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# AWS Billing and Cost Management

## API Reference



## AWS Billing and Cost Management: API Reference

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## Table of Contents

Welcome .....	1
AWS Cost Explorer .....	1
AWS Budgets .....	1
AWS Cost and Usage Report .....	2
AWS Price List .....	2
Actions .....	3
AWS Cost Explorer .....	4
CreateAnomalyMonitor .....	6
CreateAnomalySubscription .....	9
CreateCostCategoryDefinition .....	12
DeleteAnomalyMonitor .....	16
DeleteAnomalySubscription .....	18
DeleteCostCategoryDefinition .....	20
DescribeCostCategoryDefinition .....	22
GetAnomalies .....	25
GetAnomalyMonitors .....	28
GetAnomalySubscriptions .....	31
GetCostAndUsage .....	34
GetCostAndUsageWithResources .....	41
GetCostCategories .....	48
GetCostForecast .....	53
GetDimensionValues .....	58
GetReservationCoverage .....	67
GetReservationPurchaseRecommendation .....	75
GetReservationUtilization .....	81
GetRightsizingRecommendation .....	89
GetSavingsPlansCoverage .....	95
GetSavingsPlansPurchaseRecommendation .....	100
GetSavingsPlansUtilization .....	105
GetSavingsPlansUtilizationDetails .....	109
GetTags .....	114
GetUsageForecast .....	120
ListCostAllocationTags .....	125
ListCostCategoryDefinitions .....	129
ListTagsForResource .....	132
ProvideAnomalyFeedback .....	134
TagResource .....	136
UntagResource .....	138
UpdateAnomalyMonitor .....	140
UpdateAnomalySubscription .....	142
UpdateCostAllocationTagsStatus .....	145
UpdateCostCategoryDefinition .....	148
AWS Budgets .....	151
CreateBudget .....	153
CreateBudgetAction .....	161
CreateNotification .....	166
CreateSubscriber .....	169
DeleteBudget .....	172
DeleteBudgetAction .....	175
DeleteNotification .....	179
DeleteSubscriber .....	182
DescribeBudget .....	185
DescribeBudgetAction .....	192
DescribeBudgetActionHistories .....	195

DescribeBudgetActionsForAccount .....	199
DescribeBudgetActionsForBudget .....	202
DescribeBudgetNotificationsForAccount .....	206
DescribeBudgetPerformanceHistory .....	209
DescribeBudgets .....	214
DescribeNotificationsForBudget .....	221
DescribeSubscribersForNotification .....	225
ExecuteBudgetAction .....	229
UpdateBudget .....	232
UpdateBudgetAction .....	239
UpdateNotification .....	245
UpdateSubscriber .....	248
AWS Cost and Usage Report .....	250
DeleteReportDefinition .....	252
DescribeReportDefinitions .....	254
ModifyReportDefinition .....	257
PutReportDefinition .....	259
AWS Price List .....	261
DescribeServices .....	262
GetAttributeValues .....	266
GetProducts .....	270
Data Types .....	274
AWS Cost Explorer .....	276
Anomaly .....	279
AnomalyDateInterval .....	281
AnomalyMonitor .....	282
AnomalyScore .....	285
AnomalySubscription .....	286
CostAllocationTag .....	288
CostAllocationTagStatusEntry .....	289
CostCategory .....	290
CostCategoryInheritedValueDimension .....	292
CostCategoryProcessingStatus .....	293
CostCategoryReference .....	294
CostCategoryRule .....	296
CostCategorySplitChargeRule .....	298
CostCategorySplitChargeRuleParameter .....	300
CostCategoryValues .....	301
Coverage .....	302
CoverageByTime .....	303
CoverageCost .....	304
CoverageHours .....	305
CoverageNormalizedUnits .....	306
CurrentInstance .....	307
DateInterval .....	310
DimensionValues .....	311
DimensionValuesWithAttributes .....	313
DiskResourceUtilization .....	314
EBSResourceUtilization .....	316
EC2InstanceDetails .....	318
EC2ResourceDetails .....	320
EC2ResourceUtilization .....	322
EC2Specification .....	324
ElastiCacheInstanceDetails .....	325
ESInstanceDetails .....	327
Expression .....	329
ForecastResult .....	331

Group .....	333
GroupDefinition .....	334
Impact .....	335
InstanceDetails .....	336
MetricValue .....	337
ModifyRecommendationDetail .....	338
NetworkResourceUtilization .....	339
RDSInstanceDetails .....	341
RedshiftInstanceDetails .....	343
ReservationAggregates .....	345
ReservationCoverageGroup .....	348
ReservationPurchaseRecommendation .....	349
ReservationPurchaseRecommendationDetail .....	351
ReservationPurchaseRecommendationMetadata .....	355
ReservationPurchaseRecommendationSummary .....	356
ReservationUtilizationGroup .....	357
ResourceDetails .....	358
ResourceTag .....	359
ResourceUtilization .....	360
ResultByTime .....	361
RightsizingRecommendation .....	362
RightsizingRecommendationConfiguration .....	364
RightsizingRecommendationMetadata .....	365
RightsizingRecommendationSummary .....	367
RootCause .....	369
SavingsPlansAmortizedCommitment .....	371
SavingsPlansCoverage .....	372
SavingsPlansCoverageData .....	373
SavingsPlansDetails .....	375
SavingsPlansPurchaseRecommendation .....	376
SavingsPlansPurchaseRecommendationDetail .....	378
SavingsPlansPurchaseRecommendationMetadata .....	382
SavingsPlansPurchaseRecommendationSummary .....	383
SavingsPlansSavings .....	386
SavingsPlansUtilization .....	387
SavingsPlansUtilizationAggregates .....	389
SavingsPlansUtilizationByTime .....	390
SavingsPlansUtilizationDetail .....	391
ServiceSpecification .....	393
SortDefinition .....	394
Subscriber .....	395
TagValues .....	396
TargetInstance .....	398
TerminateRecommendationDetail .....	400
TotalImpactFilter .....	401
UpdateCostAllocationTagsStatusError .....	402
UtilizationByTime .....	403
AWS Budgets .....	403
Action .....	405
ActionHistory .....	407
ActionHistoryDetails .....	408
ActionThreshold .....	409
AutoAdjustData .....	410
Budget .....	411
BudgetedAndActualAmounts .....	415
BudgetNotificationsForAccount .....	416
BudgetPerformanceHistory .....	417

CalculatedSpend .....	419
CostTypes .....	420
Definition .....	423
HistoricalOptions .....	424
IamActionDefinition .....	425
Notification .....	427
NotificationWithSubscribers .....	429
ScpActionDefinition .....	430
Spend .....	431
SsmActionDefinition .....	432
Subscriber .....	433
TimePeriod .....	434
AWS Cost and Usage Report .....	434
ReportDefinition .....	435
AWS Price List .....	437
AttributeValue .....	438
Filter .....	439
Service .....	440
Common Parameters .....	441
Common Errors .....	443

# Welcome

## AWS Cost Explorer

You can use the Cost Explorer API 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. This might include 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 the costs that are associated with the Cost Explorer API, see [AWS Cost Management Pricing](#).

## AWS Budgets

Use the AWS Budgets API to plan your service usage, service costs, and instance reservations. This API reference provides descriptions, syntax, and usage examples for each of the actions and data types for the AWS Budgets feature.

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>

For information about costs that are associated with the AWS Budgets API, see [AWS Cost Management Pricing](#).

## AWS Cost and Usage Report

You can use the AWS Cost and Usage Report API to programmatically create, query, and delete AWS Cost and Usage Report definitions.

AWS Cost and Usage Report 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 Report API.

### Service Endpoint

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

- [cur.us-east-1.amazonaws.com](https://cur.us-east-1.amazonaws.com)

## AWS Price List

AWS Price List API is a centralized and convenient way to programmatically query AWS for services, products, and pricing information. The AWS Price List 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 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:

- [CreateAnomalyMonitor \(p. 6\)](#)
- [CreateAnomalySubscription \(p. 9\)](#)
- [CreateCostCategoryDefinition \(p. 12\)](#)
- [DeleteAnomalyMonitor \(p. 16\)](#)
- [DeleteAnomalySubscription \(p. 18\)](#)
- [DeleteCostCategoryDefinition \(p. 20\)](#)
- [DescribeCostCategoryDefinition \(p. 22\)](#)
- [GetAnomalies \(p. 25\)](#)
- [GetAnomalyMonitors \(p. 28\)](#)
- [GetAnomalySubscriptions \(p. 31\)](#)
- [GetCostAndUsage \(p. 34\)](#)
- [GetCostAndUsageWithResources \(p. 41\)](#)
- [GetCostCategories \(p. 48\)](#)
- [GetCostForecast \(p. 53\)](#)
- [GetDimensionValues \(p. 58\)](#)
- [GetReservationCoverage \(p. 67\)](#)
- [GetReservationPurchaseRecommendation \(p. 75\)](#)
- [GetReservationUtilization \(p. 81\)](#)
- [GetRightsizingRecommendation \(p. 89\)](#)
- [GetSavingsPlansCoverage \(p. 95\)](#)
- [GetSavingsPlansPurchaseRecommendation \(p. 100\)](#)
- [GetSavingsPlansUtilization \(p. 105\)](#)
- [GetSavingsPlansUtilizationDetails \(p. 109\)](#)
- [GetTags \(p. 114\)](#)
- [GetUsageForecast \(p. 120\)](#)
- [ListCostAllocationTags \(p. 125\)](#)
- [ListCostCategoryDefinitions \(p. 129\)](#)
- [ListTagsForResource \(p. 132\)](#)
- [ProvideAnomalyFeedback \(p. 134\)](#)
- [TagResource \(p. 136\)](#)
- [UntagResource \(p. 138\)](#)
- [UpdateAnomalyMonitor \(p. 140\)](#)
- [UpdateAnomalySubscription \(p. 142\)](#)
- [UpdateCostAllocationTagsStatus \(p. 145\)](#)
- [UpdateCostCategoryDefinition \(p. 148\)](#)

The following actions are supported by AWS Budgets:

- [CreateBudget \(p. 153\)](#)
- [CreateBudgetAction \(p. 161\)](#)

- [CreateNotification \(p. 166\)](#)
- [CreateSubscriber \(p. 169\)](#)
- [DeleteBudget \(p. 172\)](#)
- [DeleteBudgetAction \(p. 175\)](#)
- [DeleteNotification \(p. 179\)](#)
- [DeleteSubscriber \(p. 182\)](#)
- [DescribeBudget \(p. 185\)](#)
- [DescribeBudgetAction \(p. 192\)](#)
- [DescribeBudgetActionHistories \(p. 195\)](#)
- [DescribeBudgetActionsForAccount \(p. 199\)](#)
- [DescribeBudgetActionsForBudget \(p. 202\)](#)
- [DescribeBudgetNotificationsForAccount \(p. 206\)](#)
- [DescribeBudgetPerformanceHistory \(p. 209\)](#)
- [DescribeBudgets \(p. 214\)](#)
- [DescribeNotificationsForBudget \(p. 221\)](#)
- [DescribeSubscribersForNotification \(p. 225\)](#)
- [ExecuteBudgetAction \(p. 229\)](#)
- [UpdateBudget \(p. 232\)](#)
- [UpdateBudgetAction \(p. 239\)](#)
- [UpdateNotification \(p. 245\)](#)
- [UpdateSubscriber \(p. 248\)](#)

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

- [DeleteReportDefinition \(p. 252\)](#)
- [DescribeReportDefinitions \(p. 254\)](#)
- [ModifyReportDefinition \(p. 257\)](#)
- [PutReportDefinition \(p. 259\)](#)

The following actions are supported by AWS Price List:

- [DescribeServices \(p. 262\)](#)
- [GetAttributeValues \(p. 266\)](#)
- [GetProducts \(p. 270\)](#)

## AWS Cost Explorer

The following actions are supported by AWS Cost Explorer:

- [CreateAnomalyMonitor \(p. 6\)](#)
- [CreateAnomalySubscription \(p. 9\)](#)
- [CreateCostCategoryDefinition \(p. 12\)](#)
- [DeleteAnomalyMonitor \(p. 16\)](#)
- [DeleteAnomalySubscription \(p. 18\)](#)
- [DeleteCostCategoryDefinition \(p. 20\)](#)
- [DescribeCostCategoryDefinition \(p. 22\)](#)

- [GetAnomalies \(p. 25\)](#)
- [GetAnomalyMonitors \(p. 28\)](#)
- [GetAnomalySubscriptions \(p. 31\)](#)
- [GetCostAndUsage \(p. 34\)](#)
- [GetCostAndUsageWithResources \(p. 41\)](#)
- [GetCostCategories \(p. 48\)](#)
- [GetCostForecast \(p. 53\)](#)
- [GetDimensionValues \(p. 58\)](#)
- [GetReservationCoverage \(p. 67\)](#)
- [GetReservationPurchaseRecommendation \(p. 75\)](#)
- [GetReservationUtilization \(p. 81\)](#)
- [GetRightsizingRecommendation \(p. 89\)](#)
- [GetSavingsPlansCoverage \(p. 95\)](#)
- [GetSavingsPlansPurchaseRecommendation \(p. 100\)](#)
- [GetSavingsPlansUtilization \(p. 105\)](#)
- [GetSavingsPlansUtilizationDetails \(p. 109\)](#)
- [GetTags \(p. 114\)](#)
- [GetUsageForecast \(p. 120\)](#)
- [ListCostAllocationTags \(p. 125\)](#)
- [ListCostCategoryDefinitions \(p. 129\)](#)
- [ListTagsForResource \(p. 132\)](#)
- [ProvideAnomalyFeedback \(p. 134\)](#)
- [TagResource \(p. 136\)](#)
- [UntagResource \(p. 138\)](#)
- [UpdateAnomalyMonitor \(p. 140\)](#)
- [UpdateAnomalySubscription \(p. 142\)](#)
- [UpdateCostAllocationTagsStatus \(p. 145\)](#)
- [UpdateCostCategoryDefinition \(p. 148\)](#)

# CreateAnomalyMonitor

Service: AWS Cost Explorer

Creates a new cost anomaly detection monitor with the requested type and monitor specification.

## Request Syntax

```
{  
    "AnomalyMonitor": {  
        "CreationDate": "string",  
        "DimensionalValueCount": number,  
        "LastEvaluatedDate": "string",  
        "LastUpdatedDate": "string",  
        "MonitorArn": "string",  
        "MonitorDimension": "string",  
        "MonitorName": "string",  
        "MonitorSpecification": {  
            "And": [  
                "Expression"  
            ],  
            "CostCategories": {  
                "Key": "string",  
                "MatchOptions": [ "string" ],  
                "Values": [ "string" ]  
            },  
            "Dimensions": {  
                "Key": "string",  
                "MatchOptions": [ "string" ],  
                "Values": [ "string" ]  
            },  
            "Not": "Expression",  
            "Or": [  
                "Expression"  
            ],  
            "Tags": {  
                "Key": "string",  
                "MatchOptions": [ "string" ],  
                "Values": [ "string" ]  
            }  
        },  
        "MonitorType": "string"  
    },  
    "ResourceTags": [  
        {  
            "Key": "string",  
            "Value": "string"  
        }  
    ]  
}
```

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

### AnomalyMonitor (p. 6)

The cost anomaly detection monitor object that you want to create.

Type: [AnomalyMonitor \(p. 282\)](#) object

Required: Yes

#### ResourceTags (p. 6)

An optional list of tags to associate with the specified [AnomalyMonitor](#). You can use resource tags to control access to your monitor using IAM policies.

Each tag consists of a key and a value, and each key must be unique for the resource. The following restrictions apply to resource tags:

- Although the maximum number of array members is 200, you can assign a maximum of 50 user-tags to one resource. The remaining are reserved for AWS use
- The maximum length of a key is 128 characters
- The maximum length of a value is 256 characters
- Keys and values can only contain alphanumeric characters, spaces, and any of the following: `_ . : / =+@-`
- Keys and values are case sensitive
- Keys and values are trimmed for any leading or trailing whitespaces
- Don't use `aws:` as a prefix for your keys. This prefix is reserved for AWS use

Type: Array of [ResourceTag \(p. 359\)](#) objects

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

Required: No

## Response Syntax

```
{  
    "MonitorArn": "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.

#### MonitorArn (p. 7)

The unique identifier of your newly created cost anomaly detection monitor.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: `[\S\s]*`

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

#### LimitExceeded**Exception**

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

## CreateAnomalySubscription

Service: AWS Cost Explorer

Adds a subscription to a cost anomaly detection monitor. You can use each subscription to define subscribers with email or SNS notifications. Email subscribers can set a dollar threshold and a time frequency for receiving notifications.

### Request Syntax

```
{  
    "AnomalySubscription": {  
        "AccountId": "string",  
        "Frequency": "string",  
        "MonitorArnList": [ "string" ],  
        "Subscribers": [  
            {  
                "Address": "string",  
                "Status": "string",  
                "Type": "string"  
            }  
        ],  
        "SubscriptionArn": "string",  
        "SubscriptionName": "string",  
        "Threshold": number  
    },  
    "ResourceTags": [  
        {  
            "Key": "string",  
            "Value": "string"  
        }  
    ]  
}
```

### Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

#### AnomalySubscription (p. 9)

The cost anomaly subscription object that you want to create.

Type: [AnomalySubscription \(p. 286\)](#) object

Required: Yes

#### ResourceTags (p. 9)

An optional list of tags to associate with the specified [AnomalySubscription](#). You can use resource tags to control access to your subscription using IAM policies.

Each tag consists of a key and a value, and each key must be unique for the resource. The following restrictions apply to resource tags:

- Although the maximum number of array members is 200, you can assign a maximum of 50 user-tags to one resource. The remaining are reserved for AWS use
- The maximum length of a key is 128 characters
- The maximum length of a value is 256 characters

- Keys and values can only contain alphanumeric characters, spaces, and any of the following: \_ . : / =+@-
- Keys and values are case sensitive
- Keys and values are trimmed for any leading or trailing whitespaces
- Don't use aws: as a prefix for your keys. This prefix is reserved for AWS use

Type: Array of [ResourceTag \(p. 359\)](#) objects

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

Required: No

## Response Syntax

```
{  
    "SubscriptionArn": "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.

### **SubscriptionArn (p. 10)**

The unique identifier of your newly created cost anomaly subscription.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

### **LimitExceeded**Exception****

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

HTTP Status Code: 400

### **UnknownMonitor**Exception****

The cost anomaly monitor does not exist for the account.

HTTP Status Code: 400

## See Also

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

- [AWS Command Line Interface](#)

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

# CreateCostCategoryDefinition

Service: AWS Cost Explorer

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

## Request Syntax

```
{  
    "DefaultValue": "string",  
    "EffectiveStart": "string",  
    "Name": "string",  
    "ResourceTags": [  
        {  
            "Key": "string",  
            "Value": "string"  
        }  
    ],  
    "Rules": [  
        {  
            "InheritedValue": {  
                "DimensionKey": "string",  
                "DimensionName": "string"  
            },  
            "Rule": {  
                "And": [  
                    "Expression"  
                ],  
                "CostCategories": {  
                    "Key": "string",  
                    "MatchOptions": [ "string" ],  
                    "Values": [ "string" ]  
                },  
                "Dimensions": {  
                    "Key": "string",  
                    "MatchOptions": [ "string" ],  
                    "Values": [ "string" ]  
                },  
                "Not": "Expression",  
                "Or": [  
                    "Expression"  
                ],  
                "Tags": {  
                    "Key": "string",  
                    "MatchOptions": [ "string" ],  
                    "Values": [ "string" ]  
                }  
            },  
            "Type": "string",  
            "Value": "string"  
        }  
    ],  
    "RuleVersion": "string",  
    "SplitChargeRules": [  
        {  
            "Method": "string",  
            "Parameters": [  
                {  
                    "Type": "string",  
                    "Values": [ "string" ]  
                }  
            ],  
            "Source": "string",  
            "Targets": [ "string" ]  
        }  
    ]  
}
```

```
    ]  
}
```

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

### [DefaultValue \(p. 12\)](#)

The default value for the cost category.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 50.

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

Required: No

### [EffectiveStart \(p. 12\)](#)

The Cost Category's effective start date. It can only be a billing start date (first day of the month). If the date isn't provided, it's the first day of the current month. Dates can't be before the previous twelve months, or in the future.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 25.

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

Required: No

### [Name \(p. 12\)](#)

The unique name of the Cost Category.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 50.

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

Required: Yes

### [ResourceTags \(p. 12\)](#)

An optional list of tags to associate with the specified [CostCategory](#). You can use resource tags to control access to your cost category using IAM policies.

Each tag consists of a key and a value, and each key must be unique for the resource. The following restrictions apply to resource tags:

- Although the maximum number of array members is 200, you can assign a maximum of 50 user-tags to one resource. The remaining are reserved for AWS use
- The maximum length of a key is 128 characters
- The maximum length of a value is 256 characters
- Keys and values can only contain alphanumeric characters, spaces, and any of the following: \_ . : / =+@-

- Keys and values are case sensitive
- Keys and values are trimmed for any leading or trailing whitespaces
- Don't use aws: as a prefix for your keys. This prefix is reserved for AWS use

Type: Array of [ResourceTag \(p. 359\)](#) objects

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

Required: No

#### [Rules \(p. 12\)](#)

The Cost Category rules used to categorize costs. For more information, see [CostCategoryRule](#).

Type: Array of [CostCategoryRule \(p. 296\)](#) objects

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

Required: Yes

#### [RuleVersion \(p. 12\)](#)

The rule schema version in this particular Cost Category.

Type: String

Valid Values: `CostCategoryExpression.v1`

Required: Yes

#### [SplitChargeRules \(p. 12\)](#)

The split charge rules used to allocate your charges between your Cost Category values.

Type: Array of [CostCategorySplitChargeRule \(p. 298\)](#) objects

Array Members: Minimum number of 1 item. Maximum number of 10 items.

Required: No

## 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 \(p. 14\)](#)

The unique identifier for your newly created Cost Category.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

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

#### **EffectiveStart (p. 14)**

The Cost Category's effective start date. It can only be a billing start date (first day of the month).

Type: String

Length Constraints: Minimum length of 20. Maximum length of 25.

Pattern: ^\d{4}-\d\d-\d\dT\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 \(p. 443\)](#).

#### **LimitExceededException**

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

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 resource.

HTTP Status Code: 400

## See Also

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

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

## DeleteAnomalyMonitor

Service: AWS Cost Explorer

Deletes a cost anomaly monitor.

### Request Syntax

```
{  
    "MonitorArn": "string"  
}
```

### Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

#### **MonitorArn (p. 16)**

The unique identifier of the cost anomaly monitor that you want to delete.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

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 \(p. 443\)](#).

#### **LimitExceeded**Exception****

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

HTTP Status Code: 400

#### **UnknownMonitor**Exception****

The cost anomaly monitor does not exist for the account.

HTTP Status Code: 400

### See Also

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

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

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

## DeleteAnomalySubscription

Service: AWS Cost Explorer

Deletes a cost anomaly subscription.

### Request Syntax

```
{  
    "SubscriptionArn": "string"  
}
```

### Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

#### **SubscriptionArn (p. 18)**

The unique identifier of the cost anomaly subscription that you want to delete.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

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 \(p. 443\)](#).

#### **LimitExceeded**

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

HTTP Status Code: 400

#### **UnknownSubscriptionException**

The cost anomaly subscription does not exist for the account.

HTTP Status Code: 400

### See Also

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

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

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

## DeleteCostCategoryDefinition

Service: AWS Cost Explorer

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 \(p. 441\)](#).

The request accepts the following data in JSON format.

#### [CostCategoryArn \(p. 20\)](#)

The unique identifier for your Cost Category.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

Pattern: `arn:aws[-a-zA-Z0-9]*:[a-zA-Z0-9]+:[-a-zA-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 \(p. 20\)](#)

The unique identifier for your Cost Category.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

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

#### [EffectiveEnd \(p. 20\)](#)

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

Type: String

Length Constraints: Minimum length of 20. Maximum length of 25.

Pattern: ^\d{4}-\d\d-\dT\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 \(p. 443\)](#).

### **LimitExceeded**Exception****

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

## DescribeCostCategoryDefinition

Service: AWS Cost Explorer

Returns the name, Amazon Resource 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's active on a specific date. If there's no `EffectiveOn` specified, you see a Cost Category that's effective on the current date. If Cost Category is still effective, `EffectiveEnd` is omitted in the response.

### Request Syntax

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

### Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

#### [CostCategoryArn \(p. 22\)](#)

The unique identifier for your Cost Category.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

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

Required: Yes

#### [EffectiveOn \(p. 22\)](#)

The date when the Cost Category was effective.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 25.

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

Required: No

### Response Syntax

```
{  
    "CostCategory": {  
        "CostCategoryArn": "string",  
        "DefaultValue": "string",  
        "EffectiveEnd": "string",  
        "EffectiveStart": "string",  
        "Name": "string",  
        "ProcessingStatus": [  
            {  
                "Component": "string",  
            }  
        ]  
    }  
}
```

```
        "Status": "string"
    },
],
"Rules": [
{
    "InheritedValue": {
        "DimensionKey": "string",
        "DimensionName": "string"
    },
    "Rule": {
        "And": [
            "Expression"
        ],
        "CostCategories": {
            "Key": "string",
            "MatchOptions": [ "string" ],
            "Values": [ "string" ]
        },
        "Dimensions": {
            "Key": "string",
            "MatchOptions": [ "string" ],
            "Values": [ "string" ]
        },
        "Not": "Expression",
        "Or": [
            "Expression"
        ],
        "Tags": {
            "Key": "string",
            "MatchOptions": [ "string" ],
            "Values": [ "string" ]
        },
        "Type": "string",
        "Value": "string"
    }
},
{
    "RuleVersion": "string",
    "SplitChargeRules": [
        {
            "Method": "string",
            "Parameters": [
                {
                    "Type": "string",
                    "Values": [ "string" ]
                }
            ],
            "Source": "string",
            "Targets": [ "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 \(p. 22\)](#)

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

Type: [CostCategory \(p. 290\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

### **LimitExceeded**Exception****

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

## GetAnomalies

Service: AWS Cost Explorer

Retrieves all of the cost anomalies detected on your account during the time period that's specified by the DateInterval object.

### Request Syntax

```
{  
    "DateInterval": {  
        "EndDate": "string",  
        "StartDate": "string"  
    },  
    "Feedback": "string",  
    "MaxResults": number,  
    "MonitorArn": "string",  
    "NextPageToken": "string",  
    "TotalImpact": {  
        "EndValue": number,  
        "NumericOperator": "string",  
        "StartValue": number  
    }  
}
```

### Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

#### DateInterval (p. 25)

Assigns the start and end dates for retrieving cost anomalies. The returned anomaly object will have an AnomalyEndDate in the specified time range.

Type: [AnomalyDateInterval \(p. 281\)](#) object

Required: Yes

#### Feedback (p. 25)

Filters anomaly results by the feedback field on the anomaly object.

Type: String

Valid Values: YES | NO | PLANNED\_ACTIVITY

Required: No

#### MaxResults (p. 25)

The number of entries a paginated response contains.

Type: Integer

Required: No

#### MonitorArn (p. 25)

Retrieves all of the cost anomalies detected for a specific cost anomaly monitor Amazon Resource Name (ARN).

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### [NextPageToken \(p. 25\)](#)

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

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

Required: No

#### [TotalImpact \(p. 25\)](#)

Filters anomaly results by the total impact field on the anomaly object. For example, you can filter anomalies GREATER\_THAN 200.00 to retrieve anomalies, with an estimated dollar impact greater than 200.

Type: [TotalImpactFilter \(p. 401\)](#) object

Required: No

## Response Syntax

```
{  
    "Anomalies": [  
        {  
            "AnomalyEndDate": "string",  
            "AnomalyId": "string",  
            "AnomalyScore": {  
                "CurrentScore": number,  
                "MaxScore": number  
            },  
            "AnomalyStartDate": "string",  
            "DimensionValue": "string",  
            "Feedback": "string",  
            "Impact": {  
                "MaxImpact": number,  
                "TotalImpact": number  
            },  
            "MonitorArn": "string",  
            "RootCauses": [  
                {  
                    "LinkedAccount": "string",  
                    "Region": "string",  
                    "Service": "string",  
                    "UsageType": "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.

### [Anomalies \(p. 26\)](#)

A list of cost anomalies.

