "ReservoirSize": number,
    "ResourceARN": "string",
    "RuleARN": "string",
    "RuleName": "string",
    "ServiceName": "string",
    "ServiceType": "string",
    "URLPath": "string",
    "Version": number
  }
}
```

## 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.

### [SamplingRuleRecord \(p. 76\)](#)

The updated rule definition and metadata.

Type: [SamplingRuleRecord \(p. 126\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 154\)](#).

### **InvalidRequestException**

The request is missing required parameters or has invalid parameters.

HTTP Status Code: 400

### **ThrottledException**

The request exceeds the maximum number of requests per second.

HTTP Status Code: 429

## See Also

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

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)

- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# Data Types

The AWS X-Ray 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:

- [Alias](#) (p. 81)
- [AnnotationValue](#) (p. 82)
- [AnomalousService](#) (p. 83)
- [AvailabilityZoneDetail](#) (p. 84)
- [BackendConnectionErrors](#) (p. 85)
- [Edge](#) (p. 86)
- [EdgeStatistics](#) (p. 88)
- [EncryptionConfig](#) (p. 89)
- [ErrorRootCause](#) (p. 90)
- [ErrorRootCauseEntity](#) (p. 91)
- [ErrorRootCauseService](#) (p. 92)
- [ErrorStatistics](#) (p. 94)
- [FaultRootCause](#) (p. 95)
- [FaultRootCauseEntity](#) (p. 96)
- [FaultRootCauseService](#) (p. 97)
- [FaultStatistics](#) (p. 99)
- [ForecastStatistics](#) (p. 100)
- [Group](#) (p. 101)
- [GroupSummary](#) (p. 102)
- [HistogramEntry](#) (p. 103)
- [Http](#) (p. 104)
- [Insight](#) (p. 105)
- [InsightEvent](#) (p. 107)
- [InsightImpactGraphEdge](#) (p. 108)
- [InsightImpactGraphService](#) (p. 109)
- [InsightsConfiguration](#) (p. 111)
- [InsightSummary](#) (p. 112)
- [InstanceIdDetail](#) (p. 115)
- [RequestImpactStatistics](#) (p. 116)
- [ResourceARNDetail](#) (p. 117)
- [ResponseTimeRootCause](#) (p. 118)
- [ResponseTimeRootCauseEntity](#) (p. 119)
- [ResponseTimeRootCauseService](#) (p. 120)
- [RootCauseException](#) (p. 122)
- [SamplingRule](#) (p. 123)



- [SamplingRuleRecord](#) (p. 126)
- [SamplingRuleUpdate](#) (p. 127)
- [SamplingStatisticsDocument](#) (p. 130)
- [SamplingStatisticSummary](#) (p. 132)
- [SamplingStrategy](#) (p. 133)
- [SamplingTargetDocument](#) (p. 134)
- [Segment](#) (p. 135)
- [Service](#) (p. 136)
- [ServiceId](#) (p. 139)
- [ServiceStatistics](#) (p. 140)
- [Tag](#) (p. 141)
- [TelemetryRecord](#) (p. 142)
- [TimeSeriesServiceStatistics](#) (p. 143)
- [Trace](#) (p. 144)
- [TraceSummary](#) (p. 145)
- [TraceUser](#) (p. 148)
- [UnprocessedStatistics](#) (p. 149)
- [UnprocessedTraceSegment](#) (p. 150)
- [ValueWithServiceIds](#) (p. 151)

# Alias

An alias for an edge.

## Contents

### Name

The canonical name of the alias.

Type: String

Required: No

### Names

A list of names for the alias, including the canonical name.

Type: Array of strings

Required: No

### Type

The type of the alias.

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](#)

# AnnotationValue

Value of a segment annotation. Has one of three value types: Number, Boolean, or String.

## Contents

### **BooleanValue**

Value for a Boolean annotation.

Type: Boolean

Required: No

### **NumberValue**

Value for a Number annotation.

Type: Double

Required: No

### **StringValue**

Value for a String annotation.

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](#)

# AnomalousService

The service within the service graph that has anomalously high fault rates.

## Contents

### ServiceId

Type: [ServiceId](#) (p. 139) 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](#)

# AvailabilityZoneDetail

A list of Availability Zones corresponding to the segments in a trace.

## Contents

### Name

The name of a corresponding Availability Zone.

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](#)

# BackendConnectionErrors

## Contents

### **ConnectionRefusedCount**

Type: Integer

Required: No

### **HTTPCode4XXCount**

Type: Integer

Required: No

### **HTTPCode5XXCount**

Type: Integer

Required: No

### **OtherCount**

Type: Integer

Required: No

### **TimeoutCount**

Type: Integer

Required: No

### **UnknownHostCount**

Type: Integer

Required: No

## See Also

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

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

# Edge

Information about a connection between two services.

## Contents

### Aliases

Aliases for the edge.

