Table of Contents

Welcome ............................................................................................................................................. 1
Actions .............................................................................................................................................. 2
    BatchGetTraces .......................................................................................................................... 3
        Request Syntax .................................................................................................................... 3
        URI Request Parameters .................................................................................................... 3
        Request Body ....................................................................................................................... 3
        Response Syntax ................................................................................................................. 3
        Response Elements ............................................................................................................. 4
        Errors ............................................................................................................................... 4
        See Also ............................................................................................................................. 4
    CreateGroup .......................................................................................................................... 6
        Request Syntax .................................................................................................................... 6
        URI Request Parameters .................................................................................................... 6
        Request Body ....................................................................................................................... 6
        Response Syntax ................................................................................................................. 6
        Response Elements ............................................................................................................. 6
        Errors ............................................................................................................................... 7
        See Also ............................................................................................................................. 7
    CreateSamplingRule .................................................................................................................. 8
        Request Syntax .................................................................................................................... 8
        URI Request Parameters .................................................................................................... 8
        Request Body ....................................................................................................................... 8
        Response Syntax ................................................................................................................. 8
        Response Elements ............................................................................................................. 9
        Errors ............................................................................................................................... 9
        See Also ............................................................................................................................. 9
    DeleteGroup .......................................................................................................................... 11
        Request Syntax .................................................................................................................... 11
        URI Request Parameters .................................................................................................... 11
        Request Body ....................................................................................................................... 11
        Response Syntax ................................................................................................................. 11
        Response Elements ............................................................................................................. 11
        Errors ............................................................................................................................... 11
        See Also ............................................................................................................................. 11
    DeleteSamplingRule .................................................................................................................. 13
        Request Syntax .................................................................................................................... 13
        URI Request Parameters .................................................................................................... 13
        Request Body ....................................................................................................................... 13