Type: Array of [Anomaly \(p. 279\)](#) objects

### [NextPageToken \(p. 26\)](#)

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

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

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

## GetAnomalyMonitors

Service: AWS Cost Explorer

Retrieves the cost anomaly monitor definitions for your account. You can filter using a list of cost anomaly monitor Amazon Resource Names (ARNs).

### Request Syntax

```
{  
    "MaxResults": number,  
    "MonitorArnList": [ "string" ],  
    "NextPageToken": "string"  
}
```

### Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

#### [MaxResults \(p. 28\)](#)

The number of entries that a paginated response contains.

Type: Integer

Required: No

#### [MonitorArnList \(p. 28\)](#)

A list of cost anomaly monitor ARNs.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### [NextPageToken \(p. 28\)](#)

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

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

Required: No

### Response Syntax

```
{  
    "AnomalyMonitors": [  
        {  
            "CreationDate": "string",  
            "LastUpdateDate": "string",  
            "Name": "string",  
            "Status": "string",  
            "Type": "string",  
            "TimePeriod": {  
                "End": "string",  
                "Start": "string"  
            },  
            "Threshold": {  
                "Comparison": "string",  
                "Metric": "string",  
                "Value": "string"  
            }  
        }  
    ]  
}
```

```
"DimensionalValueCount": number,
"LastEvaluatedDate": "string",
"LastUpdatedDate": "string",
"MonitorArn": "string",
"MonitorDimension": "string",
"MonitorName": "string",
"MonitorSpecification": {
    "And": [
        "Expression"
    ],
    "CostCategories": {
        "Key": "string",
        "MatchOptions": [ "string" ],
        "Values": [ "string" ]
    },
    "Dimensions": {
        "Key": "string",
        "MatchOptions": [ "string" ],
        "Values": [ "string" ]
    },
    "Not": "Expression",
    "Or": [
        "Expression"
    ],
    "Tags": {
        "Key": "string",
        "MatchOptions": [ "string" ],
        "Values": [ "string" ]
    }
},
"MonitorType": "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.

### AnomalyMonitors (p. 28)

A list of cost anomaly monitors that includes the detailed metadata for each monitor.

Type: Array of [AnomalyMonitor \(p. 282\)](#) objects

### NextPageToken (p. 28)

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

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

### **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

### **UnknownMonitorException**

The cost anomaly monitor does not exist for the account.

HTTP Status Code: 400

## See Also

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

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

# GetAnomalySubscriptions

Service: AWS Cost Explorer

Retrieves the cost anomaly subscription objects for your account. You can filter using a list of cost anomaly monitor Amazon Resource Names (ARNs).

## Request Syntax

```
{  
    "MaxResults": number,  
    "MonitorArn": "string",  
    "NextPageToken": "string",  
    "SubscriptionArnList": [ "string" ]  
}
```

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

### **MaxResults (p. 31)**

The number of entries a paginated response contains.

Type: Integer

Required: No

### **MonitorArn (p. 31)**

Cost anomaly monitor ARNs.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### **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.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

Required: No

### **SubscriptionArnList (p. 31)**

A list of cost anomaly subscription ARNs.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

## Response Syntax

```
{  
    "AnomalySubscriptions": [  
        {  
            "AccountId": "string",  
            "Frequency": "string",  
            "MonitorArnList": [ "string" ],  
            "Subscribers": [  
                {  
                    "Address": "string",  
                    "Status": "string",  
                    "Type": "string"  
                }  
            ],  
            "SubscriptionArn": "string",  
            "SubscriptionName": "string",  
            "Threshold": number  
        }  
    ],  
    "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.

### AnomalySubscriptions (p. 32)

A list of cost anomaly subscriptions that includes the detailed metadata for each one.

Type: Array of [AnomalySubscription \(p. 286\)](#) objects

### NextPageToken (p. 32)

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

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

### InvalidNextTokenException

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

HTTP Status Code: 400

**LimitExceeded**

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

HTTP Status Code: 400

**UnknownSubscriptionException**

The cost anomaly subscription does not exist for the account.

HTTP Status Code: 400

## See Also

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

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

# GetCostAndUsage

Service: AWS Cost Explorer

Retrieves cost and usage metrics for your account. You can specify which cost and usage-related metric that you want the request to return. For example, you can specify BlendedCosts or UsageQuantity. 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. Management account in an organization in AWS Organizations have access to all member accounts.

For information about filter limitations, see [Quotas and restrictions](#) in the *Billing and Cost Management User Guide*.

## Request Syntax

```
{  
    "Filter": {  
        "And": [  
            "Expression"  
        ],  
        "CostCategories": {  
            "Key": "string",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        },  
        "Dimensions": {  
            "Key": "string",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        },  
        "Not": "Expression",  
        "Or": [  
            "Expression"  
        ],  
        "Tags": {  
            "Key": "string",  
            "MatchOptions": [ "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 \(p. 441\)](#).

The request accepts the following data in JSON format.

### Filter (p. 34)

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](#).

Valid values for MatchOptions for Dimensions are EQUALS and CASE\_SENSITIVE.

Valid values for MatchOptions for CostCategories and Tags are EQUALS, ABSENT, and CASE\_SENSITIVE. Default values are EQUALS and CASE\_SENSITIVE.

Type: [Expression \(p. 329\)](#) object

Required: No

### Granularity (p. 34)

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: Yes

### GroupBy (p. 34)

You can group AWS costs using up to two different groups, either dimensions, tag keys, cost categories, or any two group by types.

Valid values for the DIMENSION type are AZ, INSTANCE\_TYPE, LEGAL\_ENTITY\_NAME, INVOICING\_ENTITY, LINKED\_ACCOUNT, OPERATION, PLATFORM, PURCHASE\_TYPE, SERVICE, TENANCY, RECORD\_TYPE, and USAGE\_TYPE.

When you group by the TAG type and include a valid tag key, you get all tag values, including empty strings.

Type: Array of [GroupDefinition \(p. 334\)](#) objects

Required: No

### Metrics (p. 34)

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 and GB). To get more meaningful UsageQuantity metrics, filter by UsageType or UsageTypeGroups.

Metrics is required for GetCostAndUsage requests.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: Yes

### NextPageToken (p. 34)

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

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

Required: No

### TimePeriod (p. 34)

Sets the start date and end date 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 \(p. 310\)](#) object

Required: Yes

## Response Syntax

```
{
  "DimensionValueAttributes": [
    {
      "Attributes": {
        "string" : "string"
      },
      "Value": "string"
    }
  ],
  "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.

### **DimensionValueAttributes (p. 36)**

The attributes that apply to a specific dimension value. For example, if the value is a linked account, the attribute is that account name.

Type: Array of [DimensionValuesWithAttributes \(p. 313\)](#) objects

### **GroupDefinitions (p. 36)**

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

Type: Array of [GroupDefinition \(p. 334\)](#) objects

### **NextPageToken (p. 36)**

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

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: `[\S\s]*`

### **ResultsByTime (p. 36)**

The time period that's covered by the results in the response.

Type: Array of [ResultByTime \(p. 361\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

### **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

## Examples

### Example

The following is a sample request and response of the GetCostAndUsage operation that you can use to retrieve your Amazon S3 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.GetCostAndUsage
{
    "TimePeriod": {
        "Start": "2017-09-01",
        "End": "2017-10-01"
    },
    "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$Prod"
          ],
          "Metrics": {
            "BlendedCost": {
              "Amount": "39.1603300457",
              "Unit": "USD"
            },
            "UnblendedCost": {
              "Amount": "39.1603300457",
              "Unit": "USD"
            },
            "UsageQuantity": {
              "Amount": "173842.5440074444",
              "Unit": "N/A"
            }
          }
        },
        {
          "Keys": [
            "Amazon Simple Storage Service",
            "Environment$Test"
          ],
          "Metrics": {
            "BlendedCost": {
              "Amount": "0.1337464807",
              "Unit": "USD"
            },
            "UnblendedCost": {
              "Amount": "0.1337464807",
              "Unit": "USD"
            },
            "UsageQuantity": {
              "Amount": "15992.0786663399",
              "Unit": "N/A"
            }
          }
        }
      ],
      "TimePeriod": {
        "End": "2017-10-01",
        "Start": "2017-09-01"
      },
      "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 V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetCostAndUsageWithResources

Service: AWS Cost Explorer

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. Management account 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 about 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",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        },  
        "Dimensions": {  
            "Key": "string",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        },  
        "Not": "Expression",  
        "Or": [  
            "Expression"  
        ],  
        "Tags": {  
            "Key": "string",  
            "MatchOptions": [ "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 \(p. 441\)](#).

The request accepts the following data in JSON format.

#### Filter (p. 41)

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. It requires the [Expression](#) "SERVICE = Amazon Elastic Compute Cloud - Compute" in the filter.

Valid values for MatchOptions for Dimensions are EQUALS and CASE\_SENSITIVE.

Valid values for MatchOptions for CostCategories and Tags are EQUALS, ABSENT, and CASE\_SENSITIVE. Default values are EQUALS and CASE\_SENSITIVE.

Type: [Expression](#) (p. 329) object

Required: Yes

#### Granularity (p. 41)

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: Yes

#### GroupBy (p. 41)

You can group Amazon Web Services costs using up to two different groups: DIMENSION, TAG, COST\_CATEGORY.

Type: Array of [GroupDefinition](#) (p. 334) objects

Required: No

#### Metrics (p. 41)

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, hour or GB). To get more meaningful UsageQuantity metrics, filter by UsageType or UsageTypeGroups.

Metrics is required for GetCostAndUsageWithResources requests.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### [NextPageToken \(p. 41\)](#)

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

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

Required: No

#### [TimePeriod \(p. 41\)](#)

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 \(p. 310\)](#) object

Required: Yes

## Response Syntax

```
{  
    "DimensionValueAttributes": [  
        {  
            "Attributes": {  
                "string" : "string"  
            },  
            "Value": "string"  
        }  
    ],  
    "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.

### **DimensionValueAttributes (p. 43)**

The attributes that apply to a specific dimension value. For example, if the value is a linked account, the attribute is that account name.

Type: Array of [DimensionValuesWithAttributes \(p. 313\)](#) objects

### **GroupDefinitions (p. 43)**

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

Type: Array of [GroupDefinition \(p. 334\)](#) objects

### **NextPageToken (p. 43)**

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

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: `[\S\s]*`

### **ResultsByTime (p. 43)**

The time period that's covered by the results in the response.

Type: Array of [ResultByTime \(p. 361\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

### **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

#### LimitExceeded**Exception**

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

HTTP Status Code: 400

#### RequestChanged**Exception**

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

HTTP Status Code: 400

## Examples

### 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"
            }
          }
        },
        {
          "Keys": [
            "i-04a0089019f41"
          ],
          "Metrics": {
            "BlendedCost": {
              "Amount": "0.1656",
              "Unit": "USD"
            },
            "UnblendedCost": {
              "Amount": "0.1656",
              "Unit": "USD"
            },
            "UsageQuantity": {
              "Amount": "24.0018044403",
              "Unit": "N/A"
            }
          }
        },
        {
          "Keys": [
            "i-03b49bda9fdef"
          ],
          "Metrics": {
            "BlendedCost": {
              "Amount": "0.0927335232",
              "Unit": "USD"
            },
            "UnblendedCost": {
              "Amount": "0.0116",
              "Unit": "USD"
            },
          }
        }
      ]
    }
  ]
}
```

```
        "UsageQuantity": {
            "Amount": "24.0009345564",
            "Unit": "N/A"
        }
    },
{
    "Keys": [
        "i-0e56e09d11711"
    ],
    "Metrics": {
        "BlendedCost": {
            "Amount": "0.0927335232",
            "Unit": "USD"
        },
        "UnblendedCost": {
            "Amount": "0.1392",
            "Unit": "USD"
        },
        "UsageQuantity": {
            "Amount": "24.0011066563",
            "Unit": "N/A"
        }
    }
],
"TimePeriod": {
    "End": "2018-11-20T00:00:00Z",
    "Start": "2018-11-19T00:00:00Z"
},
"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 V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## GetCostCategories

Service: AWS Cost Explorer

Retrieves an array of Cost Category names and values incurred cost.

### Note

If some Cost Category names and values are not associated with any cost, they will not be returned by this API.

## Request Syntax

```
{  
    "CostCategoryName": "string",  
    "Filter": {  
        "And": [  
            "Expression"  
        ],  
        "CostCategories": {  
            "Key": "string",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        },  
        "Dimensions": {  
            "Key": "string",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        },  
        "Not": "Expression",  
        "Or": [  
            "Expression"  
        ],  
        "Tags": {  
            "Key": "string",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        }  
    },  
    "MaxResults": number,  
    "NextPageToken": "string",  
    "SearchString": "string",  
    "SortBy": [  
        {  
            "Key": "string",  
            "SortOrder": "string"  
        }  
    ],  
    "TimePeriod": {  
        "End": "string",  
        "Start": "string"  
    }  
}
```

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

### [CostCategoryName \(p. 48\)](#)

The unique name of the Cost Category.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 50.

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

Required: No

#### [Filter \(p. 48\)](#)

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. For GetRightsizingRecommendation, the Region is a full name (for example, REGION==US East (N. Virginia)). The Expression example is as follows:

```
{ "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. By doing this, you can 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 is as follows:

```
{ "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.

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

#### Note

For the GetRightsizingRecommendation action, a combination of OR and NOT isn't supported. OR isn't supported between different dimensions, or dimensions and tags. NOT operators aren't supported. Dimensions are also limited to LINKED\_ACCOUNT, REGION, or RIGHTSIZING\_TYPE.

For the GetReservationPurchaseRecommendation action, only NOT is supported. AND and OR aren't supported. Dimensions are limited to LINKED\_ACCOUNT.

Type: [Expression \(p. 329\)](#) object

Required: No

#### [MaxResults \(p. 48\)](#)

This field is only used when the SortBy value is provided in the request.

The maximum number of objects that are returned for this request. If MaxResults isn't specified with the SortBy value, the request returns 1000 results as the default value for this parameter.

For GetCostCategories, MaxResults has an upper quota of 1000.

Type: Integer

Valid Range: Minimum value of 1.

Required: No

#### [NextPageToken \(p. 48\)](#)

If the number of objects that are still available for retrieval exceeds the quota, AWS returns a NextPageToken value in the response. To retrieve the next batch of objects, provide the NextPageToken from the previous call in your next request.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

Required: No

#### [SearchString \(p. 48\)](#)

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

If you don't specify a CostCategoryName, SearchString is used to filter Cost Category names that match the SearchString pattern. If you specify a CostCategoryName, SearchString is used to filter Cost Category values that match the SearchString pattern.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### [SortBy \(p. 48\)](#)

The value that you sort the data by.

The key represents the cost and usage metrics. The following values are supported:

- BlendedCost
- UnblendedCost
- AmortizedCost
- NetAmortizedCost
- NetUnblendedCost
- UsageQuantity
- NormalizedUsageAmount

The supported key values for the SortOrder value are ASCENDING and DESCENDING.

When you use the SortBy value, the NextPageToken and SearchString key values aren't supported.

Type: Array of [SortDefinition \(p. 394\)](#) objects

Required: No

#### [TimePeriod \(p. 48\)](#)

The time period of the request.

Type: [DateInterval \(p. 310\)](#) object

Required: Yes

## Response Syntax

```
{  
    "CostCategoryNames": [ "string" ],  
    "CostCategoryValues": [ "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.

### [CostCategoryNames \(p. 51\)](#)

The names of the Cost Categories.

Type: Array of strings

Length Constraints: Minimum length of 1. Maximum length of 50.

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

### [CostCategoryValues \(p. 51\)](#)

The Cost Category values.

If the CostCategoryName key isn't specified in the request, the CostCategoryValues fields aren't returned.

Type: Array of strings

Length Constraints: Minimum length of 1. Maximum length of 50.

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

### [NextPageToken \(p. 51\)](#)

If the number of objects that are still available for retrieval exceeds the quota, AWS returns a NextPageToken value in the response. To retrieve the next batch of objects, provide the marker from the prior call in your next request.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

### [ReturnSize \(p. 51\)](#)

The number of objects that are returned.

Type: Integer

### [TotalSize \(p. 51\)](#)

The total number of objects.

Type: Integer

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

### **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

## See Also

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

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

## GetCostForecast

Service: AWS Cost Explorer

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",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        },  
        "Dimensions": {  
            "Key": "string",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        },  
        "Not": "Expression",  
        "Or": [  
            "Expression"  
        ],  
        "Tags": {  
            "Key": "string",  
            "MatchOptions": [ "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 \(p. 441\)](#).

The request accepts the following data in JSON format.

#### Filter (p. 53)

The filters that you want to use to filter your forecast. The GetCostForecast API supports filtering by the following dimensions:

- AZ
- INSTANCE\_TYPE
- LINKED\_ACCOUNT
- LINKED\_ACCOUNT\_NAME
- 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
- INSTANCE\_TYPE\_FAMILY
- BILLING\_ENTITY
- RESERVATION\_ID
- SAVINGS\_PLAN\_ARN

Type: [Expression \(p. 329\)](#) object

Required: No

#### [Granularity \(p. 53\)](#)

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 \(p. 53\)](#)

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 \(p. 53\)](#)

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

Valid Range: Minimum value of 51. Maximum value of 99.

Required: No

### [TimePeriod \(p. 53\)](#)

The period of time that you want the forecast to cover. The start date must be equal to or no later than the current date to avoid a validation error.

Type: [DateInterval \(p. 310\)](#) object

Required: Yes

## Response Syntax

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

### [ForecastResultsByTime \(p. 55\)](#)

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 \(p. 331\)](#) objects

### [Total \(p. 55\)](#)

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

Type: [MetricValue \(p. 337\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

### 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

## Examples

### 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
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.GetCostForecast
{
    "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": "37.0786663399",
    "PredictionIntervalLowerBound": "34.9970026341",
    "PredictionIntervalUpperBound": "39.1603300457",
    "TimePeriod": {
      "End": "2018-10-26",
      "Start": "2018-10-25"
    }
  },
  {
    "MeanValue": "37.0786663399",
    "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 V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## GetDimensionValues

Service: AWS Cost Explorer

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

```
{  
    "Context": "string",  
    "Dimension": "string",  
    "Filter": {  
        "And": [  
            "Expression"  
        ],  
        "CostCategories": {  
            "Key": "string",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        },  
        "Dimensions": {  
            "Key": "string",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        },  
        "Not": "Expression",  
        "Or": [  
            "Expression"  
        ],  
        "Tags": {  
            "Key": "string",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        }  
    },  
    "MaxResults": number,  
    "NextPageToken": "string",  
    "SearchString": "string",  
    "SortBy": [  
        {  
            "Key": "string",  
            "SortOrder": "string"  
        }  
    ],  
    "TimePeriod": {  
        "End": "string",  
        "Start": "string"  
    }  
}
```

### Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

#### Context (p. 58)

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.
- BILLING\_ENTITY - The AWS seller that your account is with. Possible values are the following:
  - AWS(Amazon Web Services): The entity that sells AWS services.
  - AISPL (Amazon Internet Services Pvt. Ltd.): The local Indian entity that's an acting reseller for AWS services in India.
  - AWS Marketplace: The entity that supports the sale of solutions that are built on AWS by third-party software providers.
- 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.
- 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.
- INSTANCE\_TYPE\_FAMILY - A family of instance types optimized to fit different use cases. Examples are Compute Optimized (for example, C4, C5, C6g, and C7g), Memory Optimization (for example, R4, R5n, R5b, and R6g).
- INVOICING\_ENTITY - The name of the entity that issues the AWS invoice.
- 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 that this usage is related to. Examples include On-Demand Instances and Standard Reserved Instances.
- RESERVATION\_ID - The unique identifier for an AWS Reservation Instance.
- SAVINGS\_PLAN\_ARN - The unique identifier for your Savings Plans.
- SAVINGS\_PLANS\_TYPE - Type of Savings Plans (EC2 Instance or Compute).
- SERVICE - The AWS service such as Amazon DynamoDB.
- TENANCY - The tenancy of a resource. Examples are shared or dedicated.
- 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.
- REGION - The AWS Region.
- RECORD\_TYPE - The different types of charges such as Reserved Instance (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 - The 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 Plans.

Type: String

Valid Values: COST\_AND\_USAGE | RESERVATIONS | SAVINGS\_PLANS

Required: No

#### Dimension (p. 58)

The name of the dimension. Each Dimension is available for a different Context. For more information, see Context. LINK\_ACCOUNT\_NAME and SERVICE\_CODE can only be used in [CostCategoryRule](#).

Type: String

Valid Values: AZ | INSTANCE\_TYPE | LINKED\_ACCOUNT | LINKED\_ACCOUNT\_NAME | OPERATION | PURCHASE\_TYPE | REGION | SERVICE | SERVICE\_CODE | 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 | AGREEMENT\_END\_DATE\_TIME\_AFTER | AGREEMENT\_END\_DATE\_TIME\_BEFORE | INVOICING\_ENTITY

Required: Yes

#### Filter (p. 58)

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. For GetRightsizingRecommendation, the Region is a full name (for example, REGION==US East (N. Virginia)). The Expression example is as follows:

```
{ "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. By doing this, you can 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 is as follows:

```
{ "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.

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

**Note**

For the GetRightsizingRecommendation action, a combination of OR and NOT isn't supported. OR isn't supported between different dimensions, or dimensions and tags. NOT operators aren't supported. Dimensions are also limited to LINKED\_ACCOUNT, REGION, or RIGHTSIZING\_TYPE.

For the GetReservationPurchaseRecommendation action, only NOT is supported. AND and OR aren't supported. Dimensions are limited to LINKED\_ACCOUNT.

Type: [Expression \(p. 329\)](#) object

Required: No

**MaxResults (p. 58)**

This field is only used when SortBy is provided in the request. The maximum number of objects that are returned for this request. If MaxResults isn't specified with SortBy, the request returns 1000 results as the default value for this parameter.

For GetDimensionValues, MaxResults has an upper limit of 1000.

Type: Integer

Valid Range: Minimum value of 1.

Required: No

**NextPageToken (p. 58)**

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

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: `[\S\s]*`

Required: No

### [SearchString \(p. 58\)](#)

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

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### [SortBy \(p. 58\)](#)

The value that you want to sort the data by.

The key represents cost and usage metrics. The following values are supported:

- BlendedCost
- UnblendedCost
- AmortizedCost
- NetAmortizedCost
- NetUnblendedCost
- UsageQuantity
- NormalizedUsageAmount

The supported values for the SortOrder key are ASCENDING or DESCENDING.

When you specify a SortBy parameter, the context must be COST\_AND\_USAGE. Further, when using SortBy, NextPageToken and SearchString aren't supported.

Type: Array of [SortDefinition \(p. 394\)](#) objects

Required: No

### [TimePeriod \(p. 58\)](#)

The start date and end date 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 \(p. 310\)](#) object

Required: Yes

## Response Syntax

```
{  
    "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. 62)

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. You can opt-in by enabling Hourly and Resource Level Data in AWS Cost Management Console preferences.

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 \(p. 313\)](#) objects

#### [NextPageToken \(p. 62\)](#)

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

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

#### [ReturnSize \(p. 62\)](#)

The number of results that AWS returned at one time.

Type: Integer

#### [TotalSize \(p. 62\)](#)

The total number of search results.

Type: Integer

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

### **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

## Examples

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

## GetReservationCoverage

Service: AWS Cost Explorer

Retrieves the reservation coverage for your account, which you can use 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 management account can see the coverage of the associated member accounts. This supports dimensions, Cost Categories, and nested expressions. 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

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

```
        },
    ],
    "MaxResults": number,
    "Metrics": [ "string" ],
    "NextPageToken": "string",
    "SortBy": {
        "Key": "string",
        "SortOrder": "string"
    },
    "TimePeriod": {
        "End": "string",
        "Start": "string"
    }
}
```

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

### [Filter \(p. 67\)](#)

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.

Cost category is also supported.

Type: [Expression \(p. 329\)](#) object

Required: No

### [Granularity \(p. 67\)](#)

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 \(p. 67\)](#)

You can group the data by the following attributes:

- AZ
- CACHE\_ENGINE
- DATABASE\_ENGINE
- DEPLOYMENT\_OPTION
- INSTANCE\_TYPE
- INVOICING\_ENTITY
- LINKED\_ACCOUNT
- OPERATING\_SYSTEM
- PLATFORM
- REGION
- TENANCY

Type: Array of [GroupDefinition \(p. 334\)](#) objects

Required: No

#### [MaxResults \(p. 67\)](#)

The maximum number of objects that you returned for this request. If more objects are available, in the response, AWS provides a NextPageToken value that you can use in a subsequent call to get the next batch of objects.

Type: Integer

Valid Range: Minimum value of 1.

Required: No

#### [Metrics \(p. 67\)](#)

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

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### [NextPageToken \(p. 67\)](#)

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

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

Required: No

#### [SortBy \(p. 67\)](#)

The value by which you want to sort the data.

The following values are supported for Key:

- OnDemandCost
- CoverageHoursPercentage
- OnDemandHours
- ReservedHours
- TotalRunningHours
- CoverageNormalizedUnitsPercentage
- OnDemandNormalizedUnits
- ReservedNormalizedUnits
- TotalRunningNormalizedUnits
- Time

Supported values for SortOrder are ASCENDING or DESCENDING.

Type: [SortDefinition \(p. 394\)](#) object

Required: No

#### [TimePeriod \(p. 67\)](#)

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 \(p. 310\)](#) object

Required: Yes

## Response Syntax

```
{  
    "CoveragesByTime": [  
        {  
            "Groups": [  
                {  
                    "Attributes": {  
                        "string" : "string"  
                    },  
                    "Coverage": {  
                        "CoverageCost": {  
                            "OnDemandCost": "string"  
                        },  
                        "CoverageHours": {  
                            "CoverageHoursPercentage": "string",  
                            "OnDemandHours": "string",  
                            "ReservedHours": "string",  
                            "TotalRunningHours": "string"  
                        }  
                    }  
                }  
            ]  
        }  
    ]  
}
```

```
        },
        "CoverageNormalizedUnits": {
            "CoverageNormalizedUnitsPercentage": "string",
            "OnDemandNormalizedUnits": "string",
            "ReservedNormalizedUnits": "string",
            "TotalRunningNormalizedUnits": "string"
        }
    }
},
"TimePeriod": {
    "End": "string",
    "Start": "string"
},
"Total": {
    "CoverageCost": {
        "OnDemandCost": "string"
    },
    "CoverageHours": {
        "CoverageHoursPercentage": "string",
        "OnDemandHours": "string",
        "ReservedHours": "string",
        "TotalRunningHours": "string"
    },
    "CoverageNormalizedUnits": {
        "CoverageNormalizedUnitsPercentage": "string",
        "OnDemandNormalizedUnits": "string",
        "ReservedNormalizedUnits": "string",
        "TotalRunningNormalizedUnits": "string"
    }
}
},
],
"NextPageToken": "string",
"Total": {
    "CoverageCost": {
        "OnDemandCost": "string"
    },
    "CoverageHours": {
        "CoverageHoursPercentage": "string",
        "OnDemandHours": "string",
        "ReservedHours": "string",
        "TotalRunningHours": "string"
    },
    "CoverageNormalizedUnits": {
        "CoverageNormalizedUnitsPercentage": "string",
        "OnDemandNormalizedUnits": "string",
        "ReservedNormalizedUnits": "string",
        "TotalRunningNormalizedUnits": "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. 70)

The amount of time that your reservations covered.

Type: Array of [CoverageByTime \(p. 303\)](#) objects

### [NextPageToken \(p. 70\)](#)

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

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

### [Total \(p. 70\)](#)

The total amount of instance usage that a reservation covered.

Type: [Coverage \(p. 302\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

### **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

## Examples

### [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](#)

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

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

## GetReservationPurchaseRecommendation

Service: AWS Cost Explorer

Gets recommendations for reservation purchases. These recommendations might help you to 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 Reserved Instance (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 Reserved Instance (RI). AWS also shows the equal number of normalized units. This way, you can purchase any instance size that you want. For this example, your RI recommendation is for c4.large because that is the smallest size instance in the c4 instance family.