Type: Array of [Alias](#) (p. 81) objects

Required: No

### EndTime

The end time of the last segment on the edge.

Type: Timestamp

Required: No

### ReferenceId

Identifier of the edge. Unique within a service map.

Type: Integer

Required: No

### ResponseTimeHistogram

A histogram that maps the spread of client response times on an edge.

Type: Array of [HistogramEntry](#) (p. 103) objects

Required: No

### StartTime

The start time of the first segment on the edge.

Type: Timestamp

Required: No

### SummaryStatistics

Response statistics for segments on the edge.

Type: [EdgeStatistics](#) (p. 88) 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](#)



# EdgeStatistics

Response statistics for an edge.

## Contents

### ErrorStatistics

Information about requests that failed with a 4xx Client Error status code.

Type: [ErrorStatistics](#) (p. 94) object

Required: No

### FaultStatistics

Information about requests that failed with a 5xx Server Error status code.

Type: [FaultStatistics](#) (p. 99) object

Required: No

### OkCount

The number of requests that completed with a 2xx Success status code.

Type: Long

Required: No

### TotalCount

The total number of completed requests.

Type: Long

Required: No

### TotalResponseTime

The aggregate response time of completed requests.

Type: Double

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](#)

# EncryptionConfig

A configuration document that specifies encryption configuration settings.

## Contents

### KeyId

The ID of the KMS key used for encryption, if applicable.

Type: String

Required: No

### Status

The encryption status. While the status is `UPDATING`, X-Ray may encrypt data with a combination of the new and old settings.

Type: String

Valid Values: `UPDATING` | `ACTIVE`

Required: No

### Type

The type of encryption. Set to `KMS` for encryption with KMS keys. Set to `NONE` for default encryption.

Type: String

Valid Values: `NONE` | `KMS`

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](#)

# ErrorRootCause

The root cause of a trace summary error.

## Contents

### ClientImpacting

A flag that denotes that the root cause impacts the trace client.

Type: Boolean

Required: No

### Services

A list of services corresponding to an error. A service identifies a segment and it contains a name, account ID, type, and inferred flag.

Type: Array of [ErrorRootCauseService](#) (p. 92) 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](#)

# ErrorRootCauseEntity

A collection of segments and corresponding subsegments associated to a trace summary error.

## Contents

### Exceptions

The types and messages of the exceptions.

Type: Array of [RootCauseException](#) (p. 122) objects

Required: No

### Name

The name of the entity.

Type: String

Required: No

### Remote

A flag that denotes a remote subsegment.

Type: Boolean

Required: No

## See Also

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

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

# ErrorRootCauseService

A collection of fields identifying the services in a trace summary error.

## Contents

### AccountId

The account ID associated to the service.

Type: String

Required: No

### EntityPath

The path of root cause entities found on the service.

Type: Array of [ErrorRootCauseEntity](#) (p. 91) objects

Required: No

### Inferred

A Boolean value indicating if the service is inferred from the trace.

Type: Boolean

Required: No

### Name

The service name.

Type: String

Required: No

### Names

A collection of associated service names.

Type: Array of strings

Required: No

### Type

The type associated to the service.

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](#)

# ErrorStatistics

Information about requests that failed with a 4xx Client Error status code.

## Contents

### **OtherCount**

The number of requests that failed with untracked 4xx Client Error status codes.

Type: Long

Required: No

### **ThrottleCount**

The number of requests that failed with a 419 throttling status code.

Type: Long

Required: No

### **TotalCount**

The total number of requests that failed with a 4xx Client Error status code.

Type: Long

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](#)

# FaultRootCause

The root cause information for a trace summary fault.

## Contents

### ClientImpacting

A flag that denotes that the root cause impacts the trace client.

Type: Boolean

Required: No

### Services

A list of corresponding services. A service identifies a segment and it contains a name, account ID, type, and inferred flag.

Type: Array of [FaultRootCauseService](#) (p. 97) 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](#)



# FaultRootCauseEntity

A collection of segments and corresponding subsegments associated to a trace summary fault error.

## Contents

### Exceptions

The types and messages of the exceptions.

Type: Array of [RootCauseException](#) (p. 122) objects

Required: No

### Name

The name of the entity.

Type: String

Required: No

### Remote

A flag that denotes a remote subsegment.

Type: Boolean

Required: No

## See Also

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

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

# FaultRootCauseService

A collection of fields identifying the services in a trace summary fault.

## Contents

### AccountId

The account ID associated to the service.

Type: String

Required: No

### EntityPath

The path of root cause entities found on the service.