        Response Syntax ................................................................................................................. 13
        Response Elements ............................................................................................................. 14
        Errors ............................................................................................................................... 14
        See Also ............................................................................................................................. 14
    GetEncryptionConfig .................................................................................................................. 15
        Request Syntax .................................................................................................................... 15
        URI Request Parameters .................................................................................................... 15
        Request Body ....................................................................................................................... 15
        Response Syntax ................................................................................................................. 15
        Response Elements ............................................................................................................. 15
        Errors ............................................................................................................................... 15
        See Also ............................................................................................................................. 15
    GetGroup ................................................................................................................................ 17
        Request Syntax .................................................................................................................... 17
        URI Request Parameters .................................................................................................... 17
        Request Body ....................................................................................................................... 17
<table>
<thead>
<tr>
<th>API Call</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>GetTraceGraph</td>
<td>36</td>
</tr>
<tr>
<td>GetTimeSeriesServiceStatistics</td>
<td>32</td>
</tr>
<tr>
<td>GetServiceGraph</td>
<td>28</td>
</tr>
<tr>
<td>GetSamplingTargets</td>
<td>25</td>
</tr>
<tr>
<td>GetSamplingStatisticSummaries</td>
<td>23</td>
</tr>
<tr>
<td>GetSamplingRules</td>
<td>21</td>
</tr>
<tr>
<td>GetGroups</td>
<td>19</td>
</tr>
<tr>
<td>Errors</td>
<td>18</td>
</tr>
<tr>
<td>See Also</td>
<td>18</td>
</tr>
<tr>
<td>Response Elements</td>
<td>19</td>
</tr>
<tr>
<td>Request Syntax</td>
<td>23</td>
</tr>
<tr>
<td>URI Request Parameters</td>
<td>23</td>
</tr>
<tr>
<td>Request Syntax</td>
<td>25</td>
</tr>
<tr>
<td>Response Syntax</td>
<td>19</td>
</tr>
<tr>
<td>Response Elements</td>
<td>20</td>
</tr>
<tr>
<td>Request Syntax</td>
<td>19</td>
</tr>
<tr>
<td>URI Request Parameters</td>
<td>19</td>
</tr>
<tr>
<td>Request Body</td>
<td>19</td>
</tr>
<tr>
<td>Response Syntax</td>
<td>19</td>
</tr>
<tr>
<td>Response Elements</td>
<td>20</td>
</tr>
<tr>
<td>Request Syntax</td>
<td>19</td>
</tr>
<tr>
<td>URI Request Parameters</td>
<td>19</td>
</tr>
<tr>
<td>Request Body</td>
<td>19</td>
</tr>
<tr>
<td>Response Syntax</td>
<td>19</td>
</tr>
<tr>
<td>Errors</td>
<td>20</td>
</tr>
<tr>
<td>See Also</td>
<td>20</td>
</tr>
<tr>
<td>Response Elements</td>
<td>22</td>
</tr>
<tr>
<td>Response Syntax</td>
<td>22</td>
</tr>
<tr>
<td>Response Elements</td>
<td>22</td>
</tr>
<tr>
<td>Request Syntax</td>
<td>22</td>
</tr>
<tr>
<td>URI Request Parameters</td>
<td>22</td>
</tr>
<tr>
<td>Request Body</td>
<td>22</td>
</tr>
<tr>
<td>Response Syntax</td>
<td>22</td>
</tr>
<tr>
<td>Response Elements</td>
<td>22</td>
</tr>
<tr>
<td>Response Syntax</td>
<td>23</td>
</tr>
<tr>
<td>Request Body</td>
<td>23</td>
</tr>
<tr>
<td>Response Syntax</td>
<td>23</td>
</tr>
<tr>
<td>Response Elements</td>
<td>23</td>
</tr>
<tr>
<td>Errors</td>
<td>24</td>
</tr>
<tr>
<td>See Also</td>
<td>24</td>
</tr>
<tr>
<td>Request Syntax</td>
<td>25</td>
</tr>
<tr>
<td>URI Request Parameters</td>
<td>25</td>
</tr>
<tr>
<td>Request Body</td>
<td>25</td>
</tr>
<tr>
<td>Response Syntax</td>
<td>25</td>
</tr>
<tr>
<td>Response Elements</td>
<td>26</td>
</tr>
<tr>
<td>Errors</td>
<td>26</td>
</tr>
<tr>
<td>See Also</td>
<td>26</td>
</tr>
<tr>
<td>Response Syntax</td>
<td>28</td>
</tr>
<tr>
<td>Request Body</td>
<td>28</td>
</tr>
<tr>
<td>Response Syntax</td>
<td>28</td>
</tr>
<tr>
<td>Response Elements</td>
<td>29</td>
</tr>
<tr>
<td>Errors</td>
<td>30</td>
</tr>
<tr>
<td>See Also</td>
<td>30</td>
</tr>
<tr>
<td>Response Syntax</td>
<td>32</td>
</tr>
<tr>
<td>Request Body</td>
<td>32</td>
</tr>
<tr>
<td>Response Syntax</td>
<td>32</td>
</tr>
<tr>
<td>Response Elements</td>
<td>33</td>
</tr>
<tr>
<td>Errors</td>
<td>34</td>
</tr>
<tr>
<td>See Also</td>
<td>34</td>
</tr>
<tr>
<td>GetTraceGraph</td>
<td>36</td>
</tr>
<tr>
<td>Request Syntax</td>
<td>36</td>
</tr>
<tr>
<td>URI Request Parameters</td>
<td>36</td>
</tr>
<tr>
<td>Request Body</td>
<td>36</td>
</tr>
<tr>
<td>Response Syntax</td>
<td>36</td>
</tr>
<tr>
<td>Response Elements</td>
<td>36</td>
</tr>
</tbody>
</table>