## Request Syntax

```
{  
    "AccountId": "string",  
    "AccountScope": "string",  
    "Filter": {  
        "And": [  
            "Expression"  
        ],  
        "CostCategories": {  
            "Key": "string",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        },  
        "Dimensions": {  
            "Key": "string",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        },  
        "Not": "Expression",  
        "Or": [  
            "Expression"  
        ],  
        "Tags": {  
            "Key": "string",  
            "MatchOptions": [ "string" ],  
            "Values": [ "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 \(p. 441\)](#).

The request accepts the following data in JSON format.

### [AccountId \(p. 75\)](#)

The account ID that's associated with the recommendation.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### [AccountScope \(p. 75\)](#)

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

Type: String

Valid Values: PAYER | LINKED

Required: No

### [Filter \(p. 75\)](#)

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. For GetRightsizingRecommendation, the Region is a full name (for example, REGION==US East (N. Virginia)). The Expression example is as follows:

```
{ "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. By doing this, you can 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 is as follows:

```
{ "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.

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

**Note**

For the GetRightsizingRecommendation action, a combination of OR and NOT isn't supported. OR isn't supported between different dimensions, or dimensions and tags. NOT operators aren't supported. Dimensions are also limited to LINKED\_ACCOUNT, REGION, or RIGHTSIZING\_TYPE.

For the GetReservationPurchaseRecommendation action, only NOT is supported. AND and OR aren't supported. Dimensions are limited to LINKED\_ACCOUNT.

Type: [Expression \(p. 329\)](#) object

Required: No

**LookbackPeriodInDays (p. 75)**

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. 75)**

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

Type: String

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

Required: No

**PageSize (p. 75)**

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. 75)**

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. 75)**

The specific service that you want recommendations for.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: Yes

#### ServiceSpecification (p. 75)

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

Type: [ServiceSpecification \(p. 393\)](#) object

Required: No

#### TermInYears (p. 75)

The reservation term that you want recommendations for.

Type: String

Valid Values: ONE\_YEAR | THREE\_YEARS

Required: No

## Response Syntax

```
{  
    "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,  
                            "Tenancy": "string"  
                        }  
                    }  
                }  
            ]  
        }  
    ]  
}
```

```
        "Region": "string",
        "SizeFlexEligible": boolean
    },
    "ESInstanceDetails": {
        "CurrentGeneration": boolean,
        "InstanceClass": "string",
        "InstanceSize": "string",
        "Region": "string",
        "SizeFlexEligible": boolean
    },
    "RDSInstanceDetails": {
        "CurrentGeneration": boolean,
        "DatabaseEdition": "string",
        "DatabaseEngine": "string",
        "DeploymentOption": "string",
        "Family": "string",
        "InstanceType": "string",
        "LicenseModel": "string",
        "Region": "string",
        "SizeFlexEligible": boolean
    },
    "RedshiftInstanceDetails": {
        "CurrentGeneration": boolean,
        "Family": "string",
        "NodeType": "string",
        "Region": "string",
        "SizeFlexEligible": boolean
    }
},
"MaximumNormalizedUnitsUsedPerHour": "string",
"MaximumNumberOfInstancesUsedPerHour": "string",
"MinimumNormalizedUnitsUsedPerHour": "string",
"MinimumNumberOfInstancesUsedPerHour": "string",
"RecommendedNormalizedUnitsToPurchase": "string",
"RecommendedNumberOfInstancesToPurchase": "string",
"RecurringStandardMonthlyCost": "string",
"UpfrontCost": "string"
}
],
"RecommendationSummary": {
    "CurrencyCode": "string",
    "TotalEstimatedMonthlySavingsAmount": "string",
    "TotalEstimatedMonthlySavingsPercentage": "string"
},
"ServiceSpecification": {
    "EC2Specification": {
        "OfferingClass": "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. 78)

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

Type: [ReservationPurchaseRecommendationMetadata \(p. 355\)](#) object

### [NextPageToken \(p. 78\)](#)

The pagination token for the next set of retrievable results.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

### [Recommendations \(p. 78\)](#)

Recommendations for reservations to purchase.

Type: Array of [ReservationPurchaseRecommendation \(p. 349\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

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

## GetReservationUtilization

Service: AWS Cost Explorer

Retrieves the reservation utilization for your account. Management account 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",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        },  
        "Dimensions": {  
            "Key": "string",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        },  
        "Not": "Expression",  
        "Or": [  
            "Expression"  
        ],  
        "Tags": {  
            "Key": "string",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        }  
    },  
    "Granularity": "string",  
    "GroupBy": [  
        {  
            "Key": "string",  
            "Type": "string"  
        }  
    ],  
    "MaxResults": number,  
    "NextPageToken": "string",  
    "SortBy": {  
        "Key": "string",  
        "SortOrder": "string"  
    },  
    "TimePeriod": {  
        "End": "string",  
        "Start": "string"  
    }  
}
```

### Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

### Filter (p. 81)

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

- AZ
- CACHE\_ENGINE
- DEPLOYMENT\_OPTION
- INSTANCE\_TYPE
- LINKED\_ACCOUNT
- OPERATING\_SYSTEM
- PLATFORM
- REGION
- SERVICE
- SCOPE
- TENANCY

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 \(p. 329\)](#) object

Required: No

### Granularity (p. 81)

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. 81)

Groups only by SUBSCRIPTION\_ID. Metadata is included.

Type: Array of [GroupDefinition \(p. 334\)](#) objects

Required: No

### MaxResults (p. 81)

The maximum number of objects that you returned for this request. If more objects are available, in the response, AWS provides a NextPageToken value that you can use in a subsequent call to get the next batch of objects.

Type: Integer

Valid Range: Minimum value of 1.

Required: No

### NextPageToken (p. 81)

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

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

Required: No

#### [SortBy \(p. 81\)](#)

The value that you want to sort the data by.

The following values are supported for Key:

- UtilizationPercentage
- UtilizationPercentageInUnits
- PurchasedHours
- PurchasedUnits
- TotalActualHours
- TotalActualUnits
- UnusedHours
- UnusedUnits
- OnDemandCostOfRHoursUsed
- NetRISavings
- TotalPotentialRISavings
- AmortizedUpfrontFee
- AmortizedRecurringFee
- TotalAmortizedFee
- RICostForUnusedHours
- RealizedSavings
- UnrealizedSavings

The supported values for SortOrder are ASCENDING and DESCENDING.

Type: [SortDefinition \(p. 394\)](#) object

Required: No

#### [TimePeriod \(p. 81\)](#)

Sets the start and end dates for retrieving Reserved Instance (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 \(p. 310\)](#) object

Required: Yes

## Response Syntax

```
{  
    "NextPageToken": "string",
```

```

    "Total": {
        "AmortizedRecurringFee": "string",
        "AmortizedUpfrontFee": "string",
        "NetRISavings": "string",
        "OnDemandCostOfRHHoursUsed": "string",
        "PurchasedHours": "string",
        "PurchasedUnits": "string",
        "RealizedSavings": "string",
        "RICostForUnusedHours": "string",
        "TotalActualHours": "string",
        "TotalActualUnits": "string",
        "TotalAmortizedFee": "string",
        "TotalPotentialRISavings": "string",
        "UnrealizedSavings": "string",
        "UnusedHours": "string",
        "UnusedUnits": "string",
        "UtilizationPercentage": "string",
        "UtilizationPercentageInUnits": "string"
    },
    "UtilizationsByTime": [
        {
            "Groups": [
                {
                    "Attributes": {
                        "string": "string"
                    },
                    "Key": "string",
                    "Utilization": {
                        "AmortizedRecurringFee": "string",
                        "AmortizedUpfrontFee": "string",
                        "NetRISavings": "string",
                        "OnDemandCostOfRHHoursUsed": "string",
                        "PurchasedHours": "string",
                        "PurchasedUnits": "string",
                        "RealizedSavings": "string",
                        "RICostForUnusedHours": "string",
                        "TotalActualHours": "string",
                        "TotalActualUnits": "string",
                        "TotalAmortizedFee": "string",
                        "TotalPotentialRISavings": "string",
                        "UnrealizedSavings": "string",
                        "UnusedHours": "string",
                        "UnusedUnits": "string",
                        "UtilizationPercentage": "string",
                        "UtilizationPercentageInUnits": "string"
                    },
                    "Value": "string"
                }
            ],
            "TimePeriod": {
                "End": "string",
                "Start": "string"
            }
        },
        "Total": {
            "AmortizedRecurringFee": "string",
            "AmortizedUpfrontFee": "string",
            "NetRISavings": "string",
            "OnDemandCostOfRHHoursUsed": "string",
            "PurchasedHours": "string",
            "PurchasedUnits": "string",
            "RealizedSavings": "string",
            "RICostForUnusedHours": "string",
            "TotalActualHours": "string",
            "TotalActualUnits": "string",
            "TotalAmortizedFee": "string",
            "TotalPotentialRISavings": "string",
            "UnusedHours": "string"
        }
    ]
}

```

```
        "UnrealizedSavings": "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. 83)

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

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

### [Total](#) (p. 83)

The total amount of time that you used your Reserved Instances (RIs).

Type: [ReservationAggregates](#) (p. 345) object

### [UtilizationsByTime](#) (p. 83)

The amount of time that you used your Reserved Instances (RIs).

Type: Array of [UtilizationByTime](#) (p. 403) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 443).

### **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

## Examples

### 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
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",
            "EndDateDateTime": "2019-09-28T15:22:31.000Z",
            "InstanceType": "t2.nano",
            "LeaseId": null,
            "NumberOfInstances": "1",
            "OfferingType": "convertible",
            "Region": "us-east-1"
          }
        }
      ]
    }
  ]
}
```

```
"Platform": "Linux/UNIX",
"Region": "us-east-1",
"Scope": "Region",
"StartTime": "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,
    "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",
        "StartTime": "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",
        "StartTime": "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"
    },
    "Total": {
        "PurchasedHours": 6307,
        "TotalActualHours": 4359,
        "UnusedHours": 1948,
        "UtilizationPercentage": 69.11368320913270968764864436340574
    }
}
]
```

## See Also

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

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

# GetRightsizingRecommendation

Service: AWS Cost Explorer

Creates recommendations that help 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 more information about calculation and function, see [Optimizing Your Cost with Rightsizing Recommendations](#) in the *AWS Billing and Cost Management User Guide*.

## Request Syntax

```
{  
    "Configuration": {  
        "BenefitsConsidered": boolean,  
        "RecommendationTarget": "string"  
    },  
    "Filter": {  
        "And": [  
            "Expression"  
        ],  
        "CostCategories": {  
            "Key": "string",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        },  
        "Dimensions": {  
            "Key": "string",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        },  
        "Not": "Expression",  
        "Or": [  
            "Expression"  
        ],  
        "Tags": {  
            "Key": "string",  
            "MatchOptions": [ "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 \(p. 441\)](#).

The request accepts the following data in JSON format.

### Configuration (p. 89)

You can use Configuration to customize recommendations across two attributes. You can choose to view recommendations for instances within the same instance families or across different instance families. You can also choose to view your estimated savings that are associated with recommendations with consideration of existing Savings Plans or RI benefits, or neither.

Type: [RightsizingRecommendationConfiguration \(p. 364\)](#) object

Required: No

#### [Filter \(p. 89\)](#)

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. For GetRightsizingRecommendation, the Region is a full name (for example, REGION==US East (N. Virginia)). The Expression example is as follows:

```
{ "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. By doing this, you can 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 is as follows:

```
{ "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.

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

#### **Note**

For the GetRightsizingRecommendation action, a combination of OR and NOT isn't supported. OR isn't supported between different dimensions, or dimensions and tags. NOT operators aren't supported. Dimensions are also limited to LINKED\_ACCOUNT, REGION, or RIGHTSIZING\_TYPE.

For the GetReservationPurchaseRecommendation action, only NOT is supported. AND and OR aren't supported. Dimensions are limited to LINKED\_ACCOUNT.

Type: [Expression \(p. 329\)](#) object

Required: No

#### [NextPageToken \(p. 89\)](#)

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

Type: String

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

Required: No

#### [PageSize \(p. 89\)](#)

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. 89)

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

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: Yes

## Response Syntax

```
{  
    "Configuration": {  
        "BenefitsConsidered": boolean,  
        "RecommendationTarget": "string"  
    },  
    "Metadata": {  
        "AdditionalMetadata": "string",  
        "GenerationTimestamp": "string",  
        "LookbackPeriodInDays": "string",  
        "RecommendationId": "string"  
    },  
    "NextPageToken": "string",  
    "RightsizingRecommendations": [  
        {  
            "AccountId": "string",  
            "CurrentInstance": {  
                "CurrencyCode": "string",  
                "InstanceName": "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": {  
                    "DiskResourceUtilization": {  
                        "DiskReadBytesPerSecond": "string",  
                        "DiskReadOpsPerSecond": "string",  
                        "DiskWriteBytesPerSecond": "string",  
                        "DiskWriteOpsPerSecond": "string"  
                    }  
                }  
            }  
        }  
    ]  
}
```

```

        },
        "EBSResourceUtilization": {
            "EbsReadBytesPerSecond": "string",
            "EbsReadOpsPerSecond": "string",
            "EbsWriteBytesPerSecond": "string",
            "EbsWriteOpsPerSecond": "string"
        },
        "MaxCpuUtilizationPercentage": "string",
        "MaxMemoryUtilizationPercentage": "string",
        "MaxStorageUtilizationPercentage": "string",
        "NetworkResourceUtilization": {
            "NetworkInBytesPerSecond": "string",
            "NetworkOutBytesPerSecond": "string",
            "NetworkPacketsInPerSecond": "string",
            "NetworkPacketsOutPerSecond": "string"
        }
    }
},
"SavingsPlansCoveredHoursInLookbackPeriod": "string",
"Tags": [
{
    "Key": "string",
    "MatchOptions": [ "string" ],
    "Values": [ "string" ]
}
],
"TotalRunningHoursInLookbackPeriod": "string"
},
"FindingReasonCodes": [ "string" ],
"ModifyRecommendationDetail": {
    "TargetInstances": [
    {
        "CurrencyCode": "string",
        "DefaultTargetInstance": boolean,
        "EstimatedMonthlyCost": "string",
        "EstimatedMonthlySavings": "string",
        "ExpectedResourceUtilization": {
            "EC2ResourceUtilization": {
                "DiskResourceUtilization": {
                    "DiskReadBytesPerSecond": "string",
                    "DiskReadOpsPerSecond": "string",
                    "DiskWriteBytesPerSecond": "string",
                    "DiskWriteOpsPerSecond": "string"
                },
                "EBSResourceUtilization": {
                    "EbsReadBytesPerSecond": "string",
                    "EbsReadOpsPerSecond": "string",
                    "EbsWriteBytesPerSecond": "string",
                    "EbsWriteOpsPerSecond": "string"
                },
                "MaxCpuUtilizationPercentage": "string",
                "MaxMemoryUtilizationPercentage": "string",
                "MaxStorageUtilizationPercentage": "string",
                "NetworkResourceUtilization": {
                    "NetworkInBytesPerSecond": "string",
                    "NetworkOutBytesPerSecond": "string",
                    "NetworkPacketsInPerSecond": "string",
                    "NetworkPacketsOutPerSecond": "string"
                }
            }
        }
    }
},
"PlatformDifferences": [ "string" ],
"ResourceDetails": {
    "EC2ResourceDetails": {
        "HourlyOnDemandRate": "string",
        "InstanceType": "string",

```

```
        "Memory": "string",
        "NetworkPerformance": "string",
        "Platform": "string",
        "Region": "string",
        "Sku": "string",
        "Storage": "string",
        "Vcpu": "string"
    }
}
]
},
"RightsizingType": "string",
"TerminateRecommendationDetail": {
    "CurrencyCode": "string",
    "EstimatedMonthlySavings": "string"
}
}
],
"Summary": {
    "EstimatedTotalMonthlySavingsAmount": "string",
    "SavingsCurrencyCode": "string",
    "SavingsPercentage": "string",
    "TotalRecommendationCount": "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.

### Configuration (p. 91)

You can use Configuration to customize recommendations across two attributes. You can choose to view recommendations for instances within the same instance families or across different instance families. You can also choose to view your estimated savings that are associated with recommendations with consideration of existing Savings Plans or RI benefits, or neither.

Type: [RightsizingRecommendationConfiguration \(p. 364\)](#) object

### Metadata (p. 91)

Information regarding this specific recommendation set.

Type: [RightsizingRecommendationMetadata \(p. 365\)](#) object

### NextPageToken (p. 91)

The token to retrieve the next set of results.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

### RightsizingRecommendations (p. 91)

Recommendations to rightsize resources.

Type: Array of [RightsizingRecommendation \(p. 362\)](#) objects

## Summary (p. 91)

Summary of this recommendation set.

Type: [RightsizingRecommendationSummary \(p. 367\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

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

## GetSavingsPlansCoverage

Service: AWS Cost Explorer

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 management account can see the coverage of the associated member accounts. This supports dimensions, Cost Categories, and nested expressions. 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": [  
            "Expression"  
        ],  
        "CostCategories": {  
            "Key": "string",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        },  
        "Dimensions": {  
            "Key": "string",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        },  
        "Not": "Expression",  
        "Or": [  
            "Expression"  
        ],  
        "Tags": {  
            "Key": "string",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        }  
    },  
    "Granularity": "string",  
    "GroupBy": [  
        {  
            "Key": "string",  
            "Type": "string"  
        }  
    ],  
    "MaxResults": number,  
    "Metrics": [ "string" ],  
    "NextToken": "string",  
    "SortBy": {  
        "Key": "string",  
        "SortOrder": "string"  
    },  
    "TimePeriod": {  
        "End": "string",  
        "Start": "string"  
    }  
}
```

}

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

### [Filter \(p. 95\)](#)

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.

Cost category is also supported.

Type: [Expression \(p. 329\)](#) object

Required: No

### [Granularity \(p. 95\)](#)

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 \(p. 95\)](#)

You can group the data using the attributes INSTANCE\_FAMILY, REGION, or SERVICE.

Type: Array of [GroupDefinition \(p. 334\)](#) objects

Required: No

### [MaxResults \(p. 95\)](#)

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 \(p. 95\)](#)

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

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### [NextToken \(p. 95\)](#)

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

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

Required: No

#### [SortBy \(p. 95\)](#)

The value that you want to sort the data by.

The following values are supported for Key:

- SpendCoveredBySavingsPlan
- OnDemandCost
- CoveragePercentage
- TotalCost
- InstanceFamily
- Region
- Service

The supported values for SortOrder are ASCENDING and DESCENDING.

Type: [SortDefinition \(p. 394\)](#) object

Required: No

#### [TimePeriod \(p. 95\)](#)

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 \(p. 310\)](#) object

Required: Yes

## Response Syntax

```
{  
    "NextToken": "string",  
    "SavingsPlansCov": [  
        {  
            "Attributes": {  
                "string" : "string"  
            },  
            "Coverage": {  
                "string": "string"  
            }  
        }  
    ]  
}
```

```
        "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 \(p. 97\)](#)

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

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

### [SavingsPlansCovgeries \(p. 97\)](#)

The amount of spend that your Savings Plans covered.

Type: Array of [SavingsPlansCoverage \(p. 372\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

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

# GetSavingsPlansPurchaseRecommendation

Service: AWS Cost Explorer

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

## Request Syntax

```
{  
    "AccountScope": "string",  
    "Filter": {  
        "And": [  
            "Expression"  
        ],  
        "CostCategories": {  
            "Key": "string",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        },  
        "Dimensions": {  
            "Key": "string",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        },  
        "Not": "Expression",  
        "Or": [  
            "Expression"  
        ],  
        "Tags": {  
            "Key": "string",  
            "MatchOptions": [ "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 \(p. 441\)](#).

The request accepts the following data in JSON format.

### AccountScope (p. 100)

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

Type: String

Valid Values: PAYER | LINKED

Required: No

### Filter (p. 100)

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) that you want to see Savings Plans purchase recommendations for.

For GetSavingsPlansPurchaseRecommendation, the Filter doesn't 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 that you want to see Savings Plans Purchase Recommendations for. AND and OR operators are not supported.

Type: [Expression \(p. 329\)](#) object

Required: No

### LookbackPeriodInDays (p. 100)

The lookback period that's used to generate the recommendation.

Type: String

Valid Values: SEVEN\_DAYS | THIRTY\_DAYS | SIXTY\_DAYS

Required: Yes

### NextPageToken (p. 100)

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

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

Required: No

### PageSize (p. 100)

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. 100)

The payment option that's 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. 100)

The Savings Plans recommendation type that's requested.

Type: String

Valid Values: COMPUTE\_SP | EC2\_INSTANCE\_SP | SAGEMAKER\_SP

Required: Yes

### TermInYears (p. 100)

The savings plan recommendation term that's used to generate these recommendations.

Type: String

Valid Values: ONE\_YEAR | THREE\_YEARS

Required: Yes

## Response Syntax

```
{  
    "Metadata": {  
        "AdditionalMetadata": "string",  
        "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",  
            "DailyCommitmentToPurchase": "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 \(p. 102\)](#)

Information that regards this specific recommendation set.

Type: [SavingsPlansPurchaseRecommendationMetadata \(p. 382\)](#) object

### [NextPageToken \(p. 102\)](#)

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

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

### [SavingsPlansPurchaseRecommendation \(p. 102\)](#)

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

Type: [SavingsPlansPurchaseRecommendation \(p. 376\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

### **InvalidNextTokenException**

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

HTTP Status Code: 400

### **LimitExceeded**Exception****

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 V2](#)
- [AWS SDK for JavaScript](#)

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

# GetSavingsPlansUtilization

Service: AWS Cost Explorer

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

## Note

You can't group by any dimension values for GetSavingsPlansUtilization.

## Request Syntax

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

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

### Filter (p. 105)

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 \(p. 329\)](#) object

Required: No

#### [Granularity \(p. 105\)](#)

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

#### [SortBy \(p. 105\)](#)

The value that you want to sort the data by.

The following values are supported for Key:

- UtilizationPercentage
- TotalCommitment
- UsedCommitment
- UnusedCommitment
- NetSavings

The supported values for SortOrder are ASCENDING and DESCENDING.

Type: [SortDefinition \(p. 394\)](#) object

Required: No

#### [TimePeriod \(p. 105\)](#)

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 \(p. 310\)](#) object

Required: Yes

## Response Syntax

```
{  
  "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 \(p. 106\)](#)

The amount of cost/commitment that you used your Savings Plans. You can use it to specify date ranges.

Type: Array of [SavingsPlansUtilizationByTime \(p. 390\)](#) objects

### [Total \(p. 106\)](#)

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

Type: [SavingsPlansUtilizationAggregates \(p. 389\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

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

# GetSavingsPlansUtilizationDetails

Service: AWS Cost Explorer

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

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

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

### [DataType \(p. 109\)](#)

The data type.

Type: Array of strings

Valid Values: ATTRIBUTES | UTILIZATION | AMORTIZED\_COMMITMENT | SAVINGS

Required: No

**Filter (p. 109)**

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 \(p. 329\)](#) object

Required: No

**MaxResults (p. 109)**

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. 109)**

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

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

Required: No

**SortBy (p. 109)**

The value that you want to sort the data by.

The following values are supported for Key:

- UtilizationPercentage
- TotalCommitment
- UsedCommitment
- UnusedCommitment
- NetSavings
- AmortizedRecurringCommitment
- AmortizedUpfrontCommitment

The supported values for SortOrder are ASCENDING and DESCENDING.

Type: [SortDefinition \(p. 394\)](#) object

Required: No

#### [TimePeriod \(p. 109\)](#)

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 \(p. 310\)](#) object

Required: Yes

## Response Syntax

```
{  
    "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"  
            }  
        }  
    ],  
    "TimePeriod": {  
        "End": "string",  
        "Start": "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.

### **NextToken (p. 111)**

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

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\\S\\s]\*

### **SavingsPlansUtilizationDetails (p. 111)**

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

Type: Array of [SavingsPlansUtilizationDetail \(p. 391\)](#) objects

### **TimePeriod (p. 111)**

The time period of the request.

Type: [DateInterval \(p. 310\)](#) object

### **Total (p. 111)**

The total Savings Plans utilization, regardless of time period.

Type: [SavingsPlansUtilizationAggregates \(p. 389\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

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

## GetTags

Service: AWS Cost Explorer

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

### Request Syntax

```
{  
    "Filter": {  
        "And": [  
            "Expression"  
        ],  
        "CostCategories": {  
            "Key": "string",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        },  
        "Dimensions": {  
            "Key": "string",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        },  
        "Not": "Expression",  
        "Or": [  
            "Expression"  
        ],  
        "Tags": {  
            "Key": "string",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        }  
    },  
    "MaxResults": number,  
    "NextPageToken": "string",  
    "SearchString": "string",  
    "SortBy": [  
        {  
            "Key": "string",  
            "SortOrder": "string"  
        }  
    ],  
    "TagKey": "string",  
    "TimePeriod": {  
        "End": "string",  
        "Start": "string"  
    }  
}
```

### Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

#### [Filter \(p. 114\)](#)

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. For

GetRightsizingRecommendation, the Region is a full name (for example, REGION==US East (N. Virginia). The Expression example is as follows:

```
{ "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. By doing this, you can 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 is as follows:

```
{ "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.

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

**Note**

For the GetRightsizingRecommendation action, a combination of OR and NOT isn't supported. OR isn't supported between different dimensions, or dimensions and tags. NOT operators aren't supported. Dimensions are also limited to LINKED\_ACCOUNT, REGION, or RIGHTSIZING\_TYPE.

For the GetReservationPurchaseRecommendation action, only NOT is supported. AND and OR aren't supported. Dimensions are limited to LINKED\_ACCOUNT.

Type: [Expression \(p. 329\)](#) object

Required: No

**MaxResults (p. 114)**

This field is only used when SortBy is provided in the request. The maximum number of objects that are returned for this request. If MaxResults isn't specified with SortBy, the request returns 1000 results as the default value for this parameter.

For GetTags, MaxResults has an upper quota of 1000.

Type: Integer

Valid Range: Minimum value of 1.

Required: No

**NextPageToken (p. 114)**

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

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: `[\S\s]*`

Required: No

#### [SearchString \(p. 114\)](#)

The value that you want to search for.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: `[\S\s]*`

Required: No

#### [SortBy \(p. 114\)](#)

The value that you want to sort the data by.

The key represents cost and usage metrics. The following values are supported:

- BlendedCost
- UnblendedCost
- AmortizedCost
- NetAmortizedCost
- NetUnblendedCost
- UsageQuantity
- NormalizedUsageAmount

The supported values for SortOrder are ASCENDING and DESCENDING.

When you use SortBy, NextPageToken and SearchString aren't supported.

Type: Array of [SortDefinition \(p. 394\)](#) objects

Required: No

#### [TagKey \(p. 114\)](#)

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

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: `[\S\s]*`

Required: No

#### [TimePeriod \(p. 114\)](#)

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 \(p. 310\)](#) 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 \(p. 117\)](#)

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

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

### [ReturnSize \(p. 117\)](#)

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

Type: Integer

### [Tags \(p. 117\)](#)

The tags that match your request.

Type: Array of strings

### [TotalSize \(p. 117\)](#)

The total number of query results.

Type: Integer

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

### **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

## Examples

### Example

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

#### 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.GetTags
{
  "TimePeriod": {
    "Start": "2017-01-01",
    "End": "2017-05-18"
  },
  "TagKey": "Project",
  "SearchString": "secretProject"
}
```

#### Sample Response

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

# GetUsageForecast

Service: AWS Cost Explorer

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

```
{  
    "Filter": {  
        "And": [  
            "Expression"  
        ],  
        "CostCategories": {  
            "Key": "string",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        },  
        "Dimensions": {  
            "Key": "string",  
            "MatchOptions": [ "string" ],  
            "Values": [ "string" ]  
        },  
        "Not": "Expression",  
        "Or": [  
            "Expression"  
        ],  
        "Tags": {  
            "Key": "string",  
            "MatchOptions": [ "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 \(p. 441\)](#).

The request accepts the following data in JSON format.

### Filter (p. 120)

The filters that you want to use to filter your forecast. The GetUsageForecast API supports filtering by the following dimensions:

- AZ
- INSTANCE\_TYPE
- LINKED\_ACCOUNT
- LINKED\_ACCOUNT\_NAME
- 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
- INSTANCE\_TYPE\_FAMILY
- BILLING\_ENTITY
- RESERVATION\_ID
- SAVINGS\_PLAN\_ARN

Type: [Expression \(p. 329\)](#) object

Required: No

#### [Granularity \(p. 120\)](#)

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.

Type: String

Valid Values: DAILY | MONTHLY | HOURLY

Required: Yes

#### [Metric \(p. 120\)](#)

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 \(p. 120\)](#)

AWS 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

Valid Range: Minimum value of 51. Maximum value of 99.

Required: No

#### [TimePeriod \(p. 120\)](#)

The start and end dates of the period that you want to retrieve usage forecast for. The start date is included in the period, but the end date isn't included in the period. 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`. The start date must be equal to or later than the current date to avoid a validation error.

Type: [DateInterval \(p. 310\)](#) object

Required: Yes

## Response Syntax

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

#### [ForecastResultsByTime \(p. 122\)](#)

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 \(p. 331\)](#) objects

#### [Total \(p. 122\)](#)

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

Type: [MetricValue \(p. 337\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

### 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

## Examples

### Example

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

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

## ListCostAllocationTags

Service: AWS Cost Explorer

Get a list of cost allocation tags. All inputs in the API are optional and serve as filters. By default, all cost allocation tags are returned.

### Request Syntax

```
{  
    "MaxResults": number,  
    "NextToken": string,  
    "Status": string,  
    "TagKeys": [ string ],  
    "Type": string  
}
```

### Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

#### [MaxResults \(p. 125\)](#)

The maximum number of objects that are returned for this request. By default, the request returns 100 results.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

#### [NextToken \(p. 125\)](#)

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

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

Required: No

#### [Status \(p. 125\)](#)

The status of cost allocation tag keys that are returned for this request.

Type: String

Valid Values: Active | Inactive

Required: No

#### [TagKeys \(p. 125\)](#)

The list of cost allocation tag keys that are returned for this request.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 100 items.

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### Type (p. 125)

The type of CostAllocationTag object that are returned for this request. The AWSGenerated type tags are tags that AWS defines and applies to support AWS resources for cost allocation purposes. The UserDefined type tags are tags that you define, create, and apply to resources.

Type: String

Valid Values: AWSGenerated | UserDefined

Required: No

## Response Syntax

```
{  
    "CostAllocationTags": [  
        {  
            "Status": "string",  
            "TagKey": "string",  
            "Type": "string"  
        }  
    ],  
    "NextToken": "string"  
}
```

## Response Elements

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

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

#### CostAllocationTags (p. 126)

A list of cost allocation tags that includes the detailed metadata for each one.

Type: Array of [CostAllocationTag \(p. 288\)](#) objects

Array Members: Minimum number of 0 items. Maximum number of 100 items.

#### NextToken (p. 126)

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

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

### 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

## Examples

The following are sample requests and responses of the ListCostAllocationTags operations.

### Example 1: List all user defined active tags

This example illustrates one usage of ListCostAllocationTags.

#### Sample Request

```
{  
    "Type": "UserDefined",  
    "Status": "Active"  
}
```

#### Sample Response

```
{  
    "CostAllocationTags": [  
        {  
            "TagKey": "tagA",  
            "Type": "UserDefined",  
            "Status": "Active"  
        }  
    ],  
    "NextToken": null  
}
```

### Example 2: List all tags by tag keys

This example illustrates one usage of ListCostAllocationTags.

#### Sample Request

```
{  
    "TagKeys": ["tagA", "tagB"]  
}
```

#### Sample Response

```
{
```

```
"CostAllocationTags": [  
    {  
        "TagKey": "tagA",  
        "Type": "UserDefined",  
        "Status": "Active"  
    },  
    {  
        "TagKey": "tagB",  
        "Type": "UserDefined",  
        "Status": "Inactive"  
    }  
,  
    "NextToken": null  
}
```

## See Also

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

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

# ListCostCategoryDefinitions

Service: AWS Cost Explorer

Returns the name, Amazon Resource Name (ARN), NumberOfRules 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. ListCostCategoryDefinitions supports pagination. The request can have a MaxResults range up to 100.

## Request Syntax

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

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

### **EffectiveOn** (p. 129)

The date when the Cost Category was effective.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 25.

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

Required: No

### **MaxResults** (p. 129)

The number of entries a paginated response contains.

Type: Integer

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

Required: No

### **NextToken** (p. 129)

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

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

Required: No

## Response Syntax

```
{  
    "CostCategoryReferences": [  
        {  
            "CostCategoryArn": "string",  
            "DefaultValue": "string",  
            "EffectiveEnd": "string",  
            "EffectiveStart": "string",  
            "Name": "string",  
            "NumberOfRules": number,  
            "ProcessingStatus": [  
                {  
                    "Component": "string",  
                    "Status": "string"  
                }  
            ],  
            "Values": [ "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.