Type: Array of [FaultRootCauseEntity](#) (p. 96) objects

Required: No

### Inferred

A Boolean value indicating if the service is inferred from the trace.

Type: Boolean

Required: No

### Name

The service name.

Type: String

Required: No

### Names

A collection of associated service names.

Type: Array of strings

Required: No

### Type

The type associated to the service.

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](#)

# FaultStatistics

Information about requests that failed with a 5xx Server Error status code.

## Contents

### **OtherCount**

The number of requests that failed with untracked 5xx Server Error status codes.

Type: Long

Required: No

### **TotalCount**

The total number of requests that failed with a 5xx Server Error status code.

Type: Long

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](#)

# ForecastStatistics

The predicted high and low fault count. This is used to determine if a service has become anomalous and if an insight should be created.

## Contents

### **FaultCountHigh**

The upper limit of fault counts for a service.

Type: Long

Required: No

### **FaultCountLow**

The lower limit of fault counts for a service.

Type: Long

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](#)

# Group

Details and metadata for a group.

## Contents

### **FilterExpression**

The filter expression defining the parameters to include traces.

Type: String

Required: No

### **GroupARN**

The Amazon Resource Name (ARN) of the group generated based on the GroupName.

Type: String

Required: No

### **GroupName**

The unique case-sensitive name of the group.

Type: String

Required: No

### **InsightsConfiguration**

The structure containing configurations related to insights.

- The InsightsEnabled boolean can be set to true to enable insights for the group or false to disable insights for the group.
- The NotificationsEnabled boolean can be set to true to enable insights notifications through Amazon EventBridge for the group.

Type: [InsightsConfiguration](#) (p. 111) 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](#)

# GroupSummary

Details for a group without metadata.

## Contents

### **FilterExpression**

The filter expression defining the parameters to include traces.

Type: String

Required: No

### **GroupARN**

The ARN of the group generated based on the GroupName.

Type: String

Required: No

### **GroupName**

The unique case-sensitive name of the group.

Type: String

Required: No

### **InsightsConfiguration**

The structure containing configurations related to insights.

- The InsightsEnabled boolean can be set to true to enable insights for the group or false to disable insights for the group.
- The NotificationsEnabled boolean can be set to true to enable insights notifications. Notifications can only be enabled on a group with InsightsEnabled set to true.

Type: [InsightsConfiguration](#) (p. 111) 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](#)

# HistogramEntry

An entry in a histogram for a statistic. A histogram maps the range of observed values on the X axis, and the prevalence of each value on the Y axis.

## Contents

### Count

The prevalence of the entry.

Type: Integer

Required: No

### Value

The value of the entry.

Type: Double

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](#)



# Http

Information about an HTTP request.

## Contents

### **ClientIp**

The IP address of the requestor.

Type: String

Required: No

### **HttpMethod**

The request method.

Type: String

Required: No

### **HttpStatus**

The response status.

Type: Integer

Required: No

### **HttpURL**

The request URL.

Type: String

Required: No

### **UserAgent**

The request's user agent string.

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](#)

# Insight

When fault rates go outside of the expected range, X-Ray creates an insight. Insights tracks emergent issues within your applications.

## Contents

### Categories

The categories that label and describe the type of insight.

Type: Array of strings

Valid Values: `FAULT`

Required: No

### ClientRequestImpactStatistics

The impact statistics of the client side service. This includes the number of requests to the client service and whether the requests were faults or okay.

Type: [RequestImpactStatistics](#) (p. 116) object

Required: No

### EndTime

The time, in Unix seconds, at which the insight ended.

Type: Timestamp

Required: No

### GroupARN

The Amazon Resource Name (ARN) of the group that the insight belongs to.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 400.

Required: No

### GroupName

The name of the group that the insight belongs to.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 32.

Required: No

### InsightId

The insights unique identifier.

Type: String

Pattern: `[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[1-5][0-9a-fA-F]{3}-[89abAB][0-9a-fA-F]{3}-[0-9a-fA-F]{12}`

Required: No

**RootCauseServiceId**

Type: [ServiceId](#) (p. 139) object

Required: No

**RootCauseServiceRequestImpactStatistics**

The impact statistics of the root cause service. This includes the number of requests to the client service and whether the requests were faults or okay.

Type: [RequestImpactStatistics](#) (p. 116) object

Required: No

**StartTime**

The time, in Unix seconds, at which the insight began.

Type: Timestamp

Required: No

**State**

The current state of the insight.

Type: String

Valid Values: `ACTIVE` | `CLOSED`

Required: No

**Summary**

A brief description of the insight.

Type: String

Required: No

**TopAnomalousServices**

The service within the insight that is most impacted by the incident.

