
AWS Cost Explorer Service

Cost Management APIs



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Welcome

AWS Cost Explorer Service

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

Service Endpoint

The Cost Explorer API provides the following endpoint:

- <https://ce.us-east-1.amazonaws.com>

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

AWS Budgets

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

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

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

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

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

Service Endpoint

The AWS Budgets API provides the following endpoint:

- <https://budgets.amazonaws.com>

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

AWS Cost and Usage Report Service

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

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

Service Endpoint

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

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

AWS Price List Service

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

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

Service Endpoint

AWS Price List Service API provides the following two endpoints:

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

Actions

The following actions are supported by AWS Cost Explorer Service:

- [GetCostAndUsage](#) (p. 5)
- [GetCostForecast](#) (p. 11)
- [GetDimensionValues](#) (p. 16)
- [GetReservationCoverage](#) (p. 22)
- [GetReservationPurchaseRecommendation](#) (p. 29)
- [GetReservationUtilization](#) (p. 34)
- [GetRightsizingRecommendation](#) (p. 41)
- [GetTags](#) (p. 46)
- [GetUsageForecast](#) (p. 50)

The following actions are supported by AWS Budgets:

- [CreateBudget](#) (p. 55)
- [CreateNotification](#) (p. 62)
- [CreateSubscriber](#) (p. 65)
- [DeleteBudget](#) (p. 68)
- [DeleteNotification](#) (p. 70)
- [DeleteSubscriber](#) (p. 73)
- [DescribeBudget](#) (p. 76)
- [DescribeBudgetPerformanceHistory](#) (p. 82)
- [DescribeBudgets](#) (p. 87)
- [DescribeNotificationsForBudget](#) (p. 94)
- [DescribeSubscribersForNotification](#) (p. 98)
- [UpdateBudget](#) (p. 102)
- [UpdateNotification](#) (p. 108)
- [UpdateSubscriber](#) (p. 111)

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

- [DeleteReportDefinition](#) (p. 114)
- [DescribeReportDefinitions](#) (p. 116)
- [ModifyReportDefinition](#) (p. 119)
- [PutReportDefinition](#) (p. 121)

The following actions are supported by AWS Price List Service:

- [DescribeServices](#) (p. 124)
- [GetAttributeValues](#) (p. 128)
- [GetProducts](#) (p. 132)

AWS Cost Explorer Service

The following actions are supported by AWS Cost Explorer Service:

- [GetCostAndUsage](#) (p. 5)
- [GetCostForecast](#) (p. 11)
- [GetDimensionValues](#) (p. 16)
- [GetReservationCoverage](#) (p. 22)
- [GetReservationPurchaseRecommendation](#) (p. 29)
- [GetReservationUtilization](#) (p. 34)
- [GetRightsizingRecommendation](#) (p. 41)
- [GetTags](#) (p. 46)
- [GetUsageForecast](#) (p. 50)

GetCostAndUsage

Service: AWS Cost Explorer Service

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

Request Syntax

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

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 216).

The request accepts the following data in JSON format.

Filter (p. 5)

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

Type: [Expression](#) (p. 158) object

Required: No

Granularity (p. 5)

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

The `GetCostAndUsageRequest` operation supports only `DAILY` and `MONTHLY` granularities.

Type: String

Valid Values: `DAILY` | `MONTHLY` | `HOURLY`

Required: No

GroupBy (p. 5)

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

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

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

Type: Array of [GroupDefinition \(p. 162\)](#) objects

Required: No

Metrics (p. 5)

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

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

Note

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

`Metrics` is required for `GetCostAndUsage` requests.

Type: Array of strings

Required: No

NextPageToken (p. 5)

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

Type: String

Required: No

TimePeriod (p. 5)

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

Type: [DateInterval \(p. 146\)](#) object

Required: Yes

Response Syntax

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

Response Elements

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

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

GroupDefinitions (p. 7)

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

Type: Array of [GroupDefinition](#) (p. 162) objects

NextPageToken (p. 7)

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

Type: String

ResultsByTime (p. 7)

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

Type: Array of [ResultByTime \(p. 183\)](#) objects

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 218\)](#).

BillExpirationException

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

HTTP Status Code: 400

DataUnavailableException

The requested data is unavailable.

HTTP Status Code: 400

InvalidNextTokenException

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

HTTP Status Code: 400

LimitExceededException

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

HTTP Status Code: 400

RequestChangedException

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

HTTP Status Code: 400

Example

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

[Sample Request](#)

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

GetCostForecast

Service: AWS Cost Explorer Service

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

Request Syntax

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

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 216\)](#).

The request accepts the following data in JSON format.

Filter (p. 11)

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

Type: [Expression \(p. 158\)](#) object

Required: No

Granularity (p. 11)

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. 11)

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. 11)

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. 11)

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

Type: [DateInterval](#) (p. 146) 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. 12)

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 \(p. 160\)](#) objects

Total (p. 12)

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

Type: [MetricValue \(p. 164\)](#) object

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 218\)](#).

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

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 Go - Pilot](#)
- [AWS SDK for Java](#)
- [AWS SDK for JavaScript](#)

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

GetDimensionValues

Service: AWS Cost Explorer Service

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

Request Syntax

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

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 216).

The request accepts the following data in JSON format.

Context (p. 16)

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

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

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

- **RECORD_TYPE** - The different types of charges such as RI fees, usage costs, tax refunds, and credits.

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.

Type: String

Valid Values: `COST_AND_USAGE` | `RESERVATIONS`

Required: No

Dimension (p. 16)

The name of the dimension. Each **Dimension** is available for a different **Context**. For more information, see **Context**.

Type: String

Valid Values: `AZ` | `INSTANCE_TYPE` | `LINKED_ACCOUNT` | `OPERATION` | `PURCHASE_TYPE` | `REGION` | `SERVICE` | `USAGE_TYPE` | `USAGE_TYPE_GROUP` | `RECORD_TYPE` | `OPERATING_SYSTEM` | `TENANCY` | `SCOPE` | `PLATFORM` | `SUBSCRIPTION_ID` | `LEGAL_ENTITY_NAME` | `DEPLOYMENT_OPTION` | `DATABASE_ENGINE` | `CACHE_ENGINE` | `INSTANCE_TYPE_FAMILY` | `BILLING_ENTITY` | `RESERVATION_ID` | `RIGHTSIZING_TYPE`

Required: Yes

NextPageToken (p. 16)

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

Type: String

Required: No

SearchString (p. 16)

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

Type: String

Required: No

TimePeriod (p. 16)

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. 146) 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. 18)

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.

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.

Type: Array of [DimensionValuesWithAttributes \(p. 148\)](#) objects

NextPageToken (p. 18)

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

Type: String

ReturnSize (p. 18)

The number of results that AWS returned at one time.

Type: Integer

TotalSize (p. 18)

The total number of search results.

Type: Integer

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 218\)](#).

BillExpirationException

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

HTTP Status Code: 400

DataUnavailableException

The requested data is unavailable.

HTTP Status Code: 400

InvalidNextTokenException

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

HTTP Status Code: 400

LimitExceededException

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

HTTP Status Code: 400

RequestChangedException

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

HTTP Status Code: 400

Example

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

Sample Request

```
POST / HTTP/1.1
Host: ce.us-east-1.amazonaws.com
x-amz-Date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
  SignedHeaders=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 Go - Pilot](#)
- [AWS SDK for Java](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V2](#)

GetReservationCoverage

Service: AWS Cost Explorer Service

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

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

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

Request Syntax

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

```
}  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 216\)](#).

The request accepts the following data in JSON format.

Filter (p. 22)

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

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

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

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

Type: [Expression \(p. 158\)](#) object

Required: No

Granularity (p. 22)

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. 22)

You can group the data by the following attributes:

- AZ
- CACHE_ENGINE
- DATABASE_ENGINE

- DEPLOYMENT_OPTION
- INSTANCE_TYPE
- LINKED_ACCOUNT
- OPERATING_SYSTEM
- PLATFORM
- REGION
- TENANCY

Type: Array of [GroupDefinition](#) (p. 162) objects

Required: No

Metrics (p. 22)

The measurement that you want your reservation coverage reported in.

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

Type: Array of strings

Required: No

NextPageToken (p. 22)

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

Type: String

Required: No

TimePeriod (p. 22)

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. 146) 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. 24)

The amount of time that your reservations covered.

Type: Array of [CoverageByTime \(p. 140\)](#) objects

NextPageToken (p. 24)

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

Type: String

Total (p. 24)

The total amount of instance usage that a reservation covered.

Type: [Coverage \(p. 139\)](#) object

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 218\)](#).

DataUnavailableException

The requested data is unavailable.

HTTP Status Code: 400

InvalidNextTokenException

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

HTTP Status Code: 400

LimitExceededException

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

HTTP Status Code: 400

Example

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

Sample Request

```
POST / HTTP/1.1
Host: ce.us-east-1.amazonaws.com
x-amz-Date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
  SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-
  requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSInsightsIndexService.GetReservationCoverage
{
  "TimePeriod": {
    "Start": "2017-07-01",
    "End": "2017-10-01"
  },
  "Filter": {
```

```

    "And": [
      {
        "Dimensions": {
          "Key": "INSTANCE_TYPE",
          "Values": [
            "t2.nano"
          ]
        },
        {
          "Dimensions": {
            "Key": "REGION",
            "Values": [
              "us-east-1"
            ]
          }
        }
      ]
    },
    "GroupBy": [
      {
        "Type": "Dimension",
        "Key": "REGION"
      }
    ]
  }
}

```

Sample Response

```

HTTP/1.1 200 OK
x-amzn-RequestId: <RequestId>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Date: <Date>
{
  "CoveragesByTime": [ {
    "Groups": [ {
      "Attributes": {
        "region": "us-east-1"
      },
      "Coverage": {
        "CoverageHours": {
          "CoverageHoursPercentage": "40%",
          "OnDemandHours": "40",
          "ReservedHours": "40",
          "TotalRunningHours": "80"
        },
        "CoverageNormalizedUnits": {
          "CoverageNormalizedUnitsPercentage": "10",
          "OnDemandNormalizedUnits": "10",
          "ReservedNormalizedUnits": "10",
          "TotalRunningNormalizedUnits": "20"
        }
      }
    }
  ] ],
  "TimePeriod": {
    "End": "2017-07-01",
    "Start": "2017-10-01"
  },
  "Total": {
    "CoverageHours": {
      "CoverageHoursPercentage": "40%",
      "OnDemandHours": "40",
      "ReservedHours": "40",
      "TotalRunningHours": "80"
    },
    "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 Go - Pilot](#)
- [AWS SDK for Java](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V2](#)

GetReservationPurchaseRecommendation

Service: AWS Cost Explorer Service

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

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

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

Request Syntax

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

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 216\)](#).

The request accepts the following data in JSON format.

[AccountId \(p. 29\)](#)

The account ID that is associated with the recommendation.

Type: String

Required: No

[AccountScope \(p. 29\)](#)

The account scope that you want recommendations for. `PAYER` means that AWS includes the master account and any member accounts when it calculates its recommendations. `LINKED` means that AWS includes only member accounts when it calculates its recommendations.

Valid values are `PAYER` and `LINKED`.

Type: String

Valid Values: `PAYER` | `LINKED`

Required: No

LookbackPeriodInDays (p. 29)

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. 29)

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

Type: String

Required: No

PageSize (p. 29)

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. 29)

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. 29)

The specific service that you want recommendations for.

Type: String

Required: Yes

ServiceSpecification (p. 29)

The recommendation parameter for `standard` or `convertible` RIs.

Type: [ServiceSpecification \(p. 187\)](#) object

Required: No

TermInYears (p. 29)

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
            },
            "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. 31)

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

Type: [ReservationPurchaseRecommendationMetadata \(p. 178\)](#) object

NextPageToken (p. 31)

The pagination token for the next set of retrievable results.

Type: String

Recommendations (p. 31)

Recommendations for reservations to purchase.

Type: Array of [ReservationPurchaseRecommendation](#) (p. 173) objects

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 218).

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

GetReservationUtilization

Service: AWS Cost Explorer Service

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

Request Syntax

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

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 216\)](#).

The request accepts the following data in JSON format.

Filter (p. 34)

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
- 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. 158) object

Required: No

[Granularity](#) (p. 34)

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. 34)

Groups only by SUBSCRIPTION_ID. Metadata is included.

Type: Array of [GroupDefinition](#) (p. 162) objects

Required: No

[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

Required: No

[TimePeriod](#) (p. 34)

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

Type: [DateInterval](#) (p. 146) object

Required: Yes

Response Syntax