### [CostCategoryReferences \(p. 130\)](#)

A reference to a Cost Category that contains enough information to identify the Cost Category.

Type: Array of [CostCategoryReference \(p. 294\)](#) objects

### [NextToken \(p. 130\)](#)

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

Length Constraints: Minimum length of 0. Maximum length of 8192.

Pattern: [\S\s]\*

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

### **LimitExceeded**

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

## ListTagsForResource

Service: AWS Cost Explorer

Returns a list of resource tags associated with the resource specified by the Amazon Resource Name (ARN).

### Request Syntax

```
{  
    "ResourceArn": "string"  
}
```

### Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

#### [ResourceArn \(p. 132\)](#)

The Amazon Resource Name (ARN) of the resource. For a list of supported resources, see [ResourceTag](#).

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

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

Required: Yes

### Response Syntax

```
{  
    "ResourceTags": [  
        {  
            "Key": "string",  
            "Value": "string"  
        }  
    ]  
}
```

### Response Elements

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

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

#### [ResourceTags \(p. 132\)](#)

A list of tag key value pairs that are associated with the resource.

Type: Array of [ResourceTag \(p. 359\)](#) objects

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

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

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

# ProvideAnomalyFeedback

Service: AWS Cost Explorer

Modifies the feedback property of a given cost anomaly.

## Request Syntax

```
{  
    "AnomalyId": "string",  
    "Feedback": "string"  
}
```

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

### AnomalyId (p. 134)

A cost anomaly ID.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: Yes

### Feedback (p. 134)

Describes whether the cost anomaly was a planned activity or you considered it an anomaly.

Type: String

Valid Values: YES | NO | PLANNED\_ACTIVITY

Required: Yes

## Response Syntax

```
{  
    "AnomalyId": "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.

### AnomalyId (p. 134)

The ID of the modified cost anomaly.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

### **LimitExceeded**Exception

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

## TagResource

Service: AWS Cost Explorer

An API operation for adding one or more tags (key-value pairs) to a resource.

You can use the TagResource operation with a resource that already has tags. If you specify a new tag key for the resource, this tag is appended to the list of tags associated with the resource. If you specify a tag key that is already associated with the resource, the new tag value you specify replaces the previous value for that tag.

Although the maximum number of array members is 200, user-tag maximum is 50. The remaining are reserved for AWS use.

## Request Syntax

```
{  
    "ResourceArn": "string",  
    "ResourceTags": [  
        {  
            "Key": "string",  
            "Value": "string"  
        }  
    ]  
}
```

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

### ResourceArn (p. 136)

The Amazon Resource Name (ARN) of the resource. For a list of supported resources, see [ResourceTag](#).

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

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

Required: Yes

### ResourceTags (p. 136)

A list of tag key-value pairs to be added to the resource.

Each tag consists of a key and a value, and each key must be unique for the resource. The following restrictions apply to resource tags:

- Although the maximum number of array members is 200, you can assign a maximum of 50 user-tags to one resource. The remaining are reserved for AWS use
- The maximum length of a key is 128 characters
- The maximum length of a value is 256 characters
- Keys and values can only contain alphanumeric characters, spaces, and any of the following: \_ . : / =+@-

- Keys and values are case sensitive
- Keys and values are trimmed for any leading or trailing whitespaces
- Don't use aws: as a prefix for your keys. This prefix is reserved for AWS use

Type: Array of [ResourceTag \(p. 359\)](#) objects

Array Members: Minimum number of 0 items. Maximum number of 200 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 \(p. 443\)](#).

### **LimitExceeded**

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

### **TooManyTagsException**

Can occur if you specify a number of tags for a resource greater than the maximum 50 user tags per resource.

HTTP Status Code: 400

## See Also

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

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

# UntagResource

Service: AWS Cost Explorer

Removes one or more tags from a resource. Specify only tag keys in your request. Don't specify the value.

## Request Syntax

```
{  
    "ResourceArn": "string",  
    "ResourceTagKeys": [ "string" ]  
}
```

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

### **ResourceArn (p. 138)**

The Amazon Resource Name (ARN) of the resource. For a list of supported resources, see [ResourceTag](#).

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

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

Required: Yes

### **ResourceTagKeys (p. 138)**

A list of tag keys associated with tags that need to be removed from the resource. If you specify a tag key that doesn't exist, it's ignored. Although the maximum number of array members is 200, user-tag maximum is 50. The remaining are reserved for AWS use.

Type: Array of strings

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

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

Pattern: `^([\\p{L}\\p{Z}\\p{N}_.:/=+\\-@]*)$`

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 \(p. 443\)](#).

### **LimitExceeded**Exception****

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

## UpdateAnomalyMonitor

Service: AWS Cost Explorer

Updates an existing cost anomaly monitor. The changes made are applied going forward, and doesn't change anomalies detected in the past.

### Request Syntax

```
{  
    "MonitorArn": "string",  
    "MonitorName": "string"  
}
```

### Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

#### **MonitorArn (p. 140)**

Cost anomaly monitor Amazon Resource Names (ARNs).

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: Yes

#### **MonitorName (p. 140)**

The new name for the cost anomaly monitor.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### Response Syntax

```
{  
    "MonitorArn": "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.

### [MonitorArn \(p. 140\)](#)

A cost anomaly monitor ARN.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

### **LimitExceededException**

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

HTTP Status Code: 400

### **UnknownMonitorException**

The cost anomaly monitor does not exist for the account.

HTTP Status Code: 400

## See Also

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

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

# UpdateAnomalySubscription

Service: AWS Cost Explorer

Updates an existing cost anomaly monitor subscription.

## Request Syntax

```
{  
    "Frequency": "string",  
    "MonitorArnList": [ "string" ],  
    "Subscribers": [  
        {  
            "Address": "string",  
            "Status": "string",  
            "Type": "string"  
        }  
    ],  
    "SubscriptionArn": "string",  
    "SubscriptionName": "string",  
    "Threshold": number  
}
```

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

### [Frequency \(p. 142\)](#)

The update to the frequency value that subscribers receive notifications.

Type: String

Valid Values: DAILY | IMMEDIATE | WEEKLY

Required: No

### [MonitorArnList \(p. 142\)](#)

A list of cost anomaly monitor ARNs.

Type: Array of strings

Length Constraints: Minimum length of 20. Maximum length of 2048.

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

Required: No

### [Subscribers \(p. 142\)](#)

The update to the subscriber list.

Type: Array of [Subscriber \(p. 395\)](#) objects

Required: No

### [SubscriptionArn \(p. 142\)](#)

A cost anomaly subscription Amazon Resource Name (ARN).

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: Yes

#### [SubscriptionName \(p. 142\)](#)

The new name of the subscription.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### [Threshold \(p. 142\)](#)

The update to the threshold value for receiving notifications.

Type: Double

Valid Range: Minimum value of 0.0.

Required: No

## Response Syntax

```
{  
    "SubscriptionArn": "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.

#### [SubscriptionArn \(p. 143\)](#)

A cost anomaly subscription ARN.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

#### **LimitExceeded****Exception**

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

HTTP Status Code: 400

**UnknownMonitorException**

The cost anomaly monitor does not exist for the account.

HTTP Status Code: 400

**UnknownSubscriptionException**

The cost anomaly subscription does not exist for the account.

HTTP Status Code: 400

## See Also

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

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

## UpdateCostAllocationTagsStatus

Service: AWS Cost Explorer

Updates status for cost allocation tags in bulk, with maximum batch size of 20. If the tag status that's updated is the same as the existing tag status, the request doesn't fail. Instead, it doesn't have any effect on the tag status (for example, activating the active tag).

### Request Syntax

```
{  
    "CostAllocationTagsStatus": [  
        {  
            "Status": "string",  
            "TagKey": "string"  
        }  
    ]  
}
```

### Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

#### [CostAllocationTagsStatus \(p. 145\)](#)

The list of `CostAllocationTagStatusEntry` objects that are used to update cost allocation tags status for this request.

Type: Array of [CostAllocationTagStatusEntry \(p. 289\)](#) objects

Array Members: Minimum number of 1 item. Maximum number of 20 items.

Required: Yes

### Response Syntax

```
{  
    "Errors": [  
        {  
            "Code": "string",  
            "Message": "string",  
            "TagKey": "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.

#### [Errors \(p. 145\)](#)

A list of `UpdateCostAllocationTagsStatusError` objects with error details about each cost allocation tag that can't be updated. If there's no failure, an empty array returns.

Type: Array of [UpdateCostAllocationTagsStatusError \(p. 402\)](#) objects

Array Members: Minimum number of 0 items. Maximum number of 20 items.

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

### LimitExceededException

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

HTTP Status Code: 400

## Examples

The following are sample requests and responses of the UpdateCostAllocationTagsStatus operations.

### Example 1: Successfully updated all tag status

This example illustrates one usage of UpdateCostAllocationTagsStatus.

#### Sample Request

```
{  
    "CostAllocationTagsStatus": [  
        {  
            "TagKey": "tagA",  
            "Status": "Active"  
        },  
        {  
            "TagKey": "tagB",  
            "Status": "Inactive"  
        }  
    ]  
}
```

#### Sample Response

```
{  
    "Errors": []  
}
```

### Example 2: Failed to update one of the tag statuses

This example illustrates one usage of UpdateCostAllocationTagsStatus.

#### Sample Request

```
{  
    "CostAllocationTagsStatus": [  
        {  
            "TagKey": "tagC",  
            "Status": "Active"  
        },  
        {  
            "TagKey": "tagD",  
            "Status": "Inactive"  
        }  
    ]  
}
```

```
        "TagKey": "tagD",
        "Status": "Inactive"
    ]
}
```

### Sample Response

```
{
    "Errors": [
        {
            "TagKey": "tagC",
            "Code": "TagKeysNotFoundException",
            "Message": "Failed to update Cost Allocation Tag: tagC"
        }
    ]
}
```

### See Also

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

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

# UpdateCostCategoryDefinition

Service: AWS Cost Explorer

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

```
{  
    "CostCategoryArn": "string",  
    "DefaultValue": "string",  
    "EffectiveStart": "string",  
    "Rules": [  
        {  
            "InheritedValue": {  
                "DimensionKey": "string",  
                "DimensionName": "string"  
            },  
            "Rule": {  
                "And": [  
                    "Expression"  
                ],  
                "CostCategories": {  
                    "Key": "string",  
                    "MatchOptions": [ "string" ],  
                    "Values": [ "string" ]  
                },  
                "Dimensions": {  
                    "Key": "string",  
                    "MatchOptions": [ "string" ],  
                    "Values": [ "string" ]  
                },  
                "Not": "Expression",  
                "Or": [  
                    "Expression"  
                ],  
                "Tags": {  
                    "Key": "string",  
                    "MatchOptions": [ "string" ],  
                    "Values": [ "string" ]  
                }  
            },  
            "Type": "string",  
            "Value": "string"  
        }  
    ],  
    "RuleVersion": "string",  
    "SplitChargeRules": [  
        {  
            "Method": "string",  
            "Parameters": [  
                {  
                    "Type": "string",  
                    "Values": [ "string" ]  
                }  
            ],  
            "Source": "string",  
            "Targets": [ "string" ]  
        }  
    ]  
}
```

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

### [CostCategoryArn \(p. 148\)](#)

The unique identifier for your Cost Category.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

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

Required: Yes

### [DefaultValue \(p. 148\)](#)

The default value for the cost category.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 50.

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

Required: No

### [EffectiveStart \(p. 148\)](#)

The Cost Category's effective start date. It can only be a billing start date (first day of the month). If the date isn't provided, it's the first day of the current month. Dates can't be before the previous twelve months, or in the future.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 25.

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

Required: No

### [Rules \(p. 148\)](#)

The Expression object used to categorize costs. For more information, see [CostCategoryRule](#).

Type: Array of [CostCategoryRule \(p. 296\)](#) objects

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

Required: Yes

### [RuleVersion \(p. 148\)](#)

The rule schema version in this particular Cost Category.

Type: String

Valid Values: `CostCategoryExpression.v1`

Required: Yes

### [SplitChargeRules \(p. 148\)](#)

The split charge rules used to allocate your charges between your Cost Category values.

Type: Array of [CostCategorySplitChargeRule \(p. 298\)](#) objects

Array Members: Minimum number of 1 item. Maximum number of 10 items.

Required: No

## 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 \(p. 150\)](#)

The unique identifier for your Cost Category.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

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

### [EffectiveStart \(p. 150\)](#)

The Cost Category's effective start date. It can only be a billing start date (first day of the month).

Type: String

Length Constraints: Minimum length of 20. Maximum length of 25.

Pattern: ^\d{4}-\d\d-\d\dT\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 \(p. 443\)](#).

### **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 resource.

HTTP Status Code: 400

## See Also

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

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

## AWS Budgets

The following actions are supported by AWS Budgets:

- [CreateBudget \(p. 153\)](#)
- [CreateBudgetAction \(p. 161\)](#)
- [CreateNotification \(p. 166\)](#)
- [CreateSubscriber \(p. 169\)](#)
- [DeleteBudget \(p. 172\)](#)
- [DeleteBudgetAction \(p. 175\)](#)
- [DeleteNotification \(p. 179\)](#)
- [DeleteSubscriber \(p. 182\)](#)
- [DescribeBudget \(p. 185\)](#)
- [DescribeBudgetAction \(p. 192\)](#)
- [DescribeBudgetActionHistories \(p. 195\)](#)
- [DescribeBudgetActionsForAccount \(p. 199\)](#)
- [DescribeBudgetActionsForBudget \(p. 202\)](#)
- [DescribeBudgetNotificationsForAccount \(p. 206\)](#)
- [DescribeBudgetPerformanceHistory \(p. 209\)](#)
- [DescribeBudgets \(p. 214\)](#)
- [DescribeNotificationsForBudget \(p. 221\)](#)
- [DescribeSubscribersForNotification \(p. 225\)](#)
- [ExecuteBudgetAction \(p. 229\)](#)
- [UpdateBudget \(p. 232\)](#)
- [UpdateBudgetAction \(p. 239\)](#)
- [UpdateNotification \(p. 245\)](#)

- [UpdateSubscriber \(p. 248\)](#)

# 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": {  
        "AutoAdjustData": {  
            "AutoAdjustType": "string",  
            "HistoricalOptions": {  
                "BudgetAdjustmentPeriod": number,  
                "LookBackAvailablePeriods": number  
            },  
            "LastAutoAdjustTime": number  
        },  
        "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": {
        "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 \(p. 441\)](#).

The request accepts the following data in JSON format.

### **AccountId** (p. 153)

The account ID that is associated with the budget.

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

Required: Yes

### **Budget** (p. 153)

The budget object that you want to create.

Type: [Budget \(p. 411\)](#) object

Required: Yes

### **NotificationsWithSubscribers** (p. 153)

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 \(p. 429\)](#) objects

Array Members: Maximum number of 10 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 \(p. 443\)](#).

### **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

### **InvalidArgumentException**

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

HTTP Status Code: 400

### **ThrottlingException**

The number of API requests has exceeded the maximum allowed API request throttling limit for the account.

HTTP Status Code: 400

## Examples

### Example

The following is the `PlannedBudgetLimits` syntax

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

```

## 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;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 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"
            },
            "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"
},
"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 `BudgetLimit` and filtering for a specific tag.

### 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": {
        "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 V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateBudgetAction

Service: AWS Budgets

Creates a budget action.

## Request Syntax

```
{  
    "AccountId": "string",  
    "ActionThreshold": {  
        "ActionThresholdType": "string",  
        "ActionThresholdValue": number  
    },  
    "ActionType": "string",  
    "ApprovalModel": "string",  
    "BudgetName": "string",  
    "Definition": {  
        "IamActionDefinition": {  
            "Groups": [ "string" ],  
            "PolicyArn": "string",  
            "Roles": [ "string" ],  
            "Users": [ "string" ]  
        },  
        "ScpActionDefinition": {  
            "PolicyId": "string",  
            "TargetIds": [ "string" ]  
        },  
        "SsmActionDefinition": {  
            "ActionSubType": "string",  
            "InstanceIds": [ "string" ],  
            "Region": "string"  
        }  
    },  
    "ExecutionRoleArn": "string",  
    "NotificationType": "string",  
    "Subscribers": [  
        {  
            "Address": "string",  
            "SubscriptionType": "string"  
        }  
    ]  
}
```

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

### AccountId ([p. 161](#))

The account ID of the user. It's a 12-digit number.

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

Required: Yes

### ActionThreshold (p. 161)

The trigger threshold of the action.

Type: [ActionThreshold \(p. 409\)](#) object

Required: Yes

### ActionType (p. 161)

The type of action. This defines the type of tasks that can be carried out by this action. This field also determines the format for definition.

Type: String

Valid Values: APPLY\_IAM\_POLICY | APPLY\_SCP\_POLICY | RUN\_SSM\_DOCUMENTS

Required: Yes

### ApprovalModel (p. 161)

This specifies if the action needs manual or automatic approval.

Type: String

Valid Values: AUTOMATIC | MANUAL

Required: Yes

### BudgetName (p. 161)

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

### Definition (p. 161)

Specifies all of the type-specific parameters.

Type: [Definition \(p. 423\)](#) object

Required: Yes

### ExecutionRoleArn (p. 161)

The role passed for action execution and reversion. Roles and actions must be in the same account.

Type: String

Length Constraints: Minimum length of 32. Maximum length of 618.

Pattern: ^arn:(aws|aws-cn|aws-us-gov|us-iso-east-1|us-isob-east-1):iam::\d{12}:role(\u002F[\u0021-\u007F]+\u002F|\u002F)[\w+=,.@-]+\$

Required: Yes

### NotificationType (p. 161)

The type of a notification. It must be ACTUAL or FORECASTED.

Type: String

Valid Values: ACTUAL | FORECASTED

Required: Yes

### [Subscribers \(p. 161\)](#)

A list of subscribers.

Type: Array of [Subscriber \(p. 433\)](#) objects

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

Required: Yes

## Response Syntax

```
{  
    "AccountId": "string",  
    "ActionId": "string",  
    "BudgetName": "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.

### [AccountId \(p. 163\)](#)

The account ID of the user. It's a 12-digit number.

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

### [ActionId \(p. 163\)](#)

A system-generated universally unique identifier (UUID) for the action.

Type: String

Length Constraints: Fixed length of 36.

Pattern: ^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}\$

### [BudgetName \(p. 163\)](#)

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: [^:\\]+

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

### **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

### **ThrottlingException**

The number of API requests has exceeded the maximum allowed API request throttling limit for the account.

HTTP Status Code: 400

## See Also

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

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



## CreateNotification

Service: AWS Budgets

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

### Request Syntax

```
{  
    "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 \(p. 441\)](#).

The request accepts the following data in JSON format.

#### [AccountId \(p. 166\)](#)

The account ID 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 \(p. 166\)](#)

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 \(p. 166\)](#)

The notification that you want to create.

Type: [Notification \(p. 427\)](#) object

Required: Yes

#### [Subscribers \(p. 166\)](#)

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 \(p. 433\)](#) 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 \(p. 443\)](#).

### **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

### **ThrottlingException**

The number of API requests has exceeded the maximum allowed API request throttling limit for the account.

HTTP Status Code: 400

## Examples

### Example

The following is a sample request of the CreateNotification 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.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 V2](#)
- [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

```
{  
    "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 \(p. 441\)](#).

The request accepts the following data in JSON format.

### AccountId (p. 169)

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. 169)

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. 169)

The notification that you want to create a subscriber for.

Type: [Notification \(p. 427\)](#) object

Required: Yes

#### [Subscriber \(p. 169\)](#)

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

Type: [Subscriber \(p. 433\)](#) 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 \(p. 443\)](#).

### **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

### **ThrottlingException**

The number of API requests has exceeded the maximum allowed API request throttling limit for the account.

HTTP Status Code: 400

## Examples

### 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 V2](#)
- [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

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

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

### AccountId (p. 172)

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. 172)

The name of the budget that you want to delete.

Type: String

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

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 \(p. 443\)](#).

### AccessDeniedException

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

HTTP Status Code: 400

**InternalServerError**

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

**ThrottlingException**

The number of API requests has exceeded the maximum allowed API request throttling limit for the account.

HTTP Status Code: 400

## Examples

### 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 V2](#)

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

## DeleteBudgetAction

Service: AWS Budgets

Deletes a budget action.

### Request Syntax

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

### Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

#### [AccountId \(p. 175\)](#)

The account ID of the user. It's a 12-digit number.

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

Required: Yes

#### [ActionId \(p. 175\)](#)

A system-generated universally unique identifier (UUID) for the action.

Type: String

Length Constraints: Fixed length of 36.

Pattern: ^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}\$

Required: Yes

#### [BudgetName \(p. 175\)](#)

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

### Response Syntax

```
{
```

```
"AccountId": "string",
"Action": {
    "ActionId": "string",
    "ActionThreshold": {
        "ActionThresholdType": "string",
        "ActionThresholdValue": number
    },
    "ActionType": "string",
    "ApprovalModel": "string",
    "BudgetName": "string",
    "Definition": {
        "IamActionDefinition": {
            "Groups": [ "string" ],
            "PolicyArn": "string",
            "Roles": [ "string" ],
            "Users": [ "string" ]
        },
        "ScpActionDefinition": {
            "PolicyId": "string",
            "TargetIds": [ "string" ]
        },
        "SsmActionDefinition": {
            "ActionSubType": "string",
            "InstanceIds": [ "string" ],
            "Region": "string"
        }
    },
    "ExecutionRoleArn": "string",
    "NotificationType": "string",
    "Status": "string",
    "Subscribers": [
        {
            "Address": "string",
            "SubscriptionType": "string"
        }
    ],
    "BudgetName": "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.

### [AccountId \(p. 175\)](#)

The account ID of the user. It's a 12-digit number.

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

### [Action \(p. 175\)](#)

A budget action resource.

Type: [Action \(p. 405\)](#) object

### [BudgetName \(p. 175\)](#)

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: [^:\\]+

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

### 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

### InvalidArgumentException

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

### ResourceLockedException

The request was received and recognized by the server, but the server rejected that particular method for the requested resource.

HTTP Status Code: 400

### ThrottlingException

The number of API requests has exceeded the maximum allowed API request throttling limit for the account.

HTTP Status Code: 400

## See Also

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

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

- [AWS SDK for Ruby V3](#)

## 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 \(p. 441\)](#).

The request accepts the following data in JSON format.

### [AccountId \(p. 179\)](#)

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 \(p. 179\)](#)

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 \(p. 179\)](#)

The notification that you want to delete.

Type: [Notification \(p. 427\)](#) 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 \(p. 443\)](#).

### 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

### InvalidArgumentException

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

### ThrottlingException

The number of API requests has exceeded the maximum allowed API request throttling limit for the account.

HTTP Status Code: 400

## Examples

### Example

The following is a sample request of the DeleteNotification 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.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 V2](#)
- [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

```
{  
    "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 \(p. 441\)](#).

The request accepts the following data in JSON format.

### [AccountId \(p. 182\)](#)

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 \(p. 182\)](#)

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 \(p. 182\)](#)

The notification whose subscriber you want to delete.

Type: [Notification \(p. 427\)](#) object

Required: Yes

#### [Subscriber \(p. 182\)](#)

The subscriber that you want to delete.

Type: [Subscriber \(p. 433\)](#) 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 \(p. 443\)](#).

### **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

### **ThrottlingException**

The number of API requests has exceeded the maximum allowed API request throttling limit for the account.

HTTP Status Code: 400

## Examples

### 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 V2](#)
- [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 \(p. 441\)](#).

The request accepts the following data in JSON format.

**AccountId (p. 185)**

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. 185)**

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": {  
        "AutoAdjustData": {  
            "AutoAdjustType": "string",  
            "HistoricalOptions": {  
                "BudgetAdjustmentPeriod": number,  
                "LookBackAvailablePeriods": number  
            },  
            "LastAutoAdjustTime": number  
        },  
        "PlannedBudgetLimits": [  
            {  
                "PlannedBudgetPeriod": "string",  
                "PlannedValue": number  
            }  
        ]  
    }  
}
```

```
"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. 185)

The description of the budget.

Type: [Budget \(p. 411\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

### 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

### ThrottlingException

The number of API requests has exceeded the maximum allowed API request throttling limit for the account.

