AWS Cost Explorer Service

Cost Management APIs
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# Table of Contents

## Welcome
- AWS Cost Explorer Service ........................................................................................................ 1
- AWS Budgets .................................................................................................................................. 1
- AWS Cost and Usage Report Service ............................................................................................. 2
- AWS Price List Service .................................................................................................................. 2

## Actions
- AWS Cost Explorer Service .......................................................................................................... 3
  - CreateCostCategoryDefinition .................................................................................................. 4
  - DeleteCostCategoryDefinition ................................................................................................. 5
  - DescribeCostCategoryDefinition ............................................................................................. 8
  - GetCostAndUsage ....................................................................................................................... 10
  - GetCostAndUsageWithResources .............................................................................................. 13
  - GetCostForecast ......................................................................................................................... 19
  - GetDimensionValues .................................................................................................................. 26
  - GetReservationCoverage .......................................................................................................... 31
  - GetReservationPurchaseRecommendation ................................................................................ 37
  - GetReservationUtilization ......................................................................................................... 44
  - GetRightSizingRecommendation ............................................................................................... 49
  - GetSavingsPlansCoverage ......................................................................................................... 56
  - GetSavingsPlansPurchaseRecommendation ............................................................................ 61
  - GetSavingsPlansUtilization ........................................................................................................ 65
  - GetSavingsPlansUtilizationDetails .......................................................................................... 69
  - GetTags ..................................................................................................................................... 73
  - GetUsageForecast ....................................................................................................................... 77
  - ListCostCategoryDefinitions ..................................................................................................... 86
  - UpdateCostCategoryDefinition ............................................................................................... 88
- AWS Budgets .................................................................................................................................. 90
  - CreateBudget ............................................................................................................................. 92
  - CreateNotification ...................................................................................................................... 100
  - CreateSubscriber ....................................................................................................................... 103
  - DeleteBudget ............................................................................................................................... 106
  - DeleteNotification ...................................................................................................................... 108
  - DeleteSubscriber ....................................................................................................................... 111
  - DescribeBudget .......................................................................................................................... 114
  - DescribeBudgetPerformanceHistory ....................................................................................... 120
  - DescribeBudgets ......................................................................................................................... 125
  - DescribeNotificationsForBudget ............................................................................................. 132
  - DescribeSubscribersForNotification ....................................................................................... 136
  - UpdateBudget ............................................................................................................................. 140
  - UpdateNotification .................................................................................................................... 147
  - UpdateSubscriber ....................................................................................................................... 150
- AWS Cost and Usage Report Service ............................................................................................. 152
  - DeleteReportDefinition ............................................................................................................ 153
  - DescribeReportDefinitions ........................................................................................................ 155
  - ModifyReportDefinition ............................................................................................................ 158
  - PutReportDefinition .................................................................................................................. 160
- AWS Price List Service .................................................................................................................. 162
  - DescribeServices ...................................................................................................................... 163
  - GetAttributeValues ................................................................................................................... 167
  - GetProducts ............................................................................................................................... 171

## Data Types
- AWS Cost Explorer Service Cost Management APIs .................................................................. 175
AWS Cost Explorer Service Cost Management APIs

CostCategoryRule ........................................................................................................... 183
CostCategoryValues ...................................................................................................... 184
Coverage ....................................................................................................................... 185
CoverageByTime ............................................................................................................ 186
CoverageCost ............................................................................................................... 187
CoverageHours ............................................................................................................. 188
CoverageNormalizedUnits ......................................................................................... 189
CurrentInstance .......................................................................................................... 190
DateInterval ............................................................................................................... 192
DimensionValues ......................................................................................................... 193
DimensionValuesWithAttributes ................................................................................... 194
EC2InstanceDetails ...................................................................................................... 195
EC2ResourceDetails ..................................................................................................... 197
EC2ResourceUtilization ............................................................................................... 199
EC2Specification ......................................................................................................... 200
ElastiCacheInstanceDetails ........................................................................................ 201
ESInstanceDetails ........................................................................................................ 203
Expression .................................................................................................................... 204
ForecastResult ............................................................................................................. 206
Group ............................................................................................................................ 207
GroupDefinition .......................................................................................................... 208
InstanceDetails ............................................................................................................ 209
MetricValue ................................................................................................................ 210
ModifyRecommendationDetail .................................................................................... 211
RDSInstanceDetails .................................................................................................... 212
RedshiftInstanceDetails ............................................................................................. 214
ReservationAggregates ............................................................................................... 215
ReservationCoverageGroup ......................................................................................... 218
ReservationPurchaseRecommendation .......................................................................... 219
ReservationPurchaseRecommendationDetail ................................................................. 221
ReservationPurchaseRecommendationMetadata ............................................................ 224
ReservationPurchaseRecommendationSummary ............................................................ 225
ReservationUtilizationGroup ....................................................................................... 226
ResourceDetails .......................................................................................................... 227
ResourceUtilization ..................................................................................................... 228
ResultByTime ............................................................................................................... 229
RightsizingRecommendation ....................................................................................... 230
RightsizingRecommendationMetadata ........................................................................ 231
RightsizingRecommendationSummary .......................................................................... 232
SavingsPlansAmortizedCommitment .......................................................................... 233
SavingsPlansCoverage ................................................................................................. 234
SavingsPlansCoverageData ........................................................................................ 235
SavingsPlansDetails ..................................................................................................... 236
SavingsPlansPurchaseRecommendation ......................................................................... 237
SavingsPlansPurchaseRecommendationDetail ............................................................... 239
SavingsPlansPurchaseRecommendationMetadata ........................................................ 242
SavingsPlansPurchaseRecommendationSummary ......................................................... 243
SavingsPlansSavings ................................................................................................... 245
SavingsPlansUtilization ............................................................................................... 246
SavingsPlansUtilizationAggregates ............................................................................ 247
SavingsPlansUtilizationByTime .................................................................................... 248
SavingsPlansUtilizationDetail ...................................................................................... 249
ServiceSpecification .................................................................................................. 251
TagValues .................................................................................................................... 252
TargetInstance ............................................................................................................ 253
TerminateRecommendationDetail ............................................................................... 255
UtilizationByTime ....................................................................................................... 256
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWS Budgets</td>
<td>256</td>
</tr>
<tr>
<td>Budget</td>
<td>258</td>
</tr>
<tr>
<td>BudgetedAndActualAmounts</td>
<td>261</td>
</tr>
<tr>
<td>BudgetPerformanceHistory</td>
<td>262</td>
</tr>
<tr>
<td>CalculatedSpend</td>
<td>264</td>
</tr>
<tr>
<td>CostTypes</td>
<td>265</td>
</tr>
<tr>
<td>Notification</td>
<td>268</td>
</tr>
<tr>
<td>NotificationWithSubscribers</td>
<td>270</td>
</tr>
<tr>
<td>Spend</td>
<td>271</td>
</tr>
<tr>
<td>Subscriber</td>
<td>272</td>
</tr>
<tr>
<td>TimePeriod</td>
<td>273</td>
</tr>
<tr>
<td>AWS Cost and Usage Report Service</td>
<td>273</td>
</tr>
<tr>
<td>ReportDefinition</td>
<td>274</td>
</tr>
<tr>
<td>AWS Price List Service</td>
<td>276</td>
</tr>
<tr>
<td>AttributeValue</td>
<td>277</td>
</tr>
<tr>
<td>Filter</td>
<td>278</td>
</tr>
<tr>
<td>Service</td>
<td>279</td>
</tr>
<tr>
<td>Common Parameters</td>
<td>280</td>
</tr>
<tr>
<td>Common Errors</td>
<td>282</td>
</tr>
</tbody>
</table>
Welcome

AWS Cost Explorer Service

The Cost Explorer API enables you to programmatically query your cost and usage data. You can query for aggregated data such as total monthly costs or total daily usage. You can also query for granular data, such as the number of daily write operations for Amazon DynamoDB database tables in your production environment.

Service Endpoint

The Cost Explorer API provides the following endpoint:

• https://ce.us-east-1.amazonaws.com

For information about costs associated with the Cost Explorer API, see AWS Cost Management Pricing.

AWS Budgets

The AWS Budgets API enables you to use AWS Budgets to plan your service usage, service costs, and instance reservations. The API reference provides descriptions, syntax, and usage examples for each of the actions and data types for AWS Budgets.

Budgets provide you with a way to see the following information:

• How close your plan is to your budgeted amount or to the free tier limits
• Your usage-to-date, including how much you've used of your Reserved Instances (RIs)
• Your current estimated charges from AWS, and how much your predicted usage will accrue in charges by the end of the month
• How much of your budget has been used

AWS updates your budget status several times a day. Budgets track your unblended costs, subscriptions, refunds, and RIs. You can create the following types of budgets:

• **Cost budgets** - Plan how much you want to spend on a service.
• **Usage budgets** - Plan how much you want to use one or more services.
• **RI utilization budgets** - Define a utilization threshold, and receive alerts when your RI usage falls below that threshold. This lets you see if your RIs are unused or under-utilized.
• **RI coverage budgets** - Define a coverage threshold, and receive alerts when the number of your instance hours that are covered by RIs fall below that threshold. This lets you see how much of your instance usage is covered by a reservation.

Service Endpoint

The AWS Budgets API provides the following endpoint:

• https://budgets.amazonaws.com
AWS Cost and Usage Report Service

The AWS Cost and Usage Report API enables you to programmatically create, query, and delete AWS Cost and Usage report definitions.

AWS Cost and Usage reports track the monthly AWS costs and usage associated with your AWS account. The report contains line items for each unique combination of AWS product, usage type, and operation that your AWS account uses. You can configure the AWS Cost and Usage report to show only the data that you want, using the AWS Cost and Usage API.

Service Endpoint

The AWS Cost and Usage Report API provides the following endpoint:

- cur.us-east-1.amazonaws.com

AWS Price List Service

AWS Price List Service API is a centralized and convenient way to programmatically query Amazon Web Services for services, products, and pricing information. The AWS Price List Service uses standardized product attributes such as Location, Storage Class, and Operating System, and provides prices at the SKU level. You can use the AWS Price List Service to build cost control and scenario planning tools, reconcile billing data, forecast future spend for budgeting purposes, and provide cost benefit analysis that compare your internal workloads with AWS.

Use GetServices without a service code to retrieve the service codes for all AWS services, then GetServices with a service code to retrieve the attribute names for that service. After you have the service code and attribute names, you can use GetAttributeValues to see what values are available for an attribute. With the service code and an attribute name and value, you can use GetProducts to find specific products that you're interested in, such as an AmazonEC2 instance, with a Provisioned IOPS volumeType.

Service Endpoint

AWS Price List Service API provides the following two endpoints:

- https://api.pricing.us-east-1.amazonaws.com
- https://api.pricing.ap-south-1.amazonaws.com
Actions

The following actions are supported by AWS Cost Explorer Service:

- CreateCostCategoryDefinition (p. 5)
- DeleteCostCategoryDefinition (p. 8)
- DescribeCostCategoryDefinition (p. 10)
- GetCostAndUsage (p. 13)
- GetCostAndUsageWithResources (p. 19)
- GetCostForecast (p. 26)
- GetDimensionValues (p. 31)
- GetReservationCoverage (p. 37)
- GetReservationPurchaseRecommendation (p. 44)
- GetReservationUtilization (p. 49)
- GetRightsizingRecommendation (p. 56)
- GetSavingsPlansCoverage (p. 61)
- GetSavingsPlansPurchaseRecommendation (p. 65)
- GetSavingsPlansUtilization (p. 69)
- GetSavingsPlansUtilizationDetails (p. 73)
- GetTags (p. 77)
- GetUsageForecast (p. 81)
- ListCostCategoryDefinitions (p. 86)
- UpdateCostCategoryDefinition (p. 88)

The following actions are supported by AWS Budgets:

- CreateBudget (p. 92)
- CreateNotification (p. 100)
- CreateSubscriber (p. 103)
- DeleteBudget (p. 106)
- DeleteNotification (p. 108)
- DeleteSubscriber (p. 111)
- DescribeBudget (p. 114)
- DescribeBudgetPerformanceHistory (p. 120)
- DescribeBudgets (p. 125)
- DescribeNotificationsForBudget (p. 132)
- DescribeSubscribersForNotification (p. 136)
- UpdateBudget (p. 140)
- UpdateNotification (p. 147)
- UpdateSubscriber (p. 150)

The following actions are supported by AWS Cost and Usage Report Service:

- DeleteReportDefinition (p. 153)
- DescribeReportDefinitions (p. 155)
The following actions are supported by AWS Price List Service:

- DescribeServices (p. 163)
- GetAttributeValue (p. 167)
- GetProducts (p. 171)

AWS Cost Explorer Service

The following actions are supported by AWS Cost Explorer Service:

- CreateCostCategoryDefinition (p. 5)
- DeleteCostCategoryDefinition (p. 8)
- DescribeCostCategoryDefinition (p. 10)
- GetCostAndUsage (p. 13)
- GetCostAndUsageWithResources (p. 19)
- GetCostForecast (p. 26)
- GetDimensionValues (p. 31)
- GetReservationCoverage (p. 37)
- GetReservationPurchaseRecommendation (p. 44)
- GetReservationUtilization (p. 49)
- GetRightsizingRecommendation (p. 56)
- GetSavingsPlansCoverage (p. 61)
- GetSavingsPlansPurchaseRecommendation (p. 65)
- GetSavingsPlansUtilization (p. 69)
- GetSavingsPlansUtilizationDetails (p. 73)
- GetTags (p. 77)
- GetUsageForecast (p. 81)
- ListCostCategoryDefinitions (p. 86)
- UpdateCostCategoryDefinition (p. 88)
CreateCostCategoryDefinition

Service: AWS Cost Explorer Service

**Important**

Cost Category is in public beta for AWS Billing and Cost Management and is subject to change. Your use of Cost Categories is subject to the Beta Service Participation terms of the AWS Service Terms (Section 1.10).

Creates a new Cost Category with the requested name and rules.

**Request Syntax**

```
{
    "Name": "string",
    "Rules": [
        {
            "Rule": {
                "And": ["Expression"],
                "CostCategories": {
                    "Key": "string",
                    "Values": ["string"]
                },
                "Dimensions": {
                    "Key": "string",
                    "Values": ["string"]
                },
                "Not": "Expression",
                "Or": ["Expression"],
                "Tags": {
                    "Key": "string",
                    "Values": ["string"]
                }
            },
            "Value": "string"
        }
        "RuleVersion": "string"
    }
}
```

**Request Parameters**

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

**Name (p. 5)**

The unique name of the Cost Category.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: ^(?! )[^\p{L}\p{N}\p{Z}-_]*(?<! )$  

Required: Yes
Rules (p. 5)

CreateCostCategoryDefinition supports dimensions, Tags, and nested expressions. Currently the only dimensions supported is LINKED_ACCOUNT.

Root level OR is not supported. We recommend you create a separate rule instead.

Rules are processed in order. If there are multiple rules that match the line item, then the first rule to match is used to determine that Cost Category value.

Type: Array of CostCategoryRule (p. 183) objects

Array Members: Minimum number of 1 item. Maximum number of 500 items.

Required: Yes

RuleVersion (p. 5)

The rule schema version in this particular Cost Category.

Type: String

Valid Values: CostCategoryExpression.v1

Required: Yes

Response Syntax

```
{
  "CostCategoryArn": "string",
  "EffectiveStart": "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.

CostCategoryArn (p. 6)

The unique identifier for your newly created Cost Category.

Type: String


Pattern: arn:aws[-a-z0-9]*:[a-z0-9]+:[-a-z0-9]*:[0-9]{12}:[-a-zA-Z0-9/:_]+

EffectiveStart (p. 6)

The Cost Category's effective start date.

Type: String


Pattern: ^\d{4}-\d\d-\d\dT\d\d:\d\d:\d\d(\+[\-]\d\d:\d\d:\d\d)|Z$
Errors

For information about the errors that are common to all actions, see Common Errors (p. 282).

LimitExceeded Exception

You made too many calls in a short period of time. Try again later.

HTTP Status Code: 400

ServiceQuotaExceeded Exception

You’ve reached the limit on the number of resources you can create, or exceeded the size of an individual resource.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3
DeleteCostCategoryDefinition

Service: AWS Cost Explorer Service

Important
Cost Category is in public beta for AWS Billing and Cost Management and is subject to change. Your use of Cost Categories is subject to the Beta Service Participation terms of the AWS Service Terms (Section 1.10).

Deletes a Cost Category. Expenses from this month going forward will no longer be categorized with this Cost Category.

Request Syntax

```
{
    "CostCategoryArn": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

CostCategoryArn (p. 8)

The unique identifier for your Cost Category.

Type: String


Pattern: arn:aws[-a-z0-9]*:[a-z0-9]+:[-a-z0-9]*:[0-9]{12}:[-a-zA-Z0-9/:_]+

Required: Yes

Response Syntax

```
{
    "CostCategoryArn": "string",
    "EffectiveEnd": "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.

CostCategoryArn (p. 8)

The unique identifier for your Cost Category.

Type: String

**Pattern:** `arn:aws[-a-z0-9]*:[a-z0-9]+:[-a-z0-9]*:[0-9]{12}:[-a-zA-Z0-9/:_]+`

**EffectiveEnd (p. 8)**

The effective end date of the Cost Category as a result of deleting it. No costs after this date will be categorized by the deleted Cost Category.

- **Type:** String
- **Length Constraints:** Minimum length of 20. Maximum length of 25.

**Pattern:** `^\d{4}-\d\d-\d\dT\d:0\d:0\d(([+-]\d\d:\d\d)|Z)$`

---

**Errors**

For information about the errors that are common to all actions, see [Common Errors (p. 282)](#).

**LimitExceededException**

You made too many calls in a short period of time. Try again later.

- **HTTP Status Code:** 400

**ResourceNotFoundException**

The specified ARN in the request doesn't exist.

- **HTTP Status Code:** 400

---

**See Also**

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3
DescribeCostCategoryDefinition

Service: AWS Cost Explorer Service

Important

Cost Category is in public beta for AWS Billing and Cost Management and is subject to change.
Your use of Cost Categories is subject to the Beta Service Participation terms of the AWS Service Terms (Section 1.10).

Returns the name, ARN, rules, definition, and effective dates of a Cost Category that's defined in the account.

You have the option to use EffectiveOn to return a Cost Category that is active on a specific date. If there is no EffectiveOn specified, you'll see a Cost Category that is effective on the current date. If Cost Category is still effective, EffectiveEnd is omitted in the response.

Request Syntax

```json
{
  "CostCategoryArn": "string",
  "EffectiveOn": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

**CostCategoryArn (p. 10)**

The unique identifier for your Cost Category.

Type: String


Pattern: `arn:aws[-a-z0-9]*:[a-z0-9]+:[-a-z0-9]*:[0-9]{12}:[-a-zA-Z0-9/:_]+`

Required: Yes

**EffectiveOn (p. 10)**

The date when the Cost Category was effective.

Type: String


Pattern: `^\d{4}\-\d\-\d\T\d\:\d\:\d\((\[+\]d\:\d\:\d|Z)`

Required: No

Response Syntax

```json
{
  "CostCategory": {
```


"CostCategoryArn": "string",
"EffectiveEnd": "string",
"EffectiveStart": "string",
"Name": "string",
"Rules": [  
  {  
    "Rule": {  
      "And": [  
        "Expression"  
      ],  
      "CostCategories": {  
        "Key": "string",
        "Values": [ "string" ]  
      },  
      "Dimensions": {  
        "Key": "string",
        "Values": [ "string" ]  
      },  
      "Not": "Expression",
      "Or": [  
        "Expression"  
      ],  
      "Tags": {  
        "Key": "string",
        "Values": [ "string" ]  
      }  
    },  
    "Value": "string"  
  }  
},  
"RuleVersion": "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.

CostCategory (p. 10)

Important
Cost Category is in public beta for AWS Billing and Cost Management and is subject to change. Your use of Cost Categories is subject to the Beta Service Participation terms of the AWS Service Terms (Section 1.10).

The structure of Cost Categories. This includes detailed metadata and the set of rules for the CostCategory object.

Type: CostCategory (p. 179) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 282).

LimitExceededException
You made too many calls in a short period of time. Try again later.

HTTP Status Code: 400
ResourceNotFoundException

The specified ARN in the request doesn't exist.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3
GetCostAndUsage

Service: AWS Cost Explorer Service

Retrieves cost and usage metrics for your account. You can specify which cost and usage-related metric, such as BlendedCosts or UsageQuantity, that you want the request to return. You can also filter and group your data by various dimensions, such as SERVICE or AZ, in a specific time range. For a complete list of valid dimensions, see the GetDimensionValues operation. Master accounts in an organization in AWS Organizations have access to all member accounts.

Request Syntax

```json
{
    "Filter": {
        "And": [
            "Expression"
        ],
        "CostCategories": {
            "Key": "string",
            "Values": [ "string" ]
        },
        "Dimensions": {
            "Key": "string",
            "Values": [ "string" ]
        },
        "Not": "Expression",
        "Or": [
            "Expression"
        ],
        "Tags": {
            "Key": "string",
            "Values": [ "string" ]
        }
    },
    "Granularity": "string",
    "GroupBy": [
        {
            "Key": "string",
            "Type": "string"
        }
    ],
    "Metrics": [ "string" ],
    "NextPageToken": "string",
    "TimePeriod": {
        "End": "string",
        "Start": "string"
    }
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

**Filter (p. 13)**

Filters AWS costs by different dimensions. For example, you can specify SERVICE and LINKED_ACCOUNT and get the costs that are associated with that account's usage of that service. You can nest Expression objects to define any combination of dimension filters. For more information, see Expression.
Type: Expression (p. 204) object

Required: No

**Granularity (p. 13)**

Sets the AWS cost granularity to MONTHLY or DAILY, or HOURLY. If Granularity isn't set, the response object doesn't include the Granularity, either MONTHLY or DAILY, or HOURLY.

Type: String

Valid Values: DAILY | MONTHLY | HOURLY

Required: No

**GroupBy (p. 13)**

You can group AWS costs using up to two different groups, either dimensions, tag keys, or both.

When you group by tag key, you get all tag values, including empty strings.

Valid values are AZ, INSTANCE_TYPE, LEGAL_ENTITY_NAME, LINKED_ACCOUNT, OPERATION, PLATFORM, PURCHASE_TYPE, SERVICE, TAGS, TENANCY, RECORD_TYPE, and USAGE_TYPE.

Type: Array of GroupDefinition (p. 208) objects

Required: No

**Metrics (p. 13)**

Which metrics are returned in the query. For more information about blended and unblended rates, see Why does the "blended" annotation appear on some line items in my bill?.

Valid values are AmortizedCost, BlendedCost, NetAmortizedCost, NetUnblendedCost, NormalizedUsageAmount, UnblendedCost, and UsageQuantity.

**Note**

If you return the UsageQuantity metric, the service aggregates all usage numbers without taking into account the units. For example, if you aggregate usageQuantity across all of Amazon EC2, the results aren't meaningful because Amazon EC2 compute hours and data transfer are measured in different units (for example, hours vs. GB). To get more meaningful UsageQuantity metrics, filter by UsageType or UsageTypeGroups.

Metrics is required for GetCostAndUsage requests.

Type: Array of strings

Required: No

**NextPageToken (p. 13)**

The token to retrieve the next set of results. AWS provides the token when the response from a previous call has more results than the maximum page size.

Type: String

Required: No

**TimePeriod (p. 13)**

Sets the start and end dates for retrieving AWS costs. The start date is inclusive, but the end date is exclusive. For example, if start is 2017-01-01 and end is 2017-05-01, then the cost and usage data is retrieved from 2017-01-01 up to and including 2017-04-30 but not including 2017-05-01.

Type: DateInterval (p. 192) object
Response Syntax

```
{
  "GroupDefinitions": [
    {
      "Key": "string",
      "Type": "string"
    }
  ],
  "NextPageToken": "string",
  "ResultsByTime": [
    {
      "Estimated": boolean,
      "Groups": [
        {
          "Keys": [ "string" ],
          "Metrics": {
            "string": {
              "Amount": "string",
              "Unit": "string"
            }
          }
        }
      ],
      "TimePeriod": {
        "End": "string",
        "Start": "string"
      },
      "Total": {
        "string": {
          "Amount": "string",
          "Unit": "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.

**GroupDefinitions (p. 15)**

The groups that are specified by the Filter or GroupBy parameters in the request.

Type: Array of GroupDefinition (p. 208) objects

**NextPageToken (p. 15)**

The token for the next set of retrievable results. AWS provides the token when the response from a previous call has more results than the maximum page size.

Type: String

**ResultsByTime (p. 15)**

The time period that is covered by the results in the response.
Type: Array of ResultByTime (p. 229) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 282).

BillExpirationException

The requested report expired. Update the date interval and try again.

HTTP Status Code: 400

DataUnavailableException

The requested data is unavailable.

HTTP Status Code: 400

InvalidNextTokenException

The pagination token is invalid. Try again without a pagination token.

HTTP Status Code: 400

LimitExceededException

You made too many calls in a short period of time. Try again later.

HTTP Status Code: 400

RequestChangedException

Your request parameters changed between pages. Try again with the old parameters or without a pagination token.

HTTP Status Code: 400

Example

The following is a sample request and response of the GetCostAndUsage operation that enables you to retrieve your Amazon S3 costs. For more complex examples, such as multi-level groupings, see Expression.

Sample Request

```bash
POST / HTTP/1.1
Host: ce.us-east-1.amazonaws.com
x-amz-date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
   SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSInsightsIndexService.GetCostAndUsage
{
   "TimePeriod": {
      "Start": "2017-09-01",
      "End": "2017-10-01"
   },
```

16
"Granularity": "MONTHLY",
"Filter": {
  "Dimensions": {
    "Key": "SERVICE",
    "Values": [
      "Amazon Simple Storage Service"
    ]
  },
  "GroupBy": [
    { "Type": "DIMENSION", "Key": "SERVICE" },
    { "Type": "TAG", "Key": "Environment" }
  ],
  "Metrics": ["BlendedCost", "UnblendedCost", "UsageQuantity"]
}

Sample Response

HTTP/1.1 200 OK
x-amzn-RequestId: <RequestId>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Date: <Date>

{ "GroupDefinitions": [ { "Key": "SERVICE", "Type": "DIMENSION" }, { "Key": "Environment", "Type": "TAG" } ], "ResultsByTime": [ { "Estimated": false, "Groups": [ { "Keys": [ "Amazon Simple Storage Service", "Environment$Prod" ], "Metrics": { "BlendedCost": { "Amount": "39.1603300457", "Unit": "USD" } }, "UnblendedCost": { "Amount": "39.1603300457", "Unit": "USD" } }, "UsageQuantity": { "Amount": "173842.5440074444", "Unit": "N/A" } } ] }
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
GetCostAndUsageWithResources
Service: AWS Cost Explorer Service

Retrieves cost and usage metrics with resources for your account. You can specify which cost and usage-related metric, such as **BlendedCosts** or **UsageQuantity**, that you want the request to return. You can also filter and group your data by various dimensions, such as **SERVICE** or **AZ**, in a specific time range. For a complete list of valid dimensions, see the GetDimensionValues operation. Master accounts in an organization in AWS Organizations have access to all member accounts. This API is currently available for the Amazon Elastic Compute Cloud – Compute service only.

**Note**
This is an opt-in only feature. You can enable this feature from the Cost Explorer Settings page. For information on how to access the Settings page, see Controlling Access for Cost Explorer in the **AWS Billing and Cost Management User Guide**.

**Request Syntax**

```
{
    "Filter": {
        "And": [
            "Expression"
        ],
        "CostCategories": {
            "Key": "string",
            "Values": [ "string" ]
        },
        "Dimensions": {
            "Key": "string",
            "Values": [ "string" ]
        },
        "Not": "Expression",
        "Or": [
            "Expression"
        ],
        "Tags": {
            "Key": "string",
            "Values": [ "string" ]
        },
        "Granularity": "string",
        "GroupBy": [
            {
                "Key": "string",
                "Type": "string"
            }
        ],
        "Metrics": [ "string" ],
        "NextPageToken": "string",
        "TimePeriod": {
            "End": "string",
            "Start": "string"
        }
    }
}
```

**Request Parameters**

For information about the parameters that are common to all actions, see **Common Parameters** (p. 280).

The request accepts the following data in JSON format.
Filter (p. 19)

Filters Amazon Web Services costs by different dimensions. For example, you can specify SERVICE and LINKED_ACCOUNT and get the costs that are associated with that account's usage of that service. You can nest Expression objects to define any combination of dimension filters. For more information, see Expression.

The GetCostAndUsageWithResources operation requires that you either group by or filter by a ResourceId.

Type: Expression (p. 204) object

Required: No

Granularity (p. 19)

Sets the AWS cost granularity to MONTHLY, DAILY, or HOURLY. If Granularity isn't set, the response object doesn't include the Granularity, MONTHLY, DAILY, or HOURLY.

Type: String

Valid Values: DAILY | MONTHLY | HOURLY

Required: No

GroupBy (p. 19)

You can group Amazon Web Services costs using up to two different groups: either dimensions, tag keys, or both.

Type: Array of GroupDefinition (p. 208) objects

Required: No

Metrics (p. 19)

Which metrics are returned in the query. For more information about blended and unblended rates, see Why does the "blended" annotation appear on some line items in my bill?.

Valid values are AmortizedCost, BlendedCost, NetAmortizedCost, NetUnblendedCost, NormalizedUsageAmount, UnblendedCost, and UsageQuantity.

Note

If you return the UsageQuantity metric, the service aggregates all usage numbers without taking the units into account. For example, if you aggregate usageQuantity across all of Amazon EC2, the results aren't meaningful because Amazon EC2 compute hours and data transfer are measured in different units (for example, hours vs. GB). To get more meaningful UsageQuantity metrics, filter by UsageType or UsageTypeGroups.

Metrics is required for GetCostAndUsageWithResources requests.

Type: Array of strings

Required: No

NextPageToken (p. 19)

The token to retrieve the next set of results. AWS provides the token when the response from a previous call has more results than the maximum page size.

Type: String

Required: No
TimePeriod (p. 19)

Sets the start and end dates for retrieving Amazon Web Services costs. The range must be within the last 14 days (the start date cannot be earlier than 14 days ago). The start date is inclusive, but the end date is exclusive. For example, if start is 2017-01-01 and end is 2017-05-01, then the cost and usage data is retrieved from 2017-01-01 up to and including 2017-04-30 but not including 2017-05-01.