API Version 2016-04-12
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>See Also</td>
<td>111</td>
</tr>
<tr>
<td>TraceUser</td>
<td>112</td>
</tr>
<tr>
<td>Contents</td>
<td>112</td>
</tr>
<tr>
<td>See Also</td>
<td>112</td>
</tr>
<tr>
<td>UnprocessedStatistics</td>
<td>113</td>
</tr>
<tr>
<td>Contents</td>
<td>113</td>
</tr>
<tr>
<td>See Also</td>
<td>113</td>
</tr>
<tr>
<td>UnprocessedTraceSegment</td>
<td>114</td>
</tr>
<tr>
<td>Contents</td>
<td>114</td>
</tr>
<tr>
<td>See Also</td>
<td>114</td>
</tr>
<tr>
<td>ValueWithServiceIds</td>
<td>115</td>
</tr>
<tr>
<td>Contents</td>
<td>115</td>
</tr>
<tr>
<td>See Also</td>
<td>115</td>
</tr>
<tr>
<td>Common Parameters</td>
<td>116</td>
</tr>
<tr>
<td>Common Errors</td>
<td>118</td>
</tr>
</tbody>
</table>
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 April 5, 2020.
Actions

The following actions are supported:

- BatchGetTraces (p. 3)
- CreateGroup (p. 6)
- CreateSamplingRule (p. 8)
- DeleteGroup (p. 11)
- DeleteSamplingRule (p. 13)
- GetEncryptionConfig (p. 15)
- GetGroup (p. 17)
- GetGroups (p. 19)
- GetSamplingRules (p. 21)
- GetSamplingStatisticSummaries (p. 23)
- GetSamplingTargets (p. 25)
- GetServiceGraph (p. 28)
- GetTimeSeriesServiceStatistics (p. 32)
- GetTraceGraph (p. 36)
- GetTraceSummaries (p. 39)
- PutEncryptionConfig (p. 45)
- PutTelemetryRecords (p. 47)
- PutTraceSegments (p. 49)
- UpdateGroup (p. 52)
- UpdateSamplingRule (p. 54)
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

```json
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

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

Required: Yes

Response Syntax

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

{
    "NextToken": "string",
    "Traces": [ 
        {
            "Duration": number,
            "Id": "string",
            "Segments": [ 
                { 
                    "Document": "string",
                    "Id": "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. 108) 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. 118).

**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
See Also

- 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"
}

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
Required: Yes

Response Syntax

HTTP/1.1 200
Content-type: application/json

{
   "Group": {
       "FilterExpression": "string",
       "GroupARN": "string",
       "GroupName": "string"
   }
}

Response Elements

If the action is successful, the service sends back an HTTP 200 response.
The following data is returned in JSON format by the service.

**Group (p. 6)**

The group that was created. Contains the name of the group that was created, the ARN of the group that was generated based on the group name, and the filter expression that was assigned to the group.

Type: Group (p. 77) object

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 118).

**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
- 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 (p. 21), 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 (p. 25) 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
   }
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

**SamplingRule (p. 8)**

   The rule definition.

   Type: SamplingRule (p. 88) object

   Required: Yes

Response Syntax

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

{
```

API Version 2016-04-12
8
"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. 8)**

The saved rule definition and metadata.

Type: **SamplingRuleRecord (p. 91)** object

Errors

For information about the errors that are common to all actions, see **Common Errors (p. 118).**

**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
• 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

```plaintext
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. 11)**

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. 11)**

The case-sensitive name of the group.

Type: String


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. 118)](#).

API Version 2016-04-12

11
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
- 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. 13)**

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

Type: String

Required: No

**RuleName (p. 13)**

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,
    }
  }
}
```
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. 13)

The deleted rule definition and metadata.

Type: SamplingRuleRecord (p. 91) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 118).

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
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- 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.

EncryptedConfig (p. 15)

The encryption configuration document.

Type: EncryptionConfig (p. 66) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 118).

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
- 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. 17)

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. 17)

The case-sensitive name of the group.

Type: String


Required: No

Response Syntax

HTTP/1.1 200
Content-type: application/json

{  
  "Group": {
    "FilterExpression": "string",
    "GroupARN": "string",
    "GroupName": "string"
  }
}

API Version 2016-04-12

17
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. 17)

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

Type: Group (p. 77) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 118).

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
- 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

```plaintext
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. 19)**

Pagination token.

Type: String

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

Required: No

Response Syntax

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

{
   "Groups": [
      {
         "FilterExpression": "string",
         "GroupARN": "string",
         "GroupName": "string"
      }
   ],
   "NextToken": "string"
}
```

Response Elements

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

The following data is returned in JSON format by the service.
Groups (p. 19)

The collection of all active groups.

Type: Array of GroupSummary (p. 78) objects

NextToken (p. 19)

Pagination token.

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 118).

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
- 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. 21)

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. 21)**

Pagination token.

Type: String

**SamplingRuleRecords (p. 21)**

Rule definitions and metadata.

Type: Array of SamplingRuleRecord (p. 91) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 118).

**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
- 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

```plaintext
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. 23)**

- 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. 23)

Pagination token.

Type: String

SamplingStatisticSummaries (p. 23)

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

Type: Array of SamplingStatisticSummary (p. 97) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 118).

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
- 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

```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. 25)**

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

Type: Array of SamplingStatisticsDocument (p. 95) objects

Array Members: Maximum number of 25 items.