HTTP Status Code: 400

## Examples

### Example

The following is the `PlannedBudgetLimits` syntax.

```
{  
    "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
        },
        "LastUpdatedTime": number,
        "TimePeriod": {
            "End": number,
            "Start": number
        },
        "TimeUnit": "string"
    }
}
```

## 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": "111122223333",
    "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,
        "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"
        }
    }
}
```

```
        "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",
"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 V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## DescribeBudgetAction

Service: AWS Budgets

Describes a budget action detail.

### Request Syntax

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

### Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

#### [AccountId \(p. 192\)](#)

The account ID of the user. It's a 12-digit number.

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

Required: Yes

#### [ActionId \(p. 192\)](#)

A system-generated universally unique identifier (UUID) for the action.

Type: String

Length Constraints: Fixed length of 36.

Pattern: ^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}\$

Required: Yes

#### [BudgetName \(p. 192\)](#)

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

### Response Syntax

```
{
```

```
"AccountId": "string",
"Action": {
    "ActionId": "string",
    "ActionThreshold": {
        "ActionThresholdType": "string",
        "ActionThresholdValue": number
    },
    "ActionType": "string",
    "ApprovalModel": "string",
    "BudgetName": "string",
    "Definition": {
        "IamActionDefinition": {
            "Groups": [ "string" ],
            "PolicyArn": "string",
            "Roles": [ "string" ],
            "Users": [ "string" ]
        },
        "ScpActionDefinition": {
            "PolicyId": "string",
            "TargetIds": [ "string" ]
        },
        "SsmActionDefinition": {
            "ActionSubType": "string",
            "InstanceIds": [ "string" ],
            "Region": "string"
        }
    },
    "ExecutionRoleArn": "string",
    "NotificationType": "string",
    "Status": "string",
    "Subscribers": [
        {
            "Address": "string",
            "SubscriptionType": "string"
        }
    ],
    "BudgetName": "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.

### [AccountId \(p. 192\)](#)

The account ID of the user. It's a 12-digit number.

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

### [Action \(p. 192\)](#)

A budget action resource.

Type: [Action \(p. 405\)](#) object

### [BudgetName \(p. 192\)](#)

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: [^:\\]+

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

### **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

### **ThrottlingException**

The number of API requests has exceeded the maximum allowed API request throttling limit for the account.

HTTP Status Code: 400

## See Also

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

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

# DescribeBudgetActionHistories

Service: AWS Budgets

Describes a budget action history detail.

## Request Syntax

```
{  
    "AccountId": "string",  
    "ActionId": "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 \(p. 441\)](#).

The request accepts the following data in JSON format.

### [AccountId \(p. 195\)](#)

The account ID of the user. It's a 12-digit number.

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

Required: Yes

### [ActionId \(p. 195\)](#)

A system-generated universally unique identifier (UUID) for the action.

Type: String

Length Constraints: Fixed length of 36.

Pattern: ^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}\$

Required: Yes

### [BudgetName \(p. 195\)](#)

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 \(p. 195\)](#)

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 \(p. 195\)](#)

A generic string.

Type: String

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

Pattern: .\*

Required: No

#### [TimePeriod \(p. 195\)](#)

The period of time that's 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.

Type: [TimePeriod \(p. 434\)](#) object

Required: No

## Response Syntax

```
{  
    "ActionHistories": [  
        {  
            "ActionHistoryDetails": {  
                "Action": {  
                    "ActionId": "string",  
                    "ActionThreshold": {  
                        "ActionThresholdType": "string",  
                        "ActionThresholdValue": number  
                    },  
                    "ActionType": "string",  
                    "ApprovalModel": "string",  
                    "BudgetName": "string",  
                    "Definition": {  
                        "IamActionDefinition": {  
                            "Groups": [ "string" ],  
                            "PolicyArn": "string",  
                            "Roles": [ "string" ],  
                            "Users": [ "string" ]  
                        },  
                        "ScpActionDefinition": {  
                            "PolicyId": "string",  
                            "TargetIds": [ "string" ]  
                        },  
                        "SsmActionDefinition": {  
                            "ActionSubType": "string",  
                            "InstanceIds": [ "string" ],  
                            "Region": "string"  
                        }  
                    }  
                }  
            }  
        }  
    ]  
}
```

```
        },
        "ExecutionRoleArn": "string",
        "NotificationType": "string",
        "Status": "string",
        "Subscribers": [
            {
                "Address": "string",
                "SubscriptionType": "string"
            }
        ],
        "Message": "string"
    },
    "EventType": "string",
    "Status": "string",
    "Timestamp": number
}
],
"NextToken": "string"
}
```

## Response Elements

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

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

### [ActionHistories \(p. 196\)](#)

The historical record of the budget action resource.

Type: Array of [ActionHistory \(p. 407\)](#) objects

Array Members: Minimum number of 0 items. Maximum number of 100 items.

### [NextToken \(p. 196\)](#)

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 \(p. 443\)](#).

### **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

### **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

### **ThrottlingException**

The number of API requests has exceeded the maximum allowed API request throttling limit for the account.

HTTP Status Code: 400

## See Also

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

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

## DescribeBudgetActionsForAccount

Service: AWS Budgets

Describes all of the budget actions for an account.

### Request Syntax

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

### Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

#### **AccountId** (p. 199)

The account ID of the user. It's a 12-digit number.

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

Required: Yes

#### **MaxResults** (p. 199)

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. 199)

A generic string.

Type: String

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

Pattern: .\*

Required: No

### Response Syntax

```
{
```

```
"Actions": [
  {
    "ActionId": "string",
    "ActionThreshold": {
      "ActionThresholdType": "string",
      "ActionThresholdValue": number
    },
    "ActionType": "string",
    "ApprovalModel": "string",
    "BudgetName": "string",
    "Definition": {
      "IamActionDefinition": {
        "Groups": [ "string" ],
        "PolicyArn": "string",
        "Roles": [ "string" ],
        "Users": [ "string" ]
      },
      "ScpActionDefinition": {
        "PolicyId": "string",
        "TargetIds": [ "string" ]
      },
      "SsmActionDefinition": {
        "ActionSubType": "string",
        "InstanceIds": [ "string" ],
        "Region": "string"
      }
    },
    "ExecutionRoleArn": "string",
    "NotificationType": "string",
    "Status": "string",
    "Subscribers": [
      {
        "Address": "string",
        "SubscriptionType": "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.

### [Actions \(p. 199\)](#)

A list of the budget action resources information.

Type: Array of [Action \(p. 405\)](#) objects

Array Members: Minimum number of 0 items. Maximum number of 100 items.

### [NextToken \(p. 199\)](#)

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 \(p. 443\)](#).

### **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

### **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

### **ThrottlingException**

The number of API requests has exceeded the maximum allowed API request throttling limit for the account.

HTTP Status Code: 400

## See Also

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

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

# DescribeBudgetActionsForBudget

Service: AWS Budgets

Describes all of the budget actions for a budget.

## Request Syntax

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

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

### **AccountId (p. 202)**

The account ID of the user. It's a 12-digit number.

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

Required: Yes

### **BudgetName (p. 202)**

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. 202)**

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. 202)**

A generic string.

Type: String

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

Pattern: .\*

Required: No

## Response Syntax

```
{  
    "Actions": [  
        {  
            "ActionId": "string",  
            "ActionThreshold": {  
                "ActionThresholdType": "string",  
                "ActionThresholdValue": number  
            },  
            "ActionType": "string",  
            "ApprovalModel": "string",  
            "BudgetName": "string",  
            "Definition": {  
                "IamActionDefinition": {  
                    "Groups": [ "string" ],  
                    "PolicyArn": "string",  
                    "Roles": [ "string" ],  
                    "Users": [ "string" ]  
                },  
                "ScpActionDefinition": {  
                    "PolicyId": "string",  
                    "TargetIds": [ "string" ]  
                },  
                "SsmActionDefinition": {  
                    "ActionSubType": "string",  
                    "InstanceIds": [ "string" ],  
                    "Region": "string"  
                }  
            },  
            "ExecutionRoleArn": "string",  
            "NotificationType": "string",  
            "Status": "string",  
            "Subscribers": [  
                {  
                    "Address": "string",  
                    "SubscriptionType": "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.

### [Actions \(p. 203\)](#)

A list of the budget action resources information.

Type: Array of [Action \(p. 405\)](#) objects

Array Members: Minimum number of 0 items. Maximum number of 100 items.

#### [NextToken \(p. 203\)](#)

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 \(p. 443\)](#).

### **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

### **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

### **ThrottlingException**

The number of API requests has exceeded the maximum allowed API request throttling limit for the account.

HTTP Status Code: 400

## See Also

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

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

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

## DescribeBudgetNotificationsForAccount

Service: AWS Budgets

Lists the budget names and notifications that are associated with an account.

### Request Syntax

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

### Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

#### **AccountId (p. 206)**

The account ID of the user. It's a 12-digit number.

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

Required: Yes

#### **MaxResults (p. 206)**

An integer that shows how many budget name entries a paginated response contains.

Type: Integer

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

Required: No

#### **NextToken (p. 206)**

A generic string.

Type: String

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

Pattern: .\*

Required: No

### Response Syntax

```
{  
    "BudgetNotificationsForAccount": [  
        {
```

```
"BudgetName": "string",
"Notifications": [
    {
        "ComparisonOperator": "string",
        "NotificationState": "string",
        "NotificationType": "string",
        "Threshold": number,
        "ThresholdType": "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.

### [BudgetNotificationsForAccount \(p. 206\)](#)

A list of budget names and associated notifications for an account.

Type: Array of [BudgetNotificationsForAccount \(p. 416\)](#) objects

Array Members: Maximum number of 50 items.

### [NextToken \(p. 206\)](#)

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 \(p. 443\)](#).

### **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

**ThrottlingException**

The number of API requests has exceeded the maximum allowed API request throttling limit for the account.

HTTP Status Code: 400

## See Also

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

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

# 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 \(p. 441\)](#).

The request accepts the following data in JSON format.

### **AccountId (p. 209)**

The account ID of the user. It's a 12-digit number.

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

Required: Yes

### **BudgetName (p. 209)**

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. 209)**

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 \(p. 209\)](#)

A generic string.

Type: String

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

Pattern: .\*

Required: No

### [TimePeriod \(p. 209\)](#)

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

Type: [TimePeriod \(p. 434\)](#) object

Required: No

## Response Syntax

```
{  
    "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. 210)**

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 \(p. 417\)](#) object

### **NextToken (p. 210)**

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 \(p. 443\)](#).

### **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

### ThrottlingException

The number of API requests has exceeded the maximum allowed API request throttling limit for the account.

HTTP Status Code: 400

## Examples

### 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=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.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,
      "IncludeRefunds": true
    }
  }
}
```

```
        "IncludeRefund": true,  
        "IncludeSubscription": true,  
        "IncludeSupport": true,  
        "IncludeTax": true,  
        "IncludeUpfront": true,  
        "UseBlended": false  
}
```

## See Also

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

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

## 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 \(p. 441\)](#).

The request accepts the following data in JSON format.

### AccountId (p. 214)

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. 214)

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. 214)

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

```
{  
    "Budgets": [  
        {  
            "AutoAdjustData": {  
                "AutoAdjustType": "string",  
                "HistoricalOptions": {  
                    "BudgetAdjustmentPeriod": number,  
                    "LookBackAvailablePeriods": number  
                },  
                "LastAutoAdjustTime": number  
            },  
            "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. 215)**

A list of budgets.

Type: Array of [Budget \(p. 411\)](#) objects

### **NextToken (p. 215)**

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 \(p. 443\)](#).

### **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

### ThrottlingException

The number of API requests has exceeded the maximum allowed API request throttling limit for the account.

HTTP Status Code: 400

## Examples

### Example

The following is the PlannedBudgetLimits syntax.

```
{  
    "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

This example illustrates one usage of DescribeBudgets.

### 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"
            },
            "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 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 V2](#)
- [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

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

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

### **AccountId (p. 221)**

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. 221)**

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. 221)**

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. 221)**

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

```
{  
    "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 \(p. 222\)](#)

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 \(p. 222\)](#)

A list of notifications that are associated with a budget.

Type: Array of [Notification \(p. 427\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

### **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

#### **ThrottlingException**

The number of API requests has exceeded the maximum allowed API request throttling limit for the account.

HTTP Status Code: 400

## Examples

### 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 V2](#)
- [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 \(p. 441\)](#).

The request accepts the following data in JSON format.

### [AccountId \(p. 225\)](#)

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 \(p. 225\)](#)

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 \(p. 225\)](#)

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 \(p. 225\)](#)

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 \(p. 225\)](#)

The notification whose subscribers you want to list.

Type: [Notification \(p. 427\)](#) object

Required: Yes

## Response Syntax

```
{  
    "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 \(p. 226\)](#)

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 \(p. 226\)](#)

A list of subscribers that are associated with a notification.

Type: Array of [Subscriber \(p. 433\)](#) 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 \(p. 443\)](#).

### **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

### **ThrottlingException**

The number of API requests has exceeded the maximum allowed API request throttling limit for the account.

HTTP Status Code: 400

## Examples

### 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

```
{
    "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 V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ExecuteBudgetAction

Service: AWS Budgets

Executes a budget action.

## Request Syntax

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

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

### [AccountId \(p. 229\)](#)

The account ID of the user. It's a 12-digit number.

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

Required: Yes

### [ActionId \(p. 229\)](#)

A system-generated universally unique identifier (UUID) for the action.

Type: String

Length Constraints: Fixed length of 36.

Pattern: ^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}\$

Required: Yes

### [BudgetName \(p. 229\)](#)

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

### [ExecutionType \(p. 229\)](#)

The type of execution.

Type: String

Valid Values: APPROVE\_BUDGET\_ACTION | RETRY\_BUDGET\_ACTION | REVERSE\_BUDGET\_ACTION | RESET\_BUDGET\_ACTION

Required: Yes

## Response Syntax

```
{  
    "AccountId": "string",  
    "ActionId": "string",  
    "BudgetName": "string",  
    "ExecutionType": "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.

### [AccountId \(p. 230\)](#)

The account ID of the user. It's a 12-digit number.

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

### [ActionId \(p. 230\)](#)

A system-generated universally unique identifier (UUID) for the action.

Type: String

Length Constraints: Fixed length of 36.

Pattern: ^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}\$

### [BudgetName \(p. 230\)](#)

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: [^:\\]+

### [ExecutionType \(p. 230\)](#)

The type of execution.

Type: String

Valid Values: APPROVE\_BUDGET\_ACTION | RETRY\_BUDGET\_ACTION | REVERSE\_BUDGET\_ACTION | RESET\_BUDGET\_ACTION

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

### **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

### **ResourceLockedException**

The request was received and recognized by the server, but the server rejected that particular method for the requested resource.

HTTP Status Code: 400

### **ThrottlingException**

The number of API requests has exceeded the maximum allowed API request throttling limit for the account.

HTTP Status Code: 400

## See Also

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

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

# 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": {  
        "AutoAdjustData": {  
            "AutoAdjustType": "string",  
            "HistoricalOptions": {  
                "BudgetAdjustmentPeriod": number,  
                "LookBackAvailablePeriods": number  
            },  
            "LastAutoAdjustTime": number  
        },  
        "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"
    }
}
```

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

### **AccountId (p. 232)**

The account ID 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. 232)**

The budget that you want to update your budget to.

Type: [Budget \(p. 411\)](#) 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 \(p. 443\)](#).

### **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

### **InvalidArgumentException**

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

**ThrottlingException**

The number of API requests has exceeded the maximum allowed API request throttling limit for the account.

HTTP Status Code: 400

## Examples

### Example

The following is the `PlannedBudgetLimits` syntax.

```
{  
    "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
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"
    }
}
```

## 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": {
        "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"
            },
            "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,
            "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 V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# UpdateBudgetAction

Service: AWS Budgets

Updates a budget action.

## Request Syntax

```
{  
    "AccountId": "string",  
    "ActionId": "string",  
    "ActionThreshold": {  
        "ActionThresholdType": "string",  
        "ActionThresholdValue": number  
    },  
    "ApprovalModel": "string",  
    "BudgetName": "string",  
    "Definition": {  
        "IamActionDefinition": {  
            "Groups": [ "string" ],  
            "PolicyArn": "string",  
            "Roles": [ "string" ],  
            "Users": [ "string" ]  
        },  
        "ScpActionDefinition": {  
            "PolicyId": "string",  
            "TargetIds": [ "string" ]  
        },  
        "SsmActionDefinition": {  
            "ActionSubType": "string",  
            "InstanceIds": [ "string" ],  
            "Region": "string"  
        }  
    },  
    "ExecutionRoleArn": "string",  
    "NotificationType": "string",  
    "Subscribers": [  
        {  
            "Address": "string",  
            "SubscriptionType": "string"  
        }  
    ]  
}
```

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

### AccountId ([p. 239](#))

The account ID of the user. It's a 12-digit number.

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

Required: Yes

### [ActionId \(p. 239\)](#)

A system-generated universally unique identifier (UUID) for the action.

Type: String

Length Constraints: Fixed length of 36.

Pattern: ^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}\$

Required: Yes

### [ActionThreshold \(p. 239\)](#)

The trigger threshold of the action.

Type: [ActionThreshold \(p. 409\)](#) object

Required: No

### [ApprovalModel \(p. 239\)](#)

This specifies if the action needs manual or automatic approval.

Type: String

Valid Values: AUTOMATIC | MANUAL

Required: No

### [BudgetName \(p. 239\)](#)

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

### [Definition \(p. 239\)](#)

Specifies all of the type-specific parameters.

Type: [Definition \(p. 423\)](#) object

Required: No

### [ExecutionRoleArn \(p. 239\)](#)

The role passed for action execution and reversion. Roles and actions must be in the same account.

Type: String

Length Constraints: Minimum length of 32. Maximum length of 618.

Pattern: ^arn:(aws|aws-cn|aws-us-gov|us-iso-east-1|us-isob-east-1):iam::\d{12}:role(\u002F[\u0021-\u007F]+\u002F|\u002F)[\w+=,.@-]+\$

Required: No

### [NotificationType \(p. 239\)](#)

The type of a notification. It must be ACTUAL or FORECASTED.

Type: String

Valid Values: ACTUAL | FORECASTED

Required: No

### Subscribers (p. 239)

A list of subscribers.

Type: Array of [Subscriber \(p. 433\)](#) objects

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

Required: No

## Response Syntax

```
{  
    "AccountId": "string",  
    "BudgetName": "string",  
    "NewAction": {  
        "ActionId": "string",  
        "ActionThreshold": {  
            "ActionThresholdType": "string",  
            "ActionThresholdValue": number  
        },  
        "ActionType": "string",  
        "ApprovalModel": "string",  
        "BudgetName": "string",  
        "Definition": {  
            "IamActionDefinition": {  
                "Groups": [ "string" ],  
                "PolicyArn": "string",  
                "Roles": [ "string" ],  
                "Users": [ "string" ]  
            },  
            "ScpActionDefinition": {  
                "PolicyId": "string",  
                "TargetIds": [ "string" ]  
            },  
            "SsmActionDefinition": {  
                "ActionSubType": "string",  
                "InstanceIds": [ "string" ],  
                "Region": "string"  
            }  
        },  
        "ExecutionRoleArn": "string",  
        "NotificationType": "string",  
        "Status": "string",  
        "Subscribers": [  
            {  
                "Address": "string",  
                "SubscriptionType": "string"  
            }  
        ]  
    },  
    "OldAction": {  
        "ActionId": "string",  
        "ActionThreshold": {  
            "ActionThresholdType": "string",  
            "ActionThresholdValue": number  
        },  
    },  
}
```

```
"ActionType": "string",
"ApprovalModel": "string",
"BudgetName": "string",
"Definition": {
    "IamActionDefinition": {
        "Groups": [ "string" ],
        "PolicyArn": "string",
        "Roles": [ "string" ],
        "Users": [ "string" ]
    },
    "ScpActionDefinition": {
        "PolicyId": "string",
        "TargetIds": [ "string" ]
    },
    "SsmActionDefinition": {
        "ActionSubType": "string",
        "InstanceIds": [ "string" ],
        "Region": "string"
    }
},
"ExecutionRoleArn": "string",
"NotificationType": "string",
"Status": "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.

### [AccountId \(p. 241\)](#)

The account ID of the user. It's a 12-digit number.

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

### [BudgetName \(p. 241\)](#)

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: [^:\\\]+

### [NewAction \(p. 241\)](#)

The updated action resource information.

Type: [Action \(p. 405\)](#) object

### [OldAction \(p. 241\)](#)

The previous action resource information.

Type: [Action \(p. 405\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

### **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

### **InvalidArgumentException**

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

### **ResourceLockedException**

The request was received and recognized by the server, but the server rejected that particular method for the requested resource.

HTTP Status Code: 400

### **ThrottlingException**

The number of API requests has exceeded the maximum allowed API request throttling limit for the account.

HTTP Status Code: 400

## See Also

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

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

- [AWS SDK for Ruby V3](#)

# UpdateNotification

Service: AWS Budgets

Updates a notification.

## Request Syntax

```
{  
    "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 \(p. 441\)](#).

The request accepts the following data in JSON format.

### **AccountId** (p. 245)

The accountID 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. 245)

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. 245)

The updated notification to be associated with a budget.

Type: [Notification \(p. 427\)](#) object

Required: Yes

#### **OldNotification (p. 245)**

The previous notification that is associated with a budget.

Type: [Notification \(p. 427\)](#) 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 \(p. 443\)](#).

### **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

### **InvalidArgumentException**

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

### **ThrottlingException**

The number of API requests has exceeded the maximum allowed API request throttling limit for the account.

HTTP Status Code: 400

## Examples

### Example

The following is a sample request of the UpdateNotification 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.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 V2](#)
- [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

```
{  
    "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 \(p. 441\)](#).

The request accepts the following data in JSON format.

### [AccountId \(p. 248\)](#)

The account ID 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 \(p. 248\)](#)

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 \(p. 248\)](#)

The updated subscriber that is associated with a budget notification.

Type: [Subscriber \(p. 433\)](#) object

Required: Yes

#### [Notification \(p. 248\)](#)

The notification whose subscriber you want to update.

Type: [Notification \(p. 427\)](#) object

Required: Yes

#### [OldSubscriber \(p. 248\)](#)

The previous subscriber that is associated with a budget notification.

Type: [Subscriber \(p. 433\)](#) 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 \(p. 443\)](#).

### **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

### **ThrottlingException**

The number of API requests has exceeded the maximum allowed API request throttling limit for the account.

HTTP Status Code: 400

## Examples

### Example

The following is a sample request of the `UpdateSubscriber` 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.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 V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## AWS Cost and Usage Report

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

- [DeleteReportDefinition \(p. 252\)](#)
- [DescribeReportDefinitions \(p. 254\)](#)
- [ModifyReportDefinition \(p. 257\)](#)
- [PutReportDefinition \(p. 259\)](#)

## DeleteReportDefinition

Service: AWS Cost and Usage Report

Deletes the specified report.

### Request Syntax

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

### Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 441\)](#).

The request accepts the following data in JSON format.

#### [ReportName \(p. 252\)](#)

The name of the report that you want to delete. 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 \(p. 252\)](#)

Whether the deletion was successful or not.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

#### [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

## Examples

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

This example illustrates one usage of DeleteReportDefinition.

### Sample Request

```
POST / HTTP/1.1
Host: api.cur.<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: 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 V2](#)
- [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

Lists the AWS Cost and Usage Report 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 \(p. 441\)](#).

The request accepts the following data in JSON format.

#### [MaxResults \(p. 254\)](#)

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

Type: Integer

Valid Range: Fixed value of 5.

Required: No

#### [NextToken \(p. 254\)](#)

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 ],  
            "BillingViewArn": string,  
            "Compression": string,  
            "Format": string,  
            "RefreshClosedReports": boolean,  
            "ReportName": string,  
            "ReportVersioning": string,  
            "S3Bucket": string,  
            "S3Prefix": string,  
            "S3Region": string,  
            "ViewType": string  
        }  
    ]  
}
```

```
        "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.

### [NextToken \(p. 254\)](#)

A generic string.

Type: String

Length Constraints: Maximum length of 256.

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

### [ReportDefinitions \(p. 254\)](#)

A AWS Cost and Usage Report list owned by the account.

Type: Array of [ReportDefinition \(p. 435\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

### **InternalErrorException**

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

HTTP Status Code: 500

## Examples

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

This example illustrates one usage of DescribeReportDefinitions.

#### [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.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 V2](#)
- [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

Allows you to programmatically update your report preferences.

## Request Syntax

```
{  
    "ReportDefinition": {  
        "AdditionalArtifacts": [ "string" ],  
        "AdditionalSchemaElements": [ "string" ],  
        "BillingViewArn": "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 \(p. 441\)](#).

The request accepts the following data in JSON format.

### **ReportDefinition (p. 257)**

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 \(p. 435\)](#) object

Required: Yes

### **ReportName (p. 257)**

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 \(p. 443\)](#).

### **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 V2](#)
- [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

Creates a new report using the description that you provide.

### Request Syntax

```
{  
    "ReportDefinition": {  
        "AdditionalArtifacts": [ "string" ],  
        "AdditionalSchemaElements": [ "string" ],  
        "BillingViewArn": "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 \(p. 441\)](#).

The request accepts the following data in JSON format.

#### ReportDefinition (p. 259)

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

Type: [ReportDefinition \(p. 435\)](#) 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 \(p. 443\)](#).

#### 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

## Examples

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

This example illustrates one usage of PutReportDefinition.

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

## AWS Price List

The following actions are supported by AWS Price List:

- [DescribeServices \(p. 262\)](#)
- [GetAttributeValues \(p. 266\)](#)
- [GetProducts \(p. 270\)](#)

## DescribeServices

Service: AWS Price List

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 \(p. 441\)](#).

The request accepts the following data in JSON format.

#### [FormatVersion \(p. 262\)](#)

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

Valid values are: aws\_v1

Type: String

Required: No

#### [MaxResults \(p. 262\)](#)

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 \(p. 262\)](#)

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

Type: String

Required: No

#### [ServiceCode \(p. 262\)](#)

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

```
{  
    "FormatVersion": "string",  
    "NextToken": "string",  
    "Services": [  
        {  
            "AttributeNames": [ "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 \(p. 263\)](#)

The format version of the response. For example, aws\_v1.

Type: String

### [NextToken \(p. 263\)](#)

The pagination token for the next set of retrievable results.

Type: String

### [Services \(p. 263\)](#)

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

Type: Array of [Service \(p. 440\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 443\)](#).

### **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

### InvalidOperationException

One or more parameters had an invalid value.

HTTP Status Code: 400

### NotFoundException

The requested resource can't be found.

HTTP Status Code: 400

## Examples

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

This example illustrates one usage of DescribeServices.

### 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.DescribeServices
{
    "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": "abcdefg123",
    "Services": [
        {
            "AttributeNames": [
                "volumeType",
                "maxIopsvolume",
                "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 V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## GetAttributeValues

Service: AWS Price List

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 \(p. 441\)](#).

The request accepts the following data in JSON format.

#### [AttributeName \(p. 266\)](#)

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

Type: String

Required: Yes

#### [MaxResults \(p. 266\)](#)

The maximum number of results to return in response.

Type: Integer

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

Required: No

#### [NextToken \(p. 266\)](#)

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

Type: String

Required: No

#### [ServiceCode \(p. 266\)](#)

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

Type: String

Required: Yes

### Response Syntax

```
{
```

```
"AttributeValues": [  
    {  
        "Value": "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.

### [AttributeValues \(p. 266\)](#)

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 \(p. 438\)](#) objects

### [NextToken \(p. 266\)](#)

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 \(p. 443\)](#).

### **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

### **InvalidArgumentException**

One or more parameters had an invalid value.

HTTP Status Code: 400

### **NotFoundException**

The requested resource can't be found.

HTTP Status Code: 400

## Examples

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

This example illustrates one usage of GetAttributeValues.