Type: DateInterval (p. 192) object

Required: Yes

Response Syntax

```json
{
  "GroupDefinitions": [
    {
      "Key": "string",
      "Type": "string"
    },
    "NextPageToken": "string",
    "ResultsByTime": [
      {
        "Estimated": boolean,
        "Groups": [
          {
            "Keys": [ "string" ],
            "Metrics": {
              "string": {
                "Amount": "string",
                "Unit": "string"
              }
            }
          }
        ],
        "TimePeriod": {
          "End": "string",
          "Start": "string"
        },
        "Total": {
          "string": {
            "Amount": "string",
            "Unit": "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.

GroupDefinitions (p. 21)

The groups that are specified by the Filter or GroupBy parameters in the request.

Type: Array of GroupDefinition (p. 208) objects
NextPageToken (p. 21)

The token for the next set of retrievable results. AWS provides the token when the response from a previous call has more results than the maximum page size.

Type: String

ResultsByTime (p. 21)

The time period that is covered by the results in the response.

Type: Array of ResultByTime (p. 229) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 282).

BillExpirationException

The requested report expired. Update the date interval and try again.

HTTP Status Code: 400

DataUnavailableException

The requested data is unavailable.

HTTP Status Code: 400

InvalidNextTokenException

The pagination token is invalid. Try again without a pagination token.

HTTP Status Code: 400

LimitExceededException

You made too many calls in a short period of time. Try again later.

HTTP Status Code: 400

RequestChangedException

Your request parameters changed between pages. Try again with the old parameters or without a pagination token.

HTTP Status Code: 400

Example

The following is a sample request and response of the GetCostAndUsageWithResources operation that enables you to retrieve your Amazon EC2 costs. For more complex examples, such as multi-level groupings, see Expression.

Sample Request

```
POST / HTTP/1.1
Host: ce.us-east-1.amazonaws.com
x-amz-date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
  SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-requestid,Signature=<Signature>
```
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSInsightsIndexService.GetCostAndUsageWithResources
{
   "TimePeriod": {
      "Start": "2018-11-19",
      "End": "2018-11-20"
   },
   "Granularity": "DAILY",
   "Filter": {
      "Dimensions": {
         "Key": "SERVICE",
         "Values": [
            "Amazon Elastic Compute Cloud - Compute"
         ]
      }
   },
   "GroupBy": [
      {
         "Type": "DIMENSION",
         "Key": "RESOURCE_ID"
      }
   ],
   "Metrics": ["BlendedCost", "UnblendedCost", "UsageQuantity"]
}

Sample Response

HTTP/1.1 200 OK
x-amzn-RequestId: <RequestId>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Date: <Date>
{
   "GroupDefinitions": [
      {
         "Key": "RESOURCE_ID",
         "Type": "DIMENSION"
      }
   ],
   "ResultsByTime": [
      {
         "Estimated": true,
         "Groups": [
            {
               "Keys": [
                  "i-00cb32c5f3163"
               ],
               "Metrics": {
                  "BlendedCost": {
                     "Amount": "0.0927335232",
                     "Unit": "USD"
                  },
                  "UnblendedCost": {
                     "Amount": "0.1276",
                     "Unit": "USD"
                  },
                  "UsageQuantity": {
                     "Amount": "24.0010557602",
                     "Unit": "N/A"
                  }
               }
            }
         ]
      }
   ]
}
<table>
<thead>
<tr>
<th>Keys</th>
<th>Metrics</th>
<th>TimePeriod</th>
</tr>
</thead>
<tbody>
<tr>
<td>i-04a0089019f41</td>
<td>BlendedCost: { Amount: &quot;0.1656&quot;, Unit: &quot;USD&quot; }, UnblendedCost: { Amount: &quot;0.1656&quot;, Unit: &quot;USD&quot; }, UsageQuantity: { Amount: &quot;24.0018044403&quot;, Unit: &quot;N/A&quot; }</td>
<td>End: &quot;2018-11-20T00:00:00Z&quot;, Start: &quot;2018-11-19T00:00:00Z&quot;</td>
</tr>
<tr>
<td>i-03b49bda9fdef</td>
<td>BlendedCost: { Amount: &quot;0.0927335232&quot;, Unit: &quot;USD&quot; }, UnblendedCost: { Amount: &quot;0.0116&quot;, Unit: &quot;USD&quot; }, UsageQuantity: { Amount: &quot;24.0009345564&quot;, Unit: &quot;N/A&quot; }</td>
<td></td>
</tr>
<tr>
<td>i-0e56e09d11711</td>
<td>BlendedCost: { Amount: &quot;0.0927335232&quot;, Unit: &quot;USD&quot; }, UnblendedCost: { Amount: &quot;0.1392&quot;, Unit: &quot;USD&quot; }, UsageQuantity: { Amount: &quot;24.0011066563&quot;, Unit: &quot;N/A&quot; }</td>
<td></td>
</tr>
</tbody>
</table>

"Total": {}
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
GetCostForecast
Service: AWS Cost Explorer Service

Retrieves a forecast for how much Amazon Web Services predicts that you will spend over the forecast time period that you select, based on your past costs.

Request Syntax

```
{
  "Filter": {
    "And": [
      "Expression"
    ],
    "CostCategories": {
      "Key": "string",
      "Values": [ "string" ]
    },
    "Dimensions": {
      "Key": "string",
      "Values": [ "string" ]
    },
    "Not": "Expression",
    "Or": [ "Expression" ],
    "Tags": {
      "Key": "string",
      "Values": [ "string" ]
    }
  },
  "Granularity": "string",
  "Metric": "string",
  "PredictionIntervalLevel": number,
  "TimePeriod": {
    "End": "string",
    "Start": "string"
  }
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

Filter (p. 26)

The filters that you want to use to filter your forecast. Cost Explorer API supports all of the Cost Explorer filters.

Type: Expression (p. 204) object

Required: No

Granularity (p. 26)

How granular you want the forecast to be. You can get 3 months of DAILY forecasts or 12 months of MONTHLY forecasts.

The GetCostForecast operation supports only DAILY and MONTHLY granularities.
Type: String

Valid Values: DAILY | MONTHLY | HOURLY

Required: Yes

**Metric (p. 26)**

Which metric Cost Explorer uses to create your forecast. For more information about blended and unblended rates, see Why does the "blended" annotation appear on some line items in my bill?.

Valid values for a `GetCostForecast` call are the following:

- AMORTIZED_COST
- BLENDED_COST
- NET_AMORTIZED_COST
- NET_UNBLENDED_COST
- UNBLENDED_COST

Type: String

Valid Values: BLENDED_COST | UNBLENDED_COST | AMORTIZED_COST |
NET_UNBLENDED_COST | NET_AMORTIZED_COST | USAGE_QUANTITY |
NORMALIZED_USAGE_AMOUNT

Required: Yes

**PredictionIntervalLevel (p. 26)**

Cost Explorer always returns the mean forecast as a single point. You can request a prediction interval around the mean by specifying a confidence level. The higher the confidence level, the more confident Cost Explorer is about the actual value falling in the prediction interval. Higher confidence levels result in wider prediction intervals.

Type: Integer


Required: No

**TimePeriod (p. 26)**

The period of time that you want the forecast to cover.

Type: `DateInterval (p. 192)` object

Required: Yes

**Response Syntax**

```json
{
  "ForecastResultsByTime": [
    {
      "MeanValue": "string",
      "PredictionIntervalLowerBound": "string",
      "PredictionIntervalUpperBound": "string",
      "TimePeriod": {
        "End": "string",
        "Start": "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.

**ForecastResultsByTime (p. 27)**

The forecasts for your query, in order. For DAILY forecasts, this is a list of days. For MONTHLY forecasts, this is a list of months.

Type: Array of ForecastResult (p. 206) objects

**Total (p. 27)**

How much you are forecasted to spend over the forecast period, in USD.

Type: MetricValue (p. 210) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 282).

**DataUnavailableException**

The requested data is unavailable.

HTTP Status Code: 400

**LimitExceededExce$$

You made too many calls in a short period of time. Try again later.

HTTP Status Code: 400

Example

The following example shows how to retrieve a forecast using the GetCostForecast operation.

**Sample Request**

```
POST / HTTP/1.1
Host: ce.us-east-1.amazonaws.com
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
               SignedHeaders=content-type;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSInsightsIndexService.GetCostForecast
```
AWS Cost Explorer Service Cost Management APIs

GetCostForecast

```json
{
  "TimePeriod": {
    "Start": "2017-10-25",
    "End": "2017-10-27"
  },
  "Granularity": "DAILY",
  "Filter": {
    "Dimensions": {
      "Key": "SERVICE",
      "Values": [
        "Amazon Simple Storage Service"
      ]
    }
  },
  "Metric": "BLENDED_COST",
  "PredictionIntervalLevel": 85
}
```

Sample Response

```
HTTP/1.1 200 OK
x-amzn-RequestId: <RequestId>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Date: <Date>
{
  "ForecastResultsByTime": [
    {
      "MeanValue": "37.0786633999",
      "PredictionIntervalLowerBound": "34.9970026341",
      "PredictionIntervalUpperBound": "39.1603300457",
      "TimePeriod": {
        "End": "2018-10-26",
        "Start": "2018-10-25"
      }
    },
    {
      "MeanValue": "37.0786633999",
      "PredictionIntervalLowerBound": "34.9970026341",
      "PredictionIntervalUpperBound": "39.1603300457",
      "TimePeriod": {
        "End": "2018-10-27",
        "Start": "2018-10-26"
      }
    }
  ],
  "Total": {
    "Amount": "74.1573326798",
    "Unit": "USD"
  }
}
```

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
GetDimensionValues

Service: AWS Cost Explorer Service

Retrieves all available filter values for a specified filter over a period of time. You can search the dimension values for an arbitrary string.

Request Syntax

```json
{
"Context": "string",
"Dimension": "string",
"NextPageToken": "string",
"SearchString": "string",
"TimePeriod": {
  "End": "string",
  "Start": "string"
}
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

**Context (p. 31)**

The context for the call to GetDimensionValues. This can be RESERVATIONS or COST_AND_USAGE. The default value is COST_AND_USAGE. If the context is set to RESERVATIONS, the resulting dimension values can be used in the GetReservationUtilization operation. If the context is set to COST_AND_USAGE, the resulting dimension values can be used in the GetCostAndUsage operation.

If you set the context to COST_AND_USAGE, you can use the following dimensions for searching:

- **AZ** - The Availability Zone. An example is us-east-1a.
- **DATABASE_ENGINE** - The Amazon Relational Database Service database. Examples are Aurora or MySQL.
- **INSTANCE_TYPE** - The type of Amazon EC2 instance. An example is m4.xlarge.
- **LEGAL_ENTITY_NAME** - The name of the organization that sells you AWS services, such as Amazon Web Services.
- **LINKED_ACCOUNT** - The description in the attribute map that includes the full name of the member account. The value field contains the AWS ID of the member account.
- **OPERATING_SYSTEM** - The operating system. Examples are Windows or Linux.
- **OPERATION** - The action performed. Examples include RunInstance and CreateBucket.
- **PLATFORM** - The Amazon EC2 operating system. Examples are Windows or Linux.
- **PURCHASE_TYPE** - The reservation type of the purchase to which this usage is related. Examples include On-Demand Instances and Standard Reserved Instances.
- **SERVICE** - The AWS service such as Amazon DynamoDB.
- **USAGE_TYPE** - The type of usage. An example is DataTransfer-In-Bytes. The response for the GetDimensionValues operation includes a unit attribute. Examples include GB and Hrs.
- **USAGE_TYPE_GROUP** - The grouping of common usage types. An example is Amazon EC2: CloudWatch – Alarms. The response for this operation includes a unit attribute.
AWS Cost Explorer Service Cost Management APIs
GetDimensionValues

- RECORD_TYPE - The different types of charges such as RI fees, usage costs, tax refunds, and credits.
- RESOURCE_ID - The unique identifier of the resource. ResourceId is an opt-in feature only available for last 14 days for EC2-Compute Service.

If you set the context to RESERVATIONS, you can use the following dimensions for searching:
- AZ - The Availability Zone. An example is us-east-1a.
- CACHE_ENGINE - The Amazon ElastiCache operating system. Examples are Windows or Linux.
- DEPLOYMENT_OPTION - The scope of Amazon Relational Database Service deployments. Valid values are SingleAZ and MultiAZ.
- INSTANCE_TYPE - The type of Amazon EC2 instance. An example is m4.xlarge.
- LINKED_ACCOUNT - The description in the attribute map that includes the full name of the member account. The value field contains the AWS ID of the member account.
- PLATFORM - The Amazon EC2 operating system. Examples are Windows or Linux.
- REGION - The AWS Region.
- SCOPE (Utilization only) - The scope of a Reserved Instance (RI). Values are regional or a single Availability Zone.
- TAG (Coverage only) - The tags that are associated with a Reserved Instance (RI).
- TENANCY - The tenancy of a resource. Examples are shared or dedicated.

If you set the context to SAVINGS_PLANS, you can use the following dimensions for searching:
- SAVINGS_PLANS_TYPE - Type of Savings Plans (EC2 Instance or Compute)
- PAYMENT_OPTION - Payment option for the given Savings Plans (for example, All Upfront)
- REGION - The AWS Region.
- INSTANCE_TYPE_FAMILY - The family of instances (For example, m5)
- LINKED_ACCOUNT - The description in the attribute map that includes the full name of the member account. The value field contains the AWS ID of the member account.
- SAVINGS_PLAN_ARN - The unique identifier for your Savings Plan

Type: String
Valid Values: COST_AND_USAGE | RESERVATIONS | SAVINGS_PLANS
Required: No

Dimension (p. 31)
The name of the dimension. Each Dimension is available for a different Context. For more information, see Context.

Type: String
Valid Values: AZ | INSTANCE_TYPE | LINKED_ACCOUNT | OPERATION | PURCHASE_TYPE | REGION | SERVICE | USAGE_TYPE | USAGE_TYPE_GROUP | RECORD_TYPE | OPERATING_SYSTEM | TENANCY | SCOPE | PLATFORM | SUBSCRIPTION_ID | LEGAL_ENTITY_NAME | DEPLOYMENT_OPTION | DATABASE_ENGINE | CACHE_ENGINE | INSTANCE_TYPE_FAMILY | BILLING_ENTITY | RESERVATION_ID | RESOURCE_ID | RIGHTSIZING_TYPE | SAVINGS_PLANS_TYPE | SAVINGS_PLAN_ARN | PAYMENT_OPTION
Required: Yes

NextPageToken (p. 31)
The token to retrieve the next set of results. AWS provides the token when the response from a previous call has more results than the maximum page size.
GetDimensionValues

Type: String
Required: No

**SearchString (p. 31)**

The value that you want to search the filter values for.

Type: String
Required: No

**TimePeriod (p. 31)**

The start and end dates for retrieving the dimension values. The start date is inclusive, but the end date is exclusive. For example, if start is 2017-01-01 and end is 2017-05-01, then the cost and usage data is retrieved from 2017-01-01 up to and including 2017-04-30 but not including 2017-05-01.

Type: DateInterval (p. 192) object
Required: Yes

**Response Syntax**

```json
{
   "DimensionValues": [
      {
         "Attributes": {
            "string": "string"
         },
         "Value": "string"
      }
   ],
   "NextPageToken": "string",
   "ReturnSize": number,
   "TotalSize": 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.

**DimensionValues (p. 33)**

The filters that you used to filter your request. Some dimensions are available only for a specific context.

If you set the context to COST_AND_USAGE, you can use the following dimensions for searching:

- **AZ** - The Availability Zone. An example is us-east-1a.
- **DATABASE_ENGINE** - The Amazon Relational Database Service database. Examples are Aurora or MySQL.
- **INSTANCE_TYPE** - The type of Amazon EC2 instance. An example is m4.xlarge.
- **LEGAL_ENTITY_NAME** - The name of the organization that sells you AWS services, such as Amazon Web Services.
- **LINKED_ACCOUNT** - The description in the attribute map that includes the full name of the member account. The value field contains the AWS ID of the member account.
• OPERATING_SYSTEM - The operating system. Examples are Windows or Linux.
• OPERATION - The action performed. Examples include RunInstance and CreateBucket.
• PLATFORM - The Amazon EC2 operating system. Examples are Windows or Linux.
• PURCHASE_TYPE - The reservation type of the purchase to which this usage is related. Examples include On-Demand Instances and Standard Reserved Instances.
• SERVICE - The AWS service such as Amazon DynamoDB.
• USAGE_TYPE - The type of usage. An example is DataTransfer-In-Bytes. The response for the GetDimensionValues operation includes a unit attribute. Examples include GB and Hrs.
• USAGE_TYPE_GROUP - The grouping of common usage types. An example is Amazon EC2: CloudWatch – Alarms. The response for this operation includes a unit attribute.
• RECORD_TYPE - The different types of charges such as RI fees, usage costs, tax refunds, and credits.
• RESOURCE_ID - The unique identifier of the resource. ResourceId is an opt-in feature only available for last 14 days for EC2-Compute Service.

If you set the context to RESERVATIONS, you can use the following dimensions for searching:
• AZ - The Availability Zone. An example is us-east-1a.
• CACHE_ENGINE - The Amazon ElastiCache operating system. Examples are Windows or Linux.
• DEPLOYMENT_OPTION - The scope of Amazon Relational Database Service deployments. Valid values are SingleAZ and MultiAZ.
• INSTANCE_TYPE - The type of Amazon EC2 instance. An example is m4.xlarge.
• LINKED_ACCOUNT - The description in the attribute map that includes the full name of the member account. The value field contains the AWS ID of the member account.
• PLATFORM - The Amazon EC2 operating system. Examples are Windows or Linux.
• REGION - The AWS Region.
• SCOPE (Utilization only) - The scope of a Reserved Instance (RI). Values are regional or a single Availability Zone.
• TAG (Coverage only) - The tags that are associated with a Reserved Instance (RI).
• TENANCY - The tenancy of a resource. Examples are shared or dedicated.

If you set the context to SAVINGS_PLANS, you can use the following dimensions for searching:
• SAVINGS_PLANS_TYPE - Type of Savings Plans (EC2 Instance or Compute)
• PAYMENT_OPTION - Payment option for the given Savings Plans (for example, All Upfront)
• REGION - The AWS Region.
• INSTANCE_TYPE_FAMILY - The family of instances (For example, m5)
• LINKED_ACCOUNT - The description in the attribute map that includes the full name of the member account. The value field contains the AWS ID of the member account.
• SAVINGS_PLAN_ARN - The unique identifier for your Savings Plan

Type: Array of DimensionValuesWithAttributes (p. 194) objects

NextPageToken (p. 33)

The token for the next set of retrievable results. AWS provides the token when the response from a previous call has more results than the maximum page size.

Type: String

ReturnSize (p. 33)

The number of results that AWS returned at one time.

Type: Integer
TotalSize (p. 33)

The total number of search results.
Type: Integer

Errors

For information about the errors that are common to all actions, see Common Errors (p. 282).

BillExpirationException

The requested report expired. Update the date interval and try again.
HTTP Status Code: 400

DataUnavailableException

The requested data is unavailable.
HTTP Status Code: 400

InvalidNextTokenException

The pagination token is invalid. Try again without a pagination token.
HTTP Status Code: 400

LimitExceededException

You made too many calls in a short period of time. Try again later.
HTTP Status Code: 400

RequestChangedException

Your request parameters changed between pages. Try again with the old parameters or without a pagination token.
HTTP Status Code: 400

Example

The following is a sample request and response of the GetDimensionValues operation that enables you to search for all the member accounts in an organization in AWS Organizations that have "Elastic" in their name.

Sample Request

```
POST / HTTP/1.1
Host: ce.us-east-1.amazonaws.com
x-amz-date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>, SignedHeaders=content-type;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSInsightsIndexService.GetDimensionValues
```
GetDimensionValues

"TimePeriod": {
    "Start": "2017-01-01",
    "End": "2017-05-18"
},
"SearchString": "Elastic",
"Dimension": "Service"

Sample Response

HTTP/1.1 200 OK
x-amzn-RequestId: <RequestId>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Date: <Date>

//Attributes are optional metadata that are returned depending on the dimension that you select.
{
    "DimensionValues": [
        {
            "Attributes": {},
            "Value": "Amazon ElastiCache"
        },
        {
            "Attributes": {},
            "Value": "EC2 - Other"
        },
        {
            "Attributes": {},
            "Value": "Amazon Elastic Compute Cloud - Compute"
        },
        {
            "Attributes": {},
            "Value": "Amazon Elasticsearch Service"
        }
    ],
    "ReturnSize": 4,
    "TotalSize": 4
}

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
GetReservationCoverage
Service: AWS Cost Explorer Service

Retrieves the reservation coverage for your account. This enables you to see how much of your Amazon Elastic Compute Cloud, Amazon ElastiCache, Amazon Relational Database Service, or Amazon Redshift usage is covered by a reservation. An organization's master account can see the coverage of the associated member accounts. For any time period, you can filter data about reservation usage by the following dimensions:

- AZ
- CACHE_ENGINE
- DATABASE_ENGINE
- DEPLOYMENT_OPTION
- INSTANCE_TYPE
- LINKED_ACCOUNT
- OPERATING_SYSTEM
- PLATFORM
- REGION
- SERVICE
- TAG
- TENANCY

To determine valid values for a dimension, use the GetDimensionValues operation.

Request Syntax

```json
{
    "Filter": {
        "And": [ "Expression" ],
        "CostCategories": {
            "Key": "string",
            "Values": [ "string" ]
        },
        "Dimensions": {
            "Key": "string",
            "Values": [ "string" ]
        },
        "Not": "Expression",
        "Or": [ "Expression" ],
        "Tags": {
            "Key": "string",
            "Values": [ "string" ]
        }
    },
    "Granularity": "string",
    "GroupBy": [ {
        "Key": "string",
        "Type": "string"
    } ],
    "Metrics": [ "string" ]
}
```
Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

**Filter (p. 37)**

Filters utilization data by dimensions. You can filter by the following dimensions:
- AZ
- CACHE_ENGINE
- DATABASE_ENGINE
- DEPLOYMENT_OPTION
- INSTANCE_TYPE
- LINKED_ACCOUNT
- OPERATING_SYSTEM
- PLATFORM
- REGION
- SERVICE
- TAG
- TENANCY

GetReservationCoverage uses the same Expression object as the other operations, but only AND is supported among each dimension. You can nest only one level deep. If there are multiple values for a dimension, they are OR'd together.

If you don't provide a SERVICE filter, Cost Explorer defaults to EC2.

Type: Expression (p. 204) object

Required: No

**Granularity (p. 37)**

The granularity of the AWS cost data for the reservation. Valid values are MONTHLY and DAILY.

If GroupBy is set, Granularity can't be set. If Granularity isn't set, the response object doesn't include Granularity, either MONTHLY or DAILY.

The GetReservationCoverage operation supports only DAILY and MONTHLY granularities.

Type: String

Valid Values: DAILY | MONTHLY | HOURLY

Required: No

**GroupBy (p. 37)**

You can group the data by the following attributes:
- AZ
- CACHE_ENGINE
- DATABASE_ENGINE
- DEPLOYMENT_OPTION
- INSTANCE_TYPE
- LINKED_ACCOUNT
- OPERATING_SYSTEM
- PLATFORM
- REGION
- TENANCY

Type: Array of GroupDefinition (p. 208) objects

Required: No

**Metrics (p. 37)**

The measurement that you want your reservation coverage reported in.

Valid values are Hour, Unit, and Cost. You can use multiple values in a request.

Type: Array of strings

Required: No

**NextPageToken (p. 37)**

The token to retrieve the next set of results. AWS provides the token when the response from a previous call has more results than the maximum page size.

Type: String

Required: No

**TimePeriod (p. 37)**

The start and end dates of the period that you want to retrieve data about reservation coverage for. You can retrieve data for a maximum of 13 months: the last 12 months and the current month. The start date is inclusive, but the end date is exclusive. For example, if start is 2017-01-01 and end is 2017-05-01, then the cost and usage data is retrieved from 2017-01-01 up to and including 2017-04-30 but not including 2017-05-01.

Type: DateInterval (p. 192) object

Required: Yes

**Response Syntax**

```json
{
    "CoveragesByTime": [
        {
            "Groups": [
                {
                    "Attributes": {
                        "string": "string"
                    },
                    "Coverage": {
                        "CoverageCost": { "OnDemandCost": "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.
**CoveragesByTime (p. 39)**

- The amount of time that your reservations covered.
  
  Type: Array of CoveragesByTime (p. 186) objects

**NextPageToken (p. 39)**

- The token for the next set of retrievable results. AWS provides the token when the response from a previous call has more results than the maximum page size.
  
  Type: String

**Total (p. 39)**

- The total amount of instance usage that a reservation covered.
  
  Type: Coverage (p. 185) object

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 282).

- **DataUnavailableException**
  
  The requested data is unavailable.
  
  HTTP Status Code: 400

- **InvalidNextTokenException**
  
  The pagination token is invalid. Try again without a pagination token.
  
  HTTP Status Code: 400

- **LimitExceededException**
  
  You made too many calls in a short period of time. Try again later.
  
  HTTP Status Code: 400

**Example**

The following example request for the **GetReservationCoverage** operation retrieves reservation coverage for all `t2.nano` instance types from 2017-07-01 to 2017-10-01.

**Sample Request**

```plaintext
POST / HTTP/1.1
Host: ce.us-east-1.amazonaws.com
x-amz-date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
  SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive

X-Amz-Target: AWSInsightsIndexService.GetReservationCoverage
{
  "TimePeriod": {
```
"Start": "2017-07-01",
"End": "2017-10-01"
},
"Filter": {
  "And": [
    {
      "Dimensions": {
        "Key": "INSTANCE_TYPE",
        "Values": [
          "t2.nano"
        ]
      },
      "Dimensions": {
        "Key": "REGION",
        "Values": [
          "us-east-1"
        ]
      }
    }
  ],
  "GroupBy": [
    {
      "Type": "Dimension",
      "Key": "REGION"
    }
  ]
}

Sample Response

HTTP/1.1 200 OK
x-amzn-RequestId: <RequestId>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Date: <Date>
{
  "CoveragesByTime": [[
    "Groups": [
      "Attributes": {
        "region": "us-east-1"
      },
      "Coverage": {
        "CoverageHours": {
          "CoverageHoursPercentage": "40%",
          "OnDemandHours": "40",
          "ReservedHours": "40",
          "TotalRunningHours": "80"
        }
      }
      "CoverageNormalizedUnits": {
        "CoverageNormalizedUnitsPercentage": "10",
        "OnDemandNormalizedUnits": "10",
        "ReservedNormalizedUnits": "10",
        "TotalRunningNormalizedUnits": "20"
      }
    }
  ],
  "TimePeriod": {
    "End": "2017-07-01",
    "Start": "2017-10-01"
  },
  "Total": {
    "CoverageHours": {
      "CoverageHoursPercentage": "40%",
      "OnDemandHours": "40",
      "ReservedHours": "40",
      "TotalRunningHours": "80"
    }
  }
}
"TotalRunningHours": "80"
}

"CoverageNormalizedUnits": {
  "CoverageNormalizedUnitsPercentage": "10",
  "OnDemandNormalizedUnits": "10",
  "ReservedNormalizedUnits": "10",
  "TotalRunningNormalizedUnits": "20"
}
}

"Total": {
  "CoverageHours": {
    "CoverageHoursPercentage": "40%",
    "OnDemandHours": "40",
    "ReservedHours": "40",
    "TotalRunningHours": "80"
  }
}

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
GetReservationPurchaseRecommendation

Service: AWS Cost Explorer Service

Gets recommendations for which reservations to purchase. These recommendations could help you reduce your costs. Reservations provide a discounted hourly rate (up to 75%) compared to On-Demand pricing.

AWS generates your recommendations by identifying your On-Demand usage during a specific time period and collecting your usage into categories that are eligible for a reservation. After AWS has these categories, it simulates every combination of reservations in each category of usage to identify the best number of each type of RI to purchase to maximize your estimated savings.

For example, AWS automatically aggregates your Amazon EC2 Linux, shared tenancy, and c4 family usage in the US West (Oregon) Region and recommends that you buy size-flexible regional reservations to apply to the c4 family usage. AWS recommends the smallest size instance in an instance family. This makes it easier to purchase a size-flexible RI. AWS also shows the equal number of normalized units so that you can purchase any instance size that you want. For this example, your RI recommendation would be for c4.large because that is the smallest size instance in the c4 instance family.

Request Syntax

```json
{
    "AccountId": "string",
    "AccountScope": "string",
    "LookbackPeriodInDays": "string",
    "NextPageToken": "string",
    "PageSize": number,
    "PaymentOption": "string",
    "Service": "string",
    "ServiceSpecification": {
        "EC2Specification": {
            "OfferingClass": "string"
        }
    },
    "TermInYears": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

**AccountId (p. 44)**

The account ID that is associated with the recommendation.

Type: String

Required: No

**AccountScope (p. 44)**

The account scope that you want your recommendations for. Amazon Web Services calculates recommendations including the payer account and linked accounts if the value is set to PAYER. If the value is LINKED, recommendations are calculated for individual linked accounts only.
Type: String

Valid Values: PAYER | LINKED

Required: No

**LookbackPeriodInDays (p. 44)**

The number of previous days that you want AWS to consider when it calculates your recommendations.

Type: String

Valid Values: SEVEN_DAYS | THIRTY_DAYS | SIXTY_DAYS

Required: No

**NextPageToken (p. 44)**

The pagination token that indicates the next set of results that you want to retrieve.

Type: String

Required: No

**PageSize (p. 44)**

The number of recommendations that you want returned in a single response object.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

**PaymentOption (p. 44)**

The reservation purchase option that you want recommendations for.

Type: String

Valid Values: NO_UPFRONT | PARTIAL_UPFRONT | ALL_UPFRONT | LIGHT_UTILIZATION | MEDIUM_UTILIZATION | HEAVY_UTILIZATION

Required: No

**Service (p. 44)**

The specific service that you want recommendations for.

Type: String

Required: Yes

**ServiceSpecification (p. 44)**

The hardware specifications for the service instances that you want recommendations for, such as standard or convertible Amazon EC2 instances.

Type: ServiceSpecification (p. 251) object

Required: No
**TermInYears (p. 44)**

The reservation term that you want recommendations for.

Type: String

Valid Values: ONE_YEAR | THREE_YEARS

Required: No

**Response Syntax**

```json
{
    "Metadata": {
        "GenerationTimestamp": "string",
        "RecommendationId": "string"
    },
    "NextPageToken": "string",
    "Recommendations": [
        {
            "AccountScope": "string",
            "LookbackPeriodInDays": "string",
            "PaymentOption": "string",
            "RecommendationDetails": [
                {
                    "AccountId": "string",
                    "AverageNormalizedUnitsUsedPerHour": "string",
                    "AverageNumberOfInstancesUsedPerHour": "string",
                    "AverageUtilization": "string",
                    "CurrencyCode": "string",
                    "EstimatedBreakEvenInMonths": "string",
                    "EstimatedMonthlyOnDemandCost": "string",
                    "EstimatedMonthlySavingsAmount": "string",
                    "EstimatedMonthlySavingsPercentage": "string",
                    "EstimatedReservationCostForLookbackPeriod": "string",
                    "InstanceDetails": {
                        "EC2InstanceDetails": {
                            "AvailabilityZone": "string",
                            "CurrentGeneration": boolean,
                            "Family": "string",
                            "InstanceType": "string",
                            "Platform": "string",
                            "Region": "string",
                            "SizeFlexEligible": boolean,
                            "Tenancy": "string"
                        },
                        "ElastiCacheInstanceDetails": {
                            "CurrentGeneration": boolean,
                            "Family": "string",
                            "NodeType": "string",
                            "ProductDescription": "string",
                            "Region": "string",
                            "SizeFlexEligible": boolean
                        },
                        "ESInstanceDetails": {
                            "CurrentGeneration": boolean,
                            "InstanceClass": "string",
                            "InstanceSize": "string",
                            "Region": "string",
                            "SizeFlexEligible": boolean
                        },
                        "RDSInstanceDetails": {
                            "CurrentGeneration": boolean,
                            "Edition": "string",
                            "Engine": "string",
                            "Family": "string",
                            "InstanceClass": "string",
                            "InstanceSize": "string",
                            "LicenseModel": "string",
                            "Region": "string",
                            "SizeFlexEligible": boolean
                        }
                    }
                }
            ]
        }
    ]
}
```
Response Elements

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

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

Metadata (p. 46)

Information about this specific recommendation call, such as the time stamp for when Cost Explorer generated this recommendation.

Type: ReservationPurchaseRecommendationMetadata (p. 224) object

NextPageToken (p. 46)

The pagination token for the next set of retrievable results.

Type: String

Recommendations (p. 46)

Recommendations for reservations to purchase.
Type: Array of ReservationPurchaseRecommendation (p. 219) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 282).

DataUnavailableException

The requested data is unavailable.

HTTP Status Code: 400

InvalidNextTokenException

The pagination token is invalid. Try again without a pagination token.

HTTP Status Code: 400

LimitExceededException

You made too many calls in a short period of time. Try again later.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3
GetReservationUtilization
Service: AWS Cost Explorer Service

Retrieves the reservation utilization for your account. Master accounts in an organization have access to member accounts. You can filter data by dimensions in a time period. You can use GetDimensionValues to determine the possible dimension values. Currently, you can group only by SUBSCRIPTION_ID.

Request Syntax

```
{
  "Filter": {
    "And": [
      "Expression"
    ],
    "CostCategories": {
      "Key": "string",
      "Values": [ "string" ]
    },
    "Dimensions": {
      "Key": "string",
      "Values": [ "string" ]
    },
    "Not": "Expression",
    "Or": [
      "Expression"
    ],
    "Tags": {
      "Key": "string",
      "Values": [ "string" ]
    }
  },
  "Granularity": "string",
  "GroupBy": [
    {
      "Key": "string",
      "Type": "string"
    }
  ],
  "NextPageToken": "string",
  "TimePeriod": {
    "End": "string",
    "Start": "string"
  }
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

**Filter (p. 49)**

Filters utilization data by dimensions. You can filter by the following dimensions:

- AZ
- CACHE_ENGINE
- DEPLOYMENT_OPTION
GetReservationUtilization uses the same Expression object as the other operations, but only AND is supported among each dimension, and nesting is supported up to only one level deep. If there are multiple values for a dimension, they are OR'd together.