Required: Yes

Response Syntax

HTTP/1.1 200
Content-type: application/json

```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. 25)

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 (p. 21) to get the latest version.

Type: Timestamp

SamplingTargetDocuments (p. 25)

Updated rules that the service should use to sample requests.

Type: Array of SamplingTargetDocument (p. 99) objects

UnprocessedStatistics (p. 25)

Information about SamplingStatisticsDocument (p. 95) that X-Ray could not process.

Type: Array of UnprocessedStatistics (p. 113) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 118).

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++
See Also

- AWS SDK for Go
- AWS SDK for Java
- 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

```xml
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. 28)

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

Type: Timestamp

Required: Yes

GroupARN (p. 28)

The ARN of a group to generate a graph based on.

Type: String

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

Required: No

GroupName (p. 28)

The name of a group to generate a graph based on.

Type: String


Required: No

NextToken (p. 28)

Pagination token.
Type: String
Required: No

**StartTime (p. 28)**

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

```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
          }
        }
      ]
    }
  ]
}
```
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. 29)

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. 29)

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

Type: Timestamp

NextToken (p. 29)

Pagination token.

Type: String

Services (p. 29)

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

Type: Array of Service (p. 101) objects
StartTime (p. 29)

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. 118).

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
- 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

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

{
  "EndTime": number,
  "EntitySelectorExpression": "string",
  "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. 32)**

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

Type: Timestamp

Required: Yes

**EntitySelectorExpression (p. 32)**

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


Required: No

**GroupARN (p. 32)**

The 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. 32)**

The case-sensitive name of the group for which to pull statistics from.
Type: String
Required: No

NextToken (p. 32)
Pagination token.
Type: String
Required: No

Period (p. 32)
Aggregation period in seconds.
Type: Integer
Required: No

StartTime (p. 32)
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
                }
            ],
            "ServiceSummaryStatistics": {
                "ErrorStatistics": {
                    "OtherCount": number,
                    "ThrottleCount": number,
                    "TotalCount": number
                },
                "FaultStatistics": {
                    "OtherCount": number,
                    "TotalCount": number
                },
                "OkCount": number,
                "TotalCount": number,
                "TotalResponseTime": 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. 33)

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

Type: Boolean

NextToken (p. 33)

Pagination token.

Type: String

TimeSeriesServiceStatistics (p. 33)

The collection of statistics.

Type: Array of TimeSeriesServiceStatistics (p. 107) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 118).

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:
See Also

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- 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. 36)**

Pagination token.

Type: String

Required: No

**TraceIds (p. 36)**

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

Type: Array of strings

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. 36)**

Pagination token.

Type: String

**Services (p. 36)**

The services that have processed one of the specified requests.

Type: Array of Service (p. 101) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 118).

**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
- 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. 39)**

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

Type: Timestamp

Required: Yes

**FilterExpression (p. 39)**

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

Type: String
Required: No

NextToken (p. 39)
Specify the pagination token returned by a previous request to retrieve the next page of results.
Type: String
Required: No

Sampling (p. 39)
Set to true to get summaries for only a subset of available traces.
Type: Boolean
Required: No

SamplingStrategy (p. 39)
A parameter to indicate whether to enable sampling on trace summaries. Input parameters are Name and Value.
Type: SamplingStrategy (p. 98) object
Required: No

StartTime (p. 39)
The start of the time frame for which to retrieve traces, in Unix time seconds.
Type: Timestamp
Required: Yes

TimeRangeType (p. 39)
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": ["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.

**ApproximateTime (p. 40)**

The start time of this page of results.

Type: Timestamp

**NextToken (p. 40)**

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. 40)**

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

Type: Long

**TraceSummaries (p. 40)**

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

Type: Array of TraceSummary (p. 109) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 118).

**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
- 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. 45)

An AWS KMS customer master key (CMK) 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 CMKs.
- **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


Required: No

Type (p. 45)