Type: Array of [AnomalousService](#) (p. 83) 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](#)

# InsightEvent

X-Ray reevaluates insights periodically until they are resolved, and records each intermediate state in an event. You can review incident events in the Impact Timeline on the Inspect page in the X-Ray console.

## Contents

### **ClientRequestImpactStatistics**

The impact statistics of the client side service. This includes the number of requests to the client service and whether the requests were faults or okay.

Type: [RequestImpactStatistics](#) (p. 116) object

Required: No

### **EventTime**

The time, in Unix seconds, at which the event was recorded.

Type: Timestamp

Required: No

### **RootCauseServiceRequestImpactStatistics**

The impact statistics of the root cause service. This includes the number of requests to the client service and whether the requests were faults or okay.

Type: [RequestImpactStatistics](#) (p. 116) object

Required: No

### **Summary**

A brief description of the event.

Type: String

Required: No

### **TopAnomalousServices**

The service during the event that is most impacted by the incident.

Type: Array of [AnomalousService](#) (p. 83) 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](#)

# InsightImpactGraphEdge

The connection between two service in an insight impact graph.

## Contents

### ReferenceId

Identifier of the edge. Unique within a service map.

Type: Integer

Required: No

## See Also

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

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

# InsightImpactGraphService

Information about an application that processed requests, users that made requests, or downstream services, resources, and applications that an application used.

## Contents

### AccountId

Identifier of the AWS account in which the service runs.

Type: String

Required: No

### Edges

Connections to downstream services.

Type: Array of [InsightImpactGraphEdge](#) (p. 108) objects

Required: No

### Name

The canonical name of the service.

Type: String

Required: No

### Names

A list of names for the service, including the canonical name.

Type: Array of strings

Required: No

### ReferenceId

Identifier for the service. Unique within the service map.

Type: Integer

Required: No

### Type

Identifier for the service. Unique within the service map.

- AWS Resource - The type of an AWS resource. For example, `AWS::EC2::Instance` for an application running on Amazon EC2 or `AWS::DynamoDB::Table` for an Amazon DynamoDB table that the application used.
- AWS Service - The type of an AWS service. For example, `AWS::DynamoDB` for downstream calls to Amazon DynamoDB that didn't target a specific table.
- AWS Service - The type of an AWS service. For example, `AWS::DynamoDB` for downstream calls to Amazon DynamoDB that didn't target a specific table.
- remote - A downstream service of indeterminate type.

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](#)

# InsightsConfiguration

The structure containing configurations related to insights.

## Contents

### **InsightsEnabled**

Set the InsightsEnabled value to true to enable insights or false to disable insights.

Type: Boolean

Required: No

### **NotificationsEnabled**

Set the NotificationsEnabled value to true to enable insights notifications. Notifications can only be enabled on a group with InsightsEnabled set to true.

Type: Boolean

Required: No

## See Also

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

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



# InsightSummary

Information that describes an insight.

## Contents

### Categories

**Categories** The categories that label and describe the type of insight.

Type: Array of strings

Valid Values: `FAULT`

Required: No

### ClientRequestImpactStatistics

The impact statistics of the client side service. This includes the number of requests to the client service and whether the requests were faults or okay.

Type: [RequestImpactStatistics](#) (p. 116) object

Required: No

### EndTime

The time, in Unix seconds, at which the insight ended.

Type: Timestamp

Required: No

### GroupARN

The Amazon Resource Name (ARN) of the group that the insight belongs to.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 400.

Required: No

### GroupName

The name of the group that the insight belongs to.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 32.

Required: No

### InsightId

The insights unique identifier.

Type: String

Pattern: `[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[1-5][0-9a-fA-F]{3}-[89abAB][0-9a-fA-F]{3}-[0-9a-fA-F]{12}`

Required: No

**LastUpdateTime**

The time, in Unix seconds, that the insight was last updated.

Type: Timestamp

Required: No

**RootCauseServiceId**

Type: [ServiceId](#) (p. 139) object

Required: No

**RootCauseServiceRequestImpactStatistics**

The impact statistics of the root cause service. This includes the number of requests to the client service and whether the requests were faults or okay.

Type: [RequestImpactStatistics](#) (p. 116) object

Required: No

**StartTime**

The time, in Unix seconds, at which the insight began.

Type: Timestamp

Required: No

**State**

The current state of the insight.

Type: String

Valid Values: `ACTIVE` | `CLOSED`

Required: No

**Summary**

A brief description of the insight.

Type: String

Required: No

**TopAnomalousServices**

The service within the insight that is most impacted by the incident.

Type: Array of [AnomalousService](#) (p. 83) 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](#)

# InstanceIdDetail

A list of EC2 instance IDs corresponding to the segments in a trace.

## Contents

### Id

The ID of a corresponding EC2 instance.