Type: Expression (p. 204) object

Required: No

Granularity (p. 49)

If GroupBy is set, Granularity can't be set. If Granularity isn't set, the response object doesn't include Granularity, either MONTHLY or DAILY. If both GroupBy and Granularity aren't set, GetReservationUtilization defaults to DAILY.

The GetReservationUtilization operation supports only DAILY and MONTHLY granularities.

Type: String

Valid Values: DAILY | MONTHLY | HOURLY

Required: No

GroupBy (p. 49)

Groups only by SUBSCRIPTION_ID. Metadata is included.

Type: Array of GroupDefinition (p. 208) objects

Required: No

NextPageToken (p. 49)

The token to retrieve the next set of results. AWS provides the token when the response from a previous call has more results than the maximum page size.

Type: String

Required: No

TimePeriod (p. 49)

Sets the start and end dates for retrieving RI utilization. The start date is inclusive, but the end date is exclusive. For example, if start is 2017-01-01 and end is 2017-05-01, then the cost and usage data is retrieved from 2017-01-01 up to and including 2017-04-30 but not including 2017-05-01.

Type: DateInterval (p. 192) object

Required: Yes

Response Syntax

```json
{

```
"NextPageToken": "string",
"Total": {
  "AmortizedRecurringFee": "string",
  "AmortizedUpfrontFee": "string",
  "NetRISavings": "string",
  "OnDemandCostOfRIHoursUsed": "string",
  "PurchasedHours": "string",
  "PurchasedUnits": "string",
  "TotalActualHours": "string",
  "TotalActualUnits": "string",
  "TotalAmortizedFee": "string",
  "TotalPotentialRISavings": "string",
  "UnusedHours": "string",
  "UnusedUnits": "string",
  "UtilizationPercentage": "string",
  "UtilizationPercentageInUnits": "string"
},
"UtilizationsByTime": [
  {
    "Groups": [
      {
        "Attributes": {
          "string": "string"
        },
        "Key": "string",
        "Utilization": {
          "AmortizedRecurringFee": "string",
          "AmortizedUpfrontFee": "string",
          "NetRISavings": "string",
          "OnDemandCostOfRIHoursUsed": "string",
          "PurchasedHours": "string",
          "PurchasedUnits": "string",
          "TotalActualHours": "string",
          "TotalActualUnits": "string",
          "TotalAmortizedFee": "string",
          "TotalPotentialRISavings": "string",
          "UnusedHours": "string",
          "UnusedUnits": "string",
          "UtilizationPercentage": "string",
          "UtilizationPercentageInUnits": "string"
        },
        "Value": "string"
      }
    ],
    "TimePeriod": {
      "End": "string",
      "Start": "string"
    },
    "Total": {
      "AmortizedRecurringFee": "string",
      "AmortizedUpfrontFee": "string",
      "NetRISavings": "string",
      "OnDemandCostOfRIHoursUsed": "string",
      "PurchasedHours": "string",
      "PurchasedUnits": "string",
      "TotalActualHours": "string",
      "TotalActualUnits": "string",
      "TotalAmortizedFee": "string",
      "TotalPotentialRISavings": "string",
      "UnusedHours": "string",
      "UnusedUnits": "string",
      "UtilizationPercentage": "string",
      "UtilizationPercentageInUnits": "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.

NextPageToken (p. 50)

The token for the next set of retrievable results. AWS provides the token when the response from a previous call has more results than the maximum page size.

Type: String

Total (p. 50)

The total amount of time that you used your RIs.

Type: ReservationAggregates (p. 215) object

UtilizationsByTime (p. 50)

The amount of time that you used your RIs.

Type: Array of UtilizationByTime (p. 256) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 282).

DataUnavailableException

The requested data is unavailable.

HTTP Status Code: 400

InvalidNextTokenException

The pagination token is invalid. Try again without a pagination token.

HTTP Status Code: 400

LimitExceededException

You made too many calls in a short period of time. Try again later.

HTTP Status Code: 400

Example

The following is a sample request and response of the GetReservationUtilization operation that enables you to retrieve your RI utilization for all t2.nano instance types from 2017-01-01 to 2017-05-01.

Sample Request

```
POST / HTTP/1.1
Host: ce.us-east-1.amazonaws.com
```
AWS Cost Explorer Service Cost Management APIs
GetReservationUtilization

x-amz-Date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
   SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-
   requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSInsightsIndexService.GetReservationUtilization
{
   "TimePeriod": {
      "Start": "2017-07-01",
      "End": "2017-10-01"
   },
   "Filter": {
      "Dimensions": {
         "Key": "INSTANCE_TYPE",
         "Values": [
            "t2.nano"
         ]
      }
   },
   "GroupBy": [
      {
         "Type": "Dimension",
         "Key": "SUBSCRIPTION_ID"
      }
   ]
}

Sample Response

HTTP/1.1 200 OK
x-amzn-RequestId: <RequestId>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Date: <Date>
{
   "UtilizationsByTime": [{
      "Groups": [{
         "Attributes": {
            "AccountId": "0123456789",
            "AccountName": null,
            "AvailabilityZone": ",",
            "CancellationDateTime": "2019-09-28T15:22:31.000Z",
            "EndDateTime": "2019-09-28T15:22:31.000Z",
            "InstanceType": "t2.nano",
            "LeaseId": null,
            "NumberOfInstances": "1",
            "OfferingType": "convertible",
            "Platform": "Linux/UNIX",
            "Region": "us-east-1",
            "Scope": "Region",
            "StartDateTime": "2016-09-28T15:22:32.000Z",
            "SubscriptionId": "359809062",
            "SubscriptionStatus": "Active",
            "SubscriptionType": "All Upfront",
            "Tenancy": "Shared"
         },
         "Key": "SUBSCRIPTION_ID",
         "Utilization": {
            "PurchasedHours": 2208,
            "TotalActualHours": 2208,
            "UnusedHours": 0,
         } // Pseudocode for utilization calculation
      }
   ] // Pseudocode for groups creation
   ] // Pseudocode for utilizations by time
} // Pseudocode for sample response
"UtilizationPercentage": 100
},
"Value": "359809062"
},
"Attributes": {
"": "0123456789",
"AccountName": null,
"AvailabilityZone": "us-east-1d",
"CancellationDateTime": "2017-09-28T15:22:31.000Z",
"EndDateTime": "2017-09-28T15:22:31.000Z",
"InstanceType": "t2.nano",
"LeaseId": null,
"NumberOfInstances": "1",
"OfferingType": "Standard",
"Platform": "Linux/UNIX",
"Region": "us-east-1",
"Scope": "Availability Zone",
"StartDateTime": "2016-09-28T15:22:32.000Z",
"SubscriptionId": "359809070",
"SubscriptionStatus": "Active",
"SubscriptionType": "All Upfront",
"Tenancy": "Shared"
},
"Key": "SUBSCRIPTION_ID",
"Utilization": {
"PurchasedHours": 2151,
"TotalActualHours": 2151,
"UnusedHours": 0,
"UtilizationPercentage": 100
},
"Value": "359809070"
},
"Attributes": {
"AccountId": "0123456789",
"AccountName": null,
"AvailabilityZone": "us-west-2a",
"CancellationDateTime": "2017-09-20T04:06:02.000Z",
"EndDateTime": "2017-09-20T04:06:02.000Z",
"InstanceType": "t2.nano",
"LeaseId": null,
"NumberOfInstances": "1",
"OfferingType": "Standard",
"Platform": "Linux/UNIX",
"Region": "us-west-2",
"Scope": "Availability Zone",
"StartDateTime": "2016-09-20T04:06:03.000Z",
"SubscriptionId": "353571154",
"SubscriptionStatus": "Active",
"SubscriptionType": "Partial Upfront",
"Tenancy": "Shared"
},
"Key": "SUBSCRIPTION_ID",
"Utilization": {
"PurchasedHours": 1948,
"TotalActualHours": 0,
"UnusedHours": 1948,
"UtilizationPercentage": 0
},
"Value": "353571154"
}
"TimePeriod": {
"End": "2017-10-01",
"Start": "2017-07-01"
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
GetRightsizingRecommendation

Service: AWS Cost Explorer Service

Creates recommendations that helps you save cost by identifying idle and underutilized Amazon EC2 instances.

Recommendations are generated to either downsize or terminate instances, along with providing savings detail and metrics. For details on calculation and function, see Optimizing Your Cost with Rightsizing Recommendations.

Request Syntax

```json
{
  "Filter": {
    "And": [
      "Expression"
    ],
    "CostCategories": {
      "Key": "string",
      "Values": [ "string" ]
    },
    "Dimensions": {
      "Key": "string",
      "Values": [ "string" ]
    },
    "Not": "Expression",
    "Or": [
      "Expression"
    ],
    "Tags": {
      "Key": "string",
      "Values": [ "string" ]
    }
  },
  "NextPageToken": "string",
  "PageSize": number,
  "Service": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

Filter (p. 56)

Use Expression to filter by cost or by usage. There are two patterns:

- Simple dimension values - You can set the dimension name and values for the filters that you plan to use. For example, you can filter for REGION==us-east-1 OR REGION==us-west-1. The Expression for that looks like this:

  ```json
  { "Dimensions": { "Key": "REGION", "Values": [ "us-east-1", "us-west-1" ] } }
  ```

  The list of dimension values are OR'd together to retrieve cost or usage data. You can create Expression and DimensionValues objects using either with* methods or set* methods in multiple lines.
• Compound dimension values with logical operations - You can use multiple Expression types and the logical operators AND/OR/NOT to create a list of one or more Expression objects. This allows you to filter on more advanced options. For example, you can filter on ((REGION == us-east-1 OR REGION == us-west-1) OR (TAG.Type == Type1)) AND (USAGE_TYPE != DataTransfer). The Expression for that looks like this:

```json
{ "And": [ {"Or": [ { "Dimensions": { "Key": "REGION", "Values": [ "us-east-1", "us-west-1" ] }}, {"Tags": { "Key": "TagName", "Values": [ "Value1" ] } }], {"Not": {"Dimensions": { "Key": "USAGE_TYPE", "Values": [ "DataTransfer" ] } }} ] }
```

**Note**
Because each Expression can have only one operator, the service returns an error if more than one is specified. The following example shows an Expression object that creates an error.

```json
{ "And": [ ... ], "DimensionValues": { "Dimension": "USAGE_TYPE", "Values": [ "DataTransfer" ] } }
```

**Note**
For GetRightsizingRecommendation action, a combination of OR and NOT is not supported. OR is not supported between different dimensions, or dimensions and tags. NOT operators aren’t supported. Dimensions are also limited to LINKED_ACCOUNT, REGION, or RIGHTSIZING_TYPE.

Type: Expression (p. 204) object

Required: No

**NextPageToken (p. 56)**

The pagination token that indicates the next set of results that you want to retrieve.

Type: String

Required: No

**PageSize (p. 56)**

The number of recommendations that you want returned in a single response object.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

**Service (p. 56)**

The specific service that you want recommendations for. The only valid value for GetRightsizingRecommendation is "AmazonEC2".

Type: String

Required: Yes

**Response Syntax**

```json
{
  "Metadata": {
    "GenerationTimestamp": "string",
    "LookbackPeriodInDays": "string",
  
```
"RecommendationId": "string",
"NextPageToken": "string",
"RightsizingRecommendations": [ 
  { 
    "AccountId": "string",
    "CurrentInstance": { 
      "CurrencyCode": "string",
      "MonthlyCost": "string",
      "OnDemandHoursInLookbackPeriod": "string",
      "ReservationCoveredHoursInLookbackPeriod": "string",
      "ResourceDetails": { 
        "EC2ResourceDetails": { 
          "HourlyOnDemandRate": "string",
          "InstanceType": "string",
          "Memory": "string",
          "NetworkPerformance": "string",
          "Platform": "string",
          "Region": "string",
          "Sku": "string",
          "Storage": "string",
          "Vcpu": "string"
        }
      },
      "ResourceId": "string",
      "ResourceUtilization": { 
        "EC2ResourceUtilization": { 
          "MaxCpuUtilizationPercentage": "string",
          "MaxMemoryUtilizationPercentage": "string",
          "MaxStorageUtilizationPercentage": "string"
        }
      },
      "SavingsPlansCoveredHoursInLookbackPeriod": "string",
      "Tags": [ 
        { 
          "Key": "string",
          "Values": [ "string" ]
        }
      ],
      "TotalRunningHoursInLookbackPeriod": "string"
    }
  },
  "ModifyRecommendationDetail": { 
    "TargetInstances": [ 
      { 
        "CurrencyCode": "string",
        "DefaultTargetInstance": boolean,
        "EstimatedMonthlyCost": "string",
        "EstimatedMonthlySavings": "string",
        "ExpectedResourceUtilization": { 
          "EC2ResourceUtilization": { 
            "MaxCpuUtilizationPercentage": "string",
            "MaxMemoryUtilizationPercentage": "string",
            "MaxStorageUtilizationPercentage": "string"
          }
        }
      }
    ],
    "ResourceDetails": { 
      "EC2ResourceDetails": { 
        "HourlyOnDemandRate": "string",
        "InstanceType": "string",
        "Memory": "string",
        "NetworkPerformance": "string",
        "Platform": "string",
        "Region": "string",
        "Sku": "string",
        "Storage": "string",
        "Vcpu": "string"
      }
    }
  }
],
"NextPageToken": "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.

Metadata (p. 57)

Information regarding this specific recommendation set.

Type: RightsizingRecommendationMetadata (p. 231) object

NextPageToken (p. 57)

The token to retrieve the next set of results.

Type: String

RightsizingRecommendations (p. 57)

Recommendations to rightsize resources.

Type: Array of RightsizingRecommendation (p. 230) objects

Summary (p. 57)

Summary of this recommendation set.

Type: RightsizingRecommendationSummary (p. 232) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 282).

InvalidNextTokenException

The pagination token is invalid. Try again without a pagination token.

HTTP Status Code: 400

LimitExceededException

You made too many calls in a short period of time. Try again later.
HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3
GetSavingsPlansCoverage

Service: AWS Cost Explorer Service

Retrieves the Savings Plans covered for your account. This enables you to see how much of your cost is covered by a Savings Plan. An organization’s master account can see the coverage of the associated member accounts. For any time period, you can filter data for Savings Plans usage with the following dimensions:

- LINKED_ACCOUNT
- REGION
- SERVICE
- INSTANCE_FAMILY

To determine valid values for a dimension, use the GetDimensionValues operation.

Request Syntax

```
{
  "Filter": {
    "And": [],
    "CostCategories": {
      "Key": "string",
      "Values": [ "string" ]
    },
    "Dimensions": {
      "Key": "string",
      "Values": [ "string" ]
    },
    "Not": "Expression",
    "Or": [ "Expression" ],
    "Tags": {
      "Key": "string",
      "Values": [ "string" ]
    }
  },
  "Granularity": "string",
  "GroupBy": [
    { "Key": "string" },
    "MaxResults": number,
    "Metrics": [ "string" ],
    "NextToken": "string",
    "TimePeriod": {
      "End": "string",
      "Start": "string"
    }
  ]
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).
The request accepts the following data in JSON format.

**Filter (p. 61)**

Filters Savings Plans coverage data by dimensions. You can filter data for Savings Plans usage with the following dimensions:
- LINKED_ACCOUNT
- REGION
- SERVICE
- INSTANCE_FAMILY

GetSavingsPlansCoverage uses the same Expression object as the other operations, but only AND is supported among each dimension. If there are multiple values for a dimension, they are OR'd together.

Type: Expression (p. 204) object

**Required:** No

**Granularity (p. 61)**

The granularity of the Amazon Web Services cost data for your Savings Plans. Granularity can't be set if GroupBy is set.

The GetSavingsPlansCoverage operation supports only DAILY and MONTHLY granularities.

Type: String

Valid Values: DAILY | MONTHLY | HOURLY

**Required:** No

**GroupBy (p. 61)**

You can group the data using the attributes INSTANCE_FAMILY, REGION, or SERVICE.

Type: Array of GroupDefinition (p. 208) objects

**Required:** No

**MaxResults (p. 61)**

The number of items to be returned in a response. The default is 20, with a minimum value of 1.

Type: Integer

Valid Range: Minimum value of 1.

**Required:** No

**Metrics (p. 61)**

The measurement that you want your Savings Plans coverage reported in. The only valid value is SpendCoveredBySavingsPlans.

Type: Array of strings

**Required:** No

**NextToken (p. 61)**

The token to retrieve the next set of results. Amazon Web Services provides the token when the response from a previous call has more results than the maximum page size.
TimePeriod (p. 61)

The time period that you want the usage and costs for. The Start date must be within 13 months. The End date must be after the Start date, and before the current date. Future dates can’t be used as an End date.

Type: DateInterval (p. 192) object

Required: Yes

Response Syntax

```json
{
   "NextToken": "string",
   "SavingsPlansCoverages": [
      {
         "Attributes": {
            "string": "string"
         },
         "Coverage": {
            "CoveragePercentage": "string",
            "OnDemandCost": "string",
            "SpendCoveredBySavingsPlans": "string",
            "TotalCost": "string"
         },
         "TimePeriod": {
            "End": "string",
            "Start": "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. 63)

The token to retrieve the next set of results. Amazon Web Services provides the token when the response from a previous call has more results than the maximum page size.

Type: String

SavingsPlansCoverages (p. 63)

The amount of spend that your Savings Plans covered.

Type: Array of SavingsPlansCoverage (p. 234) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 282).
**DataUnavailableException**

The requested data is unavailable.

HTTP Status Code: 400

**InvalidNextTokenException**

The pagination token is invalid. Try again without a pagination token.

HTTP Status Code: 400

**LimitExceededException**

You made too many calls in a short period of time. Try again later.

HTTP Status Code: 400

**See Also**

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3
GetSavingsPlansPurchaseRecommendation

Service: AWS Cost Explorer Service

Retrieves your request parameters, Savings Plan Recommendations Summary and Details.

Request Syntax

```
{
  "AccountScope": "string",
  "Filter": {
    "And": [
      "Expression"
    ],
    "CostCategories": {
      "Key": "string",
      "Values": [ "string" ]
    },
    "Dimensions": {
      "Key": "string",
      "Values": [ "string" ]
    },
    "Not": "Expression",
    "Or": [
      "Expression"
    ],
    "Tags": {
      "Key": "string",
      "Values": [ "string" ]
    }
  },
  "LookbackPeriodInDays": "string",
  "NextPageToken": "string",
  "PageSize": number,
  "PaymentOption": "string",
  "SavingsPlansType": "string",
  "TermInYears": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

AccountScope (p. 65)

- The account scope that you want your recommendations for. Amazon Web Services calculates recommendations including the payer account and linked accounts if the value is set to PAYER. If the value is LINKED, recommendations are calculated for individual linked accounts only.

  Type: String

  Valid Values: PAYER | LINKED

  Required: No

Filter (p. 65)

- You can filter your recommendations by Account ID with the LINKED_ACCOUNT dimension. To filter your recommendations by Account ID, specify Key as LINKED_ACCOUNT and Value as the comma-separated Account ID(s) for which you want to see Savings Plans purchase recommendations.

  Type: String

  Required: No
For GetSavingsPlansPurchaseRecommendation, the Filter does not include CostCategories or Tags. It only includes Dimensions. With Dimensions, Key must be LINKED_ACCOUNT and Value can be a single Account ID or multiple comma-separated Account IDs for which you want to see Savings Plans Purchase Recommendations. AND and OR operators are not supported.

Type: Expression (p. 204) object

Required: No

**LookbackPeriodInDays (p. 65)**

The lookback period used to generate the recommendation.

Type: String

Valid Values: SEVEN_DAYS | THIRTY_DAYS | SIXTY_DAYS

Required: Yes

**NextPageToken (p. 65)**

The token to retrieve the next set of results. Amazon Web Services provides the token when the response from a previous call has more results than the maximum page size.

Type: String

Required: No

**PageSize (p. 65)**

The number of recommendations that you want returned in a single response object.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

**PaymentOption (p. 65)**

The payment option used to generate these recommendations.

Type: String

Valid Values: NO_UPFRONT | PARTIAL_UPFRONT | ALL_UPFRONT | LIGHT_UTILIZATION | MEDIUM_UTILIZATION | HEAVY_UTILIZATION

Required: Yes

**SavingsPlansType (p. 65)**

The Savings Plans recommendation type requested.

Type: String

Valid Values: COMPUTE_SP | EC2_INSTANCE_SP

Required: Yes

**TermInYears (p. 65)**

The savings plan recommendation term used to generated these recommendations.

Type: String

Valid Values: ONE_YEAR | THREE_YEARS

Required: Yes
Response Syntax

```
{  
  "Metadata": {  
    "GenerationTimestamp": "string",  
    "RecommendationId": "string"  
  },  
  "NextPageToken": "string",  
  "SavingsPlansPurchaseRecommendation": {  
    "AccountScope": "string",  
    "LookbackPeriodInDays": "string",  
    "PaymentOption": "string",  
    "SavingsPlansPurchaseRecommendationDetails": [  
      {  
        "AccountId": "string",  
        "CurrencyCode": "string",  
        "CurrentAverageHourlyOnDemandSpend": "string",  
        "CurrentMaximumHourlyOnDemandSpend": "string",  
        "CurrentMinimumHourlyOnDemandSpend": "string",  
        "EstimatedAverageUtilization": "string",  
        "EstimatedMonthlySavingsAmount": "string",  
        "EstimatedOnDemandCost": "string",  
        "EstimatedOnDemandCostWithCurrentCommitment": "string",  
        "EstimatedROI": "string",  
        "EstimatedSavingsAmount": "string",  
        "EstimatedSavingsPercentage": "string",  
        "EstimatedSPCost": "string",  
        "HourlyCommitmentToPurchase": "string",  
        "SavingsPlansDetails": {  
          "InstanceFamily": "string",  
          "OfferingId": "string",  
          "Region": "string"
        },  
        "UpfrontCost": "string"
      }  
    ],  
    "SavingsPlansPurchaseRecommendationSummary": {  
      "CurrencyCode": "string",  
      "CurrentOnDemandSpend": "string",  
      "EstimatedMonthlySavingsAmount": "string",  
      "EstimatedOnDemandCostWithCurrentCommitment": "string",  
      "EstimatedROI": "string",  
      "EstimatedSavingsAmount": "string",  
      "EstimatedSavingsPercentage": "string",  
      "EstimatedTotalCost": "string",  
      "HourlyCommitmentToPurchase": "string",  
      "TotalRecommendationCount": "string"
    },  
    "SavingsPlansType": "string",  
    "TermInYears": "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.

**Metadata (p. 67)**

Information regarding this specific recommendation set.
Type: `SavingsPlansPurchaseRecommendationMetadata` (p. 242) object

**NextPageToken (p. 67)**

The token for the next set of retrievable results. AWS provides the token when the response from a previous call has more results than the maximum page size.

Type: String

**SavingsPlansPurchaseRecommendation (p. 67)**

Contains your request parameters, Savings Plan Recommendations Summary, and Details.

Type: `SavingsPlansPurchaseRecommendation` (p. 237) object

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 282).

**InvalidNextTokenException**

The pagination token is invalid. Try again without a pagination token.

HTTP Status Code: 400

**LimitExceededException**

You made too many calls in a short period of time. Try again later.

HTTP Status Code: 400

**See Also**

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3
GetSavingsPlansUtilization
Service: AWS Cost Explorer Service

Retrieves the Savings Plans utilization for your account across date ranges with daily or monthly granularity. Master accounts in an organization have access to member accounts. You can use GetDimensionValues in SAVINGS_PLANS to determine the possible dimension values.

Note
You cannot group by any dimension values for GetSavingsPlansUtilization.

Request Syntax

```json
{
    "Filter": {
        "And": [
            "Expression"
        ],
        "CostCategories": {
            "Key": "string",
            "Values": [ "string" ]
        },
        "Dimensions": {
            "Key": "string",
            "Values": [ "string" ]
        },
        "Not": "Expression",
        "Or": [
            "Expression"
        ],
        "Tags": {
            "Key": "string",
            "Values": [ "string" ]
        }
    },
    "Granularity": "string",
    "TimePeriod": {
        "End": "string",
        "Start": "string"
    }
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

Filter (p. 69)

Filters Savings Plans utilization coverage data for active Savings Plans dimensions. You can filter data with the following dimensions:

- LINKED_ACCOUNT
- SAVINGS_PLAN_ARN
- SAVINGS_PLANS_TYPE
- REGION
- PAYMENT_OPTION
- INSTANCE_TYPE_FAMILY
GetSavingsPlansUtilization uses the same Expression object as the other operations, but only AND is supported among each dimension.

Type: Expression (p. 204) object

Required: No

Granularity (p. 69)

The granularity of the Amazon Web Services utilization data for your Savings Plans.

The GetSavingsPlansUtilization operation supports only DAILY and MONTHLY granularities.

Type: String

Valid Values: DAILY | MONTHLY | HOURLY

Required: No

TimePeriod (p. 69)

The time period that you want the usage and costs for. The Start date must be within 13 months. The End date must be after the Start date, and before the current date. Future dates can’t be used as an End date.

Type: DateInterval (p. 192) object

Required: Yes

Response Syntax

```json
{
   "SavingsPlansUtilizationsByTime": [
      {
         "AmortizedCommitment": {
            "AmortizedRecurringCommitment": "string",
            "AmortizedUpfrontCommitment": "string",
            "TotalAmortizedCommitment": "string"
         },
         "Savings": {
            "NetSavings": "string",
            "OnDemandCostEquivalent": "string"
         },
         "TimePeriod": {
            "End": "string",
            "Start": "string"
         },
         "Utilization": {
            "TotalCommitment": "string",
            "UnusedCommitment": "string",
            "UsedCommitment": "string",
            "UtilizationPercentage": "string"
         }
      }
   ],
   "Total": {
      "AmortizedCommitment": {
         "AmortizedRecurringCommitment": "string",
         "AmortizedUpfrontCommitment": "string",
         "TotalAmortizedCommitment": "string"
      },
      "Savings": {
         "NetSavings": "string",
```
"OnDemandCostEquivalent": "string",
},
"Utilization": {
    "TotalCommitment": "string",
    "UnusedCommitment": "string",
    "UsedCommitment": "string",
    "UtilizationPercentage": "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.

**SavingsPlansUtilizationsByTime (p. 70)**

The amount of cost/commitment you used your Savings Plans. This allows you to specify date ranges.

Type: Array of **SavingsPlansUtilizationByTime (p. 248)** objects

**Total (p. 70)**

The total amount of cost/commitment that you used your Savings Plans, regardless of date ranges.

Type: **SavingsPlansUtilizationAggregates (p. 247)** object

Errors

For information about the errors that are common to all actions, see **Common Errors (p. 282)**.

**DataUnavailableException**

The requested data is unavailable.

HTTP Status Code: 400

**LimitExceededException**

You made too many calls in a short period of time. Try again later.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
AWS SDK for Python
AWS SDK for Ruby V3
GetSavingsPlansUtilizationDetails
Service: AWS Cost Explorer Service

Retrieves attribute data along with aggregate utilization and savings data for a given time period. This doesn't support granular or grouped data (daily/monthly) in response. You can't retrieve data by dates in a single response similar to GetSavingsPlanUtilization, but you have the option to make multiple calls to GetSavingsPlanUtilizationDetails by providing individual dates. You can use GetDimensionValues in SAVINGS_PLANS to determine the possible dimension values.

Note
GetSavingsPlanUtilizationDetails internally groups data by SavingsPlansArn.

Request Syntax

```json
{
  "Filter": {
    "And": ["Expression"],
    "CostCategories": {
      "Key": "string",
      "Values": ["string"]
    },
    "Dimensions": {
      "Key": "string",
      "Values": ["string"]
    },
    "Not": "Expression",
    "Or": [
      "Expression"
    ],
    "Tags": {
      "Key": "string",
      "Values": ["string"]
    }
  },
  "MaxResults": number,
  "NextToken": "string",
  "TimePeriod": {
    "End": "string",
    "Start": "string"
  }
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

Filter (p. 73)

Filters Savings Plans utilization coverage data for active Savings Plans dimensions. You can filter data with the following dimensions:

- LINKED_ACCOUNT
- SAVINGS_PLAN_ARN
- REGION
- PAYMENT_OPTION
• INSTANCE_TYPE_FAMILY

GetSavingsPlansUtilizationDetails uses the same Expression object as the other operations, but only AND is supported among each dimension.

Type: Expression (p. 204) object

Required: No

MaxResults (p. 73)

The number of items to be returned in a response. The default is 20, with a minimum value of 1.

Type: Integer

Valid Range: Minimum value of 1.

Required: No

NextToken (p. 73)

The token to retrieve the next set of results. Amazon Web Services provides the token when the response from a previous call has more results than the maximum page size.

Type: String

Required: No

TimePeriod (p. 73)

The time period that you want the usage and costs for. The Start date must be within 13 months. The End date must be after the Start date, and before the current date. Future dates can't be used as an End date.

Type: DateInterval (p. 192) object

Required: Yes

Response Syntax

```json
{
  "NextToken": "string",
  "SavingsPlansUtilizationDetails": [
    {
      "AmortizedCommitment": {
        "AmortizedRecurringCommitment": "string",
        "AmortizedUpfrontCommitment": "string",
        "TotalAmortizedCommitment": "string"
      },
      "Attributes": {
        "string": "string"
      },
      "Savings": {
        "NetSavings": "string",
        "OnDemandCostEquivalent": "string"
      },
      "SavingsPlanArn": "string",
      "Utilization": {
        "TotalCommitment": "string",
        "UnusedCommitment": "string",
        "UsedCommitment": "string",
        "UtilizationPercentage": "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. 74)

The token to retrieve the next set of results. Amazon Web Services provides the token when the response from a previous call has more results than the maximum page size.