### 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":
"GpgauTGIY7LGezuc15LV0w==:7GzYJ0nw0DBTJ2J66EoTIIynE601uXwQtTRqioJzQadBnDVgHPzI1en4BUQnPCLpzeBk9RQQAWa
+Z/9/cTw9G1dnPOHN98+FdmJP7wKU3Q0pQ8MQr5K0eBkIsAqvAQYdL0DkL7tHwPtE5iCEByAmg9gcC/
yBU1vA0sf7R3VaNN4M5jMDv3woSwqASSI1BVB6tgW78YL22KhssotM/jWW+aP6Jqtq4mldxp/ct6DWA1+xLFwHU/
CbketimPPXYqHF3/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 V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## GetProducts

Service: AWS Price List

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

### Request Syntax

```
{  
    "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 \(p. 441\)](#).

The request accepts the following data in JSON format.

#### **Filters (p. 270)**

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

Type: Array of [Filter \(p. 439\)](#) objects

Required: No

#### **FormatVersion (p. 270)**

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

Valid values are: aws\_v1

Type: String

Required: No

#### **MaxResults (p. 270)**

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. 270)**

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

Type: String

Required: No

#### **ServiceCode (p. 270)**

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. 271)**

The format version of the response. For example, aws\_v1.

Type: String

#### **NextToken (p. 271)**

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

Type: String

#### **PriceList (p. 271)**

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 \(p. 443\)](#).

#### **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

## Examples

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

This example illustrates one usage of GetProducts.

### 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"
        }
    ],
    "FormatVersion": "aws_v1",
    "NextToken": null,
    "MaxResults": 1,
    "ServiceCode": "AmazonEC2"
}
```

### 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": "57r3UcqRjDujbzWfHF7Ciw==:ywSmZsD3mtpQmQLQ5x0sIMkYybSj
+vAT+kGmwMFq+K9DGmIoJkz7lunVeamiOPgthdWS02a7YKojC0+zY4dJmuN12QvbNhXs
+AJ2Ufn7xGmJncNI2TsEuAsVCUfTAvAQNcwamtk6XuZ4YdNnooV62FjkV3ZAn40d9+wAxV7+FImvhUHi/
+f8afgZdGh2zPU1H8j1V9uUtj0oHp8+DhPUuHXh+WBI1E/aoKpPSm3c=",
    "PriceList": [
        "{\"product\":{\"productFamily\":\"Storage\", \"attributes\":{\"storageMedia
\":\\\"SSD-backed\\\", \"maxThroughputvolume\":\"320 MB/sec\", \"volumeType\":\"Provisioned
IOPS\", \"maxIopsvolume\":\"20000\", \"servicecode\":\"AmazonEC2\", \"usagetype\":
\\\"CAN1-EBS:VolumeUsage.piops\\\", \"locationType\":\"AWS Region\", \"location\":\"Canada
(Central)\", \"servicename\":\"Amazon Elastic Compute Cloud\", \"maxVolumeSize
\":\"16 TiB\", \"operation\":\"\", \"sku\":\"WQGC34PB2AWS8R4U\"}, \"serviceCode
\":\"AmazonEC2\", \"terms\":{\"OnDemand\":{\"WQGC34PB2AWS8R4U.JRTCKXETXF\":
{\"priceDimensions\":{\"WQGC34PB2AWS8R4U.JRTCKXETXF.6YS6EN2CT7\":{\"unit\":\\\"GB-Mo
\\\", \"endRange\":\"Inf\", \"description\":\"$0.138 per GB-month of Provisioned IOPS
SSD (io1) provisioned storage - Canada (Central)\"}, \"appliesTo\":[], \"rateCode
\":\"WQGC34PB2AWS8R4U.JRTCKXETXF.6YS6EN2CT7\", \"beginRange\":\"0\", \"pricePerUnit
\":{\\\"USD\\\":\\\"0.138000000\\\"}}}, \"sku\":\"WQGC34PB2AWS8R4U\", \"effectiveDate\":
\"2017-08-01T00:00:00Z\", \"offerTermCode\":\"JRTCKXETXF\", \"termAttributes\":{}}, \"version\"
:\"20170901182201\", \"publicationDate\":\"2017-09-01T18:22:01Z\"}"
    ]
}
```

## See Also

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

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

# Data Types

The following data types are supported by AWS Cost Explorer:

- [Anomaly \(p. 279\)](#)
- [AnomalyTimeInterval \(p. 281\)](#)
- [AnomalyMonitor \(p. 282\)](#)
- [AnomalyScore \(p. 285\)](#)
- [AnomalySubscription \(p. 286\)](#)
- [CostAllocationTag \(p. 288\)](#)
- [CostAllocationTagStatusEntry \(p. 289\)](#)
- [CostCategory \(p. 290\)](#)
- [CostCategoryInheritedValueDimension \(p. 292\)](#)
- [CostCategoryProcessingStatus \(p. 293\)](#)
- [CostCategoryReference \(p. 294\)](#)
- [CostCategoryRule \(p. 296\)](#)
- [CostCategorySplitChargeRule \(p. 298\)](#)
- [CostCategorySplitChargeRuleParameter \(p. 300\)](#)
- [CostCategoryValues \(p. 301\)](#)
- [Coverage \(p. 302\)](#)
- [CoverageByTime \(p. 303\)](#)
- [CoverageCost \(p. 304\)](#)
- [CoverageHours \(p. 305\)](#)
- [CoverageNormalizedUnits \(p. 306\)](#)
- [CurrentInstance \(p. 307\)](#)
- [DateInterval \(p. 310\)](#)
- [DimensionValues \(p. 311\)](#)
- [DimensionValuesWithAttributes \(p. 313\)](#)
- [DiskResourceUtilization \(p. 314\)](#)
- [EBSResourceUtilization \(p. 316\)](#)
- [EC2InstanceDetails \(p. 318\)](#)
- [EC2ResourceDetails \(p. 320\)](#)
- [EC2ResourceUtilization \(p. 322\)](#)
- [EC2Specification \(p. 324\)](#)
- [ElastiCacheInstanceDetails \(p. 325\)](#)
- [ESInstanceDetails \(p. 327\)](#)
- [Expression \(p. 329\)](#)
- [ForecastResult \(p. 331\)](#)
- [Group \(p. 333\)](#)
- [GroupDefinition \(p. 334\)](#)
- [Impact \(p. 335\)](#)
- [InstanceDetails \(p. 336\)](#)
- [MetricValue \(p. 337\)](#)
- [ModifyRecommendationDetail \(p. 338\)](#)

- [NetworkResourceUtilization \(p. 339\)](#)
- [RDSInstanceDetails \(p. 341\)](#)
- [RedshiftInstanceDetails \(p. 343\)](#)
- [ReservationAggregates \(p. 345\)](#)
- [ReservationCoverageGroup \(p. 348\)](#)
- [ReservationPurchaseRecommendation \(p. 349\)](#)
- [ReservationPurchaseRecommendationDetail \(p. 351\)](#)
- [ReservationPurchaseRecommendationMetadata \(p. 355\)](#)
- [ReservationPurchaseRecommendationSummary \(p. 356\)](#)
- [ReservationUtilizationGroup \(p. 357\)](#)
- [ResourceDetails \(p. 358\)](#)
- [ResourceTag \(p. 359\)](#)
- [ResourceUtilization \(p. 360\)](#)
- [ResultByTime \(p. 361\)](#)
- [RightsizingRecommendation \(p. 362\)](#)
- [RightsizingRecommendationConfiguration \(p. 364\)](#)
- [RightsizingRecommendationMetadata \(p. 365\)](#)
- [RightsizingRecommendationSummary \(p. 367\)](#)
- [RootCause \(p. 369\)](#)
- [SavingsPlansAmortizedCommitment \(p. 371\)](#)
- [SavingsPlansCoverage \(p. 372\)](#)
- [SavingsPlansCoverageData \(p. 373\)](#)
- [SavingsPlansDetails \(p. 375\)](#)
- [SavingsPlansPurchaseRecommendation \(p. 376\)](#)
- [SavingsPlansPurchaseRecommendationDetail \(p. 378\)](#)
- [SavingsPlansPurchaseRecommendationMetadata \(p. 382\)](#)
- [SavingsPlansPurchaseRecommendationSummary \(p. 383\)](#)
- [SavingsPlansSavings \(p. 386\)](#)
- [SavingsPlansUtilization \(p. 387\)](#)
- [SavingsPlansUtilizationAggregates \(p. 389\)](#)
- [SavingsPlansUtilizationByTime \(p. 390\)](#)
- [SavingsPlansUtilizationDetail \(p. 391\)](#)
- [ServiceSpecification \(p. 393\)](#)
- [SortDefinition \(p. 394\)](#)
- [Subscriber \(p. 395\)](#)
- [TagValues \(p. 396\)](#)
- [TargetInstance \(p. 398\)](#)
- [TerminateRecommendationDetail \(p. 400\)](#)
- [TotalImpactFilter \(p. 401\)](#)
- [UpdateCostAllocationTagsStatusError \(p. 402\)](#)
- [UtilizationByTime \(p. 403\)](#)

The following data types are supported by AWS Budgets:

- [Action \(p. 405\)](#)
- [ActionHistory \(p. 407\)](#)

- [ActionHistoryDetails \(p. 408\)](#)
- [ActionThreshold \(p. 409\)](#)
- [AutoAdjustData \(p. 410\)](#)
- [Budget \(p. 411\)](#)
- [BudgetedAndActualAmounts \(p. 415\)](#)
- [BudgetNotificationsForAccount \(p. 416\)](#)
- [BudgetPerformanceHistory \(p. 417\)](#)
- [CalculatedSpend \(p. 419\)](#)
- [CostTypes \(p. 420\)](#)
- [Definition \(p. 423\)](#)
- [HistoricalOptions \(p. 424\)](#)
- [IamActionDefinition \(p. 425\)](#)
- [Notification \(p. 427\)](#)
- [NotificationWithSubscribers \(p. 429\)](#)
- [ScpActionDefinition \(p. 430\)](#)
- [Spend \(p. 431\)](#)
- [SsmActionDefinition \(p. 432\)](#)
- [Subscriber \(p. 433\)](#)
- [TimePeriod \(p. 434\)](#)

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

- [ReportDefinition \(p. 435\)](#)

The following data types are supported by AWS Price List:

- [AttributeValue \(p. 438\)](#)
- [Filter \(p. 439\)](#)
- [Service \(p. 440\)](#)

## AWS Cost Explorer

The following data types are supported by AWS Cost Explorer:

- [Anomaly \(p. 279\)](#)
- [AnomalyDateInterval \(p. 281\)](#)
- [AnomalyMonitor \(p. 282\)](#)
- [AnomalyScore \(p. 285\)](#)
- [AnomalySubscription \(p. 286\)](#)
- [CostAllocationTag \(p. 288\)](#)
- [CostAllocationTagStatusEntry \(p. 289\)](#)
- [CostCategory \(p. 290\)](#)
- [CostCategoryInheritedValueDimension \(p. 292\)](#)
- [CostCategoryProcessingStatus \(p. 293\)](#)
- [CostCategoryReference \(p. 294\)](#)
- [CostCategoryRule \(p. 296\)](#)

- [CostCategorySplitChargeRule \(p. 298\)](#)
- [CostCategorySplitChargeRuleParameter \(p. 300\)](#)
- [CostCategoryValues \(p. 301\)](#)
- [Coverage \(p. 302\)](#)
- [CoverageByTime \(p. 303\)](#)
- [CoverageCost \(p. 304\)](#)
- [CoverageHours \(p. 305\)](#)
- [CoverageNormalizedUnits \(p. 306\)](#)
- [CurrentInstance \(p. 307\)](#)
- [DateInterval \(p. 310\)](#)
- [DimensionValues \(p. 311\)](#)
- [DimensionValuesWithAttributes \(p. 313\)](#)
- [DiskResourceUtilization \(p. 314\)](#)
- [EBSResourceUtilization \(p. 316\)](#)
- [EC2InstanceDetails \(p. 318\)](#)
- [EC2ResourceDetails \(p. 320\)](#)
- [EC2ResourceUtilization \(p. 322\)](#)
- [EC2Specification \(p. 324\)](#)
- [ElastiCacheInstanceDetails \(p. 325\)](#)
- [ESInstanceDetails \(p. 327\)](#)
- [Expression \(p. 329\)](#)
- [ForecastResult \(p. 331\)](#)
- [Group \(p. 333\)](#)
- [GroupDefinition \(p. 334\)](#)
- [Impact \(p. 335\)](#)
- [InstanceDetails \(p. 336\)](#)
- [MetricValue \(p. 337\)](#)
- [ModifyRecommendationDetail \(p. 338\)](#)
- [NetworkResourceUtilization \(p. 339\)](#)
- [RDSInstanceDetails \(p. 341\)](#)
- [RedshiftInstanceDetails \(p. 343\)](#)
- [ReservationAggregates \(p. 345\)](#)
- [ReservationCoverageGroup \(p. 348\)](#)
- [ReservationPurchaseRecommendation \(p. 349\)](#)
- [ReservationPurchaseRecommendationDetail \(p. 351\)](#)
- [ReservationPurchaseRecommendationMetadata \(p. 355\)](#)
- [ReservationPurchaseRecommendationSummary \(p. 356\)](#)
- [ReservationUtilizationGroup \(p. 357\)](#)
- [ResourceDetails \(p. 358\)](#)
- [ResourceTag \(p. 359\)](#)
- [ResourceUtilization \(p. 360\)](#)
- [ResultByTime \(p. 361\)](#)
- [RightsizingRecommendation \(p. 362\)](#)
- [RightsizingRecommendationConfiguration \(p. 364\)](#)
- [RightsizingRecommendationMetadata \(p. 365\)](#)
- [RightsizingRecommendationSummary \(p. 367\)](#)

- [RootCause \(p. 369\)](#)
- [SavingsPlansAmortizedCommitment \(p. 371\)](#)
- [SavingsPlansCoverage \(p. 372\)](#)
- [SavingsPlansCoverageData \(p. 373\)](#)
- [SavingsPlansDetails \(p. 375\)](#)
- [SavingsPlansPurchaseRecommendation \(p. 376\)](#)
- [SavingsPlansPurchaseRecommendationDetail \(p. 378\)](#)
- [SavingsPlansPurchaseRecommendationMetadata \(p. 382\)](#)
- [SavingsPlansPurchaseRecommendationSummary \(p. 383\)](#)
- [SavingsPlansSavings \(p. 386\)](#)
- [SavingsPlansUtilization \(p. 387\)](#)
- [SavingsPlansUtilizationAggregates \(p. 389\)](#)
- [SavingsPlansUtilizationByTime \(p. 390\)](#)
- [SavingsPlansUtilizationDetail \(p. 391\)](#)
- [ServiceSpecification \(p. 393\)](#)
- [SortDefinition \(p. 394\)](#)
- [Subscriber \(p. 395\)](#)
- [TagValues \(p. 396\)](#)
- [TargetInstance \(p. 398\)](#)
- [TerminateRecommendationDetail \(p. 400\)](#)
- [TotalImpactFilter \(p. 401\)](#)
- [UpdateCostAllocationTagsStatusError \(p. 402\)](#)
- [UtilizationByTime \(p. 403\)](#)

## Anomaly

Service: AWS Cost Explorer

An unusual cost pattern. This consists of the detailed metadata and the current status of the anomaly object.

## Contents

### AnomalyEndDate

The last day the anomaly is detected.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 40.

Pattern: (\d{4}-\d{2}-\d{2})(T\d{2}:\d{2}:\d{2}Z)?

Required: No

### AnomalyId

The unique identifier for the anomaly.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: Yes

### AnomalyScore

The latest and maximum score for the anomaly.

Type: [AnomalyScore \(p. 285\)](#) object

Required: Yes

### AnomalyStartDate

The first day the anomaly is detected.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 40.

Pattern: (\d{4}-\d{2}-\d{2})(T\d{2}:\d{2}:\d{2}Z)?

Required: No

### DimensionValue

The dimension for the anomaly (for example, an AWS service in a service monitor).

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

## Feedback

The feedback value.

Type: String

Valid Values: YES | NO | PLANNED\_ACTIVITY

Required: No

## Impact

The dollar impact for the anomaly.

Type: [Impact \(p. 335\)](#) object

Required: Yes

## MonitorArn

The Amazon Resource Name (ARN) for the cost monitor that generated this anomaly.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: Yes

## RootCauses

The list of identified root causes for the anomaly.

Type: Array of [RootCause \(p. 369\)](#) objects

Required: No

## See Also

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

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

# AnomalyDateInterval

Service: AWS Cost Explorer

The time period for an anomaly.

## Contents

### **EndDate**

The last date an anomaly was observed.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 40.

Pattern: (\d{4}-\d{2}-\d{2})(T\d{2}:\d{2}:\d{2}Z)?

Required: No

### **StartDate**

The first date an anomaly was observed.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 40.

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

# AnomalyMonitor

Service: AWS Cost Explorer

This object continuously inspects your account's cost data for anomalies. It's based on MonitorType and MonitorSpecification. The content consists of detailed metadata and the current status of the monitor object.

## Contents

### **CreationDate**

The date when the monitor was created.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 40.

Pattern: (\d{4}-\d{2}-\d{2})(T\d{2}:\d{2}:\d{2}Z)?

Required: No

### **DimensionalValueCount**

The value for evaluated dimensions.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

### **LastEvaluatedDate**

The date when the monitor last evaluated for anomalies.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 40.

Pattern: (\d{4}-\d{2}-\d{2})(T\d{2}:\d{2}:\d{2}Z)?

Required: No

### **LastUpdatedDate**

The date when the monitor was last updated.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 40.

Pattern: (\d{4}-\d{2}-\d{2})(T\d{2}:\d{2}:\d{2}Z)?

Required: No

### **MonitorArn**

The Amazon Resource Name (ARN) value.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### **MonitorDimension**

The dimensions to evaluate.

Type: String

Valid Values: SERVICE

Required: No

#### **MonitorName**

The name of the monitor.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: Yes

#### **MonitorSpecification**

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. For GetRightsizingRecommendation, the Region is a full name (for example, REGION==US East (N. Virginia)). The Expression example is as follows:

```
{ "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. By doing this, you can 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 is as follows:

```
{ "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.

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

#### **Note**

For the GetRightsizingRecommendation action, a combination of OR and NOT isn't supported. OR isn't supported between different dimensions, or dimensions and tags. NOT

operators aren't supported. Dimensions are also limited to LINKED\_ACCOUNT, REGION, or RIGHTSIZING\_TYPE.

For the GetReservationPurchaseRecommendation action, only NOT is supported. AND and OR aren't supported. Dimensions are limited to LINKED\_ACCOUNT.

Type: [Expression \(p. 329\)](#) object

Required: No

**MonitorType**

The possible type values.

Type: String

Valid Values: DIMENSIONAL | CUSTOM

Required: Yes

## See Also

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

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

## AnomalyScore

Service: AWS Cost Explorer

Quantifies the anomaly. The higher score means that it's more anomalous.

### Contents

#### CurrentScore

The last observed score.

Type: Double

Required: Yes

#### MaxScore

The maximum score that's observed during the AnomalyDateInterval.

Type: Double

Required: Yes

### See Also

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

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

# AnomalySubscription

Service: AWS Cost Explorer

The association between a monitor, threshold, and list of subscribers used to deliver notifications about anomalies detected by a monitor that exceeds a threshold. The content consists of the detailed metadata and the current status of the AnomalySubscription object.

## Contents

### AccountId

Your unique account identifier.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### Frequency

The frequency that anomaly reports are sent over email.

Type: String

Valid Values: DAILY | IMMEDIATE | WEEKLY

Required: Yes

### MonitorArnList

A list of cost anomaly monitors.

Type: Array of strings

Length Constraints: Minimum length of 20. Maximum length of 2048.

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

Required: Yes

### Subscribers

A list of subscribers to notify.

Type: Array of [Subscriber \(p. 395\)](#) objects

Required: Yes

### SubscriptionArn

The AnomalySubscription Amazon Resource Name (ARN).

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### **SubscriptionName**

The name for the subscription.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: Yes

### **Threshold**

The dollar value that triggers a notification if the threshold is exceeded.

Type: Double

Valid Range: Minimum value of 0.0.

Required: Yes

## See Also

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

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

# CostAllocationTag

Service: AWS Cost Explorer

The cost allocation tag structure. This includes detailed metadata for the `CostAllocationTag` object.

## Contents

### Status

The status of a cost allocation tag.

Type: String

Valid Values: Active | Inactive

Required: Yes

### TagKey

The key for the cost allocation tag.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: Yes

### Type

The type of cost allocation tag. You can use `AWSGenerated` or `UserDefined` type tags.

`AWSGenerated` type tags are tags that AWS defines and applies to support AWS resources for cost allocation purposes. `UserDefined` type tags are tags that you define, create, and apply to resources.

Type: String

Valid Values: `AWSGenerated` | `UserDefined`

Required: Yes

## See Also

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

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

# CostAllocationTagStatusEntry

Service: AWS Cost Explorer

The cost allocation tag status. The status of a key can either be active or inactive.

## Contents

### Status

The status of a cost allocation tag.

Type: String

Valid Values: Active | Inactive

Required: Yes

### TagKey

The key for the cost allocation tag.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: Yes

## See Also

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

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

# CostCategory

Service: AWS Cost Explorer

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

Length Constraints: Minimum length of 20. Maximum length of 2048.

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

Required: Yes

### DefaultValue

The default value for the cost category.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 50.

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

Required: No

### EffectiveEnd

The effective end date of your Cost Category.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 25.

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

Required: No

### EffectiveStart

The effective start date of your Cost Category.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 25.

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

Required: Yes

### Name

The unique name of the Cost Category.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 50.

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

Required: Yes

#### **ProcessingStatus**

The list of processing statuses for Cost Management products for a specific cost category.

Type: Array of [CostCategoryProcessingStatus \(p. 293\)](#) objects

Required: No

#### **Rules**

The 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 \(p. 296\)](#) 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

#### **SplitChargeRules**

The split charge rules that are used to allocate your charges between your Cost Category values.

Type: Array of [CostCategorySplitChargeRule \(p. 298\)](#) objects

Array Members: Minimum number of 1 item. Maximum number of 10 items.

Required: No

## See Also

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

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

# CostCategoryInheritedValueDimension

Service: AWS Cost Explorer

When you create or update a cost category, you can define the `CostCategoryRule` rule type as `INHERITED_VALUE`. This rule type adds the flexibility to define a rule that dynamically inherits the cost category value from the dimension value that's defined by `CostCategoryInheritedValueDimension`. For example, suppose that you want to dynamically group costs that are based on the value of a specific tag key. First, choose an inherited value rule type, and then choose the tag dimension and specify the tag key to use.

## Contents

### DimensionKey

The key to extract cost category values.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: `[\S\s]*`

Required: No

### DimensionName

The name of the dimension that's used to group costs.

If you specify `LINKED_ACCOUNT_NAME`, the cost category value is based on account name. If you specify `TAG`, the cost category value is based on the value of the specified tag key.

Type: String

Valid Values: `LINKED_ACCOUNT_NAME` | `TAG`

Required: No

## See Also

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

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

# CostCategoryProcessingStatus

Service: AWS Cost Explorer

The list of processing statuses for Cost Management products for a specific cost category.

## Contents

### Component

The Cost Management product name of the applied status.

Type: String

Valid Values: COST\_EXPLORER

Required: No

### Status

The process status for a specific cost category.

Type: String

Valid Values: PROCESSING | APPLIED

Required: No

## See Also

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

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

# CostCategoryReference

Service: AWS Cost Explorer

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.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

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

Required: No

### DefaultValue

The default value for the cost category.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 50.

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

Required: No

### EffectiveEnd

The Cost Category's effective end date.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 25.

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

Required: No

### EffectiveStart

The Cost Category's effective start date.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 25.

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

Required: No

### Name

The unique name of the Cost Category.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 50.

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

Required: No

#### **NumberOfRules**

The number of rules that are associated with a specific Cost Category.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

#### **ProcessingStatus**

The list of processing statuses for Cost Management products for a specific cost category.

Type: Array of [CostCategoryProcessingStatus \(p. 293\)](#) objects

Required: No

#### **Values**

A list of unique cost category values in a specific cost category.

Type: Array of strings

Length Constraints: Minimum length of 1. Maximum length of 50.

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

# CostCategoryRule

Service: AWS Cost Explorer

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

### InheritedValue

The value the line item is categorized as if the line item contains the matched dimension.

Type: [CostCategoryInheritedValueDimension \(p. 292\)](#) object

Required: No

### Rule

An [Expression](#) object used to categorize costs. This supports dimensions, tags, and nested expressions. Currently the only dimensions supported are LINKED\_ACCOUNT, SERVICE\_CODE, RECORD\_TYPE, and LINKED\_ACCOUNT\_NAME.

Root level OR isn't supported. We recommend that you create a separate rule instead.

RECORD\_TYPE is a dimension used for Cost Explorer APIs, and is also supported for Cost Category expressions. This dimension uses different terms, depending on whether you're using the console or API/JSON editor. For a detailed comparison, see [Term Comparisons](#) in the *AWS Billing and Cost Management User Guide*.

Type: [Expression \(p. 329\)](#) object

Required: No

### Type

You can define the CostCategoryRule rule type as either REGULAR or INHERITED\_VALUE. The INHERITED\_VALUE rule type adds the flexibility to define a rule that dynamically inherits the cost category value. This value is from the dimension value that's defined by CostCategoryInheritedValueDimension. For example, suppose that you want to costs to be dynamically grouped based on the value of a specific tag key. First, choose an inherited value rule type, and then choose the tag dimension and specify the tag key to use.

Type: String

Valid Values: REGULAR | INHERITED\_VALUE

Required: No

### Value

The default value for the cost category.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 50.

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

# CostCategorySplitChargeRule

Service: AWS Cost Explorer

Use the split charge rule to split the cost of one Cost Category value across several other target values.

## Contents

### Method

The method that's used to define how to split your source costs across your targets.

Proportional - Allocates charges across your targets based on the proportional weighted cost of each target.

Fixed - Allocates charges across your targets based on your defined allocation percentage.

>Even - Allocates costs evenly across all targets.

Type: String

Valid Values: FIXED | PROPORTIONAL | EVEN

Required: Yes

### Parameters

The parameters for a split charge method. This is only required for the FIXED method.

Type: Array of [CostCategorySplitChargeRuleParameter \(p. 300\)](#) objects

Array Members: Minimum number of 1 item. Maximum number of 10 items.

Required: No

### Source

The Cost Category value that you want to split. That value can't be used as a source or a target in other split charge rules. To indicate uncategorized costs, you can use an empty string as the source.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: Yes

### Targets

The Cost Category values that you want to split costs across. These values can't be used as a source in other split charge rules.

Type: Array of strings

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

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: Yes

## See Also

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

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

# CostCategorySplitChargeRuleParameter

Service: AWS Cost Explorer

The parameters for a split charge method.

## Contents

### Type

The parameter type.

Type: String

Valid Values: ALLOCATION\_PERCENTAGES

Required: Yes

### Values

The parameter values.

Type: Array of strings

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

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: Yes

## See Also

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

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

# CostCategoryValues

Service: AWS Cost Explorer

The Cost Categories values used for filtering the costs.

If Values and Key are not specified, the ABSENT MatchOption is applied to all Cost Categories. That is, it filters on resources that aren't mapped to any Cost Categories.

If Values is provided and Key isn't specified, the ABSENT MatchOption is applied to the Cost Categories Key only. That is, it filters on resources without the given Cost Categories key.

## Contents

### Key

The unique name of the Cost Category.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 50.

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

Required: No

### MatchOptions

The match options that you can use to filter your results. MatchOptions is only applicable for actions related to cost category. The default values for MatchOptions is EQUALS and CASE\_SENSITIVE.

Type: Array of strings

Valid Values: EQUALS | ABSENT | STARTS\_WITH | ENDS\_WITH | CONTAINS | CASE\_SENSITIVE | CASE\_INSENSITIVE

Required: No

### Values

The specific value of the Cost Category.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

## See Also

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

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

## Coverage

Service: AWS Cost Explorer

The amount of instance usage that a reservation covered.

### Contents

#### **CoverageCost**

The amount of cost that the reservation covered.

Type: [CoverageCost \(p. 304\)](#) object

Required: No

#### **CoverageHours**

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

Type: [CoverageHours \(p. 305\)](#) object

Required: No

#### **CoverageNormalizedUnits**

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

Type: [CoverageNormalizedUnits \(p. 306\)](#) object

Required: No

## See Also

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

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

# CoverageByTime

Service: AWS Cost Explorer

Reservation coverage for a specified period, in hours.

## Contents

### Groups

The groups of instances that the reservation covered.

Type: Array of [ReservationCoverageGroup \(p. 348\)](#) objects

Required: No

### TimePeriod

The period that this coverage was used over.

Type: [DateInterval \(p. 310\)](#) object

Required: No

### Total

The total reservation coverage, in hours.

Type: [Coverage \(p. 302\)](#) object

Required: No

## See Also

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

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

## CoverageCost

Service: AWS Cost Explorer

How much it costs to run an instance.

### Contents

#### OnDemandCost

How much an On-Demand Instance 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 V2](#)
- [AWS SDK for Ruby V3](#)

# CoverageHours

Service: AWS Cost Explorer

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

## CoverageNormalizedUnits

Service: AWS Cost Explorer

The amount of instance usage, in normalized units. You can use normalized units to see your EC2 usage for multiple sizes of instances in a uniform way. For example, suppose that 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. When you use 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 V2](#)
- [AWS SDK for Ruby V3](#)

## CurrentInstance

Service: AWS Cost Explorer

Context about the current instance.

### Contents

#### CurrencyCode

The currency code that AWS used to calculate the costs for this instance.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### InstanceName

The name that you given an instance. This field shows as blank if you haven't given the instance a name.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### MonthlyCost

The current On-Demand cost of operating this instance on a monthly basis.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### OnDemandHoursInLookbackPeriod

The number of hours during the lookback period that's billed at On-Demand rates.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### ReservationCoveredHoursInLookbackPeriod

The number of hours during the lookback period that's covered by reservations.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### **ResourceDetails**

Details about the resource and utilization.

Type: [ResourceDetails \(p. 358\)](#) object

Required: No

#### **ResourceId**

Resource ID of the current instance.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### **ResourceUtilization**

Utilization information of the current instance during the lookback period.

Type: [ResourceUtilization \(p. 360\)](#) object

Required: No

#### **SavingsPlansCoveredHoursInLookbackPeriod**

The number of hours during the lookback period that's covered by Savings Plans.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### **Tags**

Cost allocation resource tags that are applied to the instance.

Type: Array of [TagValues \(p. 396\)](#) objects

Required: No

#### **TotalRunningHoursInLookbackPeriod**

The total number of hours that the instance ran during the lookback period.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

## See Also

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

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

## DateInterval

Service: AWS Cost Explorer

The time period of the request.

### Contents

#### End

The end of the time period. 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

Length Constraints: Minimum length of 0. Maximum length of 40.

Pattern: `(\d{4}-\d{2}-\d{2})(T\d{2}:\d{2}:\d{2}Z)?`

Required: Yes

#### Start

The beginning of the time period. 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. The start date must be equal to or no later than the current date to avoid a validation error.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 40.

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

# DimensionValues

Service: AWS Cost Explorer

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. LINK\_ACCOUNT\_NAME and SERVICE\_CODE can only be used in [CostCategoryRule](#).

Type: String

Valid Values: AZ | INSTANCE\_TYPE | LINKED\_ACCOUNT | LINKED\_ACCOUNT\_NAME | OPERATION | PURCHASE\_TYPE | REGION | SERVICE | SERVICE\_CODE | 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 | AGREEMENT\_END\_DATE\_TIME\_AFTER | AGREEMENT\_END\_DATE\_TIME\_BEFORE | INVOICING\_ENTITY

Required: No

### MatchOptions

The match options that you can use to filter your results. MatchOptions is only applicable for actions related to Cost Category. The default values for MatchOptions are EQUALS and CASE\_SENSITIVE.

Type: Array of strings

Valid Values: EQUALS | ABSENT | STARTS\_WITH | ENDS\_WITH | CONTAINS | CASE\_SENSITIVE | CASE\_INSENSITIVE

Required: No

### Values

The metadata values that you can use to filter and group your results. You can use GetDimensionValues to find specific values.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

## See Also

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

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

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

# DimensionValuesWithAttributes

Service: AWS Cost Explorer

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

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

## See Also

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

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

# DiskResourceUtilization

Service: AWS Cost Explorer

The field that contains a list of disk (local storage) metrics that are associated with the current instance.

## Contents

### DiskReadBytesPerSecond

The maximum read throughput operations per second.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### DiskReadOpsPerSecond

The maximum number of read operations per second.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### DiskWriteBytesPerSecond

The maximum write throughput operations per second.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### DiskWriteOpsPerSecond

The maximum number of write operations per second.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

## See Also

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

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

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

## EBSResourceUtilization

Service: AWS Cost Explorer

The EBS field that contains a list of EBS metrics that are associated with the current instance.

### Contents

#### **EbsReadBytesPerSecond**

The maximum size of read operations per second

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### **EbsReadOpsPerSecond**

The maximum number of read operations per second.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### **EbsWriteBytesPerSecond**

The maximum size of write operations per second.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### **EbsWriteOpsPerSecond**

The maximum number of write operations per second.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

## See Also

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

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

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

## EC2InstanceDetails

Service: AWS Cost Explorer

Details about the Amazon EC2 instances that AWS recommends that you purchase.

### Contents

#### AvailabilityZone

The Availability Zone of the recommended reservation.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### CurrentGeneration

Determines whether the recommendation is for a current-generation instance.

Type: Boolean

Required: No

#### Family

The instance family of the recommended reservation.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### InstanceType

The type of instance that AWS recommends.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

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

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### Region

The AWS Region of the recommended reservation.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### SizeFlexEligible

Determines whether the recommended reservation is size flexible.

Type: Boolean

Required: No

### Tenancy

Determines whether the recommended reservation is dedicated or shared.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

## See Also

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

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

## EC2ResourceDetails

Service: AWS Cost Explorer

Details on the Amazon EC2 Resource.

### Contents

#### **HourlyOnDemandRate**

The hourly public On-Demand rate for the instance type.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### **InstanceType**

The type of AWS instance.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### **Memory**

The memory capacity of the AWS instance.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### **NetworkPerformance**

The network performance capacity of the AWS instance.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### **Platform**

The platform of the AWS instance. The platform is the specific combination of operating system, license model, and software on an instance.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: `[\\S\\s]*`

Required: No

#### Region

The AWS Region of the instance.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: `[\\S\\s]*`

Required: No

#### Sku

The SKU of the product.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: `[\\S\\s]*`

Required: No

#### Storage

The disk storage of the AWS instance. This doesn't include EBS storage.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: `[\\S\\s]*`

Required: No

#### Vcpu

The number of VCPU cores in the AWS instance type.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: `[\\S\\s]*`

Required: No

## See Also

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

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

# EC2ResourceUtilization

Service: AWS Cost Explorer

Utilization metrics for the instance.

## Contents

### DiskResourceUtilization

The field that contains a list of disk (local storage) metrics that are associated with the current instance.

Type: [DiskResourceUtilization \(p. 314\)](#) object

Required: No

### EBSResourceUtilization

The EBS field that contains a list of EBS metrics that are associated with the current instance.

Type: [EBSResourceUtilization \(p. 316\)](#) object

Required: No

### MaxCpuUtilizationPercentage

The maximum observed or expected CPU utilization of the instance.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: `[\S\s]*`

Required: No

### MaxMemoryUtilizationPercentage

The maximum observed or expected memory utilization of the instance.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: `[\S\s]*`

Required: No

### MaxStorageUtilizationPercentage

The maximum observed or expected storage utilization of the instance. This doesn't include EBS storage.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: `[\S\s]*`

Required: No

### NetworkResourceUtilization

The network field that contains a list of network metrics that are associated with the current instance.

Type: [NetworkResourceUtilization \(p. 339\)](#) object

Required: No

## See Also

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

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

## EC2Specification

Service: AWS Cost Explorer

The Amazon EC2 hardware specifications that you want AWS to provide recommendations for.

### Contents

#### OfferingClass

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

# ElastiCacheInstanceDetails

Service: AWS Cost Explorer

Details about the Amazon ElastiCache instances that AWS recommends that you purchase.

## Contents

### CurrentGeneration

Determines whether the recommendation is for a current generation instance.

Type: Boolean

Required: No

### Family

The instance family of the recommended reservation.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### NodeType

The type of node that AWS recommends.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### ProductDescription

The description of the recommended reservation.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### Region

The AWS Region of the recommended reservation.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### **SizeFlexEligible**

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

## ESInstanceDetails

Service: AWS Cost Explorer

Details about the Amazon OpenSearch Service instances that AWS recommends that you purchase.

### Contents

#### CurrentGeneration

Determines whether the recommendation is for a current-generation instance.

Type: Boolean

Required: No

#### InstanceClass

The class of instance that AWS recommends.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### InstanceSize

The size of instance that AWS recommends.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### Region

The AWS Region of the recommended reservation.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### SizeFlexEligible

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

# Expression

Service: AWS Cost Explorer

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. For GetRightsizingRecommendation, the Region is a full name (for example, REGION==US East (N. Virginia)). The Expression example is as follows:

```
{ "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. By doing this, 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 is as follows:

```
{ "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.

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

## Note

For the GetRightsizingRecommendation action, a combination of OR and NOT isn't supported. OR isn't supported between different dimensions, or dimensions and tags. NOT operators aren't supported. Dimensions are also limited to LINKED\_ACCOUNT, REGION, or RIGHTSIZING\_TYPE.

For the GetReservationPurchaseRecommendation action, only NOT is supported. AND and OR aren't supported. Dimensions are limited to LINKED\_ACCOUNT.

## Contents

### And

Return results that match both Dimension objects.

Type: Array of [Expression \(p. 329\)](#) objects

Required: No

### CostCategories

The filter that's based on CostCategory values.

Type: [CostCategoryValues \(p. 301\)](#) object

Required: No

#### Dimensions

The specific Dimension to use for Expression.

Type: [DimensionValues \(p. 311\)](#) object

Required: No

#### Not

Return results that don't match a Dimension object.

Type: [Expression \(p. 329\)](#) object

Required: No

#### Or

Return results that match either Dimension object.

Type: Array of [Expression \(p. 329\)](#) objects

Required: No

#### Tags

The specific Tag to use for Expression.

Type: [TagValues \(p. 396\)](#) object

Required: No

## See Also

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

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

## ForecastResult

Service: AWS Cost Explorer

The forecast that's created for your query.

### Contents

#### MeanValue

The mean value of the forecast.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### PredictionIntervalLowerBound

The lower limit for the prediction interval.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### PredictionIntervalUpperBound

The upper limit for the prediction interval.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### TimePeriod

The period of time that the forecast covers.

Type: [DateInterval \(p. 310\)](#) object

Required: No

## See Also

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

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



# Group

Service: AWS Cost Explorer

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 \(p. 337\)](#) object map

Key Length Constraints: Minimum length of 0. Maximum length of 1024.

Key Pattern: [\S\s]\*

Required: No

## See Also

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

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

# GroupDefinition

Service: AWS Cost Explorer

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

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

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

# Impact

Service: AWS Cost Explorer

The dollar value of the anomaly.

## Contents

### MaxImpact

The maximum dollar value that's observed for an anomaly.

Type: Double

Required: Yes

### TotalImpact

The cumulative dollar value that's observed for an anomaly.

Type: Double

Required: No

## See Also

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

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

## InstanceDetails

Service: AWS Cost Explorer

Details about the instances that AWS recommends that you purchase.

### Contents

#### **EC2InstanceDetails**

The Amazon EC2 instances that AWS recommends that you purchase.

Type: [EC2InstanceDetails \(p. 318\)](#) object

Required: No

#### **ElastiCacheInstanceDetails**

The ElastiCache instances that AWS recommends that you purchase.

Type: [ElastiCacheInstanceDetails \(p. 325\)](#) object

Required: No

#### **ESInstanceDetails**

The Amazon OpenSearch Service instances that AWS recommends that you purchase.

Type: [ESInstanceDetails \(p. 327\)](#) object

Required: No

#### **RDSInstanceDetails**

The Amazon RDS instances that AWS recommends that you purchase.

Type: [RDSInstanceDetails \(p. 341\)](#) object

Required: No

#### **RedshiftInstanceDetails**

The Amazon Redshift instances that AWS recommends that you purchase.

Type: [RedshiftInstanceDetails \(p. 343\)](#) object

Required: No

## See Also

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

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

## MetricValue

Service: AWS Cost Explorer

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

# ModifyRecommendationDetail

Service: AWS Cost Explorer

Details for the modification recommendation.

## Contents

### TargetInstances

Determines whether this instance type is the AWS default recommendation.

Type: Array of [TargetInstance \(p. 398\)](#) objects

Required: No

## See Also

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

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

# NetworkResourceUtilization

Service: AWS Cost Explorer

The network field that contains a list of network metrics that are associated with the current instance.

## Contents

### NetworkInBytesPerSecond

The network inbound throughput utilization measured in Bytes per second (Bps).

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### NetworkOutBytesPerSecond

The network outbound throughput utilization measured in Bytes per second (Bps).

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### NetworkPacketsInPerSecond

The network inbound packets that are measured in packets per second.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### NetworkPacketsOutPerSecond

The network outbound packets that are measured in packets per second.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

## See Also

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

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

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

# RDSInstanceDetails

Service: AWS Cost Explorer

Details about the Amazon RDS instances that AWS recommends that you purchase.

## Contents

### **CurrentGeneration**

Determines whether the recommendation is for a current-generation instance.

Type: Boolean

Required: No

### **DatabaseEdition**

The database edition that the recommended reservation supports.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### **DatabaseEngine**

The database engine that the recommended reservation supports.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### **DeploymentOption**

Determines 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

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### **Family**

The instance family of the recommended reservation.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### **InstanceType**

The type of instance that AWS recommends.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### **LicenseModel**

The license model that the recommended reservation supports.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### **Region**

The AWS Region of the recommended reservation.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### **SizeFlexEligible**

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

# RedshiftInstanceDetails

Service: AWS Cost Explorer

Details about the Amazon Redshift instances that AWS recommends that you purchase.

## Contents

### CurrentGeneration

Determines whether the recommendation is for a current-generation instance.

Type: Boolean

Required: No

### Family

The instance family of the recommended reservation.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### NodeType

The type of node that AWS recommends.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### Region

The AWS Region of the recommended reservation.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### SizeFlexEligible

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

# ReservationAggregates

Service: AWS Cost Explorer

The aggregated numbers for your reservation usage.

## Contents

### **AmortizedRecurringFee**

The monthly cost of your reservation. It's amortized over the reservation period.

Type: String

Required: No

### **AmortizedUpfrontFee**

The upfront cost of your reservation. It's 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 costs if charged On-Demand rates.

Type: String

Required: No

### **PurchasedHours**

How many reservation hours that you purchased.

Type: String

Required: No

### **PurchasedUnits**

The number of Amazon EC2 reservation hours that you purchased. It's converted to normalized units. Normalized units are available only for Amazon EC2 usage after November 11, 2017.

Type: String

Required: No

### **RealizedSavings**

The realized savings because of purchasing and using a reservation.

Type: String

Required: No

### **RICostForUnusedHours**

The cost of unused hours for your reservation.

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. It's 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. It's amortized over the reservation period.

Type: String

Required: No

### **TotalPotentialRISavings**

How much you might save if you use your entire reservation.

Type: String

Required: No

### **UnrealizedSavings**

The unrealized savings because of purchasing and using a 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. It's 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. It's 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 V2](#)
- [AWS SDK for Ruby V3](#)

# ReservationCoverageGroup

Service: AWS Cost Explorer

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 \(p. 302\)](#) object

Required: No

## See Also

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

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

# ReservationPurchaseRecommendation

Service: AWS Cost Explorer

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 \(p. 351\)](#) objects

Required: No

### RecommendationSummary

A summary about the recommended purchase.

Type: [ReservationPurchaseRecommendationSummary \(p. 356\)](#) object

Required: No

### ServiceSpecification

Hardware specifications for the service that you want recommendations for.

Type: [ServiceSpecification \(p. 393\)](#) 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 V2](#)
- [AWS SDK for Ruby V3](#)

# ReservationPurchaseRecommendationDetail

Service: AWS Cost Explorer

Details about your recommended reservation purchase.

## Contents

### AccountId

The account that this Reserved Instance (RI) recommendation is for.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

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

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

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

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### AverageUtilization

The average utilization of your instances. AWS uses this to calculate your recommended reservation purchases.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### CurrencyCode

The currency code that AWS used to calculate the costs for this instance.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: `[\S\s]*`

Required: No

#### **EstimatedBreakEvenInMonths**

How long AWS estimates that it takes for this instance to start saving you money, in months.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: `[\S\s]*`

Required: No

#### **EstimatedMonthlyOnDemandCost**

How much AWS estimates that you spend on On-Demand Instances in a month.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: `[\S\s]*`

Required: No

#### **EstimatedMonthlySavingsAmount**

How much AWS estimates that this specific recommendation might save you in a month.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: `[\S\s]*`

Required: No

#### **EstimatedMonthlySavingsPercentage**

How much AWS estimates that this specific recommendation might save you in a month, as a percentage of your overall costs.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: `[\S\s]*`

Required: No

#### **EstimatedReservationCostForLookbackPeriod**

How much AWS estimates that you might spend for all usage during the specified historical period if you had a reservation.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: `[\S\s]*`

Required: No

#### **InstanceDetails**

Details about the instances that AWS recommends that you purchase.

Type: [InstanceDetails \(p. 336\)](#) 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

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

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

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

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

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

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

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### **RecommendedNormalizedUnitsToPurchase**

The number of normalized units that AWS recommends that you purchase.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

**RecommendedNumberOfInstancesToPurchase**

The number of instances that AWS recommends that you purchase.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

**RecurringStandardMonthlyCost**

How much purchasing this instance costs you on a monthly basis.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

**UpfrontCost**

How much purchasing this instance costs you upfront.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

## See Also

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

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

# ReservationPurchaseRecommendationMetadata

Service: AWS Cost Explorer

Information about this specific recommendation, such as the timestamp for when AWS made a specific recommendation.

## Contents

### GenerationTimestamp

The timestamp for when AWS made this recommendation.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### RecommendationId

The ID for this specific recommendation.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

## See Also

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

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

# ReservationPurchaseRecommendationSummary

Service: AWS Cost Explorer

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

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### TotalEstimatedMonthlySavingsAmount

The total amount that AWS estimates that this recommendation could save you in a month.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

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

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

## See Also

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

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

# ReservationUtilizationGroup

Service: AWS Cost Explorer

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 \(p. 345\)](#) 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 V2](#)
- [AWS SDK for Ruby V3](#)

## ResourceDetails

Service: AWS Cost Explorer

Details for the resource.

### Contents

#### EC2ResourceDetails

Details for the Amazon EC2 resource.

Type: [EC2ResourceDetails \(p. 320\)](#) object

Required: No

### See Also

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

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

## ResourceTag

Service: AWS Cost Explorer

The tag structure that contains a tag key and value.

### Note

Tagging is supported only for the following Cost Explorer resource types: [AnomalyMonitor](#), [AnomalySubscription](#), [CostCategory](#).

## Contents

### Key

The key that's associated with the tag.

Type: String

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

Pattern: `^([\p{L}\p{Z}\p{N}_.:=/=+\-@\"]*)$`

Required: Yes

### Value

The value that's associated with the tag.

Type: String

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

Pattern: `^([\p{L}\p{Z}\p{N}_.:=/=+\-@\"]*)$`

Required: Yes

## See Also

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

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

# ResourceUtilization

Service: AWS Cost Explorer

Resource utilization of current resource.

## Contents

### EC2ResourceUtilization

The utilization of current Amazon EC2 instance.

Type: [EC2ResourceUtilization \(p. 322\)](#) object

Required: No

## See Also

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

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

## ResultByTime

Service: AWS Cost Explorer

The result that's associated with a time period.

### Contents

#### Estimated

Determines whether the result is estimated.

Type: Boolean

Required: No

#### Groups

The groups that this time period includes.

Type: Array of [Group \(p. 333\)](#) objects

Required: No

#### TimePeriod

The time period that the result covers.

Type: [DateInterval \(p. 310\)](#) object

Required: No

#### Total

The total amount of cost or usage accrued during the time period.

Type: String to [MetricValue \(p. 337\)](#) object map

Key Length Constraints: Minimum length of 0. Maximum length of 1024.

Key Pattern: [\\$\s]\*

Required: No

### See Also

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

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

# RightsizingRecommendation

Service: AWS Cost Explorer

Recommendations to rightsize resources.

## Contents

### **AccountId**

The account that this recommendation is for.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### **CurrentInstance**

Context regarding the current instance.

Type: [CurrentInstance \(p. 307\)](#) object

Required: No

### **FindingReasonCodes**

The list of possible reasons why the recommendation is generated, such as under- or over-utilization of specific metrics (for example, CPU, Memory, Network).

Type: Array of strings

Valid Values: CPU\_OVER\_PROVISIONED | CPU\_UNDER\_PROVISIONED  
| MEMORY\_OVER\_PROVISIONED | MEMORY\_UNDER\_PROVISIONED |  
EBS\_THROUGHPUT\_OVER\_PROVISIONED | EBS\_THROUGHPUT\_UNDER\_PROVISIONED  
| EBS\_IOPS\_OVER\_PROVISIONED | EBS\_IOPS\_UNDER\_PROVISIONED |  
NETWORK\_BANDWIDTH\_OVER\_PROVISIONED | NETWORK\_BANDWIDTH\_UNDER\_PROVISIONED  
| NETWORK\_PPS\_OVER\_PROVISIONED | NETWORK\_PPS\_UNDER\_PROVISIONED  
| DISK\_IOPS\_OVER\_PROVISIONED | DISK\_IOPS\_UNDER\_PROVISIONED |  
DISK\_THROUGHPUT\_OVER\_PROVISIONED | DISK\_THROUGHPUT\_UNDER\_PROVISIONED

Required: No

### **ModifyRecommendationDetail**

The details for the modification recommendations.

Type: [ModifyRecommendationDetail \(p. 338\)](#) object

Required: No

### **RightsizingType**

A recommendation to either terminate or modify the resource.

Type: String

Valid Values: TERMINATE | MODIFY

Required: No

### TerminateRecommendationDetail

The details for termination recommendations.

Type: [TerminateRecommendationDetail \(p. 400\)](#) object

Required: No

## See Also

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

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

# RightsizingRecommendationConfiguration

Service: AWS Cost Explorer

You can use RightsizingRecommendationConfiguration to customize recommendations across two attributes. You can choose to view recommendations for instances within the same instance families or across different instance families. You can also choose to view your estimated savings that are associated with recommendations with consideration of existing Savings Plans or Reserved Instance (RI) benefits, or neither.

## Contents

### BenefitsConsidered

The option to consider RI or Savings Plans discount benefits in your savings calculation. The default value is TRUE.

Type: Boolean

Required: Yes

### RecommendationTarget

The option to see recommendations within the same instance family or recommendations for instances across other families. The default value is SAME\_INSTANCE\_FAMILY.

Type: String

Valid Values: SAME\_INSTANCE\_FAMILY | CROSS\_INSTANCE\_FAMILY

Required: Yes

## See Also

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

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

# RightsizingRecommendationMetadata

Service: AWS Cost Explorer

Metadata for this recommendation set.

## Contents

### AdditionalMetadata

Additional metadata that might be applicable to the recommendation.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### GenerationTimestamp

The timestamp for when AWS made this recommendation.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### LookbackPeriodInDays

The number of days of previous usage that AWS 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

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

## See Also

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

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

- [AWS SDK for Ruby V3](#)

# RightsizingRecommendationSummary

Service: AWS Cost Explorer

The summary of rightsizing recommendations

## Contents

### **EstimatedTotalMonthlySavingsAmount**

The estimated total savings resulting from modifications, on a monthly basis.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### **SavingsCurrencyCode**

The currency code that AWS used to calculate the savings.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### **SavingsPercentage**

The savings percentage based on the recommended modifications. It's relative to the total On-Demand costs that are associated with these instances.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### **TotalRecommendationCount**

The total number of instance recommendations.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

## See Also

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

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

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

## RootCause

Service: AWS Cost Explorer

The combination of AWS service, linked account, Region, and usage type where a cost anomaly is observed.

## Contents

### LinkedAccount

The member account value that's associated with the cost anomaly.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### Region

The AWS Region that's associated with the cost anomaly.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### Service

The AWS service name that's associated with the cost anomaly.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### UsageType

The UsageType value that's associated with the cost anomaly.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

## See Also

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

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

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

# SavingsPlansAmortizedCommitment

Service: AWS Cost Explorer

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

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### AmortizedUpfrontCommitment

The amortized amount of your Savings Plans commitment that was purchased with an Upfront or PartialUpfront Savings Plans.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### TotalAmortizedCommitment

The total amortized amount of your Savings Plans commitment, regardless of your Savings Plans purchase method.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

## See Also

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

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

# SavingsPlansCoverage

Service: AWS Cost Explorer

The amount of Savings Plans eligible usage that's 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 \(p. 373\)](#) object

Required: No

### TimePeriod

The time period of the request.

Type: [DateInterval \(p. 310\)](#) object

Required: No

## See Also

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

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

# SavingsPlansCoverageData

Service: AWS Cost Explorer

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

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### OnDemandCost

The cost of your AWS usage at the public On-Demand rate.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### SpendCoveredBySavingsPlans

The amount of your AWS usage that's covered by a Savings Plans.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### TotalCost

The total cost of your AWS usage, regardless of your purchase option.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

## See Also

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

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

# SavingsPlansDetails

Service: AWS Cost Explorer

The attribute details on a specific Savings Plan.

## Contents

### InstanceFamily

A group of instance types that Savings Plans applies to.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### OfferingId

The unique ID that's used to distinguish Savings Plans from one another.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

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

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

## See Also

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

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

# SavingsPlansPurchaseRecommendation

Service: AWS Cost Explorer

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 that include the management account and member accounts if the value is set to PAYER. If the value is LINKED, recommendations are calculated for individual member accounts only.

Type: String

Valid Values: PAYER | LINKED

Required: No

### LookbackPeriodInDays

The lookback period in days that's used to generate the recommendation.

Type: String

Valid Values: SEVEN\_DAYS | THIRTY\_DAYS | SIXTY\_DAYS

Required: No

### PaymentOption

The payment option that's 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 that we recommend that you purchase to cover existing Savings Plans eligible workloads.

Type: Array of [SavingsPlansPurchaseRecommendationDetail \(p. 378\)](#) objects

Required: No

### SavingsPlansPurchaseRecommendationSummary

Summary metrics for your Savings Plans Recommendations.

Type: [SavingsPlansPurchaseRecommendationSummary \(p. 383\)](#) object

Required: No

### SavingsPlansType

The requested Savings Plans recommendation type.

Type: String

Valid Values: COMPUTE\_SP | EC2\_INSTANCE\_SP | SAGEMAKER\_SP

Required: No

**TermInYears**

The Savings Plans recommendation term in years. It's 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 V2](#)
- [AWS SDK for Ruby V3](#)

# SavingsPlansPurchaseRecommendationDetail

Service: AWS Cost Explorer

Details for your recommended Savings Plans.

## Contents

### AccountId

The Account ID the recommendation is generated for.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### CurrencyCode

The currency code that AWS used to generate the recommendations and present potential savings.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### CurrentAverageHourlyOnDemandSpend

The average value of hourly On-Demand spend over the lookback period of the applicable usage type.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### CurrentMaximumHourlyOnDemandSpend

The highest value of hourly On-Demand spend over the lookback period of the applicable usage type.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### CurrentMinimumHourlyOnDemandSpend

The lowest value of hourly On-Demand spend over the lookback period of the applicable usage type.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: `[\S\s]*`

Required: No

#### **EstimatedAverageUtilization**

The estimated utilization of the recommended Savings Plans.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: `[\S\s]*`

Required: No

#### **EstimatedMonthlySavingsAmount**

The estimated monthly savings amount based on the recommended Savings Plans.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: `[\S\s]*`

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

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: `[\S\s]*`

Required: No

#### **EstimatedOnDemandCostWithCurrentCommitment**

The estimated On-Demand costs you expect with no additional commitment, based on your usage of the selected time period and the Savings Plans you own.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: `[\S\s]*`

Required: No

#### **EstimatedROI**

The estimated return on investment that's based on the recommended Savings Plans that you purchased. This is calculated as `estimatedSavingsAmount / estimatedSPCost * 100`.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: `[\S\s]*`

Required: No

#### **EstimatedSavingsAmount**

The estimated savings amount that's based on the recommended Savings Plans over the length of the lookback period.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### **EstimatedSavingsPercentage**

The estimated savings percentage relative to the total cost of applicable On-Demand usage over the lookback period.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### **EstimatedSPCost**

The cost of the recommended Savings Plans over the length of the lookback period.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### **HourlyCommitmentToPurchase**

The recommended hourly commitment level for the Savings Plans type and the configuration that's based on the usage during the lookback period.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

#### **SavingsPlansDetails**

Details for your recommended Savings Plans.

Type: [SavingsPlansDetails \(p. 375\)](#) object

Required: No

#### **UpfrontCost**

The upfront cost of the recommended Savings Plans, based on the selected payment option.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

## See Also

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

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

# SavingsPlansPurchaseRecommendationMetadata

Service: AWS Cost Explorer

Metadata about your Savings Plans Purchase Recommendations.

## Contents

### AdditionalMetadata

Additional metadata that might be applicable to the recommendation.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### GenerationTimestamp

The timestamp that shows when the recommendations were generated.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### RecommendationId

The unique identifier for the recommendation set.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

## See Also

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

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

# SavingsPlansPurchaseRecommendationSummary

Service: AWS Cost Explorer

Summary metrics for your Savings Plans Purchase Recommendations.

## Contents

### CurrencyCode

The currency code that AWS used to generate the recommendations and present potential savings.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### CurrentOnDemandSpend

The current total on demand spend of the applicable usage types over the lookback period.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### DailyCommitmentToPurchase

The recommended Savings Plans cost on a daily (24 hourly) basis.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### EstimatedMonthlySavingsAmount

The estimated monthly savings amount that's based on the recommended Savings Plans purchase.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### EstimatedOnDemandCostWithCurrentCommitment

The estimated On-Demand costs you expect with no additional commitment. It's based on your usage of the selected time period and the Savings Plans you own.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

**EstimatedROI**

The estimated return on investment that's based on the recommended Savings Plans and estimated savings.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

**EstimatedSavingsAmount**

The estimated total savings over the lookback period, based on the purchase of the recommended Savings Plans.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

**EstimatedSavingsPercentage**

The estimated savings relative to the total cost of On-Demand usage, over the lookback period. This is calculated as estimatedSavingsAmount/ CurrentOnDemandSpend\*100.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

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

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

**HourlyCommitmentToPurchase**

The recommended hourly commitment that's based on the recommendation parameters.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

**TotalRecommendationCount**

The aggregate number of Savings Plans recommendations that exist for your account.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

## See Also

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

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

# SavingsPlansSavings

Service: AWS Cost Explorer

The amount of savings that you're accumulating, against the public On-Demand rate of the usage accrued in an account.

## Contents

### NetSavings

The savings amount that you're accumulating for the usage that's covered by a Savings Plans, when compared to the On-Demand equivalent of the same usage.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### OnDemandCostEquivalent

How much the amount that the usage would have cost if it was accrued at the On-Demand rate.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