Type: String

Required: No

## See Also

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

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

# RequestImpactStatistics

Statistics that describe how the incident has impacted a service.

## Contents

### **FaultCount**

The number of requests that have resulted in a fault,

Type: Long

Required: No

### **OkCount**

The number of successful requests.

Type: Long

Required: No

### **TotalCount**

The total number of requests to the service.

Type: Long

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](#)

# ResourceARNDetail

A list of resources ARNs corresponding to the segments in a trace.

## Contents

### ARN

The ARN of a corresponding resource.

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](#)

# ResponseTimeRootCause

The root cause information for a response time warning.

## Contents

### ClientImpacting

A flag that denotes that the root cause impacts the trace client.

Type: Boolean

Required: No

### Services

A list of corresponding services. A service identifies a segment and contains a name, account ID, type, and inferred flag.

Type: Array of [ResponseTimeRootCauseService](#) (p. 120) 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](#)

# ResponseTimeRootCauseEntity

A collection of segments and corresponding subsegments associated to a response time warning.

## Contents

### Coverage

The type and messages of the exceptions.

Type: Double

Required: No

### Name

The name of the entity.

Type: String

Required: No

### Remote

A flag that denotes a remote subsegment.

Type: Boolean

Required: No

## See Also

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

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



# ResponseTimeRootCauseService

A collection of fields identifying the service in a response time warning.

## Contents

### AccountId

The account ID associated to the service.

Type: String

Required: No

### EntityPath

The path of root cause entities found on the service.

Type: Array of [ResponseTimeRootCauseEntity](#) (p. 119) objects

Required: No

### Inferred

A Boolean value indicating if the service is inferred from the trace.

Type: Boolean

Required: No

### Name

The service name.

Type: String

Required: No

### Names

A collection of associated service names.

Type: Array of strings

Required: No

### Type

The type associated to the service.

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](#)

# RootCauseException

The exception associated with a root cause.

## Contents

### Message

The message of the exception.

Type: String

Required: No

### Name

The name of the exception.

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](#)

# SamplingRule

A sampling rule that services use to decide whether to instrument a request. Rule fields can match properties of the service, or properties of a request. The service can ignore rules that don't match its properties.

## Contents

### Attributes

Matches attributes derived from the request.

Type: String to string map

Map Entries: Maximum number of 5 items.

Key Length Constraints: Minimum length of 1. Maximum length of 32.

Value Length Constraints: Minimum length of 1. Maximum length of 32.

Required: No

### FixedRate

The percentage of matching requests to instrument, after the reservoir is exhausted.

Type: Double

Valid Range: Minimum value of 0. Maximum value of 1.

Required: Yes

### Host

Matches the hostname from a request URL.

Type: String

Length Constraints: Maximum length of 64.

Required: Yes

### HTTPMethod

Matches the HTTP method of a request.

Type: String

Length Constraints: Maximum length of 10.

Required: Yes

### Priority

The priority of the sampling rule.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 9999.

Required: Yes

### **ReservoirSize**

A fixed number of matching requests to instrument per second, prior to applying the fixed rate. The reservoir is not used directly by services, but applies to all services using the rule collectively.

Type: Integer

Valid Range: Minimum value of 0.

Required: Yes

### **ResourceARN**

Matches the ARN of the AWS resource on which the service runs.

Type: String

Length Constraints: Maximum length of 500.

Required: Yes

### **RuleARN**

The ARN of the sampling rule. Specify a rule by either name or ARN, but not both.

Type: String

Required: No

### **RuleName**

The name of the sampling rule. Specify a rule by either name or ARN, but not both.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 32.

Required: No

### **ServiceName**

Matches the name that the service uses to identify itself in segments.

Type: String

Length Constraints: Maximum length of 64.

Required: Yes

### **ServiceType**

Matches the origin that the service uses to identify its type in segments.

Type: String

Length Constraints: Maximum length of 64.

Required: Yes

### **URLPath**

Matches the path from a request URL.

Type: String

Length Constraints: Maximum length of 128.

Required: Yes

**Version**

The version of the sampling rule format (1).

Type: Integer

Valid Range: Minimum value of 1.

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](#)

# SamplingRuleRecord

A [SamplingRule](#) and its metadata.

## Contents

### CreatedAt

When the rule was created, in Unix time seconds.

Type: Timestamp

Required: No

### ModifiedAt

When the rule was last modified, in Unix time seconds.

Type: Timestamp

Required: No

### SamplingRule

The sampling rule.

Type: [SamplingRule](#) (p. 123) 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](#)

# SamplingRuleUpdate

A document specifying changes to a sampling rule's configuration.