```
{
```

```

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

```



```
}
```

Response Elements

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

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

NextPageToken (p. 35)

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

Type: String

Total (p. 35)

The total amount of time that you used your RIs.

Type: [ReservationAggregates](#) (p. 169) object

UtilizationsByTime (p. 35)

The amount of time that you used your RIs.

Type: Array of [UtilizationByTime](#) (p. 192) objects

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 218).

DataUnavailableException

The requested data is unavailable.

HTTP Status Code: 400

InvalidNextTokenException

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

HTTP Status Code: 400

LimitExceededException

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

HTTP Status Code: 400

Example

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

Sample Request

```
POST / HTTP/1.1
Host: ce.us-east-1.amazonaws.com
```

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

Sample Response

```
HTTP/1.1 200 OK
x-amzn-RequestId: <RequestId>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Date: <Date>
{
  "UtilizationsByTime": [{
    "Groups": [{
      "Attributes": {
        "AccountId": "0123456789",
        "AccountName": null,
        "AvailabilityZone": "",
        "CancellationDateTime": "2019-09-28T15:22:31.000Z",
        "EndDateTime": "2019-09-28T15:22:31.000Z",
        "InstanceType": "t2.nano",
        "LeaseId": null,
        "NumberOfInstances": "1",
        "OfferingType": "convertible",
        "Platform": "Linux/UNIX",
        "Region": "us-east-1",
        "Scope": "Region",
        "StartDateTime": "2016-09-28T15:22:32.000Z",
        "SubscriptionId": "359809062",
        "SubscriptionStatus": "Active",
        "SubscriptionType": "All Upfront",
        "Tenancy": "Shared"
      },
      "Key": "SUBSCRIPTION_ID",
      "Utilization": {
        "PurchasedHours": 2208,
        "TotalActualHours": 2208,
        "UnusedHours": 0,

```

```

        "UtilizationPercentage": 100
    },
    "Value": "359809062"
},
{
    "Attributes": {
        "AccountId": "0123456789",
        "AccountName": null,
        "AvailabilityZone": "us-east-1d",
        "CancellationDateTime": "2017-09-28T15:22:31.000Z",
        "EndDateTime": "2017-09-28T15:22:31.000Z",
        "InstanceType": "t2.nano",
        "LeaseId": null,
        "NumberOfInstances": "1",
        "OfferingType": "Standard",
        "Platform": "Linux/UNIX",
        "Region": "us-east-1",
        "Scope": "Availability Zone",
        "StartDateTime": "2016-09-28T15:22:32.000Z",
        "SubscriptionId": "359809070",
        "SubscriptionStatus": "Active",
        "SubscriptionType": "All Upfront",
        "Tenancy": "Shared"
    },
    "Key": "SUBSCRIPTION_ID",
    "Utilization": {
        "PurchasedHours": 2151,
        "TotalActualHours": 2151,
        "UnusedHours": 0,
        "UtilizationPercentage": 100
    },
    "Value": "359809070"
},
{
    "Attributes": {
        "AccountId": "0123456789",
        "AccountName": null,
        "AvailabilityZone": "us-west-2a",
        "CancellationDateTime": "2017-09-20T04:06:02.000Z",
        "EndDateTime": "2017-09-20T04:06:02.000Z",
        "InstanceType": "t2.nano",
        "LeaseId": null,
        "NumberOfInstances": "1",
        "OfferingType": "Standard",
        "Platform": "Linux/UNIX",
        "Region": "us-west-2",
        "Scope": "Availability Zone",
        "StartDateTime": "2016-09-20T04:06:03.000Z",
        "SubscriptionId": "353571154",
        "SubscriptionStatus": "Active",
        "SubscriptionType": "Partial Upfront",
        "Tenancy": "Shared"
    },
    "Key": "SUBSCRIPTION_ID",
    "Utilization": {
        "PurchasedHours": 1948,
        "TotalActualHours": 0,
        "UnusedHours": 1948,
        "UtilizationPercentage": 0
    },
    "Value": "353571154"
}
],
"TimePeriod": {
    "End": "2017-10-01",
    "Start": "2017-07-01"
}

```

```
    },  
    "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 Go - Pilot](#)
- [AWS SDK for Java](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V2](#)

GetRightsizingRecommendation

Service: AWS Cost Explorer Service

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

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

Request Syntax

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

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 216).

The request accepts the following data in JSON format.

Filter (p. 41)

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

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

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

The list of dimension values are OR'd together to retrieve cost or usage data. You can create `Expression` and `DimensionValues` objects using either `with*` methods or `set*` methods in multiple lines.

- Compound dimension values with logical operations - You can use multiple `Expression` types and the logical operators `AND/OR/NOT` to create a list of one or more `Expression` objects. This allows you to filter on more advanced options. For example, you can filter on `((REGION == us-`

east-1 OR REGION == us-west-1) OR (TAG.Type == Type1)) AND (USAGE_TYPE != DataTransfer). The Expression for that looks like this:

```
{ "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 GetRightsizingRecommendation action, a combination of OR and NOT is not supported. OR is not supported between different dimensions, or dimensions and tags. NOT operators aren't supported. Dimensions are also limited to LINKED_ACCOUNT, REGION, or RIGHTSIZING_TYPE.

Type: [Expression \(p. 158\)](#) object

Required: No

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

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

Type: String

Required: No

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

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

Type: Integer

Valid Range: Minimum value of 0.

Required: No

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

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

Type: String

Required: Yes

Response Syntax

```
{
  "Metadata": {
    "GenerationTimestamp": "string",
    "LookbackPeriodInDays": "string",
    "RecommendationId": "string"
  },

```

```

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

```

```
    ],
    "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.

Metadata (p. 42)

Information regarding this specific recommendation set.

Type: [RightsizingRecommendationMetadata](#) (p. 185) object

NextPageToken (p. 42)

The token to retrieve the next set of results.

Type: String

RightsizingRecommendations (p. 42)

Recommendations to rightsize resources.

Type: Array of [RightsizingRecommendation](#) (p. 184) objects

Summary (p. 42)

Summary of this recommendation set.

Type: [RightsizingRecommendationSummary](#) (p. 186) object

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 218).

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

GetTags

Service: AWS Cost Explorer Service

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

Request Syntax

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

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 216).

The request accepts the following data in JSON format.

NextPageToken (p. 46)

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

Type: String

Required: No

SearchString (p. 46)

The value that you want to search for.

Type: String

Required: No

TagKey (p. 46)

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

Type: String

Required: No

TimePeriod (p. 46)

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. 146) 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. 47)

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

Type: String

ReturnSize (p. 47)

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

Type: Integer

Tags (p. 47)

The tags that match your request.

Type: Array of strings

TotalSize (p. 47)

The total number of query results.

Type: Integer

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 218\)](#).

BillExpirationException

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

HTTP Status Code: 400

DataUnavailableException

The requested data is unavailable.

HTTP Status Code: 400

InvalidNextTokenException

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

HTTP Status Code: 400

LimitExceededException

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

HTTP Status Code: 400

RequestChangedException

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

HTTP Status Code: 400

Example

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

GetUsageForecast

Service: AWS Cost Explorer Service

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

Request Syntax

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

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 216\)](#).

The request accepts the following data in JSON format.

Filter (p. 50)

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

Type: [Expression \(p. 158\)](#) object

Required: No

Granularity (p. 50)

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. 50)

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. 50)

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. 50)

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

Type: [DateInterval \(p. 146\)](#) 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. 51)

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 \(p. 160\)](#) objects

Total (p. 51)

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

Type: [MetricValue \(p. 164\)](#) object

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 218\)](#).

DataUnavailableException

The requested data is unavailable.

HTTP Status Code: 400

LimitExceededException

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

HTTP Status Code: 400

UnresolvableUsageUnitException

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

HTTP Status Code: 400

Example

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

Sample Request

```
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 Go - Pilot](#)

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

AWS Budgets

The following actions are supported by AWS Budgets:

- [CreateBudget](#) (p. 55)
- [CreateNotification](#) (p. 62)
- [CreateSubscriber](#) (p. 65)
- [DeleteBudget](#) (p. 68)
- [DeleteNotification](#) (p. 70)
- [DeleteSubscriber](#) (p. 73)
- [DescribeBudget](#) (p. 76)
- [DescribeBudgetPerformanceHistory](#) (p. 82)
- [DescribeBudgets](#) (p. 87)
- [DescribeNotificationsForBudget](#) (p. 94)
- [DescribeSubscribersForNotification](#) (p. 98)
- [UpdateBudget](#) (p. 102)
- [UpdateNotification](#) (p. 108)
- [UpdateSubscriber](#) (p. 111)

CreateBudget

Service: AWS Budgets

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

Important

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

Request Syntax

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

```
    "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 \(p. 216\)](#).

The request accepts the following data in JSON format.

AccountId (p. 55)

The `accountId` that is associated with the budget.

Type: String

Length Constraints: Fixed length of 12.

Pattern: `\d{12}`

Required: Yes

Budget (p. 55)

The budget object that you want to create.

Type: [Budget \(p. 194\)](#) object

Required: Yes

NotificationsWithSubscribers (p. 55)

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 \(p. 206\)](#) objects

Array Members: Maximum number of 5 items.

Required: No

Response Elements

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

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 218\)](#).

CreationLimitExceededException

You've exceeded the notification or subscriber limit.

HTTP Status Code: 400

DuplicateRecordException

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

HTTP Status Code: 400

InternalErrorException

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

HTTP Status Code: 400

InvalidParameterException

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

HTTP Status Code: 400

Examples

Example

The following is the `PlannedBudgetLimits` syntax

```
{
  "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"  
      }  
    ]  
  }  
]
```

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

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. 216).

The request accepts the following data in JSON format.

[AccountId](#) (p. 62)

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

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

Required: Yes

[BudgetName](#) (p. 62)

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. 62)

The notification that you want to create.

Type: [Notification \(p. 204\)](#) object

Required: Yes

Subscribers (p. 62)

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 \(p. 208\)](#) 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 \(p. 218\)](#).

CreationLimitExceededException

You've exceeded the notification or subscriber limit.

HTTP Status Code: 400

DuplicateRecordException

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

HTTP Status Code: 400

InternalErrorException

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

HTTP Status Code: 400

InvalidParameterException

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

HTTP Status Code: 400

NotFoundException

We can't locate the resource that you specified.