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
```
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. 45)

The new encryption configuration.

Type: EncryptionConfig (p. 66) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 118).

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
- 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. 47)

Type: String

Length Constraints: Maximum length of 20.

Required: No

**Hostname** (p. 47)

Type: String

Length Constraints: Maximum length of 255.

Required: No

**ResourceARN** (p. 47)

Type: String

Length Constraints: Maximum length of 20.

Required: No

API Version 2016-04-12
Type: String
Length Constraints: Maximum length of 500.
Required: No

TelemetryRecords (p. 47)

Type: Array of TelemetryRecord (p. 106) 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. 118).

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
- 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 the fact 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-a006649127e37103a2de979. This includes:

**Trace ID Format**

- The version number, i.e. 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. 49)

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. 50)

Segments that failed processing.

Type: Array of UnprocessedTraceSegment (p. 114) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 118).

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
See Also

- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- 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"
}

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

FilterExpression (p. 52)

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

Type: String

Required: No

GroupARN (p. 52)

The ARN that was generated upon creation.

Type: String

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

Required: No

GroupName (p. 52)

The case-sensitive name of the group.

Type: String


Required: No

Response Syntax

HTTP/1.1 200
Content-type: application/json
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. 52)**

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

Type: Group (p. 77) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 118).

**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
- 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. 54)**

The rule and fields to change.

Type: SamplingRuleUpdate (p. 92) object

Required: Yes

Response Syntax

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

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

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

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

**SamplingRuleRecord (p. 54)**

The updated rule definition and metadata.

Type: **SamplingRuleRecord (p. 91) object**

**Errors**

For information about the errors that are common to all actions, see **Common Errors (p. 118).**

**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
- AWS SDK for JavaScript
- AWS SDK for PHP V3

API Version 2016-04-12
- 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. 59)
- AnnotationValue (p. 60)
- AvailabilityZoneDetail (p. 61)
- BackendConnectionErrors (p. 62)
- Edge (p. 63)
- EdgeStatistics (p. 65)
- EncryptionConfig (p. 66)
- ErrorRootCause (p. 67)
- ErrorRootCauseEntity (p. 68)
- ErrorRootCauseService (p. 69)
- ErrorStatistics (p. 71)
- FaultRootCause (p. 72)
- FaultRootCauseEntity (p. 73)
- FaultRootCauseService (p. 74)
- FaultStatistics (p. 76)
- Group (p. 77)
- GroupSummary (p. 78)
- HistogramEntry (p. 79)
- Http (p. 80)
- InstanceldDetail (p. 81)
- ResourceARNDetail (p. 82)
- ResponseTimeRootCause (p. 83)
- ResponseTimeRootCauseEntity (p. 84)
- ResponseTimeRootCauseService (p. 85)
- RootCauseException (p. 87)
- SamplingRule (p. 88)
- SamplingRuleRecord (p. 91)
- SamplingRuleUpdate (p. 92)
- SamplingStatisticsDocument (p. 95)
- SamplingStatisticSummary (p. 97)
- SamplingStrategy (p. 98)
- SamplingTargetDocument (p. 99)
- Segment (p. 100)
- Service (p. 101)
- Serviceld (p. 104)
• ServiceStatistics (p. 105)
• TelemetryRecord (p. 106)
• TimeSeriesServiceStatistics (p. 107)
• Trace (p. 108)
• TraceSummary (p. 109)
• TraceUser (p. 112)
• UnprocessedStatistics (p. 113)
• UnprocessedTraceSegment (p. 114)
• ValueWithServiceIds (p. 115)
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
- 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
- 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
- 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
- AWS SDK for Ruby V3
Edge

Information about a connection between two services.

**Contents**

**Aliases**

Aliases for the edge.

Type: Array of [Alias](p. 59) 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. 79) 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. 65) 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
• 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. 71) object

Required: No

FaultStatistics

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

Type: FaultStatistics (p. 76) 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
- AWS SDK for Ruby V3
EncryptionConfig

A configuration document that specifies encryption configuration settings.

Contents

KeyId

The ID of the customer master key (CMK) 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 CMKs. 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
- 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. 69) 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
- 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. 87)* 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
- 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. 68)` 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
See Also

- 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
- 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. 74) 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
- 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. 87)` 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
- 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. 73) 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
• 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
- 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 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

**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
- 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

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
- 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
- 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
- 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
- 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
- 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. 85) 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
- AWS SDK for Ruby V3
ResponseTimeRootCauseEntity

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

Contents

Coverage

The types 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
- 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. 84) 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
• 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
- 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
Key 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
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
- AWS SDK for Ruby V3
SamplingRuleRecord

A SamplingRule (p. 88) 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. 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
- 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