## Contents

### Attributes

Matches attributes derived from the request.

Type: String to string map

Map Entries: Maximum number of 5 items.

Key Length Constraints: Minimum length of 1. Maximum length of 32.

Value Length Constraints: Minimum length of 1. Maximum length of 32.

Required: No

### FixedRate

The percentage of matching requests to instrument, after the reservoir is exhausted.

Type: Double

Required: No

### Host

Matches the hostname from a request URL.

Type: String

Length Constraints: Maximum length of 64.

Required: No

### HTTPMethod

Matches the HTTP method of a request.

Type: String

Length Constraints: Maximum length of 10.

Required: No

### Priority

The priority of the sampling rule.

Type: Integer

Required: No

### ReservoirSize

A fixed number of matching requests to instrument per second, prior to applying the fixed rate. The reservoir is not used directly by services, but applies to all services using the rule collectively.

Type: Integer

Required: No



**ResourceARN**

Matches the ARN of the AWS resource on which the service runs.

Type: String

Length Constraints: Maximum length of 500.

Required: No

**RuleARN**

The ARN of the sampling rule. Specify a rule by either name or ARN, but not both.

Type: String

Required: No

**RuleName**

The name of the sampling rule. Specify a rule by either name or ARN, but not both.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 32.

Required: No

**ServiceName**

Matches the name that the service uses to identify itself in segments.

Type: String

Length Constraints: Maximum length of 64.

Required: No

**ServiceType**

Matches the origin that the service uses to identify its type in segments.

Type: String

Length Constraints: Maximum length of 64.

Required: No

**URLPath**

Matches the path from a request URL.

Type: String

Length Constraints: Maximum length of 128.

Required: No

## See Also

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

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

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

# SamplingStatisticsDocument

Request sampling results for a single rule from a service. Results are for the last 10 seconds unless the service has been assigned a longer reporting interval after a previous call to [GetSamplingTargets](#).

## Contents

### **BorrowCount**

The number of requests recorded with borrowed reservoir quota.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

### **ClientID**

A unique identifier for the service in hexadecimal.

Type: String

Length Constraints: Fixed length of 24.

Required: Yes

### **RequestCount**

The number of requests that matched the rule.

Type: Integer

Valid Range: Minimum value of 0.

Required: Yes

### **RuleName**

The name of the sampling rule.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 32.

Required: Yes

### **SampledCount**

The number of requests recorded.

Type: Integer

Valid Range: Minimum value of 0.

Required: Yes

### **Timestamp**

The current time, in [ISO-8601 format](#) (YYYY-MM-DDThh:mm:ss).

Type: Timestamp

Required: Yes

## See Also

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

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

# SamplingStatisticSummary

Aggregated request sampling data for a sampling rule across all services for a 10-second window.

## Contents

### **BorrowCount**

The number of requests recorded with borrowed reservoir quota.

Type: Integer

Required: No

### **RequestCount**

The number of requests that matched the rule.

Type: Integer

Required: No

### **RuleName**

The name of the sampling rule.

Type: String

Required: No

### **SampledCount**

The number of requests recorded.

Type: Integer

Required: No

### **Timestamp**

The start time of the reporting window, in Unix time seconds.

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](#)

# SamplingStrategy

The name and value of a sampling rule to apply to a trace summary.

## Contents

### Name

The name of a sampling rule.

Type: String

Valid Values: `PartialScan` | `FixedRate`

Required: No

### Value

The value of a sampling rule.

Type: Double

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](#)

# SamplingTargetDocument

Temporary changes to a sampling rule configuration. To meet the global sampling target for a rule, X-Ray calculates a new reservoir for each service based on the recent sampling results of all services that called [GetSamplingTargets](#).

## Contents

### FixedRate

The percentage of matching requests to instrument, after the reservoir is exhausted.

Type: Double

Required: No

### Interval

The number of seconds for the service to wait before getting sampling targets again.

Type: Integer

Required: No

### ReservoirQuota

The number of requests per second that X-Ray allocated for this service.

Type: Integer

Required: No

### ReservoirQuotaTTL

When the reservoir quota expires.

Type: Timestamp

Required: No

### RuleName

The name of the sampling rule.

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](#)

# Segment

A segment from a trace that has been ingested by the X-Ray service. The segment can be compiled from documents uploaded with [PutTraceSegments](#), or an `inferred` segment for a downstream service, generated from a subsegment sent by the service that called it.

For the full segment document schema, see [AWS X-Ray Segment Documents](#) in the *AWS X-Ray Developer Guide*.

## Contents

### Document

The segment document.

Type: String

Length Constraints: Minimum length of 1.

Required: No

### Id

The segment's ID.