HTTP Status Code: 400

Example

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

Sample Request

```
POST / HTTP/1.1
```

```
Host: awsbudgets.<region>.<domain>
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 Go - Pilot](#)
- [AWS SDK for Java](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V2](#)

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. 216).

The request accepts the following data in JSON format.

AccountId (p. 65)

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. 65)

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. 65)

The notification that you want to create a subscriber for.

Type: [Notification](#) (p. 204) object

Required: Yes

Subscriber (p. 65)

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

Type: [Subscriber \(p. 208\)](#) 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 \(p. 218\)](#).

CreationLimitExceededException

You've exceeded the notification or subscriber limit.

HTTP Status Code: 400

DuplicateRecordException

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

HTTP Status Code: 400

InternalErrorException

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

HTTP Status Code: 400

InvalidParameterException

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

HTTP Status Code: 400

NotFoundException

We can't locate the resource that you specified.

HTTP Status Code: 400

Example

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

Sample Request

```
POST / HTTP/1.1
Host: awsbudgets.<region>.<domain>
x-amz-Date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
  SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-
  requestid,Signature=<Signature>
User-Agent: <UserAgentString>
```

```
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSBudgetServiceGateway.CreateSubscriber
{
  "AccountId": "111122223333",
  "BudgetName": "Example Budget",
  "Notification": {
    "ComparisonOperator": "GREATER_THAN",
    "NotificationType": "ACTUAL",
    "Threshold": 80,
    "ThresholdType": "PERCENTAGE"
  },
  "Subscribers": [
    {
      "Address": "example@example.com",
      "SubscriptionType": "EMAIL"
    }
  ]
}
```

See Also

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

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

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 \(p. 216\)](#).

The request accepts the following data in JSON format.

AccountId (p. 68)

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. 68)

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 \(p. 218\)](#).

InternalErrorException

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

HTTP Status Code: 400

InvalidParameterException

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

HTTP Status Code: 400

NotFoundException

We can't locate the resource that you specified.

HTTP Status Code: 400

Example

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

Sample Request

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

See Also

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

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

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. 216).

The request accepts the following data in JSON format.

AccountId (p. 70)

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. 70)

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. 70)

The notification that you want to delete.

Type: [Notification](#) (p. 204) 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 \(p. 218\)](#).

InternalErrorException

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

HTTP Status Code: 400

InvalidParameterException

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

HTTP Status Code: 400

NotFoundException

We can't locate the resource that you specified.

HTTP Status Code: 400

Example

The following is a sample request of the DeleteNotification operation.

Sample Request

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

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. 216).

The request accepts the following data in JSON format.

AccountId (p. 73)

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. 73)

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. 73)

The notification whose subscriber you want to delete.

Type: [Notification](#) (p. 204) object

Required: Yes

Subscriber (p. 73)

The subscriber that you want to delete.

Type: [Subscriber \(p. 208\)](#) 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 \(p. 218\)](#).

InternalErrorException

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

HTTP Status Code: 400

InvalidParameterException

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

HTTP Status Code: 400

NotFoundException

We can't locate the resource that you specified.

HTTP Status Code: 400

Example

The following is a sample request of the DeleteSubscriber operation.

Sample Request

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

```
    "ThresholdType": "PERCENTAGE"
  },
  "Subscribers": [
    {
      "Address": "example@example.com",
      "SubscriptionType": "EMAIL"
    }
  ]
}
```

See Also

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

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

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. 216).

The request accepts the following data in JSON format.

[AccountId](#) (p. 76)

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. 76)

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

Type: String

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

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

Required: Yes

Response Syntax

```
{
  "Budget": {
    "BudgetLimit": {
      "Amount": "string",
      "Unit": "string"
    },
    "BudgetName": "string",
    "BudgetType": "string",
  }
}
```



```

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

```

Response Elements

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

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

Budget (p. 76)

The description of the budget.

Type: [Budget \(p. 194\)](#) object

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 218\)](#).

InternalErrorException

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

HTTP Status Code: 400

InvalidParameterException

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

HTTP Status Code: 400

NotFoundException

We can't locate the resource that you specified.

HTTP Status Code: 400

Examples

Example

The following is the `PlannedBudgetLimits` syntax.

```
{
  "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"
      },
      "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 Go - Pilot](#)
- [AWS SDK for Java](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V2](#)

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 \(p. 216\)](#).

The request accepts the following data in JSON format.

[AccountId \(p. 82\)](#)

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

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

Required: Yes

[BudgetName \(p. 82\)](#)

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 \(p. 82\)](#)

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 \(p. 82\)](#)

A generic string.

Type: String

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

Pattern: .*

Required: No

TimePeriod (p. 82)

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

Type: [TimePeriod](#) (p. 209) 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. 83)

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 \(p. 198\)](#) object

NextToken (p. 83)

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 \(p. 218\)](#).

ExpiredNextTokenException

The pagination token expired.

HTTP Status Code: 400

InternalErrorException

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

HTTP Status Code: 400

InvalidNextTokenException

The pagination token is invalid.

HTTP Status Code: 400

InvalidParameterException

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

HTTP Status Code: 400

NotFoundException

We can't locate the resource that you specified.

HTTP Status Code: 400

Example

The following is a sample request 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,
      "IncludeRefund": true,
      "IncludeSubscription": true,
      "IncludeSupport": true,
      "IncludeTax": true,
      "IncludeUpfront": true,
      "UseBlended": false
    },
    "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 Go - Pilot](#)
- [AWS SDK for Java](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V2](#)

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 \(p. 216\)](#).

The request accepts the following data in JSON format.

[AccountId \(p. 87\)](#)

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 \(p. 87\)](#)

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 \(p. 87\)](#)

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": [
    {
      "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. 88)

A list of budgets.

Type: Array of [Budget \(p. 194\)](#) objects

NextToken (p. 88)

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 \(p. 218\)](#).

ExpiredNextTokenException

The pagination token expired.

HTTP Status Code: 400

InternalErrorException

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

HTTP Status Code: 400

InvalidNextTokenException

The pagination token is invalid.

HTTP Status Code: 400

InvalidParameterException

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

HTTP Status Code: 400

NotFoundException

We can't locate the resource that you specified.

HTTP Status Code: 400

Examples

Example

The following is the `PlannedBudgetLimits` syntax.

```
{
  "Budgets": [
    {
      "BudgetLimit": {
        "Amount": "string",
        "Unit": "string"
      },
      "PlannedBudgetLimits": {
        "string": {
          "Amount": "string",
          "Unit": "string"
        },
      }
    }
  ]
}
```

```

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

```

Example

Sample Request

```

POST / HTTP/1.1
Host: awsbudgets.<region>.<domain>
x-amz-date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
  SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-
  requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSBudgetServiceGateway.DescribeBudgets
{
  "AccountId": "111122223333",
  "MaxResults": 20
}

```

Sample Response

```
{
```

```

"Budgets": [
  {
    "BudgetLimit": {
      "Amount": "100",
      "Unit": "USD"
    },
    "BudgetName": "Example Limit Fixed Budget ",
    "BudgetType": "COST",
    "CalculatedSpend": {
      "ActualSpend": {
        "Amount": "50",
        "Unit": "USD"
      },
      "ForecastedSpend": {
        "Amount": "100",
        "Unit": "USD"
      }
    },
    "CostFilters": {
      "AZ" : [ "us-east-1" ]
    },
    "CostTypes": {
      "IncludeCredit": true,
      "IncludeDiscount": true,
      "IncludeOtherSubscription": true,
      "IncludeRecurring": true,
      "IncludeRefund": true,
      "IncludeSubscription": true,
      "IncludeSupport": true,
      "IncludeTax": true,
      "IncludeUpfront": true,
      "UseBlended": false
    },
    "TimePeriod": {
      "Start": 1477353600,
      "End": 1477958399
    },
    "TimeUnit": "MONTHLY"
  },
  {
    "BudgetLimit": {
      "Amount": "100",
      "Unit": "USD"
    },
    "PlannedBudgetLimits":{
      "1583020800": {
        "Amount": "100",
        "Unit": "USD"
      },
      "1564617600": {
        "Amount": "200",
        "Unit": "USD"
      },
      "1569888000": {
        "Amount": "300",
        "Unit": "USD"
      },
      "1556668800": {
        "Amount": "400",
        "Unit": "USD"
      },
      "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 Go - Pilot](#)
- [AWS SDK for Java](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V2](#)

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 \(p. 216\)](#).

The request accepts the following data in JSON format.

[AccountId \(p. 94\)](#)

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 \(p. 94\)](#)

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 \(p. 94\)](#)

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 \(p. 94\)](#)

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. 95)

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. 95)

A list of notifications that are associated with a budget.

Type: Array of [Notification \(p. 204\)](#) objects

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 218\)](#).

ExpiredNextTokenException

The pagination token expired.

HTTP Status Code: 400

InternalErrorException

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

HTTP Status Code: 400

InvalidNextTokenException

The pagination token is invalid.

HTTP Status Code: 400

InvalidParameterException

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

HTTP Status Code: 400

NotFoundException

We can't locate the resource that you specified.

HTTP Status Code: 400

Example

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

Sample Request

```
POST / HTTP/1.1
Host: awsbudgets.<region>.<domain>
x-amz-Date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
  SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-
  requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSBudgetServiceGateway.DescribeNotificationsForBudget
{
  "AccountId": "111122223333",
  "BudgetName": "Example Budget",
  "MaxResults": 5
}
```

Sample Response

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

See Also

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

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

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. 216).

The request accepts the following data in JSON format.

AccountId (p. 98)

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. 98)

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. 98)

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. 98)

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. 98)

The notification whose subscribers you want to list.

Type: [Notification \(p. 204\)](#) 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. 99)

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. 99)

A list of subscribers that are associated with a notification.

Type: Array of [Subscriber \(p. 208\)](#) 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 \(p. 218\)](#).

ExpiredNextTokenException

The pagination token expired.

HTTP Status Code: 400

InternalErrorException

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

HTTP Status Code: 400

InvalidNextTokenException

The pagination token is invalid.

HTTP Status Code: 400

InvalidParameterException

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

HTTP Status Code: 400

NotFoundException

We can't locate the resource that you specified.

HTTP Status Code: 400

Example

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

Sample Request

```
POST / HTTP/1.1
Host: awsbudgets.<region>.<domain>
x-amz-Date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
  SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-
  requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSBudgetServiceGateway.DescribeSubscribersForNotification
{
  "AccountId": "111122223333",
  "BudgetName": "Example Budget",
  "MaxResults": 5,
  "Notification": {
    "ComparisonOperator": "GREATER_THAN",
    "NotificationType": "ACTUAL",
    "Threshold": 80,
    "ThresholdType": "PERCENTAGE"
  }
}
```

Sample Response

```
{
```



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

UpdateBudget

Service: AWS Budgets

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

Important

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

Request Syntax

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

```
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 216\)](#).

The request accepts the following data in JSON format.

AccountId (p. 102)

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

Type: String

Length Constraints: Fixed length of 12.

Pattern: `\d{12}`

Required: Yes

NewBudget (p. 102)

The budget that you want to update your budget to.

Type: [Budget \(p. 194\)](#) 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 \(p. 218\)](#).

InternalErrorException

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

HTTP Status Code: 400

InvalidParameterException

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

HTTP Status Code: 400

NotFoundException

We can't locate the resource that you specified.