Type: String

SavingsPlansUtilizationDetails (p. 74)

Retrieves a single daily or monthly Savings Plans utilization rate and details for your account.

Type: Array of SavingsPlansUtilizationDetail (p. 249) objects

TimePeriod (p. 74)

The time period that you want the usage and costs for.

Type: DateInterval (p. 192) object

Total (p. 74)

The total Savings Plans utilization, regardless of time period.

Type: SavingsPlansUtilizationAggregates (p. 247) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 282).

DataUnavailableException

The requested data is unavailable.
HTTP Status Code: 400

InvalidNextTokenException

The pagination token is invalid. Try again without a pagination token.

HTTP Status Code: 400

LimitExceededException

You made too many calls in a short period of time. Try again later.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3
GetTags
Service: AWS Cost Explorer Service

Queries for available tag keys and tag values for a specified period. You can search the tag values for an arbitrary string.

Request Syntax

```
{
   "NextPageToken": "string",
   "SearchString": "string",
   "TagKey": "string",
   "TimePeriod": {
      "End": "string",
      "Start": "string"
   }
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

**NextPageToken (p. 77)**

The token to retrieve the next set of results. AWS provides the token when the response from a previous call has more results than the maximum page size.

Type: String

Required: No

**SearchString (p. 77)**

The value that you want to search for.

Type: String

Required: No

**TagKey (p. 77)**

The key of the tag that you want to return values for.

Type: String

Required: No

**TimePeriod (p. 77)**

The start and end dates for retrieving the dimension values. The start date is inclusive, but the end date is exclusive. For example, if start is 2017-01-01 and end is 2017-05-01, then the cost and usage data is retrieved from 2017-01-01 up to and including 2017-04-30 but not including 2017-05-01.

Type: DatetimeInterval (p. 192) object

Required: Yes
Response Syntax

```
{
    "NextPageToken": "string",
    "ReturnSize": number,
    "Tags": [ "string" ],
    "TotalSize": 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.

**NextPageToken (p. 78)**

The token for the next set of retrievable results. AWS provides the token when the response from a previous call has more results than the maximum page size.

Type: String

**ReturnSize (p. 78)**

The number of query results that AWS returns at a time.

Type: Integer

**Tags (p. 78)**

The tags that match your request.

Type: Array of strings

**TotalSize (p. 78)**

The total number of query results.

Type: Integer

Errors

For information about the errors that are common to all actions, see Common Errors (p. 282).

**BillExpirationException**

The requested report expired. Update the date interval and try again.

HTTP Status Code: 400

**DataUnavailableException**

The requested data is unavailable.

HTTP Status Code: 400

**InvalidNextTokenException**

The pagination token is invalid. Try again without a pagination token.

HTTP Status Code: 400
LimitExceededException

You made too many calls in a short period of time. Try again later.

HTTP Status Code: 400

RequestChangedEventArgs

Your request parameters changed between pages. Try again with the old parameters or without a pagination token.

HTTP Status Code: 400

Example

The following example shows how to retrieve the list of tag keys using the `GetTags` operation.

Sample Request

```plaintext
POST / HTTP/1.1
Host: ce.us-east-1.amazonaws.com
x-amz-date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
    SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-requestId,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSInsightsIndexService.GetTags
{
    "TimePeriod": {
        "Start": "2017-01-01",
        "End": "2017-05-18"
    },
    "TagKey": "Project",
    "SearchString": "secretProject"
}
```

Sample Response

```plaintext
HTTP/1.1 200 OK
x-amzn-RequestId: <RequestId>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Date: <Date>
{
    "ReturnSize": 2,
    "Tags": [
        "secretProject1",
        "secretProject2"
    ],
    "TotalSize": 2
}
```

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
GetUsageForecast

Service: AWS Cost Explorer Service

Retrieves a forecast for how much Amazon Web Services predicts that you will use over the forecast time period that you select, based on your past usage.

Request Syntax

```json
{
  "Filter": {
    "And": [
      "Expression"
    ],
    "CostCategories": {
      "Key": "string",
      "Values": [ "string" ]
    },
    "Dimensions": {
      "Key": "string",
      "Values": [ "string" ]
    },
    "Not": "Expression",
    "Or": [ "Expression" ],
    "Tags": {
      "Key": "string",
      "Values": [ "string" ]
    }
  },
  "Granularity": "string",
  "Metric": "string",
  "PredictionIntervalLevel": number,
  "TimePeriod": {
    "End": "string",
    "Start": "string"
  }
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

Filter (p. 81)

The filters that you want to use to filter your forecast. Cost Explorer API supports all of the Cost Explorer filters.

Type: Expression (p. 204) object

Required: No

Granularity (p. 81)

How granular you want the forecast to be. You can get 3 months of DAILY forecasts or 12 months of MONTHLY forecasts.

The GetUsageForecast operation supports only DAILY and MONTHLY granularities.
AWS Cost Explorer Service Cost Management APIs
GetUsageForecast

Type: String

Valid Values: DAILY | MONTHLY | HOURLY

Required: Yes

**Metric (p. 81)**

Which metric Cost Explorer uses to create your forecast.

Valid values for a GetUsageForecast call are the following:
- USAGE_QUANTITY
- NORMALIZED_USAGE_AMOUNT

Type: String

Valid Values: BLENDED_COST | UNBLENDED_COST | AMORTIZED_COST | NET_UNBLENDED_COST | NET_AMORTIZED_COST | USAGE_QUANTITY | NORMALIZED_USAGE_AMOUNT

Required: Yes

**PredictionIntervalLevel (p. 81)**

Cost Explorer always returns the mean forecast as a single point. You can request a prediction interval around the mean by specifying a confidence level. The higher the confidence level, the more confident Cost Explorer is about the actual value falling in the prediction interval. Higher confidence levels result in wider prediction intervals.

Type: Integer


Required: No

**TimePeriod (p. 81)**

The start and end dates of the period that you want to retrieve usage forecast for. The start date is inclusive, but the end date is exclusive. For example, if start is 2017-01-01 and end is 2017-05-01, then the cost and usage data is retrieved from 2017-01-01 up to and including 2017-04-30 but not including 2017-05-01.

Type: DateInterval (p. 192) object

Required: Yes

**Response Syntax**

```json
{
    "ForecastResultsByTime": [
        {
            "MeanValue": "string",
            "PredictionIntervalLowerBound": "string",
            "PredictionIntervalUpperBound": "string",
            "TimePeriod": {
                "End": "string",
                "Start": "string"
            }
        }
    ],
    "Total": {
        "Amount": "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.

**ForecastResultsByTime (p. 82)**

The forecasts for your query, in order. For **DAILY** forecasts, this is a list of days. For **MONTHLY** forecasts, this is a list of months.

Type: Array of ForecastResult (p. 206) objects

**Total (p. 82)**

How much you're forecasted to use over the forecast period.

Type: MetricValue (p. 210) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 282).

**DataUnavailableException**

The requested data is unavailable.

HTTP Status Code: 400

**LimitExceededException**

You made too many calls in a short period of time. Try again later.

HTTP Status Code: 400

**UnresolvableUsageUnitException**

Cost Explorer was unable to identify the usage unit. Provide `UsageType/UsageTypeGroup` filter selections that contain matching units, for example: `hours`.

HTTP Status Code: 400

Example

The following example shows how to retrieve a forecast using the GetUsageForecast operation.

**Sample Request**

```plaintext
POST / HTTP/1.1
Host: ce.us-east-1.amazonaws.com
x-amz-date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
```
AWS Cost Explorer Service Cost Management APIs

GetUsageForecast

Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSInsightsIndexService.GetUsageForecast

{
  "TimePeriod": {
    "Start": "2018-10-25",
    "End": "2018-10-27"
  },
  "Granularity": "DAILY",
  "Filter": {
    "Dimensions": {
      "Key": "SERVICE",
      "Values": [
        "Amazon Simple Storage Service"
      ]
    }
  },
  "Metric": "USAGE_QUANTITY",
  "PredictionIntervalLevel": 85
}

Sample Response

HTTP/1.1 200 OK
x-amzn-RequestId: <RequestId>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Date: <Date>

{
  "ForecastResultsByTime": [
    {
      "MeanValue": "37.0786663399",
      "PredictionIntervalLowerBound": "34.9970026341",
      "PredictionIntervalUpperBound": "39.1603300457",
      "TimePeriod": {
        "End": "2019-10-26",
        "Start": "2019-10-25"
      }
    },
    {
      "MeanValue": "37.0786663399",
      "PredictionIntervalLowerBound": "34.9970026341",
      "PredictionIntervalUpperBound": "39.1603300457",
      "TimePeriod": {
        "End": "2019-10-27",
        "Start": "2019-10-26"
      }
    }
  ],
  "Total": {
    "Amount": "74.1573326798",
    "Unit": "Hrs"
  }
}

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
ListCostCategoryDefinitions

Service: AWS Cost Explorer Service

Important

Cost Category is in public beta for AWS Billing and Cost Management and is subject to change. Your use of Cost Categories is subject to the Beta Service Participation terms of the AWS Service Terms (Section 1.10).

Returns the name, ARN and effective dates of all Cost Categories defined in the account. You have the option to use EffectiveOn to return a list of Cost Categories that were active on a specific date. If there is no EffectiveOn specified, you’ll see Cost Categories that are effective on the current date. If Cost Category is still effective, EffectiveEnd is omitted in the response.

Request Syntax

```json
{
   "EffectiveOn": "string",
   "NextToken": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

**EffectiveOn (p. 86)**

The date when the Cost Category was effective.

Type: String


Pattern: `^[\d]{4}-\d\d-\d\dT\d\d:\d\d:\d\d(\([+-]\d\d:\d\d:\d\d\)Z)\$`

Required: No

**NextToken (p. 86)**

The token to retrieve the next set of results. Amazon Web Services provides the token when the response from a previous call has more results than the maximum page size.

You can use this information to retrieve the full Cost Category information using DescribeCostCategory.

Type: String

Required: No

Response Syntax

```json
{
   "CostCategoryReferences": [
   {
      "CostCategoryArn": "string",
      "EffectiveEnd": "string",
      "EffectiveOn": "string",
      "Name": "string",
      "EffectiveStartDate": "string",
      "EffectiveEndDate": "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.

**CostCategoryReferences (p. 86)**

A reference to a Cost Category containing enough information to identify the Cost Category.

Type: Array of CostCategoryReference (p. 181) objects

**NextToken (p. 86)**

The token to retrieve the next set of results. Amazon Web Services provides the token when the response from a previous call has more results than the maximum page size.

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 282).

**LimitExceededException**

You made too many calls in a short period of time. Try again later.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3
UpdateCostCategoryDefinition
Service: AWS Cost Explorer Service

Important
Cost Category is in public beta for AWS Billing and Cost Management and is subject to change.
Your use of Cost Categories is subject to the Beta Service Participation terms of the AWS
Service Terms (Section 1.10).

Updates an existing Cost Category. Changes made to the Cost Category rules will be used to categorize
the current month’s expenses and future expenses. This won’t change categorization for the previous
months.

Request Syntax

```json
{
  "CostCategoryArn": "string",
  "Rules": [
    {
      "Rule": {
        "And": [
          "Expression"
        ],
        "CostCategories": {
          "Key": "string",
          "Values": [ "string" ]
        },
        "Dimensions": {
          "Key": "string",
          "Values": [ "string" ]
        },
        "Not": "Expression",
        "Or": [
          "Expression"
        ],
        "Tags": {
          "Key": "string",
          "Values": [ "string" ]
        }
      },
      "Value": "string"
    }
  ],
  "RuleVersion": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common
Parameters (p. 280).

The request accepts the following data in JSON format.

**CostCategoryArn (p. 88)**

The unique identifier for your Cost Category.

Type: String


Pattern: arn:aws[-a-z0-9]*:[a-z0-9]+:[-a-z0-9]*:[0-9]{12}:[-a-zA-Z0-9/:_]+
AWS Cost Explorer Service Cost Management APIs

UpdateCostCategoryDefinition

Required: Yes

**Rules (p. 88)**

UpdateCostCategoryDefinition supports dimensions, Tags, and nested expressions. Currently the only dimensions supported is LINKED_ACCOUNT.

Root level `OR` is not supported. We recommend you create a separate rule instead.

Rules are processed in order. If there are multiple rules that match the line item, then the first rule to match is used to determine that Cost Category value.

Type: Array of `CostCategoryRule (p. 183)` objects

Array Members: Minimum number of 1 item. Maximum number of 500 items.

Required: Yes

**RuleVersion (p. 88)**

The rule schema version in this particular Cost Category.

Type: String

Valid Values: `CostCategoryExpression.v1`

Required: Yes

**Response Syntax**

```json
{
  "CostCategoryArn": "string",
  "EffectiveStart": "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.

**CostCategoryArn (p. 89)**

The unique identifier for your Cost Category.

Type: String


Pattern: `arn:aws[-a-z0-9]*:[a-z0-9]+:[-a-z0-9]*:[0-9]{12}:[-a-zA-Z0-9/:_]+`

**EffectiveStart (p. 89)**

The Cost Category's effective start date.

Type: String


Pattern: `^\d{4}-\d\d-\d\dT\d:\d:\d:\d(([+-]\d\d:\d\d)|Z)$`
Errors

For information about the errors that are common to all actions, see Common Errors (p. 282).

LimitExceededException
You made too many calls in a short period of time. Try again later.

HTTP Status Code: 400

ResourceNotFoundException
The specified ARN in the request doesn't exist.

HTTP Status Code: 400

ServiceQuotaExceededException
You've reached the limit on the number of resources you can create, or exceeded the size of an individual resources.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

AWS Budgets

The following actions are supported by AWS Budgets:

- CreateBudget (p. 92)
- CreateNotification (p. 100)
- CreateSubscriber (p. 103)
- DeleteBudget (p. 106)
- DeleteNotification (p. 108)
- DeleteSubscriber (p. 111)
- DescribeBudget (p. 114)
- DescribeBudgetPerformanceHistory (p. 120)
- DescribeBudgets (p. 125)
- DescribeNotificationsForBudget (p. 132)
- DescribeSubscribersForNotification (p. 136)
- UpdateBudget (p. 140)
- UpdateNotification (p. 147)
- UpdateSubscriber (p. 150)
CreateBudget
Service: AWS Budgets

Creates a budget and, if included, notifications and subscribers.

Important
Only one of `BudgetLimit` or `PlannedBudgetLimits` can be present in the syntax at one time. Use the syntax that matches your case. The Request Syntax section shows the `BudgetLimit` syntax. For `PlannedBudgetLimits`, see the Examples section.

Request Syntax

```
{
  "AccountId": "string",
  "Budget": {
    "BudgetLimit": {
      "Amount": "string",
      "Unit": "string"
    },
    "BudgetName": "string",
    "BudgetType": "string",
    "CalculatedSpend": {
      "ActualSpend": {
        "Amount": "string",
        "Unit": "string"
      },
      "ForecastedSpend": {
        "Amount": "string",
        "Unit": "string"
      }
    },
    "CostFilters": {
      "string": [ "string" ]
    },
    "CostTypes": {
      "IncludeCredit": boolean,
      "IncludeDiscount": boolean,
      "IncludeOtherSubscription": boolean,
      "IncludeRecurring": boolean,
      "IncludeRefund": boolean,
      "IncludeSubscription": boolean,
      "IncludeSupport": boolean,
      "IncludeTax": boolean,
      "IncludeUpfront": boolean,
      "UseAmortized": boolean,
      "UseBlended": boolean
    },
    "LastUpdatedTime": number,
    "PlannedBudgetLimits": {
      "string": {
        "Amount": "string",
        "Unit": "string"
      }
    },
    "TimePeriod": {
      "End": number,
      "Start": number
    },
    "TimeUnit": "string"
  },
  "NotificationsWithSubscribers": [ {
    "Notification": {
      "string": [ "string" ]
    }
  ]
}
```
AWS Cost Explorer Service Cost Management APIs
CreateBudget

```
"ComparisonOperator": "string",
"NotificationState": "string",
"NotificationType": "string",
"Threshold": number,
"ThresholdType": "string"
},
"Subscribers": [
  {
    "Address": "string",
    "SubscriptionType": "string"
  }
]
]}
```

**Request Parameters**

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

**AccountId (p. 92)**

The accountId that is associated with the budget.

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

Required: Yes

**Budget (p. 92)**

The budget object that you want to create.

Type: Budget (p. 258) object

Required: Yes

**NotificationsWithSubscribers (p. 92)**

A notification that you want to associate with a budget. A budget can have up to five notifications, and each notification can have one SNS subscriber and up to 10 email subscribers. If you include notifications and subscribers in your CreateBudget call, AWS creates the notifications and subscribers for you.

Type: Array of NotificationWithSubscribers (p. 270) objects

Array Members: Maximum number of 5 items.

Required: No

**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. 282).
AccessDeniedException
You are not authorized to use this operation with the given parameters.
HTTP Status Code: 400

CreationLimitExceededException
You've exceeded the notification or subscriber limit.
HTTP Status Code: 400

DuplicateRecordException
The budget name already exists. Budget names must be unique within an account.
HTTP Status Code: 400

InternalErrorException
An error on the server occurred during the processing of your request. Try again later.
HTTP Status Code: 400

InvalidParameterException
An error on the client occurred. Typically, the cause is an invalid input value.
HTTP Status Code: 400

Examples

Example

The following is the PlannedBudgetLimits syntax:

```json
{
    "AccountId": "string",
    "Budget": {
        "PlannedBudgetLimits": {
            "string": {
                "Amount": "string",
                "Unit": "string"
            },
        },
        "BudgetName": "string",
        "BudgetType": "string",
        "CalculatedSpend": {
            "ActualSpend": {
                "Amount": "string",
                "Unit": "string"
            },
            "ForecastedSpend": {
                "Amount": "string",
                "Unit": "string"
            }
        },
        "CostFilters": {
            "string": [ "string" ]
        },
        "CostTypes": {
            "IncludeCredit": boolean,
            "IncludeDiscount": boolean,
            "IncludeOtherSubscription": boolean
        }
    }
}
```
Example

The following is a sample request of the CreateBudget operation using BudgetLimit

Sample Request

```
POST / HTTP/1.1
Host: awsbudgets.<region>.<domain>
x-amz-Date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
SignedHeaders=contenttype;date;host;x-amz-agent;x-amz-date;x-amz-target;x-amzn-requestid
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSBudgetServiceGateway.CreateBudgets
{
  "AccountId": "111122223333",
  "Budget": {
    "BudgetLimit": {
      "Amount": "100",
      "Unit": "USD"
    },
    "BudgetName": "Example Budget",
    "BudgetType": "COST",
    "CostFilters": {
      "AZ": [ "us-east-1" ]
    }
  }
}
"CostTypes": {  
  "IncludeCredit": true,
  "IncludeDiscount": true,
  "IncludeOtherSubscription": true,
  "IncludeRecurring": true,
  "IncludeRefund": true,
  "IncludeSubscription": true,
  "IncludeSupport": true,
  "IncludeTax": true,
  "IncludeUpfront": true,
  "UseBlended": false
},
"TimePeriod": {  
  "Start": 1477353600,
  "End": 1477958399
},
"TimeUnit": "MONTHLY"
},
"NotificationsWithSubscribers": [
  {
    "Notification": {
      "ComparisonOperator": "GREATER_THAN",
      "NotificationType": "ACTUAL",
      "Threshold": 80,
      "ThresholdType": "PERCENTAGE"
    },
    "Subscribers": [
      {
        "Address": "example@example.com",
        "SubscriptionType": "EMAIL"
      }
    ]
  }
]

Example

The following is a sample request of the CreateBudget operation using PlannedBudgetLimits

Sample Request

POST / HTTP/1.1
Host: awsbudgets.<region>.<domain>
x-amz-Date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
  SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSBudgetServiceGateway.CreateBudgets

"AccountId": "111122223333",
"Budget": {
  "PlannedBudgetLimits": {
    "1583020800": {
      "Amount": "100",
      "Unit": "USD"
    },
    "1564617600": {
      "Amount": "200",
      "Unit": "USD"
"BudgetName": "Example Budget",
"BudgetType": "COST",
"CostFilters": {
  "AZ": ["us-east-1"]
},
"CostTypes": {
  "IncludeCredit": true,
  "IncludeDiscount": true,
  "IncludeOtherSubscription": true,
  "IncludeRecurring": true,
  "IncludeRefund": true,
  "IncludeSubscription": true,
  "IncludeSupport": true,
  "IncludeTax": true,
  "IncludeUpfront": true,
  "UseBlended": false
},
"TimePeriod": {
  "Start": 1477353600,
  "End": 1477958399
},
"TimeUnit": "MONTHLY"}
AWS Cost Explorer Service Cost Management APIs

CreateBudget

{
  "Notification": {
    "ComparisonOperator": "GREATER_THAN",
    "NotificationType": "ACTUAL",
    "Threshold": 80,
    "ThresholdType": "PERCENTAGE"
  },
  "Subscribers": [
    {
      "Address": "example@example.com",
      "SubscriptionType": "EMAIL"
    }
  ]
}

Example

The following is a sample request of the CreateBudget operation using BudgetLimit and filtering for a specific tag.

Sample Request

POST / HTTP/1.1
Host: awsbudgets.<region>.<domain>
Date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
  SignedHeaders=content-type;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSBudgetServiceGateway.CreateBudgets

{
  "AccountId": "111122223333",
  "Budget": {
    "BudgetLimit": {
      "Amount": "100",
      "Unit": "USD"},
    "BudgetName": "Example Tag Budget",
    "BudgetType": "COST",
    "CostFilters": {
      "TagKeyValue": ["user:Key$value1","user:Key$value2"]
    },
    "CostTypes": {
      "IncludeCredit": true,
      "IncludeDiscount": true,
      "IncludeOtherSubscription": true,
      "IncludeRecurring": true,
      "IncludeRefund": true,
      "IncludeSubscription": true,
      "IncludeSupport": true,
      "IncludeTax": true,
      "IncludeUpfront": true,
      "UseBlended": false
    },
    "TimePeriod": {
      "Start": 1477958399,
      "End": 3706473600
    }},
  "TimeUnit": "MONTHLY"}
"NotificationsWithSubscribers": [
    
    "Notification": {
      "ComparisonOperator": "GREATER_THAN",
      "NotificationType": "ACTUAL",
      "Threshold": 80,
      "ThresholdType": "PERCENTAGE"
    },
    "Subscribers": [
      
      "Address": "example@example.com",
      "SubscriptionType": "EMAIL"
    ]
  }]

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
CreateNotification
Service: AWS Budgets

Creates a notification. You must create the budget before you create the associated notification.

Request Syntax

```json
{
    "AccountId": "string",
    "BudgetName": "string",
    "Notification": {
        "ComparisonOperator": "string",
        "NotificationState": "string",
        "NotificationType": "string",
        "Threshold": number,
        "ThresholdType": "string"
    },
    "Subscribers": [
        {
            "Address": "string",
            "SubscriptionType": "string"
        }
    ]
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

`AccountId (p. 100)`

The accountId that is associated with the budget that you want to create a notification for.

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

Required: Yes

`BudgetName (p. 100)`

The name of the budget that you want AWS to notify you about. Budget names must be unique within an account.

Type: String

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

Pattern: [^:\\]+

Required: Yes

`Notification (p. 100)`

The notification that you want to create.
Type: Notification (p. 268) object

Required: Yes

Subscribers (p. 100)

A list of subscribers that you want to associate with the notification. Each notification can have one SNS subscriber and up to 10 email subscribers.

Type: Array of Subscriber (p. 272) objects

Array Members: Minimum number of 1 item. Maximum number of 11 items.

Required: Yes

Response Elements

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

Errors

For information about the errors that are common to all actions, see Common Errors (p. 282).

AccessDeniedException

You are not authorized to use this operation with the given parameters.

HTTP Status Code: 400

CreationLimitExceededException

You've exceeded the notification or subscriber limit.

HTTP Status Code: 400

DuplicateRecordException

The budget name already exists. Budget names must be unique within an account.

HTTP Status Code: 400

InternalErrorException

An error on the server occurred during the processing of your request. Try again later.

HTTP Status Code: 400

InvalidParameterException

An error on the client occurred. Typically, the cause is an invalid input value.

HTTP Status Code: 400

NotFoundException

We can't locate the resource that you specified.

HTTP Status Code: 400

Example

The following is a sample request of the CreateNotification operation.
Sample Request

POST / HTTP/1.1
Host: awsbudgets.<region>.<domain>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
   SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-
   requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSBudgetServiceGateway.CreateNotification
{
   "AccountId": "111122223333",
   "BudgetName": "Example Budget",
   "Notification": {
      "ComparisonOperator": "GREATER_THAN",
      "NotificationType": "ACTUAL",
      "Threshold": 80,
      "ThresholdType": "PERCENTAGE"
   },
   "Subscribers": [
      { "Address": "example@example.com",
        "SubscriptionType": "EMAIL"
      }
   ]
}

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
CreateSubscriber
Service: AWS Budgets

Creates a subscriber. You must create the associated budget and notification before you create the subscriber.

Request Syntax

```json
{
  "AccountId": "string",
  "BudgetName": "string",
  "Notification": {
    "ComparisonOperator": "string",
    "NotificationState": "string",
    "NotificationType": "string",
    "Threshold": number,
    "ThresholdType": "string"
  },
  "Subscriber": {
    "Address": "string",
    "SubscriptionType": "string"
  }
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

**AccountId (p. 103)**

The `accountId` that is associated with the budget that you want to create a subscriber for.

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

Required: Yes

**BudgetName (p. 103)**

The name of the budget that you want to subscribe to. Budget names must be unique within an account.

Type: String

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

Pattern: [^:\\]+

Required: Yes

**Notification (p. 103)**

The notification that you want to create a subscriber for.

Type: Notification (p. 268) object
Required: Yes

**Subscriber (p. 103)**

The subscriber that you want to associate with a budget notification.

Type: **Subscriber (p. 272)** object

Required: Yes

**Response Elements**

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

**Errors**

For information about the errors that are common to all actions, see **Common Errors (p. 282)**.

- **AccessDeniedException**
  
  You are not authorized to use this operation with the given parameters.
  
  HTTP Status Code: 400

- **CreationLimitExceededException**
  
  You've exceeded the notification or subscriber limit.
  
  HTTP Status Code: 400

- **DuplicateRecordException**
  
  The budget name already exists. Budget names must be unique within an account.
  
  HTTP Status Code: 400

- **InternalErrorException**
  
  An error on the server occurred during the processing of your request. Try again later.
  
  HTTP Status Code: 400

- **InvalidParameterException**
  
  An error on the client occurred. Typically, the cause is an invalid input value.
  
  HTTP Status Code: 400

- **NotFoundException**
  
  We can't locate the resource that you specified.
  
  HTTP Status Code: 400

**Example**

The following is a sample request of the **CreateSubscriber** operation.

**Sample Request**

```
POST / HTTP/1.1
```
Host: awsbudgets.<region>.<domain>
X-amz-Date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
   SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-
   requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSBudgetServiceGateway.CreateSubscriber
{
   "AccountId": "111122223333",
   "BudgetName": "Example Budget",
   "Notification": {
      "ComparisonOperator": "GREATER_THAN",
      "NotificationType": "ACTUAL",
      "Threshold": 80,
      "ThresholdType": "PERCENTAGE"
   },
   "Subscribers": [
      {"Address": "example@example.com",
       "SubscriptionType": "EMAIL"
      }
   ]
}

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
DeleteBudget
Service: AWS Budgets

Deletes a budget. You can delete your budget at any time.

**Important**
Deleting a budget also deletes the notifications and subscribers that are associated with that budget.

**Request Syntax**

```json
{
   "AccountId": "string",
   "BudgetName": "string"
}
```

**Request Parameters**

For information about the parameters that are common to all actions, see [Common Parameters](p. 280).

The request accepts the following data in JSON format.

**AccountId (p. 106)**

- The `accountId` that is associated with the budget that you want to delete.
  - Type: String
  - Length Constraints: Fixed length of 12.
  - Pattern: \d{12}
  - Required: Yes

**BudgetName (p. 106)**

- The name of the budget that you want to delete.
  - Type: String
  - Pattern: [^:\\]+
  - Required: Yes

**Response Elements**

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

**Errors**

For information about the errors that are common to all actions, see [Common Errors](p. 282).

**AccessDeniedException**

You are not authorized to use this operation with the given parameters.
HTTP Status Code: 400

**InternalErrorException**

An error on the server occurred during the processing of your request. Try again later.

HTTP Status Code: 400

**InvalidParameterException**

An error on the client occurred. Typically, the cause is an invalid input value.

HTTP Status Code: 400

**NotFoundException**

We can’t locate the resource that you specified.

HTTP Status Code: 400

---

**Example**

The following is a sample request of the `DeleteBudget` operation.

**Sample Request**

```
POST / HTTP/1.1
Host: awsbudgets.<region>.<domain>
x-amz-Date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
    SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSBudgetServiceGateway.DeleteBudget
{
    "AccountId": "111122223333",
    "BudgetName": "Example Budget"
}
```

---

**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
DeleteNotification
Service: AWS Budgets

Deletes a notification.

**Important**
Deleting a notification also deletes the subscribers that are associated with the notification.

**Request Syntax**

```
{
    "AccountId": "string",
    "BudgetName": "string",
    "Notification": {
        "ComparisonOperator": "string",
        "NotificationState": "string",
        "NotificationType": "string",
        "Threshold": number,
        "ThresholdType": "string"
    }
}
```

**Request Parameters**

For information about the parameters that are common to all actions, see [Common Parameters](p. 280).

The request accepts the following data in JSON format.

**AccountId (p. 108)**

The `AccountId` that is associated with the budget whose notification you want to delete.

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

Required: Yes

**BudgetName (p. 108)**

The name of the budget whose notification you want to delete.

Type: String

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

Pattern: [^:\\]+  

Required: Yes

**Notification (p. 108)**

The notification that you want to delete.

Type: `Notification (p. 268)` object

Required: Yes
Response Elements

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

Errors

For information about the errors that are common to all actions, see Common Errors (p. 282).

AccessDeniedException

You are not authorized to use this operation with the given parameters.

HTTP Status Code: 400

InternalErrorException

An error on the server occurred during the processing of your request. Try again later.

HTTP Status Code: 400

InvalidParameterException

An error on the client occurred. Typically, the cause is an invalid input value.

HTTP Status Code: 400

NotFoundException

We can’t locate the resource that you specified.

HTTP Status Code: 400

Example

The following is a sample request of the DeleteNotification operation.

Sample Request

```plaintext
POST / HTTP/1.1
Host: awsbudgets.<region>.<domain>
x-amz-Date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
            SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSBudgetServiceGateway.DeleteNotification
{
    "AccountId": "111122223333",
    "BudgetName": "Example Budget",
    "Notification": {
        "ComparisonOperator": "GREATER_THAN",
        "NotificationType": "ACTUAL",
        "Threshold": 80,
        "ThresholdType": "PERCENTAGE"
    }
}
```
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
DeleteSubscriber
Service: AWS Budgets

Deletes a subscriber.

**Important**
Deleting the last subscriber to a notification also deletes the notification.

**Request Syntax**

```json
{
   "AccountId": "string",
   "BudgetName": "string",
   "Notification": {
      "ComparisonOperator": "string",
      "NotificationState": "string",
      "NotificationType": "string",
      "Threshold": number,
      "ThresholdType": "string"
   },
   "Subscriber": {
      "Address": "string",
      "SubscriptionType": "string"
   }
}
```

**Request Parameters**

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

**AccountId (p. 111)**

The `accountId` that is associated with the budget whose subscriber you want to delete.

Type: String

Length Constraints: Fixed length of 12.

Pattern: `\d{12}`

Required: Yes

**BudgetName (p. 111)**

The name of the budget whose subscriber you want to delete.

Type: String

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

Pattern: `^[^:\\]+`

Required: Yes

**Notification (p. 111)**

The notification whose subscriber you want to delete.

Type: `Notification (p. 268)` object
DeleteSubscriber

**Required:** Yes

**Subscriber (p. 111)**

The subscriber that you want to delete.

**Type:** Subscriber (p. 272) object

**Required:** Yes

### Response Elements

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

### Errors

For information about the errors that are common to all actions, see Common Errors (p. 282).

**AccessDeniedException**

You are not authorized to use this operation with the given parameters.

HTTP Status Code: 400

**InternalErrorException**

An error on the server occurred during the processing of your request. Try again later.

HTTP Status Code: 400

**InvalidParameterException**

An error on the client occurred. Typically, the cause is an invalid input value.

HTTP Status Code: 400

**NotFoundException**

We can't locate the resource that you specified.

HTTP Status Code: 400

### Example

The following is a sample request of the DeleteSubscriber operation.

**Sample Request**

```
POST / HTTP/1.1
Host: awsbudgets.<region>.<domain>
x-amz-Date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>, SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSBudgetServiceGateway.DeleteSubscriber
```
"AccountId": "111122223333",
"BudgetName": "Example Budget",
"Notification": {
  "ComparisonOperator": "GREATER_THAN",
  "NotificationType": "ACTUAL",
  "Threshold": 80,
  "ThresholdType": "PERCENTAGE"
},
"Subscribers": [
  {
    "Address": "example@example.com",
    "SubscriptionType": "EMAIL"
  }
]}

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
DescribeBudget

Service: AWS Budgets

Describes a budget.

**Important**
The Request Syntax section shows the BudgetLimit syntax. For PlannedBudgetLimits, see the Examples section.

Request Syntax

```
{
   "AccountId": "string",
   "BudgetName": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

**AccountId (p. 114)**

The accountId that is associated with the budget that you want a description of.