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](#)



# Service

Information about an application that processed requests, users that made requests, or downstream services, resources, and applications that an application used.

## Contents

### **AccountId**

Identifier of the AWS account in which the service runs.

Type: String

Required: No

### **DurationHistogram**

A histogram that maps the spread of service durations.

Type: Array of [HistogramEntry](#) (p. 103) objects

Required: No

### **Edges**

Connections to downstream services.

Type: Array of [Edge](#) (p. 86) objects

Required: No

### **EndTime**

The end time of the last segment that the service generated.

Type: Timestamp

Required: No

### **Name**

The canonical name of the service.

Type: String

Required: No

### **Names**

A list of names for the service, including the canonical name.

Type: Array of strings

Required: No

### **ReferenceId**

Identifier for the service. Unique within the service map.

Type: Integer

Required: No

### **ResponseTimeHistogram**

A histogram that maps the spread of service response times.

Type: Array of [HistogramEntry](#) (p. 103) objects

Required: No

### **Root**

Indicates that the service was the first service to process a request.

Type: Boolean

Required: No

### **StartTime**

The start time of the first segment that the service generated.

Type: Timestamp

Required: No

### **State**

The service's state.

Type: String

Required: No

### **SummaryStatistics**

Aggregated statistics for the service.

Type: [ServiceStatistics](#) (p. 140) object

Required: No

### **Type**

The type of service.

- **AWS Resource** - The type of an AWS resource. For example, `AWS::EC2::Instance` for an application running on Amazon EC2 or `AWS::DynamoDB::Table` for an Amazon DynamoDB table that the application used.
- **AWS Service** - The type of an AWS service. For example, `AWS::DynamoDB` for downstream calls to Amazon DynamoDB that didn't target a specific table.
- `client` - Represents the clients that sent requests to a root service.
- `remote` - A downstream service of indeterminate type.

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](#)

# ServiceId

## Contents

### AccountId

Type: String

Required: No

### Name

Type: String

Required: No

### Names

Type: Array of strings

Required: No

### Type

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](#)

# ServiceStatistics

Response statistics for a service.

## Contents

### ErrorStatistics

Information about requests that failed with a 4xx Client Error status code.

Type: [ErrorStatistics](#) (p. 94) object

Required: No

### FaultStatistics

Information about requests that failed with a 5xx Server Error status code.

Type: [FaultStatistics](#) (p. 99) object

Required: No

### OkCount

The number of requests that completed with a 2xx Success status code.

Type: Long

Required: No

### TotalCount

The total number of completed requests.

Type: Long

Required: No

### TotalResponseTime

The aggregate response time of completed requests.

Type: Double

Required: No

## See Also

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

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

# Tag

A map that contains tag keys and tag values to attach to an AWS X-Ray group or sampling rule. For more information about ways to use tags, see [Tagging AWS resources](#) in the *AWS General Reference*.

The following restrictions apply to tags:

- Maximum number of user-applied tags per resource: 50
- Tag keys and values are case sensitive.
- Don't use `aws :` as a prefix for keys; it's reserved for AWS use. You cannot edit or delete system tags.

## Contents

### Key

A tag key, such as `Stage` or `Name`. A tag key cannot be empty. The key can be a maximum of 128 characters, and can contain only Unicode letters, numbers, or separators, or the following special characters: `+ - = . _ : /`

Type: String

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

Required: Yes

### Value

An optional tag value, such as `Production` or `test-only`. The value can be a maximum of 255 characters, and contain only Unicode letters, numbers, or separators, or the following special characters: `+ - = . _ : /`

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Required: Yes

## See Also

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

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

# TelemetryRecord

## Contents

### **BackendConnectionErrors**

Type: [BackendConnectionErrors](#) (p. 85) object

Required: No

### **SegmentsReceivedCount**

Type: Integer

Required: No

### **SegmentsRejectedCount**

Type: Integer

Required: No

### **SegmentsSentCount**

Type: Integer

Required: No

### **SegmentsSpilloverCount**

Type: Integer

Required: No

### **Timestamp**

Type: Timestamp

Required: Yes

## See Also

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

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

# TimeSeriesServiceStatistics

A list of TimeSeriesStatistic structures.

## Contents

### EdgeSummaryStatistics

Response statistics for an edge.

Type: [EdgeStatistics](#) (p. 88) object

Required: No

### ResponseTimeHistogram

The response time histogram for the selected entities.

Type: Array of [HistogramEntry](#) (p. 103) objects

Required: No

### ServiceForecastStatistics

The forecasted high and low fault count values.

Type: [ForecastStatistics](#) (p. 100) object

Required: No

### ServiceSummaryStatistics

Response statistics for a service.