HTTP Status Code: 400

Examples

Example

The following is the `PlannedBudgetLimits` syntax.

```
{
```

```

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

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. 216).

The request accepts the following data in JSON format.

AccountId (p. 108)

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

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

Required: Yes

BudgetName (p. 108)

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

Type: String

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

Pattern: [^\:\ \]+

Required: Yes

NewNotification (p. 108)

The updated notification to be associated with a budget.

Type: [Notification](#) (p. 204) object

Required: Yes

OldNotification (p. 108)

The previous notification that is associated with a budget.

Type: [Notification \(p. 204\)](#) 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 \(p. 218\)](#).

DuplicateRecordException

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

HTTP Status Code: 400

InternalErrorException

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

HTTP Status Code: 400

InvalidParameterException

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

HTTP Status Code: 400

NotFoundException

We can't locate the resource that you specified.

HTTP Status Code: 400

Example

The following is a sample request of the UpdateNotification operation.

Sample Request

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

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. 216).

The request accepts the following data in JSON format.

AccountId (p. 111)

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

Type: String

Length Constraints: Fixed length of 12.

Pattern: \d{12}

Required: Yes

BudgetName (p. 111)

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

Type: String

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

Pattern: [^\:\ \]+

Required: Yes

NewSubscriber (p. 111)

The updated subscriber that is associated with a budget notification.

Type: [Subscriber \(p. 208\)](#) object

Required: Yes

Notification (p. 111)

The notification whose subscriber you want to update.

Type: [Notification \(p. 204\)](#) object

Required: Yes

OldSubscriber (p. 111)

The previous subscriber that is associated with a budget notification.

Type: [Subscriber \(p. 208\)](#) 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 \(p. 218\)](#).

DuplicateRecordException

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

HTTP Status Code: 400

InternalServerErrorException

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

HTTP Status Code: 400

InvalidParameterException

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

HTTP Status Code: 400

NotFoundException

We can't locate the resource that you specified.

HTTP Status Code: 400

Example

The following is a sample request of the UpdateSubscriber operation.

Sample Request

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

AWS Cost and Usage Report Service

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

- [DeleteReportDefinition](#) (p. 114)
- [DescribeReportDefinitions](#) (p. 116)
- [ModifyReportDefinition](#) (p. 119)
- [PutReportDefinition](#) (p. 121)

DeleteReportDefinition

Service: AWS Cost and Usage Report Service

Deletes the specified report.

Request Syntax

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

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 216\)](#).

The request accepts the following data in JSON format.

ReportName (p. 114)

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

Type: String

Length Constraints: Maximum length of 256.

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

Required: No

Response Syntax

```
{  
  "ResponseMessage": "string"  
}
```

Response Elements

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

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

ResponseMessage (p. 114)

Whether the deletion was successful or not.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 218\)](#).

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

Example

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

Sample Request

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

See Also

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

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

DescribeReportDefinitions

Service: AWS Cost and Usage Report Service

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

Request Syntax

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

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 216\)](#).

The request accepts the following data in JSON format.

MaxResults (p. 116)

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

Type: Integer

Valid Range: Fixed value of 5.

Required: No

NextToken (p. 116)

A generic string.

Type: String

Required: No

Response Syntax

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


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. 116)

A generic string.

Type: String

ReportDefinitions (p. 116)

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

Type: Array of [ReportDefinition \(p. 210\)](#) objects

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 218\)](#).

InternalErrorException

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

HTTP Status Code: 500

Example

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

Sample Request

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

ModifyReportDefinition

Service: AWS Cost and Usage Report Service

Allows you to programatically update your report preferences.

Request Syntax

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

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 216).

The request accepts the following data in JSON format.

ReportDefinition (p. 119)

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. 210) object

Required: Yes

ReportName (p. 119)

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. 218).

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

PutReportDefinition

Service: AWS Cost and Usage Report Service

Creates a new report using the description that you provide.

Request Syntax

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

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 216).

The request accepts the following data in JSON format.

ReportDefinition (p. 121)

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

Type: [ReportDefinition](#) (p. 210) 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. 218).

DuplicateReportNameException

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

HTTP Status Code: 400

InternalErrorException

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

HTTP Status Code: 500

ReportLimitReachedException

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

HTTP Status Code: 400

ValidationException

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

HTTP Status Code: 400

Example

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

Sample Request

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

See Also

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

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

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

AWS Price List Service

The following actions are supported by AWS Price List Service:

- [DescribeServices](#) (p. 124)
- [GetAttributeValues](#) (p. 128)
- [GetProducts](#) (p. 132)

DescribeServices

Service: AWS Price List Service

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

Request Syntax

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

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 216).

The request accepts the following data in JSON format.

FormatVersion (p. 124)

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

Valid values are: `aws_v1`

Type: String

Required: No

MaxResults (p. 124)

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. 124)

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

Type: String

Required: No

ServiceCode (p. 124)

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. 125)

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

Type: String

NextToken (p. 125)

The pagination token for the next set of retrievable results.

Type: String

Services (p. 125)

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

Type: Array of [Service \(p. 215\)](#) objects

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 218\)](#).

ExpiredNextTokenException

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

HTTP Status Code: 400

InternalErrorException

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

HTTP Status Code: 400

InvalidNextTokenException

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

HTTP Status Code: 400

InvalidParameterException

One or more parameters had an invalid value.

HTTP Status Code: 400

NotFoundException

The requested resource can't be found.

HTTP Status Code: 400

Example

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

Sample Request

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

GetAttributeValues

Service: AWS Price List Service

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

Request Syntax

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

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 216\)](#).

The request accepts the following data in JSON format.

AttributeName (p. 128)

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

Type: String

Required: Yes

MaxResults (p. 128)

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. 128)

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

Type: String

Required: No

ServiceCode (p. 128)

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

Type: String

Required: Yes

Response Syntax

```
{
```

```
"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. 128)

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 \(p. 213\)](#) objects

NextToken (p. 128)

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 \(p. 218\)](#).

ExpiredNextTokenException

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

HTTP Status Code: 400

InternalErrorException

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

HTTP Status Code: 400

InvalidNextTokenException

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

HTTP Status Code: 400

InvalidParameterException

One or more parameters had an invalid value.

HTTP Status Code: 400

NotFoundException

The requested resource can't be found.

HTTP Status Code: 400

Example

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

Sample Request

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

Sample Response

```
HTTP/1.1 200 OK
x-amzn-RequestId: <RequestId>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Date: <Date>
{
  "AttributeValues": [
    {
      "Value": "Throughput Optimized HDD"
    },
    {
      "Value": "Provisioned IOPS"
    }
  ],
  "NextToken":
    "GpgauTGIY7LGezuc15LV0w=:7GzYJ0nw0DBTJ2J66EoTIIynE601uXwQtTRqioJzQadBnDVgHPzI1en4BUQnPCLpzeBk9RQQAwaF
    +Z/9/cTw9GldnPOHN98+FdmJP7wKU3QQpQ8MQr5K0eBkIsAqvAQYdL0DkL7tHwPtE5iCEByAmg9gcC/
    yBU1vAOsf7R3VaNN4M5jMDv3woSWqASSilBVB6tgW78YL22KhssoitM/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 Go - Pilot](#)

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

GetProducts

Service: AWS Price List Service

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 \(p. 216\)](#).

The request accepts the following data in JSON format.

Filters (p. 132)

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

Type: Array of [Filter \(p. 214\)](#) objects

Required: No

FormatVersion (p. 132)

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

Valid values are: `aws_v1`

Type: String

Required: No

MaxResults (p. 132)

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. 132)

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

Type: String

Required: No

ServiceCode (p. 132)

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

Type: String

Required: No

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. 133)

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

Type: String

NextToken (p. 133)

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

Type: String

PriceList (p. 133)

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 \(p. 218\)](#).

ExpiredNextTokenException

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

HTTP Status Code: 400

InternalErrorException

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

HTTP Status Code: 400

InvalidNextTokenException

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

HTTP Status Code: 400

InvalidParameterException

One or more parameters had an invalid value.

HTTP Status Code: 400

NotFoundException

The requested resource can't be found.

HTTP Status Code: 400

Example

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

Sample Request

```
POST / HTTP/1.1
Host: api.pricing.<region>.<domain>
x-amz-Date: <Date>
Authorization: AWS4-HMAC-SHA256 Credential=<Credential>,
  SignedHeaders=contenttype;date;host;user-agent;x-amz-date;x-amz-target;x-amzn-
  requestid,Signature=<Signature>
User-Agent: <UserAgentString>
Content-Type: application/x-amz-json-1.1
Content-Length: <PayloadSizeBytes>
Connection: Keep-Alive
X-Amz-Target: AWSPriceListService.GetProducts
{
  "Filters": [
    {
      "Type": "TERM_MATCH",
      "Field": "ServiceCode",
      "Value": "AmazonEC2"
    },
    {
      "Type": "TERM_MATCH",
      "Field": "volumeType",
      "Value": "Provisioned IOPS"
    }
  ],
  "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": "57r3UcqRjDujbzWfHF7Ciw==:ywSmZsD3mtpQmQLQ5XfOsIMkYybsj
+vAT+kGmwMFq+K9DGmIoJkz7lunVeamiOPgthdWSO2a7YKOjCO+zY4dJmuN12QvbNhXs
+AJ2Ufn7xGmJncNI2TsEuAsVCUfTAvAQncwwamtk6XuZ4YdNnooV62FjkV3ZAn40d9+wAxV7+FImvhUHi/
+f8afgZdGh2zPulH8jlV9uUtj0oHp8+DhPUuHXh+WBII1E/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": "0.1380000000"
            },
            "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 Go - Pilot](#)
- [AWS SDK for Java](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V2](#)

Data Types

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

- [Coverage](#) (p. 139)
- [CoverageByTime](#) (p. 140)
- [CoverageCost](#) (p. 141)
- [CoverageHours](#) (p. 142)
- [CoverageNormalizedUnits](#) (p. 143)
- [CurrentInstance](#) (p. 144)
- [DateInterval](#) (p. 146)
- [DimensionValues](#) (p. 147)
- [DimensionValuesWithAttributes](#) (p. 148)
- [EC2InstanceDetails](#) (p. 149)
- [EC2ResourceDetails](#) (p. 151)
- [EC2ResourceUtilization](#) (p. 153)
- [EC2Specification](#) (p. 154)
- [ElastiCacheInstanceDetails](#) (p. 155)
- [ESInstanceDetails](#) (p. 157)
- [Expression](#) (p. 158)
- [ForecastResult](#) (p. 160)
- [Group](#) (p. 161)
- [GroupDefinition](#) (p. 162)
- [InstanceDetails](#) (p. 163)
- [MetricValue](#) (p. 164)
- [ModifyRecommendationDetail](#) (p. 165)
- [RDSInstanceDetails](#) (p. 166)
- [RedshiftInstanceDetails](#) (p. 168)
- [ReservationAggregates](#) (p. 169)
- [ReservationCoverageGroup](#) (p. 172)
- [ReservationPurchaseRecommendation](#) (p. 173)
- [ReservationPurchaseRecommendationDetail](#) (p. 175)
- [ReservationPurchaseRecommendationMetadata](#) (p. 178)
- [ReservationPurchaseRecommendationSummary](#) (p. 179)
- [ReservationUtilizationGroup](#) (p. 180)
- [ResourceDetails](#) (p. 181)
- [ResourceUtilization](#) (p. 182)
- [ResultByTime](#) (p. 183)
- [RightsizingRecommendation](#) (p. 184)
- [RightsizingRecommendationMetadata](#) (p. 185)
- [RightsizingRecommendationSummary](#) (p. 186)
- [ServiceSpecification](#) (p. 187)
- [TagValues](#) (p. 188)
- [TargetInstance](#) (p. 189)

- [TerminateRecommendationDetail](#) (p. 191)
- [UtilizationByTime](#) (p. 192)

The following data types are supported by AWS Budgets:

- [Budget](#) (p. 194)
- [BudgetedAndActualAmounts](#) (p. 197)
- [BudgetPerformanceHistory](#) (p. 198)
- [CalculatedSpend](#) (p. 200)
- [CostTypes](#) (p. 201)
- [Notification](#) (p. 204)
- [NotificationWithSubscribers](#) (p. 206)
- [Spend](#) (p. 207)
- [Subscriber](#) (p. 208)
- [TimePeriod](#) (p. 209)

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

- [ReportDefinition](#) (p. 210)

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

- [AttributeValue](#) (p. 213)
- [Filter](#) (p. 214)
- [Service](#) (p. 215)

AWS Cost Explorer Service

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

- [Coverage](#) (p. 139)
- [CoverageByTime](#) (p. 140)
- [CoverageCost](#) (p. 141)
- [CoverageHours](#) (p. 142)
- [CoverageNormalizedUnits](#) (p. 143)
- [CurrentInstance](#) (p. 144)
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- [DimensionValuesWithAttributes](#) (p. 148)
- [EC2InstanceDetails](#) (p. 149)
- [EC2ResourceDetails](#) (p. 151)
- [EC2ResourceUtilization](#) (p. 153)
- [EC2Specification](#) (p. 154)
- [ElastiCacheInstanceDetails](#) (p. 155)
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- [ServiceSpecification](#) (p. 187)
- [TagValues](#) (p. 188)
- [TargetInstance](#) (p. 189)
- [TerminateRecommendationDetail](#) (p. 191)
- [UtilizationByTime](#) (p. 192)

Coverage

Service: AWS Cost Explorer Service

The amount of instance usage that a reservation covered.