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

Required: Yes

**BudgetName (p. 114)**

The name of the budget that you want a description of.

Type: String

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

Pattern: \^[^:\\]+\+

Required: Yes

Response Syntax

```
{
   "Budget": {
      "BudgetLimit": {
         "Amount": "string",
         "Unit": "string"
      },
      "BudgetName": "string",
      "BudgetType": "string"
   }
}
```
"CalculatedSpend": {  
  "ActualSpend": {  
    "Amount": "string",
    "Unit": "string"
  },  
  "ForecastedSpend": {  
    "Amount": "string",
    "Unit": "string"
  }  
},  
"CostFilters": {  
  "string" : [ "string" ]
},  
"CostTypes": {  
  "IncludeCredit": boolean,  
  "IncludeDiscount": boolean,  
  "IncludeOtherSubscription": boolean,  
  "IncludeRecurring": boolean,  
  "IncludeRefund": boolean,  
  "IncludeSubscription": boolean,  
  "IncludeSupport": boolean,  
  "IncludeTax": boolean,  
  "IncludeUpfront": boolean,  
  "UseAmortized": boolean,  
  "UseBlended": boolean
},  
"LastUpdatedTime": number,  
"PlannedBudgetLimits": {  
  "string" : {  
    "Amount": "string",
    "Unit": "string"
  }
},  
"TimePeriod": {  
  "End": number,  
  "Start": number
},  
"TimeUnit": "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.

Budget (p. 114)

The description of the budget.

Type: Budget (p. 258) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 282).

AccessDeniedException

You are not authorized to use this operation with the given parameters.

HTTP Status Code: 400
AWS Cost Explorer Service Cost Management APIs
DescribeBudget

**InternalErrorException**

An error on the server occurred during the processing of your request. Try again later.

HTTP Status Code: 400

**InvalidParameterException**

An error on the client occurred. Typically, the cause is an invalid input value.

HTTP Status Code: 400

**NotFoundException**

We can't locate the resource that you specified.

HTTP Status Code: 400

**Examples**

**Example**

The following is the `PlannedBudgetLimits` syntax.

```json
{
    "Budget": {
        "BudgetLimit": {
            "Amount": "string",
            "Unit": "string"
        },
        "PlannedBudgetLimits": {
            "BudgetLimit": "string": {
                "Amount": "string",
                "Unit": "string"
            },
            "BudgetName": "string",
            "BudgetType": "string",
            "CalculatedSpend": {
                "ActualSpend": {
                    "Amount": "string",
                    "Unit": "string"
                },
                "ForecastedSpend": {
                    "Amount": "string",
                    "Unit": "string"
                }
            },
            "CostFilters": {
                "string": [ "string" ]
            },
            "CostTypes": {
                "IncludeCredit": boolean,
                "IncludeDiscount": boolean,
                "IncludeOtherSubscription": boolean,
                "IncludeRecurring": boolean,
                "IncludeRefund": boolean,
                "IncludeSubscription": boolean,
                "IncludeSupport": boolean,
                "IncludeTax": boolean,
                "IncludeUpfront": boolean,
                "UseAmortized": boolean,
                "UseBlended": boolean
```
Example

The following is a sample request and response of the DescribeBudget operation using BudgetLimit

Sample Request

POST / HTTP/1.1
Host: awsbudgets.<region>.<domain>
x-amz-date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSBudgetServiceGateway.DescribeBudget
{
  "AccountId": "11122223333",
  "BudgetName": "Example Budget"
}

Sample Response

{
  "Budget": {
    "BudgetLimit": {
      "Amount": "100",
      "Unit": "USD"
    },
    "BudgetName": "Example Budget",
    "BudgetType": "COST",
    "CalculatedSpend": {
      "ActualSpend": {
        "Amount": "50",
        "Unit": "USD"
      },
      "ForecastedSpend": {
        "Amount": "100",
        "Unit": "USD"
      }
    },
    "CostFilters": {
      "AZ": [ "us-east-1" ]
    },
    "CostTypes": {
      "IncludeCredit": true,
      "IncludeDiscount": true,
      "IncludeOtherSubscription": true,
      "IncludeRecurring": true,
      "IncludeRefund": true,
      "IncludeSubscription": true,
      "IncludeSupport": true,
AWS Cost Explorer Service Cost Management APIs

DescribeBudget

"IncludeTax": true,
"IncludeUpfront": true,
"UseBlended": false
},
"TimePeriod": {
  "Start": 1477353600,
  "End": 1477958399
},
"TimeUnit": "MONTHLY"
}

Example

The following is a sample response of the DescribeBudget operation, using PlannedBudgetLimits.

Sample Response

{
  "Budget": {
    "BudgetLimit": {
      "Amount": "100",
      "Unit": "USD"
    },
    "PlannedBudgetLimits":{
      "1583020800": { 
        "Amount": "100",
        "Unit": "USD"
      },
      "1564617600": {
        "Amount": "200",
        "Unit": "USD"
      },
      "1569888000": {
        "Amount": "300",
        "Unit": "USD"
      },
      "1556668800": {
        "Amount": "400",
        "Unit": "USD"
      },
      "1575158400": {
        "Amount": "500",
        "Unit": "USD"
      },
      "1580515200": {
        "Amount": "200",
        "Unit": "USD"
      },
      "1567296000": {
        "Amount": "300",
        "Unit": "USD"
      },
      "1554076800": {
        "Amount": "100",
        "Unit": "USD"
      },
      "1577836800": {
        "Amount": "200",
        "Unit": "USD"
      },
      "1561939200": {
        "Amount": "100",
        "Unit": "USD"
      }
  }
}
AWS Cost Explorer Service Cost Management APIs

DescribeBudget

```
"1572566400": {
    "Amount": "110",
    "Unit": "USD"
},
"1559347200": {
    "Amount": "120",
    "Unit": "USD"
}
"BudgetName": "Example Budget",
"BudgetType": "COST",
"CalculatedSpend": {
    "ActualSpend": {
        "Amount": "50",
        "Unit": "USD"
    },
    "ForecastedSpend": {
        "Amount": "100",
        "Unit": "USD"
    }
},
"CostFilters": {
    "AZ": ["us-east-1"]
},
"CostTypes": {
    "IncludeCredit": true,
    "IncludeDiscount": true,
    "IncludeOtherSubscription": true,
    "IncludeRecurring": true,
    "IncludeRefund": true,
    "IncludeSubscription": true,
    "IncludeSupport": true,
    "IncludeTax": true,
    "IncludeUpfront": true,
    "UseBlended": false
},
"TimePeriod": {
    "Start": 1477353600,
    "End": 1477958399
},
"TimeUnit": "MONTHLY"
```

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
DescribeBudgetPerformanceHistory

Service: AWS Budgets

Describes the history for DAILY, MONTHLY, and QUARTERLY budgets. Budget history isn't available for ANNUAL budgets.

Request Syntax

```
{
  "AccountId": "string",
  "BudgetName": "string",
  "MaxResults": number,
  "NextToken": "string",
  "TimePeriod": {
    "End": number,
    "Start": number
  }
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

**AccountId (p. 120)**

The account ID of the user. It should be a 12-digit number.

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

Required: Yes

**BudgetName (p. 120)**

A string that represents the budget name. The ":" and "\" characters aren't allowed.

Type: String

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

Pattern: [^:\"]+

Required: Yes

**MaxResults (p. 120)**

An integer that represents how many entries a paginated response contains. The maximum is 100.

Type: Integer

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

Required: No
NextToken (p. 120)

A generic string.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 2147483647.

Pattern: .*

Required: No

TimePeriod (p. 120)

Retrieves how often the budget went into an ALARM state for the specified time period.

Type: TimePeriod (p. 273) object

Required: No

Response Syntax

```json
{
   "BudgetPerformanceHistory": {
      "BudgetedAndActualAmountsList": [
         {
            "ActualAmount": {
               "Amount": "string",
               "Unit": "string"
            },
            "BudgetedAmount": {"Amount": "string",
            "Unit": "string"},
            "TimePeriod": {
               "End": number,
               "Start": number
            }
         }
      ],
      "BudgetName": "string",
      "BudgetType": "string",
      "CostFilters": {
         "string": ["string"]
      },
      "CostTypes": {
         "IncludeCredit": boolean,
         "IncludeDiscount": boolean,
         "IncludeOtherSubscription": boolean,
         "IncludeRecurring": boolean,
         "IncludeRefund": boolean,
         "IncludeSubscription": boolean,
         "IncludeSupport": boolean,
         "IncludeTax": boolean,
         "IncludeUpfront": boolean,
         "UseAmortized": boolean,
         "UseBlended": boolean
      },
      "TimeUnit": "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.

**BudgetPerformanceHistory (p. 121)**

The history of how often the budget has gone into an **ALARM** state.

For **DAILY** budgets, the history saves the state of the budget for the last 60 days. For **MONTHLY** budgets, the history saves the state of the budget for the current month plus the last 12 months. For **QUARTERLY** budgets, the history saves the state of the budget for the last four quarters.

Type: **BudgetPerformanceHistory (p. 262)** object

**NextToken (p. 121)**

A generic string.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 2147483647.

Pattern: . *

Errors

For information about the errors that are common to all actions, see [Common Errors (p. 282)](#).

**AccessDeniedException**

You are not authorized to use this operation with the given parameters.

HTTP Status Code: 400

**ExpiredNextTokenException**

The pagination token expired.

HTTP Status Code: 400

**InternalErrorException**

An error on the server occurred during the processing of your request. Try again later.

HTTP Status Code: 400

**InvalidNextTokenException**

The pagination token is invalid.

HTTP Status Code: 400

**InvalidParameterException**

An error on the client occurred. Typically, the cause is an invalid input value.

HTTP Status Code: 400

**NotFoundException**

We can't locate the resource that you specified.
Example

The following is a sample request of the DescribeBudgetPerformanceHistory operation.

Sample Request

```
GET HTTP/1.1
Host: awsbudgets.<region>.<domain>
x-amz-Date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
                  SignedHeaders=content-type;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSBudgetServiceGateway.DescribeBudgetPerformanceHistory
{
   "AccountId": "111122223333",
   "Budget": "ExampleBudget"
}
```

Sample Response

```
{
   "BudgetPerformanceHistory": {
      "BudgetedAndActualAmountsList": [
         {
            "ActualAmount": {
               "Amount": "50",
               "Unit": "USD"
            },
            "BudgetedAmount": {
               "Amount": "100",
               "Unit": "USD"
            },
            "TimePeriod": {
               "End": 1477958399,
               "Start": 1477353600
            }
         }
      ],
      "BudgetName": "ExampleBudget",
      "BudgetType": "COST",
      "CostFilters": {
         "AZ": [ "us-east-1" ]
      },
      "CostTypes": {
         "IncludeCredit": true,
         "IncludeDiscount": true,
         "IncludeOtherSubscription": true,
         "IncludeRecurring": true,
         "IncludeRefund": true,
         "IncludeSubscription": true,
         "IncludeSupport": true,
         "IncludeTax": true,
         "IncludeUpfront": true,
         "UseBlended": false
      }
   }
```
"TimeUnit": "MONTHLY"

```json
}
```

### 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
DescribeBudgets

Service: AWS Budgets

Lists the budgets that are associated with an account.

Important
The Request Syntax section shows the BudgetLimit syntax. For PlannedBudgetLimits, see the Examples section.

Request Syntax

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

AccountId (p. 125)

The accountId that is associated with the budgets that you want descriptions of.

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

Required: Yes

MaxResults (p. 125)

An optional integer that represents how many entries a paginated response contains. The maximum is 100.

Type: Integer

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

Required: No

NextToken (p. 125)

The pagination token that you include in your request to indicate the next set of results that you want to retrieve.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 2147483647.

Pattern: .*

Required: No
Response Syntax

```json
{  "Budgets": [    {      "BudgetLimit": {        "Amount": "string",        "Unit": "string"      },      "BudgetName": "string",      "BudgetType": "string",      "CalculatedSpend": {        "ActualSpend": {          "Amount": "string",          "Unit": "string"        },        "ForecastedSpend": {          "Amount": "string",          "Unit": "string"        }      },      "CostFilters": {        "string": ["string"]      },      "CostTypes": {        "IncludeCredit": boolean,        "IncludeDiscount": boolean,        "IncludeOtherSubscription": boolean,        "IncludeRecurring": boolean,        "IncludeRefund": boolean,        "IncludeSubscription": boolean,        "IncludeSupport": boolean,        "IncludeTax": boolean,        "IncludeUpfront": boolean,        "UseAmortized": boolean,        "UseBlended": boolean      },      "LastUpdatedTime": number,      "PlannedBudgetLimits": {        "string": {          "Amount": "string",          "Unit": "string"        }      },      "TimePeriod": {        "End": number,        "Start": number      },      "TimeUnit": "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.

**Budgets (p. 126)**

A list of budgets.
Type: Array of Budget (p. 258) objects

**NextToken (p. 126)**

The pagination token in the service response that indicates the next set of results that you can retrieve.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 2147483647.

Pattern: .*

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 282).

**AccessDeniedException**

You are not authorized to use this operation with the given parameters.

HTTP Status Code: 400

**ExpiredNextTokenException**

The pagination token expired.

HTTP Status Code: 400

**InternalErrorException**

An error on the server occurred during the processing of your request. Try again later.

HTTP Status Code: 400

**InvalidNextTokenException**

The pagination token is invalid.

HTTP Status Code: 400

**InvalidParameterException**

An error on the client occurred. Typically, the cause is an invalid input value.

HTTP Status Code: 400

**NotFoundException**

We can't locate the resource that you specified.

HTTP Status Code: 400

**Examples**

**Example**

The following is the PlannedBudgetLimits syntax.

```json
{
   "Budgets": [
      {
         "BudgetLimit": {
            "Amount": "string",
            "Unit": "string"
         }
      }
   ]
}
```
"PlannedBudgetLimits": {  
  "string": {  
    "Amount": "string",
    "Unit": "string"
  },
},
"BudgetName": "string",
"BudgetType": "string",
"CalculatedSpend": {  
  "ActualSpend": {  
    "Amount": "string",
    "Unit": "string"
  },
  "ForecastedSpend": {  
    "Amount": "string",
    "Unit": "string"
  }
},
"CostFilters": {  
  "string": [  "string"
  ],
},
"CostTypes": {  
  "IncludeCredit": boolean,
  "IncludeDiscount": boolean,
  "IncludeOtherSubscription": boolean,
  "IncludeRecurring": boolean,
  "IncludeRefund": boolean,
  "IncludeSubscription": boolean,
  "IncludeSupport": boolean,
  "IncludeTax": boolean,
  "IncludeUpfront": boolean,
  "UseAmortized": boolean,
  "UseBlended": boolean
},
"LastUpdatedTime": number,
"TimePeriod": {  
  "End": number,
  "Start": number
},
"TimeUnit": "string"
],
"NextToken": "string"

Example

Sample Request

POST / HTTP/1.1
Host: awsbudgets.<region>.<domain>
x-amz-Date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
  SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-
  requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSBudgetServiceGateway.DescribeBudgets

{  
  "AccountId": "111122223333",
  "MaxResults": 20
}
Sample Response

{
    "Budgets": [
        {
            "BudgetLimit": {
                "Amount": "100",
                "Unit": "USD"
            },
            "BudgetName": "Example Limit Fixed Budget ",
            "BudgetType": "COST",
            "CalculatedSpend": {
                "ActualSpend": {
                    "Amount": "50",
                    "Unit": "USD"
                },
                "ForecastedSpend": {
                    "Amount": "100",
                    "Unit": "USD"
                }
            },
            "CostFilters": {
                "AZ" : [ "us-east-1" ]
            },
            "CostTypes": {
                "IncludeCredit": true,
                "IncludeDiscount": true,
                "IncludeOtherSubscription": true,
                "IncludeRecurring": true,
                "IncludeRefund": true,
                "IncludeSubscription": true,
                "IncludeSupport": true,
                "IncludeTax": true,
                "IncludeUpfront": true,
                "UseBlended": false
            },
            "TimePeriod": {
                "Start": 1477353600,
                "End": 1477958399
            },
            "TimeUnit": "MONTHLY"
        },
        {
            "BudgetLimit": {
                "Amount": "100",
                "Unit": "USD"
            },
            "PlannedBudgetLimits":{
                "1583020800": {
                    "Amount": "100",
                    "Unit": "USD"
                },
                "1564617600": {
                    "Amount": "200",
                    "Unit": "USD"
                },
                "1569888000": {
                    "Amount": "300",
                    "Unit": "USD"
                },
                "1556668800": {
                    "Amount": "400",
                    "Unit": "USD"
                },
                "15458158400": {
                    "Amount": "500",
                    "Unit": "USD"
                }
            }
        }
    ]
}
"Amount": "500",
"Unit": "USD"
},
"1580515200": {
"Amount": "200",
"Unit": "USD"
},
"1567296000": {
"Amount": "300",
"Unit": "USD"
},
"1554076800": {
"Amount": "100",
"Unit": "USD"
},
"1577836800": {
"Amount": "200",
"Unit": "USD"
},
"1561939200": {
"Amount": "100",
"Unit": "USD"
},
"1572566400": {
"Amount": "110",
"Unit": "USD"
},
"1559347200": {
"Amount": "120",
"Unit": "USD"
}
},
"BudgetName": "Example Planned Limits Budget",
"BudgetType": "COST",
"CalculatedSpend": {
"ActualSpend": {
"Amount": "50",
"Unit": "USD"
},
"ForecastedSpend": {
"Amount": "100",
"Unit": "USD"
}
},
"CostFilters": {
"AZ": ["us-east-1"]
},
"CostTypes": {
"IncludeCredit": true,
"IncludeDiscount": true,
"IncludeOtherSubscription": true,
"IncludeRecurring": true,
"IncludeRefund": true,
"IncludeSubscription": true,
"IncludeSupport": true,
"IncludeTax": true,
"IncludeUpfront": true,
"UseBlended": false
},
"TimePeriod": {
"Start": 1477353600,
"End": 1477958399
},
"TimeUnit": "MONTHLY"}
"NextToken": "exampleTokenString"
}

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
DescribeNotificationsForBudget

Service: AWS Budgets

Lists the notifications that are associated with a budget.

Request Syntax

```json
{
   "AccountId": "string",
   "BudgetName": "string",
   "MaxResults": number,
   "NextToken": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

**AccountId (p. 132)**

The accountId that is associated with the budget whose notifications you want descriptions of.

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

Required: Yes

**BudgetName (p. 132)**

The name of the budget whose notifications you want descriptions of.

Type: String

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

Pattern: ^[^:\\]+$

Required: Yes

**MaxResults (p. 132)**

An optional integer that represents how many entries a paginated response contains. The maximum is 100.

Type: Integer

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

Required: No

**NextToken (p. 132)**

The pagination token that you include in your request to indicate the next set of results that you want to retrieve.
Type: String
Length Constraints: Minimum length of 0. Maximum length of 2147483647.
Pattern: .*
Required: No

Response Syntax

```json
{
   "NextToken": "string",
   "Notifications": [
       {
           "ComparisonOperator": "string",
           "NotificationState": "string",
           "NotificationType": "string",
           "Threshold": number,
           "ThresholdType": "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. 133)**

The pagination token in the service response that indicates the next set of results that you can retrieve.

Type: String
Length Constraints: Minimum length of 0. Maximum length of 2147483647.
Pattern: .*

**Notifications (p. 133)**

A list of notifications that are associated with a budget.

Type: Array of Notification (p. 268) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 282).

**AccessDeniedException**

You are not authorized to use this operation with the given parameters.

HTTP Status Code: 400

**ExpiredNextTokenException**

The pagination token expired.
HTTP Status Code: 400

**InternalErrorException**

An error on the server occurred during the processing of your request. Try again later.

HTTP Status Code: 400

**InvalidNextTokenException**

The pagination token is invalid.

HTTP Status Code: 400

**InvalidParameterException**

An error on the client occurred. Typically, the cause is an invalid input value.

HTTP Status Code: 400

**NotFoundException**

We can't locate the resource that you specified.

HTTP Status Code: 400

### Example

The following is a sample request and response of the `DescribeNotificationsForBudget` operation.

#### Sample Request

```
POST / HTTP/1.1
Host: awsbudgets.<region>.<domain>
x-amz-Date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSBudgetServiceGateway.DescribeNotificationsForBudget

{
    "AccountId": "111122223333",
    "BudgetName": "Example Budget",
    "MaxResults": 5
}
```

#### Sample Response

```
{
    "NextToken": "exampleTokenString",
    "Notifications": [
        {
            "ComparisonOperator": "GREATER_THAN",
            "NotificationType": "ACTUAL",
            "Threshold": 80,
            "ThresholdType": "PERCENTAGE"
        }
    ]
}
```
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
DescribeSubscribersForNotification

Service: AWS Budgets

Lists the subscribers that are associated with a notification.

Request Syntax

```
{
   "AccountId": "string",
   "BudgetName": "string",
   "MaxResults": number,
   "NextToken": "string",
   "Notification": {
      "ComparisonOperator": "string",
      "NotificationState": "string",
      "NotificationType": "string",
      "Threshold": number,
      "ThresholdType": "string"
   }
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

**AccountId (p. 136)**

The accountId that is associated with the budget whose subscribers you want descriptions of.

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

Required: Yes

**BudgetName (p. 136)**

The name of the budget whose subscribers you want descriptions of.

Type: String

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

Pattern: [^:\\]+?

Required: Yes

**MaxResults (p. 136)**

An optional integer that represents how many entries a paginated response contains. The maximum is 100.

Type: Integer

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

Required: No
**NextToken (p. 136)**

The pagination token that you include in your request to indicate the next set of results that you want to retrieve.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 2147483647.

Pattern: .*

Required: No

**Notification (p. 136)**

The notification whose subscribers you want to list.

Type: Notification (p. 268) object

Required: Yes

**Response Syntax**

```json
{
    "NextToken": "string",
    "Subscribers": [
        {
            "Address": "string",
            "SubscriptionType": "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. 137)**

The pagination token in the service response that indicates the next set of results that you can retrieve.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 2147483647.

Pattern: .*

**Subscribers (p. 137)**

A list of subscribers that are associated with a notification.

Type: Array of Subscriber (p. 272) objects

Array Members: Minimum number of 1 item. Maximum number of 11 items.

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 282).
AccessDeniedException
You are not authorized to use this operation with the given parameters.
HTTP Status Code: 400

ExpiredNextTokenException
The pagination token expired.
HTTP Status Code: 400

InternalErrorException
An error on the server occurred during the processing of your request. Try again later.
HTTP Status Code: 400

InvalidNextTokenException
The pagination token is invalid.
HTTP Status Code: 400

InvalidParameterException
An error on the client occurred. Typically, the cause is an invalid input value.
HTTP Status Code: 400

NotFoundException
We can't locate the resource that you specified.
HTTP Status Code: 400

Example

The following is a sample request and response of the DescribeSubscribersForNotification operation.

Sample Request

```
POST / HTTP/1.1
Host: awsbudgets.<region>.<domain>
x-amz-Date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>, SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn- requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSBudgetServiceGateway.DescribeSubscribersForNotification

{ 
  "AccountId": "111122223333",
  "BudgetName": "Example Budget",
  "MaxResults": 5,
  "Notification": {
    "ComparisonOperator": "GREATER_THAN",
    "NotificationType": "ACTUAL",
    "Threshold": 80,
    "ThresholdType": "PERCENTAGE"
  }
```

Sample Response

```json
{
    "NextToken": "string",
    "Subscribers": [
        {
            "Address": "example@example.com",
            "SubscriptionType": "EMAIL"
        }
    ]
}
```

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
UpdateBudget
Service: AWS Budgets

Updates a budget. You can change every part of a budget except for the budgetName and the calculatedSpend. When you modify a budget, the calculatedSpend drops to zero until AWS has new usage data to use for forecasting.

Important
Only one of BudgetLimit or PlannedBudgetLimits can be present in the syntax at one time. Use the syntax that matches your case. The Request Syntax section shows the BudgetLimit syntax. For PlannedBudgetLimits, see the Examples section.

Request Syntax

{  
  "AccountId": "string",
  "NewBudget": {  
    "BudgetLimit": {  
      "Amount": "string",
      "Unit": "string"
    },
    "BudgetName": "string",
    "BudgetType": "string",
    "CalculatedSpend": {  
      "ActualSpend": {  
        "Amount": "string",
        "Unit": "string"
      },
      "ForecastedSpend": {  
        "Amount": "string",
        "Unit": "string"
      }
    },
    "CostFilters": {  
      "string": [ "string" ]
    },
    "CostTypes": {  
      "IncludeCredit": boolean,
      "IncludeDiscount": boolean,
      "IncludeOtherSubscription": boolean,
      "IncludeRecurring": boolean,
      "IncludeRefund": boolean,
      "IncludeSubscription": boolean,
      "IncludeSupport": boolean,
      "IncludeTax": boolean,
      "IncludeUpfront": boolean,
      "UseAmortized": boolean,
      "UseBlended": boolean
    },
    "LastUpdatedTime": number,
    "PlannedBudgetLimits": {  
      "string": {  
        "Amount": "string",
        "Unit": "string"
      }
    },
    "TimePeriod": {  
      "End": number,
      "Start": number
    },
    "TimeUnit": "string"
  }
}
UpdateBudget

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

`AccountId` (p. 140)

The `accountId` that is associated with the budget that you want to update.

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

Required: Yes

`NewBudget` (p. 140)

The budget that you want to update your budget to.

Type: Budget (p. 258) object

Required: Yes

Response Elements

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

Errors

For information about the errors that are common to all actions, see Common Errors (p. 282).

AccessDeniedException

You are not authorized to use this operation with the given parameters.

HTTP Status Code: 400

InternalErrorException

An error on the server occurred during the processing of your request. Try again later.

HTTP Status Code: 400

InvalidParameterException

An error on the client occurred. Typically, the cause is an invalid input value.

HTTP Status Code: 400

NotFoundException

We can't locate the resource that you specified.
AWS Cost Explorer Service Cost Management APIs

UpdateBudget

HTTP Status Code: 400

Examples

Example

The following is the PlannedBudgetLimits syntax.

```json
{
    "AccountId": "string",
    "NewBudget": {
        "PlannedBudgetLimits": {
            "string": {
                "Amount": "string",
                "Unit": "string"
            },
        },
        "BudgetName": "string",
        "BudgetType": "string",
        "CalculatedSpend": {
            "ActualSpend": {
                "Amount": "string",
                "Unit": "string"
            },
            "ForecastedSpend": {
                "Amount": "string",
                "Unit": "string"
            }
        },
        "CostFilters": {
            "string": [ "string" ]
        },
        "CostTypes": {
            "IncludeCredit": boolean,
            "IncludeDiscount": boolean,
            "IncludeOtherSubscription": boolean,
            "IncludeRecurring": boolean,
            "IncludeRefund": boolean,
            "IncludeSubscription": boolean,
            "IncludeSupport": boolean,
            "IncludeTax": boolean,
            "IncludeUpfront": boolean,
            "UseAmortized": boolean,
            "UseBlended": boolean
        },
        "LastUpdatedTime": number,
        "TimePeriod": {
            "End": number,
            "Start": number
        },
        "TimeUnit": "string"
    }
}
```

Example

The following is a sample request and response of the UpdateBudget operation using BudgetLimit.

Sample Request

```
POST / HTTP/1.1
```

142
Example

The following is a sample request and response of the UpdateBudget operation using PlannedBudgetLimits.

Sample Request

POST / HTTP/1.1
Host: awsbudgets.<region>.<domain>
x-amz-Date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSBudgetServiceGateway.UpdateBudget
{
    "AccountId": "111122223333",
    "NewBudget": {
        "BudgetLimit": {
            "Amount": "100",
            "Unit": "USD"
        },
        "BudgetName": "Example Budget",
        "BudgetType": "COST",
        "CostFilters": {
            "AZ": [ "us-east-1" ]
        },
        "CostTypes": {
            "IncludeCredit": true,
            "IncludeDiscount": true,
            "IncludeOtherSubscription": true,
            "IncludeRecurring": true,
            "IncludeRefund": true,
            "IncludeSubscription": true,
            "IncludeSupport": true,
            "IncludeTax": true,
            "IncludeUpfront": true,
            "UseBlended": false
        },
        "TimePeriod": {
            "Start": 1477353600,
            "End": 1477958399
        },
        "TimeUnit": "MONTHLY"
    }
}
"Amount": "100",
[Unit]: "USD"
},
"1564617600": {
"Amount": "200",
[Unit]: "USD"
},
"1569888000": {
"Amount": "300",
[Unit]: "USD"
},
"1556668800": {
"Amount": "400",
[Unit]: "USD"
},
"1575158400": {
"Amount": "500",
[Unit]: "USD"
},
"1580515200": {
"Amount": "200",
[Unit]: "USD"
},
"1567296000": {
"Amount": "300",
[Unit]: "USD"
},
"1554076800": {
"Amount": "100",
[Unit]: "USD"
},
"1577836800": {
"Amount": "200",
[Unit]: "USD"
},
"1561939200": {
"Amount": "100",
[Unit]: "USD"
},
"1572566400": {
"Amount": "110",
[Unit]: "USD"
},
"1559347200": {
"Amount": "120",
[Unit]: "USD"
}
},
"BudgetName": "Example Budget",
"BudgetType": "COST",
"CostFilters": {
"AZ": ["us-east-1"
]
},
"CostTypes": {
"IncludeCredit": true,
"IncludeDiscount": true,
"IncludeOtherSubscription": true,
"IncludeRecurring": true,
"IncludeRefund": true,
"IncludeSubscription": true,
"IncludeSupport": true,
"IncludeTax": true,
"IncludeUpfront": true,
"UseBlended": false
}
"TimePeriod": {
    "Start": 1477353600,
    "End": 1477958399
},
"TimeUnit": "MONTHLY"
}

Sample Response

{
    "AccountId": "111122223333",
    "NewBudget": {
        "BudgetLimit": {
            "Amount": "200",
            "Unit": "USD"
        },
        "BudgetName": "Example Budget",
        "BudgetType": "COST",
        "CalculatedSpend": {
            "ActualSpend": {
                "Amount": "0",
                "Unit": "USD"
            },
            "ForecastedSpend": {
                "Amount": "0",
                "Unit": "USD"
            }
        },
        "CostFilters": {
            "AZ": [ "ap-south-1" ]
        },
        "CostTypes": {
            "IncludeCredit": true,
            "IncludeDiscount": false,
            "IncludeOtherSubscription": true,
            "IncludeRecurring": true,
            "IncludeRefund": true,
            "IncludeSubscription": true,
            "IncludeTax": true,
            "IncludeUpfront": true,
            "UseBlended": false
        },
        "TimePeriod": {
            "Start": 1477353600,
            "End": 1477958399
        },
        "TimeUnit": "MONTHLY"
    }
}

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
UpdateNotification
Service: AWS Budgets
Updates a notification.

Request Syntax

```json
{
   "AccountId": "string",
   "BudgetName": "string",
   "NewNotification": {
      "ComparisonOperator": "string",
      "NotificationState": "string",
      "NotificationType": "string",
      "Threshold": number,
      "ThresholdType": "string"
   },
   "OldNotification": {
      "ComparisonOperator": "string",
      "NotificationState": "string",
      "NotificationType": "string",
      "Threshold": number,
      "ThresholdType": "string"
   }
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

AccountId (p. 147)

The account ID that is associated with the budget whose notification you want to update.