Type: [ServiceStatistics](#) (p. 140) object

Required: No

### Timestamp

Timestamp of the window for which statistics are aggregated.

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](#)



# Trace

A collection of segment documents with matching trace IDs.

## Contents

### Duration

The length of time in seconds between the start time of the root segment and the end time of the last segment that completed.

Type: Double

Required: No

### Id

The unique identifier for the request that generated the trace's segments and subsegments.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 35.

Required: No

### LimitExceeded

LimitExceeded is set to true when the trace has exceeded one of the defined quotas. For more information about quotas, see [AWS X-Ray endpoints and quotas](#).

Type: Boolean

Required: No

### Segments

Segment documents for the segments and subsegments that comprise the trace.

Type: Array of [Segment](#) (p. 135) 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](#)

# TraceSummary

Metadata generated from the segment documents in a trace.

## Contents

### Annotations

Annotations from the trace's segment documents.

Type: String to array of [ValueWithServiceIds](#) (p. 151) objects map

Required: No

### AvailabilityZones

A list of Availability Zones for any zone corresponding to the trace segments.

Type: Array of [AvailabilityZoneDetail](#) (p. 84) objects

Required: No

### Duration

The length of time in seconds between the start time of the root segment and the end time of the last segment that completed.

Type: Double

Required: No

### EntryPoint

The root of a trace.

Type: [ServiceId](#) (p. 139) object

Required: No

### ErrorRootCauses

A collection of ErrorRootCause structures corresponding to the trace segments.

Type: Array of [ErrorRootCause](#) (p. 90) objects

Required: No

### FaultRootCauses

A collection of FaultRootCause structures corresponding to the trace segments.

Type: Array of [FaultRootCause](#) (p. 95) objects

Required: No

### HasError

The root segment document has a 400 series error.

Type: Boolean

Required: No

### HasFault

The root segment document has a 500 series error.

Type: Boolean

Required: No

**HasThrottle**

One or more of the segment documents has a 429 throttling error.

Type: Boolean

Required: No

**Http**

Information about the HTTP request served by the trace.

Type: [Http \(p. 104\)](#) object

Required: No

**Id**

The unique identifier for the request that generated the trace's segments and subsegments.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 35.

Required: No

**InstanceIds**

A list of EC2 instance IDs for any instance corresponding to the trace segments.

Type: Array of [InstanceIdDetail \(p. 115\)](#) objects

Required: No

**IsPartial**

One or more of the segment documents is in progress.

Type: Boolean

Required: No

**MatchedEventTime**

The matched time stamp of a defined event.

Type: Timestamp

Required: No

**ResourceARNs**

A list of resource ARNs for any resource corresponding to the trace segments.

Type: Array of [ResourceARNDetail \(p. 117\)](#) objects

Required: No

**ResponseTime**

The length of time in seconds between the start and end times of the root segment. If the service performs work asynchronously, the response time measures the time before the response is sent to the user, while the duration measures the amount of time before the last traced activity completes.

Type: Double

Required: No

#### **ResponseTimeRootCauses**

A collection of ResponseTimeRootCause structures corresponding to the trace segments.

Type: Array of [ResponseTimeRootCause](#) (p. 118) objects

Required: No

#### **Revision**

The revision number of a trace.

Type: Integer

Required: No

#### **ServiceIds**

Service IDs from the trace's segment documents.

Type: Array of [ServiceId](#) (p. 139) objects

Required: No

#### **Users**

Users from the trace's segment documents.

Type: Array of [TraceUser](#) (p. 148) 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](#)

# TraceUser

Information about a user recorded in segment documents.

## Contents

### **ServiceIds**

Services that the user's request hit.

Type: Array of [ServiceId](#) (p. 139) objects

Required: No

### **UserName**

The user's name.

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](#)

# UnprocessedStatistics

Sampling statistics from a call to [GetSamplingTargets](#) that X-Ray could not process.

## Contents

### **ErrorCode**

The error code.

Type: String

Required: No

### **Message**

The error message.

Type: String

Required: No

### **RuleName**

The name of the sampling rule.

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](#)

# UnprocessedTraceSegment

Information about a segment that failed processing.

## Contents

### **ErrorCode**

The error that caused processing to fail.

Type: String

Required: No

### **Id**

The segment's ID.

Type: String

Required: No

### **Message**

The error message.

Type: String

Required: No

## See Also

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

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

# ValueWithServiceIds

Information about a segment annotation.

## Contents

### **AnnotationValue**

Values of the annotation.

Type: [AnnotationValue](#) (p. 82) object

Required: No

### **ServiceIds**

Services to which the annotation applies.

Type: Array of [ServiceId](#) (p. 139) 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](#)



# 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'THHMMSS'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