Contents

CoverageCost

The amount of cost that the reservation covered.

Type: [CoverageCost \(p. 141\)](#) object

Required: No

CoverageHours

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

Type: [CoverageHours \(p. 142\)](#) object

Required: No

CoverageNormalizedUnits

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

Type: [CoverageNormalizedUnits \(p. 143\)](#) 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 Go - Pilot](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

CoverageByTime

Service: AWS Cost Explorer Service

Reservation coverage for a specified period, in hours.

Contents

Groups

The groups of instances that the reservation covered.

Type: Array of [ReservationCoverageGroup \(p. 172\)](#) objects

Required: No

TimePeriod

The period that this coverage was used over.

Type: [DateInterval \(p. 146\)](#) object

Required: No

Total

The total reservation coverage, in hours.

Type: [Coverage \(p. 139\)](#) object

Required: No

See Also

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

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

CoverageCost

Service: AWS Cost Explorer Service

How much it cost to run an instance.

Contents

OnDemandCost

How much an On-Demand instance cost.

Type: String

Required: No

See Also

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

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

CoverageHours

Service: AWS Cost Explorer Service

How long a running instance either used a reservation or was On-Demand.

Contents

CoverageHoursPercentage

The percentage of instance hours that a reservation covered.

Type: String

Required: No

OnDemandHours

The number of instance running hours that On-Demand Instances covered.

Type: String

Required: No

ReservedHours

The number of instance running hours that reservations covered.

Type: String

Required: No

TotalRunningHours

The total instance usage, in hours.

Type: String

Required: No

See Also

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

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

CoverageNormalizedUnits

Service: AWS Cost Explorer Service

The amount of instance usage, in normalized units. Normalized units enable you to see your EC2 usage for multiple sizes of instances in a uniform way. For example, suppose you run an xlarge instance and a 2xlarge instance. If you run both instances for the same amount of time, the 2xlarge instance uses twice as much of your reservation as the xlarge instance, even though both instances show only one instance-hour. Using normalized units instead of instance-hours, the xlarge instance used 8 normalized units, and the 2xlarge instance used 16 normalized units.

For more information, see [Modifying Reserved Instances](#) in the *Amazon Elastic Compute Cloud User Guide for Linux Instances*.

Contents

CoverageNormalizedUnitsPercentage

The percentage of your used instance normalized units that a reservation covers.

Type: String

Required: No

OnDemandNormalizedUnits

The number of normalized units that are covered by On-Demand Instances instead of a reservation.

Type: String

Required: No

ReservedNormalizedUnits

The number of normalized units that a reservation covers.

Type: String

Required: No

TotalRunningNormalizedUnits

The total number of normalized units that you used.

Type: String

Required: No

See Also

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

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

CurrentInstance

Service: AWS Cost Explorer Service

Context about the current instance.

Contents

CurrencyCode

The currency code that Amazon Web Services used to calculate the costs for this instance.

Type: String

Required: No

MonthlyCost

Current On Demand cost of operating this instance on a monthly basis.

Type: String

Required: No

OnDemandHoursInLookbackPeriod

Number of hours during the lookback period billed at On Demand rates.

Type: String

Required: No

ReservationCoveredHoursInLookbackPeriod

Number of hours during the lookback period covered by reservations.

Type: String

Required: No

ResourceDetails

Details about the resource and utilization.

Type: [ResourceDetails \(p. 181\)](#) object

Required: No

ResourceId

Resource ID of the current instance.

Type: String

Required: No

ResourceUtilization

Utilization information of the current instance during the lookback period.

Type: [ResourceUtilization \(p. 182\)](#) object

Required: No

Tags

Cost allocation resource tags applied to the instance.

Type: Array of [TagValues \(p. 188\)](#) objects

Required: No

TotalRunningHoursInLookbackPeriod

The total number of hours the instance ran during the lookback period.

Type: String

Required: No

See Also

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

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

DateInterval

Service: AWS Cost Explorer Service

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

Contents

End

The end of the time period that you want the usage and costs for. The end date is exclusive. For example, if `end` is `2017-05-01`, AWS retrieves cost and usage data from the start date up to, but not including, `2017-05-01`.

Type: String

Pattern: `(\d{4}-\d{2}-\d{2})(T\d{2}:\d{2}:\d{2}Z)?`

Required: Yes

Start

The beginning of the time period that you want the usage and costs for. The start date is inclusive. For example, if `start` is `2017-01-01`, AWS retrieves cost and usage data starting at `2017-01-01` up to the end date.

Type: String

Pattern: `(\d{4}-\d{2}-\d{2})(T\d{2}:\d{2}:\d{2}Z)?`

Required: Yes

See Also

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

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

DimensionValues

Service: AWS Cost Explorer Service

The metadata that you can use to filter and group your results. You can use `GetDimensionValues` to find specific values.

Contents

Key

The names of the metadata types that you can use to filter and group your results. For example, `AZ` returns a list of Availability Zones.

Type: String

Valid Values: `AZ` | `INSTANCE_TYPE` | `LINKED_ACCOUNT` | `OPERATION` | `PURCHASE_TYPE` | `REGION` | `SERVICE` | `USAGE_TYPE` | `USAGE_TYPE_GROUP` | `RECORD_TYPE` | `OPERATING_SYSTEM` | `TENANCY` | `SCOPE` | `PLATFORM` | `SUBSCRIPTION_ID` | `LEGAL_ENTITY_NAME` | `DEPLOYMENT_OPTION` | `DATABASE_ENGINE` | `CACHE_ENGINE` | `INSTANCE_TYPE_FAMILY` | `BILLING_ENTITY` | `RESERVATION_ID` | `RIGHTSIZING_TYPE`

Required: No

Values

The metadata values that you can use to filter and group your results. You can use `GetDimensionValues` to find specific values.

Valid values for the `SERVICE` dimension are Amazon Elastic Compute Cloud - Compute, Amazon Elasticsearch Service, Amazon ElastiCache, Amazon Redshift, and Amazon Relational Database Service.

Type: Array of strings

Required: No

See Also

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

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

DimensionValuesWithAttributes

Service: AWS Cost Explorer Service

The metadata of a specific type that you can use to filter and group your results. You can use `GetDimensionValues` to find specific values.

Contents

Attributes

The attribute that applies to a specific `Dimension`.

Type: String to string map

Required: No

Value

The value of a dimension with a specific attribute.

Type: String

Required: No

See Also

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

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

EC2InstanceDetails

Service: AWS Cost Explorer Service

Details about the Amazon EC2 instances that AWS recommends that you purchase.

Contents

AvailabilityZone

The Availability Zone of the recommended reservation.

Type: String

Required: No

CurrentGeneration

Whether the recommendation is for a current-generation instance.

Type: Boolean

Required: No

Family

The instance family of the recommended reservation.

Type: String

Required: No

InstanceType

The type of instance that AWS recommends.

Type: String

Required: No

Platform

The platform of the recommended reservation. The platform is the specific combination of operating system, license model, and software on an instance.

Type: String

Required: No

Region

The AWS Region of the recommended reservation.

Type: String

Required: No

SizeFlexEligible

Whether the recommended reservation is size flexible.

Type: Boolean

Required: No

Tenancy

Whether the recommended reservation is dedicated or shared.

Type: String

Required: No

See Also

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

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

EC2ResourceDetails

Service: AWS Cost Explorer Service

Details on the Amazon EC2 Resource.

Contents

HourlyOnDemandRate

Hourly public On Demand rate for the instance type.

Type: String

Required: No

InstanceType

The type of Amazon Web Services instance.

Type: String

Required: No

Memory

Memory capacity of Amazon Web Services instance.

Type: String

Required: No

NetworkPerformance

Network performance capacity of the Amazon Web Services instance.

Type: String

Required: No

Platform

The platform of the Amazon Web Services instance. The platform is the specific combination of operating system, license model, and software on an instance.

Type: String

Required: No

Region

The Amazon Web Services Region of the instance.

Type: String

Required: No

Sku

The SKU of the product.

Type: String

Required: No

Storage

The disk storage of the Amazon Web Services instance (Not EBS storage).

Type: String

Required: No

Vcpu

Number of VCPU cores in the Amazon Web Services instance type.

Type: String

Required: No

See Also

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

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

EC2ResourceUtilization

Service: AWS Cost Explorer Service

Utilization metrics of the instance.

Contents

MaxCpuUtilizationPercentage

Maximum observed or expected CPU utilization of the instance.

Type: String

Required: No

MaxMemoryUtilizationPercentage

Maximum observed or expected memory utilization of the instance.

Type: String

Required: No

MaxStorageUtilizationPercentage

Maximum observed or expected storage utilization of the instance (does not measure EBS storage).

Type: String

Required: No

See Also

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

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

EC2Specification

Service: AWS Cost Explorer Service

The Amazon EC2 hardware specifications that you want AWS to provide recommendations for.

Contents

OfferingClass

Whether you want a recommendation for standard or convertible reservations.

Type: String

Valid Values: STANDARD | CONVERTIBLE

Required: No

See Also

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

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

ElastiCacheInstanceDetails

Service: AWS Cost Explorer Service

Details about the Amazon ElastiCache instances that AWS recommends that you purchase.

Contents

CurrentGeneration

Whether the recommendation is for a current generation instance.

Type: Boolean

Required: No

Family

The instance family of the recommended reservation.

Type: String

Required: No

NodeType

The type of node that AWS recommends.

Type: String

Required: No

ProductDescription

The description of the recommended reservation.

Type: String

Required: No

Region

The AWS Region of the recommended reservation.

Type: String

Required: No

SizeFlexEligible

Whether the recommended reservation is size flexible.

Type: Boolean

Required: No

See Also

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

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

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

ESInstanceDetails

Service: AWS Cost Explorer Service

Details about the Amazon ES instances that AWS recommends that you purchase.

Contents

CurrentGeneration

Whether the recommendation is for a current-generation instance.

Type: Boolean

Required: No

InstanceClass

The class of instance that AWS recommends.

Type: String

Required: No

InstanceSize

The size of instance that AWS recommends.

Type: String

Required: No

Region

The AWS Region of the recommended reservation.

Type: String

Required: No

SizeFlexEligible

Whether the recommended reservation is size flexible.

Type: Boolean

Required: No

See Also

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

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

Expression

Service: AWS Cost Explorer Service

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

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

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

The list of dimension values are OR'd together to retrieve cost or usage data. You can create `Expression` and `DimensionValues` objects using either `with*` methods or `set*` methods in multiple lines.