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

Required: Yes

BudgetName (p. 147)

The name of the budget whose notification you want to update.

Type: String

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

Pattern: [^:\\]+

Required: Yes

NewNotification (p. 147)

The updated notification to be associated with a budget.

Type: Notification (p. 268) object
Required: Yes

**OldNotification (p. 147)**

The previous notification that is associated with a budget.

Type: Notification (p. 268) object

Required: Yes

**Response Elements**

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

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 282).

**AccessDeniedException**

You are not authorized to use this operation with the given parameters.

HTTP Status Code: 400

**DuplicateRecordException**

The budget name already exists. Budget names must be unique within an account.

HTTP Status Code: 400

**InternalErrorException**

An error on the server occurred during the processing of your request. Try again later.

HTTP Status Code: 400

**InvalidParameterException**

An error on the client occurred. Typically, the cause is an invalid input value.

HTTP Status Code: 400

**NotFoundException**

We can't locate the resource that you specified.

HTTP Status Code: 400

**Example**

The following is a sample request of the UpdateNotification operation.

**Sample Request**

```bash
POST / HTTP/1.1
Host: awsbudgets.<region>.<domain>
x-amz-Date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>, SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-requestid,Signature=<Signature>
User-Agent: <UserAgentString>
```
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSBudgetServiceGateway.UpdateNotification
{
   "AccountId": "111122223333",
   "BudgetName": "Example Budget",
   "NewNotification": {
      "ComparisonOperator": "GREATER_THAN",
      "NotificationType": "ACTUAL",
      "Threshold": 80,
      "ThresholdType": "PERCENTAGE"
   }
},
"OldNotification": {
   "ComparisonOperator": "GREATER_THAN",
   "NotificationType": "ACTUAL",
   "Threshold": 80,
   "ThresholdType": "PERCENTAGE"
}
}

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
UpdateSubscriber
Service: AWS Budgets
Updates a subscriber.

Request Syntax

```json
{
    "AccountId": "string",
    "BudgetName": "string",
    "NewSubscriber": {
        "Address": "string",
        "SubscriptionType": "string"
    },
    "Notification": {
        "ComparisonOperator": "string",
        "NotificationState": "string",
        "NotificationType": "string",
        "Threshold": number,
        "ThresholdType": "string"
    },
    "OldSubscriber": {
        "Address": "string",
        "SubscriptionType": "string"
    }
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

**AccountId (p. 150)**

The accountId that is associated with the budget whose subscriber you want to update.

Type: String
Length Constraints: Fixed length of 12.
Pattern: \d{12}
Required: Yes

**BudgetName (p. 150)**

The name of the budget whose subscriber you want to update.

Type: String
Length Constraints: Minimum length of 1. Maximum length of 100.
Pattern: [^:/\]+ Required: Yes

**NewSubscriber (p. 150)**

The updated subscriber that is associated with a budget notification.
Type: **Subscriber (p. 272)** object

Required: Yes

**Notification (p. 150)**

The notification whose subscriber you want to update.

Type: **Notification (p. 268)** object

Required: Yes

**OldSubscriber (p. 150)**

The previous subscriber that is associated with a budget notification.

Type: **Subscriber (p. 272)** object

Required: Yes

**Response Elements**

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

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 282).

**AccessDeniedException**

You are not authorized to use this operation with the given parameters.

HTTP Status Code: 400

**DuplicateRecordException**

The budget name already exists. Budget names must be unique within an account.

HTTP Status Code: 400

**InternalErrorException**

An error on the server occurred during the processing of your request. Try again later.

HTTP Status Code: 400

**InvalidParameterException**

An error on the client occurred. Typically, the cause is an invalid input value.

HTTP Status Code: 400

**NotFoundException**

We can't locate the resource that you specified.

HTTP Status Code: 400

**Example**

The following is a sample request of the `UpdateSubscriber` operation.
Sample Request

```json
POST / HTTP/1.1
Host: awsbudgets.<region>.<domain>
x-amz-Date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
               SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSBudgetServiceGateway.UpdateSubscriber
{
    "AccountId": "111122223333",
    "BudgetName": "Example Budget",
    "Notification": {
        "ComparisonOperator": "GREATER_THAN",
        "NotificationType": "ACTUAL",
        "Threshold": 80,
        "ThresholdType": "PERCENTAGE"
    },
    "OldSubscriber": {
        "Address": "example@example.com",
        "SubscriptionType": "EMAIL"
    },
    "NewSubscriber": {
        "Address": "example2@example.com",
        "SubscriptionType": "EMAIL"
    }
}
```

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

AWS Cost and Usage Report Service

The following actions are supported by AWS Cost and Usage Report Service:

- DeleteReportDefinition (p. 153)
- DescribeReportDefinitions (p. 155)
- ModifyReportDefinition (p. 158)
- PutReportDefinition (p. 160)
DeleteReportDefinition
Service: AWS Cost and Usage Report Service
Deletes the specified report.

Request Syntax

```
{
  "ReportName": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

ReportName (p. 153)
The name of the report that you want to create. The name must be unique, is case sensitive, and can't include spaces.

- Type: String
- Length Constraints: Maximum length of 256.
- Pattern: `[0-9A-Za-z!\-_\.\*\'\()]+`
- Required: No

Response Syntax

```
{
  "ResponseMessage": "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.

ResponseMessage (p. 153)
Whether the deletion was successful or not.

- Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 282).

InternalErrorException
An error on the server occurred during the processing of your request. Try again later.
AWS Cost Explorer Service Cost Management APIs
DeleteReportDefinition

HTTP Status Code: 500

ValidationException

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

HTTP Status Code: 400

Example

The following is a sample request and response of the DeleteReportDefinition operation.

Sample Request

```
POST / HTTP/1.1
Host: api.cur.<region>.<domain>
X-Amz-Date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
    SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-
    requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSOrigamiServiceGateway.DeleteReportDefinition
{
    "ReportName": "ExampleReport"
}
```

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
DescribeReportDefinitions
Service: AWS Cost and Usage Report Service

Lists the AWS Cost and Usage reports available to this account.

Request Syntax

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

MaxResults (p. 155)

The maximum number of results that AWS returns for the operation.

Type: Integer

Valid Range: Fixed value of 5.

Required: No

NextToken (p. 155)

A generic string.

Type: String

Length Constraints: Maximum length of 256.

Pattern: [A-Za-z0-9-_\.\-]*

Required: No

Response Syntax

```
{
  "NextToken": "string",
  "ReportDefinitions": [
    {
      "AdditionalArtifacts": [ "string" ],
      "AdditionalSchemaElements": [ "string" ],
      "Compression": "string",
      "Format": "string",
      "RefreshClosedReports": boolean,
      "ReportName": "string",
      "ReportVersioning": "string",
      "S3Bucket": "string",
      "S3Prefix": "string",
      "S3Region": "string",
      "TimeUnit": "string"
    }
  ]
}
```
AWS Cost Explorer Service Cost Management APIs
DescribeReportDefinitions

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. 155)**

A generic string.

Type: String

Length Constraints: Maximum length of 256.

Pattern: [A-Za-z0-9_.\-]*

**ReportDefinitions (p. 155)**

A list of AWS Cost and Usage reports owned by the account.

Type: Array of ReportDefinition (p. 274) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 282).

**InternalErrorException**

An error on the server occurred during the processing of your request. Try again later.

HTTP Status Code: 500

Example

The following is a sample request and response of the DescribeReportDefinitions operation.

Sample Request

```bash
POST / HTTP/1.1
Host: api.cur.<region>.<domain>
x-amz-Date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
   SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSOrigamiServiceGateway.DescribeReportDefinitions
{
   "MaxResults": 5
}
```
Sample Response

HTTP/1.1 200 OK
x-amzn-RequestId: <RequestId>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Date: <Date>
{
    "ReportDefinitions": [
        {
            "AdditionalArtifacts": ["QUICKSIGHT"],
            "AdditionalSchemaElements": ["RESOURCES"],
            "Compression": "GZIP",
            "Format": "textORcsv",
            "ReportName": "ExampleReport",
            "S3Bucket": "example-s3-bucket",
            "S3Prefix": "exampleprefix",
            "S3Region": "us-east-1",
            "TimeUnit": "HOURLY"
        },
        {
            "AdditionalArtifacts": ["QUICKSIGHT"],
            "AdditionalSchemaElements": ["RESOURCES"],
            "Compression": "GZIP",
            "Format": "textORcsv",
            "ReportName": "ExampleReport2",
            "S3Bucket": "example-s3-bucket",
            "S3Prefix": "exampleprefix",
            "S3Region": "us-east-1",
            "TimeUnit": "HOURLY"
        }
    ]
}

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
ModifyReportDefinition
Service: AWS Cost and Usage Report Service

Allows you to programatically update your report preferences.

Request Syntax

```
{
    "ReportDefinition": {
        "AdditionalArtifacts": [ "string" ],
        "AdditionalSchemaElements": [ "string" ],
        "Compression": "string",
        "Format": "string",
        "RefreshClosedReports": boolean,
        "ReportName": "string",
        "ReportVersioning": "string",
        "S3Bucket": "string",
        "S3Prefix": "string",
        "S3Region": "string",
        "TimeUnit": "string"
    },
    "ReportName": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

**ReportDefinition (p. 158)**

The definition of AWS Cost and Usage Report. You can specify the report name, time unit, report format, compression format, S3 bucket, additional artifacts, and schema elements in the definition.

Type: ReportDefinition (p. 274) object

Required: Yes

**ReportName (p. 158)**

The name of the report that you want to create. The name must be unique, is case sensitive, and can't include spaces.

Type: String

Length Constraints: Maximum length of 256.

Pattern: [0-9A-Za-z!\-_.*\'()]+

Required: Yes

Response Elements

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

Errors

For information about the errors that are common to all actions, see Common Errors (p. 282).
AWS Cost Explorer Service Cost Management APIs
ModifyReportDefinition

**InternalErrorException**

An error on the server occurred during the processing of your request. Try again later.

HTTP Status Code: 500

**ValidationException**

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

HTTP Status Code: 400

**See Also**

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3
PutReportDefinition

Service: AWS Cost and Usage Report Service

Creates a new report using the description that you provide.

Request Syntax

```json
{
  "ReportDefinition": {
    "AdditionalArtifacts": [ "string" ],
    "AdditionalSchemaElements": [ "string" ],
    "Compression": "string",
    "Format": "string",
    "RefreshClosedReports": boolean,
    "ReportName": "string",
    "ReportVersioning": "string",
    "S3Bucket": "string",
    "S3Prefix": "string",
    "S3Region": "string",
    "TimeUnit": "string"
  }
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

**ReportDefinition (p. 160)**

Represents the output of the PutReportDefinition operation. The content consists of the detailed metadata and data file information.

Type: ReportDefinition (p. 274) object

Required: Yes

Response Elements

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

Errors

For information about the errors that are common to all actions, see Common Errors (p. 282).

**DuplicateReportNameException**

A report with the specified name already exists in the account. Specify a different report name.

HTTP Status Code: 400

**InternalErrorException**

An error on the server occurred during the processing of your request. Try again later.

HTTP Status Code: 500
ReportLimitReachedException

This account already has five reports defined. To define a new report, you must delete an existing report.

HTTP Status Code: 400

ValidationException

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

HTTP Status Code: 400

Example

The following is a sample request and response of the PutReportDefinition operation.

Sample Request

```
POST / HTTP/1.1
Host: api.cur.<region>.<domain>
x-amz-Date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSOrigamiServiceGateway.PutReportDefinition
{
    "ReportDefinition": {
        "ReportName": "ExampleReport",
        "TimeUnit": "DAILY",
        "Format": "textORcsv",
        "Compression": "ZIP",
        "AdditionalSchemaElements": ["RESOURCES"]
    },
    "S3Bucket": "example-s3-bucket",
    "S3Prefix": "exampleprefix",
    "S3Region": "us-east-1",
    "AdditionalArtifacts": [
        "REDSHIFT",
        "QUICKSIGHT"
    ]
}
```

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 Price List Service

The following actions are supported by AWS Price List Service:

- DescribeServices (p. 163)
- GetAttributeValues (p. 167)
- GetProducts (p. 171)
DescribeServices
Service: AWS Price List Service

Returns the metadata for one service or a list of the metadata for all services. Use this without a service code to get the service codes for all services. Use it with a service code, such as AmazonEC2, to get information specific to that service, such as the attribute names available for that service. For example, some of the attribute names available for EC2 are volumeType, maxIopsVolume, operation, locationType, and instanceCapacity10xlarge.

Request Syntax

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

**FormatVersion (p. 163)**

The format version that you want the response to be in.

Valid values are: aws_v1

Type: String

Required: No

**MaxResults (p. 163)**

The maximum number of results that you want returned in the response.

Type: Integer

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

Required: No

**NextToken (p. 163)**

The pagination token that indicates the next set of results that you want to retrieve.

Type: String

Required: No

**ServiceCode (p. 163)**

The code for the service whose information you want to retrieve, such as AmazonEC2. You can use the ServiceCode to filter the results in a GetProducts call. To retrieve a list of all services, leave this blank.

Type: String

Required: No
Response Syntax

```json
{
    "FormatVersion": "string",
    "NextToken": "string",
    "Services": [
        {
            "AttributeName": [ "string" ],
            "ServiceCode": "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.

**FormatVersion (p. 164)**

The format version of the response. For example, `aws_v1`.

*Type: String*

**NextToken (p. 164)**

The pagination token for the next set of retrievable results.

*Type: String*

**Services (p. 164)**

The service metadata for the service or services in the response.

*Type: Array of Service (p. 279) objects*

Errors

For information about the errors that are common to all actions, see Common Errors (p. 282).

**ExpiredNextTokenException**

The pagination token expired. Try again without a pagination token.

HTTP Status Code: 400

**InternalErrorException**

An error on the server occurred during the processing of your request. Try again later.

HTTP Status Code: 400

**InvalidNextTokenException**

The pagination token is invalid. Try again without a pagination token.

HTTP Status Code: 400

**InvalidParameterException**

One or more parameters had an invalid value.
HTTP Status Code: 400

NotFoundException

The requested resource can't be found.

HTTP Status Code: 400

Example

The following is a sample request and response of the GetService operation.

Sample Request

```http
POST / HTTP/1.1
Host: api.pricing.<region>.<domain>
x-amz-Date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
    SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-
    requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSPriceListService.DescribeServices
{
    "ServiceCode": "AmazonEC2",
    "FormatVersion": "aws_v1",
    "NextToken": null,
    "MaxResults": 1
}
```

Sample Response

```http
HTTP/1.1 200 OK
x-amzn-RequestId: <RequestId>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Date: <Date>
{
    "FormatVersion": "aws_v1",
    "NextToken": "abcdefg123",
    "Services": [
        {
            "AttributeNames": [
                "volumeType",
                "max1opsvolume",
                "instanceCapacity10xlarge",
                "locationType",
                "operation"
            ],
            "ServiceCode": "AmazonEC2"
        }
    ]
}
```

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
GetAttributeValues

Service: AWS Price List Service

Returns a list of attribute values. Attributes are similar to the details in a Price List API offer file. For a list of available attributes, see Offer File Definitions in the AWS Billing and Cost Management User Guide.

Request Syntax

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

AttributeName (p. 167)

The name of the attribute that you want to retrieve the values for, such as volumeType.

Type: String

Required: Yes

MaxResults (p. 167)

The maximum number of results to return in response.

Type: Integer

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

Required: No

NextToken (p. 167)

The pagination token that indicates the next set of results that you want to retrieve.

Type: String

Required: No

ServiceCode (p. 167)

The service code for the service whose attributes you want to retrieve. For example, if you want the retrieve an EC2 attribute, use AmazonEC2.

Type: String

Required: Yes

Response Syntax

```
{
}
```
"AttributeValue": [  
  
  ],  

"AttributeValues": [  
  
  ],  

"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.

**AttributeValues (p. 167)**

The list of values for an attribute. For example, Throughput Optimized HDD and Provisioned IOPS are two available values for the AmazonEC2 volumeType.

Type: Array of AttributeValue (p. 277) objects

**NextToken (p. 167)**

The pagination token that indicates the next set of results to retrieve.

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 282).

**ExpiredNextTokenException**

The pagination token expired. Try again without a pagination token.

HTTP Status Code: 400

**InternalErrorException**

An error on the server occurred during the processing of your request. Try again later.

HTTP Status Code: 400

**InvalidNextTokenException**

The pagination token is invalid. Try again without a pagination token.

HTTP Status Code: 400

**InvalidParameterException**

One or more parameters had an invalid value.

HTTP Status Code: 400

**NotFoundException**

The requested resource can't be found.

HTTP Status Code: 400
Example

The following is a sample request and response of the GetAttributeValues operation.

Sample Request

```
POST / HTTP/1.1
Host: api.pricing.<region>.<domain>
X-amz-Date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
               SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-
               requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSPriceListService.GetAttributeValues
{
    "ServiceCode": "AmazonEC2",
    "AttributeName": "volumeType",
    "NextToken": null,
    "MaxResults": 2
}
```

Sample Response

```
HTTP/1.1 200 OK
x-amzn-RequestId: <RequestId>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Date: <Date>
{
    "AttributeValues": [
        {
            "Value": "Throughput Optimized HDD"
        },
        {
            "Value": "Provisioned IOPS"
        }
    ],
    "NextToken": "GpgtauTG1Y7LGezuc15LV0w==:7GzJ0nw0DBTJ2J66EcTIIynE6Ol1uXWqtTRqioJsQadBnDVgHPzI1en4BUQnPCLpseBk9RQQWAFlgK
+Z/9/cTw9GldnPOHN98+FdmJ+7wKU3QQqQ8Mqr5K0eBkIsAQvAqYdL0dkL7thHwPtE51CByAmq9gC/ yBu1vA0s7R3vNN4MSj3Dv3wSwqASS1lBVB6tgW78yL22KhsoItM/3WW+aP6Jqtq4mlxp/cT6DWA1+xLFwHU/
CbketimPPXygHF3/UXDw=="
}
```

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
GetProducts
Service: AWS Price List Service

Returns a list of all products that match the filter criteria.

Request Syntax

```json
{
  "Filters": [
    {
      "Field": "string",
      "Type": "string",
      "Value": "string"
    }
  ],
  "FormatVersion": "string",
  "MaxResults": number,
  "NextToken": "string",
  "ServiceCode": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 280).

The request accepts the following data in JSON format.

**Filters (p. 171)**

The list of filters that limit the returned products. only products that match all filters are returned.

Type: Array of Filter (p. 278) objects

Required: No

**FormatVersion (p. 171)**

The format version that you want the response to be in.

Valid values are: aws_v1

Type: String

Required: No

**MaxResults (p. 171)**

The maximum number of results to return in the response.

Type: Integer

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

Required: No

**NextToken (p. 171)**

The pagination token that indicates the next set of results that you want to retrieve.

Type: String
Required: No

**ServiceCode (p. 171)**

The code for the service whose products you want to retrieve.

Type: String

Required: Yes

**Response Syntax**

```
{
  "FormatVersion": "string",
  "NextToken": "string",
  "PriceList": [ "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.

**FormatVersion (p. 172)**

The format version of the response. For example, aws_v1.

Type: String

**NextToken (p. 172)**

The pagination token that indicates the next set of results to retrieve.

Type: String

**PriceList (p. 172)**

The list of products that match your filters. The list contains both the product metadata and the price information.

Type: Array of strings

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 282).

**ExpiredNextTokenException**

The pagination token expired. Try again without a pagination token.

HTTP Status Code: 400

**InternalErrorException**

An error on the server occurred during the processing of your request. Try again later.

HTTP Status Code: 400

**InvalidNextTokenException**

The pagination token is invalid. Try again without a pagination token.
HTTP Status Code: 400
InvalidParameterException
One or more parameters had an invalid value.

HTTP Status Code: 400
NotFoundException
The requested resource can't be found.

HTTP Status Code: 400

Example
The following is a sample request and response of the GetProducts operation.

Sample Request

```
POST / HTTP/1.1
Host: api.pricing.<region>.<domain>
x-amz-Date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
    SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-
    requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSPriceListService.GetProducts
{
    "Filters": [
        {
            "Type": "TERM_MATCH",
            "Field": "ServiceCode",
            "Value": "AmazonEC2"
        },
        {
            "Type": "TERM_MATCH",
            "Field": "volumeType",
            "Value": "Provisioned IOPS"
        }
    ],
    "ServiceCode": "AmazonEC2",
    "FormatVersion": "aws_v1",
    "NextToken": null,
    "MaxResults": 1
}
```

Sample Response

```
HTTP/1.1 200 OK
x-amzn-RequestId: <RequestId>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Date: <Date>
{
    "FormatVersion": "aws_v1",
    "NextToken": "57r3UcqRjDujbzWfHF7C1w==:ywSmZsD3mtpQmQLQ5SxF0sIMkYyb3j
    *vAT+kGmWFq+R9DgmIoJkz7lunVeamiOPgthdWSO2a7YKojcO+zY4dJmuN12QvbWhXs
```
AWS Cost Explorer Service Cost Management APIs

GetProducts

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
Data Types

The following data types are supported by AWS Cost Explorer Service:

- CostCategory (p. 179)
- CostCategoryReference (p. 181)
- CostCategoryRule (p. 183)
- CostCategoryValues (p. 184)
- Coverage (p. 185)
- CoverageByTime (p. 186)
- CoverageCost (p. 187)
- CoverageHours (p. 188)
- CoverageNormalizedUnits (p. 189)
- CurrentInstance (p. 190)
- DateInterval (p. 192)
- DimensionValues (p. 193)
- DimensionValuesWithAttributes (p. 194)
- EC2InstanceDetails (p. 195)
- EC2ResourceDetails (p. 197)
- EC2ResourceUtilization (p. 199)
- EC2Specification (p. 200)
- ElastiCacheInstanceDetails (p. 201)
- ESInstanceDetails (p. 203)
- Expression (p. 204)
- ForecastResult (p. 206)
- Group (p. 207)
- GroupDefinition (p. 208)
- InstanceDetails (p. 209)
- MetricValue (p. 210)
- ModifyRecommendationDetail (p. 211)
- RDSInstanceDetails (p. 212)
- RedshiftInstanceDetails (p. 214)
- ReservationAggregates (p. 215)
- ReservationCoverageGroup (p. 218)
- ReservationPurchaseRecommendation (p. 219)
- ReservationPurchaseRecommendationDetail (p. 221)
- ReservationPurchaseRecommendationMetadata (p. 224)
- ReservationPurchaseRecommendationSummary (p. 225)
- ReservationUtilizationGroup (p. 226)
- ResourceDetails (p. 227)
- ResourceUtilization (p. 228)
- ResultByTime (p. 229)
- RightsizingRecommendation (p. 230)
- RightsizingRecommendationMetadata (p. 231)
The following data types are supported by AWS Budgets:

- Budget (p. 258)
- BudgetedAndActualAmounts (p. 261)
- BudgetPerformanceHistory (p. 262)
- CalculatedSpend (p. 264)
- CostTypes (p. 265)
- Notification (p. 268)
- NotificationWithSubscribers (p. 270)
- Spend (p. 271)
- Subscriber (p. 272)
- TimePeriod (p. 273)

The following data types are supported by AWS Cost and Usage Report Service:

- ReportDefinition (p. 274)

The following data types are supported by AWS Price List Service:

- AttributeValue (p. 277)
- Filter (p. 278)
- Service (p. 279)
• CostCategory (p. 179)
• CostCategoryReference (p. 181)
• CostCategoryRule (p. 183)
• CostCategoryValues (p. 184)
• Coverage (p. 185)
• CoverageByTime (p. 186)
• CoverageCost (p. 187)
• CoverageHours (p. 188)
• CoverageNormalizedUnits (p. 189)
• CurrentInstance (p. 190)
• DateInterval (p. 192)
• DimensionValues (p. 193)
• DimensionValuesWithAttributes (p. 194)
• EC2InstanceDetails (p. 195)
• EC2ResourceDetails (p. 197)
• EC2ResourceUtilization (p. 199)
• EC2Specification (p. 200)
• ElastiCacheInstanceDetails (p. 201)
• ESInstanceDetails (p. 203)
• Expression (p. 204)
• ForecastResult (p. 206)
• Group (p. 207)
• GroupDefinition (p. 208)
• InstanceDetails (p. 209)
• MetricValue (p. 210)
• ModifyRecommendationDetail (p. 211)
• RDSInstanceDetails (p. 212)
• RedshiftInstanceDetails (p. 214)
• ReservationAggregates (p. 215)
• ReservationCoverageGroup (p. 218)
• ReservationPurchaseRecommendation (p. 219)
• ReservationPurchaseRecommendationDetail (p. 221)
• ReservationPurchaseRecommendationMetadata (p. 224)
• ReservationPurchaseRecommendationSummary (p. 225)
• ReservationUtilizationGroup (p. 226)
• ResourceDetails (p. 227)
• ResourceUtilization (p. 228)
• ResultByTime (p. 229)
• RightsizingRecommendation (p. 230)
• RightsizingRecommendationMetadata (p. 231)
• RightsizingRecommendationSummary (p. 232)
• SavingsPlansAmortizedCommitment (p. 233)
• SavingsPlansCoverage (p. 234)
• SavingsPlansCoverageData (p. 235)
• SavingsPlansDetails (p. 236)
• SavingsPlansPurchaseRecommendation (p. 237)
• SavingsPlansPurchaseRecommendationDetail (p. 239)
• SavingsPlansPurchaseRecommendationMetadata (p. 242)
• SavingsPlansPurchaseRecommendationSummary (p. 243)
• SavingsPlansSavings (p. 245)
• SavingsPlansUtilization (p. 246)
• SavingsPlansUtilizationAggregates (p. 247)
• SavingsPlansUtilizationByTime (p. 248)
• SavingsPlansUtilizationDetail (p. 249)
• ServiceSpecification (p. 251)
• TagValues (p. 252)
• TargetInstance (p. 253)
• TerminateRecommendationDetail (p. 255)
• UtilizationByTime (p. 256)
**CostCategory**

Service: AWS Cost Explorer Service

**Important**

Cost Category is in public beta for AWS Billing and Cost Management and is subject to change. Your use of Cost Categories is subject to the Beta Service Participation terms of the AWS Service Terms (Section 1.10).

The structure of Cost Categories. This includes detailed metadata and the set of rules for the CostCategory object.

**Contents**

**CostCategoryArn**

The unique identifier for your Cost Category.

Type: String


Pattern: \arn:aws\[-a-z0-9\]*:[a-z0-9]+:[-a-z0-9]*:[0-9]{12}:[-a-zA-Z0-9/:_]+

Required: Yes

**EffectiveEnd**

The Cost Category's effective end date.

Type: String


Pattern: ^\d{4}\-\d{2}\-\d{2}T\d{2}:\d{2}:\d{2}((\[+-\]\d{2}:\d{2})|Z)$

Required: No

**EffectiveStart**

The Cost Category's effective start date.

Type: String


Pattern: ^\d{4}\-\d{2}\-\d{2}T\d{2}:\d{2}:\d{2}((\[+-\]\d{2}:\d{2})|Z)$

Required: Yes

**Name**

The unique name of the Cost Category.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: ^([^! ])[\p{L}\p{N}\p{Z}_-]*(?! )$

Required: Yes

**Rules**

Rules are processed in order. If there are multiple rules that match the line item, then the first rule to match is used to determine that Cost Category value.
Type: Array of `CostCategoryRule` objects

Array Members: Minimum number of 1 item. Maximum number of 500 items.

Required: Yes

**RuleVersion**

The rule schema version in this particular Cost Category.

Type: String

Valid Values: `CostCategoryExpression.v1`

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
CostCategoryReference

Service: AWS Cost Explorer Service

Important

Cost Category is in public beta for AWS Billing and Cost Management and is subject to change. Your use of Cost Categories is subject to the Beta Service Participation terms of the AWS Service Terms (Section 1.10).

A reference to a Cost Category containing only enough information to identify the Cost Category.

You can use this information to retrieve the full Cost Category information using DescribeCostCategory.

Contents

CostCategoryArn

The unique identifier for your Cost Category Reference.

Type: String


Pattern: arn:aws[-a-z0-9]*:[a-z0-9]+:[-a-z0-9]*:[0-9]{12}:[-a-zA-Z0-9/:_]+

Required: No

EffectiveEnd

The Cost Category's effective end date.

Type: String


Pattern: ^\d{4}-\d{2}-\dT\d{2}:\d{2}:\d{2}(([+-]\d{2}:\d{2})|Z)$

Required: No

EffectiveStart

The Cost Category's effective start date.

Type: String


Pattern: ^\d{4}-\d{2}-\dT\d{2}:\d{2}:\d{2}(([+-]\d{2}:\d{2})|Z)$

Required: No

Name

The unique name of the Cost Category.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: ^(?!] [p{L}\p{N}\p{Z}-_]*)(?<! )$

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
CostCategoryRule
Service: AWS Cost Explorer Service

Important
Cost Category is in public beta for AWS Billing and Cost Management and is subject to change. Your use of Cost Categories is subject to the Beta Service Participation terms of the AWS Service Terms (Section 1.10).