Key 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


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
• 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 (p. 25).

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
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
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
- 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
- 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
- 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 (p. 25).

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 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
- 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 (p. 49)`, 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
- 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. 79) objects

Required: No

Edges

Connections to downstream services.

Type: Array of Edge (p. 63) 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. 79) 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. 105) object
Required: No

Type

The type of service.

- AWS Resource - The type of an AWS resource. For example, AWS::EC2::Instance for a 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
See Also

- AWS SDK for Java
- AWS SDK for Ruby V3
ServiceId

Contents

Accountld

  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
- 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. 71) object

Required: No

FaultStatistics

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

Type: FaultStatistics (p. 76) 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
- AWS SDK for Ruby V3
TelemetryRecord

Contents

BackendConnectionErrors

Type: BackendConnectionErrors (p. 62) 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
- AWS SDK for Ruby V3
TimeSeriesServiceStatistics

A list of TimeSeriesStatistic structures.

Contents

EdgeSummaryStatistics

Response statistics for an edge.

Type: EdgeStatistics (p. 65) object

Required: No

ResponseTimeHistogram

The response time histogram for the selected entities.

Type: Array of HistogramEntry (p. 79) objects

Required: No

ServiceSummaryStatistics

Response statistics for a service.

Type: ServiceStatistics (p. 105) 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
- 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

Segments

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

Type: Array of Segment (p. 100) 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
- 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 ValueWithServicelds (p. 115) objects map

Required: No

AvailabilityZones

A list of availability zones for any zone corresponding to the trace segments.

Type: Array of AvailabilityZoneDetail (p. 61) 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: Serviceld (p. 104) object

Required: No

ErrorRootCauses

A collection of ErrorRootCause structures corresponding to the trace segments.

Type: Array of ErrorRootCause (p. 67) objects

Required: No

FaultRootCauses

A collection of FaultRootCause structures corresponding to the the trace segments.

Type: Array of FaultRootCause (p. 72) 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. 80)** 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. 81)** 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. 82)** 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. 83) 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 Serviceld (p. 104) objects
Required: No

**Users**

Users from the trace's segment documents.

Type: Array of TraceUser (p. 112) 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
- 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. 104) 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
- AWS SDK for Ruby V3
UnprocessedStatistics

Sampling statistics from a call to GetSamplingTargets (p. 25) 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
- 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
- AWS SDK for Ruby V3
ValueWithServiceIds

Information about a segment annotation.

Contents

AnnotationValue

Values of the annotation.

Type: AnnotationValue (p. 60) object

Required: No

ServiceIds

Services to which the annotation applies.

Type: Array of ServiceId (p. 104) 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
- AWS SDK for Ruby V3
Common Parameters

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

**Action**

The action to be performed.

Type: string

Required: Yes

**Version**

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

Type: string

Required: Yes

**X-Amz-Algorithm**

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

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

Type: string

Valid Values: AWS4-HMAC-SHA256

Required: Conditional

**X-Amz-Credential**

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

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

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

Type: string

Required: Conditional

**X-Amz-Date**

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

Condition: X-Amz-Date is optional for all requests; it can be used to override the date used for signing requests. If the Date header is specified in the ISO 8601 basic format, X-Amz-Date is
not required. When X-Amz-Date is used, it always overrides the value of the Date header. For more information, see Handling Dates in Signature Version 4 in the Amazon Web Services General Reference.

Type: string
Required: Conditional

X-Amz-Security-Token

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

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

Type: string
Required: Conditional

X-Amz-Signature

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

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

Type: string
Required: Conditional

X-Amz-SignedHeaders

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

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

Type: string
Required: Conditional
Common Errors

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

**AccessDeniedException**
You do not have sufficient access to perform this action.

HTTP Status Code: 400

**IncompleteSignature**
The request signature does not conform to AWS standards.

HTTP Status Code: 400

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

HTTP Status Code: 500

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

HTTP Status Code: 400

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

HTTP Status Code: 403

**InvalidParameterCombination**
Parameters that must not be used together were used together.

HTTP Status Code: 400

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

HTTP Status Code: 400

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

HTTP Status Code: 400

**MalformedQueryString**
The query string contains a syntax error.

HTTP Status Code: 404

**MissingAction**
The request is missing an action or a required parameter.

HTTP Status Code: 400

API Version 2016-04-12
118
**MissingAuthenticationToken**

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

HTTP Status Code: 403

**MissingParameter**

A required parameter for the specified action is not supplied.

HTTP Status Code: 400

**OptInRequired**

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

HTTP Status Code: 403

**RequestExpired**

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

HTTP Status Code: 400

**ServiceUnavailable**

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

HTTP Status Code: 503

**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