- Compound dimension values with logical operations - You can use multiple `Expression` types and the logical operators AND/OR/NOT to create a list of one or more `Expression` objects. This allows you to filter on more advanced options. For example, you can filter on `((REGION == us-east-1 OR REGION == us-west-1) OR (TAG.Type == Type1)) AND (USAGE_TYPE != DataTransfer)`. The `Expression` for that looks like this:

```
{ "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 `GetRightsizingRecommendation` action, a combination of OR and NOT is not supported. OR is not supported between different dimensions, or dimensions and tags. NOT operators aren't supported. Dimensions are also limited to `LINKED_ACCOUNT`, `REGION`, or `RIGHTSIZING_TYPE`.

Contents

And

Return results that match both `Dimension` objects.

Type: Array of [Expression \(p. 158\)](#) objects

Required: No

Dimensions

The specific `Dimension` to use for `Expression`.

Type: [DimensionValues \(p. 147\)](#) object

Required: No

Not

Return results that don't match a `Dimension` object.

Type: [Expression \(p. 158\)](#) object

Required: No

Or

Return results that match either `Dimension` object.

Type: Array of [Expression \(p. 158\)](#) objects

Required: No

Tags

The specific `Tag` to use for `Expression`.

Type: [TagValues \(p. 188\)](#) 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 Go - Pilot](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

ForecastResult

Service: AWS Cost Explorer Service

The forecast created for your query.

Contents

MeanValue

The mean value of the forecast.

Type: String

Required: No

PredictionIntervalLowerBound

The lower limit for the prediction interval.

Type: String

Required: No

PredictionIntervalUpperBound

The upper limit for the prediction interval.

Type: String

Required: No

TimePeriod

The period of time that the forecast covers.

Type: [DateInterval](#) (p. 146) 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 Go - Pilot](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

Group

Service: AWS Cost Explorer Service

One level of grouped data in the results.

Contents

Keys

The keys that are included in this group.

Type: Array of strings

Required: No

Metrics

The metrics that are included in this group.

Type: String to [MetricValue \(p. 164\)](#) object map

Required: No

See Also

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

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

GroupDefinition

Service: AWS Cost Explorer Service

Represents a group when you specify a group by criteria or in the response to a query with a specific grouping.

Contents

Key

The string that represents a key for a specified group.

Type: String

Required: No

Type

The string that represents the type of group.

Type: String

Valid Values: `DIMENSION` | `TAG`

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

InstanceDetails

Service: AWS Cost Explorer Service

Details about the instances that AWS recommends that you purchase.

Contents

EC2InstanceDetails

The Amazon EC2 instances that AWS recommends that you purchase.

Type: [EC2InstanceDetails \(p. 149\)](#) object

Required: No

ElastiCacheInstanceDetails

The ElastiCache instances that AWS recommends that you purchase.

Type: [ElastiCacheInstanceDetails \(p. 155\)](#) object

Required: No

ESInstanceDetails

The Amazon ES instances that AWS recommends that you purchase.

Type: [ESInstanceDetails \(p. 157\)](#) object

Required: No

RDSInstanceDetails

The Amazon RDS instances that AWS recommends that you purchase.

Type: [RDSInstanceDetails \(p. 166\)](#) object

Required: No

RedshiftInstanceDetails

The Amazon Redshift instances that AWS recommends that you purchase.

Type: [RedshiftInstanceDetails \(p. 168\)](#) 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 Go - Pilot](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

MetricValue

Service: AWS Cost Explorer Service

The aggregated value for a metric.

Contents

Amount

The actual number that represents the metric.

Type: String

Required: No

Unit

The unit that the metric is given in.

Type: String

Required: No

See Also

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

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

ModifyRecommendationDetail

Service: AWS Cost Explorer Service

Details on the modification recommendation.

Contents

TargetInstances

Identifies whether this instance type is the Amazon Web Services default recommendation.

Type: Array of [TargetInstance](#) (p. 189) 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 Go - Pilot](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

RDSInstanceDetails

Service: AWS Cost Explorer Service

Details about the Amazon RDS instances that AWS recommends that you purchase.

Contents

CurrentGeneration

Whether the recommendation is for a current-generation instance.

Type: Boolean

Required: No

DatabaseEdition

The database edition that the recommended reservation supports.

Type: String

Required: No

DatabaseEngine

The database engine that the recommended reservation supports.

Type: String

Required: No

DeploymentOption

Whether the recommendation is for a reservation in a single Availability Zone or a reservation with a backup in a second Availability Zone.

Type: String

Required: No

Family

The instance family of the recommended reservation.

Type: String

Required: No

InstanceType

The type of instance that AWS recommends.

Type: String

Required: No

LicenseModel

The license model that the recommended reservation supports.

Type: String

Required: No

Region

The AWS Region of the recommended reservation.

Type: String

Required: No

SizeFlexEligible

Whether the recommended reservation is size flexible.

Type: Boolean

Required: No

See Also

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

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

RedshiftInstanceDetails

Service: AWS Cost Explorer Service

Details about the Amazon Redshift instances that AWS recommends that you purchase.

Contents

CurrentGeneration

Whether the recommendation is for a current-generation instance.

Type: Boolean

Required: No

Family

The instance family of the recommended reservation.

Type: String

Required: No

NodeType

The type of node that AWS recommends.

Type: String

Required: No

Region

The AWS Region of the recommended reservation.

Type: String

Required: No

SizeFlexEligible

Whether the recommended reservation is size flexible.

Type: Boolean

Required: No

See Also

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

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

ReservationAggregates

Service: AWS Cost Explorer Service

The aggregated numbers for your reservation usage.

Contents

AmortizedRecurringFee

The monthly cost of your reservation, amortized over the reservation period.

Type: String

Required: No

AmortizedUpfrontFee

The upfront cost of your reservation, amortized over the reservation period.

Type: String

Required: No

NetRISavings

How much you saved due to purchasing and utilizing reservation. AWS calculates this by subtracting `TotalAmortizedFee` from `OnDemandCostOfRIHoursUsed`.

Type: String

Required: No

OnDemandCostOfRIHoursUsed

How much your reservation would cost if charged On-Demand rates.

Type: String

Required: No

PurchasedHours

How many reservation hours that you purchased.

Type: String

Required: No

PurchasedUnits

How many Amazon EC2 reservation hours that you purchased, converted to normalized units. Normalized units are available only for Amazon EC2 usage after November 11, 2017.

Type: String

Required: No

TotalActualHours

The total number of reservation hours that you used.

Type: String

Required: No

TotalActualUnits

The total number of Amazon EC2 reservation hours that you used, converted to normalized units. Normalized units are available only for Amazon EC2 usage after November 11, 2017.

Type: String

Required: No

TotalAmortizedFee

The total cost of your reservation, amortized over the reservation period.

Type: String

Required: No

TotalPotentialRISavings

How much you could save if you use your entire reservation.

Type: String

Required: No

UnusedHours

The number of reservation hours that you didn't use.

Type: String

Required: No

UnusedUnits

The number of Amazon EC2 reservation hours that you didn't use, converted to normalized units. Normalized units are available only for Amazon EC2 usage after November 11, 2017.

Type: String

Required: No

UtilizationPercentage

The percentage of reservation time that you used.

Type: String

Required: No

UtilizationPercentageInUnits

The percentage of Amazon EC2 reservation time that you used, converted to normalized units. Normalized units are available only for Amazon EC2 usage after November 11, 2017.

Type: String

Required: No

See Also

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

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

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

ReservationCoverageGroup

Service: AWS Cost Explorer Service

A group of reservations that share a set of attributes.

Contents

Attributes

The attributes for this group of reservations.

Type: String to string map

Required: No

Coverage

How much instance usage this group of reservations covered.

Type: [Coverage \(p. 139\)](#) object

Required: No

See Also

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

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

ReservationPurchaseRecommendation

Service: AWS Cost Explorer Service

A specific reservation that AWS recommends for purchase.

Contents

AccountScope

The account scope that AWS recommends that you purchase this instance for. For example, you can purchase this reservation for an entire organization in AWS Organizations.

Type: String

Valid Values: `PAYER` | `LINKED`

Required: No

LookbackPeriodInDays

How many days of previous usage that AWS considers when making this recommendation.

Type: String

Valid Values: `SEVEN_DAYS` | `THIRTY_DAYS` | `SIXTY_DAYS`

Required: No

PaymentOption

The payment option for the reservation. For example, `AllUpfront` or `NoUpfront`.

Type: String

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

Required: No

RecommendationDetails

Details about the recommended purchases.

Type: Array of [ReservationPurchaseRecommendationDetail \(p. 175\)](#) objects

Required: No

RecommendationSummary

A summary about the recommended purchase.

Type: [ReservationPurchaseRecommendationSummary \(p. 179\)](#) object

Required: No

ServiceSpecification

Hardware specifications for the service that you want recommendations for.

Type: [ServiceSpecification \(p. 187\)](#) 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 Go - Pilot](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

ReservationPurchaseRecommendationDetail

Service: AWS Cost Explorer Service

Details about your recommended reservation purchase.

Contents

AccountId

The account that this RI recommendation is for.

Type: String

Required: No

AverageNormalizedUnitsUsedPerHour

The average number of normalized units that you used in an hour during the historical period. AWS uses this to calculate your recommended reservation purchases.

Type: String

Required: No

AverageNumberOfInstancesUsedPerHour

The average number of instances that you used in an hour during the historical period. AWS uses this to calculate your recommended reservation purchases.

Type: String

Required: No

AverageUtilization

The average utilization of your instances. AWS uses this to calculate your recommended reservation purchases.

Type: String

Required: No

CurrencyCode

The currency code that AWS used to calculate the costs for this instance.

Type: String

Required: No

EstimatedBreakEvenInMonths

How long AWS estimates that it takes for this instance to start saving you money, in months.

Type: String

Required: No

EstimatedMonthlyOnDemandCost

How much AWS estimates that you spend on On-Demand Instances in a month.

Type: String

Required: No

EstimatedMonthlySavingsAmount

How much AWS estimates that this specific recommendation could save you in a month.

Type: String

Required: No

EstimatedMonthlySavingsPercentage

How much AWS estimates that this specific recommendation could save you in a month, as a percentage of your overall costs.

Type: String

Required: No

EstimatedReservationCostForLookbackPeriod

How much AWS estimates that you would have spent for all usage during the specified historical period if you had had a reservation.

Type: String

Required: No

InstanceDetails

Details about the instances that AWS recommends that you purchase.

Type: [InstanceDetails](#) (p. 163) object

Required: No

MaximumNormalizedUnitsUsedPerHour

The maximum number of normalized units that you used in an hour during the historical period. AWS uses this to calculate your recommended reservation purchases.

Type: String

Required: No

MaximumNumberOfInstancesUsedPerHour

The maximum number of instances that you used in an hour during the historical period. AWS uses this to calculate your recommended reservation purchases.

Type: String

Required: No

MinimumNormalizedUnitsUsedPerHour

The minimum number of normalized units that you used in an hour during the historical period. AWS uses this to calculate your recommended reservation purchases.

Type: String

Required: No

MinimumNumberOfInstancesUsedPerHour

The minimum number of instances that you used in an hour during the historical period. AWS uses this to calculate your recommended reservation purchases.

Type: String

Required: No

RecommendedNormalizedUnitsToPurchase

The number of normalized units that AWS recommends that you purchase.

Type: String

Required: No

RecommendedNumberOfInstancesToPurchase

The number of instances that AWS recommends that you purchase.

Type: String

Required: No

RecurringStandardMonthlyCost

How much purchasing this instance costs you on a monthly basis.

Type: String

Required: No

UpfrontCost

How much purchasing this instance costs you upfront.

Type: String

Required: No

See Also

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

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

ReservationPurchaseRecommendationMetadata

Service: AWS Cost Explorer Service

Information about this specific recommendation, such as the time stamp for when AWS made a specific recommendation.

Contents

GenerationTimestamp

The time stamp for when AWS made this recommendation.

Type: String

Required: No

RecommendationId

The ID for this specific recommendation.

Type: String

Required: No

See Also

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

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

ReservationPurchaseRecommendationSummary

Service: AWS Cost Explorer Service

A summary about this recommendation, such as the currency code, the amount that AWS estimates that you could save, and the total amount of reservation to purchase.

Contents

CurrencyCode

The currency code used for this recommendation.

Type: String

Required: No