Rules are processed in order. If there are multiple rules that match the line item, then the first rule to match is used to determine that Cost Category value.

Contents

Rule

An Expression object used to categorize costs. This supports dimensions, Tags, and nested expressions. Currently the only dimensions supported is LINKED_ACCOUNT.

Root level OR is not supported. We recommend you create a separate rule instead.

Type: Expression (p. 204) object

Required: Yes

Value

The value a line item will be categorized as, if it matches the rule.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: ^(?! )\[\p{L}\p{N}\p{Z}_-]*(?<! )$

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
CostCategoryValues
Service: AWS Cost Explorer Service

Important
Cost Category is in public beta for AWS Billing and Cost Management and is subject to change. Your use of Cost Categories is subject to the Beta Service Participation terms of the AWS Service Terms (Section 1.10).

The values that are available for Cost Categories.

Contents

Key
The unique name of the Cost Category.
Type: String
Length Constraints: Minimum length of 1. Maximum length of 255.
Pattern: ^(?! )[\p{L}\p{N}\p{Z}-_]*(?:?! )$
Required: No

Values
The specific value of the Cost Category.
Type: Array of strings
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
Coverage
Service: AWS Cost Explorer Service

The amount of instance usage that a reservation covered.

Contents

CoverageCost

The amount of cost that the reservation covered.

Type: CoverageCost (p. 187) object

Required: No

CoverageHours

The amount of instance usage that the reservation covered, in hours.

Type: CoverageHours (p. 188) object

Required: No

CoverageNormalizedUnits

The amount of instance usage that the reservation covered, in normalized units.

Type: CoverageNormalizedUnits (p. 189) 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
CoverageByTime
Service: AWS Cost Explorer Service

Reservation coverage for a specified period, in hours.

Contents

Groups
The groups of instances that the reservation covered.
Type: Array of ReservationCoverageGroup (p. 218) objects
Required: No

TimePeriod
The period that this coverage was used over.
Type: DateInterval (p. 192) object
Required: No

Total
The total reservation coverage, in hours.
Type: Coverage (p. 185) 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
CoverageCost
Service: AWS Cost Explorer Service

How much it cost to run an instance.

Contents

OnDemandCost

How much an On-Demand instance cost.

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
**CoverageHours**

Service: AWS Cost Explorer Service

How long a running instance either used a reservation or was On-Demand.

**Contents**

**CoverageHoursPercentage**

The percentage of instance hours that a reservation covered.

- Type: String
- Required: No

**OnDemandHours**

The number of instance running hours that On-Demand Instances covered.

- Type: String
- Required: No

**ReservedHours**

The number of instance running hours that reservations covered.

- Type: String
- Required: No

**TotalRunningHours**

The total instance usage, in hours.

- 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
CoverageNormalizedUnits
Service: AWS Cost Explorer Service

The amount of instance usage, in normalized units. Normalized units enable you to see your EC2 usage for multiple sizes of instances in a uniform way. For example, suppose you run an xlarge instance and a 2xlarge instance. If you run both instances for the same amount of time, the 2xlarge instance uses twice as much of your reservation as the xlarge instance, even though both instances show only one instance-hour. Using normalized units instead of instance-hours, the xlarge instance used 8 normalized units, and the 2xlarge instance used 16 normalized units.

For more information, see Modifying Reserved Instances in the Amazon Elastic Compute Cloud User Guide for Linux Instances.

Contents

CoverageNormalizedUnitsPercentage
- The percentage of your used instance normalized units that a reservation covers.
  - Type: String
  - Required: No

OnDemandNormalizedUnits
- The number of normalized units that are covered by On-Demand Instances instead of a reservation.
  - Type: String
  - Required: No

ReservedNormalizedUnits
- The number of normalized units that a reservation covers.
  - Type: String
  - Required: No

TotalRunningNormalizedUnits
- The total number of normalized units that you used.
  - 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
CurrentInstance
Service: AWS Cost Explorer Service
Context about the current instance.

Contents

CurrencyCode
The currency code that Amazon Web Services used to calculate the costs for this instance.
Type: String
Required: No

MonthlyCost
Current On Demand cost of operating this instance on a monthly basis.
Type: String
Required: No

OnDemandHoursInLookbackPeriod
Number of hours during the lookback period billed at On Demand rates.
Type: String
Required: No

ReservationCoveredHoursInLookbackPeriod
Number of hours during the lookback period covered by reservations.
Type: String
Required: No

ResourceDetails
Details about the resource and utilization.
Type: ResourceDetails (p. 227) object
Required: No

ResourceId
Resource ID of the current instance.
Type: String
Required: No

ResourceUtilization
Utilization information of the current instance during the lookback period.
Type: ResourceUtilization (p. 228) object
Required: No

SavingsPlansCoveredHoursInLookbackPeriod
Number of hours during the lookback period covered by Savings Plans.
AWS Cost Explorer Service Cost Management APIs
CurrentInstance

Type: String
Required: No

Tags
Cost allocation resource tags applied to the instance.
Type: Array of TagValues (p. 252) objects
Required: No

TotalRunningHoursInLookbackPeriod
The total number of hours the instance ran during the lookback period.
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
DateInterval
Service: AWS Cost Explorer Service

The time period that you want the usage and costs for.

Contents

End

The end of the time period that you want the usage and costs for. The end date is exclusive. For example, if end is 2017-05-01, AWS retrieves cost and usage data from the start date up to, but not including, 2017-05-01.

Type: String
Pattern: (\d{4}-\d{2}-\d{2})(T\d{2}:\d{2}:\d{2}\Z)?
Required: Yes

Start

The beginning of the time period that you want the usage and costs for. The start date is inclusive. For example, if start is 2017-01-01, AWS retrieves cost and usage data starting at 2017-01-01 up to the end date.

Type: String
Pattern: (\d{4}-\d{2}-\d{2})(T\d{2}:\d{2}:\d{2}\Z)?
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
DimensionValues
Service: AWS Cost Explorer Service

The metadata that you can use to filter and group your results. You can use GetDimensionValues to find specific values.

Contents

Key

The names of the metadata types that you can use to filter and group your results. For example, AZ returns a list of Availability Zones.

Type: String

Valid Values: AZ | INSTANCE_TYPE | LINKED_ACCOUNT | OPERATION | PURCHASE_TYPE | REGION | SERVICE | USAGE_TYPE | USAGE_TYPE_GROUP | RECORD_TYPE | OPERATING_SYSTEM | TENANCY | SCOPE | PLATFORM | SUBSCRIPTION_ID | LEGAL_ENTITY_NAME | DEPLOYMENT_OPTION | DATABASE_ENGINE | CACHE_ENGINE | INSTANCE_TYPE_FAMILY | BILLING_ENTITY | RESERVATION_ID | RESOURCE_ID | RIGHTSIZING_TYPE | SAVINGS_PLANS_TYPE | SAVINGS_PLAN_ARN | PAYMENT_OPTION

Required: No

Values

The metadata values that you can use to filter and group your results. You can use GetDimensionValues to find specific values.

Valid values for the SERVICE dimension are Amazon Elastic Compute Cloud — Compute, Amazon Elasticsearch Service, Amazon ElastiCache, Amazon Redshift, and Amazon Relational Database Service.

Type: Array of strings

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
**DimensionValuesWithAttributes**

Service: AWS Cost Explorer Service

The metadata of a specific type that you can use to filter and group your results. You can use `GetDimensionValues` to find specific values.

**Contents**

**Attributes**

The attribute that applies to a specific `Dimension`.

Type: String to string map

Required: No

**Value**

The value of a dimension with a specific attribute.

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
EC2InstanceDetails
Service: AWS Cost Explorer Service
Details about the Amazon EC2 instances that AWS recommends that you purchase.

Contents

AvailabilityZone
The Availability Zone of the recommended reservation.
Type: String
Required: No

CurrentGeneration
Whether the recommendation is for a current-generation instance.
Type: Boolean
Required: No

Family
The instance family of the recommended reservation.
Type: String
Required: No

InstanceType
The type of instance that AWS recommends.
Type: String
Required: No

Platform
The platform of the recommended reservation. The platform is the specific combination of operating system, license model, and software on an instance.
Type: String
Required: No

Region
The AWS Region of the recommended reservation.
Type: String
Required: No

SizeFlexEligible
Whether the recommended reservation is size flexible.
Type: Boolean
Required: No
Tenancy

Whether the recommended reservation is dedicated or shared.

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
EC2ResourceDetails
Service: AWS Cost Explorer Service
Details on the Amazon EC2 Resource.

Contents

HourlyOnDemandRate
Hourly public On Demand rate for the instance type.
Type: String
Required: No

InstanceType
The type of Amazon Web Services instance.
Type: String
Required: No

Memory
Memory capacity of Amazon Web Services instance.
Type: String
Required: No

NetworkPerformance
Network performance capacity of the Amazon Web Services instance.
Type: String
Required: No

Platform
The platform of the Amazon Web Services instance. The platform is the specific combination of operating system, license model, and software on an instance.
Type: String
Required: No

Region
The Amazon Web Services Region of the instance.
Type: String
Required: No

Sku
The SKU of the product.
Type: String
Required: No
Storage

The disk storage of the Amazon Web Services instance (Not EBS storage).

Type: String
Required: No

Vcpu

Number of VCPU cores in the Amazon Web Services instance 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
EC2ResourceUtilization
Service: AWS Cost Explorer Service
Utilization metrics of the instance.

Contents

MaxCpuUtilizationPercentage
Maximum observed or expected CPU utilization of the instance.
Type: String
Required: No

MaxMemoryUtilizationPercentage
Maximum observed or expected memory utilization of the instance.
Type: String
Required: No

MaxStorageUtilizationPercentage
Maximum observed or expected storage utilization of the instance (does not measure EBS storage).
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
EC2Specification
Service: AWS Cost Explorer Service

The Amazon EC2 hardware specifications that you want AWS to provide recommendations for.

Contents

OfferingClass

Whether you want a recommendation for standard or convertible reservations.

Type: String

Valid Values: STANDARD | CONVERTIBLE

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
ElastiCacheInstanceDetails

Service: AWS Cost Explorer Service

Details about the Amazon ElastiCache instances that AWS recommends that you purchase.

Contents

CurrentGeneration

Whether the recommendation is for a current generation instance.

Type: Boolean
Required: No

Family

The instance family of the recommended reservation.

Type: String
Required: No

NodeType

The type of node that AWS recommends.

Type: String
Required: No

ProductDescription

The description of the recommended reservation.

Type: String
Required: No

Region

The AWS Region of the recommended reservation.

Type: String
Required: No

SizeFlexEligible

Whether the recommended reservation is size flexible.

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
ESInstanceDetails
Service: AWS Cost Explorer Service

Details about the Amazon ES instances that AWS recommends that you purchase.

Contents

CurrentGeneration

Whether the recommendation is for a current-generation instance.

Type: Boolean
Required: No

InstanceClass

The class of instance that AWS recommends.

Type: String
Required: No

InstanceSize

The size of instance that AWS recommends.

Type: String
Required: No

Region

The AWS Region of the recommended reservation.

Type: String
Required: No

SizeFlexEligible

Whether the recommended reservation is size flexible.

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
Expression

Service: AWS Cost Explorer Service

Use Expression to filter by cost or by usage. There are two patterns:

- Simple dimension values - You can set the dimension name and values for the filters that you plan to use. For example, you can filter for `REGION==us-east-1 OR REGION==us-west-1`. The Expression for that looks like this:

  ```json
  { "Dimensions": { "Key": "REGION", "Values": [ "us-east-1", "us-west-1" ] } }
  ```

  The list of dimension values are OR'd together to retrieve cost or usage data. You can create Expression and DimensionValues objects using either `with*` methods or `set*` methods in multiple lines.

- Compound dimension values with logical operations - You can use multiple Expression types and the logical operators AND/OR/NOT to create a list of one or more Expression objects. This allows you to filter on more advanced options. For example, you can filter on `((REGION == us-east-1 OR REGION == us-west-1) OR (TAG.Type == Type1)) AND (USAGE_TYPE != DataTransfer)`. The Expression for that looks like this:

  ```json
  { "And": [ { "Or": [ { "Dimensions": { "Key": "REGION", "Values": [ "us-east-1", "us-west-1" ] } }, { "Tags": { "Key": "TagName", "Values": [ "Value1" ] } } ], { "Not": { "Dimensions": { "Key": "USAGE_TYPE", "Values": [ "DataTransfer" ] } } } ] }
  ```

  Note
  
  Because each Expression can have only one operator, the service returns an error if more than one is specified. The following example shows an Expression object that creates an error.

  ```json
  { "And": [ ... ], "DimensionValues": { "Dimension": "USAGE_TYPE", "Values": [ "DataTransfer" ] } }
  ```

  Note
  
  For `GetRightsizingRecommendation` action, a combination of OR and NOT is not supported. OR is not supported between different dimensions, or dimensions and tags. NOT operators aren't supported. Dimensions are also limited to `LINKED_ACCOUNT`, `REGION`, or `RIGHTSIZING_TYPE`.

Contents

And

Return results that match both Dimension objects.

Type: Array of Expression (p. 204) objects

Required: No

CostCategories

Cost Category is in public beta for AWS Billing and Cost Management and is subject to change. Your use of Cost Categories is subject to the Beta Service Participation terms of the AWS Service Terms (Section 1.10).

The specific CostCategory used for Expression.

Type: CostCategoryValues (p. 184) object
Required: No

**Dimensions**

The specific Dimension to use for Expression.

Type: DimensionValues (p. 193) object

Required: No

**Not**

Return results that don't match a Dimension object.

Type: Expression (p. 204) object

Required: No

**Or**

Return results that match either Dimension object.

Type: Array of Expression (p. 204) objects

Required: No

**Tags**

The specific Tag to use for Expression.

Type: TagValues (p. 252) 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
ForecastResult
Service: AWS Cost Explorer Service
The forecast created for your query.

Contents

MeanValue
The mean value of the forecast.
Type: String
Required: No

PredictionIntervalLowerBound
The lower limit for the prediction interval.
Type: String
Required: No

PredictionIntervalUpperBound
The upper limit for the prediction interval.
Type: String
Required: No

TimePeriod
The period of time that the forecast covers.
Type: DateInterval (p. 192) 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
Group
Service: AWS Cost Explorer Service

One level of grouped data in the results.

Contents

Keys

The keys that are included in this group.

Type: Array of strings

Required: No

Metrics

The metrics that are included in this group.

Type: String to MetricValue (p. 210) object map

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
GroupDefinition
Service: AWS Cost Explorer Service

Represents a group when you specify a group by criteria or in the response to a query with a specific grouping.

Contents

Key
The string that represents a key for a specified group.
Type: String
Required: No

Type
The string that represents the type of group.
Type: String
Valid Values: DIMENSION | TAG | COST_CATEGORY
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
InstanceDetails
Service: AWS Cost Explorer Service
Details about the instances that AWS recommends that you purchase.

Contents

EC2InstanceDetails
The Amazon EC2 instances that AWS recommends that you purchase.
Type: EC2InstanceDetails (p. 195) object
Required: No

ElastiCacheInstanceDetails
The ElastiCache instances that AWS recommends that you purchase.
Type: ElastiCacheInstanceDetails (p. 201) object
Required: No

ESInstanceDetails
The Amazon ES instances that AWS recommends that you purchase.
Type: ESInstanceDetails (p. 203) object
Required: No

RDSInstanceDetails
The Amazon RDS instances that AWS recommends that you purchase.
Type: RDSInstanceDetails (p. 212) object
Required: No

RedshiftInstanceDetails
The Amazon Redshift instances that AWS recommends that you purchase.
Type: RedshiftInstanceDetails (p. 214) 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
MetricValue
Service: AWS Cost Explorer Service
The aggregated value for a metric.

Contents

Amount
The actual number that represents the metric.

  Type: String
  Required: No

Unit
The unit that the metric is given in.

  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
ModifyRecommendationDetail
Service: AWS Cost Explorer Service
Details on the modification recommendation.

Contents

TargetInstances
Identifies whether this instance type is the Amazon Web Services default recommendation.
Type: Array of TargetInstance (p. 253) 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
RDSInstanceDetails
Service: AWS Cost Explorer Service

Details about the Amazon RDS instances that AWS recommends that you purchase.

Contents

CurrentGeneration
Whether the recommendation is for a current-generation instance.
Type: Boolean
Required: No

DatabaseEdition
The database edition that the recommended reservation supports.
Type: String
Required: No

DatabaseEngine
The database engine that the recommended reservation supports.
Type: String
Required: No

DeploymentOption
Whether the recommendation is for a reservation in a single Availability Zone or a reservation with a backup in a second Availability Zone.
Type: String
Required: No

Family
The instance family of the recommended reservation.
Type: String
Required: No

InstanceType
The type of instance that AWS recommends.
Type: String
Required: No

LicenseModel
The license model that the recommended reservation supports.
Type: String
Required: No
Region

The AWS Region of the recommended reservation.

Type: String
Required: No

SizeFlexEligible

Whether the recommended reservation is size flexible.

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
RedshiftInstanceDetails
Service: AWS Cost Explorer Service

Details about the Amazon Redshift instances that AWS recommends that you purchase.

Contents

CurrentGeneration
- Whether the recommendation is for a current-generation instance.
  - Type: Boolean
  - Required: No

Family
- The instance family of the recommended reservation.
  - Type: String
  - Required: No

NodeType
- The type of node that AWS recommends.
  - Type: String
  - Required: No

Region
- The AWS Region of the recommended reservation.
  - Type: String
  - Required: No

SizeFlexEligible
- Whether the recommended reservation is size flexible.
  - 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
ReservationAggregates
Service: AWS Cost Explorer Service

The aggregated numbers for your reservation usage.

Contents

**AmortizedRecurringFee**

The monthly cost of your reservation, amortized over the reservation period.

Type: String

Required: No

**AmortizedUpfrontFee**

The upfront cost of your reservation, amortized over the reservation period.

Type: String

Required: No

**NetRISavings**

How much you saved due to purchasing and utilizing reservation. AWS calculates this by subtracting TotalAmortizedFee from OnDemandCostOfRIHoursUsed.

Type: String

Required: No

**OnDemandCostOfRIHoursUsed**

How much your reservation would cost if charged On-Demand rates.

Type: String

Required: No

**PurchasedHours**

How many reservation hours that you purchased.

Type: String

Required: No

**PurchasedUnits**

How many Amazon EC2 reservation hours that you purchased, converted to normalized units. Normalized units are available only for Amazon EC2 usage after November 11, 2017.

Type: String

Required: No

**TotalActualHours**

The total number of reservation hours that you used.

Type: String

Required: No
**TotalActualUnits**

The total number of Amazon EC2 reservation hours that you used, converted to normalized units. Normalized units are available only for Amazon EC2 usage after November 11, 2017.

Type: String
Required: No

**TotalAmortizedFee**

The total cost of your reservation, amortized over the reservation period.

Type: String
Required: No

**TotalPotentialRI Savings**

How much you could save if you use your entire reservation.

Type: String
Required: No

**UnusedHours**

The number of reservation hours that you didn't use.

Type: String
Required: No

**UnusedUnits**

The number of Amazon EC2 reservation hours that you didn't use, converted to normalized units. Normalized units are available only for Amazon EC2 usage after November 11, 2017.

Type: String
Required: No

**UtilizationPercentage**

The percentage of reservation time that you used.

Type: String
Required: No

**UtilizationPercentageInUnits**

The percentage of Amazon EC2 reservation time that you used, converted to normalized units. Normalized units are available only for Amazon EC2 usage after November 11, 2017.

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
ReservationCoverageGroup
Service: AWS Cost Explorer Service

A group of reservations that share a set of attributes.

Contents

Attributes

The attributes for this group of reservations.

Type: String to string map

Required: No

Coverage

How much instance usage this group of reservations covered.

Type: Coverage (p. 185) 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
ReservationPurchaseRecommendation

Service: AWS Cost Explorer Service

A specific reservation that AWS recommends for purchase.

Contents

AccountScope

The account scope that AWS recommends that you purchase this instance for. For example, you can purchase this reservation for an entire organization in AWS Organizations.

Type: String

Valid Values: PAYER | LINKED

Required: No

LookbackPeriodInDays

How many days of previous usage that AWS considers when making this recommendation.

Type: String

Valid Values: SEVEN_DAYS | THIRTY_DAYS | SIXTY_DAYS

Required: No

PaymentOption

The payment option for the reservation. For example, AllUpfront or NoUpfront.

Type: String

Valid Values: NO_UPFRONT | PARTIAL_UPFRONT | ALL_UPFRONT | LIGHT_UTILIZATION | MEDIUM_UTILIZATION | HEAVY_UTILIZATION

Required: No

RecommendationDetails

Details about the recommended purchases.

Type: Array of ReservationPurchaseRecommendationDetail (p. 221) objects

Required: No

RecommendationSummary

A summary about the recommended purchase.

Type: ReservationPurchaseRecommendationSummary (p. 225) object

Required: No

ServiceSpecification

Hardware specifications for the service that you want recommendations for.

Type: ServiceSpecification (p. 251) object

Required: No
**TermInYears**

The term of the reservation that you want recommendations for, in years.

Type: String

Valid Values: **ONE_YEAR | THREE_YEARS**

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
ReservationPurchaseRecommendationDetail

Service: AWS Cost Explorer Service

Details about your recommended reservation purchase.

Contents

AccountId
The account that this RI recommendation is for.
Type: String
Required: No

AverageNormalizedUnitsUsedPerHour
The average number of normalized units that you used in an hour during the historical period. AWS uses this to calculate your recommended reservation purchases.
Type: String
Required: No

AverageNumberOfInstancesUsedPerHour
The average number of instances that you used in an hour during the historical period. AWS uses this to calculate your recommended reservation purchases.
Type: String
Required: No

AverageUtilization
The average utilization of your instances. AWS uses this to calculate your recommended reservation purchases.
Type: String
Required: No

CurrencyCode
The currency code that AWS used to calculate the costs for this instance.
Type: String
Required: No

EstimatedBreakEvenInMonths
How long AWS estimates that it takes for this instance to start saving you money, in months.
Type: String
Required: No

EstimatedMonthlyOnDemandCost
How much AWS estimates that you spend on On-Demand Instances in a month.
Type: String
Required: No
**EstimatedMonthlySavingsAmount**

How much AWS estimates that this specific recommendation could save you in a month.

Type: String

Required: No

**EstimatedMonthlySavingsPercentage**

How much AWS estimates that this specific recommendation could save you in a month, as a percentage of your overall costs.

Type: String

Required: No

**EstimatedReservationCostForLookbackPeriod**

How much AWS estimates that you would have spent for all usage during the specified historical period if you had a reservation.

Type: String

Required: No

**InstanceDetails**

Details about the instances that AWS recommends that you purchase.

Type: InstanceDetails (p. 209) object

Required: No

**MaximumNormalizedUnitsUsedPerHour**

The maximum number of normalized units that you used in an hour during the historical period. AWS uses this to calculate your recommended reservation purchases.

Type: String

Required: No

**MaximumNumberOfInstancesUsedPerHour**

The maximum number of instances that you used in an hour during the historical period. AWS uses this to calculate your recommended reservation purchases.

Type: String

Required: No

**MinimumNormalizedUnitsUsedPerHour**

The minimum number of normalized units that you used in an hour during the historical period. AWS uses this to calculate your recommended reservation purchases.

Type: String

Required: No

**MinimumNumberOfInstancesUsedPerHour**

The minimum number of instances that you used in an hour during the historical period. AWS uses this to calculate your recommended reservation purchases.

Type: String
Required: No

**RecommendedNormalizedUnitsToPurchase**

The number of normalized units that AWS recommends that you purchase.

Type: String

Required: No

**RecommendedNumberOfInstancesToPurchase**

The number of instances that AWS recommends that you purchase.

Type: String

Required: No

**RecurringStandardMonthlyCost**

How much purchasing this instance costs you on a monthly basis.

Type: String

Required: No

**UpfrontCost**

How much purchasing this instance costs you upfront.

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
ReservationPurchaseRecommendationMetadata
Service: AWS Cost Explorer Service

Information about this specific recommendation, such as the time stamp for when AWS made a specific recommendation.

Contents

**GenerationTimestamp**

The time stamp for when AWS made this recommendation.

Type: String

Required: No

**RecommendationId**

The ID for this specific recommendation.

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
ReservationPurchaseRecommendationSummary
Service: AWS Cost Explorer Service

A summary about this recommendation, such as the currency code, the amount that AWS estimates that you could save, and the total amount of reservation to purchase.

Contents

CurrencyCode

The currency code used for this recommendation.

Type: String
Required: No

TotalEstimatedMonthlySavingsAmount

The total amount that AWS estimates that this recommendation could save you in a month.

Type: String
Required: No

TotalEstimatedMonthlySavingsPercentage

The total amount that AWS estimates that this recommendation could save you in a month, as a percentage of your costs.

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
ReservationUtilizationGroup
Service: AWS Cost Explorer Service

A group of reservations that share a set of attributes.

Contents

Attributes
The attributes for this group of reservations.
Type: String to string map
Required: No

Key
The key for a specific reservation attribute.
Type: String
Required: No

Utilization
How much you used this group of reservations.
Type: ReservationAggregates (p. 215) object
Required: No

Value
The value of a specific reservation attribute.
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
ResourceDetails
Service: AWS Cost Explorer Service
Details on the resource.

Contents

EC2ResourceDetails
- Details on the Amazon EC2 resource.
  Type: EC2ResourceDetails (p. 197) 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
ResourceUtilization
Service: AWS Cost Explorer Service
Resource utilization of current resource.

Contents

EC2ResourceUtilization
Utilization of current Amazon EC2 Instance
Type: EC2ResourceUtilization (p. 199) 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
**ResultByTime**

Service: AWS Cost Explorer Service

The result that is associated with a time period.

**Contents**

**Estimated**

Whether the result is estimated.

Type: Boolean

Required: No

**Groups**

The groups that this time period includes.

Type: Array of Group (p. 207) objects

Required: No

**TimePeriod**

The time period that the result covers.

Type: DateInterval (p. 192) object

Required: No

**Total**

The total amount of cost or usage accrued during the time period.

Type: String to MetricValue (p. 210) object map

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
RightsizingRecommendation
Service: AWS Cost Explorer Service
Recommendations to rightsize resources.

Contents

AccountId
The account that this recommendation is for.
Type: String
Required: No

CurrentInstance
Context regarding the current instance.
Type: CurrentInstance (p. 190) object
Required: No

ModifyRecommendationDetail
Details for modification recommendations.
Type: ModifyRecommendationDetail (p. 211) object
Required: No

RightsizingType
Recommendation to either terminate or modify the resource.
Type: String
Valid Values: TERMINATE | MODIFY
Required: No

TerminateRecommendationDetail
Details for termination recommendations.
Type: TerminateRecommendationDetail (p. 255) 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
RightsizingRecommendationMetadata

Service: AWS Cost Explorer Service

Metadata for this recommendation set.

Contents

**GenerationTimestamp**

The time stamp for when Amazon Web Services made this recommendation.

Type: String
Required: No

**LookbackPeriodInDays**

How many days of previous usage that Amazon Web Services considers when making this recommendation.

Type: String
Valid Values: **SEVEN_DAYS | THIRTY_DAYS | SIXTY_DAYS**
Required: No

**RecommendationId**

The ID for this specific recommendation.

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
RightsizingRecommendationSummary
Service: AWS Cost Explorer Service
Summary of rightsizing recommendations

Contents

**EstimatedTotalMonthlySavingsAmount**
Estimated total savings resulting from modifications, on a monthly basis.
- Type: String
- Required: No

**SavingsCurrencyCode**
The currency code that Amazon Web Services used to calculate the savings.
- Type: String
- Required: No

**SavingsPercentage**
Savings percentage based on the recommended modifications, relative to the total On Demand costs associated with these instances.
- Type: String
- Required: No

**TotalRecommendationCount**
Total number of instance recommendations.
- 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
SavingsPlansAmortizedCommitment
Service: AWS Cost Explorer Service

The amortized amount of Savings Plans purchased in a specific account during a specific time interval.

Contents

AmortizedRecurringCommitment
The amortized amount of your Savings Plans commitment that was purchased with either a Partial or a NoUpfront.

Type: String
Required: No

AmortizedUpfrontCommitment
The amortized amount of your Savings Plans commitment that was purchased with an Upfront or PartialUpfront Savings Plans.

Type: String
Required: No

TotalAmortizedCommitment
The total amortized amount of your Savings Plans commitment, regardless of your Savings Plans purchase method.

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
SavingsPlansCoverage
Service: AWS Cost Explorer Service

The amount of Savings Plans eligible usage that is covered by Savings Plans. All calculations consider the On-Demand equivalent of your Savings Plans usage.

Contents

Attributes

The attribute that applies to a specific Dimension.

Type: String to string map

Required: No

Coverage

The amount of Savings Plans eligible usage that the Savings Plans covered.

Type: SavingsPlansCoverageData (p. 235) object

Required: No

TimePeriod

The time period that you want the usage and costs for.

Type: DateInterval (p. 192) 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
SavingsPlansCoverageData

Service: AWS Cost Explorer Service

Specific coverage percentage, On-Demand costs, and spend covered by Savings Plans, and total Savings Plans costs for an account.

Contents

CoveragePercentage

The percentage of your existing Savings Plans covered usage, divided by all of your eligible Savings Plans usage in an account (or set of accounts).

Type: String

Required: No

OnDemandCost

The cost of your Amazon Web Services usage at the public On-Demand rate.

Type: String

Required: No

SpendCoveredBySavingsPlans

The amount of your Amazon Web Services usage that is covered by a Savings Plans.

Type: String

Required: No

TotalCost

The total cost of your Amazon Web Services usage, regardless of your purchase option.

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
SavingsPlansDetails
Service: AWS Cost Explorer Service
Attribute details on a specific Savings Plan.

Contents

InstanceFamily
A group of instance types that Savings Plans applies to.
Type: String
Required: No

OfferingId
The unique ID used to distinguish Savings Plans from one another.
Type: String
Required: No

Region
A collection of AWS resources in a geographic area. Each AWS Region is isolated and independent of the other Regions.
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
SavingsPlansPurchaseRecommendation

Service: AWS Cost Explorer Service

Contains your request parameters, Savings Plan Recommendations Summary, and Details.

Contents

**AccountScope**

The account scope that you want your recommendations for. Amazon Web Services calculates recommendations including the payer account and linked accounts if the value is set to `PAYER`. If the value is `LINKED`, recommendations are calculated for individual linked accounts only.

Type: String

Valid Values: PAYER | LINKED

Required: No

**LookbackPeriodInDays**

The lookback period in days, used to generate the recommendation.

Type: String

Valid Values: SEVEN_DAYS | THIRTY_DAYS | SIXTY_DAYS

Required: No

**PaymentOption**

The payment option used to generate the recommendation.

Type: String

Valid Values: NO_UPFRONT | PARTIAL_UPFRONT | ALL_UPFRONT | LIGHT_UTILIZATION | MEDIUM_UTILIZATION | HEAVY_UTILIZATION

Required: No

**SavingsPlansPurchaseRecommendationDetails**

Details for the Savings Plans we recommend you to purchase to cover existing, Savings Plans eligible workloads.

Type: Array of SavingsPlansPurchaseRecommendationDetail (p. 239) objects

Required: No

**SavingsPlansPurchaseRecommendationSummary**

Summary metrics for your Savings Plans Recommendations.