## See Also

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

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

# SavingsPlansUtilization

Service: AWS Cost Explorer

The measurement of how well you're 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

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### UnusedCommitment

The amount of your Savings Plans commitment that wasn't consumed from Savings Plans eligible usage in a specific period.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### UsedCommitment

The amount of your Savings Plans commitment that was consumed from Savings Plans eligible usage in a specific period.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### UtilizationPercentage

The amount of UsedCommitment divided by the TotalCommitment for your Savings Plans.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

## See Also

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

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

# SavingsPlansUtilizationAggregates

Service: AWS Cost Explorer

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 \(p. 371\)](#) object

Required: No

### Savings

The amount that's saved by using existing Savings Plans. Savings returns both net savings from Savings Plans and also the onDemandCostEquivalent of the Savings Plans when considering the utilization rate.

Type: [SavingsPlansSavings \(p. 386\)](#) 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 \(p. 387\)](#) 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 V2](#)
- [AWS SDK for Ruby V3](#)

# SavingsPlansUtilizationByTime

Service: AWS Cost Explorer

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 \(p. 371\)](#) object

Required: No

### **Savings**

The amount that's saved by using existing Savings Plans. Savings returns both net savings from Savings Plans and also the `onDemandCostEquivalent` of the Savings Plans when considering the utilization rate.

Type: [SavingsPlansSavings \(p. 386\)](#) object

Required: No

### **TimePeriod**

The time period of the request.

Type: [DateInterval \(p. 310\)](#) 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 \(p. 387\)](#) 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 V2](#)
- [AWS SDK for Ruby V3](#)

# SavingsPlansUtilizationDetail

Service: AWS Cost Explorer

A single daily or monthly Savings Plans utilization rate and details for your account. A management account 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 \(p. 371\)](#) 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 and also the onDemandCostEquivalent of the Savings Plans when considering the utilization rate.

Type: [SavingsPlansSavings \(p. 386\)](#) 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 \(p. 387\)](#) object

Required: No

## See Also

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

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

- [AWS SDK for Ruby V3](#)

# ServiceSpecification

Service: AWS Cost Explorer

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 \(p. 324\)](#) object

Required: No

## See Also

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

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

# SortDefinition

Service: AWS Cost Explorer

The details for how to sort the data.

## Contents

### Key

The key that's used to sort the data.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: Yes

### SortOrder

The order that's used to sort the data.

Type: String

Valid Values: ASCENDING | DESCENDING

Required: No

## See Also

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

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

## Subscriber

Service: AWS Cost Explorer

The recipient of AnomalySubscription notifications.

### Contents

#### Address

The email address or SNS Amazon Resource Name (ARN). This depends on the Type.

Type: String

Length Constraints: Minimum length of 6. Maximum length of 302.

Pattern: (^[a-zA-Z0-9. !#\$%&'\*+=?^\_{'|}~-]+@[a-zA-Z0-9\_-]+(\.[a-zA-Z0-9\_-]+)+\$)|(^arn:(aws[a-zA-Z-]\*):sns:[a-zA-Z0-9-]+:[0-9]{12}:[a-zA-Z0-9\_-]+(\.fifo)?\$)

Required: No

#### Status

Indicates if the subscriber accepts the notifications.

Type: String

Valid Values: CONFIRMED | DECLINED

Required: No

#### Type

The notification delivery channel.

Type: String

Valid Values: EMAIL | SNS

Required: No

### See Also

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

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

# TagValues

Service: AWS Cost Explorer

The values that are available for a tag.

If Values and Key aren't specified, the ABSENT MatchOption is applied to all tags. That is, it's filtered on resources with no tags.

If Key is provided and Values isn't specified, the ABSENT MatchOption is applied to the tag Key only. That is, it's filtered on resources without the given tag key.

## Contents

### Key

The key for the tag.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### MatchOptions

The match options that you can use to filter your results. MatchOptions is only applicable for actions related to Cost Category. The default values for MatchOptions are EQUALS and CASE\_SENSITIVE.

Type: Array of strings

Valid Values: EQUALS | ABSENT | STARTS\_WITH | ENDS\_WITH | CONTAINS | CASE\_SENSITIVE | CASE\_INSENSITIVE

Required: No

### Values

The specific value of the tag.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

## See Also

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

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



# TargetInstance

Service: AWS Cost Explorer

Details on recommended instance.

## Contents

### CurrencyCode

The currency code that AWS used to calculate the costs for this instance.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### DefaultTargetInstance

Determines whether this recommendation is the defaulted AWS recommendation.

Type: Boolean

Required: No

### EstimatedMonthlyCost

The expected cost to operate this instance type on a monthly basis.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### EstimatedMonthlySavings

The estimated savings that result from modification, on a monthly basis.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### ExpectedResourceUtilization

The expected utilization metrics for target instance type.

Type: [ResourceUtilization \(p. 360\)](#) object

Required: No

### PlatformDifferences

Explains the actions that you might need to take to successfully migrate your workloads from the current instance type to the recommended instance type.

Type: Array of strings

Valid Values: HYPERVISOR | NETWORK\_INTERFACE | STORAGE\_INTERFACE | INSTANCE\_STORE\_AVAILABILITY | VIRTUALIZATION\_TYPE

Required: No

#### **ResourceDetails**

Details on the target instance type.

Type: [ResourceDetails \(p. 358\)](#) object

Required: No

## See Also

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

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

# TerminateRecommendationDetail

Service: AWS Cost Explorer

Details on termination recommendation.

## Contents

### CurrencyCode

The currency code that AWS used to calculate the costs for this instance.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### EstimatedMonthlySavings

The estimated savings that result from modification, on a monthly basis.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

## See Also

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

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

# TotalImpactFilter

Service: AWS Cost Explorer

Filters cost anomalies based on the total impact.

## Contents

### EndValue

The upper bound dollar value that's used in the filter.

Type: Double

Required: No

### NumericOperator

The comparing value that's used in the filter.

Type: String

Valid Values: EQUAL | GREATER\_THAN\_OR\_EQUAL | LESS\_THAN\_OR\_EQUAL | GREATER\_THAN  
| LESS\_THAN | BETWEEN

Required: Yes

### StartValue

The lower bound dollar value that's used in the filter.

Type: Double

Required: Yes

## See Also

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

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

# UpdateCostAllocationTagsStatusError

Service: AWS Cost Explorer

Gives a detailed description of the result of an action. It's on each cost allocation tag entry in the request.

## Contents

### Code

An error code representing why the action failed on this entry.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

### Message

A message explaining why the action failed on this entry.

Type: String

Required: No

### TagKey

The key for the cost allocation tag.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1024.

Pattern: [\S\s]\*

Required: No

## See Also

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

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

## UtilizationByTime

Service: AWS Cost Explorer

The amount of utilization, in hours.

### Contents

#### Groups

The groups that this utilization result uses.

Type: Array of [ReservationUtilizationGroup \(p. 357\)](#) objects

Required: No

#### TimePeriod

The period of time that this utilization was used for.

Type: [DateInterval \(p. 310\)](#) object

Required: No

#### Total

The total number of reservation hours that were used.

Type: [ReservationAggregates \(p. 345\)](#) object

Required: No

### See Also

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

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

## AWS Budgets

The following data types are supported by AWS Budgets:

- [Action \(p. 405\)](#)
- [ActionHistory \(p. 407\)](#)
- [ActionHistoryDetails \(p. 408\)](#)
- [ActionThreshold \(p. 409\)](#)
- [AutoAdjustData \(p. 410\)](#)
- [Budget \(p. 411\)](#)
- [BudgetedAndActualAmounts \(p. 415\)](#)
- [BudgetNotificationsForAccount \(p. 416\)](#)
- [BudgetPerformanceHistory \(p. 417\)](#)

- [CalculatedSpend \(p. 419\)](#)
- [CostTypes \(p. 420\)](#)
- [Definition \(p. 423\)](#)
- [HistoricalOptions \(p. 424\)](#)
- [IamActionDefinition \(p. 425\)](#)
- [Notification \(p. 427\)](#)
- [NotificationWithSubscribers \(p. 429\)](#)
- [ScpActionDefinition \(p. 430\)](#)
- [Spend \(p. 431\)](#)
- [SsmActionDefinition \(p. 432\)](#)
- [Subscriber \(p. 433\)](#)
- [TimePeriod \(p. 434\)](#)

## Action

Service: AWS Budgets

A budget action resource.

## Contents

### ActionId

A system-generated universally unique identifier (UUID) for the action.

Type: String

Length Constraints: Fixed length of 36.

Pattern: ^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}\$

Required: Yes

### ActionThreshold

The trigger threshold of the action.

Type: [ActionThreshold \(p. 409\)](#) object

Required: Yes

### ActionType

The type of action. This defines the type of tasks that can be carried out by this action. This field also determines the format for definition.

Type: String

Valid Values: APPLY\_IAM\_POLICY | APPLY\_SCP\_POLICY | RUN\_SSM\_DOCUMENTS

Required: Yes

### ApprovalModel

This specifies if the action needs manual or automatic approval.

Type: String

Valid Values: AUTOMATIC | MANUAL

Required: Yes

### 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: Yes

### Definition

Where you specify all of the type-specific parameters.

Type: [Definition \(p. 423\)](#) object

Required: Yes

**ExecutionRoleArn**

The role passed for action execution and reversion. Roles and actions must be in the same account.

Type: String

Length Constraints: Minimum length of 32. Maximum length of 618.

Pattern: ^arn:(aws|aws-cn|aws-us-gov|us-iso-east-1|us-isob-east-1):iam::\d{12}:role(\u002F[\u0021-\u007F]+\u002F|\u002F)[\w+=,.@-]+\$

Required: Yes

**NotificationType**

The type of a notification. It must be ACTUAL or FORECASTED.

Type: String

Valid Values: ACTUAL | FORECASTED

Required: Yes

**Status**

The status of the action.

Type: String

Valid Values: STANDBY | PENDING | EXECUTION\_IN\_PROGRESS | EXECUTION\_SUCCESS | EXECUTION\_FAILURE | REVERSE\_IN\_PROGRESS | REVERSE\_SUCCESS | REVERSE\_FAILURE | RESET\_IN\_PROGRESS | RESET\_FAILURE

Required: Yes

**Subscribers**

A list of subscribers.

Type: Array of [Subscriber \(p. 433\)](#) 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 V2](#)
- [AWS SDK for Ruby V3](#)

# ActionHistory

Service: AWS Budgets

The historical records for a budget action.

## Contents

### ActionHistoryDetails

The description of the details for the event.

Type: [ActionHistoryDetails \(p. 408\)](#) object

Required: Yes

### EventType

This distinguishes between whether the events are triggered by the user or are generated by the system.

Type: String

Valid Values: SYSTEM | CREATE\_ACTION | DELETE\_ACTION | UPDATE\_ACTION | EXECUTE\_ACTION

Required: Yes

### Status

The status of action at the time of the event.

Type: String

Valid Values: STANDBY | PENDING | EXECUTION\_IN\_PROGRESS | EXECUTION\_SUCCESS | EXECUTION\_FAILURE | REVERSE\_IN\_PROGRESS | REVERSE\_SUCCESS | REVERSE\_FAILURE | RESET\_IN\_PROGRESS | RESET\_FAILURE

Required: Yes

### Timestamp

A generic time stamp. In Java, it's transformed to a Date object.

Type: Timestamp

Required: Yes

## See Also

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

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

# ActionHistoryDetails

Service: AWS Budgets

The description of the details for the event.

## Contents

### Action

The budget action resource.

Type: [Action \(p. 405\)](#) object

Required: Yes

### Message

A generic string.

Type: String

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

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

# ActionThreshold

Service: AWS Budgets

The trigger threshold of the action.

## Contents

### ActionThresholdType

The type of threshold for a notification.

Type: String

Valid Values: PERCENTAGE | ABSOLUTE\_VALUE

Required: Yes

### ActionThresholdValue

The threshold of a notification.

Type: Double

Valid Range: Minimum value of 0. Maximum value of 15000000000000.

Required: Yes

## See Also

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

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

## AutoAdjustData

Service: AWS Budgets

The parameters that determine the budget amount for an auto-adjusting budget.

### Contents

#### AutoAdjustType

The string that defines whether your budget auto-adjusts based on historical or forecasted data.

Type: String

Valid Values: HISTORICAL | FORECAST

Required: Yes

#### HistoricalOptions

The parameters that define or describe the historical data that your auto-adjusting budget is based on.

Type: [HistoricalOptions \(p. 424\)](#) object

Required: No

#### LastAutoAdjustTime

The last time that your budget was auto-adjusted.

Type: Timestamp

Required: No

## See Also

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

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

# 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 Amazon Resource Name (ARN) pattern for a budget:

`arn:aws:budgets::AccountId:budget/budgetName`

## Contents

### **AutoAdjustData**

The parameters that determine the budget amount for an auto-adjusting budget.

Type: [AutoAdjustData \(p. 410\)](#) object

Required: No

### **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. This 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 \(p. 431\)](#) 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**

Specifies 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 \(p. 419\)](#) object

Required: No

#### **CostFilters**

The cost filters, such as Region, Service, member account, Tag, or Cost Category, that are applied to a budget.

AWS Budgets supports the following services as a Service filter for RI budgets:

- Amazon EC2
- Amazon Redshift
- Amazon Relational Database Service
- Amazon ElastiCache
- Amazon OpenSearch 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: [\\S\\s]\*

Required: No

#### **CostTypes**

The types of costs that are included in this COST budget.

USAGE, RI\_UTILIZATION, RI\_COVERAGE, SAVINGS\_PLANS\_UTILIZATION, and SAVINGS\_PLANS\_COVERAGE budgets do not have CostTypes.

Type: [CostTypes \(p. 420\)](#) 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 both 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 four quarters of PlannedBudgetLimits value entries in standard calendar quarter increments. This must start from the current quarter and include the next three quarters. The key is the start of the quarter, UTC in epoch seconds.

If the planned budget expires before 12 months for monthly or four 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` also contain `BudgetLimit` representing the current month or quarter limit present in `PlannedBudgetLimits`. This only applies to budgets that are created with `PlannedBudgetLimits`. Budgets that are created without `PlannedBudgetLimits` only contain `BudgetLimit`. They don't contain `PlannedBudgetLimits`.

Type: String to [Spend \(p. 431\)](#) object map

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

Key Pattern: `.*`

Required: No

#### TimePeriod

The period of time that's covered by a budget. You set the start date and 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 the associated notifications and subscribers.

Type: [TimePeriod \(p. 434\)](#) object

Required: No

#### TimeUnit

The length of time until a budget resets the actual and forecasted spend.

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 V2](#)
- [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 \(p. 431\)](#) object

Required: No

### BudgetedAmount

The amount of cost or usage that you created the budget for.

Type: [Spend \(p. 431\)](#) object

Required: No

### TimePeriod

The time period that's covered by this budget comparison.

Type: [TimePeriod \(p. 434\)](#) object

Required: No

## See Also

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

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

# BudgetNotificationsForAccount

Service: AWS Budgets

The budget name and associated notifications for an account.

## Contents

### **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

### **Notifications**

A list of notifications.

Type: Array of [Notification \(p. 427\)](#) objects

Required: No

## See Also

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

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

# 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, which are compared to your actual costs or usage.

Type: Array of [BudgetedAndActualAmounts \(p. 415\)](#) 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, or 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: [\S\s]\*

Required: No

### **CostTypes**

The history of the cost types for a budget during the specified time period.

Type: [CostTypes \(p. 420\)](#) 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 V2](#)
- [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 that you're predicted to spend based on your historical usage profile.

For example, if it's 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 used.

Type: [Spend \(p. 431\)](#) object

Required: Yes

### ForecastedSpend

The amount of cost, usage, RI units, or Savings Plans units that you're forecasted to use.

Type: [Spend \(p. 431\)](#) object

Required: No

## See Also

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

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

# 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 don't 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 V2](#)

- [AWS SDK for Ruby V3](#)

## Definition

Service: AWS Budgets

Specifies all of the type-specific parameters.

## Contents

### IamActionDefinition

The AWS Identity and Access Management (IAM) action definition details.

Type: [IamActionDefinition \(p. 425\)](#) object

Required: No

### ScpActionDefinition

The service control policies (SCPs) action definition details.

Type: [ScpActionDefinition \(p. 430\)](#) object

Required: No

### SsmActionDefinition

The AWS Systems Manager (SSM) action definition details.

Type: [SsmActionDefinition \(p. 432\)](#) object

Required: No

## See Also

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

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

# HistoricalOptions

Service: AWS Budgets

The parameters that define or describe the historical data that your auto-adjusting budget is based on.

## Contents

### BudgetAdjustmentPeriod

The number of budget periods included in the moving-average calculation that determines your auto-adjusted budget amount. The maximum value depends on the TimeUnit granularity of the budget:

- For the DAILY granularity, the maximum value is 60.
- For the MONTHLY granularity, the maximum value is 12.
- For the QUARTERLY granularity, the maximum value is 4.
- For the ANNUALLY granularity, the maximum value is 1.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 60.

Required: Yes

### LookBackAvailablePeriods

The integer that describes how many budget periods in your BudgetAdjustmentPeriod are included in the calculation of your current BudgetLimit. If the first budget period in your BudgetAdjustmentPeriod has no cost data, then that budget period isn't included in the average that determines your budget limit.

For example, if you set BudgetAdjustmentPeriod as 4 quarters, but your account had no cost data in the first quarter, then only the last three quarters are included in the calculation. In this scenario, LookBackAvailablePeriods returns 3.

You can't set your own LookBackAvailablePeriods. The value is automatically calculated from the BudgetAdjustmentPeriod and your historical cost data.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 60.

Required: No

## See Also

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

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

# IamActionDefinition

Service: AWS Budgets

The AWS Identity and Access Management (IAM) action definition details.

## Contents

### Groups

A list of groups to be attached. There must be at least one group.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 100 items.

Length Constraints: Minimum length of 1. Maximum length of 640.

Pattern: ^([\u0021-\u007F]+\u002F)?[\w+=,.@-]+\$

Required: No

### PolicyArn

The Amazon Resource Name (ARN) of the policy to be attached.

Type: String

Length Constraints: Minimum length of 25. Maximum length of 684.

Pattern: ^arn:(aws|aws-cn|aws-us-gov|us-iso-east-1|us-isob-east-1):iam::(\d{12}|aws):policy([\u002F][\u0021-\u007F]+\u002F|\u002F)[\w+=,.@-]+\$

Required: Yes

### Roles

A list of roles to be attached. There must be at least one role.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 100 items.

Length Constraints: Minimum length of 1. Maximum length of 576.

Pattern: ^([\u0021-\u007F]+\u002F)?[\w+=,.@-]+\$

Required: No

### Users

A list of users to be attached. There must be at least one user.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 100 items.

Length Constraints: Minimum length of 1. Maximum length of 576.

Pattern: ^([\u0021-\u007F]+\u002F)?[\w+=,.@-]+\$

Required: No

## See Also

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

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

# Notification

Service: AWS Budgets

A notification that's associated with a budget. A budget can have up to ten 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's used for this notification.

Type: String

Valid Values: GREATER\_THAN | LESS\_THAN | EQUAL\_TO

Required: Yes

### NotificationState

Specifies whether this notification is in alarm. If a budget notification is in the ALARM state, you passed the set threshold for the budget.

Type: String

Valid Values: OK | ALARM

Required: No

### NotificationType

Specifies whether the notification is for how much you have spent (ACTUAL) or for how much that you're forecasted to spend (FORECASTED).

Type: String

Valid Values: ACTUAL | FORECASTED

Required: Yes

### Threshold

The threshold that's 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 1500000000000000.

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

# 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's associated with a budget.

Type: [Notification \(p. 427\)](#) object

Required: Yes

### Subscribers

A list of subscribers who are subscribed to this notification.

Type: Array of [Subscriber \(p. 433\)](#) 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 V2](#)
- [AWS SDK for Ruby V3](#)

# ScpActionDefinition

Service: AWS Budgets

The service control policies (SCP) action definition details.

## Contents

### PolicyId

The policy ID attached.

Type: String

Length Constraints: Minimum length of 10. Maximum length of 130.

Pattern: ^p-[0-9a-zA-Z\_]{8,128}\$

Required: Yes

### TargetIds

A list of target IDs.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 100 items.

Length Constraints: Minimum length of 12. Maximum length of 68.

Pattern: ^(ou-[0-9a-z]{4,32}-[a-zA-Z0-9]{8,32}\$)|(\\d{12})

Required: Yes

## See Also

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

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

## Spend

Service: AWS Budgets

The amount of cost or usage that's measured for a budget.

For example, a Spend for 3 GB of S3 usage has the following parameters:

- An Amount of 3
- A unit of GB

## Contents

### Amount

The cost or usage amount that's associated with a budget forecast, actual spend, or budget threshold.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2147483647.

Pattern: ([0-9]\*\\.)?[0-9]+

Required: Yes

### Unit

The unit of measurement that's used for the budget forecast, actual spend, or budget threshold, such as USD or GBP.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2147483647.

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

## SsmActionDefinition

Service: AWS Budgets

The AWS Systems Manager (SSM) action definition details.

### Contents

#### ActionSubType

The action subType.

Type: String

Valid Values: STOP\_EC2\_INSTANCES | STOP\_RDS\_INSTANCES

Required: Yes

#### InstanceIds

The EC2 and RDS instance IDs.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 100 items.

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: ^i-(\w{8}|\w{17})\$|^a-zA-Z([\w-]{0,61}\w)?\$

Required: Yes

#### Region

The Region to run the SSM document.

Type: String

Length Constraints: Minimum length of 9. Maximum length of 20.

Pattern: ^\w{2}-\w+(-\w+)?-\d\$

Required: Yes

## See Also

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

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

## 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 has 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

Length Constraints: Minimum length of 1. Maximum length of 2147483647.

Pattern: `(.*[\n\r\t\f\ ]?)^`\*

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

## TimePeriod

Service: AWS Budgets

The period of time that's 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 the 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 V2](#)
- [AWS SDK for Ruby V3](#)

## AWS Cost and Usage Report

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

- [ReportDefinition \(p. 435\)](#)

# ReportDefinition

Service: AWS Cost and Usage Report

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 AWS 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 AWS includes in the report, such as individual resource IDs.

Type: Array of strings

Valid Values: RESOURCES

Required: Yes

### BillingViewArn

The Amazon resource name of the billing view. The BillingViewArn is needed to create AWS Cost and Usage Report for each billing group maintained in the AWS Billing Conductor service. The BillingViewArn for a billing group can be constructed as: arn:aws:billing::payer-account-id:billingview/billing-group-primary-account-id

Type: String

Length Constraints: Maximum length of 128.

Pattern: (arn:aws(-cn)?::billing::[0-9]{12}:billingview/)?[a-zA-Z0-9\_\+=\.\-\@]{1,30}

Required: No

### 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 AWS to update your reports after they have been finalized if AWS 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.

Type: String

Length Constraints: Maximum length of 256.

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

Required: Yes

#### **ReportVersioning**

Whether you want AWS 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: af-south-1 | ap-east-1 | ap-south-1 | ap-southeast-1 | ap-southeast-2 | ap-southeast-3 | 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 | eu-south-1 | me-south-1 | sa-east-1 | us-east-1 | us-east-2 | us-west-1 | us-west-2 | cn-north-1 | cn-northwest-1

Required: Yes

#### TimeUnit

The length of time covered by the report.

Type: String

Valid Values: HOURLY | DAILY | MONTHLY

Required: Yes

## See Also

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

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

## AWS Price List

The following data types are supported by AWS Price List:

- [AttributeValue \(p. 438\)](#)
- [Filter \(p. 439\)](#)
- [Service \(p. 440\)](#)

## AttributeValue

Service: AWS Price List

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

## Filter

Service: AWS Price List

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

## Service

Service: AWS Price List

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

# Common Parameters

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

## Action

The action to be performed.

Type: string

Required: Yes

## Version

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

Type: string

Required: Yes

## X-Amz-Algorithm

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

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

Type: string

Valid Values: AWS4-HMAC-SHA256

Required: Conditional

## X-Amz-Credential

The credential scope value, which is a string that includes your access key, the date, the region you are targeting, the service you are requesting, and a termination string ("aws4\_request"). The value is expressed in the following format: *access\_key/YYYYMMDD/region/service/aws4\_request*.

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

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

Type: string

Required: Conditional

## X-Amz-Date

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

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

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

Type: string

Required: Conditional

**X-Amz-Security-Token**

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

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

Type: string

Required: Conditional

**X-Amz-Signature**

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

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

Type: string

Required: Conditional

**X-Amz-SignedHeaders**

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

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

Type: string

Required: Conditional

# Common Errors

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

## **AccessDeniedException**

You do not have sufficient access to perform this action.

HTTP Status Code: 400

## **IncompleteSignature**

The request signature does not conform to AWS standards.

HTTP Status Code: 400

## **InternalFailure**

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

HTTP Status Code: 500

## **InvalidAction**

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

HTTP Status Code: 400

## **InvalidClientId**

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

HTTP Status Code: 403

## **InvalidParameterCombination**

Parameters that must not be used together were used together.

HTTP Status Code: 400

## **InvalidParameterValue**

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

HTTP Status Code: 400

## **InvalidQueryParameter**

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

HTTP Status Code: 400

## **MalformedQueryString**

The query string contains a syntax error.

HTTP Status Code: 404

## **MissingAction**

The request is missing an action or a required parameter.

HTTP Status Code: 400

**MissingAuthenticationToken**

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

HTTP Status Code: 403

**MissingParameter**

A required parameter for the specified action is not supplied.

HTTP Status Code: 400

**NotAuthorized**

You do not have permission to perform this action.

HTTP Status Code: 400

**OptInRequired**

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

HTTP Status Code: 403

**RequestExpired**

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

HTTP Status Code: 400

**ServiceUnavailable**

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

HTTP Status Code: 503

**ThrottlingException**

The request was denied due to request throttling.

HTTP Status Code: 400

**ValidationException**

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

HTTP Status Code: 400