TotalEstimatedMonthlySavingsAmount

The total amount that AWS estimates that this recommendation could save you in a month.

Type: String

Required: No

TotalEstimatedMonthlySavingsPercentage

The total amount that AWS estimates that this recommendation could save you in a month, as a percentage of your costs.

Type: String

Required: No

See Also

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

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

ReservationUtilizationGroup

Service: AWS Cost Explorer Service

A group of reservations that share a set of attributes.

Contents

Attributes

The attributes for this group of reservations.

Type: String to string map

Required: No

Key

The key for a specific reservation attribute.

Type: String

Required: No

Utilization

How much you used this group of reservations.

Type: [ReservationAggregates \(p. 169\)](#) 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 Go - Pilot](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

ResourceDetails

Service: AWS Cost Explorer Service

Details on the resource.

Contents

EC2ResourceDetails

Details on the Amazon EC2 resource.

Type: [EC2ResourceDetails \(p. 151\)](#) 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 Go - Pilot](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

ResourceUtilization

Service: AWS Cost Explorer Service

Resource utilization of current resource.

Contents

EC2ResourceUtilization

Utilization of current Amazon EC2 Instance

Type: [EC2ResourceUtilization \(p. 153\)](#) 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 Go - Pilot](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

ResultByTime

Service: AWS Cost Explorer Service

The result that is associated with a time period.

Contents

Estimated

Whether the result is estimated.

Type: Boolean

Required: No

Groups

The groups that this time period includes.

Type: Array of [Group \(p. 161\)](#) objects

Required: No

TimePeriod

The time period that the result covers.

Type: [DateInterval \(p. 146\)](#) object

Required: No

Total

The total amount of cost or usage accrued during the time period.

Type: String to [MetricValue \(p. 164\)](#) object map

Required: No

See Also

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

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

RightsizingRecommendation

Service: AWS Cost Explorer Service

Recommendations to rightsize resources.

Contents

AccountId

The account that this recommendation is for.

Type: String

Required: No

CurrentInstance

Context regarding the current instance.

Type: [CurrentInstance](#) (p. 144) object

Required: No

ModifyRecommendationDetail

Details for modification recommendations.

Type: [ModifyRecommendationDetail](#) (p. 165) object

Required: No

RightsizingType

Recommendation to either terminate or modify the resource.

Type: String

Valid Values: `TERMINATE` | `MODIFY`

Required: No

TerminateRecommendationDetail

Details for termination recommendations.

Type: [TerminateRecommendationDetail](#) (p. 191) 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 Go - Pilot](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

RightsizingRecommendationMetadata

Service: AWS Cost Explorer Service

Metadata for this recommendation set.

Contents

GenerationTimestamp

The time stamp for when Amazon Web Services made this recommendation.

Type: String

Required: No

LookbackPeriodInDays

How many days of previous usage that Amazon Web Services considers when making this recommendation.

Type: String

Valid Values: SEVEN_DAYS | THIRTY_DAYS | SIXTY_DAYS

Required: No

RecommendationId

The ID for this specific recommendation.

Type: String

Required: No

See Also

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

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

RightsizingRecommendationSummary

Service: AWS Cost Explorer Service

Summary of rightsizing recommendations

Contents

EstimatedTotalMonthlySavingsAmount

Estimated total savings resulting from modifications, on a monthly basis.

Type: String

Required: No

SavingsCurrencyCode

The currency code that Amazon Web Services used to calculate the savings.

Type: String

Required: No

SavingsPercentage

Savings percentage based on the recommended modifications, relative to the total On Demand costs associated with these instances.

Type: String

Required: No

TotalRecommendationCount

Total number of instance recommendations.

Type: String

Required: No

See Also

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

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

ServiceSpecification

Service: AWS Cost Explorer Service

Hardware specifications for the service that you want recommendations for.

Contents

EC2Specification

The Amazon EC2 hardware specifications that you want AWS to provide recommendations for.

Type: [EC2Specification \(p. 154\)](#) 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 Go - Pilot](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

TagValues

Service: AWS Cost Explorer Service

The values that are available for a tag.

Contents

Key

The key for the tag.

Type: String

Required: No

Values

The specific value of the tag.

Type: Array of strings

Required: No

See Also

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

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

TargetInstance

Service: AWS Cost Explorer Service

Details on recommended instance.

Contents

CurrencyCode

The currency code that Amazon Web Services used to calculate the costs for this instance.

Type: String

Required: No

DefaultTargetInstance

Indicates whether or not this recommendation is the defaulted Amazon Web Services recommendation.

Type: Boolean

Required: No

EstimatedMonthlyCost

Expected cost to operate this instance type on a monthly basis.

Type: String

Required: No

EstimatedMonthlySavings

Estimated savings resulting from modification, on a monthly basis.

Type: String

Required: No

ExpectedResourceUtilization

Expected utilization metrics for target instance type.

Type: [ResourceUtilization](#) (p. 182) object

Required: No

ResourceDetails

Details on the target instance type.

Type: [ResourceDetails](#) (p. 181) 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 Go - Pilot](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

TerminateRecommendationDetail

Service: AWS Cost Explorer Service

Details on termination recommendation.

Contents

CurrencyCode

The currency code that Amazon Web Services used to calculate the costs for this instance.

Type: String

Required: No

EstimatedMonthlySavings

Estimated savings resulting from modification, on a monthly basis.

Type: String

Required: No

See Also

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

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

UtilizationByTime

Service: AWS Cost Explorer Service

The amount of utilization, in hours.

Contents

Groups

The groups that this utilization result uses.

Type: Array of [ReservationUtilizationGroup](#) (p. 180) objects

Required: No

TimePeriod

The period of time that this utilization was used for.

Type: [DateInterval](#) (p. 146) object

Required: No

Total

The total number of reservation hours that were used.

Type: [ReservationAggregates](#) (p. 169) 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 Go - Pilot](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

AWS Budgets

The following data types are supported by AWS Budgets:

- [Budget](#) (p. 194)
- [BudgetedAndActualAmounts](#) (p. 197)
- [BudgetPerformanceHistory](#) (p. 198)
- [CalculatedSpend](#) (p. 200)
- [CostTypes](#) (p. 201)
- [Notification](#) (p. 204)
- [NotificationWithSubscribers](#) (p. 206)
- [Spend](#) (p. 207)

- [Subscriber \(p. 208\)](#)
- [TimePeriod \(p. 209\)](#)

Budget

Service: AWS Budgets

Represents the output of the `CreateBudget` operation. The content consists of the detailed metadata and data file information, and the current status of the `budget` object.

This is the ARN pattern for a budget:

`arn:aws:budgetservice::AccountId:budget/budgetName`

Contents

BudgetLimit

The total amount of cost, usage, RI utilization, or RI coverage that you want to track with your budget.

`BudgetLimit` is required for cost or usage budgets, but optional for RI utilization or coverage budgets. RI utilization or coverage budgets default to 100, which is the only valid value for RI utilization or coverage budgets. You can't use `BudgetLimit` with `PlannedBudgetLimits` for `CreateBudget` and `UpdateBudget` actions.

Type: [Spend \(p. 207\)](#) object

Required: No

BudgetName

The name of a budget. The name must be unique within an account. The `:` and `\` characters aren't allowed in `BudgetName`.

Type: String

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

Pattern: `[^:\ \]+`

Required: Yes

BudgetType

Whether this budget tracks costs, usage, RI utilization, or RI coverage.

Type: String

Valid Values: `USAGE` | `COST` | `RI_UTILIZATION` | `RI_COVERAGE`

Required: Yes

CalculatedSpend

The actual and forecasted cost or usage that the budget tracks.

Type: [CalculatedSpend \(p. 200\)](#) object

Required: No

CostFilters

The cost filters, such as service or tag, that are applied to a budget.

AWS Budgets supports the following services as a filter for RI budgets:

- Amazon Elastic Compute Cloud - Compute

- Amazon Redshift
- Amazon Relational Database Service
- Amazon ElastiCache
- Amazon Elasticsearch Service

Type: String to array of strings map

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

Key Pattern: . *

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

Pattern: . *

Required: No

CostTypes

The types of costs that are included in this COST budget.

USAGE, RI_UTILIZATION, and RI_COVERAGE budgets do not have CostTypes.

Type: [CostTypes \(p. 201\)](#) object

Required: No

LastUpdatedTime

The last time that you updated this budget.

Type: Timestamp

Required: No

PlannedBudgetLimits

A map containing multiple BudgetLimit, including current or future limits.

PlannedBudgetLimits is available for cost or usage budget and supports monthly and quarterly TimeUnit.

For monthly budgets, provide 12 months of PlannedBudgetLimits values. This must start from the current month and include the next 11 months. The key is the start of the month, UTC in epoch seconds.

For quarterly budgets, provide 4 quarters of PlannedBudgetLimits value entries in standard calendar quarter increments. This must start from the current quarter and include the next 3 quarters. The key is the start of the quarter, UTC in epoch seconds.

If the planned budget expires before 12 months for monthly or 4 quarters for quarterly, provide the PlannedBudgetLimits values only for the remaining periods.

If the budget begins at a date in the future, provide PlannedBudgetLimits values from the start date of the budget.

After all of the BudgetLimit values in PlannedBudgetLimits are used, the budget continues to use the last limit as the BudgetLimit. At that point, the planned budget provides the same experience as a fixed budget.

DescribeBudget and DescribeBudgets response along with PlannedBudgetLimits will also contain BudgetLimit representing the current month or quarter limit present in

`PlannedBudgetLimits`. This only applies to budgets created with `PlannedBudgetLimits`. Budgets created without `PlannedBudgetLimits` will only contain `BudgetLimit`, and no `PlannedBudgetLimits`.

Type: String to [Spend \(p. 207\)](#) object map

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

Key Pattern: . *

Required: No

TimePeriod

The period of time that is covered by a budget. The period has a start date and an end date. The start date must come before the end date. The end date must come before 06/15/87 00:00 UTC.

If you create your budget and don't specify a start date, AWS defaults to the start of your chosen time period (DAILY, MONTHLY, QUARTERLY, or ANNUALLY). For example, if you created your budget on January 24, 2018, chose DAILY, and didn't set a start date, AWS set your start date to 01/24/18 00:00 UTC. If you chose MONTHLY, AWS set your start date to 01/01/18 00:00 UTC. If you didn't specify an end date, AWS set your end date to 06/15/87 00:00 UTC. The defaults are the same for the AWS Billing and Cost Management console and the API.

You can change either date with the `UpdateBudget` operation.

After the end date, AWS deletes the budget and all associated notifications and subscribers.

Type: [TimePeriod \(p. 209\)](#) object

Required: No

TimeUnit

The length of time until a budget resets the actual and forecasted spend. DAILY is available only for RI_UTILIZATION and RI_COVERAGE budgets.

Type: String

Valid Values: DAILY | MONTHLY | QUARTERLY | ANNUALLY

Required: Yes

See Also

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

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

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 \(p. 207\)](#) object

Required: No

BudgetedAmount

The amount of cost or usage that you created the budget for.

Type: [Spend \(p. 207\)](#) object

Required: No

TimePeriod

The time period covered by this budget comparison.

Type: [TimePeriod \(p. 209\)](#) 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 Go - Pilot](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

BudgetPerformanceHistory

Service: AWS Budgets

A history of the state of a budget at the end of the budget's specified time period.

Contents

BudgetedAndActualAmountsList

A list of amounts of cost or usage that you created budgets for, compared to your actual costs or usage.

Type: Array of [BudgetedAndActualAmounts](#) (p. 197) 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, or RI_COVERAGE.

Type: String

Valid Values: USAGE | COST | RI_UTILIZATION | RI_COVERAGE

Required: No

CostFilters

The history of the cost filters for a budget during the specified time period.

Type: String to array of strings map

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

Key Pattern: . *

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

Pattern: . *

Required: No

CostTypes

The history of the cost types for a budget during the specified time period.

Type: [CostTypes](#) (p. 201) 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 Go - Pilot](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

CalculatedSpend

Service: AWS Budgets

The spend objects that are associated with this budget. The `actualSpend` tracks how much you've used, cost, usage, or RI units, and the `forecastedSpend` tracks how much you are predicted to spend if your current usage remains steady.

For example, if it is the 20th of the month and you have spent 50 dollars on Amazon EC2, your `actualSpend` is 50 USD, and your `forecastedSpend` is 75 USD.

Contents

ActualSpend

The amount of cost, usage, or RI units that you have used.

Type: [Spend \(p. 207\)](#) object

Required: Yes

ForecastedSpend

The amount of cost, usage, or RI units that you are forecasted to use.

Type: [Spend \(p. 207\)](#) 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 Go - Pilot](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