Type: SavingsPlansPurchaseRecommendationSummary (p. 243) object

Required: No

**SavingsPlansType**

The requested Savings Plans recommendation type.

Type: String

Valid Values: COMPUTE_SP | EC2_INSTANCE_SP
Required: No

**TermInYears**

The Savings Plans recommendation term in years, used to generate the recommendation.

Type: String

Valid Values: ONE_YEAR | THREE_YEARS

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
SavingsPlansPurchaseRecommendationDetail
Service: AWS Cost Explorer Service
Details for your recommended Savings Plans.

Contents

AccountId
The Account ID the recommendation is generated for.
Type: String
Required: No

CurrencyCode
The currency code Amazon Web Services used to generate the recommendations and present potential savings.
Type: String
Required: No

CurrentAverageHourlyOnDemandSpend
The average value of hourly On-Demand spend over the lookback period of the applicable usage type.
Type: String
Required: No

CurrentMaximumHourlyOnDemandSpend
The highest value of hourly On-Demand spend over the lookback period of the applicable usage type.
Type: String
Required: No

CurrentMinimumHourlyOnDemandSpend
The lowest value of hourly On-Demand spend over the lookback period of the applicable usage type.
Type: String
Required: No

EstimatedAverageUtilization
The estimated utilization of the recommended Savings Plans.
Type: String
Required: No

EstimatedMonthlySavingsAmount
The estimated monthly savings amount, based on the recommended Savings Plans.
Type: String
Required: No
EstimatedOnDemandCost

The remaining On-Demand cost estimated to not be covered by the recommended Savings Plans, over the length of the lookback period.

Type: String
Required: No

EstimatedOnDemandCostWithCurrentCommitment

The estimated On-Demand costs you would expect with no additional commitment, based on your usage of the selected time period and the Savings Plans you own.

Type: String
Required: No

EstimatedROI

The estimated return on investment based on the recommended Savings Plans purchased. This is calculated as \( \frac{\text{estimatedSavingsAmount}}{\text{estimatedSPCost}} \times 100. \)

Type: String
Required: No

EstimatedSavingsAmount

The estimated savings amount based on the recommended Savings Plans over the length of the lookback period.

Type: String
Required: No

EstimatedSavingsPercentage

The estimated savings percentage relative to the total cost of applicable On-Demand usage over the lookback period.

Type: String
Required: No

EstimatedSPCost

The cost of the recommended Savings Plans over the length of the lookback period.

Type: String
Required: No

HourlyCommitmentToPurchase

The recommended hourly commitment level for the Savings Plans type, and configuration based on the usage during the lookback period.

Type: String
Required: No

SavingsPlansDetails

Details for your recommended Savings Plans.

Type: SavingsPlansDetails (p. 236) object
Required: No

**UpfrontCost**

The upfront cost of the recommended Savings Plans, based on the selected payment option.

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
SavingsPlansPurchaseRecommendationMetadata
Service: AWS Cost Explorer Service
Metadata about your Savings Plans Purchase Recommendations.

Contents

GenerationTimestamp
The timestamp showing when the recommendations were generated.
Type: String
Required: No

RecommendationId
The unique identifier for the recommendation set.
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
SavingsPlansPurchaseRecommendationSummary

Service: AWS Cost Explorer Service

Summary metrics for your Savings Plans Purchase Recommendations.

Contents

CurrencyCode
The currency code Amazon Web Services used to generate the recommendations and present potential savings.

Type: String
Required: No

CurrentOnDemandSpend
The current total on demand spend of the applicable usage types over the lookback period.

Type: String
Required: No

DailyCommitmentToPurchase
The recommended Savings Plans cost on a daily (24 hourly) basis.

Type: String
Required: No

EstimatedMonthlySavingsAmount
The estimated monthly savings amount, based on the recommended Savings Plans purchase.

Type: String
Required: No

EstimatedOnDemandCostWithCurrentCommitment
The estimated On-Demand costs you would expect with no additional commitment, based on your usage of the selected time period and the Savings Plans you own.

Type: String
Required: No

EstimatedROI
The estimated return on investment based on the recommended Savings Plans and estimated savings.

Type: String
Required: No

EstimatedSavingsAmount
The estimated total savings over the lookback period, based on the purchase of the recommended Savings Plans.

Type: String
**EstimatedSavingsPercentage**

The estimated savings relative to the total cost of On-Demand usage, over the lookback period. This is calculated as \( \frac{\text{estimatedSavingsAmount}}{\text{CurrentOnDemandSpend}} \times 100 \).

Type: String

Required: No

**EstimatedTotalCost**

The estimated total cost of the usage after purchasing the recommended Savings Plans. This is a sum of the cost of Savings Plans during this term, and the remaining On-Demand usage.

Type: String

Required: No

**HourlyCommitmentToPurchase**

The recommended hourly commitment based on the recommendation parameters.

Type: String

Required: No

**TotalRecommendationCount**

The aggregate number of Savings Plans recommendations that exist for your account.

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
SavingsPlansSavings

Service: AWS Cost Explorer Service

The amount of savings you're accumulating, against the public On-Demand rate of the usage accrued in an account.

Contents

NetSavings

The savings amount that you are accumulating for the usage that is covered by a Savings Plans, when compared to the On-Demand equivalent of the same usage.

Type: String
Required: No

OnDemandCostEquivalent

How much the amount that the usage would have cost if it was accrued at the On-Demand rate.

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
SavingsPlansUtilization
Service: AWS Cost Explorer Service
The measurement of how well you are using your existing Savings Plans.

Contents

TotalCommitment
The total amount of Savings Plans commitment that's been purchased in an account (or set of accounts).
Type: String
Required: No

UnusedCommitment
The amount of your Savings Plans commitment that was not consumed from Savings Plans eligible usage in a specific period.
Type: String
Required: No

UsedCommitment
The amount of your Savings Plans commitment that was consumed from Savings Plans eligible usage in a specific period.
Type: String
Required: No

UtilizationPercentage
The amount of UsedCommitment divided by the TotalCommitment for your Savings Plans.
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
SavingsPlansUtilizationAggregates
Service: AWS Cost Explorer Service

The aggregated utilization metrics for your Savings Plans usage.

Contents

AmortizedCommitment

The total amortized commitment for a Savings Plans. This includes the sum of the upfront and recurring Savings Plans fees.

Type: SavingsPlansAmortizedCommitment (p. 233) object

Required: No

Savings

The amount saved by using existing Savings Plans. Savings returns both net savings from Savings Plans, as well as the onDemandCostEquivalent of the Savings Plans when considering the utilization rate.

Type: SavingsPlansSavings (p. 245) object

Required: No

Utilization

A ratio of your effectiveness of using existing Savings Plans to apply to workloads that are Savings Plans eligible.

Type: SavingsPlansUtilization (p. 246) object

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
SavingsPlansUtilizationByTime
Service: AWS Cost Explorer Service

The amount of Savings Plans utilization, in hours.

Contents

AmortizedCommitment

The total amortized commitment for a Savings Plans. This includes the sum of the upfront and recurring Savings Plans fees.

Type: SavingsPlansAmortizedCommitment (p. 233) object

Required: No

Savings

The amount saved by using existing Savings Plans. Savings returns both net savings from Savings Plans as well as the onDemandCostEquivalent of the Savings Plans when considering the utilization rate.

Type: SavingsPlansSavings (p. 245) object

Required: No

TimePeriod

The time period that you want the usage and costs for.

Type: DateInterval (p. 192) object

Required: Yes

Utilization

A ratio of your effectiveness of using existing Savings Plans to apply to workloads that are Savings Plans eligible.

Type: SavingsPlansUtilization (p. 246) object

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
SavingsPlansUtilizationDetail

Service: AWS Cost Explorer Service

A single daily or monthly Savings Plans utilization rate, and details for your account. Master accounts in an organization have access to member accounts. You can use GetDimensionValues to determine the possible dimension values.

Contents

AmortizedCommitment

The total amortized commitment for a Savings Plans. Includes the sum of the upfront and recurring Savings Plans fees.

Type: SavingsPlansAmortizedCommitment (p. 233) object

Required: No

Attributes

The attribute that applies to a specific Dimension.

Type: String to string map

Required: No

Savings

The amount saved by using existing Savings Plans. Savings returns both net savings from savings plans as well as the onDemandCostEquivalent of the Savings Plans when considering the utilization rate.

Type: SavingsPlansSavings (p. 245) object

Required: No

SavingsPlanArn

The unique Amazon Resource Name (ARN) for a particular Savings Plan.

Type: String

Required: No

Utilization

A ratio of your effectiveness of using existing Savings Plans to apply to workloads that are Savings Plans eligible.

Type: SavingsPlansUtilization (p. 246) 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
ServiceSpecification
Service: AWS Cost Explorer Service

Hardware specifications for the service that you want recommendations for.

Contents

EC2Specification

The Amazon EC2 hardware specifications that you want AWS to provide recommendations for.

Type: EC2Specification (p. 200) 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
TagValues
Service: AWS Cost Explorer Service

The values that are available for a tag.

Contents

Key

The key for the tag.
Type: String
Required: No

Values

The specific value of the tag.
Type: Array of strings
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
TargetInstance
Service: AWS Cost Explorer Service
Details on recommended instance.

Contents

CurrencyCode
The currency code that Amazon Web Services used to calculate the costs for this instance.
Type: String
Required: No

DefaultTargetInstance
Indicates whether or not this recommendation is the defaulted Amazon Web Services recommendation.
Type: Boolean
Required: No

EstimatedMonthlyCost
Expected cost to operate this instance type on a monthly basis.
Type: String
Required: No

EstimatedMonthlySavings
Estimated savings resulting from modification, on a monthly basis.
Type: String
Required: No

ExpectedResourceUtilization
Expected utilization metrics for target instance type.
Type: ResourceUtilization (p. 228) object
Required: No

ResourceDetails
Details on the target instance type.
Type: ResourceDetails (p. 227) 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
TerminateRecommendationDetail
Service: AWS Cost Explorer Service
Details on termination recommendation.

Contents

CurrencyCode
The currency code that Amazon Web Services used to calculate the costs for this instance.
Type: String
Required: No

EstimatedMonthlySavings
Estimated savings resulting from modification, on a monthly basis.
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
UtilizationByTime
Service: AWS Cost Explorer Service

The amount of utilization, in hours.

Contents

Groups

The groups that this utilization result uses.

Type: Array of ReservationUtilizationGroup (p. 226) objects

Required: No

TimePeriod

The period of time that this utilization was used for.

Type: DateInterval (p. 192) object

Required: No

Total

The total number of reservation hours that were used.

Type: ReservationAggregates (p. 215) 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

AWS Budgets

The following data types are supported by AWS Budgets:

- Budget (p. 258)
- BudgetedAndActualAmounts (p. 261)
- BudgetPerformanceHistory (p. 262)
- CalculatedSpend (p. 264)
- CostTypes (p. 265)
- Notification (p. 268)
- NotificationWithSubscribers (p. 270)
- Spend (p. 271)
- Subscriber (p. 272)
• TimePeriod (p. 273)
**Budget**

Service: AWS Budgets

Represents the output of the `CreateBudget` operation. The content consists of the detailed metadata and data file information, and the current status of the budget object.

This is the ARN pattern for a budget:

```
arn:aws:budgets::AccountId:budget/budgetName
```

**Contents**

**BudgetLimit**

The total amount of cost, usage, RI utilization, RI coverage, Savings Plans utilization, or Savings Plans coverage that you want to track with your budget.

*BudgetLimit* is required for cost or usage budgets, but optional for RI or Savings Plans utilization or coverage budgets. RI and Savings Plans utilization or coverage budgets default to 100, which is the only valid value for RI or Savings Plans utilization or coverage budgets. You can't use *BudgetLimit* with *PlannedBudgetLimits* for `CreateBudget` and `UpdateBudget` actions.

Type: `Spend (p. 271)` object

Required: No

**BudgetName**

The name of a budget. The name must be unique within an account. The : and \ characters aren't allowed in *BudgetName*.

Type: String

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

Pattern: `[^:\\]+`

Required: Yes

**BudgetType**

Whether this budget tracks costs, usage, RI utilization, RI coverage, Savings Plans utilization, or Savings Plans coverage.

Type: String

Valid Values: `USAGE` | `COST` | `RI_UTILIZATION` | `RI_COVERAGE` | `SAVINGS_PLANS_UTILIZATION` | `SAVINGS_PLANS_COVERAGE`

Required: Yes

**CalculatedSpend**

The actual and forecasted cost or usage that the budget tracks.

Type: `CalculatedSpend (p. 264)` object

Required: No

**CostFilters**

The cost filters, such as service or tag, that are applied to a budget.
AWS Budgets supports the following services as a filter for RI budgets:
- Amazon Elastic Compute Cloud - Compute
- Amazon Redshift
- Amazon Relational Database Service
- Amazon ElastiCache
- Amazon Elasticsearch Service

Type: String to array of strings map

Key Length Constraints: Minimum length of 0. Maximum length of 2147483647.

Key Pattern: .*

Length Constraints: Minimum length of 0. Maximum length of 2147483647.

Pattern: .*

Required: No

CostTypes

The types of costs that are included in this budget.

USAGE, RI_UTILIZATION, RI_COVERAGE, SAVINGS_PLANS_UTILIZATION, and SAVINGS_PLANS_COVERAGE budgets do not have CostTypes.

Type: CostTypes (p. 265) object

Required: No

LastUpdatedTime

The last time that you updated this budget.

Type: Timestamp

Required: No

PlannedBudgetLimits

A map containing multiple BudgetLimit, including current or future limits.

PlannedBudgetLimits is available for cost or usage budget and supports monthly and quarterly TimeUnit.

For monthly budgets, provide 12 months of PlannedBudgetLimits values. This must start from the current month and include the next 11 months. The key is the start of the month, UTC in epoch seconds.

For quarterly budgets, provide 4 quarters of PlannedBudgetLimits value entries in standard calendar quarter increments. This must start from the current quarter and include the next 3 quarters. The key is the start of the quarter, UTC in epoch seconds.

If the planned budget expires before 12 months for monthly or 4 quarters for quarterly, provide the PlannedBudgetLimits values only for the remaining periods.

If the budget begins at a date in the future, provide PlannedBudgetLimits values from the start date of the budget.

After all of the BudgetLimit values in PlannedBudgetLimits are used, the budget continues to use the last limit as the BudgetLimit. At that point, the planned budget provides the same experience as a fixed budget.
DescribeBudget and DescribeBudgets response along with PlannedBudgetLimits will also contain BudgetLimit representing the current month or quarter limit present in PlannedBudgetLimits. This only applies to budgets created with PlannedBudgetLimits. Budgets created without PlannedBudgetLimits will only contain BudgetLimit, and no PlannedBudgetLimits.

Type: String to Spend (p. 271) object map

Key Length Constraints: Minimum length of 0. Maximum length of 2147483647.

Key Pattern: .*

Required: No

**TimePeriod**

The period of time that is covered by a budget. The period has a start date and an end date. The start date must come before the end date. The end date must come before 06/15/87 00:00 UTC.

If you create your budget and don't specify a start date, AWS defaults to the start of your chosen time period (DAILY, MONTHLY, QUARTERLY, or ANNUALLY). For example, if you created your budget on January 24, 2018, chose DAILY, and didn't set a start date, AWS set your start date to 01/24/18 00:00 UTC. If you chose MONTHLY, AWS set your start date to 01/01/18 00:00 UTC. If you didn't specify an end date, AWS set your end date to 06/15/87 00:00 UTC. The defaults are the same for the AWS Billing and Cost Management console and the API.

You can change either date with the UpdateBudget operation.

After the end date, AWS deletes the budget and all associated notifications and subscribers.

Type: TimePeriod (p. 273) object

Required: No

**TimeUnit**

The length of time until a budget resets the actual and forecasted spend. DAILY is available only for RI_UTILIZATION, RI_COVERAGE, SAVINGS_PLANS_UTILIZATION, and SAVINGS_PLANS_COVERAGE budgets.

Type: String

Valid Values: DAILY | MONTHLY | QUARTERLY | ANNUALLY

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
BudgetedAndActualAmounts

Service: AWS Budgets

The amount of cost or usage that you created the budget for, compared to your actual costs or usage.

Contents

ActualAmount

Your actual costs or usage for a budget period.

Type: Spend (p. 271) object

Required: No

BudgetedAmount

The amount of cost or usage that you created the budget for.

Type: Spend (p. 271) object

Required: No

TimePeriod

The time period covered by this budget comparison.

Type: TimePeriod (p. 273) 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
BudgetPerformanceHistory

Service: AWS Budgets

A history of the state of a budget at the end of the budget's specified time period.

Contents

**BudgetedAndActualAmountsList**

A list of amounts of cost or usage that you created budgets for, compared to your actual costs or usage.

Type: Array of [BudgetedAndActualAmounts](p. 261) objects

Required: No

**BudgetName**

A string that represents the budget name. The ":" and "\" characters aren't allowed.

Type: String

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

Pattern: [^:\\]+

Required: No

**BudgetType**

The type of a budget. It must be one of the following types:

- COST
- USAGE
- RI_UTILIZATION
- RI_COVERAGE
- SAVINGS_PLANS_UTILIZATION
- SAVINGS_PLANS_COVERAGE

Type: String

Valid Values: USAGE | COST | RI_UTILIZATION | RI_COVERAGE | SAVINGS_PLANS_UTILIZATION | SAVINGS_PLANS_COVERAGE

Required: No

**CostFilters**

The history of the cost filters for a budget during the specified time period.

Type: String to array of strings map

Key Length Constraints: Minimum length of 0. Maximum length of 2147483647.

Key Pattern: .*

Length Constraints: Minimum length of 0. Maximum length of 2147483647.

Pattern: .*

Required: No

**CostTypes**

The history of the cost types for a budget during the specified time period.

Type: [CostTypes](p. 265) object
Required: No

**TimeUnit**

The time unit of the budget, such as MONTHLY or QUARTERLY.

Type: String

Valid Values: DAILY | MONTHLY | QUARTERLY | ANNUALLY

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
CalculatedSpend

Service: AWS Budgets

The spend objects that are associated with this budget. The actualSpend tracks how much you've used, cost, usage, RI units, or Savings Plans units and the forecastedSpend tracks how much you are predicted to spend based on your historical usage profile.

For example, if it is the 20th of the month and you have spent 50 dollars on Amazon EC2, your actualSpend is 50 USD, and your forecastedSpend is 75 USD.

Contents

**ActualSpend**

The amount of cost, usage, RI units, or Savings Plans units that you have used.

Type: Spend (p. 271) object

Required: Yes

**ForecastedSpend**

The amount of cost, usage, RI units, or Savings Plans units that you are forecasted to use.

Type: Spend (p. 271) 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
CostTypes
Service: AWS Budgets

The types of cost that are included in a COST budget, such as tax and subscriptions.

USAGE, RI_UTILIZATION, RI_COVERAGE, SAVINGS_PLANS_UTILIZATION, and SAVINGS_PLANS_COVERAGE budgets do not have CostTypes.

Contents

IncludeCredit
- Specifies whether a budget includes credits.
- The default value is true.
- Type: Boolean
- Required: No

IncludeDiscount
- Specifies whether a budget includes discounts.
- The default value is true.
- Type: Boolean
- Required: No

IncludeOtherSubscription
- Specifies whether a budget includes non-RI subscription costs.
- The default value is true.
- Type: Boolean
- Required: No

IncludeRecurring
- Specifies whether a budget includes recurring fees such as monthly RI fees.
- The default value is true.
- Type: Boolean
- Required: No

IncludeRefund
- Specifies whether a budget includes refunds.
- The default value is true.
- Type: Boolean
- Required: No

IncludeSubscription
- Specifies whether a budget includes subscriptions.
The default value is true.
Type: Boolean
Required: No

**IncludeSupport**
Specifies whether a budget includes support subscription fees.
The default value is true.
Type: Boolean
Required: No

**IncludeTax**
Specifies whether a budget includes taxes.
The default value is true.
Type: Boolean
Required: No

**IncludeUpfront**
Specifies whether a budget includes upfront RI costs.
The default value is true.
Type: Boolean
Required: No

**UseAmortized**
Specifies whether a budget uses the amortized rate.
The default value is false.
Type: Boolean
Required: No

**UseBlended**
Specifies whether a budget uses a blended rate.
The default value is false.
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
Notification
Service: AWS Budgets

A notification that is associated with a budget. A budget can have up to five notifications.

Each notification must have at least one subscriber. A notification can have one SNS subscriber and up to 10 email subscribers, for a total of 11 subscribers.

For example, if you have a budget for 200 dollars and you want to be notified when you go over 160 dollars, create a notification with the following parameters:

- A notificationType of ACTUAL
- A thresholdType of PERCENTAGE
- A comparisonOperator of GREATER_THAN
- A notification threshold of 80

Contents

ComparisonOperator

The comparison that is used for this notification.

Type: String

Valid Values: GREATER_THAN | LESS_THAN | EQUAL_TO

Required: Yes

NotificationState

Whether this notification is in alarm. If a budget notification is in the ALARM state, you have passed the set threshold for the budget.

Type: String

Valid Values: OK | ALARM

Required: No

NotificationType

Whether the notification is for how much you have spent (ACTUAL) or for how much you're forecasted to spend (FORECASTED).

Type: String

Valid Values: ACTUAL | FORECASTED

Required: Yes

Threshold

The threshold that is associated with a notification. Thresholds are always a percentage, and many customers find value being alerted between 50% - 200% of the budgeted amount. The maximum limit for your threshold is 1,000,000% above the budgeted amount.

Type: Double

Valid Range: Minimum value of 0. Maximum value of 1000000000.
Required: Yes

**ThresholdType**

The type of threshold for a notification. For `ABSOLUTE_VALUE` thresholds, AWS notifies you when you go over or are forecasted to go over your total cost threshold. For `PERCENTAGE` thresholds, AWS notifies you when you go over or are forecasted to go over a certain percentage of your forecasted spend. For example, if you have a budget for 200 dollars and you have a `PERCENTAGE` threshold of 80%, AWS notifies you when you go over 160 dollars.

Type: String

Valid Values: `PERCENTAGE` | `ABSOLUTE_VALUE`

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
Amazon Web Services Cost Explorer Service Cost Management APIs

NotificationWithSubscribers

Service: AWS Budgets

A notification with subscribers. A notification can have one SNS subscriber and up to 10 email subscribers, for a total of 11 subscribers.

Contents

Notification

The notification that is associated with a budget.

Type: Notification (p. 268) object

Required: Yes

Subscribers

A list of subscribers who are subscribed to this notification.

Type: Array of Subscriber (p. 272) objects

Array Members: Minimum number of 1 item. Maximum number of 11 items.

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
**Spend**

*Service: AWS Budgets*

The amount of cost or usage that is measured for a budget.

For example, a `Spend` for 3 GB of S3 usage would have the following parameters:

- An **Amount** of 3
- A unit of **GB**

**Contents**

**Amount**

The cost or usage amount that is associated with a budget forecast, actual spend, or budget threshold.

- Type: String
- Pattern: `([0-9]+)\?([0-9]+)`
- Required: Yes

**Unit**

The unit of measurement that is used for the budget forecast, actual spend, or budget threshold, such as dollars or GB.

- Type: String
- Pattern: `\.`
- 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
**Subscriber**

Service: AWS Budgets

The subscriber to a budget notification. The subscriber consists of a subscription type and either an Amazon SNS topic or an email address.

For example, an email subscriber would have the following parameters:

- A `subscriptionType` of `EMAIL`
- An address of `example@example.com`

**Contents**

**Address**

The address that AWS sends budget notifications to, either an SNS topic or an email.

When you create a subscriber, the value of `Address` can't contain line breaks.

Type: String


Pattern: 

Required: Yes

**SubscriptionType**

The type of notification that AWS sends to a subscriber.

Type: String

Valid Values: `SNS` | `EMAIL`

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
**TimePeriod**  
Service: AWS Budgets

The period of time that is covered by a budget. The period has a start date and an end date. The start date must come before the end date. There are no restrictions on the end date.

**Contents**

**End**

The end date for a budget. If you didn't specify an end date, AWS set your end date to 06/15/87 00:00 UTC. The defaults are the same for the AWS Billing and Cost Management console and the API.

After the end date, AWS deletes the budget and all associated notifications and subscribers. You can change your end date with the `UpdateBudget` operation.

Type: Timestamp  
Required: No

**Start**

The start date for a budget. If you created your budget and didn't specify a start date, AWS defaults to the start of your chosen time period (DAILY, MONTHLY, QUARTERLY, or ANNUALLY). For example, if you created your budget on January 24, 2018, chose DAILY, and didn't set a start date, AWS set your start date to 01/24/18 00:00 UTC. If you chose MONTHLY, AWS set your start date to 01/01/18 00:00 UTC. The defaults are the same for the AWS Billing and Cost Management console and the API.

You can change your start date with the `UpdateBudget` operation.

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

**AWS Cost and Usage Report Service**

The following data types are supported by AWS Cost and Usage Report Service:

- ReportDefinition (p. 274)
ReportDefinition

Service: AWS Cost and Usage Report Service

The definition of AWS Cost and Usage Report. You can specify the report name, time unit, report format, compression format, S3 bucket, additional artifacts, and schema elements in the definition.

Contents

AdditionalArtifacts

A list of manifests that you want Amazon Web Services to create for this report.

Type: Array of strings

Valid Values: REDSHIFT | QUICKSIGHT | ATHENA

Required: No

AdditionalSchemaElements

A list of strings that indicate additional content that Amazon Web Services includes in the report, such as individual resource IDs.

Type: Array of strings

Valid Values: RESOURCES

Required: Yes

Compression

The compression format that AWS uses for the report.

Type: String

Valid Values: ZIP | GZIP | Parquet

Required: Yes

Format

The format that AWS saves the report in.

Type: String

Valid Values: textORcsv | Parquet

Required: Yes

RefreshClosedReports

Whether you want Amazon Web Services to update your reports after they have been finalized if Amazon Web Services detects charges related to previous months. These charges can include refunds, credits, or support fees.

Type: Boolean

Required: No

ReportName

The name of the report that you want to create. The name must be unique, is case sensitive, and can't include spaces.
ReportDefinition

Type: String

Length Constraints: Maximum length of 256.

Pattern: [0-9A-Za-z!\-_\.\.*'(\)]*

Required: Yes

ReportVersioning

Whether you want Amazon Web Services to overwrite the previous version of each report or to deliver the report in addition to the previous versions.

Type: String

Valid Values: CREATE_NEW_REPORT | OVERWRITE_REPORT

Required: No

S3Bucket

The S3 bucket where AWS delivers the report.

Type: String

Length Constraints: Maximum length of 256.

Pattern: [A-Za-z0-9-_\.\-]+

Required: Yes

S3Prefix

The prefix that AWS adds to the report name when AWS delivers the report. Your prefix can't include spaces.

Type: String

Length Constraints: Maximum length of 256.

Pattern: [0-9A-Za-z!\-_\.\-]+]

Required: Yes

S3Region

The region of the S3 bucket that AWS delivers the report into.

Type: String

Valid Values: ap-east-1 | ap-south-1 | ap-southeast-1 | ap-southeast-2 | ap-northeast-1 | ap-northeast-2 | ap-northeast-3 | ca-central-1 | eu-central-1 | eu-west-1 | eu-west-2 | eu-west-3 | eu-north-1 | me-south-1 | sa-east-1 | us-east-1 | us-east-2 | us-west-1 | us-west-2

Required: Yes

TimeUnit

The length of time covered by the report.

Type: String

Valid Values: HOURLY | DAILY

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

AWS Price List Service

The following data types are supported by AWS Price List Service:

- AttributeValue (p. 277)
- Filter (p. 278)
- Service (p. 279)
AttributeValue
Service: AWS Price List Service

The values of a given attribute, such as Throughput Optimized HDD or Provisioned IOPS for the Amazon EC2 volumeType attribute.

Contents

Value

The specific value of an attributeName.

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
Filter
Service: AWS Price List Service
The constraints that you want all returned products to match.

Contents

Field
The product metadata field that you want to filter on. You can filter by just the service code to see all products for a specific service, filter by just the attribute name to see a specific attribute for multiple services, or use both a service code and an attribute name to retrieve only products that match both fields.

Valid values include: ServiceCode, and all attribute names

For example, you can filter by the AmazonEC2 service code and the volumeType attribute name to get the prices for only Amazon EC2 volumes.

Type: String
Required: Yes

Type
The type of filter that you want to use.

Valid values are: TERM_MATCH. TERM_MATCH returns only products that match both the given filter field and the given value.

Type: String
Valid Values: TERM_MATCH
Required: Yes

Value
The service code or attribute value that you want to filter by. If you are filtering by service code this is the actual service code, such as AmazonEC2. If you are filtering by attribute name, this is the attribute value that you want the returned products to match, such as a Provisioned IOPS volume.

Type: String
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
Service
Service: AWS Price List Service

The metadata for a service, such as the service code and available attribute names.

Contents

AttributeNames

The attributes that are available for this service.

Type: Array of strings
Required: No

ServiceCode

The code for the AWS service.

Type: String
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
Common Parameters

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

Action
The action to be performed.
Type: string
Required: Yes

Version
The API version that the request is written for, expressed in the format YYYY-MM-DD.
Type: string
Required: Yes

X-Amz-Algorithm
The hash algorithm that you used to create the request signature.
Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.
Type: string
Valid Values: AWS4-HMAC-SHA256
Required: Conditional

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

For more information, see Task 2: Create a String to Sign for Signature Version 4 in the Amazon Web Services General Reference.
Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.
Type: string
Required: Conditional

X-Amz-Date
The date that is used to create the signature. The format must be ISO 8601 basic format (YYYYMMDD'T'HHMMSS'Z'). For example, the following date time is a valid X-Amz-Date value: 20120325T120000Z.
Condition: X-Amz-Date is optional for all requests; it can be used to override the date used for signing requests. If the Date header is specified in the ISO 8601 basic format, X-Amz-Date is
not required. When X-Amz-Date is used, it always overrides the value of the Date header. For more information, see Handling Dates in Signature Version 4 in the Amazon Web Services General Reference.

Type: string
Required: Conditional

X-Amz-Security-Token

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

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

Type: string
Required: Conditional

X-Amz-Signature

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

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

Type: string
Required: Conditional

X-Amz-SignedHeaders

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

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

Type: string
Required: Conditional
Common Errors

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

**AccessDeniedException**

You do not have sufficient access to perform this action.

HTTP Status Code: 400

**IncompleteSignature**

The request signature does not conform to AWS standards.

HTTP Status Code: 400

**InternalFailure**

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

HTTP Status Code: 500

**InvalidAction**

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

HTTP Status Code: 400

**InvalidClientTokenId**

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

HTTP Status Code: 403

**InvalidParameterCombination**

Parameters that must not be used together were used together.

HTTP Status Code: 400

**InvalidParameterValue**

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

HTTP Status Code: 400

**InvalidQueryParameter**

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

HTTP Status Code: 400

**MalformedQueryString**

The query string contains a syntax error.

HTTP Status Code: 404

**MissingAction**

The request is missing an action or a required parameter.

HTTP Status Code: 400
MissingAuthenticationToken
The request must contain either a valid (registered) AWS access key ID or X.509 certificate.

HTTP Status Code: 403

MissingParameter
A required parameter for the specified action is not supplied.

HTTP Status Code: 400

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