CostTypes

Service: AWS Budgets

The types of cost that are included in a `COST` budget, such as tax and subscriptions.

`USAGE`, `RI_UTILIZATION`, and `RI_COVERAGE` budgets do not have `CostTypes`.

Contents

IncludeCredit

Specifies whether a budget includes credits.

The default value is `true`.

Type: Boolean

Required: No

IncludeDiscount

Specifies whether a budget includes discounts.

The default value is `true`.

Type: Boolean

Required: No

IncludeOtherSubscription

Specifies whether a budget includes non-RI subscription costs.

The default value is `true`.

Type: Boolean

Required: No

IncludeRecurring

Specifies whether a budget includes recurring fees such as monthly RI fees.

The default value is `true`.

Type: Boolean

Required: No

IncludeRefund

Specifies whether a budget includes refunds.

The default value is `true`.

Type: Boolean

Required: No

IncludeSubscription

Specifies whether a budget includes subscriptions.

The default value is `true`.

Type: Boolean

Required: No

IncludeSupport

Specifies whether a budget includes support subscription fees.

The default value is `true`.

Type: Boolean

Required: No

IncludeTax

Specifies whether a budget includes taxes.

The default value is `true`.

Type: Boolean

Required: No

IncludeUpfront

Specifies whether a budget includes upfront RI costs.

The default value is `true`.

Type: Boolean

Required: No

UseAmortized

Specifies whether a budget uses the amortized rate.

The default value is `false`.

Type: Boolean

Required: No

UseBlended

Specifies whether a budget uses a blended rate.

The default value is `false`.

Type: Boolean

Required: No

See Also

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

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

Notification

Service: AWS Budgets

A notification that is associated with a budget. A budget can have up to five notifications.

Each notification must have at least one subscriber. A notification can have one SNS subscriber and up to 10 email subscribers, for a total of 11 subscribers.

For example, if you have a budget for 200 dollars and you want to be notified when you go over 160 dollars, create a notification with the following parameters:

- A `notificationType` of `ACTUAL`
- A `thresholdType` of `PERCENTAGE`
- A `comparisonOperator` of `GREATER_THAN`
- A notification threshold of 80

Contents

ComparisonOperator

The comparison that is used for this notification.

Type: String

Valid Values: `GREATER_THAN` | `LESS_THAN` | `EQUAL_TO`

Required: Yes

NotificationState

Whether this notification is in alarm. If a budget notification is in the `ALARM` state, you have passed the set threshold for the budget.

Type: String

Valid Values: `OK` | `ALARM`

Required: No

NotificationType

Whether the notification is for how much you have spent (`ACTUAL`) or for how much you're forecasted to spend (`FORECASTED`).

Type: String

Valid Values: `ACTUAL` | `FORECASTED`

Required: Yes

Threshold

The threshold that is associated with a notification. Thresholds are always a percentage.

Type: Double

Valid Range: Minimum value of 0. Maximum value of 1000000000.

Required: Yes

ThresholdType

The type of threshold for a notification. For `ABSOLUTE_VALUE` thresholds, AWS notifies you when you go over or are forecasted to go over your total cost threshold. For `PERCENTAGE` thresholds, AWS notifies you when you go over or are forecasted to go over a certain percentage of your forecasted spend. For example, if you have a budget for 200 dollars and you have a `PERCENTAGE` threshold of 80%, AWS notifies you when you go over 160 dollars.

Type: String

Valid Values: `PERCENTAGE` | `ABSOLUTE_VALUE`

Required: No

See Also

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

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

NotificationWithSubscribers

Service: AWS Budgets

A notification with subscribers. A notification can have one SNS subscriber and up to 10 email subscribers, for a total of 11 subscribers.

Contents

Notification

The notification that is associated with a budget.

Type: [Notification \(p. 204\)](#) object

Required: Yes

Subscribers

A list of subscribers who are subscribed to this notification.

Type: Array of [Subscriber \(p. 208\)](#) 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 Go - Pilot](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

Spend

Service: AWS Budgets

The amount of cost or usage that is measured for a budget.

For example, a `Spend` for 3 GB of S3 usage would have the following parameters:

- An `Amount` of 3
- A `unit` of GB

Contents

Amount

The cost or usage amount that is associated with a budget forecast, actual spend, or budget threshold.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2147483647.

Pattern: `([0-9]*\.)?[0-9]+`

Required: Yes

Unit

The unit of measurement that is used for the budget forecast, actual spend, or budget threshold, such as dollars or GB.

Type: String

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

Subscriber

Service: AWS Budgets

The subscriber to a budget notification. The subscriber consists of a subscription type and either an Amazon SNS topic or an email address.

For example, an email subscriber would have the following parameters:

- A `subscriptionType` of `EMAIL`
- An address of `example@example.com`

Contents

Address

The address that AWS sends budget notifications to, either an SNS topic or an email.

When you create a subscriber, the value of `Address` can't contain line breaks.

Type: String

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

TimePeriod

Service: AWS Budgets

The period of time that is covered by a budget. The period has a start date and an end date. The start date must come before the end date. There are no restrictions on the end date.

Contents

End

The end date for a budget. If you didn't specify an end date, AWS set your end date to 06/15/87 00:00 UTC. The defaults are the same for the AWS Billing and Cost Management console and the API.

After the end date, AWS deletes the budget and all associated notifications and subscribers. You can change your end date with the `UpdateBudget` operation.

Type: Timestamp

Required: No

Start

The start date for a budget. If you created your budget and didn't specify a start date, AWS defaults to the start of your chosen time period (DAILY, MONTHLY, QUARTERLY, or ANNUALLY). For example, if you created your budget on January 24, 2018, chose DAILY, and didn't set a start date, AWS set your start date to 01/24/18 00:00 UTC. If you chose MONTHLY, AWS set your start date to 01/01/18 00:00 UTC. The defaults are the same for the AWS Billing and Cost Management console and the API.

You can change your start date with the `UpdateBudget` operation.

Type: Timestamp

Required: No

See Also

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

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

AWS Cost and Usage Report Service

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

- [ReportDefinition](#) (p. 210)

ReportDefinition

Service: AWS Cost and Usage Report Service

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

Contents

AdditionalArtifacts

A list of manifests that you want Amazon Web Services to create for this report.

Type: Array of strings

Valid Values: REDSHIFT | QUICKSIGHT | ATHENA

Required: No

AdditionalSchemaElements

A list of strings that indicate additional content that Amazon Web Services includes in the report, such as individual resource IDs.

Type: Array of strings

Valid Values: RESOURCES

Required: Yes

Compression

The compression format that AWS uses for the report.

Type: String

Valid Values: ZIP | GZIP | Parquet

Required: Yes

Format

The format that AWS saves the report in.

Type: String

Valid Values: textORcsv | Parquet

Required: Yes

RefreshClosedReports

Whether you want Amazon Web Services to update your reports after they have been finalized if Amazon Web Services detects charges related to previous months. These charges can include refunds, credits, or support fees.

Type: Boolean

Required: No

ReportName

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

Type: String

Length Constraints: Maximum length of 256.

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

Required: Yes

ReportVersioning

Whether you want Amazon Web Services to overwrite the previous version of each report or to deliver the report in addition to the previous versions.

Type: String

Valid Values: `CREATE_NEW_REPORT` | `OVERWRITE_REPORT`

Required: No

S3Bucket

The S3 bucket where AWS delivers the report.

Type: String

Length Constraints: Maximum length of 256.

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: `us-east-1` | `us-west-1` | `us-west-2` | `eu-central-1` | `eu-west-1` | `ap-southeast-1` | `ap-southeast-2` | `ap-northeast-1` | `eu-north-1` | `ap-northeast-3` | `ap-east-1`

Required: Yes

TimeUnit

The length of time covered by the report.

Type: String

Valid Values: `HOURLY` | `DAILY`

Required: Yes

See Also

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

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

AWS Price List Service

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

- [AttributeValue \(p. 213\)](#)
- [Filter \(p. 214\)](#)
- [Service \(p. 215\)](#)

AttributeValue

Service: AWS Price List Service

The values of a given attribute, such as `Throughput Optimized HDD` or `Provisioned IOPS` for the `Amazon EC2 volumeType` attribute.

Contents

Value

The specific value of an `attributeName`.

Type: String

Required: No

See Also

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

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

Filter

Service: AWS Price List Service

The constraints that you want all returned products to match.

Contents

Field

The product metadata field that you want to filter on. You can filter by just the service code to see all products for a specific service, filter by just the attribute name to see a specific attribute for multiple services, or use both a service code and an attribute name to retrieve only products that match both fields.

Valid values include: `ServiceCode`, and all attribute names

For example, you can filter by the `AmazonEC2` service code and the `volumeType` attribute name to get the prices for only Amazon EC2 volumes.

Type: String

Required: Yes

Type

The type of filter that you want to use.

Valid values are: `TERM_MATCH`. `TERM_MATCH` returns only products that match both the given filter field and the given value.

Type: String

Valid Values: `TERM_MATCH`

Required: Yes

Value

The service code or attribute value that you want to filter by. If you are filtering by service code this is the actual service code, such as `AmazonEC2`. If you are filtering by attribute name, this is the attribute value that you want the returned products to match, such as a `Provisioned IOPS` volume.

Type: String

Required: Yes

See Also

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

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

Service

Service: AWS Price List Service

The metadata for a service, such as the service code and available attribute names.

Contents

AttributeNames

The attributes that are available for this service.

Type: Array of strings

Required: No

ServiceCode

The code for the AWS service.

Type: String

Required: 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 Go - Pilot](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

Common Parameters

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

Action

The action to be performed.

Type: string

Required: Yes

Version

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

Type: string

Required: Yes

X-Amz-Algorithm

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

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

Type: string

Valid Values: `AWS4-HMAC-SHA256`

Required: Conditional

X-Amz-Credential

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

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

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

Type: string

Required: Conditional

X-Amz-Date

The date that is used to create the signature. The format must be ISO 8601 basic format (YYYYMMDD'THHMMSS'Z'). For example, the following date time is a valid X-Amz-Date value: `20120325T120000Z`.

Condition: X-Amz-Date is optional for all requests; it can be used to override the date used for signing requests. If the Date header is specified in the ISO 8601 basic format, X-Amz-Date is

not required. When X-Amz-Date is used, it always overrides the value of the Date header. For more information, see [Handling Dates in Signature Version 4](#) in the *Amazon Web Services General Reference*.

Type: string

Required: Conditional

X-Amz-Security-Token

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

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

Type: string

Required: Conditional

X-Amz-Signature

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

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

Type: string

Required: Conditional

X-Amz-SignedHeaders

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

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

Type: string

Required: Conditional

Common Errors

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

AccessDeniedException

You do not have sufficient access to perform this action.

HTTP Status Code: 400

IncompleteSignature

The request signature does not conform to AWS standards.

HTTP Status Code: 400

InternalFailure

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

HTTP Status Code: 500

InvalidAction

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

HTTP Status Code: 400

InvalidClientTokenId

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

HTTP Status Code: 403

InvalidParameterCombination

Parameters that must not be used together were used together.

HTTP Status Code: 400

InvalidParameterValue

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

HTTP Status Code: 400

InvalidQueryParameter

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

HTTP Status Code: 400

MalformedQueryString

The query string contains a syntax error.

HTTP Status Code: 404

MissingAction

The request is missing an action or a required parameter.

HTTP Status Code: 400

MissingAuthenticationToken

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

HTTP Status Code: 403

MissingParameter

A required parameter for the specified action is not supplied.

HTTP Status Code: 400

OptInRequired

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

HTTP Status Code: 403

RequestExpired

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

HTTP Status Code: 400

ServiceUnavailable

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

HTTP Status Code: 503

ThrottlingException

The request was denied due to request throttling.

HTTP Status Code: 400

ValidationError

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

HTTP Status Code: 400